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Soft X-Ray Emission Spectra of Metallic Solids: Critical Review of Selected Systems and Annotated Spectral Index

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SOFT X-RAY EMISSION SPECTRA OF METALLIC SOLIDS: CRITICAL REVIEW OF SELECTED SYSTEMS AND ANNOTATED SPECTRAL INDEX

A. J. McAlister, R. C. Dobbyn,
J. R. Cuthill, and M. L. Williams

Metallurgy Division
Institute for Materials Research
National Bureau of Standards
Washington, D.C. 20234

U.S. DEPARTMENT OF COMMERCE, Frederick B. Dent, *Secretary*

NATIONAL BUREAU OF STANDARDS, Richard W. Roberts, *Director*

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David R. Lide, Jr., Chief
Office of Standard Reference Data

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Soft X-Ray Emission Spectra of Metallic Solids: Critical Review of Selected Systems and Annotated Spectral Index

A. J. McAlister, R. C. Dobbyn, J. R. Cuthill, and M. L. Williams

Theory and experimental practice in the field of soft x-ray emission from metallic solids are briefly reviewed, and measurements on a number of systems (Al, Al in $AuAl_2$, Al and Mg in Al-Mg, Cu, Cu and Ni in Cu-Ni, Li, Mg, Na, and Ni) are critically evaluated and compared with the results of other techniques and theory with a view to establishing the pertinence of the soft x-ray measurements and indicating specific guidelines for further enhancing their value. In addition, an exhaustive annotated index of measured spectra is provided.

Key words: Alloys; critical review; emission spectra; intermetallic compounds; metals; soft x-ray; spectra.

1. Introduction

In recent years, considerable progress has been made in understanding the electronic structure of solids. On the theoretical side, within the framework of the independent particle model, the techniques of energy band theory have been developed to the extent that many experimenters are now employing them in the detailed interpretation of their own data. Ordered compounds as well as elemental materials are under investigation, and the theory of disordered systems is being actively pursued. In addition, the theory of many-body systems has progressed to the point that the general limits of validity of the independent particle approach are fairly well understood. Experimental progress has been no less dramatic. An impressive array of experimental techniques has been brought to bear on the problem. These techniques fall into two categories: Fermi level probes of metallic solids, such as the many techniques for gaging the Fermi surface, low temperature specific heat, the Knight shift; and broad probes of the electronic structure, such as optical, photoemission, soft x-ray, ion neutralization, positron annihilation, and Compton spectroscopies. All of these techniques are being applied, with ever increasing refinement, to more and more systems. The obvious price of such progress is an enormous growth of the literature and the attendant danger of individual workers losing touch even with work in their own fields. Topical reviews are much needed to ward off this danger.

The present paper is intended to fulfill a part of this need by providing a selective critical review and literature index to one major aspect of one experimental technique. The technique is soft x-ray emission spectroscopy, a broad probe which explores the entire occupied band structure. We further restrict ourselves to metals in their pure state, in alloys, and in intermetallic compounds. We use the term "soft x-ray" in a special way. "X-ray" has its traditional sense of describing radiative transitions involving initial ion core level vacancies. But the term "soft" shall imply that the final vacancy lies within the conduction band. Thus, as illustrated in figure 1, the technique consists of producing vacancies in ion core levels and observing the spontaneous radiation emitted when electrons initially in the conduction band drop into the vacant core states. Generally, photons emitted in this process are "soft" in the usual sense of being readily absorbed by the atmosphere, and measurements are of necessity carried out in vacuum instruments. This is not always the case, however. The penetrating radiation emitted in conduction band to K level transitions in the $3d$ metals is "soft" by our definition. To further orient the reader unfamiliar with the field, a typical instrument is illustrated in figure 2. It consists of two major components: a sample head in which the soft x-rays are generated, and a spectrometer in which they are energy analyzed and detected. To achieve sample cleanliness and reliable, reproducible results, the sample should always be mounted in vacuum. If, as in the case illustrated, initial state ion core vacancies are prepared by electron bombardment, a vacuum system must be employed. If inner level vacancies are produced by photoemission (shining x-rays from a separate tube onto the sample,

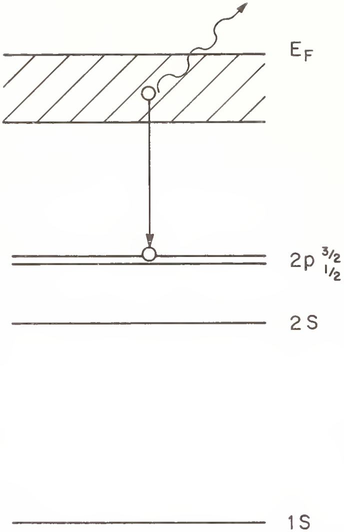

Figure 1. *An energy level scheme, appropriate to Al metal, illustrating the soft x-ray emission process.* A vacancy of well defined energy is produced in some ion core level by electron beam bombardment or photoemission. An electron from the conduction band may drop into the core hole, the relaxation being accompanied by emission of soft x-ray photon. The energy distribution of the emitted photons reflects the distribution in energy in the conduction band of the particular orbital character allowed by the dipole selection rules.

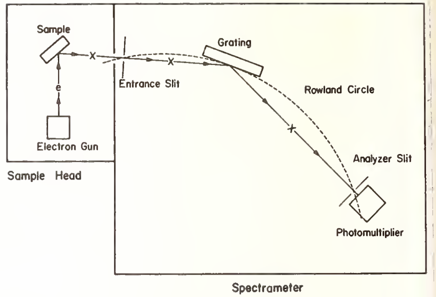

Figure 2. *Any soft x-ray system must consist of (1) a sample head in which the x-rays are produced, and (2) a spectrometer in which they are energy analyzed and detected.* In most practical applications, each must be mounted in vacuum since the radiation is usually easily absorbed by the atmosphere. Where the radiation is highly penetrating, it is well to keep the sample head under vacuum in the interest of sample cleanliness.

for example) and penetrating radiation is produced, then the sample could be mounted in atmosphere, save for the reasons of cleanliness and reliability cited above. Figure 2 shows a particular type of spectrometer using a concave grating as the dispersing element and a driven photomultiplier as a detector. Other arrangements may be used, depending on spectral range and purpose. For instance, bent crystals and double crystals are used as dispersing elements in regions of higher photon energy. Proportional counters or photographic plates may be used as detectors as the application demands.

The major aims of this review are threefold: to promote better experimental practice by analysis of a representative sampling of systems upon which two or more measurements have been performed, to afford theorists a better understanding of the problems and limitations of the measurements, and to provide an easily used key to the literature of this subfield. The material presented to achieve these ends and its organization are as follows. In section 2, after brief surveys of the status of theory and experimental technique, we give a reasonably thorough critical review of experimental results on selected systems. Criteria for critical evaluation are developed in subsection 2.2, and cogently summarized in the introduction to subsection 2.3. In the latter segment, contact is made with theory and the results of other experimental techniques where possible. Since photoemission and ion neutralization results will be the other techniques most frequently compared, a brief description of these techniques has been provided in figure 3. Section 3 contains a comprehensive annotated index of soft x-ray emission spectra from metallic systems. The spectra are grouped according to the principal quantum number of the inner level involved (K, L, M, . . . for $n=1, 2, 3, \ldots$), and listed alphabetically by elements studied (all elements permuted) within this grouping. Additionally, the spectra are separately listed alphabetically by author (all authors permuted). Also included is a chart showing the spectral ranges over which approximately 90 percent of the oscillator strength of many pure metal spectra extends.

All references in section 2 are made by author and our reference number and will be found in the author listing of section 3.

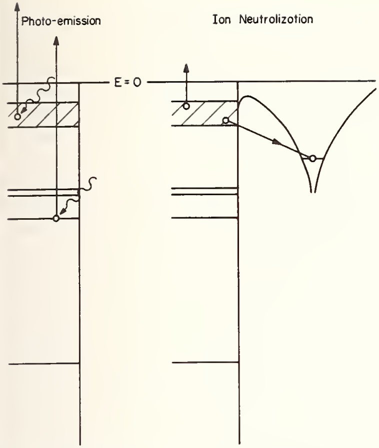

Figure 3. *Photoemission (x-ray or UV induced):* An incoming mono-energetic photon beam ejects electrons from the metal. If UV photons are used, only conduction band states are accessible for study; if x-rays are used, core states may be studied as well. The kinetic energy spectrum of ejected electrons yields information on the fold of occupied and unoccupied states. The two may be sorted out by varying the exciting photon beam energy.

Ion neutralization: A low energy beam of noble gas ions impinges on the metal surface. If a vacant ion state lies below the conduction band of the metal, an Auger relaxation may occur at the surface, one electron of the Auger pair filling the ion vacancy, and the other being raised to an excited state whence it may escape from the metal. The energy spectrum of ejected electrons contains information on the state density, though probably only near the surface.

2. Review of Soft X-ray Emission Spectra from Metallic Systems

2.1. Theoretical Situation

Conduction band emission spectroscopy is carried out by preparing vacancies in ion core levels, in the manner outlined in the previous section, and then observing the energy distribution of photons spontaneously emitted as electrons initially in conduction band states drop into vacant core levels. Since the core levels are relatively sharp, some picture of the distribution of the conduction band states in energy is expected to emerge. To proceed further, we note that the core states are compact, normally occupying much less than a unit cell volume. Furthermore, in typical experiments, the density of ions with vacant core levels is low enough that the probability of their interacting is negligible. Thus, the dimensions of the radiating system are small compared to a wavelength, and the dipole approximation is valid. One can then write for the photon emission rate

$$R(\omega) \propto \omega/l \sum_{i,f} |<\psi_f| \sum_k \mathbf{p}_k |\psi_i>|^2 \delta(h\omega - E_i + E_f)$$

where $\mathbf{p}$ is electron momentum. The k sum ranges over all electrons of the system, the i sum over l initial states, and the f sum over all final states. ψ_i and ψ_f are exact state vectors; E_i and E_f their energies. The usual dipole selection rules apply, and thus the emitted spectrum depends on the orbital symmetry of the inner level: a K level samples only the p-orbital admixture of the conduction band; L_2 and L_3 levels, the s and d orbital admixture.

The above expression for the soft x-ray emission spectrum is exact so far as the crystalline states are concerned. It can be solved in several approximations, in the simplest of which dynamic interactions between the electrons and local charge reorganization due to the presence of the core hole are ignored. ψ_i and ψ_f are approximated by antisymmetric linear combinations of single particle wave functions, ψ_i describing N conduction states plus a core with a vacancy, ψ_f an excited state containing N-1 conduction states and a full core. If the initial and final states are represented by linear combinations constructed from the same orthonormal set, the matrix element reduces to a sum of terms involving only single initial core and final band states. In the first attempt at this sort of analysis, Houston (319000) used free electron wave functions for the conduction band states, an approach which ignores the fact that the strongly localized core functions sample the band states near the nucleus where free electron waves form a very poor approximation to the Bloch states. This factor and an approximate accounting of the effect of crystal symmetry on the orbital admixture of the band states were introduced by Jones, Mott, and Skinner (349000). Only recently have attempts been made to carry this one-electron approach further by detailed calculations based on band theoretical results. While only a few systems have as yet been studied in this way—pure Al and Cu, Al in $AuAl_2$, all discussed in some detail in section 2.3. below—*structural* agreement with experiment is remarkably good.

A number of features of the observed emission profiles cannot be explained by the one-electron model described above. Broad low energy tails and weak satellites on the low energy side, shifted down from the main band by the plasmon energy, are obvious examples. Moreover, while structural features such as peaks and edges occur at predicted locations, their observed amplitudes and sharpness differ from the simple one electron prediction, and seem to require screening and lifetime effects for their explanation. A number of workers have examined the effects of charge reorganization about the core hole in the one-electron approximation—Friedel (520032), Goodings (659065), Allotey (679087)—emphasizing light metal spectra, particularly the Li K spectrum [Tomboulian and Bedo (589030)], which displays a puzzling early peak, about 0.6 eV below the high energy edge. It seems fair to say that their results, while plausible, offer no definitive explanation of the observed profiles. (See particularly the discussion of the Li K spectrum given below). The first attempt to account for the effects of the electron-electron interaction (beyond the usual effective potential of the one-electron approach) was carried out by Landsberg (499007), who used a static screened interaction to compute the energy dependent lifetime of final state conduction band holes. In this way, he was able to account for the broad low energy tail of the Na $L_{2,3}$ spectrum. Despite the rather good fit obtained, this result was defective in several respects. Since a static interaction was used, the method could not handle the plasmon satellite [observed later; see Rooke (639085)]. The small pip seen at the high energy edge [Skinner (409005) and later work discussed below] remained unexplained. Landsberg adjusted the screening length to give best fit. The length giving optimum fit was significantly shorter than that computed from the Bohm-Pines theory (539018). This situation worsened when Pirenne and Longe (649108) introduced the further effect of electrons virtually scattered from the core defect. Energy must be supplied to make the virtual processes real when a photon is emitted and further broadening is introduced. The static screening length needed to fit the experiment when this process is introduced results in further deviation from the Bohm-Pines length. A successful resolution of the plasmon and screening length difficulties was given by Glick and Longe (659075), who calculated the intensity of the tailing, including the plasmon satellite, of the Na $L_{2,3}$ spectrum by carrying out a many-body perturbation estimate of the matrix elements, including only the lowest order terms contributing to the tail region. The earlier discrepancy with the Bohm-Pines theory was found to have resulted from omission of certain cross terms in the static approximation. The Glick-Longe first order theory, however, diverged in the main band. Together with Bose (689344), they extended the work to the main band by summing over certain classes of terms in the many-body expansion. A notable result of this latter work was a distinct enhancement of intensity at the high energy edge resulting from a heavy production of virtual electron-hole pairs via dynamic scattering from the core hole. This provides a natural explanation for the emission edge pip observed in the Na spectrum, and agrees well with the independent analyses of the effects of sudden decay (or build up) of screening charge about the ion core defect upon emission (or absorption) edge intensities by Mahan (679320) and Nozières and de Dominicis (699051). Particular attention should be called to the work of Hedin and Lundqvist (699354), whose work on the relation between structural peaks in the spectral distribution function of the interacting electron gas, the eigenenergies of one-electron theory, and the results of a variety of experiments, including soft x-ray emission spectroscopy, provides the most convincing theoretical rationalization of the agreement cited above between one-electron estimates of soft x-ray profiles and experiment.

2.2. Remarks on Experimental Practices

It is not our purpose here to discuss instrumental details and technique. The interested reader will find much useful information and many references in Parratt's classic review (599072), the Strathclyde Conference Proceedings, edited by Fabian (689336), and the recent text by Samson (679056). Rather, we focus attention on those aspects of current experimental practice which most directly affect interpretation of emission band spectra. It is important to note, however, that the true emission spectrum is not measured, but rather the quantity

$$R_m(\omega_s)=\int_{-\infty}^{\infty} d\omega R(\omega)S(\omega)\rho(\omega)W(\omega-\omega_s)$$

where R_m is the measured emission rate at frequency setting ω_s, $R(\omega)$ the true emission spectrum at frequency ω, $S(\omega)$ the fraction of emitted photons escaping the sample (self-absorption factor), $\rho(\omega)$ the probability of a photon of energy $h\omega$ being detected, and $W(\omega-\omega_s)$ the instrumental window function. The true emission rate $R(\omega)$ may not be (in fact, probably is never) the precise quantity theory would predict and experiment determine. Bulk or surface contaminants could well contribute a spurious component. More typically, overlapping contributions may arise when several initial states not widely separated in energy occur. Thus, for instance, the measured L profile of Al inevitably consists of strongly overlapping L_2 and L_3 profiles, accompanied by a negligibly weak partially overlapping high energy satellite as well (Neddermeyer and Wiech, 709000). These problems are more pronounced in the M spectra of Cu and Ni, and are discussed in the following subsection. They can be dealt with in some cases, but their existence and the problems involved in correcting data for their presence should be borne in mind by the reader and stressed by the experimenter in reporting his results.

A number of advances have been made in experimental technique over the last decade. The use of improved vacuum technique lends greater confidence in the more current results. Two other advances are perhaps more significant. The introduction of photon counting techniques and digital recording systems has resulted in accurately linear response and known statistical confidence levels. Such work as Rooke's study of the plasmon satellites of the light metals (639085) and the identification of 3*d*-band structural features in the M_3 emission spectra of Cu (Dobbyn et al., 709080) and Ni (Cuthill et al., 679300) would not have been possible without this technique. Equally important is the growing realization of the effects of self-absorption on emission profiles. In this regard, Bonnelle (649057) demonstrated the utility of optimizing x-ray takeoff and exciting electron beam incidence angles. Liefeld (689330, 709116) has demonstrated that the many discrepancies among recorded 3*d*-metal L_3 emission profiles arose mainly from differences in satellite and self-absorption weightings due to differences in excitation conditions. It is of interest to note that the threshold effects observed in available Na L and Li K emission spectra (see the discussion in the next subsection), so important to the verification of current theory, may be affected to a significant degree by self absorption. Of course, when excitation conditions are accurately known and, in addition, the absorption coefficient of the sample is known over the appropriate spectral range (the latter is not usually the case), self-absorbed spectra can be theoretically corrected. (For instance, see Yakowitz and Heinrich (689304).)

Systematic uncertainties still remain a problem in the field. (For instance, see the discussion of Al profiles in the following subsection.) We address ourselves here, if not to their complete elimination, at least to the suggestion that measurements be reported in sufficient detail that their importance can be assessed by the reader. The major reasons for this problem are evidently the unique character of each instrument in use and the lack of any standard instrumental comparison technique. The major difficulties appear to be as follows. The frequency response $\rho(\omega)$ of dispersing elements and detectors is seldom known. Measurements on the same material are often made under different excitation conditions; not only does the intensity of excitation vary (exciting voltage and current density, say, in the case of electronic excitation), but the excitation geometry (exciting beam incidence and x-ray takeoff angles) usually differs as well. Hence $S(\omega)$ and satellite contributions to $R(\omega)$ can vary from measurement to measurement. Removal of background from electronically excited spectra is complicated by all of these factors. And too often, statements of slit settings and estimates of the inherent, varying instrumental resolution, $W(\omega-\omega_s)$ (the spectral window), are omitted, not surprisingly in the case of grating instruments where no simple experimental method of estimating W is available. These problems are not insuperable, of course, but in most cases their complete solution involves considerable difficulty. When painstaking efforts have been made to assess the instrumental response, as in the work of Neddermeyer and Wiech on Al (709000) and Neddermeyer on Mg (709115), then a detailed report of spectra measured on the calibrated instrument should serve as a valuable secondary calibration standard. However, the low L_2/L_3 intensity ratios observed in these measurements indicate that they have been made at low x-ray takeoff and high electron incidence angles. The authors do not give these numbers. (They can be found in Neddermeyer's thesis (699355); however, they are not cited in the published papers.) Now one must either reproduce their excitation conditions or, knowing the appropriate absorption coefficients, correct for differences in excitation conditions when using their data for calibration. Thus, the utility of their results as a secondary calibration standard is limited, not by the presence of self absorption in the profile, but by the authors' omission of a conveniently accessible complete summary of the conditions under which the measurements were made.

Other examples could be cited but these few seem sufficient basis for recommending that the following guidelines be followed by all workers in reporting emission spectra. This information should be given or some *readily accessible* source cited in all papers.

A. *The Instrument*
   (i) Method of calibration.
   (ii) Estimates of frequency response. If none, give type and nature of dispersing element, settings.
   (iii) Report of resolution tests.
   (iv) Type of detector and recording system.

B. *Excitation*
   (i) Type: x-ray or electron. Monochromaticity. Current density and voltage.
   (ii) Geometry: beam incidence and x-ray takeoff angles.

C. *Sample*
   (i) Preparation: purity, method.
   (ii) Characterization: type of tests and results. *Particularly important for alloys and compounds.*
   (iii) Handling: before mounting; in vacuum before and during measurements. Tests made in instrument (e.g., scans for C and O K emission bands).

D. *Data Treatment*
   (i) Explain everything clearly—all corrections, smoothings, unfoldings.
   (ii) *Show raw measured data*, indicating statistical confidence level.

2.3. Critical Survey of Selected Main Band Results

In the following critical survey, we deal with complete transcribed spectral profiles rather than such commonly used spectroscopic parameters as peak position, half-width, and asymmetry index. We do so because such parameters can be strongly affected by the experimental problems cited above and because it is the existence or otherwise of characteristic structure in the profiles, rather than coarse general features, which is of most interest to the student of electronic structure. Only main bands will be presented. Unless otherwise indicated, the ordinate is [Rate ($h\nu$) per unit energy]/ν^3, as given by the author or so corrected. The abscissa is E-E_F in eV, where E_F is the estimated position of the Fermi level. All curves are normalized at peak ordinate value. This is not the best choice in all cases; in some, it will, in fact, overemphasize discrepancies. Additionally, the curves are corrected for background, usually by the author, but by us (using a simple linear approximation) if he has not done so. All alloy concentrations are given in atomic percent.

The criteria for value judgments between measured profiles are those established in section 2.2. An ideal measurement will have been made on a clean, well characterized sample in an instrument with accurate energy calibration, known frequency response, and a sharp, known spectral window. Electromagnetic detection will have been used, and data of known statistical confidence level presented. Excitation conditions will have been clearly stated, and self-absorption effects will be, if not eliminated, of readily assessible extent. In cases where many measurements have been made, we select for display those few which come closest to the ideal. (An occasional good measurement, in particularly close agreement with one of those displayed, may be omitted for the sake of clarity in the figures; such an omission will be noted in the text.) Where only two or three measurements are available, we show all which are free of obvious catastrophic error.

a. Al

In figure 4 are presented a number of results, experimental and theoretical, on the $L_{2,3}$ and K emission bands of metallic Al, the material most frequently studied by soft x-ray spectroscopists, as well as the photoemission spectrum recorded by Wooten et al. (659084) at $h\nu = 11.3$ eV.

The $L_{2,3}$ measurements are from Fomichev (679102) (background corrected); Neddermeyer and Wiech (709000 and 699355); and Rooke (689154). All used electromagnetic detection. Neddermeyer and Wiech present an average of strip chart records; Fomichev (679102) total counts, accumulated point by point; Rooke total counts, accumulated by summing many digitally recorded continuous sweeps of the spectrum. Fomichev and Neddermeyer and Wiech used Au coated, blazed gratings, and have made measurements of and corrected for grating frequency response. Neddermeyer and Wiech argue for a smooth, relatively flat detector response. Rooke used an unblazed glass grating and did not make response measurements. No sample temperatures were reported; Fomichev notes use of a water-cooled anode. The curves have been shifted slightly to coincide at $Y = 0.6$ on the leading edge (a Fermi energy

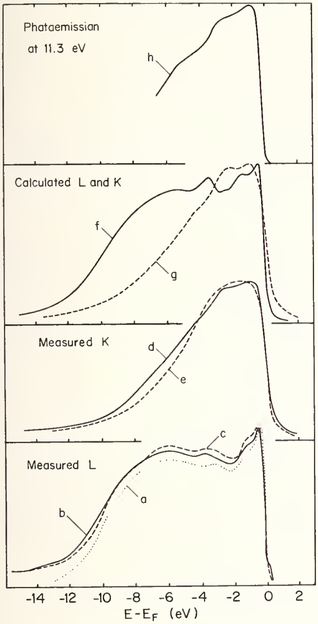

Figure 4. Al *Measured $L_{2,3}$ spectra: (a) Fomichev, (b) Neddermeyer and Weich, (c) Rooke. Measured K spectra: (d) Deslattes, (e) Sénémaud. Calculated spectra of McAlister: (f) L, (g) K. Measured photoemission spectrum at 11.6eV, (h) Wooten et al.*

estimate suggested by calculations cited below). All three are electronically excited. All appear to be rather strongly self absorbed at the edge. Fomichev and Neddermeyer and Wiech have achieved better resolution than Rooke, and their profiles are more intense at the band edge. Normalization to peak intensity, therefore, makes their curves appear weaker in the lower reaches of the emission band. The definition of the $L_{2,3}$ edges of Fomichev and Neddermeyer and Wiech suggests that about the same resolution was achieved. In light of their attempts at determining instrumental frequency response, the discrepancies between Fomichev and Neddermeyer and Wiech are puzzling. In any case, all three spectra show the same type of structure, as do the available band theoretical estimates of the profile [Rooke (689153), Smrcka (719187), and McAlister (unpublished)]. Other measurements showing the same structure have been reported: Sagawa (689323); Appleton and Curry (659066); Dimond (679063), (the latter in close agreement with Rooke's measurements). Earlier work, in various respects less satisfactory than those cited above, by Catterall and Trotter (639087), Skinner (409005), and Cady and Tomboulian (419001), is in essential agreement. Discrepancies certainly exist among the various measurements of the $L_{2,3}$ spectral profile. Their source is not clear. Temperature differences could play a role. The exact location of the deeper lying structure is liable to uncertainty from inherent noise, mode of data presentation, variations in instrumental response, and errors in estimating spectral dispersion. It seems safe to conclude, however, from the weight of experimental evidence, that the structure observed is real, though at present not perfectly characterized and, from the calculations, that it arises from band structure effects. Neither the calculations nor the measurements are sufficiently refined at present to ascertain the need for invoking singular edge behavior.

The two K profiles are from Deslattes (unpublished) and Sénémaud (see Cauchois, 689326). (The latter is a revision of earlier work by Sénémaud (669142).) Deslattes used a two-crystal spectrometer and digital, stepwise recording of the output of an electromagnetic detector. (The curve shown here was obtained by averaging two raw spectra, kindly supplied us by Dr. Deslattes, and subtracting a constant background correction.) Sénémaud used a bent crystal instrument and photographic recording, and employed photoexcitation rather than electron beam excitation. The results of Sénémaud, therefore, needed no background correction. The overall shapes of the spectra are in good accord, particularly in view of our rough background correction to Deslattes results. The results of Deslattes show weak but clear structural features which are in quite good agreement with the calculated result, curve *g* of figure 4. The failure of Sénémaud (and other experimenters as well) to observe the structure in the K spectrum is in all likelihood due to the use of photographic detection (with only marginal response linearity) and the somewhat poorer resolution of the spectrometers employed.

The calculated profiles of McAlister (unpublished) are shown here; the L profile labeled *f*, the K profile *g*. Of the three available estimates, we believe this one to have determined the orbital character of the band wave functions most accurately. As noted above, the evident structural correlation between the calculated and measured profiles strongly suggests that band structure effects are being observed. The further structural correlation with the ultraviolet photoemission spectrum lends additional weight to this suggestion.

b. Al in $AuAl_2$

The measured $L_{2,3}$ profiles of Al from $AuAl_2$ shown in figure 5 are from Williams et al. (709081) and Curry and Harrison (709016). Williams et al. used photoelectric detection and summed many scans of the spectrum. Curry and Harrison averaged several photographic records. The structural agreement between the two spectra is quite good. Comparison of $L_{2,3}$ spectra of pure Al from the two groups with other results [see above, and Appleton and Curry (659066)] suggests that the overall difference between the profiles is due to spectrometer frequency response, the results of Curry and Harrison being more severely affected. Williams et al. appears to have achieved more nearly linear intensity response and spent greater effort on specimen characterization. The upper curves of figure 5 give some theoretical estimate of the Al $L_{2,3}$ profile from the compound. The solid curve is Switendick's (709113) estimate of the density of *s*-like states at Al sites. This has been shown [Goodings and Harris (699161); Bennett et al. (709082); Dobbyn et al. (709080)] to be the leading term in a band theoretical estimate of the profile. The dashed curve is the result of applying an approximate Landsberg fold (499007) to the Al *s*-density. The agreement seen between the calculation and the measured profiles is quite striking, as good in fact as that noted between measured and calculated pure Al $L_{2,3}$ spectra above.

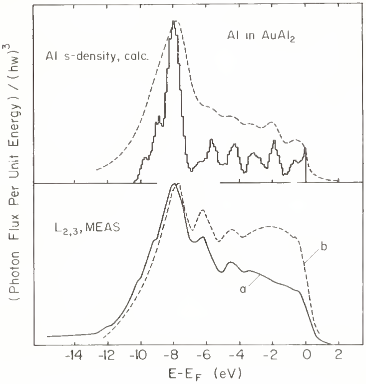

FIGURE 5. Al *in* $AuAl_2$. *Lower curves, measured* Al $L_{2,3}$ *spectra: (a) Williams et al., (b) Curry and Harrison.* Upper solid curve: calculated *s*-like state density at Al sites. Upper dashed curve: *s*-like state density at Al sites subjected to Landsberg smear.

c. Al and Mg in Al-Mg

In figures 6 and 7 are compared Al (fig. 6) and Mg (fig. 7) $L_{2,3}$ emission spectra from the pure metals and the compounds Al_3Mg_2 and $Al_{12}Mg_{17}$. The data are from Neddermeyer (709115), solid curves, and Appleton and Curry (659066), dashed curves. Both used electron beam excitation; Neddermeyer at 2.0 keV, Appleton and Curry at 3.5 keV. Neither reported electron impingement or x-ray takeoff angles.

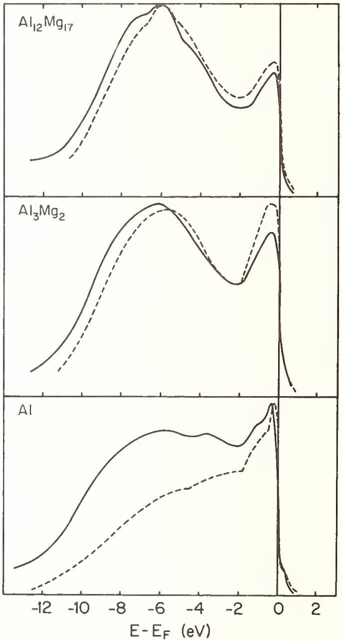

Figure 6. Al *in* Al-Mg. *Measured* Al $L_{2,3}$ *emission spectra from* Al *and two* Al-Mg *Compounds.*

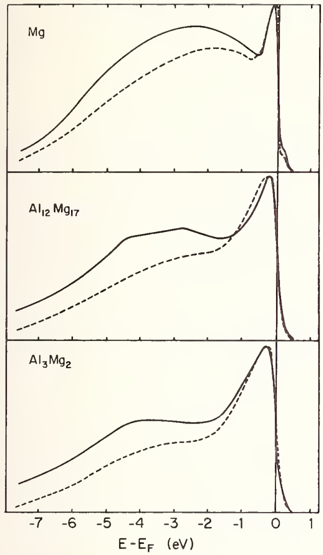

Figure 7. Mg *in* Al-Mg. *Measured* Mg $L_{2,3}$ *emission spectra from* Mg *and two* Al-Mg *compounds.*

No temperatures were reported, although Appleton and Curry used water-cooled targets. Stated pressures were: Neddermeyer 4×10^{-8}, and Appleton and Curry, 1×10^{-6} torr. Neddermeyer used photoelectric detection, averaged several strip chart recordings of ratemeter output, and corrected his results for the known frequency response of his Au coated, blazed grating. Appleton and Curry used an unblazed glass grating, with photographic detection. As noted above (Al in $AuAl_2$), and evident here, Appleton and Curry's instrumental response increases markedly with photon energy, while Neddermeyer's, because of the quantum efficiency of the photocathode used [see Samson (679056)], probably decreases slightly. Both Neddermeyer and Appleton and Curry note that their compound samples probably deviate from stoichiometry by 1 or 2 percent.

Apart from the noted difference in instrumental frequency response, these two sets of measurements are in good general agreement. Specific points of disagreement occur in the placement of the minimum of the pure Mg spectrum; the lack of structure in Appleton and Curry's Mg profile from $Al_{12}Mg_{17}$; and, finally, in the shape of the Mg profiles from the compounds below -4.5 eV. In this energy range, Neddermeyer's curves are noticeably concave while Appleton and Curry's are slightly convex. This latter point is pertinent to understanding the electronic structure of this alloy system and needs further experimental clarification. Early measurements by Farineau of the Al and Mg K spectra from Al-Mg alloys showed equal experimental band widths for Al and Mg in the alloys, with the common band width varying smoothly from pure Al to pure Mg. More recent K measurements by Fischer and Baun (679041), under cleaner vacuum conditions, are in essential agreement with Farineau's work. (The validity of these K measurements is questionable, however, since strong self-absorption effects may mask the true behavior. Reinvestigation of the K spectra with this difficulty in mind would be of considerable interest.) The L spectra clearly behave in a radically different way, each component retaining essentially the same observed band width throughout the composition range. This behavior is clearly shown in figure 8, where Neddermeyer's Mg and Al spectra are overlaid. The compound data of figures 6 and 7 are repeated here and the results from a solid solution of 5 percent Al in Mg are shown. The latter sample was believed to be single phase. The striking difference in measured band widths seen here probably stems from the necessity of local charge neutrality in a metallic system. More charge must accumulate in regions of greatest potential, here at Al sites. Screening is evidently accomplished by states lowest in energy being heavily localized at Al sites, and perhaps being of different orbital symmetry there than at Mg sites. (This latter point is suggested by the concavity of the Mg $L_{2,3}$ from Al_3Mg_2 and $Al_{12}Mg_{17}$ below -4 eV. Normally, one anticipates convexity for L spectra in this energy range, owing to dominantly *s*-like local wave function character there. See Jones et al., 349000.) Direct substantiation of this picture by band computations for the compounds is ruled out at present because of their complicated crystal structure. However, a rough model computation by Jacobs (699213) suggests that it is correct. Computational evidence does exist for energy dependent charging in other alloy systems. For instance, consider the calculations for $AuAl_2$ by Switendick (709113) cited above, where Bloch functions of dominantly *d*-like character at Au sites are highly localized there and exert influence on the charge distribution at Al sites largely through hybridization effects.

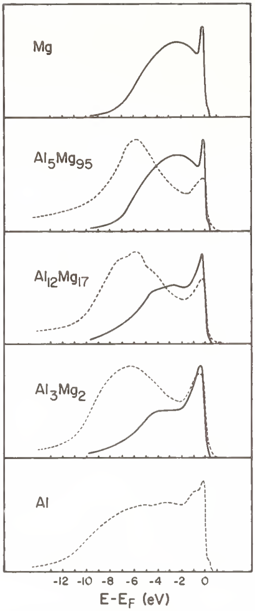

Figure 8. Al *and* Mg *in* Al-Mg. Measured Al and Mg spectra, matched in energy at the Fermi edge and overlaid. Spectra from pure metals, the compounds Al_3Mg_2 and $Al_{12}Mg_{17}$, and the solid solution 5 percent Al in Mg.

d. Cu

In figure 9, three measurements of the Cu $M_{2,3}$ spectral complex are shown. These are smoothed, background corrected spectra, as presented by the authors save for division by suitable powers of energy to reduce the data to a common plot of intensity (energy flux per unit energy) versus photon energy. The curves have been shifted by slight amounts (no more than 0.3 eV) to match in energy at peak intensity. They are otherwise faithful transcriptions of the published curves. These data are from Bedo and Tomboulian (599002), solid curve; Dobbyn et al. (709080), dash-dot curve; and Clift et al. (639083), dashed curve. Bedo and Tomboulian and Clift et al. used photographic detection; Dobbyn et al., photoelectric detection. Dobbyn et al. summed many digitally recorded scans of the spectrum and, in view of the linear response of photoelectric detection and the known standard counting error in their data (1.1

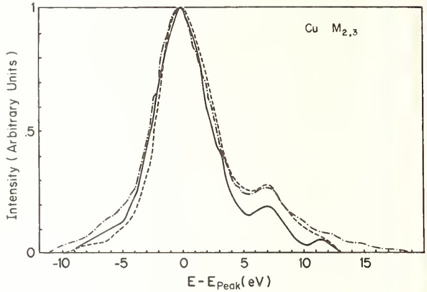

FIGURE 9. Cu. *Comparison of three measurements of the* Cu $M_{2,3}$ *emission spectrum taken with different exciting electron beam voltages and different detection methods.*

to 0.7 percent), asserted the fine structure they observed to be reliably established. Bedo and Tomboulian and Clift et al. report pressures of 1×10^{-6} torr, and used water-cooled targets. Dobbyn et al. reported a pressure of 7×10^{-8} torr, with the target at 580 °C [well above the O_2 surface cleanup temperature of 277 °C (Roberts, 609017)]. All used electron beam excitation with beam energies as follows: Bedo and Tomboulian, 1.5 keV; Dobbyn et al., 2.5 keV; and Clift et al., 3.5 keV. The grazing angles of electron beam incidence were 90, 20, and 90°; x-ray takeoff angles, 45, 90, and 32° for Bedo and Tomboulian, Dobbyn et al., and Clift et al. respectively. None attempted to assess self-absorption effects. Bedo and Tomboulian and Dobbyn et al. identify the structure above 5 eV in figure 9 as satellites, Dobbyn et al. noting that, energetically, they are likely to be double ionization satellites with the spectator hole residing in the M shell. This identification is supported by the trend in intensity of this structure relative to the main peak with exciting voltage. Dobbyn et al. (private communication) noted this same trend, comparing measurements made at 1.5 and 2.5 keV in the same instrument. Dobbyn et al. also noted that additional satellites nearer the parent bands are expected, with the spectator hole residing in the valence band. By treating the valence band satellites in a manner suggested by analysis of Liefeld's (689330) measurements of the L_3 spectra of Cu and Ni at and above the L_2 threshold excitation voltage, and the M shell satellites in the intermediate coupling approximation, Dobbyn et al. argued that the major features of the Cu $M_{2,3}$ spectrum could be approximated by

$$M_{2,3}(E) = [M_3(E) + \alpha_1 M_3(E-\epsilon) + \alpha_2 M_3(E-2\epsilon)]$$
$$+ [\beta_1 M_3(E-\delta-2\epsilon/3) + \beta_2(E-\delta+\epsilon/\sqrt{3})$$
$$+ \beta_3 M_3(E-\delta+2\epsilon/3)]$$

where $M_{2,3}$ *(E)* is the measured spectral complex and M_3 *(E)* the true single hole M_3 emission profile. The second bracketed term on the right approximates the satellites with the spectator hole residing in the $3p$ shell; the first represents the M_3 and M_2 parents and the satellites with spectator hole in the valence band. Dobbyn et al. inverted this expression and varied ϵ, the α's, and the β's over reasonable ranges, and found the estimated M_3 single hole emission profile to be relatively insensitive to choice of these parameters. In figure 10, the Dobbyn et al. estimate of the M_3 profile (SXS) so obtained is compared with the results of other deep band experimental probe studies: ion neutralization (INS) by Hagstrum and Becker (679195); x-ray induced photoemission (XPS) by Fadley and Shirley (689234); and ultraviolet induced photoemission (UPS) by Eastman (699246).

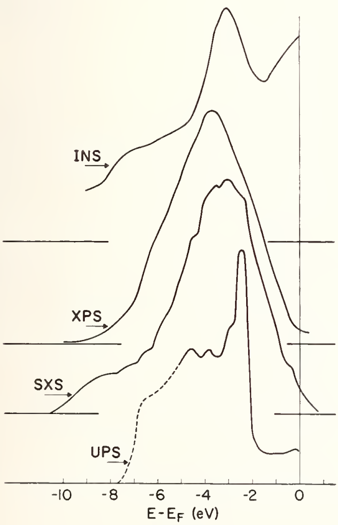

Figure 10. Cu. *Comparison of various deep band probe results: ultraviolet photoemission optical density of states (UPS); reduced soft x-ray M_3 emission band (SXS): x-ray photoemission spectrum with* Al $K_{\alpha 1,2}$ *excitation (XPS), ion neutralization unfold function (INS).*

Note particularly the 1-to-1 correspondence of structural features in the main SXS and UPS humps and the agreement as to width and peak location of all four measurements.

In figure 11, the lower set of curves compares the experimental M_3 and L_3 single hole emission profiles, the latter determined by Liefeld (689330) at threshold excitation. Note particularly the greater width of the M_3 profile in the d-hump, and its greater relative intensity below the hump. Qualitatively, these features are predicted in the one-electron transition densities calculated by Goodings and Harris (699161), but they are overridden in the total emission spectra by the E^3 dependence of the dipole emission rate expression, this factor being important to the M_3 profile only. The Goodings and Harris results for the M_3 and L_3 Cu emission profiles are shown as the middle pair of curves in figure 11, where many-body level broadening has been taken into account with Blokhin and Sachenko's approximation (609057) to the Landsberg (499007) free electron result. Dobbyn et al. (709080) noted that if emission takes place after screening of the inner level defect, one might reasonably expect large positive s-wave and small negative d-wave shifts in the screening

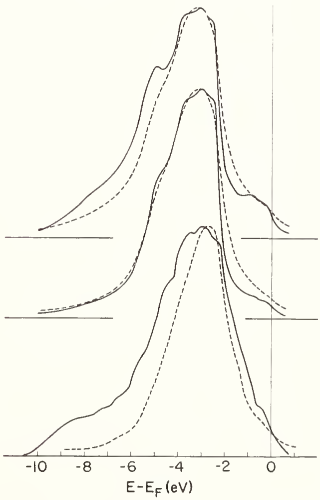

Figure 11. Cu. *Comparison of measured and calculated* Cu *L_3 (dashed) and M_3 (solid) emission spectra. Lower curve, measured. Middle curve, band theory estimate; upper curve, band theory with approximate screening correction.*

cloud. Thus, the *s*-like fraction of the calculated emission spectrum could be enhanced relative to the *d* by a factor in excess of 1, and the above-mentioned differences in one-electron transition rates enhanced by the screening. They tested this mechanism in a rough way by assuming various energy independent *s* to *d* enhancement factors and then recomputing the spectra. Their results for $s/d=5$ are shown at the top of figure 11. Agreement with experiment was noticeably improved, but no rationalization of the factor used was offered.

e. Cu and Ni in Cu-Ni

Cu and Ni form a continuous series of solid solutions over the entire composition range; the lattice constant increasing by 2.7 percent from Ni to Cu. It is, therefore, an attractive system for studying the effects of substitutional disorder on the electronic structure of metals. Homogeneity is difficult to achieve, however, and for this reason some of the results presented here must be regarded with caution. (The question of homogeneity in Cu-Ni alloys has been reviewed by Seib and Spicer, 700846.) While not enough work has been done to permit intercomparison of soft x-ray results, sufficient other deep band probe studies have been made to warrant their summary. Presented here are: soft x-ray emission bands (SXS) (Clift et al., 639082); x-ray photoemission spectra (XPS) (Hüfner et al., 729038); ultraviolet photoemission (UPS) (Seib and Spicer, 700846 and 700847); soft x-ray L_3 absorption spectra (Van den Berg, 579055).

Clift et al. (639082) give (SXS) $M_{2,3}$ emission spectra of the pure metals and both components of the alloys, in 10 percent concentration steps across the composition range. No details of sample preparation were given. Some of their results are shown in figure 12, plotted as intensity versus photon energy. The spectra were excited with a 3.5 keV electron beam normally incident on the samples. X-ray takeoff was at 30° from the sample surface. Samples were water cooled. Pressure was approximately 1×10^{-6} torr. Photographic detection was used. The plotted curves were obtained by averaging densitometer traces of several exposures at 0.5 eV intervals and drawing a smooth curve through the points. Thus, even in the pure metals, detail such as that observed by Cuthill et al. (679300) for pure Ni and Dobbyn et al. for Cu (709080) is eliminated, and no light is shed on the interesting question of its survival or change with alloying.

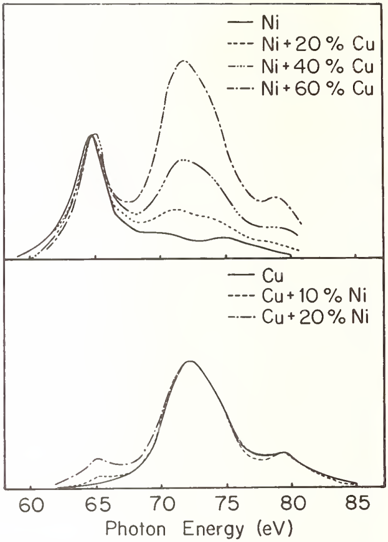

Figure 12. Cu *and* Ni *in* Cu-Ni. *Soft x-ray $M_{2,3}$ spectra from a number of alloys and the pure metals.*

Hüfner et al. (729038) XPS spectra of the valence bands of Cu, Ni, and 12, 44, 46, and 74 percent of Cu in Ni are shown in figure 13. Al $K_{\alpha12}$ radiation was employed; resolution was approximately 1.0 eV. No details of sample preparation are given. Ar ion cleaning was employed prior to measurements.

The samples upon which Seib and Spicer (700846 and 700847) performed UPS measurements fall into three classes: 0, 13, and 23 percent Ni in Cu, single crystal, the alloys vacuum annealed at 1000 °C for 13 days and air quenched, all three cleaned in vacuum by heating to 600 °C; 0, 11, 19, and 49 percent Cu in Ni, polycrystalline, similarly heat treated, then cleaned in vacuum by successive Ar bombardments followed by 355 °C annealing; 39 and 62 percent Cu in Ni, no heat treatment, cleaned in vacuum like the latter. The alloys of 39, 49, and 62 percent Cu in Ni proved unsatisfactory in several respects and will not be discussed here. Figure 14 shows photoemission spectra from samples of 0, 13, and 23 percent Ni in Cu, taken with 10.2 eV photons; and 81, 89, and 100 percent Ni in Cu, taken with 10.0 eV photons. Resolution is about 0.2 eV.

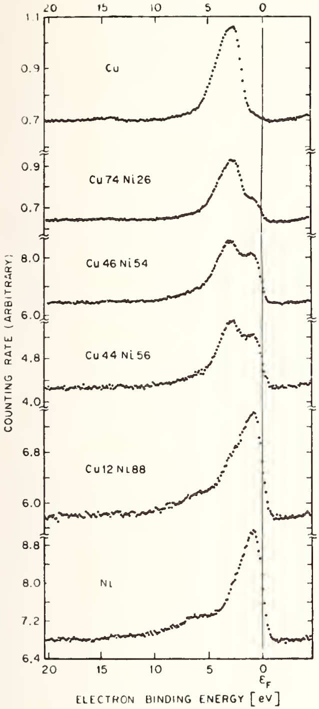

Figure 13. Cu *and* Ni *in* Cu-Ni. *X-ray photoemission spectra of a number of* Cu-Ni *alloys.*

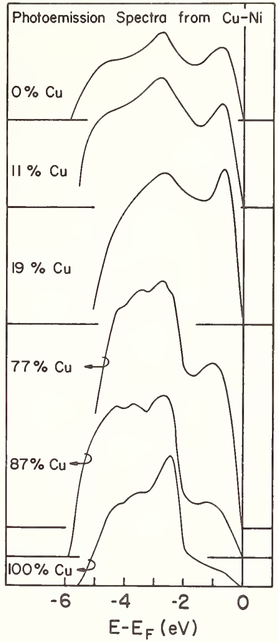

Figure 14. Cu *and* Ni *in* Cu-Ni. *Ultraviolet photoemission spectra from several* Cu-Ni *alloys.*

Both Clift et al. and Hüfner et al. note that, to a good approximation, their results can be reproduced by superimposing the pure metal results. Seib and Spicer on the other hand assert that the Ni density of states is narrow (~ 1 eV) at low Ni concentrations and broadens to about 5 eV for pure Ni. There is reason to doubt the validity of this description at low Ni concentrations, however. Seib and Spicer base this assertion largely on an attempt to remove the Cu contribution to the observed spectra at 13 and 23 percent Ni by scaling the pure Cu spectrum to full experimental intensity for the alloys at -2.2 eV and subtracting. The resulting curves not only show a peak at about -1.0 eV, but an additional peak at -3.0 eV, together with a rather pathological, narrow minimum at -2.1. Reducing the scale factor for Cu from full to about 0.7 of the experimental intensity at -2.2 largely removes the strange minimum and leaves an estimated Ni curve quite like that of pure Ni but with about a -0.2 eV chemical shift. Thus, it would appear that all three techniques can be reasonably construed to yield compatible results.

An additional interesting experimental observation is that of figure 15. Shown here are Van den Berg's (579055) measurements of the soft x-ray L absorption edge of Ni in pure Ni and 4 and 40 percent Ni in Cu. The striking feature here is the persistence of the strong peak at the edge, usually attributed to *d* holes above the Fermi level. This result is again consistent with those cited above, but the quality of the samples, described only as evaporated films, is open to question.

Finally, Wenger et al. (719033) have attempted to obtain a measure of the *s-d* charge at Ni sites in Cu-Ni alloys by measuring the integrated intensity of the Ni L_α emission band normalized to that of the Ni L_l line ($3s \rightarrow 2p^{3/2}$) at 20 percent intervals across the se-

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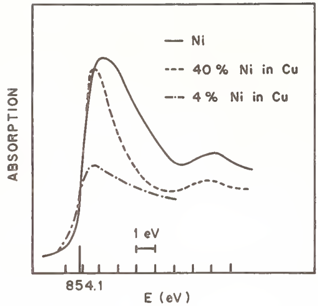

Figure 15. Ni *in* Cu-Ni. *Soft x-ray* L_3 *absorption spectra of* Ni *in pure* Ni *and two* Cu-Ni *alloys.*

ries. They found it to be constant within experimental error. No details of sample preparation were given.

Further clarification of the experimental situation is needed, particularly at low Ni concentrations. SXS measurements should be particularly valuable here because of the partial resolution of the component emission spectra, but optimum resolution, linearity, and signal-to-noise ratio must be achieved if genuine improvements are to be made.

f. Li

Figure 16 compares Li K emission profiles recorded by Crisp and Williams (619025) and Crisp (619046), and Tomboulian and Bedo (589030). These two results are quite representative of the available literature. In each case, measurements were made on samples freshly evaporated in vacuum. Pressures were approximately 10^{-5} torr during evaporation and 10^{-6} during measurement. (More recent measurements by Aita and Sagawa (699204), made under better vacuum, 10^{-7} to 10^{-8} torr, are compatible with these results.) Crisp and Williams used electromagnetic detection and ratemeter strip chart records. Tomboulian and Bedo used photographic detection. Sample temperature was stated by Tomboulian and Bedo as 162 °C; Crisp and Williams used a water-cooled sample but reported no temperature. In each case, the samples were metallic and retained bright metallic luster during the measurements. The only significant difference between the two profiles is in the high energy edge, the results of Crisp and Williams being noticeably sharper there. In this connection, it is worth noting differences in excitation conditions; Crisp and Williams, electron beam of 4 keV, incident at 90°, x-ray takeoff ~ 15°; Tomboulian and Bedo (589030), electron beam of 0.75 keV at 90°, x-ray takeoff of 45°. The sharper edge of Crisp and Williams appears to be a self-absorption artifact.

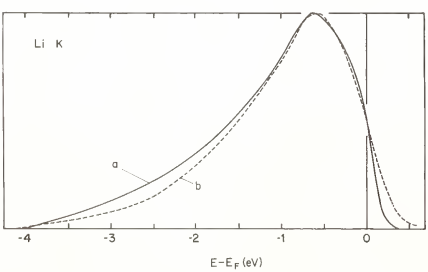

Figure 16. Li. *Two measured soft x-ray* Li *K emission profiles: (a) Crisp and Williams, (b) Tomboulian and Bedo.*

The pre-peaking of the Li K emission spectrum has not as yet received definitive explanation. It is certain that no band calculation based on Hartree-Fock type orbitals and using conventionally constructed crystal potentials will yield an early peak (McAlister, 699058). However, the new band calculational approach of Goddard (see O'Keefe and Goddard, 690254), using spin generalized rather than Hartree-Fock basis orbitals, does offer a natural one-electron explanation. Since the removal of core electron from Li constitutes an extremely large perturbation, screening effects have been plausibly invoked (Goodings, 659065; Allotey, 679087; Ausman and Glick, 699001). None of these approaches offers any explanation of the extreme overlap of the emission and absorption edges (Skinner and Johnston, 379000) and their Gaussian tails. McAlister (699058) has shown that folding one-electron estimates of the emission and absorption rates with a broad Gaussian smearing function yields good agreement with experiment. He attributes the Gaussian smear to thermal broadening of the K level by the phonon field but offers no rationalization of the large width (.3 to .4 eV) needed for a good fit.

g. Mg

Numerous measurements have been made of the Mg $L_{2,3}$ emission spectrum, all showing a rather sharp peak just below the high energy emission edge. The three measurements of figure 17 are due to Watson et al. (689324), Neddermeyer (709115), and Fomichev (699089). In no case were tempera-

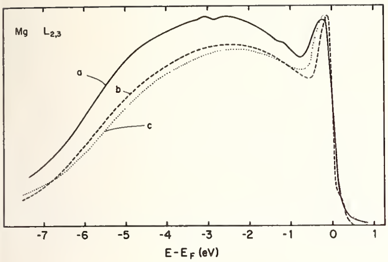

Figure 17. Mg. *Three measured Mg $L_{2,3}$ soft x-ray emission profiles: (a) Watson et al., (b) Neddermeyer, (c) Fomichev.*

tures stated, but water-cooled cathodes were used by Watson et al. and Fomichev. Electron beam excitation was used in each case: Watson et al., 3.0 keV; Neddermeyer, 2.0 keV; and Fomichev, not stated. None cite x-ray takeoff or electron impingement angles. Pressures cited were: Watson et al., 1×10^{-6} torr; Neddermeyer, $1-3\times10^{-8}$ torr; and Fomichev, not stated. All used blazed metal coated gratings: Watson et al. and Fomichev, Au coated; and Neddermeyer, Pt coated. Photoelectric detection was used in each case. Watson et al. summed many digitally recorded runs, Neddermeyer summed several strip chart recorded scans, and Fomichev used a single, stepped counting sweep. Neither Neddermeyer nor Fomichev cite noise figures for their data. Watson et al. plotted data with vertical bars representing the standard counting error, $\pm\sqrt{N}$, N being the total number of counts per channel. Their statistical noise level was sufficiently low that the small features at -1.3 and -2.9 eV appear real. Independent, unpublished measurements of Dimond, displayed by Watson et al. show like structure. An approximate theoretical analysis, similar to that by Rooke for Al (689153), was carried out by Watson et al. The analysis suggests a one-electron interpretation for the minimum at about -0.8 eV on their curve, and the feature at -1.3 eV. The analysis suggests no explanation for that at -2.9. The calculated positions for the minimum and slope break are -0.9 and -1.7 eV respectively. The feature at -2.9 remains unexplained. Watson et al. suggest the possibility that it is an oxide structure. However, it shows no correlation with the Mg spectrum from bulk MgO [Neddermeyer (699355), Fomichev et al. (689249)].

h. Mg in Al-Mg

See Al and Mg in Al-Mg.

i. Na

The measurements of the Na $L_{2,3}$ profile shown in figure 18 are due to Crisp and Williams (619025) and R. S. Crisp (619046), Skinner (409005), and Cady and Tomboulian (419001). Crisp and Williams used photoelectric detection and averaged several strip chart records. Rooke (689322) has produced a sum of digitally recorded scans made on the same instrument and in essential agreement with Crisp and Williams. Skinner used photographic recordings. A photographic measurement by Sen (569025) agrees well with Skinner. Cady and Tomboulian used photographic detection. All reported measurements were carried out at 1 to 5×10^{-6} torr, a pressure range over which Na at least retains its metallic luster. Temperatures were uncertain but all measurements were made on the solid. The sharp pip at the emission edge seen in Crisp and Williams, and Skinner (409005) (and by Rooke and Sen as well) is surely characteristic of measurements made at high excitation voltage and unfavorable excitation geometry. Cady and Tomboulian took experimental precautions at least as extensive as the other workers; their measurements of the Al and Mg $L_{2,3}$ profiles reported at the same time are in line with other

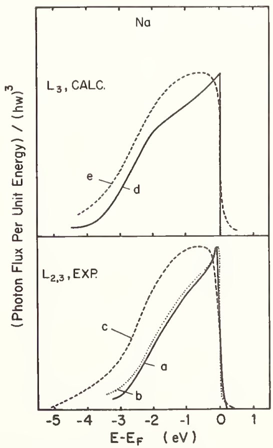

Figure 18. Na. *Measured $L_{2,3}$ spectra: (a) Crisp and Williams, (b) Skinner, (c) Cady and Tomboulian. Theory: (d) many body profile; (e) band theory profile.*

experimental results. However, they report an r.m.s. electron beam exciting voltage of 1.4 keV, while those of other workers range from 3.5 to 4.0 keV. Additionally, Haensel et al. (699094) have reported a measurement of the Na $L_{2,3}$ absorption profile which shows a distinct minimum approximately 0.2 eV below the midpoint of the L_3 edge. The pip in the data of Crisp and Williams, and Skinner occurs approximately 0.15 eV below the 50 percent point of the emission edge. Unfortunately, the absorption data extend only 0.6 eV below the midpoint of the edge, and only the shape of the absorption edge, not its absolute magnitude, is reported. These factors suggest that the edge pip may be a self-absorption artifact. Further experimental work is needed to clarify this point.

The importance of answering this question is emphasized by the two theoretical estimates shown in the upper part of figure 18. In figure 18 the solid curve d is the result of a many-body calculation by Glick et al. (689344). It includes in a natural way the effects of the core hole and final state interactions, and shows a distinct rise in intensity just at the Fermi edge. The broken curve e is a band theory estimate by McAlister (unpublished), with level broadening treated in the Landsberg approximation (499007). The latter would agree fairly well with experimental curve c (fig. 18) if a modest degree of energy dependent enhancement by core hole screening were assumed.

j. Ni

The L_3 emission profile of Ni has been studied by many investigators (Farineau, 389001; Skinner et al., 549020; Cauchois, 539002, for example), with considerable disagreement resulting. Van den Berg (579055) made the first progress in solving the problem by noting that the measured profile depended strongly on the energy of the exciting electron beam. More recently, Bonnelle (649057) and, particularly, Liefeld and coworkers (689330, 709116) have shown the disparities to arise from the fact that satellite intensity and self-absorption effects can be very important and depend markedly on exciting electron beam energy. In figure 19 are shown results of Liefeld (689330) and Chopra and Liefeld (649160) on the L_3 profile of Ni. Measurements were made at a sample temperature of about 800 °C, at approximately 1×10^{-7} torr in a two-crystal instrument. Various exciting electron beam voltages, V_x, were used. Curve a (fig. 19) is typical of results with V_x

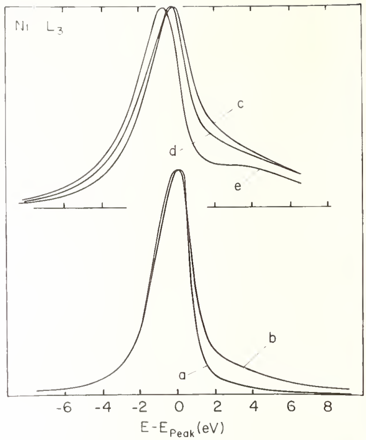

Figure 19. Ni. *The* Ni *soft x-ray L_3 profile, measured at a number of exciting electron beam energies.* The voltages are, in keV: (a) 0.86, (b) 0.92, (c) 2.0, (d) 5.1, (e) 12.5.

between the L_3 and L_2 threshold. For V_x above the L_2 threshold, holes can be created in the $2p^{1/2}$ core shell, and the Auger decay $2p^{1/2} \rightarrow 2p^{3/2}$, v, where v denotes a hole in the valence band, can occur. Radiative decay can then occur with a local, relatively high mass spectator hole in a $3d$ level, and high energy satellite structure appears, as in curve b. As one continues to raise V_x, the satellite structure increases in intensity, as in c. Eventually, as in curves d and e, self absorption becomes sufficiently strong to warp the measured profiles in a pronounced way. In fact, the L_3 absorption spectrum can be obtained by taking the ratio of profiles measured at two suitable values of V_x (Liefeld, 689330). Bonnelle (649057) independently demonstrated the dependence of self absorption on V_x and, in addition, showed how it can be reduced by optimizing x-ray takeoff and exciting electron beam incidence angles.

Various measurements of the Ni $M_{2,3}$ spectrum (Tomboulian and Bedo, 619081; Skinner et al., 549020; Clift et al., 639083; Cuthill et al., 679300) have shown better agreement, the situation being comparable to that shown above for the $M_{2,3}$ spectra of Cu. There are several probable causes for this. The $M_{2,3}$ measurements were made over a less extreme range of V_x, 2.5 to 4.0 keV. Also, as noted above for Cu, the M-valence band satellites tend to be degenerate in energy with the M_2 band. And, finally, self absorption should be much less severe, owing to very broad and only gently structured $M_{2,3}$ absorption edges (Sonntag, 699356).

In figure 20, a number of deep band electronic structure probe results on Ni are compared: the M_3 profile of Cuthill et al. (679300), extracted from the $M_{2,3}$ complex in the manner described above for Cu; the L_3 profile, measured at L_3 threshold excitation by Liefeld (709116); the ultraviolet induced photoemission optical density of states of Eastman and Krolikowski (689211), the XPS spectrum of Fadley and Shirley (689234), and the ion neutralization unfold function of Hagstrum and Becker (679195). Here, as in the case of Cu discussed above, remarkably strong structural correlations are observed, despite differences in magnetic state. The soft x-ray measurements were made on paramagnetic Ni (at 960 °C for the M, 800 °C for the L) while the photoemission and ion neutralization measurements were made at room temperature on ferromagnetic samples. Figure 21 compares the M_3 profiles of Cu (Dobbyn et al., 709080) and paramagnetic Ni (Cuthill et al., 679300). Structural correlation between the two spectra is evident and to be expected from their common crystal structure and valence difference of 1. Note, however, the slight shoulder on the high energy side of the *d*-hump in both spectra. Similar structure has been noted by the present authors in unpublished measurements of the M spectra of Cr and Fe. Liefeld and Hanzely (709116) also report like structure in their threshold measurements of the L_3 spectra of Cu, Ni, Co, and Fe. These have been plausibly interpreted as excitation features (Dobbyn, 709080; Liefeld, 709116) of the type described by Parratt (599072).

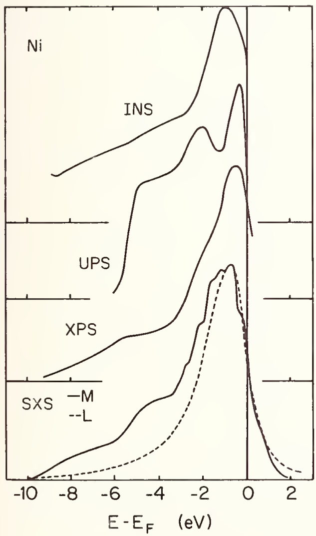

Figure 20. *Comparison of various deep probe results for* Ni. Lowest curves, soft x-ray L and M emission spectra (SXS). X-ray photoemission spectrum (XPS); ultraviolet photoemission optical density of states (UPS); ion neutralization unfold function (INS).

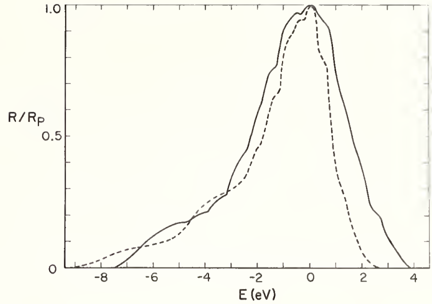

Figure 21. Ni *and* Cu. *Comparison of* Ni- *and* Cu-$M_{2,3}$ *emission bands, showing structural correlation.*

k. Ni in Cu-Ni

See Cu and Ni in Cu-Ni.

3. Annotated Spectral Index

3.1. Guide to the Index

This section contains an annotated index to soft x-ray emission spectra from metallic systems. As far as possible, it is complete for the literature published through 1970, with many later papers included as well. The papers are grouped according to the principal quantum number of the inner level involved (K, L, M, . . . for $n = 1, 2, 3, \ldots$). Within these groups, the listing is alphabetical by material (with all components of an alloy permuted). The papers are annotated according to type (E, T, or R for experiment, theory, or review) and to content, the various properties (e.g., 5D for state density, 9S for satellite structure) being listed in appendix 1. A guide to journal name and special publication abbreviations is given in appendix 2. The year of publication is indicated by the first two digits of the file number. Boldface italics has been used to designate the elements from which spectra have been obtained. (Elements are normally denoted by chemical symbol. Occasionally, classes of materials are studied (for example, rare earths), and special class designations are used. These are listed in app. 3.) Concentrations are rounded to the nearest integer or zero. For binaries, the composition always applies to the constituent occurring first in alphabetic order. For three or more constituents, additional entries appear, the second entry giving the concentration of the element second in alphabetic order, the third entry giving the concentration of the third in alphabetic order, etc. Specimen temperature or temperature range is assumed to be room temperature unless specified otherwise by footnote. This section closes with an index to sources of spectra, arranged alphabetically by author (all authors permuted). Included here are all references from the text above, including those which would not otherwise be listed.

3.2. Index by Inner Shell

a. K-Spectra

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Parratt L	2	PHYS REV	84	362	519013	R	9K 0O			
Friedel J	1	PHIL MAG	43	153	520032	R	9K 9F 5B			
Karalnik S	1	RONTGENCHEMBIND		166	669205	R	5N 9K 9L 5B			
Faessler A	1	SXS BANDSPECTRA		93	689328	T	9K 9G			
Parratt L	1	PHYS REV	49	502	369002	E	9K 9S 0O	***A***		
Parratt L	1	PHYS REV	50	1	369003	E	9K 9S 0O	***A***		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	***Ag***		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	***Ag***		
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	***Ag***		
Fischer B	2	Z PHYSIK	204	122	679137	E	9K 9H 9I 4X	***Ag***		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Ag***Al***	00	70
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Ag***Al***		50
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9K	Ag***Al***		50
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	Ag***Al***		67
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	Ag***Al***		20
Farineau J	1	ANN PHYS	10	20	389001	E	9K 0L	***Al***		
Cauchois Y	1	ACTA CRYST	6	352	539003	E	9K	***Al***		
Das Gupta K	3	J SCI INDUS RES	14B	129	559005	E	9K 9L	***Al***		
Nordfors B	1	PROC PHYS SOC	68A	654	559017	E	9K 9S 9I 4L	***Al***		
Nordfors B	1	ARKIV FYSIK	10	279	569024	E	9K 9S 9I 9R 4L	***Al***		
Sen A	1	INDIAN J PHYS	30	415	569025	E	9L 9K 5B	***Al***		
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	***Al***		
Cauchois Y	3	COMPT REND	257	1051	639092	E	9G 9K 0S 5B	***Al***		
Cauchois Y	3	COMPT REND	257	1242	639093	E	9G 9A 9B 9K 6S	***Al***		
Kurylenko C	1	CAHIERS PHYS	17	344	639121	E	9K 0L	***Al***		
Nagakura I	1	SCI REP TOHOKUU	48	90	649007	E	9K 9S	***Al***		100
Konstantinov A	3	BULLACADSCIUSSR	28	103	649119	E	9G 9K 9R	***Al***		
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	***Al***		
Baun W	2	PHYS LET	13	36	649133	E	9K 9S 9I	***Al***		
Fischer D	2	J APPL PHYS	36	534	659070	E	9K 9S	***Al***		100
Cauchois Y	2	OPTPROPS ABELES		83	659083	E	9A 9K	***Al***		100
Fischer D	2	PHYS REV	138	1047	659090	E	9K 0L 4B	***Al***		
Senemaud C	1	J PHYSIQUE COLL	27	55	669055	E	9K 9G	***Al***		
Kurylenko C	1	CAHIERS PHYS	20	333	669130	E	9K 0L	***Al***		100
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9G 9K	***Al***		100

First two digits of "Reference Number" indicates year.

a. K-Spectra—Continued

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Senemaud C	1	J PHYS RADIUM	27C	55	669142	E	9A 9K 9G 4L 9R	*Al*		
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	*Al*		100
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	*Al*		100
Fomichev V	1	SOVPHYS SOLIDST	8	2312	679102	E	9A 9L 6O 5D 9R	*Al*		
Nemoshkalenk V	2	UKRAIN PHYS J	12	812	679107	E	9K 9S	*Al*		100
Fischer B	2	Z PHYSIK	204	122	679137	E	9K 9H 9I 4X	*Al*		
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	*Al*		
Laputina I	2	BULLACADSCIUSSR	31	926	679163	E	9K 9G 9S 5B 0O	*Al*		
Senemaud C	1	COMPT REND	265	403	679240	E	9K 9G	*Al*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	*Al*		100
Rooke G	1	J PHYS	1C	767	689153	T	9L 9K 5D 9T	*Al*		
Demekhin V	2	PHYS METALMETAL	26	178	689237	E	9K 9G 9S 4A 4L	*Al*		
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O	*Al*		100
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Al*		
							9K 5D 5B	*Al*		
Cauchois Y	1	SXS BANDSPECTRA		71	689326	E	9K	*Al*		
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	*Al*		100
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	*Al*		100
Aita O	2	J PHYS SOC JAP	27	164	699204	E	9K 5B	*Al*		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 5D	*Al*		
							9L 5D	*Al*		
Nemoshkalenk V	2	UKRAIN PHYS J	13	1022	699240	E	9K 4L 9U 4A	*Al*		100
Maruno S	2	JAP J APPL PHYS	9	1428	709234	E	9K 4A	*Al*		100
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*Al*		100
Nemnonov S	3	PHYS METALMETAL	30	211	709351	E	9K 9L	*Al*		100
							9K 9L	*Al*		100
Smrcka L	1	CZECH J PHYS	21B	683	719187	T	9K 9L 5D	*Al*		100
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9K	Al		100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Ag	00	70
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Ag		50
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9K	*Al*Ag		50
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	*Al*Ag		67
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	*Al*Ag		20
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*As		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Au		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Au		50
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9K	*Al*Au		50
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	*Al*Au		67
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	*Al*Au		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	Al*B*		33
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Al*B*		08
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	Al*B*		08
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Al*C*		57
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Al*C*		57
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*C		57
							9K 9S	*Al*Ca		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Ca		67
							9K 9L	*Al*Ce		67
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Co		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Co		50
Nemoshkalenk V	3	AKADNAUKUKR RPT		151	709357	E	9K	*AlCo*		
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	*Al*Cr		33
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	Al*Cr*	33	80
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Cr		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Cr		50
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9K	Al*Cr*	33	80

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Yoshida S	1	INSTPHYSCHEMRES	28	243	369007	E	9K	*Al*Cu	10	100
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9K	*Al*Cu	19	100
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	*Al*Cu		10
Friedel J	1	PHIL MAG	43	153	520032	R	9A 9K 5N 6P	*Al*Cu		
Kurylenko C	1	CAHIERS PHYS	20	333	669130	E	9K	*Al*Cu	10	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Cu	10	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Cu	10	100
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9K 5B 4L	*Al*Cu	10	100
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K	*Al*Cu	20	100
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	*Al*Cu	33	67
Baun W	1	J APPL PHYS	40	4210	699174	E	9K 9F 4L	*Al*Cu		49
Solomon J	2	APPL SPECTRY	25		719192	E	9K	*Al*Cu		40
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	AlCu*Mg*	94	95
								AlCu*Mg*		04
								AlCu*Mg*	01	02
Vainshtein E	2	SOV PHYS DOKL	1	527	569031	E	9K	Al*CuMg*		17 (1)
								Al*CuMg*		67 (1)
								Al*CuMg*		16 (1)
Kotlyar B	2	NAUCH ZAPISKI	22	71	589014	E	9K	Al*CuMn*	08	25
								Al*CuMn*	50	79
								Al*CuMn*	23	25
Kotlyar B	1	NAUCH ZAPISKI	22	60	589015	E	9K 2T	Al*CuMn*		25
								Al*CuMn*		50
								Al*CuMn*		25
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Dy		67
							9K 9L	*Al*Er		67
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	*Al*Fe		25
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Fe	10	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Fe	25	75
Fischer D	2	J APPL PHYS	38	229	679096	E	9K 9S	*Al*Fe	00	100
Nemoshkalenk V	3	PHYS STAT SOLID	29	45	680711	E	9K	*AlFe*		67
Nemoshkalenk V	2	UKRAIN PHYS J	13	1022	699240	E	9K 4L 9U 4A 3Q	*AlFe*	25	72
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9K	Al*Fe*	25	75
							9K	Al*Fe*		50
Nemoshkalenk V	2	AKADNAUKUKR RPT		130	709356	E	9K	*AlFe*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Gd		67
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Hf		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*La		67
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	*Al*Li		
							9K 0I	Al*Li*		
Farineau J	1	ANN PHYS	10	20	389001	E	9K	*AlMg*	40	60
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	Al*Mg*	90	99
Kurylenko C	1	CAHIERS PHYS	20	333	669130	E	9K	*Al*Mg		62
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Mg	10	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Mg	10	100
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K	*Al*Mg	30	100
Neddermey H	1	PHYS LET	38A	329	729045	E	9K 9L	*AlMg*	40	60
Neddermey H	1	BAND STRU SPECT		153	739002	E	9K 9L	*AlMg*	05	60
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	Al*Mg*Si		97
								Al*Mg*Si		01
								Al*Mg*Si		02
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Al*N*		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Al*N*		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	*Al*N		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*N		50

(1) 40 °C to 300 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Fomichev V	1	SOVPHYS SOLIDST	10	597	689224	E	9L 6G 4L 5D 6T	*Al*N		50
							9K 6G 4L 5D 6T	Al*N*		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*Al*N		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Nd		67
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9K	*Al*Ni	18	100
							9L	Al*Ni*	00	89
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	*Al*Ni		25
Fischer D	2	PHYS REV	145	555	669148	E	9K 9S 9I 4L 5B	*Al*Ni	4	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Ni	04	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Ni	41	100
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K	*Al*Ni	20	100
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	*Al*Ni		60
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	*Al*O		40
Nordfors B	1	PROC PHYS SOC	68A	654	559017	E	9K 9S 9I 4L	*Al*O		40
Nordfors B	1	ARKIV FYSIK	10	279	569024	E	9K 9S 9I 9R 4L	*Al*O		40
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	*Al*O		40
Baun W	2	PHYS LET	13	36	649133	E	9K 9S 9I	*Al*O		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Al*O*		40
Fischer D	2	J APPL PHYS	36	534	659070	E	9K 9S	*AlO*		40
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	*Al*O		40
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*Al*O		40
Senemaud C	1	J PHYSIQUE COLL	27	55	669055	E	9K 9G	*Al*O		40
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9G 9K	*Al*O		40
Senemaud C	1	J PHYS RADIUM	27C	55	669142	E	9A 9K 9G 4L 9R	*Al*O		40
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	*Al*O		40
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	*AlO*		40
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*O		40
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*O		40
Fomichev V	1	SOVPHYS SOLIDST	8	2312	679102	E	9A 9K 4L 5D 9R	*AlO*		40
Nemoshkalenk V	2	UKRAIN PHYS J	12	812	679107	E	9K 9S	*Al*O		40
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	*Al*O		40
Senemaud C	1	COMPT REND	265	403	679240	E	9K 9G	*Al*O		40
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	*Al*O		40
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G	*Al*O	40	100
Demekhin V	2	PHYS METALMETAL	26	178	689237	E	9K 9G 9S 4A 4L	*Al*O		40
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O 9S	*Al*O		40
Cauchois Y	1	SXS BANDSPECTRA		71	689326	E	9K	*Al*O		40
Chun H	2	PHYS LET	28A	334	689357	E	9K 4N	Al*O*		40
							9K	*Al*O		40
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	*AlO*		40
							9L 9A	*Al*O		40
Bonnelle C	2	COMPT REND	268	65	699027	E	9K 9S	*Al*O		
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	*Al*O		40
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	*Al*O		40
Chun H	2	Z NATURFORSCH	24A	930	699133	E	9K 9F 6U 6P	Al*O*		40
							9K 9L	*Al*O		40
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	*Al*O	40	100
Gigl P	3	JELECTROCHEMSOC	117	15	709041	E	9K 4L	*AlO*		40
Maruno S	2	JAP J APPL PHYS	9	1428	709234	E	9K 4A	*Al*O		40
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*AlO*		40
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	*Al*P		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*P		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*P		50
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	Al*P*		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Pr		67

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Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	*Al*Pt		67
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*S		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	*Al*Sb		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Sb		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Sb		50
Nemnonov S	5	PHYS METALMETAL	14	51	629124	R	9A 9K 3O 5W	Al*T*		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Ti	25	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Ti		50
Kolobova K	2	PHYS METALMETAL	27	69	699351	E	9A 9K 9G 9I 9S	Al*Ti*	0	75
Fischer D	2	J APPL PHYS	38	2404	679122	E	9K 9S 9I 4L 5B	*Al*X		
Gigl P	3	JELECTROCHEMSOC	117	15	709041	E	9K 4L 0O	*AlX*		
Maruno S	2	JAP J APPL PHYS	9	1428	709234	E	9K 4A 0O	*Al*X		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	*Al*Zr	25	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	*Al*Zr	25	75
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*As*		
Groven L	2	BULLACADROYBELG	37	630	519009	E	9K 9S 9I 5B 0O	*As*		
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	As*Al*		50
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Au*		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Au*Al*		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Au*Al*		50
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9K	Au*Al*		50
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	Au*Al*		67
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	Au*Al*		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B*		100
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9K	*B*		
Crisp R	2	PHIL MAG	6	365	619025	E	9K	*B*		
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	*B*		100
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	*B*		
Henke B	2	J APPL PHYS	37	922	669013	E	9K 9G	*B*		
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	*B*		99
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*B*		100
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*B*		100
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K	*B*		100
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	*B*		
Fomichev V	1	BULLACADSCIUSSR	31	972	679172	E	9A 9K 9V	*B*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	*B*		100
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9K	*B*		100
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 6P	*B*		100
Aita O	2	J PHYS SOC JAP	27	164	699204	E	9K 5B	*B*		100
Hoffmann L	3	Z PHYSIK	229	131	699264	E	9K 9I 9R 0S 7D	*B*		
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K	*B*		
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	*B*		100
Shashkina T	1	PHYS STAT SOLID	44B	571	719097	E	9K 9I	*B*		100
Feser K	4	J PHYSIQUE	32S	331	719209	E	9K 6S 0O	*B*		100
Feser K	4	MUNICH SYMP			739016	E	9K 6S	*B*		100
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B* Al		33
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*B* Al		08
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*B* Al		08
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B* C		50
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	*B* C		80
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*B* C		80
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*B* C		80
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	*B C*		80
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	*B* C		80
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B* Ca		86
							9K 4A 4B 4N	*B* Ce		86

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Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	B *Cr*	50	67
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	B *Cr*	50	67
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	B *Cr*	50	67
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	*B* Cr		67
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	*B* Cr		67
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	*B* Cr		67 (1)
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	*B* Hf		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B* La		86
Shashkina T	1	PHYS STAT SOLID	44B	571	719097	E	9K 9I	*B Mn*	20	67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B* N		50
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	*B N*		50
Holliday J	1	J APPL PHYS	33	3259	629095	E	9K	B *N*		50
Lukirskii A	3	OPT SPECTR	16	372	649115	E	9K	B *N*		50
Nicholson J	2	XRAY ANALYS	7	497	649163	E	9K 0I	*B* N		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	B *N*		50
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	*B* N		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	B *N*		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	B *N*		50
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	*B N*		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	B *N*		50
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	*B N*		50
Fomichev V	1	BULLACADSCIUSSR	31	972	679172	E	9A 9K 9V	*B* N		50
							9A 9K 9V	B *N*		50
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	*B N*		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	*B* N		50
Fomichev V	2	J PHYS CHEM SOL	29	1015	689140	E	9K 3N 6H	*B N*		50
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	*B* N		50
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	*B N*		50
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 3Q	*B* N		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	B *N*		50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9K 5D	*B N*		
Fomichev V	3	SOVPHYS SOLIDST	12	123	709217	E	9K 9S 6G 0O	*B* N		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*B* N		50
Nakhmanso M	2	SOVPHYS SOLIDST	12	1966	719042	T	9A 9K	*B* N		50
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	*B* N		50
Fomichev V	1	SOVPHYS SOLIDST	13	754	719170	R	9A 9K	*B N*		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*B* Nb		67
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	*B* Nb		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	*B* O		40
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	*B O*		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	B *O*		40
Henke B	2	J APPL PHYS	37	922	669013	E	9K 9G 4L	*B* O		40
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	*B* O		40
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*B* O		40
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	*B* O		40
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	*B O*		40
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	*B* O		40
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	*B O*		40
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 3Q	*B* O		40
Fomichev V	3	SOVPHYS SOLIDST	12	123	709217	E	9K 9S 6G	*B* O		40
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*B* O		40
Nakhmanso M	2	SOVPHYS SOLIDST	12	1966	719042	T	9A 9K	*B* O		40
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	*B* O		40
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	*B* P		50

(1) 870 °C

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Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***B*** P		50	
Fomichev V	3	J PHYS CHEM SOL	29	1025	689141	E	9K 6H 6U	***B*** P		50	
							9L 6H 6U	B ***P***		50	
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	B ***P***		50	
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	***B P***		50	
							9L 9A	B ***P***		50	
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	B ***P***			
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	B ***Sc***		50	
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	***B*** Sc		67	
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	***B*** Sc		67	(1)
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***B*** Si		86	
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	B ***T***		67	
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	***B*** Ta		67	
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	B ***Ti***	50	67	
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	***B*** Ti		67	
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***B*** Ti		67	
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	B ***Ti***		67	
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	B ***Ti***		67	
							9K 4L 4A	***B*** Ti		67	
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	***B*** Ti		67	
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	B ***Ti***		67	
							9K 4L	***B*** Ti		67	
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	B ***Ti***		67	
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9L	B ***Ti***		67	
							9K	***B*** Ti		67	
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	B ***Ti***		67	
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	B ***Ti***		67	
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	***B*** Ti		67	
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	***B*** Ti		67	
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	***B*** Ti		67	(2)
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	B ***V***	50	67	
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9K	***B*** V		67	
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	***B*** V		67	
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	***B*** V		67	
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	***B*** V		67	(3)
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***B*** W		71	
							9K 6P	***B*** Zr		67	
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	***B*** Zr		67	
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	***B*** Zr		67	
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	***B*** Zr		67	
							9M 0I	B ***Zr***		67	
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9K	***B*** Zr		67	
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	***B*** Zr		33	
							6P 9M	B ***Zr***		33	
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	***B*** Zr		67	
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	E	9K 9F 9G 9S	Ba***Fe***O		20	
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Ba***O***		50	
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	***Ba*** O	50	100	
Jones H	3	PHYS REV	45	379	349000	T	9K	***Be***			
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9K	***Be***			
Catterall J	2	PHIL MAG	3	1424	599007	E	9K 9S	***Be***			
Crisp R	2	PHIL MAG	6	365	619025	E	9K	***Be***			
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	***Be***		100	
Lukirskii A	1	BULLACADSCIUSSR	25	926	619055	E	9E 9K	***Be***		100	
Sagawa T	1	SCI REP TOHOKUU	45	232	619095	E	9K 9S	***Be***		100	

(1) 640 °C (2) 710 °C (3) 760 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Tomboulian D	1	J QUAN SPECT RT	2	649	629122	R	9K	*Be*		
Lukirskii A	2	SOVPHYS SOLIDST	6	33	649089	E	9A 9K 6H	*Be*		100
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	*Be*		
Henke B	2	J APPL PHYS	37	922	669013	E	9K 9G	*Be*		
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*Be*		100
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	*Be*		100
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	*Be*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	*Be*		100
Hayasi Y	1	SCI REP TOHOKUU	51	1	689109	E	9K 9S	*Be*		
Rooke G	1	SXS BANDSPECTRA		3	689322	E	9K 9S 9T 5B 6T	*Be*		
Watson L	3	SXS BANDSPECTRA		45	689324	E	9K 9S	*Be*		
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9K 5D 5B	*Be*		
Aita O	2	J PHYS SOC JAP	27	164	699204	E	9K 5B	*Be*		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 5D 9A	*Be*		
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 6F	*Be*		
Watson L	4	X RAY CONF KIEV	2	56	699289	R	9K 0D	*Be*		
Sagawa T	1	J PHYSIQUE	32S	186	719204	E	9K 9S	*Be*		100
Feser K	4	J PHYSIQUE	32S	331	719209	E	9K 6S	*Be*		100
Feser K	4	MUNICH SYMP			739016	E	9K 6S	*Be*		100
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*Be*Cu		00
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	*BeO*		50
Lukirskii A	2	SOVPHYS SOLIDST	6	33	649089	E	9A 9K 6H	*BeO*		50
Henke B	2	J APPL PHYS	37	922	669013	E	9K 9G 4L	*Be*O		50
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*Be*O		50
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	*Be*O		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Be*O*		50
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	*Be*O		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	Be*O*		50
Hayasi Y	1	SCI REP TOHOKUU	51	1	689109	E	9K 9S	*BeO*		50
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 3Q	*Be*O		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*Be*O		50
Fomichev V	1	SOVPHYS SOLIDST	13	754	719170	R	9A 9K	*BeO*		50
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	Be*Ti*	50	67
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K 0O	*Be*X		
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9A 9K	Bi*Ti*		50
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K 0O	*Br*		
Groven L	2	BULLACADROYBELG	37	630	519009	E	9K 9S 9I 5B 0O	*Br*		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9K	*C*		
Das Gupta K	3	J SCI INDUS RES	14B	129	559005	E	9K 9L	*C*		
Dutta A	1	PROC PHYS SOC	74	604	599015	T	9K	*C*		
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	*C*		100
Lukirskii A	1	BULLACADSCIUSSR	25	926	619055	E	9E 9K	*C*		100
Holliday J	1	J APPL PHYS	33	3259	629095	E	9K	*C*		
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	*C*		
Nicholson J	2	XRAY ANALYS	7	497	649163	E	9E 9K	*C*		100
Caruso A	2	APPL OPT	4	247	659052	E	9K 0I	*C*		
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	*C*		100
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*C*		100
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	*C*		
Sagawa T	1	J PHYS SOC JAP	21	49	669229	E	9K 0D	*C*		
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	*C*		100
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	*C*		100
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K	*C*		100
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	*C*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	*C*		100

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	C		100
Zhurakovs E	1	SOV PHYS DOKL	13	578	689166	E	9K	C		
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C		
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	C		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 5D	C		
Hoffmann L	3	Z PHYSIK	229	131	699264	E	9K 9I 9R 0S 7D	C		
Wiech G	2	NBS IMR SYMP	3		709118	E	9K	C		100
Borovskii I	3	SOV PHYS DOKL	15	1141	719051	E	9K 0X	C		
Aita O	3	J PHYS SOC JAP	30	516	719062	E	9K 9S 9C	C		100
Solomon J	2	APPL SPECTRY	25		719192	E	9K 0I	C		100
Feser K	4	J PHYSIQUE	32S	331	719209	E	9K 6S 0O	C		100
Feser K	4	MUNICH SYMP			739016	E	9K 6S	C		100
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	C Al		57
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	C Al		57
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	C Al		57
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	C B		50
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	C B		80
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	C B		80
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	C B		80
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	C B		80
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	C B		80
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C CoMn		
								C CoMn		
								C CoMn		
Menshikov A	1	PHYS METALMETAL	15	29	639089	T	9A 9K 5B	C Cr	20	43
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	C Cr	20	40
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	C Cr	20	40
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	C Cr		50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	C Cr	20	40
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C Cr		60
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	C Fe		25
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C Fe	00	75
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	C FeMn		
								C FeMn		
								C FeMn		
Manne R	1	J CHEM PHYS	52	5733	709201	T	9K 9V 0O 9I 6T	C H	20	50
								C H	20	50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	C Hf		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C Hf		50
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	C Hf		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	C Mo		33
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	C Mo		33
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	C Mo		33
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C Mo		67
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	C N	50	67
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	C N Ti	11	21
								C N Ti	29	39
								C N Ti		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	C Nb		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	C Nb		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	C Nb		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	C Nb		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	C Nb		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	C Nb		50
							9M 5D	C Nb		50

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	*C* Nb		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 4L 9V 5V 3Q	C *Nb*	43	48
							9K 4L 9V 5V 3Q	*C* Nb	43	48
Manne R	1	J CHEM PHYS	52	5733	709201	T	9K 9V 0O 9I 6T	*C* O	33	50
								C O	33	50
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	C O *V*	23	33
								C O *V*	24	26
								C O *V*	41	53
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	C *Sc*		50
Kern B	1	Z PHYSIK	159	178	609025	E	9K	C *Si*		50
Demekhin V	2	BULLACADSCIUSSR	28	733	649139	E	9K 9S 9I 4L	C *Si*		50
							9K	*C* Si		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	*C* Si		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*C* Si		50
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	C *Si*		50
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	C *Si*		25
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	C *Si*	00	50
							9K 5D 5B	C *Si*	00	50
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	C *Si*	50	100
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	C *Si*		
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	C *T*		
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	C *T*		50
Holliday J	1	ADV XRAY ANALYS	13	136	709349	R	9K 4L	*C* T		
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	*C* Ta		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*C* Ta		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	*C* Ta	00	50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	*C* Ta	00	50
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	*C* Ta		50
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	C *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	2	251	579039	E	9K	C *Ti*	9	24
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	C *Ti*		50
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	C *Ti*		50
Vainshtein E	2	SOV PHYS KOKL	48	1050	609085	E	9G 9K 3Q	C *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	7	724	629131	E	9K 4L	C *Ti*		
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	C *Ti*		50
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	C *Ti*		50
							5D	C *Ti*		
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	C *Ti*	45	50
							9K 4L 4A	*C* Ti		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	C *Ti*	45	49
							9K 4L	*C* Ti	45	49
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	C *Ti*		50
Chirkov V	3	SOVPHYS SOLIDST	9	873	679243	E	9A 9K 4L	C *Ti*		50 (1)
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	*C* Ti	0	50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	*C* Ti		50
Zhurakovs E	1	SOV PHYS DOKL	13	578	689166	E	9K	*C* Ti	35	56
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	C *Ti*		50
							9K	*C* Ti		50
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	C *Ti*		
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	*C* Ti		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	C *Ti*		50
							9L 9A 5B	C *Ti*		50
Holliday J	1	ADV XRAY ANALYS	13	136	709349	R	9K 4L	C *Ti*	0	66
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	C *Ti*		50

(1) Did not exceed 100 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	C *Ti* W		51
								C *Ti* W		24
								C *Ti* W		25
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	C *V*	16	19
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	C *V*	41	47
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	*C* V	00	50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	C *V*	40	46
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	*C* V	00	50
Zhurakovs E	1	SOV PHYS DOKL	14	163	699149	E	9K 5B	*C* V		50
Zhurakovs E	3	INORGANIC MATLS	6	183	709306	E	9L 4A 1H 1B 1T	C *V*	27	48
							9K 4L	*C* V	27	48
							9K 4L	C *V*	29	47
Holliday J	1	ADV XRAY ANALYS	13	136	709349	R	9K 4L	C *V*	0	50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719006	E	9K 4L 9V 5V 3Q	*C V*	42	47
							9L 4L 9V 5V 3Q	*C* V	42	47
								C V	42	47
Zhurakovs E	8	SOV PHYS DOKL	15	877	719021	E	9L 4A 1H 4L	C *V*	28	47
							9K 4L	*C* V	28	47
							9K 9A	C *V*	28	47
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	*C* Zr		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	*C* Zr		50
							9M	C *Zr*		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	*C* Zr		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	*C* Zr		50
Zhurakovs E	1	SOV PHYS DOKL	14	163	699149	E	9K 5B	*C* Zr		50
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Ca*		
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K	*Ca*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Ca*		
Shuvaev A	1	BULLACADSCIUSSR	24	434	609087	T	4L 9E 9K 5N	*Ca*		100
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*Ca*		
Finkelshtein L	2	PHYS METALMETAL	22	38	669161	E	9A 9K	*Ca*		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Ca*Al*		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ca*Al*		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	Ca*B*		86
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q 0O	Ca*F*		33
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Ca*O*		50
Finkelshtein L	2	PHYS METALMETAL	22	38	669161	E	9A 9K	*Ca* O		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Ca*O*		50
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 4L 5B 0O	CaO *S*		17
								CaO *S*		67
								CaO *S*		16
							9G 9K 5B 0O	Ca*S*		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ca*Si*		33
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Cd*		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*Cd*		
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Cd*O*		50
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Ce*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ce*Al*		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	Ce*B*		86
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ce*Si*		33
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K 0O	*Cl*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K 0O	*Cl*		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B 0O	Cl*Rb*		50
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Co*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Co*		

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	*Co*		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	*Co*		
Borisov N	2	BULLACADSCIUSSR	25	1011	619099	E	9K 9I 9S 3Q	*Co*		100
Nemoshkalenk V	1	SOV PHYS DOKL	7	348	629106	E	9K 9I 6P 5N	*Co*		100 (1)
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*Co*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*Co*		
Nemoshkalenk V	2	BULLACADSCIUSSR	31	1005	679178	E	9K 5D 5B	*Co*		100
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Co*		
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G	*Co*		100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Co*Al*		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Co*Al*		50
Nemoshkalenk V	3	AKADNAUKUKR RPT		151	709357	E	9K	*CoAl*		
Nemoshkalenk V	1	SOV PHYS DOKL	7	348	629106	E	9K 9I 9S	*CoFe*	0	100 (1)
							9K 9I 6P 5N	*CoFe*	05	95 (1)
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	Co*Fe*		50
Austin A	2	J SOLID ST CHEM	1	229	709003	E	9K	*CoGe*	33	83
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	*Co*MnC		
								*Co*MnC		
								*Co*MnC		
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Co*O*	40	43
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*CoO*		50
							9L	*Co*O		50
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	Co*S*		50
Kallne E	2	MUNICH SYMP			739011	E	9K	*CoTi*		
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G 3Q	*CoV*		43
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	Co*V*		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Co*V*		25
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Cr*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Cr*		
Herglotz H	1	OSTER AKAD WISS	162	235	539008	E	9K 9S	*Cr*		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	*Cr*		
Borisov N	3	BULLACADSCIUSSR	21	1412	579012	E	9K 6P	*Cr*		100
Borisov M	3	ISSLAKADNAUKSSR	3	252	589002	E	9K	*Cr*		
Borisov N	3	SOV PHYS DOKL	3	826	589066	E	9K 4A	*Cr*		
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	*Cr*		100
Borovskii I	2	PHYSMETALMETAL	7	61	599006	E	9K 9A 6P	*Cr*	99	100
Borisov M	3	BULLACADSCIUSSR	24	443	609010	E	9K 9S	*Cr*		
							9K 4A 6P	*Cr*		100
Borisov N	2	BULLACADSCIUSSR	25	1011	619099	E	9K 9I 9S 3Q	*Cr*		100
Menshikov A	1	PHYS METALMETAL	14	118	629126	E	9K 0D	*Cr*		100
Menshikov A	1	PHYS METALMETAL	15	29	639089	T	9A 9K 5B	*Cr*		100
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*		
Shuvaev A	2	BULLACADSCIUSSR	27	331	639117	E	9K 9S 4L 4A	*Cr*		
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*Cr*		
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	*Cr*		
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	*Cr*		100
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9K 9A 6P 6F 0D	*Cr*		
							5D	*Cr*		
Nemoshkalenk V	2	BULLACADSCIUSSR	31	1005	679178	E	9K 5D 5B	*Cr*		100
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Cr*		
Nemnonov S	2	PHYS METALMETAL	26	43	689236	R	9K 9L	*Cr*		100
Finkelshtein L	2	PHYS METALMETAL	26	102	689370	E	9K 9A	*Cr*		100
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	*Cr*		100
Blau W	1	X RAY CONF KIEV	2	188	699298	E	9S 9I 9K 9Q	*Cr*		
Leonhardt G	2	X RAY CONF KIEV	2	342	699304	E	9K 4B 3Q	*Cr*		

(1) 250 °C to 1250 °C

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Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Fischer D	1	PHYS REV	4B	1778	719106	R	9K 9M 6G 5B 9A	*Cr*		100
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	Cr*Al*		33
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*Al	33	80
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Cr*Al*		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Cr*Al*		50
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9K	*Cr*Al	33	80
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*B	50	67
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	*Cr*B	50	67
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Cr*B	50	67
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	Cr*B*		67
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	Cr*B*		67
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	Cr*B*		67 (1)
Menshikov A	1	PHYS METALMETAL	15	29	639089	T	9A 9K 5B	*Cr*C	20	43
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*C	20	40
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	Cr*C*	20	40
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	Cr*C*		50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Cr*C	20	40
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Cr*C*		60
Kazantsev V	1	SBOR NAU TRUDOV	2	187	569020	E	9K	*CrFe*	85	89
Borisov N	3	BULLACADSCIUSSR	21	1412	579012	E	9K 6P	*CrFe*	04	75
Borisov M	3	ISSLAKADNAUKSSR	3	252	589002	E	9K	*CrFe*	4	50
Borisov N	3	SOV PHYS DOKL	3	826	589066	E	9K 4A 6F	*CrFe*	35	55
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	*CrFe*		45
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	Cr*Fe*		50
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	*CrFeNi*		26
								CrFeNi		58
								CrFeNi		16
Borisov N	3	BULLACADSCIUSSR	24	451	609010	E	9K 4A 6P	*CrFe*Ni	50	60 (2)
								*CrFe*Ni		40 (2)
							9K 4A 6P	*CrFe*Ni	0	10 (2)
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	CrK *O*		14
							9L 9A	*Cr*K O		29
								CrK O		57
Finkelshtein L	2	PHYS METALMETAL	26	102	689370	E	9K 9A	*CrMn*	07	55
Borovskii I	5	BULLACADSCIUSSR	21	1389	579060	E	9K 9S	*Cr*Mo	5	18
							9A 9K 6P	*Cr*Mo	00	100
Borovskii I	2	PHYSMETALMETAL	7	61	599006	E	9K 9A 6P	*Cr*Mo	99	100
							9A 9L	Cr*Mo*	99	100
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*N	50	67
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Cr*N	50	67
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Cr*N*	50	67
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	CrNa*O*		14
							9L 9A	*Cr*NaO		29
								CrNaO		57
Menshikov A	1	PHYS METALMETAL	14	118	629126	E	9K 0D	*Cr*O		40
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*O		40
Shuvaev A	2	BULLACADSCIUSSR	27	331	639117	E	9K 9S 4L 4A	*Cr*O		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Cr*O*		40
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	*Cr*O		40
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Cr*O		40
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	E	9L	*Cr*O		40
							9A 9K	*Cr*O		40
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E		*Cr*O	25	40
							9K 9A	Cr*O*	25	40
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	*Cr*Si	33	75
Nemnonov S	2	PHYS STAT SOLID	24K	43	679383	E	9K 9A	*Cr*Si		75

(1) 870 °C (2) 1000 °C

Authors: First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition: Low	Composition: High
Kolobova K	2	PHYS METALMETAL	26	57	689368	R	9K 9S	*Cr* Si	33	50
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	R	9A 9K 5B	*Cr* Si		75
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9A 9K 6P 6F	*CrV*	40	93
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q 0O	*Cr* X		
Shuvaev A	2	BULLACADSCIUSSR	27	331	639117	E	9E 9K 9S 4L 4A	*Cr* X		
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 0O	*Cr* X		
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Cu*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Cu*		
Bearden J	2	PHYS REV	58	387	409001	E	9A 9K 5B 5D 4L	*Cu*		
Friedman H	2	PHYS REV	58	400	409002	E	9K 9A	*Cu*		
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	*Cu*		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	*Cu*		
Hanson H	2	PHYS REV	105	1483	579048	E	9E 9K	*Cu*		
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*Cu*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*Cu*		
Nikiforov I	2	BULLACADSCIUSSR	28	695	649118	E	9K 9S	*Cu*		
Tomlin S	1	AUSTRAL J PHYS	17	452	649121	E	9K 9I 9B 9R	*Cu*		
Metchnik V	1	AUST J PHYS	17	45	649127	E	9K 9I 5Q	*Cu*		
Nikiforov I	1	RONTGENCHEMBIND		241	669214	T	9K	*Cu*		100
Fischer B	2	Z PHYSIK	204	122	679137	E	9K 9H 9I 4X	*Cu*		
Akopdzhanov R	1	PHYS METALMETAL	24	46	679212	E	9A 9K 5B	*Cu*		100
Nemoshkalenk V	3	PHYS STAT SOLID	30	703	689298	E	9K 6T	*Cu*		100
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Cu*		
Yoshida S	1	INSTPHYSCHEMRES	28	243	369007	E	9K	Cu*Al*	10	100
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9K	Cu*Al*	19	100
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	Cu*Al*		10
Friedel J	1	PHIL MAG	43	153	520032	R	9A 9K 5N 6P	Cu*Al*		
Kurylenko C	1	CAHIERS PHYS	20	333	669130	E	9K	Cu*Al*	10	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Cu*Al*	10	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Cu*Al*	10	100
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9K 5B 4L	Cu*Al*	10	100
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K	Cu*Al*	20	100
Nemnonov S	2	PHYS METALMETAL	28	192	699145	E	9K	Cu*Al*	33	67
Baun W	1	J APPL PHYS	40	4210	699174	E	9K 9F 4L	Cu*Al*		49
Solomon J	2	APPL SPECTRY	25		719192	E	9K	Cu*Al*		40
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	Cu*Be*		00
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	Cu*Li*		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Cu*Mg*	00	67
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	Cu*Mg* Al	94	95
								Cu*Mg* Al		04
								Cu*Mg* Al	01	02
Vainshtein E	2	SOV PHYS DOKL	1	527	569031	E	9K	*CuMg* Al		17
								CuMg Al		67
								CuMg Al		16
Kotlyar B	2	NAUCH ZAPISKI	22	71	589014	E	9K	*CuMn*	66	90
							9K	*CuMn* Al	08	25
								CuMn Al	50	79
								CuMn Al	23	25
Kotlyar B	1	NAUCH ZAPISKI	22	60	589015	E	9K 2T	*CuMn* Al		25
								CuMn Al		50
								CuMn Al		25
Friedman H	2	PHYS REV	58	400	409002	E	9K 9A	*CuNi*	20	70
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Cu*O*	50	67
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*CuO*		50
							9L	*Cu* O		50

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Akopdzhanov R	1	SOVPHYS SOLIDST	12	1095	709228	E	9A 9K 9S 5B	*Cu*O		67
							9L 5B	*Cu*O		67
							9K	Cu*O*		67
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	*CuPd*		60
							9K	*Cu*Pd		60
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	Cu*S*		50
Bearden J	2	PHYS REV	58	387	409001	E	9A 9K 5B 5D 4L	*CuZn*	21	95
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9K 9S	Cu*Zn*		
Friedel J	1	PHIL MAG	43	153	520032	R	9A 9K 5N 6P	Cu*Zn*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Dy*Al*		67
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Er*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Er*Al*		67
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Eu*		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q 0O	*F*Ca		33
							9K 3Q 0O	*F*Li		50
							9K 3Q 0O	*F Na*		50
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G 0O	F *Na*		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	*F*Tb		75
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Fe*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Fe*		
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	*Fe*		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	*Fe*		
Borisov N	3	BULLACADSCIUSSR	21	1412	579012	E	9K 6P	*Fe*		100
Hanson H	2	PHYS REV	105	1483	579048	E	9E 9K	*Fe*		
Borisov M	3	ISSLAKADNAUKSSR	3	252	589002	E	9K	*Fe*		
Borisov N	3	SOV PHYS DOKL	3	826	589066	E	9K 4A	*Fe*		
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	*Fe*		100 (1)
Borisov M	3	BULLACADSCIUSSR	24	443	609010	E	9K 9S	*Fe*		
							9K 4A 6P	*Fe*		100
Gorak Z	1	BULLACADSCIUSSR	24		609020	T	9K 9S	*Fe*		
Shuvaev A	1	BULLACADSCIUSSR	24	434	609087	T	4L 9E 9K 5N	*Fe*		100
Nikiforov I	1	BULLACADSCIUSSR	25	1048	619061	T	9K 9S	*Fe*		
Borisov N	2	BULLACADSCIUSSR	25	1011	619099	E	9K 9I 9S 3Q	*Fe*		100
Nemoshkalenk V	1	SOV PHYS DOKL	7	348	629106	E	9K 9I 6P 5N	*Fe*		100 (2)
Nikiforov I	2	BULLACADSCIUSSR	27	323	639109	T	9E 9K 5W 5D	*Fe*		
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*Fe*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*Fe*		
Nikiforov I	2	BULLACADSCIUSSR	28	695	649118	E	9K 9S	*Fe*		
Nagornyi V	2	SOV PHYS DOKL	11	161	669001	E	9K 9I 9S	*Fe*		100
Kolobova K	3	PHYS METALMETAL	21	132	669018	E	9K 9G	*Fe*		
Nemoshkalenk V	2	RONTGENCHEMBIND		230	669213	E	9K 9I	*Fe*		100
Nemnonov S	2	PHYS METALMETAL	23	66	679055	E	9A 9K 5D	*Fe*		100
Nemoshkalenk V	2	BULLACADSCIUSSR	31	1005	679178	E	9K 5D 5B	*Fe*		100
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Fe*		
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 4L	*Fe*		
Kolobova K	2	PHYS METALMETAL	26	57	689368	E	9K 9S 9I 9S 9G	*Fe*		100
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	*Fe*		100
Nemoshkalenk V	2	UKRAIN PHYS J	13	1022	699240	E	9K 4L 9U 4A	*Fe*		100
Blau W	1	X RAY CONF KIEV	2	188	699298	E	9S 9I 9K 9Q	*Fe*		
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	Fe*Al*		25
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Fe*Al*	10	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Fe*Al*	25	75
Fischer D	2	J APPL PHYS	38	229	679096	E	9K 9S	Fe*Al*	00	100
Nemoshkalenk V	3	PHYS STAT SOLID	29	45	680711	E	9K	*FeAl*		67
Nemoshkalenk V	2	UKRAIN PHYS J	13	1022	699240	E	9K 4L 9U 4A 3Q	*FeAl*	25	72

(1) 1000 °C (2) 300 °C to 1200 °C

Authors: First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition: Low	Composition: High
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9K	**Fe** Al	25	75
							9K	**Fe** Al		50
Nemoshkalenk V	2	AKADNAUKUKR RPT		130	709356	E	9K	**FeAl**		
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	Fe**C**		25
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Fe**C**	00	75
Nemoshkalenk V	1	SOV PHYS DOKL	7	348	629106	E	9K 9I 9S	**FeCo**	0	100
							9K 9I 6P 5N	**FeCo**	05	95
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	**Fe** Co		50
Kazantsev V	1	SBOR NAU TRUDOV	2	187	569020	E	9K	**FeCr**	85	89
Borisov N	3	BULLACADSCIUSSR	21	1412	579012	E	9K 6P	**FeCr**	04	75
Borisov M	3	ISSLAKADNAUKSSR	3	252	589002	E	9K	**FeCr**	4	50
Borisov N	3	SOV PHYS DOKL	3	826	589066	E	9K 4A 6F	**FeCr**	35	55
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	**FeCr**		45
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	**Fe** Cr		50
Austin A	2	J SOLID ST CHEM	1	229	709003	E	9K	**FeGe**	33	83
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	FeMn**C**		
								FeMn**C**		
								FeMn**C**		
Sasovskay I	3	PHYS METALMETAL	27	78	699352	E	9K 9G	**FeNi**		70
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	**FeNiCr**		26
								FeNiCr		58
								FeNiCr		16
Borisov N	3	BULLACADSCIUSSR	24	451	609010	E	9K 4A 6P	**Fe** Ni**Cr**	50	60 (1)
								Fe Ni**Cr**		40
							9K 4A 6P	**Fe** Ni**Cr**	0	10
Holliday J	1	J APPL PHYS	33	3259	629095	E	9K	Fe**O**		43
Nicholson J	2	XRAY ANALYS	7	497	649163	E	9E 9K	Fe**O**		43
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Fe**O**	40	43
Kolobova K	3	PHYS METALMETAL	21	132	669018	E	9K 9G	**Fe** O		50
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	E	9K 9F 9G 9S	**Fe** O	40	50
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 4L	**Fe** O	40	50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	**FeO**		50
							9L	**Fe** O		50
Krause H	3	TECH REPORT AD	699	544	709013	E	9K 4L	Fe**O**		40
							9K 4L	Fe**O**		43
							9K 4L	Fe**O**		50
Krause H	3	JELECTROCHEMSOC	117	557	709042	E	9K 9E	Fe**O**	40	50
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	E	9K 9F 9G 9S	**Fe** O Ba		20
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	Fe**S**		50
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9K 5B	Fe**Si**	0	75
Kolobova K	2	PHYS METALMETAL	26	57	689368	E	9K 9S 9I 9S 9G	**Fe** Si	28	83
							9K 9S 9I 9S 9G	Fe**Si**	30	50
Nemnonov S	2	PHYS METALMETAL	23	66	679055	E	9A 9K 5D	**FeTi**	0	67
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	**Fe** Ti		50
Kallne E	2	MUNICH SYMP			739011	E	9K	**FeTi**		
Nagornyi V	2	SOV PHYS DOKL	11	161	669001	E	9K 9I 9S	**FeV**	20	50
Nemoshkalenk V	2	RONTGENCHEMBIND		230	669213	E	9K 9I 4L	Fe**V**	22	57
							9K 9I 4L	**Fe** V	52	99
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	**Fe** V		50
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Fe**V**		30
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 0O 4L	**Fe** X		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	**Ga**		
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	**Ga**		
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	Ga**Ge**		00
Chun H	2	Z NATURFORSCH	24A	930	699133	E	9K 9F 6U 6P	Ga**O**		40

(1) 1000 °C

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Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	Ga*P*		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	Ga*Sb*		50
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	E	9K 5B 7T	Ga*V*		25
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Gd*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Gd*Al*		67
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Ge*		
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*Ge*		
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	*Ge*		
Lyapin V	1	SOVPHYS SOLIDST	8	2851	679109	E	9L 9K 5B	*Ge*		
Deslattes R	1	PHYS REV	172	625	689213	E	9L 9K 0X	*Ge*		
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	*Ge*		100
Nemoshkalenk V	3	PHYS STAT SOLID	30	703	689298	E	9K 6T	*Ge*		100
Klima J	1	J PHYS	3C		709004	T	9K 9L 9M 6T	*Ge*		100
Fomichev V	2	SOVPHYS SOLIDST	12	2121	719044	R	9K 9M 5D	*Ge*		100
Austin A	2	J SOLID ST CHEM	1	229	709003	E	9K	*GeCo*	33	83
							9K	*GeFe*	33	83
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	*Ge* Ga		00
Austin A	2	J SOLID ST CHEM	1	229	709003	E	9K	*GeMn*	17	67
							9K	*GeNi*	17	67
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Ge*O*		33
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	*Ge* Sb		00
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	E	9K 5B 7T	Ge*V*		25
Manne R	1	J CHEM PHYS	52	5733	709201	T	9K 9V 0O 9I 6T	H *C*	20	50
								H *C*	20	50
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	H *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	H *Ti*	01	003
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	H *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	609085	E	9G 9K 3Q 9S	H *Ti*	33	58
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	H *Ti*		64
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Hf*		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Hf*Al*		50
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	Hf*B*		67
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	Hf*C*		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Hf*C*		50
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	Hf*C*		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Hf*N*		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Hf*O*		33
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Hf* O	33	100
Morlet J	1	BULLACADROYBELG	35	1059	499003	E	9K 9L 9S	*Hg*		
Barrere G	1	COMPT REND	233	376	519001	E	9K 9L	*Hg*		
Beckman O	1	PHYS REV	109	1590	589001	E	9K	*Hg*		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*In*		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*In*		
Chun H	2	Z NATURFORSCH	24A	930	699133	E	9K 9F 6U 6P	In*O*		40
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	In*P*		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	In*Sb*		50
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	Ir*V*		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Ir*V*		25
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K	*K*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*K*		
Richtmyer R	1	PHYS REV	49	1	369005	T	9S 9K	*K*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*K*		
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	K *O* Cr		14
							9L 9A	K O *Cr*		29
								K O Cr		57

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Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 4L 5B 0O	K O *S*		29
								K O *S*		57
								K O *S*		14
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K 0O	*Kr*		
Groven L	2	BULLACADROYBELG	37	630	519009	E	9K 9S 9I 5B 0O	*Kr*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	La*Al*		67
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	La*B*		86
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	La*O*		60
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*La* O	40	100
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	La*Si*		33
Jones H	3	PHYS REV	45	379	349000	T	9K	*Li*		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9K	*Li*		
Sen A	1	INDIAN J PHYS	30	415	569025	E	9K 5B	*Li*		
Bedo D	1	DISSERT ABSTR	17	1097	579006	E	9K 9S	*Li*		
Tomboulian D	2	PHYS REV	109	35	589030	E	9K	*Li*		
Catterall J	2	PHIL MAG	3	1424	599007	E	9K 9S	*Li*		
Catterall J	2	PHIL MAG	4	1164	599008	E	9K	*Li*		
Crisp R	2	PHIL MAG	5	525	609015	E	9K	*Li*		
Crisp R	2	PHIL MAG	5	1205	609016	E	9K	*Li*		
Crisp R	2	PHIL MAG	6	365	619025	E	9K	*Li*		
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	*Li*		100
Sagawa T	1	SCI REP TOHOKUU	45	232	619095	E	9K 9S	*Li*		100
Tomboulian D	1	J QUAN SPECT RT	2	649	629122	R	9K	*Li*		
Goodings D	1	PROC PHYS SOC	86	75	659065	T	9K 6T 5N	*Li*		100
Allotey F	1	PHYS REV	157	467	679087	T	9K 5N 5B 5D 5F	*Li*		
Ausman G	2	BULL AM PHYSSOC	12	531	679092	T	9K 5Z	*Li*		
Rooke G	1	SXS BANDSPECTRA		3	689322	E	9K 9S 9T 5B 6T	*Li*		
Sagawa T	1	SXS BANDSPECTRA		29	689323	E	9K 5B 5D	*Li*		
Ausman G	2	PHYS REV	183	687	699001	T	9K 9I	*Li*		
Mc Alister A	1	PHYS REV	186	595	699058	T	9E 9K 6T	*Li*		100
Ausman G	1	THESIS U MD		1	699118	T	9K 9S 6O 6Q	*Li*		
Aita O	2	J PHYS SOC JAP	27	164	699204	E	9K 5B	*Li*		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 5D 9A	*Li*		
Mc Mullen T	1	J PHYS	3C	2178	709123	T	9K 9I 6T 5B	*Li*		
Bergersen B	3	PREPRINT			719003	T	9K 9A	*Li*		100
Allotey F	1	SOLIDSTATE COMM	9	91	719020	T	9K 9S 6O	*Li*		100
Sagawa T	1	J PHYSIQUE	32S	186	719204	E	9K 9S	*Li*		100
Feser K	4	MUNICH SYMP			739016	E	9K 6S	*Li*		100
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	Li*Al*		
							9K 0I	*Li* Al		
							9K 0I	*Li* Cu		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q 0O	Li*F*		50
Catterall J	2	PHIL MAG	4	1164	599008	E	9K	*Li* Mg	05	55
							9L	Li*Mg*	05	55
Crisp R	2	PHIL MAG	5	1205	609016	E	9K	*Li* Mg	15	70
							9L	Li*Mg*	15	70
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	*Li* Mg	15	70
							9L 0I	Li*Mg*	15	70
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Lu* O	40	100
Hayashi T	1	SCI REP TOHOKUU	31	1	429000	T	9S 9K	*Mg*		
Sen A	1	INDIAN J PHYS	30	415	569025	E	9L 9K 5B	*Mg*		
Callon P	1	COMPT REND	248	1985	599009	E	9K	*Mg*		
Konstantinov A	3	BULLACADSCIUSSR	28	103	649119	E	9G 9K 9R	*Mg*		
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	*Mg*		100
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	*Mg*		

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First	No.								Low	High
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	***Mg***		100
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O	***Mg***		100
Cauchois Y	1	SXS BANDSPECTRA		71	689326	E	9K	***Mg***		
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 9L 5D	***Mg***		
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	***Mg***		100
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9K	***Mg***		100
Senemaud C	1	J PHYSIQUE	32	89	719210	E	9E 9K 5D	***Mg***		
Neddermey H	1	MUNICH SYMP			739015	E	9K	***Mg***		100
Farineau J	1	ANN PHYS	10	20	389001	E	9K	***MgAl***	40	60
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	***Mg***Al	90	99
Kurylenko C	1	CAHIERS PHYS	20	333	669130	E	9K	Mg***Al***		62
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Mg***Al***	10	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Mg***Al***	10	100
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K	Mg***Al***	30	100
Neddermey H	1	PHYS LET	38A	329	729045	E	9K 9L	***MgAl***	40	60
Neddermey H	1	BAND STRU SPECT		153	739002	E	9K 9L	***MgAl***	05	60
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	***Mg***AlCu	94	95
								MgAlCu		04
								MgAlCu	01	02
Vainshtein E	2	SOV PHYS DOKL	1	527	569031	E	9K	***Mg***Al***Cu***		17
								MgAl***Cu***		67
								MgAl***Cu***		16
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	***Mg***Cu	00	67
Catterall J	2	PHIL MAG	4	1164	599008	E	9K	Mg***Li***	05	55
							9L	***Mg***Li	05	55
Crisp R	2	PHIL MAG	5	1205	609016	E	9K	Mg***Li***	15	70
							9L	***Mg***Li	15	70
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	Mg***Li***	15	70
							9L 0I	***Mg***Li	15	70
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	***MgO***		50
Callon P	1	COMPT REND	248	1985	599009	E	9K	***Mg***O		50
Lukirskii A	3	OPT SPECTR	16	372	649115	E	9K	Mg***O***		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Mg***O***		50
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	***Mg***O		50
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	***Mg***O		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Mg***O***		50
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	***Mg***O		50
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9C	***Mg***O	50	100
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O 9S	***Mg***O		50
Bonnelle C	2	COMPT REND	268	65	699027	E	9K 9S	***Mg***O		
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	***Mg***O	50	100
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	***MgO***		50
Senemaud C	1	J PHYSIQUE	32	89	719210	E	9E 9K 5D	***Mg***O		
Nicholls C	2	MUNICH SYMP			739012	E	9K	***Mg***O		50
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	***Mg***SiAl		97
								MgSiAl		01
								MgSiAl		02
Vainshtein E	3	SOVPHYS SOLIDST	7	1707	669227	E	9K 9G 9S 4L 0O	***Mg***X X		
Neddermey H	1	MUNICH SYMP			739015	E	9K	***Mg***Zn	33	90
							9L	Mg***Zn***	33	90
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	***Mn***		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	***Mn***		
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	***Mn***		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	***Mn***		
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	***Mn***		

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First	No.								Low	High	
Vainshtein E	3	SOVPHYS SOLIDST	7	1707	669227	E	9K 9G 9S 4L	*Mn*			(1)
Fischer B	2	Z PHYSIK	204	122	679137	E	9K 9H 9I 4X	*Mn*			
Nemoshkalenk V	2	BULLACADSCIUSSR	31	1005	679178	E	9K 5D 5B	*Mn*		100	
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 4L	*Mn*			
Nemnonov S	2	PHYS METALMETAL	25	179	689366	E	9A 9K 9G	*Mn*		100	
Finkelshtein L	2	PHYS METALMETAL	26	102	689370	E	9K 9A	*Mn*		100	
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G	*Mn*		100	
Leonhardt G	2	X RAY CONF KIEV	2	342	699304	E	9K 4B 3Q	*Mn*			
Shashkina T	1	PHYS STAT SOLID	44B	571	719097	E	9K 9I	*Mn*		100	
Kotlyar B	2	NAUCH ZAPISKI	22	71	589014	E	9K	*Mn* Al*Cu*	08	25	
								Mn Al*Cu*	50	79	
								Mn Al*Cu*	23	25	
Kotlyar B	1	NAUCH ZAPISKI	22	60	589015	E	9K 2T	*Mn* Al*Cu*		25	
								Mn Al*Cu*		50	
								Mn Al*Cu*		25	
Shashkina T	1	PHYS STAT SOLID	44B	571	719097	E	9K 9I	*MnB*	20	67	
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	MnC *Co*			
								MnC *Co*			
								MnC *Co*			
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	Mn*C* Fe			
								Mn*C* Fe			
								Mn*C* Fe			
Finkelshtein L	2	PHYS METALMETAL	26	102	689370	E	9K 9A	*MnCr*	07	55	
Kotlyar B	2	NAUCH ZAPISKI	22	71	589014	E	9K	*MnCu*	66	90	
Austin A	2	J SOLID ST CHEM	1	229	709003	E	9K	*MnGe*	17	67	
Kazantsev V	1	BULLACADSCIUSSR	20	97	569003	E	9K 9A	*MnNi*			
Kazantsev V	1	SOV PHYS DOKL	3	1249	599021	E	9K	*Mn* Ni			
Kazantsev V	1	SOV PHYS DOKL	6	786	629103	E	9K 9S	Mn*Ni*			
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Mn*O*		33	
Vainshtein E	3	SOVPHYS SOLIDST	7	1707	669227	E	9K 9G 9S 4L	*Mn* O	33	43	(1)
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 4L	*Mn* O	33	50	
Krause H	3	TECH REPORT AD	699	544	709013	E	9K 4L	Mn*O*		33	
							9K 4L	Mn*O*		40	
							9K 4L	Mn*O*		43	
							9K 4L	Mn*O*		50	
Krause H	3	JELECTROCHEMSOC	117	557	709042	E	9K 9E	Mn*O*			
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 4L 5B 0O	Mn*S*		50	
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	Mn*S*		50	
Ovrutskaya R	3	PHYS METALMETAL	15	123	639096	E	9K 4B	*Mn* Te		50	(2)
Nemnonov S	2	PHYS METALMETAL	25	179	689366	E	9A 9K 9G	*Mn V*		50	
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G 3Q	*Mn V*		81	
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 0O 4L	*Mn* X			
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*Mo*			
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Mo*			
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*Mo*			
Rogosa G	2	PHYS REV	92	1434	539011	E	9K 9L	*Mo*			
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Mo*			
Blau W	1	X RAY CONF KIEV	2	188	699298	E	9S 9I 9K 9Q	*Mo*			
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	Mo*C*		33	
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	Mo*C*		33	
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	Mo*C*		33	
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Mo*C*		67	
Borovskii I	5	BULLACADSCIUSSR	21	1389	579060	E	9K 9S	Mo*Cr*	5	18	
							9A 9K 6P	Mo*Cr*	00	100	
Borovskii I	2	PHYSMETALMETAL	7	61	599006	E	9K 9A 6P	Mo*Cr*	99	100	

(1) 300 °C (2) 12 °C to 82 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
							9A 9L	***Mo*** Cr	99	100
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Mo***N***		67
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Mo***O***		25
Sumbaev O	5	SOV PHYS JETP	23	572	669093	E	9K 5N	***Mo*** O		25
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	***Mo*** O	25	100
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Mo***Si***		33
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	***N*** Al		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***N*** Al		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	N ***Al***		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	N ***Al***		50
Fomichev V	1	SOVPHYS SOLIDST	10	597	689224	E	9L 6G 4L 5D 6T	N ***Al***		50
							9K 6G 4L 5D 6T	***N*** Al		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	N ***Al***		50
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	N ***B***		50
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	***N B***		50
Holliday J	1	J APPL PHYS	33	3259	629095	E	9K	***N*** B		50
Lukirskii A	3	OPT SPECTR	16	372	649115	E	9K	***N*** B		50
Nicholson J	2	XRAY ANALYS	7	497	649163	E	9K 0I	N ***B***		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	***N*** B		50
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	N ***B***		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***N*** B		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	***N*** B		50
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	***N B***		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	***N*** B		50
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	***N B***		50
Fomichev V	1	BULLACADSCIUSSR	31	972	679172	E	9A 9K 9V	N ***B***		50
							9A 9K 9V	***N*** B		50
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	***N B***		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	N ***B***		50
Fomichev V	2	J PHYS CHEM SOL	29	1015	689140	E	9K 3N 6H	***N B***		50
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	N ***B***		50
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	***N B***		50
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 3Q	N ***B***		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	***N*** B		50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9K 5D	***N B***		
Fomichev V	3	SOVPHYS SOLIDST	12	123	709217	E	9K 9S 6G 0O	N ***B***		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	N ***B***		50
Nakhmanso M	2	SOVPHYS SOLIDST	12	1966	719042	T	9A 9K	N ***B***		50
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	N ***B***		50
Fomichev V	1	SOVPHYS SOLIDST	13	754	719170	R	9A 9K	***N B***		50
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	N ***C***	50	67
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	N ***Cr***	50	67
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	N ***Cr***	50	67
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	***N*** Cr	50	67
							9K 4L 3Q	***N*** Hf		50
							9K 4L 3Q	***N*** Mo		67
							9K 4L 3Q	***N*** Nb		50
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	N ***Sc***		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	***N*** Sc		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	***N*** Si		57
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	***N*** Si		57
Zhukova I	4	SOVPHYS SOLIDST	10	1097	689258	E	9L 6G 5B 5D 4L	N ***Si***		57
							9K 6G 5B 5D 4L	***N*** Si		57
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	N ***Si***		57
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	N ***T***		

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	N *T*		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	*N* Ta		50
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	N *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	N *Ti*		50
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	N *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	609085	E	9G 9K 3Q	N *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	7	724	629131	E	9K 4L	N *Ti*		
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	N *Ti*		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	*N* Ti		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	*N* Ti		50
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	N *Ti*		50
							5D	N Ti		
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	N *Ti*		50
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	N *Ti*		50
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	*N Ti*		50
							9L 9I 9S 3Q	N *Ti*		50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	N *Ti*		50
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	N *Ti*		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	*N* Ti		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	N *Ti*		50
							9L 9A 5B	N *Ti*		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	N *Ti*		50
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	N *Ti* C	11	21
								N *Ti* C	29	39
								N *Ti* C		50
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	N *V*		50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	N *V*		50
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9K 9S 5B	*N V*		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	*N* V		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	*N* Zr		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	*N* Zr		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	*N* Zr		50
Sen A	1	INDIAN J PHYS	30	415	569025	E	9L 9K 5B	*Na*		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q 0O	*NaF*		50
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G 0O	*Na* F		50
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	Na*O* Cr		14
							9L 9A	NaO *Cr*		29
								NaO Cr		57
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*Nb*		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Nb*		
Bhide V	2	MUNICH SYMP			739017	E	9K 9V	Nb		100
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Nb*B*		67
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	Nb*B*		67
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Nb*C*		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Nb*C*		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	Nb*C*		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	Nb*C*		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	Nb*C*		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Nb*C*		50
							9M 5D	*Nb* C		50
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	Nb*C*		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 4L 9V 5V 3Q	*Nb* C	43	48
							9K 4L 9V 5V 3Q	Nb*C*	43	48
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Nb*N*		50
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	Nb*O*		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Nb*O*		29
							9K 0O	Nb*O*		40

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Nb*O	14	100
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Nd*Al*		67
Horak Z	1	PROC PHYS SOC	77	980	619039	T	9K 9L 9S 0O	*Ne*		
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Ni*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Ni*		
Friedman H	2	PHYS REV	58	400	409002	E	9K 9A	*Ni*		
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	*Ni*		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	*Ni*		
Blokhin M	1	BULLACADSCIUSSR	20	127	569001	E	0D 5D 9E 9K	*Ni*		
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	*Ni*		100
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*Ni*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*Ni*		
Nikiforov I	2	BULLACADSCIUSSR	28	695	649118	E	9K 9S	*Ni*		
Nemoshkalenk V	3	PHYS STAT SOLID	30	703	689298	E	9K 6T	*Ni*		100
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9K	Ni*Al*	18	100
							9L	*Ni*Al	00	89
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	Ni*Al*		25
Fischer D	2	PHYS REV	145	555	669148	E	9K 9S 9I 4L 5B	Ni*Al*	4	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Ni*Al*	04	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Ni*Al*	41	100
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K	Ni*Al*	20	100
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	Ni*Al*		60
Borisov N	2	PHYS METALMETAL	8	44	599004	E	9K 9S 4A	*NiCrFe*		26
								NiCrFe		58
								NiCrFe		16
Borisov N	3	BULLACADSCIUSSR	24	451	609010	E	9K 4A 6P	Ni*CrFe*	50	60 (1)
								Ni*CrFe*		40 (1)
							9K 4A 6P	Ni*CrFe*	0	10 (1)
Friedman H	2	PHYS REV	58	400	409002	E	9K 9A	*NiCu*	20	70
Sasovskay I	3	PHYS METALMETAL	27	78	699352	E	9K 9G	*NiFe*		70
Austin A	2	J SOLID ST CHEM	1	229	709003	E	9K	*NiGe*	17	67 (2)
Kazantsev V	1	BULLACADSCIUSSR	20	97	569003	E	9K 9A	*NiMn*		
Kazantsev V	1	SOV PHYS DOKL	3	1249	599021	E	9K	Ni*Mn*		
Kazantsev V	1	SOV PHYS DOKL	6	786	629103	E	9K 9S	*Ni*Mn		
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Ni*O*		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Ni*O*		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*NiO*		50
							9L	*Ni*O		50
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	Ni*S*		50
Kallne E	2	MUNICH SYMP			739011	E	9K	*NiTi*		
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	Ni*V*		90
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Ni*V*		90
Bearden J	2	PHYS REV	58	396	409000	E	9A 9K 9S	*NiZn*	70	83
Fischer D	1	TECH REPORT AD	713	100	709312	R	9K 9A	*O*		
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	O *Al*		40
Nordfors B	1	PROC PHYS SOC	68A	654	559017	E	9K 9S 9I 4L	O *Al*		40
Nordfors B	1	ARKIV FYSIK	10	279	569024	E	9K 9S 9I 9R 4L	O *Al*		40
Nemnonov S	2	BULLACADSCIUSSR	25	1015	619059	E	9A 9K	O *Al*		40
Baun W	2	PHYS LET	13	36	649133	E	9K 9S 9I	O *Al*		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	*O* Al		40
Fischer D	2	J APPL PHYS	36	534	659070	E	9K 9S	*O Al*		40
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	O *Al*		40
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	O *Al*		40
Senemaud C	1	J PHYSIQUE COLL	27	55	669055	E	9K 9G	O *Al*		40
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9G 9K	O *Al*		40

(1) 1000 °C (2) RT to 300 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Senemaud C	1	J PHYS RADIUM	27C	55	669142	E	9A 9K 9G 4L 9R	O Al		40
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	O Al		40
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	O Al		40
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	O Al		40
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	O Al		40
Fomichev V	1	SOVPHYS SOLIDST	8	2312	679102	E	9A 9K 4L 5D 9R	O Al		40
Nemoshkalenk V	2	UKRAIN PHYS J	12	812	679107	E	9K 9S	O Al		40
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	O Al		40
Senemaud C	1	COMPT REND	265	403	679240	E	9K 9G	O Al		40
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	O Al		40
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G	O Al	40	100
Demekhin V	2	PHYS METALMETAL	26	178	689237	E	9K 9G 9S 4A 4L	O Al		40
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O 9S	O Al		40
Cauchois Y	1	SXS BANDSPECTRA		71	689326	E	9K	O Al		40
Chun H	2	PHYS LET	28A	334	689357	E	9K 4N	O Al		40
							9K	O Al		40
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	O Al		40
							9L 9A	O Al		40
Bonnelle C	2	COMPT REND	268	65	699027	E	9K 9S	O Al		
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	O Al		40
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	O Al		40
Chun H	2	Z NATURFORSCH	24A	930	699133	E	9K 9F 6U 6P	O Al		40
							9K 9L	O Al		40
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	O Al	40	100
Gigl P	3	JELECTROCHEMSOC	117	15	709041	E	9K 4L	O Al		40
Maruno S	2	JAP J APPL PHYS	9	1428	709234	E	9K 4A	O Al		40
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	O Al		40
Gwinner E	2	Z PHYSIK	107	449	379001	E	9K 4A 4B 4N	O B		40
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	O B		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	O B		40
Henke B	2	J APPL PHYS	37	922	669013	E	9K 9G 4L	O B		40
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	O B		40
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	O B		40
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	O B		40
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	O B		40
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	O B		40
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	O B		40
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 3Q	O B		40
Fomichev V	3	SOVPHYS SOLIDST	12	123	709217	E	9K 9S 6G	O B		40
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	O B		40
Nakhmanso M	2	SOVPHYS SOLIDST	12	1966	719042	T	9A 9K	O B		40
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	O B		40
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	O Ba		50
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O Ba	50	100
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	E	9K 9F 9G 9S	O BaFe		20
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	O Be		50
Lukirskii A	2	SOVPHYS SOLIDST	6	33	649089	E	9A 9K 6H	O Be		50
Henke B	2	J APPL PHYS	37	922	669013	E	9K 9G 4L	O Be		50
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	O Be		50
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	O Be		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	O Be		50
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9R	O Be		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	O Be		50
Hayasi Y	1	SCI REP TOHOKUU	51	1	689109	E	9K 9S	O Be		50
Hayasi T	2	X RAY CONF KIEV	1	307	699286	R	9E 9K 3Q	O Be		50

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	O ***Be***		50
Fomichev V	1	SOVPHYS SOLIDST	13	754	719170	R	9A 9K	***O Be***		50
Manne R	1	J CHEM PHYS	52	5733	709201	T	9K 9V 0O 9I 6T	O ***C***	33	50
								O ***C***	33	50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** Ca		50
Finkelshtein L	2	PHYS METALMETAL	22	38	669161	E	9A 9K	O ***Ca***		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** Ca		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	***O*** Cd		50
							9K 0O	***O*** Co	40	43
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	***O Co***		50
							9L	O ***Co***		50
Menshikov A	1	PHYS METALMETAL	14	118	629126	E	9K 0D	O ***Cr***		40
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	O ***Cr***		40
Shuvaev A	2	BULLACADSCIUSSR	27	331	639117	E	9K 9S 4L 4A	O ***Cr***		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** Cr		40
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 2S 2B	O ***Cr***		40
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	O ***Cr***		40
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	E	9L	O ***Cr***		40
							9A 9K	O ***Cr***		40
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E		O ***Cr***	25	40
							9K 9A	***O*** Cr	25	40
							9K 9A	***O*** CrK		14
							9L 9A	O ***Cr*** K		29
								O CrK		57
							9K 9A	***O*** CrNa		14
							9L 9A	O ***Cr*** Na		29
								O CrNa		57
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	***O*** Cu	50	67
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	***O Cu***		50
							9L	O ***Cu***		50
Akopdzhanov R	1	SOVPHYS SOLIDST	12	1095	709228	E	9A 9K 9S 5B	O ***Cu***		67
							9L 5B	O ***Cu***		67
							9K	***O*** Cu		67
							9L	O ***Cu***		67
Holliday J	1	J APPL PHYS	33	3259	629095	E	9K	***O*** Fe		43
Nicholson J	2	XRAY ANALYS	7	497	649163	E	9E 9K	***O*** Fe		43
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** Fe	40	43
Kolobova K	3	PHYS METALMETAL	21	132	669018	E	9K 9G	O ***Fe***		50
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	E	9K 9F 9G 9S	O ***Fe***	40	50
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 4L	O ***Fe***	40	50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	***O Fe***		50
							9L	O ***Fe***		50
Krause H	3	TECH REPORT AD	699	544	709013	E	9K 4L	***O*** Fe		40
							9K 4L	***O*** Fe		43
							9K 4L	***O*** Fe		50
Krause H	3	JELECTROCHEMSOC	117	557	709042	E	9K 9E	***O*** Fe	40	50
Chun H	2	Z NATURFORSCH	24A	930	699133	E	9K 9F 6U 6P	***O*** Ga		40
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	***O*** Ge		33
							9K 4L 5B 9I 0O	***O*** Hf		33
Sumhaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***Hf***	33	100
Chun H	2	Z NATURFORSCH	24A	930	699133	E	9K 9F 6U 6P	***O*** In		40
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** La		60
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***La***	40	100
							9K 5N	O ***Lu***	40	100
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9K 5B 4L 0O	***O Mg***		50
Callon P	1	COMPT REND	248	1985	599009	E	9K	O ***Mg***		50

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Lukirskii A	3	OPT SPECTR	16	372	649115	E	9K	*O* Mg		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	*O* Mg		50
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	O *Mg*		50
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	O *Mg*		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	*O* Mg		50
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	O *Mg*		50
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G	O *Mg*	50	100
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O 9S	O *Mg*		50
Bonnelle C	2	COMPT REND	268	65	699027	E	9K 9S	O *Mg*		
Chun H	I	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	O *Mg*	50	100
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*O Mg*		50
Senemaud C	1	J PHYSIQUE	32	89	719210	E	9E 9K 5D	O *Mg*		
Nicholls C	2	MUNICH SYMP			739012	E	9K	O *Mg*		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	*O* Mn		33
Vainshtein E	3	SOVPHYS SOLIDST	7	1707	669227	E	9K 9G 9S 4L	O *Mn*	33	43
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 4L	O *Mn*	33	50
Krause H	3	TECH REPORT AD	699	544	709013	E	9K 4L	*O* Mn		33
							9K 4L	*O* Mn		40
							9K 4L	*O* Mn		43
							9K 4L	*O* Mn		50
Krause H	3	JELECTROCHEMSOC	117	557	709042	E	9K 9E	*O* Mn		
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	*O* Mo		25
Sumbaev O	5	SOV PHYS JETP	23	572	669093	E	9K 5N	O *Mo*		25
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O *Mo*	25	100
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*O* Nb		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	*O* Nb		29
							9K 0O	*O* Nb		40
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O *Nb*	14	100
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	*O* Ni		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	*O* Ni		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*O Ni*		50
							9L	O *Ni*		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	*O* Pb	50	67
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 4L 5B 0O	O *S* Ca		17
								O *S* Ca		67
								O *S* Ca		16
							9G 9K 4L 5B 0O	O *S* K		29
								O *S* K		57
								O *S* K		14
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	O *Sc*		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	*O* Sc		60
Kern B	1	Z PHYSIK	159	178	609025	E	9K	O *Si*	00	67
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9K 5B	O *Si*		67
Demekhin V	2	BULLACADSCIUSSR	28	733	649139	E	9K 9S 9I 4L	O *Si*		67
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	*O* Si		67
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	O *Si*		67
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	*O* Si		67
Demekhin V	2	BULLACADSCIURRS	31	921	679162	E	9S 9I 9K	O *Si*	00	67
Ershov O	2	SOVPHYS SOLIDST	8	1699	679316	E	9L 6U	O *Si*		67
							9A 9K 9S	*O* Si		67
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	O *Si*		67
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G	O *Si*	00	67
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	O *Si*	00	67
							9K 5D 5B	O *Si*	00	67
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	O *Si*	67	100

a. K-Spectra – Continued

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Urch D	1	J PHYS	3C	1275	709220	T	9S 9K 9L 9I 4L	O ***Si***		80
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	O ***Si***		67
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** Sm		60
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** Sn		50
Sumbaev O	5	SOV PHYS JETP	23	572	669093	E	9K 5N	O ***Sn***	00	67
Gokhale B	3	PHYS REV LET	18	957	679057	E	9G 9K 4L 4N 5D	O ***Sn***		50
							9G 9K 4L 4N 5D	O ***Sn***		67
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	O ***Sr***		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** Sr		50
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***Sr***	00	50
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	O ***T***		
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	O ***T***		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** Ta		60
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***Ta***	00	86
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	***O*** Th		67
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	O ***Ti***		67
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	O ***Ti***		67
Vainshtein E	2	SOV PHYS DOKL	9	697	649143	E	9K 9I	O ***Ti***	46	54
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	***O*** Ti		67
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	O ***Ti***		50
Batyrev V	2	BULLACADSCIUSSR	31	896	679158	E	9K 4L	O ***Ti***	50	67
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	O ***Ti***		50
Chirkov V	3	SOVPHYS SOLIDST	9	873	679243	E	9A 9K 4L	O ***Ti***	50	75 (1)
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9L	O ***Ti***	20	66
							9K	***O*** Ti	20	66
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	R	9A 9K	O ***Ti***		
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	***O Ti***	48	54
							9L 9I 9S 3Q	O ***Ti***	48	54
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	O ***Ti***		50
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	O ***Ti***		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	***O Ti***		50
							9L	O ***Ti***		50
Krause H	3	TECH REPORT AD	699	544	709013	E	9K 4L	***O*** Ti		45
							9K 4L	***O*** Ti		50
							9K 4L	***O*** Ti		60
							9K 4L	***O*** Ti		67
Krause H	3	JELECTROCHEMSOC	117	557	709042	E	9K 9E	***O*** Ti		
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	***O Ti***		50
							9L 9A 5B	O ***Ti***		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** V		29
							9K 0O	***O*** V		60
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	O ***V***	60	71
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	O ***V***	46	55
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	O ***V***	45	55
Fischer D	1	J APPL PHYS	40	4151	699173	E	9K 9R	***O*** V	60	71
								O V	60	67
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	***O V***		50
							9L	O ***V***		50
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	O ***V*** C	23	33
								O ***V*** C	24	26
								O ***V*** C	41	53
Sumbaev O	5	SOV PHYS JETP	23	572	669093	E	9K 5N	O ***W***	00	75
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***W***	00	75
Fischer D	1	APPL SPECTRY	25	263	719069	E	9K 0O	***O*** X X		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	O ***Y***		60

(1) Did not exceed 100 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** Y		60
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***Y***	00	60
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** Yb		60
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	***O*** Zn		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	***O*** Zn		50
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	O ***Zr***		67
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	***O*** Zr		33
							9K 0O	***O*** Zr		67
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	O ***Zr***	00	67
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Os ***V***		25
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B 4N 0O	***P***		
Wiech G	1	X RAY CONF KIEV	2	25	699287	R	9K	***P***		
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	P ***Al***		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	P ***Al***		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	P ***Al***		50
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	***P*** Al		50
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	P ***B***		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	P ***B***		50
Fomichev V	3	J PHYS CHEM SOL	29	1025	689141	E	9K 6H 6U	P ***B***		50
							9L 6H 6U	***P*** B		50
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	***P*** B		50
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	***P B***		50
							9L 9A	***P*** B		50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	***P*** B		
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	***P*** Ga		50
							9L 9K 5B	***P*** In		50
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9A 9K	P ***Ti***		50
Wiech G	1	X RAY CONF KIEV	2	25	699287	R	9K	***P*** X		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	***Pb***		
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Pb***O***	50	67
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	***Pd***		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	***Pd***		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	***Pd***		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	***Pd***		
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	***PdCu***		60
							9K	Pd***Cu***		60
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	Pd***V***		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Pd***V***		25
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	***Pr***		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Pr***Al***		67
							9K 9L	Pr***Si***		33
Kliever W	1	PHYS REV	56	387	399003	E	9K	***Pt***		
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9K	Pt***Al***		67
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	Pt***V***		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Pt***V***		25
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	***Rb***		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	***Rb***		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B 0O	***Rb*** Cl		50
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	***Rh***		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	***Rh***		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	***Rh***		
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	Rh***V***		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Rh***V***		25
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	***Ru***		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	***Ru***		

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Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	***Ru***		
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	Ru***V***		25
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K 0O	***S***		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K 0O	***S***		
Faessler A	2	NATURWISSEN	39	169	529011	E	9G 9K 4L 0O	***S***		
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 4L 5B 0O	***S***		100
Sugiura C	1	J PHYS SOC JAP	30	1766	719075	E	9A 9K 0O	***S***		100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	S ***Al***		50
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 5B 0O	***S*** Ca		50
							9G 9K 4L 5B 0O	***S*** CaO		17
								S CaO		67
								S CaO		16
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	***S*** Co		50
							9A 9K 6P	***S*** Cu		50
							9A 9K 6P	***S*** Fe		50
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 4L 5B 0O	***S*** K O		29
								S K O		57
								S K O		14
							9G 9K 4L 5B 0O	***S*** Mn		50
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	***S*** Mn		50
							9A 9K 6P	***S*** Ni		50
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 5B 0O	***S*** Sr		
							9G 9K 4L 5B 0O	***S*** Sr		50
Miyake S	3	J PHYS SOC JAP	22	670	679099	E	9K 0X 0S 9I 5Q	S ***Zn***		50
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	***S*** Zn		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	Sb***Al***		50
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Sb***Al***		50
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Sb***Al***		50
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	***Sb*** Ga		50
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	Sb***Ge***		00
Domaschew E	2	RONTGENCHEMBIND		70	669177	E	9K 9S 9I 4L	***Sb*** In		50
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	***Sc***		
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K	***Sc***		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	***Sc***		
Nemnonov S	2	PHYS METALMETAL	22	66	669086	R	9K 9A	***Sc***		
Finkelshtein L	2	PHYS METALMETAL	22	45	669105	E	9K 9G 9A 0D 5D	***Sc***		100
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	***Sc***		
							9G 9K 4L 5B 9F	***Sc*** B		50
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	ScB		67
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	Sc***B***		67 (1)
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	***Sc*** C		50
							9G 9K 4L 5B 9F	***Sc*** N		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Sc***N***		50
Zhurakovs E	3	SOV PHYS DOKL	11	814	679117	E	9G 9K 4L 5B 9F	***Sc*** O		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Sc***O***		60
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9A 9K 6P 6F	***ScTi***		75
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	***Se***		
Morlet J	1	BULLACADROYBELG	35	1059	499003	E	9K 9L 9S	***Se***		
Groven L	2	BULLACADROYBELG	37	630	519009	E	9K 9S 9I 5B 0O	***Se***		
Fiocher B	2	Z PHYSIK	204	122	679131	E	9K 9H 9I 4X	***Se***		
Nemoshkalenk V	3	PHYS STAT SOLID	30	703	689298	E	9K 6T	***Se***		100
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	***Se***		
Kern B	1	Z PHYSIK	159	178	609025	E	9K	***Si***		
Demekhin V	2	BULLACADSCIUSSR	28	733	649139	E	9K 9S 9I 4L	***Si***		100 (2)
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	***Si***		100
Lyapin V	1	SOVPHYS SOLIDST	8	2851	679109	E	9L 9K 5B	***Si***		

(1) 640 °C (2) 50 °C to 70 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	*Si*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	*Si*		100
Dodd C	2	J APPL PHYS	39	5377	689319	E	9K 0O	*Si*		100
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Si*		
							9K 5D 5B	*Si*		
Kolobova K	2	PHYS METALMETAL	26	57	689368	E	9K 9S 9I 9S 9G	*Si*		100
Graeffe G	5	PHYS LET	29A	464	699111	E	9K 9G 9S 9I	*Si*		
Aita O	2	J PHYS SOC JAP	27	164	699204	E	9K 5B	*Si*		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 9L 5D	*Si*		
Klima J	1	J PHYS	3C		709004	T	9K 9L 6T	*Si*		100
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*Si*		100
Cauchois Y	1	COMPT REND	231	574	509000	E	9K 6P	SiAl*Mg*		97
								SiAl*Mg*		01
								SiAl*Mg*		02
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Si*B*		86
Kern B	1	Z PHYSIK	159	178	609025	E	9K	*Si*C		50
Demekhin V	2	BULLACADSCIUSSR	28	733	649139	E	9K 9S 9I 4L	*Si*C		50 (1)
							9K	Si*C*		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Si*C*		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Si*C*		50
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	*Si*C		50
Demekhin V	2	BULLACADSCIUSSR	31	921	679162	E	9S 9I 9K	*Si*C		25
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Si*C	00	50
							9K 5D 5B	*Si*C	00	50
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	*Si*C	50	100
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	*Si*C		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*Ca		33
							9K 9L	*Si*Ce		33
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q	Si*Cr*	33	75
Nemnonov S	2	PHYS STAT SOLID	24K	43	679383	E	9K 9A	Si*Cr*		75
Kolobova K	2	PHYS METALMETAL	26	57	689368	R	9K 9S	Si*Cr*	33	50
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	R	9A 9K 5B	Si*Cr*		75
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9K 5B	*Si*Fe	0	75
Kolobova K	2	PHYS METALMETAL	26	57	689368	E	9K 9S 9I 9S 9G	Si*Fe*	28	83
							9K 9S 9I 9S 9G	*Si*Fe	30	50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*La		33
							9K 9L	*Si*Mo		33
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Si*N*		57
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Si*N*		57
Zhukova I	4	SOVPHYS SOLIDST	10	1097	689258	E	9L 6G 5B 5D 4L	*Si*N		57
							9K 6G 5B 5D 4L	Si*N*		57
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*Si*N		57
Kern B	1	Z PHYSIK	159	178	609025	E	9K	*Si*O	00	67
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9K 5B	*Si*O		67
Demekhin V	2	BULLACADSCIUSSR	28	733	649139	E	9K 9S 9I 4L	*Si*O		67 (1)
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Si*O*		67
Demjoohin W	2	RONTGENCHEMBIND		58	669149	E	9K 9S 9I 4L 4A	*Si*O		67
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9K 0I	Si*O*		67
Demekhin V	2	BULLACADSCIURRS	31	921	679162	E	9S 9I 9K	*Si*O	00	67
Ershov O	2	SOVPHYS SOLIDST	8	1699	679316	E	9L 6U	*Si*O		67
							9A 9K 9S	Si*O*		67
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9K 9S	*Si*O		67
Utriainen J	5	Z NATURFORSCH	23A	1178	689210	E	9I 9K 9S 9G	*Si*O	00	67
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Si*O	00	67
							9K 5D 5B	*Si*O	00	67

(1) 50 °C to 70 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Chun H	1	PHYS LET	31A	118	709005	E	9K 9S 4L 0O	*Si*O	67	100
Urch D	1	J PHYS	3C	1275	709220	T	9S 9K 9L 9I 4L	*Si*O		80
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9K	*Si*O		67
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*Pr		33
Nemnonov S	5	PHYS METALMETAL	14	51	629124	R	9A 9K 3O 5W	Si*T*		
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	Si*Ti*	50	67
Kolobova K	2	PHYS METALMETAL	26	57	689368	E	9K 9S 9I 9S 9G	Si*Ti*	50	67
Nemnonov S	2	PHYS STAT SOLID	24K	43	679383	E	9K	Si*V*		25
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	E	9K 5B 7T	Si*V*		25
Kurmaev E	2	PHYS STAT SOLID	43K	49	719056	R	9K 9L 5D	*SiV*		25
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*W		67
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Sm*		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Sm*O*		60
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Sn*		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*Sn*		
Gokhale B	3	PHYS REV LET	18	957	679057	E	9G 9K 4L 4N 5D	*Sn*		
Fischer B	2	Z PHYSIK	204	122	679137	E	9K 9H 9I 4X	*Sn*		
Green M	2	BRITJ APPL PHYS	1D	425	689206		9K 9I 9H	*Sn*		
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Sn*O*		50
Sumbaev O	5	SOV PHYS JETP	23	572	669093	E	9K 5N	*Sn*O	00	67
Gokhale B	3	PHYS REV LET	18	957	679057	E	9G 9K 4L 4N 5D	*Sn*O		50
							9G 9K 4L 4N 5D	*Sn*O		67
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*Sr*		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Sr*		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Sr*		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*Sr*O		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Sr*O*		50
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Sr*O	00	50
Faessler A	2	Z PHYSIK	138	71	549008	E	9G 9K 5B 0O	Sr*S*		
							9G 9K 4L 5B 0O	Sr*S*		50
Vainshtein E	1	DOP ACADNAUKURR	70	21	509011	E	9K 6T 9K	*T*		
Nemnonov S	5	PHYS METALMETAL	14	51	629124	R	9A 9K 3O 5W	*T*Al		
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	*T*B		67
							9K 9A 9L 5D 3Q	*T*C		
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	*T*C		50
Holliday J	1	ADV XRAY ANALYS	13	136	709349	R	9K 4L	T *C*		
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	*T*N		
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	*T*N		50
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	*T*O		
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q	*T*O		50
Nemnonov S	5	PHYS METALMETAL	14	51	629124	R	9A 9K 3O 5W	*T*Si		
Shuvaev A	1	BULLACADSCIUSSR	24	434	609087	T	4L 9E 9K 5N	*T*X		
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	Ta*B*		67
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Ta*C*		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Ta*C*		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	Ta*C*	00	50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Ta*C*	00	50
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	Ta*C*		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Ta*N*		50
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Ta*O*		60
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Ta*O	00	86
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Tb*F*		75
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Te*		
Ovrutskaya R	3	PHYS METALMETAL	15	123	639096	E	9K 4B	Te*Mn*		50
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Th*		

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Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Th*O*		67
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*Ti*		
Parratt L	1	PHYS REV	49	132	369001	E	9K 9S	*Ti*		
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K	*Ti*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Ti*		
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K	*Ti*		100
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	*Ti*		100
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*		100
Vainshtein E	2	SOV PHYS DOKL	4	1050	609085	E	9G 9K	*Ti*		100
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*Ti*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*Ti*		
Nemnonov S	2	PHYS METALMETAL	22	66	669086	R	9K 9A	*Ti*		
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 5D	*Ti*		100
Nemnonov S	2	FIZ METAL METAL	21	476	669228	E	9A 9K	*Ti*		
Batyrev V	2	BULLACADSCIUSSR	31	896	679158	E	9G 9F 9K 4L	*Ti*		100
Nemoshkalenk V	2	BULLACADSCIUSSR	31	1005	679178	E	9K 5D 5B	*Ti*		100
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*		100
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Ti*		
Nemnonov S	2	PHYS METALMETAL	26	43	689236	R	9K 9L	*Ti*		100
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	*Ti*		100
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	*Ti*		100
							9K 9A	*Ti*		100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Ti*Al*	25	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Ti*Al*		50
Kolobova K	2	PHYS METALMETAL	27	69	699351	E	9A 9K 9G 9I 9S	*Ti*Al	0	75
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*B	50	67
Fischer D	2	J APPL PHYS	37	768	669025	E	9K	Ti*B*		67
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Ti*B*		67
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	*Ti*B		67
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	*Ti*B		67
							9K 4L 4A	Ti*B*		67
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K	Ti*B*		67
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	*Ti*B		67
							9K 4L	Ti*B*		67
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*B		67
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9L	*Ti*B		67
							9K	Ti*B*		67
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Ti*B		67
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	*Ti*B		67
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	Ti*B*		67
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	Ti*B*		67
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	Ti*B*		67 (1)
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*Be	50	67
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9A 9K	*Ti*Bi		50
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	*Ti*C		50
Vainshtein E	2	SOV PHYS DOKL	2	251	579039	E	9K	*Ti*C	9	24
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	*Ti*C		50
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*C		50
Vainshtein E	2	SOV PHYS KOKL	48	1050	609085	E	9G 9K 3Q	*Ti*C		50
Vainshtein E	2	SOV PHYS DOKL	7	724	629131	E	9K 4L	*Ti*C		
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	*Ti*C		50
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	*Ti*C		50
							5D	*Ti*C		
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	*Ti*C	45	50
							9K 4L 4A	Ti*C*		50

(1) 710 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	*Ti*C	45	49
							9K 4L	Ti*C*	45	49
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*C		50
Chirkov V	3	SOVPHYS SOLIDST	9	873	679243	E	9A 9K 4L	*Ti*C		50 (1)
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	Ti*C*	0	50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	Ti*C*		50
Zhurakovs E	1	SOV PHYS DOKL	13	578	689166	E	9K	Ti*C*	35	56
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	*Ti*C		50
							9K	Ti*C*		50
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	*Ti*C		
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	Ti*C*		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	*Ti*C		50
							9L 9A 5B	*Ti*C		50
Holliday J	1	ADV XRAY ANALYS	13	136	709349	R	9K 4L	*Ti*C	0	66
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	*Ti*C		50
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	*Ti*C N	11	21
								*Ti*C N	29	39
								*Ti*C N		50
Kallne E	2	MUNICH SYMP			739011	E	9K	*TiCo*		
Nemnonov S	2	PHYS METALMETAL	23	66	679055	E	9A 9K 5D	*TiFe*	0	67
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9C 9S	Ti*Fe*		50
Kallne E	2	MUNICH SYMP			739011	E	9K	*TiFe*		
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	*Ti*H		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	*Ti*H	01	003
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*H		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	609085	E	9C 9K 3Q 9S	*Ti*H	33	58
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	*Ti*H		64
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	*Ti*N		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	599037	E	9K	*Ti*N		50
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*N		50
Vainshtein E	2	SOV PHYS DOKL	4	1050	609085	E	9C 9K 3Q	*Ti*N		50
Vainshtein E	2	SOV PHYS DOKL	7	724	629131	E	9K 4L	*Ti*N		
Vainshtein E	2	SOV PHYS DOKL	7	724	639028	E	9K 9S	*Ti*N		50
Fischer D	2	J CHEM PHYS	43	2075	659092	E	9K 4A	Ti*N*		50
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Ti*N*		50
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	*Ti*N		50
							5D	TiN		
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	*Ti*N		50
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*N		50
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	*TiN*		50
							9L 9I 9S 3Q	*Ti*N		50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Ti*N		50
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	*Ti*N		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Ti*N*		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	*Ti*N		50
							9L 9A 5B	*Ti*N		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	*Ti*N		50
Kallne E	2	MUNICH SYMP			739011	E	9K	*TiNi*		
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	*Ti*O		67
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*O		67
Vainshtein E	2	SOV PHYS DOKL	9	697	649143	E	9K 9I	*Ti*O	46	54
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Ti*O*		67
Nemnonov S	2	PHYS METALMETAL	22	36	669141	E	9A 9K 3Q 9I 9S	*Ti*O		50
Batyrev V	2	BULLACADSCIUSSR	31	896	679158	E	9K 4L	*Ti*O	50	67
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*O		50
Chirkov V	3	SOVPHYS SOLIDST	9	873	679243	E	9A 9K 4L	*Ti*O	50	75 (1)

(1) Did not exceed 100 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	High
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9L	*Ti*O	20	66
							9K	Ti*O*	20	66
Kolobova K	3	SOVPHYS SOLIDST	10	571	689040	R	9A 9K	*Ti*O		
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	*TiO*	48	54
							9L 9I 9S 3Q	*Ti*O	48	54
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*Ti*O		50
Ramqvist L	5	J PHYS CHEM SOL	30	1849	699087	E	9A 9K 3O 3Q	*Ti*O		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*TiO*		50
							9L	*Ti*O		50
Krause H	3	TECH REPORT AD	699	544	709013	E	9K 4L	Ti*O*		45
							9K 4L	Ti*O*		50
							9K 4L	Ti*O*		60
							9K 4L	Ti*O*		67
Krause H	3	JELECTROCHEMSOC	117	557	709042	E	9K 9E	Ti*O*		
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	*TiO*		50
							9L 9A 5B	*Ti*O		50
Kolobova K	2	PHYS METALMETAL	27	69	699351	R	9A 9K	*Ti*P		50
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9A 9K 6P 6F	*TiSc*		75
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*Ti*Si	50	67
Kolobova K	2	PHYS METALMETAL	26	57	689368	E	9K 9S 9I 9S 9G	*Ti*Si	50	67
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9A 9K 6P 6F	*TiV*	50	80
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	*Ti*W C		51
								*Ti*W C		24
								*Ti*W C		25
Shuvaev A	2	BULLACADSCIUSSR	28	838	649149	T	9K 4L 5W	*Ti*X		
Rogosa G	2	PHYS REV	92	1434	539011	E	9K 9L	*U*		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*U*		
Pearsall A	1	PHYS REV	48	133	359001	E	9S 9K	*V*		
Parratt L	1	PHYS REV	49	502	369002	E	9S 9K	*V*		
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*V*		
Zhurakovs E	2	SOV PHYS DOKL	4	1308	599067	R	9K 9S	*V*		100
Nemoshkalenk V	1	SOV PHYS DOKL	8	78	639120	E	9K 9S 9I 4B	*V*		
Best P	1	BULL AM PHYSSOC	9	388	649103	R	9K 9S 4B	*V*		
Nagornyi V	2	SOV PHYS DOKL	11	161	669001	E	9K 9I 9S	*V*		100
Nemnonov S	2	PHYS METALMETAL	22	66	669086	R	9K 9A	*V*		
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	*V*		
Nemnonov S	2	FIZ METAL METAL	21	211	669151	R	9K 5D 9A	*V*		100
Nemoshkalenk V	2	RONTGENCHEMBIND		230	669213	E	9K 9I	*V*		100
Nemoshkalenk V	2	BULLACADSCIUSSR	31	1005	679178	E	9K 5D 5B	*V*		100
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*V*		
Nemnonov S	2	PHYS METALMETAL	26	43	689236	R	9K 9L	*V*		100
Nemnonov S	2	PHYS METALMETAL	25	179	689366	R	9A 9K	*V*		100
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G	*V*		100
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9K	*V*		100
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	*V*		100
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	*V* B	50	67
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9K	V *B*		67
Cuthill J	4	NBS TECH NOTE	565	11	710591	E	9K 5D	V *B*		67
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	V *B*		67
Mc Alister A	4	MUNICH SYMP			739018	E	9K 5B	V *B*		67 (1)
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	*V* C	16	19
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	*V* C	41	47
Holliday J	1	J APPL PHYS	38	4720	679258	E	9K	V *C*	00	50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	*V* C	40	46
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	V *C*	00	50

(1) 760 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	High
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	V C		50
Zhurakovs E	3	INORGANIC MATLS	6	183	709306	E	9L 4A 1H 1B 1T	V C	27	48
							9K 4L	V C	27	48
							9K 4L	V C	29	47
Holliday J	1	ADV XRAY ANALYS	13	136	709349	R	9K 4L	V C	0	50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9K 4L 9V 5V 3Q	V C	42	47
							9L 4L 9V 5V 3Q	V C	42	47
								V C	42	47
Zhurakovs E	8	SOV PHYS DOKL	15	877	719021	E	9L 4A 1H 4L	V C	28	47
							9K 4L	V C	28	47
							9K 9A	V C	28	47
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	V C O	23	33
								V C O	24	26
								V C O	41	53
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G 3Q	V Co		43
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	V Co		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Co		25
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9A 9K 6P 6F	V Cr	40	93
Nagornyi V	2	SOV PHYS DOKL	11	161	669001	E	9K 9I 9S	V Fe	20	50
Nemoshkalenk V	2	RONTGENCHEMBIND		230	669213	E	9K 9I 4L	V Fe	22	57
							9K 9I 4L	V Fe	52	99
Kolobova K	2	PHYS METALMETAL	25	77	689369	E	9K 9G 9S	V Fe		50
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Fe		30
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	E	9K 5B 7T	V Ga		25
							9K 5B 7T	V Ge		25
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	V Ir		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Ir		25
Nemnonov S	2	PHYS METALMETAL	25	179	689366	E	9A 9K 9G	V Mn		50
Nemoshkalenk V	2	UKRAIN PHYS J	13	847	699108	E	9K 9G 3Q	V Mn		81
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	V N		50
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	V N		50
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9K 9S 5B	V N		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	V N		50
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	V Ni		90
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Ni		90
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	V O		29
							9K 0O	V O		60
Dzeganovskii V	2	SOV PHYS DOKL	11	349	669144	E	9K 9G 3Q 4L	V O	60	71
Kurmaev E	4	BULLACADSCIUSSR	31	1011	679179	E	9A 9K 5B 3Q	V O	46	55
Nemnonov S	4	PHYS METALMETAL	25	107	689194	E	9K 9S 5B	V O	45	55
Fischer D	1	J APPL PHYS	40	4151	699173	E	9K 9R	V O	60	71
								V O	60	67
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	V O		50
							9L	V O		50
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Os		25
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	V Pd		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Pd		25
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	V Pt		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Pt		25
Nemnonov S	4	PHYS STAT SOLID	46	77	719169	E	9K	V Rh		25
Nemnonov S	6	BAND STRU SPECT		237	739006	E	9K	V Rh		25
							9K	V Ru		25
Nemnonov S	2	PHYS STAT SOLID	24K	43	679383	E	9K	V Si		25
Nemnonov S	3	PHYS STAT SOLID	39	39	709195	E	9K 5B 7T	V Si		25
Kurmaev E	2	PHYS STAT SOLID	43K	49	719056	R	9K 9L 5D	V Si		25

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Nemnonov S	2	PHYS METALMETAL	22	66	669086	E	9A 9K 6P 6F	V *Ti*	50	80
Kliever W	1	PHYS REV	56	387	399003	E	9K	*W*		
Barrere G	I	COMPT REND	233	376	519001	E	9K 9L	*W*		
Hanson H	2	PHYS REV	105	1483	579048	E	9E 9K	*W*		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*W*		
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	W *B*		71
Vainshtein E	2	SOV PHYS DOKL	2	207	579038	E	9K 9S	W C *Ti*		51
								W C *Ti*		24
								W C *Ti*		25
Sumbaev O	5	SOV PHYS JETP	23	572	669093	E	9K 5N	*W* O	00	75
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*W* O	00	75
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	W *Si*		67
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9K 9S	*X*		
Curie D	1	J PHYS RADIUM	13	505	529007	E	9K 4A 4C	*X*		
Kakuschadse T	1	ANN PHYSIK	3	352	599019	T	9K 9S 5D	*X*		
Blokhin M	2	BULLACADSCIUSSR	24	410	609057	T	9K 9L 9M 9T	*X*		
Kakushadze T	1	ANN PHYSIK	8	353	619044	T	9S 9K 9L 9M 5B	*X*		
Mizuno Y	2	J PHYS SOC JAP	25	627	689233	T	9A 9K 9L	*X*		
Sumbaev O	1	PHYS LET	30A	129	699165	E	9K 4L	*X*		
Stankevic Y	1	SOV PHYS DOKL	15	356	709212	T	9E 9K	*X*		
Holliday J	1	TECH METALS RES	3	325	709345	R	9K 9L 9M 0I	*X*		
Fabian D	1	CRREV SOLST SCI	2	255	719070	R	9K 9L 9M	*X*		
Fischer D	2	J APPL PHYS	38	2404	679122	E	9K 9S 9I 4L 5B	X *Al*		
Gigl P	3	JELECTROCHEMSOC	117	15	709041	E	9K 4L 0O	*X Al*		
Maruno S	2	JAP J APPL PHYS	9	1428	709234	E	9K 4A 0O	X *Al*		
Ehlert R	2	ADV XRAY ANALYS	9	456	669241	E	9K 0O	X *Be*		
Menshikov A	2	BULLACADSCIUSSR	27	402	639116	E	9K 9S 3Q 0O	X *Cr*		
Shuvaev A	2	BULLACADSCIUSSR	27	331	639117	E	9E 9K 9S 4L 4A	X *Cr*		
Menshikov A	2	PHYS METALMETAL	19	52	659088	E	9A 9K 9G 0O	X *Cr*		
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 0O 4L	X *Fe*		
Vainshtein E	3	SOVPHYS SOLIDST	7	1707	669227	E	9K 9G 9S 4L 0O	X *Mg* X		
Kirichok P	2	UKRAIN PHYS J	13	66	689063	E	9K 9S 0O 4L	X *Mn*		
Fischer D	1	APPL SPECTRY	25	263	719069	E	9K 0O	X *O* X		
Wiech G	1	X RAY CONF KIEV	2	25	699287	R	9K	X *P*		
Shuvaev A	1	BULLACADSCIUSSR	24	434	609087	T	4L 9E 9K 5N	X *T*		
Shuvaev A	2	BULLACADSCIUSSR	28	838	649149	T	9K 4L 5W	X *Ti*		
Shuvaev A	1	BULLACADSCIUSSR	25	996	619101	E	9K 9I 0O	X X		
Thompson B	2	DVP APPL SPCTRY	4	23	649156	R	9K 9L 9M	*X X*		
							9K 9L 9M	*X X*		
Lyapin V	2	SOVPHYS SOLIDST	10	1879	699019	T	9K 9L 4B 5B	*X X*		
							9K 9L 4B 5B	*X X*		
Nemnonov S	2	PHYS METALMETAL	27	51	699115	R	9K 9S 3Q 0O	X *X*		
							9K 9S 3Q 0O	*X* X		
Stott M	1	J PHYS	2C	1474	699140	T	9K 5R 5N	*X X*		
							9K 5R 5N	*X X*		
Vainshtein E	3	SOVPHYS SOLIDST	7	1707	669227	E	9K 9G 9S 4L 0O	X X *Mg*		
Fischer D	1	APPL SPECTRY	25	263	719069	E	9K 0O	X X *O*		
Shaw C	2	PHYS REV	50	I006	369006	E	9S 9K	*Y*		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Y*		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Y*		
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*Y* O		60
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Y *O*		60
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Y* O	00	60
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Yb*		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Yb *O*		60
Parratt L	1	PHYS REV	50	1	369003	E	9S 9K	*Zn*		

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*Zn*		
Bearden J	2	PHYS REV	58	387	409001	E	9A 9K 5B 5D 4L	*Zn*		
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9K 9L 9M 9S	*Zn*		
Edamoto I	1	SCI REP TOHOKUU	2A	561	509005	E	9K 9F	*Zn*		
Groven L	2	BULLACADROYBELG	37	630	519009	E	9K 9S 9I 5B 0O	*Zn*		
Sawada M	4	J PHYS SOC JAP	10	647	559022	E	9K 9S	*Zn*		
Shuvaev A	1	BULLACADSCIUSSR	24	434	609087	T	4L 9E 9K 5N	*Zn*		100
Nemoshkalenk V	3	PHYS STAT SOLID	30	703	689298	E	9K 6T	*Zn*		100
Nemoshkalenk V	2	PHYS STAT SOLID	25K	83	689372	E	9K 9Q 9F	*Zn*		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Zn*		
Bearden J	2	PHYS REV	58	387	409001	E	9A 9K 5B 5D 4L	*ZnCu*	21	95
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9K 9S	*Zn*Cu		
Friedel J	1	PHIL MAG	43	153	520032	R	9A 9K 5N 6P	*Zn*Cu		
Neddermey H	1	MUNICH SYMP			739015	E	9K	Zn*Mg*	33	90
							9L	*Zn*Mg	33	90
Bearden J	2	PHYS REV	58	396	409000	E	9A 9K 9S	*ZnNi*	70	83
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 0O	Zn*O*		50
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9K 3Q	Zn*O*		50
Miyake S	3	J PHYS SOC JAP	22	670	679099	E	9K 0X 0S 9I 5Q	*Zn*S		50
Sugiura C	1	JAP J APPL PHYS	10	1120	719186	E	9A 9K 6P	Zn*S*		50
Shaw C	2	PHYS REV	50	1006	369006	E	9S 9K	*Zr*		
Gokhale B	1	COMPT REND	233	937	519008	E	9K 4A	*Zr*		
Slivinsky V	2	PHYS LET	29A	463	699110	E	9I 9K 9G	*Zr*		
Fischer D	2	TECH REPORT AD	807	479	669226	E	9K 9S	Zr*Al*	25	100
Fischer D	2	ADV XRAY ANALYS	10	374	679041	E	9K 9S 9I 6P 4L	Zr*Al*	25	75
Fischer D	2	ADV XRAY ANALYS	9	329	669030	E	9K 6P	Zr*B*		67
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	Zr*B*		67
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	Zr*B*		67
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	Zr*B*		67
							9M 0I	*Zr*B		67
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9K	Zr*B*		67
Hayasi Y	1	SCI REP TOHOKUU	51	43	689367	E	9K 3Q 9S 6P	Zr*B*		33
							6P 9M	*Zr*B		33
Frantsevi A	3	SOV PHYS DOKL	15	970	719050	E	9K 3Q	Zr*B*		67
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	Zr*C*		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	Zr*C*		50
							9M	*Zr*C		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	Zr*C*		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	Zr*C*		50
Zhurakovs E	1	SOV PHYS DOKL	14	168	699149	E	9K 5B	Zr*C*		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9K 4L 4A	Zr*N*		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	Zr*N*		50
Zhurakovs E	2	SOV PHYS DOKL	14	710	709183	E	9K 4L 3Q	Zr*N*		50
Gokhale B	1	ANN PHYSIQUE	7	852	529013	E	9K 4A 6L 5B	*Zr*O		67
Fischer D	1	J CHEM PHYS	42	3814	659064	E	9K 4L 5B 9I 0O	Zr*O*		33
							9K 0O	Zr*O*		67
Sumbaev O	6	SOV PHYS JETP	26	891	689189	E	9K 5N	*Zr*O	00	67

b. L-Spectra

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Norris P	3	BAND STRU SPECT		229	739009	E	9L	*Mg*T		
Hirsh F	2	PHYS REV	44	955	339000	E	9G 9S 9L	*Ag*		
Parratt L	1	PHYS REV	50	598	369004	E	9S 9L 9M 9I 4A	*Ag*		
Burbank C	1	PHYS REV	56	142	399001	E	9S 9L	*Ag*		
Richtmyer R	1	PHYS REV	56	146	399005	T	9L 9S	*Ag*		
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Ag*		
Cauchois Y	1	COMPT REND	235	613	529005	E	9L	*Ag*		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	*Ag*		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	*Ag*		
Nemoshkalenk V	2	RONTGENCHEMBIND		224	669212	E	9L 9I	*Ag*		100
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	*Ag*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Ag*		
Marshall C	5	PHYS LET	28A	579	699002	E	9L 5B	Ag*Al*	0	20
Fabian D	5	X RAY CONF KIEV	I	26	699280	E	9L 8U	Ag*Al*	0	10
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Ag*Al*		63
Fabian D	3	NBS IMR SYMP	3		709114	E	9L	Ag*Al*	0	20
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Ag*Al*		
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Ag*Mg*		25
Norris P	3	BAND STRU SPECT		229	739009	E	9L	Ag*Mg*		
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	*Ag*Pd		12
							9L	*AgPd*		71
							9L	Ag*Pd*		88
Jones H	3	PHYS REV	45	379	349000	T	9L	*Al*		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9L	*Al*		
Cady W	2	PHYS REV	59	381	419001	E	9L	*Al*		
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	*Al*		
Shinoda G	3	J PHYS SOC JAP	7	644	529023	E	9L	*Al*		
Shinoda G	3	TECHREPT OSAKAU	4	1	549018	E	9L 0I	*Al*		
Das Gupta K	3	J SCI INDUS RES	14B	129	559005	E	9K 9L	*Al*		
Sen A	1	INDIAN J PHYS	30	415	569025	E	9L 9K 5B	*Al*		
Shinoda G	3	J PHYS SOC JAP	11	657	569027	E	9L	*Al*		
Hayashi T	2	SCI REP TOHOKUU	44	126	609077	E	9A 9L	*Al*		100
Sagawa T	1	SCI REP TOHOKUU	44	115	609078	E	9L	*Al*		
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	*Al*		100
Lukirskii A	1	BULLACADSCIUSSR	25	926	619055	E	9E 9L	*Al*		100
Rooke G	1	PHYS LET	3	234	639085	E	9S 9L	*Al*		100
Catterall J	2	PHIL MAG	8	897	639087	E	9L 0L	*Al*		(1)
Brouers F	1	PHYS LET	11	297	649112	T	9L 6O 9S 9I	*Al*		
Appleton A	2	PHIL MAG	12	245	659066	E	9L	*Al*		100
Wiech G	1	Z PHYSIK	193	490	669167	E	9L 0S 4L	*Al*		
Wiech G	1	RONTGENCHEMBIND		343	669225	E	9L	*Al*		100
Dimond R	1	PHIL MAG	15	631	679063	E	9R 9A 9L	*Al*		
Fomichev V	1	SOVPHYS SOLIDST	8	2312	679102	E	9A 9L 6O 5D 9R	*Al*		
Brouers F	1	PHYS STAT SOLID	22	213	679124	T	9L 6O 9S 9I	*Al*		
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9L 0I	*Al*		
Appleton A	2	PHIL MAG	16	1031	679278	E	9L	*Al*		
Ellwood E	3	METALS MATLS	1	333	679379	R	9L	*Al*		100
Rooke G	1	J PHYS	1C	767	689153	T	9L 9K 5D 9T	*Al*		
Rooke G	1	J PHYS	1C	776	689154	E	9L 9S 5P	*Al*		
Rooke G	1	SXS BANDSPECTRA		3	689322	E	9L 9S 9T 5B 6T	*Al*		
Sagawa T	1	SXS BANDSPECTRA		29	689323	E	9A 5B 5D 9L	*Al*		
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Al*		
							9K 5D 5B	*Al*		
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9L 9S	*Al*		100

(1) 800 °C to 850 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	**Al**		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 5D	**Al**		
							9L 5D	**Al**		
Hoffmann L	3	Z PHYSIK	229	131	699264	E	9L 9I 9R 0S 7D	**Al**		
Hayasi T	2	X RAY CONF KIEV	1	307	699286	E	9E 9L 6P	**Al**		
Watson L	4	X RAY CONF KIEV	2	56	699289	R	9L 0D	**Al**		
Neddermey H	2	PHYS LET	31A	17	709000	E	9L 9S 9R	**Al**		100
Kobayasi T	2	J PHYS SOC JAP	28	457	709055	T	6T 9E 9L 9T 9R	**Al**		
							4A	**Al**		
Nemnonov S	3	PHYS METALMETAL	30	211	709351	E	9K 9L	**Al**		100
							9K 9L	**Al**		100
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9L	**Al**		100
Smrcka L	1	CZECH J PHYS	21B	683	719187	T	9K 9L 5D	**Al**		100
Sagawa T	1	J PHYSIQUE	32S	186	719204	E	9L 9S	**Al**		100
Watson L	3	J PHYSIQUE	32S	325	719208	E	9L	**Al**		100
Watson L	3	MUNICH SYMP			739014	E	9L	**Al**		
Marshall C	5	PHYS LET	28A	579	699002	E	9L 5B	**Al**Ag	0	20
Fabian D	5	X RAY CONF KIEV	1	26	699280	E	9L 8U	**Al**Ag	0	10
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	**Al**Ag		63
Fabian D	3	NBS IMR SYMP	3		709114	E	9L	**Al**Ag	0	20
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	**Al**Ag		
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	**Al**Au	50	67
Williams M	4	NBS IMR SYMP	3		709081	E	9L 6T	**Al**Au		67 (1)
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	**Al**Au		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	**Al**Ca		67
							9K 9L	**Al**Ce		67
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	**Al**Co		71
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	**Al**Co		
Watson L	3	MUNICH SYMP			739014	E	9L	**Al**Co		50
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	**Al**Cr		70
Watson L	3	MUNICH SYMP			739014	E	9L	**Al**Cr		36
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9L	Al**Cu**	00	96
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	Al**Cu**		66
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	Al**Cu**	2	96
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	Al**Cu**	00	98
Appleton A	1	CONTEMP PHYS	6	50	649132	R	5D 9L	**Al**Cu	19	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	Al**Cu**	00	80
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9L 5B 4L	Al**Cu**	0	80
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	**Al**Cu		67
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	**Al**Cu	50	67
Fabian D	3	NBS IMR SYMP	3		709114	E	9L	**Al**Cu		80
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9L	**Al**Cu	33	67
Watson L	1	BAND STRU SPECT		125	739003	R	9L 9S 5D	**Al**Cu		50
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	**Al**Cu		
Watson L	3	MUNICH SYMP			739014	E	9L	**Al**Cu	20	90
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	**Al**Dy		67
							9K 9L	**Al**Er		67
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	Al**Fe**		25
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	**AlFe**	0	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	Al**Fe**	00	95
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	Al**Fe**	18	28
							9L	**Al**Fe	18	28
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	**Al**Fe	18	28
Nemoshkalenk V	2	UKRAIN PHYS J	13	1022	699240	R	8C 9E 9L	**AlFe**	25	72
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	**Al**Fe		71

(1) 500 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	*Al*Fe		
Watson L	3	MUNICH SYMP			739014	E	9L	*Al*Fe	25	75
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Gd		67
							9K 9L	*Al*La		67
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	*Al*Li		
							9K 0I	Al*Li*		
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	*AlMg*	5	100
Gale B	2	PHIL MAG	1	759	569016	E	9L	*AlMg*		
Appleton A	1	CONTEMP PHYS	6	50	649132	R	5D 9L	*Al*Mg	04	100
							5D 9L	Al*Mg*	00	88
Appleton A	2	PHIL MAG	12	245	659066	E	9L	*AlMg*	42	58
Dimond R	1	PHIL MAG	15	631	679063	E	9R 9A 9L	*AlMg*	43	60
Curry C	1	SXSBANDSPECTRA		173	689333	R	9L 5D	*AlMg*	41	100
Jacobs R	1	PHYS LET	30A	523	699213	T	9L 5D 6T	*AlMg*		50
Neddermey H	1	THESIS MUNCHEN			699355	E	9L 0I	*AlMg*	0	100
Neddermey H	1	NBS IMR SYMP	3		709115	E	9L	*AlMg*	0	100
Neddermey H	1	PHYS LET	38A	329	729045	E	9K 9L	*AlMg*	40	60
Neddermey H	1	BAND STRU SPECT		153	739002	E	9K 9L	*AlMg*	05	60
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	*Al*Mn		75
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	*Al*Mn		75
Watson L	3	MUNICH SYMP			739014	E	9L	*Al*Mn		86
Fomichev V	1	SOVPHYS SOLIDST	10	597	689224	E	9L 6G 4L 5D 6T	*Al*N		50
							9K 6G 4L 5D 6T	Al*N*		50
Hayasi T	2	X RAY CONF KIEV	1	307	699286	E	9E 9L 3Q	*Al*N		50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*Al*N		50
Watson L	3	J PHYSIQUE	32S	325	719208	E	9L	*Al*Nb	25	75
Watson L	1	BAND STRU SPECT		125	739003	R	9L 9S 5D	*Al*Nb	25	75
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	*Al*Nb		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Nd		67
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9K	*Al*Ni	18	100
							9L	Al*Ni*	00	89
Fischer D	2	PHYS REV	145	555	669148	E	9L 9S 9I 4L 5B	Al*Ni*	0	90
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	Al*Ni*	00	90
Cuthill J	3	J APPL PHYS	39	2204	689098	E	9L	*Al*Ni	0	100
							9M	Al*Ni*	0	100
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9M 5D	Al*Ni*	0	100
							9L 5D	*Al*Ni	0	100
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	*Al*Ni		50
Watson L	3	MUNICH SYMP			739014	E	9L	*Al*Ni		48
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	*Al*O		
Wiech G	1	Z PHYSIK	193	490	669167	E	9L 0S 4L	*AlO*		40
Fomichev V	1	SOVPHYS SOLIDST	8	2312	679102	E	9A 9K 4L 5D 9R	*AlO*		40
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	*AlO*		40
							9L 9A	*Al*O		40
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	*Al*O		40
Chun H	2	Z NATURFORSCH	24A	930	699133	R	9K 9L	*Al*O		40
Hayasi T	2	X RAY CONF KIEV	1	307	699286	E	9E 9L 3Q	*Al*O		40
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	Al*P*		50
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9L	*Al*Pd		75
Watson L	3	J PHYSIQUE	32S	325	719208	E	9L	*Al*Pd	50	75
Watson L	1	BAND STRU SPECT		125	739003	R	9L 9S 5D	*Al*Pd		50
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	*Al*Pd		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Al*Pr		67
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*Al*Sb		50
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	*AlSi*	5	12

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	***Al***Ti		75
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	***Al***V		
Watson L	3	MUNICH SYMP			739014	E	9L	***Al***V	10	75
Fabian D	5	X RAY CONF KIEV	1	26	699280	E	9L 8U	***Al***Zn	75	100
Fabian D	3	NBS IMR SYMP	3		709114	E	9L	***Al***Zn		45
Watson L	3	MUNICH SYMP			739014	E	9L	***Al***Zn	45	90
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	***Al***Zr		67
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	***Am***		
Parratt L	1	PHYS REV	50	598	369004	E	9S 9L 9M 9I 4A	***Au***		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	***Au***		
Salgueiro L	2	PORTUGALIE PHYS	3	117	519015	E	9L 9S	***Au***		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	***Au***		
Mande C	1	ANN PHYSIQUE	5	1559	609036	E	9L 9S	***Au***		100
							9L 9M	***Au***		100
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	***Au***		
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Au***Al***	50	67
Williams M	4	NBS IMR SYMP	3		709081	E	9L 6T	Au***Al***		67 (1)
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Au***Al***		
Norris P	3	BAND STRU SPECT		229	739009	E	9L	Au***Mg***		
Mande C	1	ANN PHYSIQUE	5	1559	609036	E	9L 6P	Au***Pd***	21	80
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	Au***Pd***	45	86
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	***B*** N		50
Korsunski M	2	AKADNAUKUKR SSR		15	579023	E	9L 9S	B ***Nb***		67
Korsunski M	2	BULLACADSCIUSSR	24		609026	E	9L 9S 5D 9G	B ***Nb***		67
Fomichev V	3	J PHYS CHEM SOL	29	1025	689141	E	9K 6H 6U	***B*** P		50
							9L 6H 6U	B ***P***		50
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	B ***P***		50
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	***B P***		50
							9L 9A	B ***P***		50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	B ***P***		
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	B ***T***		67
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	B ***Ti***		67
							9K 4L 4A	***B*** Ti		67
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	B ***Ti***		67
							9K 4L	***B*** Ti		67
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	B ***Ti***		67
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9L	B ***Ti***		67
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	B ***Ti***		67
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	B ***Ti***		67
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	B ***V***		67
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	B ***V***		67
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9L	B ***V***		33
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	***Ba***		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	***Bi***		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	***Bi***		
Das Gupta K	3	J SCI INDUS RES	14B	129	559005	E	9K 9L	***C***		
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	C Co***Mn***		20
								C Co***Mn***		
								C Co***Mn***		
							9L	C ***Cr***		40
							9L	C ***Fe***	00	25
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	C ***Fe***		
Barinskii R	2	BULLACADSCIUSSR	21	1375	579004	E	9A 9L	C ***Mo***		33
Korsunski M	2	AKADNAUKUKR SSR		15	579023	E	9L 9S	C ***Nb***		50
Korsunski M	2	BULLACADSCIUSSR	·24		609026	E	9L 9S 5D 9G	C ***Nb***		50

(1) 500 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Nemnonov S	4	PHYS METALMETAL	28	192	699071	E	9L 9S	C *Nb*		46
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 4L 9V 5V 3Q	C *Nb*	43	48
							9K 4L 9V 5V 3Q	*C* Nb	43	48
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	C *Si*		
Wiech G	1	Z PHYSIK	207	428	679261	E	9L 9I 5B 5D	C *Si*		50
Zhukova I	4	SOVPHYS SOLIDST	10	1097	689258	E	9L 4N 6G 5B 5D	C *Si*		50
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	C *Si*	00	50
							9K 5D 5B	C *Si*	00	50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	C *Si*		
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	C *Si*		50
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	C *T*		
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 3Q 4L	C *Ta*	49	50
								C Ta	49	50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	C *Ti*	45	50
							9K 4L 4A	*C* Ti		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	C *Ti*	45	49
							9K 4L	*C* Ti	45	49
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	C *Ti*		50
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	C *Ti*		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	C *Ti*		50
							9K	*C* Ti		50
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9L 5B	C *Ti*		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	C *Ti*		50
							9L 9A 5B	C *Ti*		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	C *Ti*		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	C *Ti*		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	C *Ti*		49
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9L 5B	C *V*		47
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	C *V*		50
Zhurakovs E	3	INORGANIC MATLS	6	183	709306	E	9L 4A 1H 1B 1T	C *V*	27	48
							9K 4L	*C* V	27	48
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	C *V*		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9K 4L 9V 5V 3Q	*C V*	42	47
							9L 4L 9V 5V 3Q	*C* V	42	47
								C V	42	47
Zhurakovs E	8	SOV PHYS DOKL	15	877	719021	E	9L 4A 1H 4L	C *V*	28	47
							9K 4L	*C* V	28	47
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 4L 9V 5V 3Q	C *Zr*		48
Kingston R	1	PHYS REV	84	944	519010	E	9L 5B 5D 0S	*Ca*		(1)
Kingston R	1	TECH REPORT MIT	193	1	519011	E	9L	*Ca*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	*Ca*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ca*Al*		67
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	*Ca* O		50
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	Ca*Si*		50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	Ca*Si*	33	67
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ca*Si*		33
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Cd*		
Nikiforov I	3	ARKIV FYSIK	26	319	649106	E	9L 5B 9R 9I	*Cd*		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	*Cd*		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	*Cd*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Cd*		
Gale B	3	PHIL MAG	20	79	699112	E	9L 3N 1B 6F 8U	Cd*Mg*		25
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	Cd*S*		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Ce*Al*		67
							9K 9L	Ce*Si*		33

(1) RT to 100 °C

Authors: First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition: Low	Composition: High
Bonnelle C	1	J PHYSIQUE COLL	28	65	679084	E	9A 9L 0O	Cl*Cu*		50
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9L 5D 0O 9A	Cl*Cu*	00	50
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0I	*Cl*Na		50
Henke B	2	J APPL PHYS	37	922	669013	E	9L 9G 0O	*Cl*X		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0O	*Cl*X		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Co*		
Holliday J	1	J APPL PHYS	33	3259	629095	E	9L 9S	*Co*		
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Co*		100
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Co*		
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Co*		
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9L 5D	*Co*		
Hanzely S	2	NBS IMR SYMP	3		709116	E	9A 9L 9R 9S	*Co*		100
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Co*Al*		71
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Co*Al*		
Watson L	3	MUNICH SYMP			739014	E	9L	Co*Al*		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	Co*Mn*C		20
								Co*Mn*C		
								Co*Mn*C		
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Co*O		43
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Co*O		43
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*CoO*		50
							9L	*Co*O		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	*Co*O		40
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	Co*Si*	33	67
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	Co*Ti*		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	Co*Ti*		50
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Cr*		
Holliday J	1	J APPL PHYS	33	3259	629095	E	9L 9S	*Cr*		
Bonnelle C	1	COMPT REND	254	2313	629118	E	9L 9A	*Cr*		
Bonnelle C	1	COMPT REND	254	2313	629128	E	9L 9A	*Cr*		100
Lukirskii A	2	BULLACADSCIUSSR	28	749	649144	E	9L 4A 9I 6O	*Cr*		100 (1)
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Cr*		
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	*Cr*		
Brytov I	1	PHYS METALMETAL	24	174	679328	E	9L 4A	*Cr*		
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Cr*		
Nemnonov S	2	PHYS METALMETAL	26	43	689236	R	9K 9L	*Cr*		100
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9A 9L 5B 5D	*Cr*		
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	*Cr*		100
Sommer G	4	PHYS METALMETAL	30	233	709353	T	9L 9M 9A	*Cr*		100
Fischer D	1	PHYS REV	4B	1778	719106	E	9A 9L 9R	*Cr*		100
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9L 9A	*Cr*		100
Hague C	2	MUNICH SYMP			739010	E	9L	*Cr*		100
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Cr*Al*		70
Watson L	3	MUNICH SYMP			739014	E	9L	Cr*Al*		36
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	*Cr*C		40
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	CrK *O*		14
							9L 9A	*Cr*K O		29
								CrK O		57
Borovskii I	2	PHYSMETALMETAL	7	61	599006	E	9K 9A 6P	*Cr*Mo	99	100
							9A 9L	Cr*Mo*	99	100
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	CrNa*O*		14
							9L 9A	*Cr*NaO		29
								CrNaO		57
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	*Cr*O		40
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Cr*O		100
Lukirskii A	2	BULLACADSCIUSSR	28	749	649144	E	9L 4A 9I	*CrO*		40 (1)

(1) 1100 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Cr* O		40
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	E	9L	*Cr* O		40
							9A 9K	*Cr* O		40
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	*Cr* O		40
Hague C	2	MUNICH SYMP			739010	E	9L	*Cr* O		40
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	Cr *Si*		50
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	Cr *Ti*		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	Cr *Ti*		67
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Cs*		
Cauchois Y	1	PHIL MAG	44	173	539002	E	9L	*Cu*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M 9A	*Cu*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Cu*		
Cauchois Y	2	COMPT REND	245	1230	579015	E	9A 9L 9I 9B 6F	*Cu*		
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	*Cu*		
Van Den b C	1	THESISGRONINGEN			579055	E	9A 9L 0I	*Cu*		
Korsunski M	2	ISSLAKADNAUKSSR	3	249	589013	E	9L	*Cu*		
Rumyantse I	2	OPT SPECTR	7	498	599029	E	9L	*Cu*		
Holliday J	1	J APPL PHYS	33	3259	629095	E	9L 9S	*Cu*		
Fujimori K	1	SCI REP TOHOKUU	47	50	639123	E	9L 9S	*Cu*		100
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Cu*		100
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Cu*		
Cauchois Y	2	OPTPROPS ABELES		83	659083	E	9A 9L	*Cu*		100
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9L	*Cu*		100
Nemnonov S	3	PHYS METALMETAL	22	54	669158	E	9L 9G 9A 5B	*Cu*		100
Bonnelle C	1	J PHYSIQUE COLL	28	65	679084	E	9A 9L 9S	*Cu*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9L 9R	*Cu*		100
Liefeld R	1	SXS BANDSPECTRA		133	689330	E	9L 9A 9H 9R 9S	*Cu*		
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9L 5D	*Cu*		
Willens R	4	PHYS REV LET	23	413	699092	E	9L 0T	*Cu*		
Zyryanov V	2	PHYS METALMETAL	27	191	699116	E	9L 9S 0D	*Cu*		100
Goodings D	2	J PHYS C	2	1808	699161	T	9L 9M 5D 5B	*Cu*		
Blokhin M	2	SOV PHYS DOKL	13	1116	699353	E	9L 9S	*Cu*		
Willens R	1	NBS IMR SYMP	3	281	709111	T	9L 6X	*Cu*		100
Nemnonov S	2	PHYS METALMETAL	29	141	709348	E	9A 9L	*Cu*		100
Ribble T	1	PHYS STAT SOLID	6A	473	719074	E	9L 9R 9S	*Cu*		100
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9L	*Cu* Al	00	96
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Cu* Al		66
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	*Cu* Al	2	96
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	*Cu* Al	00	98
Appleton A	1	CONTEMP PHYS	6	50	649132	R	5D 9L	Cu *Al*	19	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	*Cu* Al	00	80
Baun W	2	J APPL PHYS	38	2092	679108	E	9S 9I 9L 5B 4L	*Cu* Al	0	80
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	Cu *Al*		67
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Cu *Al*	50	67
Fabian D	3	NBS IMR SYMP	3		709114	E	9L	Cu *Al*		80
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9L	Cu *Al*	33	67
Watson L	1	BAND STRU SPECT		125	739003	R	9L 9S 5D	Cu *Al*		50
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Cu *Al*		
Watson L	3	MUNICH SYMP			739014	E	9L	Cu *Al*	20	90
Bonnelle C	1	J PHYSIQUE COLL	28	65	679084	E	9A 9L 0O	*Cu* Cl		50
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9L 5D 0O 9A	*Cu* Cl	00	50
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	Cu *Fe*		83
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Cu *Mg*	33	67
Norris P	3	BAND STRU SPECT		229	739009	E	9L	Cu *Mg*		
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	*Cu* Ni	9	79

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Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	***Cu***Ni	09	100
Bonnelle C	1	COMPT REND	248	2324	599003	E	9L	***Cu***O	50	66
Fujimori K	1	SCI REP TOHOKUU	47	50	639123	E	9L 9S	***Cu***O	50	67
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	***Cu***O	50	67
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	***Cu***O	50	67
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9L	***Cu***O		50
							9E 9L	***Cu***O		67
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	***Cu***O	50	100
Bonnelle C	1	J PHYSIQUE COLL	28	65	679084	E	9A 9L	***Cu***O	50	67
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9L 5D	***Cu***O		67
							9L 5B	***Cu***O		67
Zyryanov V	2	PHYS METALMETAL	27	191	699116	E	9L 9S 0D	***Cu***O	50	67
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	***CuO***		50
							9L	***Cu***O		50
Akopdzhanov R	1	SOVPHYS SOLIDST	12	1095	709228	E	9A 9K 9S 5B	***Cu***O		67
							9L 5B	***Cu***O		67
Ribble T	1	PHYS STAT SOLID	6A	473	719074	E	9L 9R 9S	CuO	50	67
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	***CuPd***		60
							9K	***Cu***Pd		60
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	Cu***Si***		75
Harrison R	1	PHIL MAG	22	131	709184	E	9L 5N	Cu***Si***	75	90
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	***Cu***Zn	20	80
Rumyantse I	2	OPT SPECTR	7	498	599029	E	9L	Cu***Zn***		
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	***Cu***Zn	20	100
Nemnonov S	2	PHYS METALMETAL	29	141	709348	E	9L	***CuZn***		52
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Dy***Al***		67
Sakellari P	1	COMPT REND	247	921	589023	E	9L 9S	***Er***		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Er***Al***		67
Sakellari P	1	COMPT REND	236	1767	539012	E	9A 9L	***Eu***		
Sakellari P	1	COMPT REND	236	1547	539013	E	9A 9L	***Eu***		
Sakellari P	1	J PHYS RADIUM	16	422	559020	E	9L 9F 9I 5B 6U	***Eu***		
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	***Eu***O		40
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	F ***Fe***		75
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	F ***La***		75
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	F ***La***		75
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	***Fe***		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	***Fe***		
Holliday J	1	J APPL PHYS	33	3259	629095	E	9L 9S	***Fe***		
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	***Fe***		100
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	***Fe***		
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	***Fe***		
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	***Fe***		
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	***Fe***		
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9A 9L 5B 5D	***Fe***		
Hanzely S	2	NBS IMR SYMP	3		709116	E	9A 9L 9R 9S	***Fe***		100
Smith D	2	J PHYS	4D	147	719004	E	9L 9I 9R	***Fe***		100
Fischer D	1	PHYS REV	4B	1778	719106	R	9L 6G	***Fe***		100
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	***Fe***		100
Holliday J	1	ADV XRAY ANALYS	14	243	719202	E	9L 9R 9A	***Fe***		
Hague C	2	MUNICH SYMP			739010	E	9L	***Fe***		100
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	***Fe***Al		25
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	***FeAl***	0	100
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	***Fe***Al	00	95
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	***Fe***Al	18	28
							9L	Fe***Al***	18	28
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	Fe***Al***	18	28

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Nemoshkalenk V	2	UKRAIN PHYS J	13	1022	699240	R	8C 9E 9L	*FeAl*	25	72
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Fe*Al*		71
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Fe*Al*		
Watson L	3	MUNICH SYMP			739014	E	9L	Fe*Al*	25	75
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	*Fe*C	00	25
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	*Fe*C		
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	*Fe*Cu		83
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	*Fe*F		75
Solomon J	2	APPL SPECTRY	25		719192	E	9L 9A	*Fe*Ni		40
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	*Fe*O		50
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	*Fe*O		43
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Fe*O		43
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Fe*O	40	43
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	*Fe*O	40	50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*FeO*		50
							9L	*Fe*O		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	*Fe*O		40
Smith D	2	J PHYS	4D	147	719004	E	9L 9I 9R	*Fe*O		40
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	*Fe*O	40	50
Hague C	2	MUNICH SYMP			739010	E	9L	*Fe*O		40
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	*Fe*S		50
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	*Fe*S	33	50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	Fe*S*		67
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	*Fe*Si	75	91
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	Fe*Si*		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	Fe*Ti*		50
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	*Ga*		
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	Ga*Ge*		00
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	Ga*P*		50
Sakellari P	1	COMPT REND	236	1767	539012	E	9A 9L	*Gd*		
Sakellari P	1	COMPT REND	236	1244	539014	E	9A 9L	*Gd*		
Sakellari P	1	J PHYS RADIUM	16	422	559020	E	9L 9F 9I 5B 6U	*Gd*		
Nigam A	2	INDIAN J PAPHYS	6	644	689296	E	9L	*Gd*		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Gd*Al*		67
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	*Gd*O		40
Borovikov G	2	BULLACADSCIUSSR	21	1426	579013	E	9L	*Ge*		
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	*Ge*		
Lyapin V	1	SOVPHYS SOLIDST	8	2851	679109	E	9L 9K 5B	*Ge*		
Deslattes R	1	PHYS REV	172	625	689213	E	9L 9K 0X	*Ge*		
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	*Ge*		100
Blokhin M	4	SOVPHYS SOLIDST	11	12	699119	E	9L 9S	*Ge*		100
Klima J	1	J PHYS	3C		709004	T	9K 9L 9M 6T	*Ge*		100
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	*Ge*Ga		00
Borovikov G	2	BULLACADSCIUSSR	21	1426	579013	E	9L	*Ge*O		33
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	*Ge*Sb		00
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	H *La*	67	75
Bos W	1	INTL MEET H MET		665	720574	E	9L	H *La*	68	69
Bos W	1	BERBUN PHYSCHEM	76	846	720575	E	9L 4B	H *La*	67	75
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	H *La*	67	75
Gilberg E	1	MUNICH SYMP			739019	E	9L	H *Nb*	40	70
Das Gupta K	1	APPL PHYS LET	6	104	659057	E	9L 9S 0Y	H *Pd*		40
Morlet J	1	BULLACADROYBELG	35	1059	499003	E	9K 9L 9S	*Hg*		
Barrere G	1	COMPT REND	233	376	519001	E	9K 9L	*Hg*		
Deodhar G	2	J SCI INDUS RES	11B	1	529008	E	9L	*Hg*		
Deodhar G	2	NATURE	169	889	529009	E	9L	*Hg*		

b. L-Spectra—Continued

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Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	***Hg***		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	***Hg***		
Sakellari P	1	COMPT REND	236	1767	539012	E	9A 9L	***Ho***		
Sakellari P	1	COMPT REND	236	1014	539015	E	9A 9L	***Ho***		
Sakellari P	1	J PHYS RADIUM	16	422	559020	E	9L 9F 9I 5B 6U	***Ho***		
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	***Ho*** O		40
Randall C	1	PHYS REV	57	786	409004	E	9S 9L 0O	***I***		
							9S 9L	***In***		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	***In***		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	***In***		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	***In***		
Rooke G	1	SXS BANDSPECTRA		185	689334	E	9L 5D 5B	In***Na***		
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	In***P***		50
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	***Ir***		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	***Ir***		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	***Ir***		
Nigam A	1	INDIAN J PAPHYS	1	53	639097	E	9L 9Q	***Ir***		
							9L	***Ir***		100
Kingston R	1	PHYS REV	84	944	519010	E	9L 5B 5D 0S	***K***		(1)
Kingston R	1	TECH REPORT MIT	193	1	519011	E	9L	***K***		
Crisp R	1	PHIL MAG	5	1161	609014	E	9L 9M	***K***		
Rooke G	1	SXS BANDSPECTRA		3	689322	E	9L 9S 9T 5B 6T	***K***		
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	K ***Mn*** O		17
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	K ***O*** Cr		14
							9L 9A	K O ***Cr***		29
								K O Cr		57
Moore H	1	PROC PHYS SOC	70A	466	579028	E	9L 0O	***Kr***		
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	***La***		100
Bos W	1	INTL MEET H MET		665	720574	E	9L	***La***		100
Bos W	1	BERBUN PHYSCHEM	76	846	720575	E	9L	***La***		100
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	***La***		100
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	La***Al***		67
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	***La*** F		75
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	***La*** F		75
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	***La*** H	67	75
Bos W	1	INTL MEET H MET		665	720574	E	9L	***La*** H	68	69
Bos W	1	BERBUN PHYSCHEM	76	846	720575	E	9L 4B	***La*** H	67	75
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	***La*** H	67	75
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	***La*** O		40
Bos W	1	INTL MEET H MET		665	720574	E	9L	***La*** O		40
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	***La*** O		40
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	La***Si***		33
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	Li***Al***		
							9K 0I	***Li*** Al		
Catterall J	2	PHIL MAG	4	1164	599008	E	9K	***Li*** Mg	05	55
							9L	Li***Mg***	05	55
Crisp R	2	PHIL MAG	5	1205	609016	E	9K	***Li*** Mg	15	70
							9L	Li***Mg***	15	70
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	***Li*** Mg	15	70
							9L 0I	Li***Mg***	15	70
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9L	***Lu***		
Jones H	3	PHYS REV	45	379	349000	T	9L	***Mg***		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9L	***Mg***		
Cady W	2	PHYS REV	59	381	419001	E	9L	***Mg***		
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	***Mg***		
Sen A	1	INDIAN J PHYS	30	415	569025	E	9L 9K 5B	***Mg***		

(1) RT to 100 °C

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Crisp R	1	AUSTRAL J PHYS	11	449	589006	E	9L	***Mg***		
Catterall J	2	PHIL MAG	4	1164	599008	E	9L	***Mg***		100
Crisp R	2	PHIL MAG	5	1205	609016	E	9L	***Mg***		
Sagawa T	1	SCI REP TOHOKUU	45	232	619095	E	9L 9S	***Mg***		100
Rooke G	1	PHYS LET	3	234	639085	E	9S 9L	***Mg***		100
Brouers F	1	PHYS LET	11	297	649112	T	9L 6O 9S 9I	***Mg***		
Appleton A	2	PHIL MAG	12	245	659066	E	9L	***Mg***		100
Dimond R	1	PHIL MAG	15	631	679063	E	9R 9A 9L	***Mg***		
Brouers F	1	PHYS STAT SOLID	22	213	679124	T	9L 6O 9S 9I	***Mg***		
Appleton A	2	PHIL MAG	16	1031	679278	E	9L	***Mg***		
Watson L	3	J SCI INSTR	44	506	679289	E	9L 0I	***Mg***		
Rooke G	1	J PHYS	1C	776	689154	E	9L 9S 5P	***Mg***		
Rooke G	1	SXS BANDSPECTRA		3	689322	E	9L 9S 9T 5B 6T	***Mg***		
Watson L	3	SXS BANDSPECTRA		45	689324	E	9L 5D 9F 9S	***Mg***		
Fomichev V	2	SOVPHYS SOLIDST	10	2992	699089	E	9A 9L	***Mg***		
Gale B	3	PHIL MAG	20	79	699112	E	9L 3N 1B 6F 8U	***Mg***		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 9L 5D	***Mg***		
Watson L	4	X RAY CONF KIEV	2	56	699289	R	9L 0D	***Mg***		
Kobayasi T	2	J PHYS SOC JAP	28	457	709055	T	6T 9E 9L 9T 9R	***Mg***		
							4A	***Mg***		
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	***Mg***Ag		25
Norris P	3	BAND STRU SPECT		229	739009	E	9L	***Mg***Ag		
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	***MgAl***	5	100
Gale B	2	PHIL MAG	1	759	569016	E	9L	***MgAl***		
Appleton A	1	CONTEMP PHYS	6	50	649132	R	5D 9L	Mg***Al***	04	100
							5D 9L	***Mg***Al	00	88
Appleton A	2	PHIL MAG	12	245	659066	E	9L	***MgAl***	42	58
Dimond R	1	PHIL MAG	15	631	679063	E	9R 9A 9L	***MgAl***	43	60
Curry C	1	SXSBANDSPECTRA		173	689333	R	9L 5D	***MgAl***	41	100
Jacobs R	1	PHYS LET	30A	523	699213	T	9L 5D 6T	***MgAl***		50
Neddermey H	1	THESIS MUNCHEN			699355	E	9L 0I	***MgAl***	0	100
Neddermey H	1	NBS IMR SYMP	3		709115	E	9L	***MgAl***	0	100
Neddermey H	1	PHYS LET	38A	329	729045	E	9K 9L	***MgAl***	40	60
Neddermey H	1	BAND STRU SPECT		153	739002	E	9K 9L	***MgAl***	05	60
Norris P	3	BAND STRU SPECT		229	739009	E	9L	***Mg***Au		
Gale B	3	PHIL MAG	20	79	699112	E	9L 3N 1B 6F 8U	***Mg***Cd		25
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	***Mg***Cu	33	67
Norris P	3	BAND STRU SPECT		229	739009	E	9L	***Mg***Cu		
Catterall J	2	PHIL MAG	4	1164	599008	E	9K	Mg***Li***	05	55
							9L	***Mg***Li	05	55
Crisp R	2	PHIL MAG	5	1205	609016	E	9K	Mg***Li***	15	70
							9L	***Mg***Li	15	70
Crisp R	1	THESIS U W AUST		1	619046	E	9K 0I	Mg***Li***	15	70
							9L 0I	***Mg***Li	15	70
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	Mg***Ni***		67
							9L	***Mg***Ni		67
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	***Mg***Ni	67	100
Norris P	3	BAND STRU SPECT		229	739009	E	9L	***Mg***Ni		
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	***Mg***O		
Fomichev V	3	SOVPHYS SOLIDST	10	2421	689249	E	9A 9L 5B	***Mg***O		50
Neddermey H	1	THESIS MUNCHEN			699355	E	9L 0I	***Mg***O		50
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	***MgSi***	10	50
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	Mg***Si***		67
Harrison R	1	PHIL MAG	22	131	709184	E	9L 5N	Mg***Si***		67
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	Mg***Si***		67

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First	No.								Low	High
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	*Mg*Sn		67
Gale B	1	PROC PHYS SOC	84	933	649114	E	9L 0D 6F 4A	*Mg*X		
Neddermey H	1	MUNICH SYMP			739015	E	9K	*Mg*Zn	33	90
							9L	Mg*Zn*	33	90
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Mn*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Mn*		
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Mn*		
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	*Mn*		
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	*Mn*		100
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	Mn*Al*		75
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Mn*Al*		75
Watson L	3	MUNICH SYMP			739014	E	9L	Mn*Al*		86
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	*Mn*C Co		20
								*Mn*C Co		
								*Mn*C Co		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	*Mn*O		33
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Mn*O		33
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	*Mn*O		40
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	*Mn*O	33	50
							9L	*Mn*O K		17
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	Mn*Si*		50
Hirsh F	2	PHYS REV	44	955	339000	E	9G 9S 9L	*Mo*		
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Mo*		
Rogosa G	2	PHYS REV	92	1434	539011	E	9K 9L	*Mo*		
Borovskii I	5	BULLACADSCIUSSR	21	1389	579060	E	9A 9L 9S	*Mo*		100
Callon P	1	COMPT REND	248	2085	599010	E	9A 9L	*Mo*		
Shveitser I	3	BULLACADSCIUSSR	28	705	649122	R	9E 9L	*Mo*		
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	*Mo*		
Nemoshkalenk V	2	BULLACADSCIUSSR	31	999	679177	E	9L 5D	*Mo*		100
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Mo*		
Barinskii R	2	BULLACADSCIUSSR	21	1375	579004	E	9A 9L	*Mo*C		33
Borovskii I	2	PHYSMETALMETAL	7	61	599006	E	9K 9A 6P	Mo*Cr*	99	100
							9A 9L	*Mo*Cr	99	100
Barinskii R	2	BULLACADSCIUSSR	21	1375	579004	E	9A 9L	*Mo*O		25
							9A 9L	*Mo*O		33
							9A 9L	*Mo*S		25
							9A 9L	*Mo*S		33
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Mo*Si*		33
Fomichev V	1	SOVPHYS SOLIDST	10	597	689224	E	9L 6G 4L 5D 6T	N *Al*		50
							9K 6G 4L 5D 6T	*N* Al		50
Hayasi T	2	X RAY CONF KIEV	1	307	699286	E	9E 9L 3Q	N *Al*		50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	N *Al*		50
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9K	N *B*		50
Korsunski M	2	BULLACADSCIUSSR	24		609026	E	9L 9S 5D 9G	N *Nb*		50
Korsunski M	2	BULLACADSCIUSSR	27	371	639118	E	9L	N *Nb*	02	03
Nemnonov S	4	PHYS METALMETAL	28	192	699071	E	9L 9S	N *Nb*		50
							9L 9S	*N* O		50
Zhukova I	4	SOVPHYS SOLIDST	10	1097	689258	E	9L 6G 5B 5D 4L	N *Si*		57
							9K 6G 5B 5D 4L	*N* Si		57
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	N *Si*		57
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	N *T*		
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	N *Ti*		50
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	N *Ti*		50
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	*N Ti*		50
							9L 9I 9S 3Q	N *Ti*		50

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Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	N ***Ti***		50
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	N ***Ti***	17	50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	N ***Ti***		50
							9L 9A 5B	N ***Ti***		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	N ***Ti***		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	N ***Ti***		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	N ***Ti***	17	44
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	N ***V***		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	N ***V***		50
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9L	***Na***		
Cady W	2	PHYS REV	59	381	419001	E	9L	***Na***		
Landsberg P	1	PROC PHYS SOC	62A	806	499007	T	9L 9T	***Na***		
Sen A	1	INDIAN J PHYS	30	415	569025	E	9L 9K 5B	***Na***		
Crisp R	2	PHIL MAG	6	365	619025	E	9L	***Na***		
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	***Na***		100
Sagawa T	1	SCI REP TOHOKUU	45	232	619095	E	9L 9S	***Na***		100
Rooke G	1	PHYS LET	3	234	639085	E	9S 9L	***Na***		100
Pirenne J	2	PHYSICA	30	277	649108	T	9L 9T	***Na***		
Brouers F	1	PHYS LET	11	297	649112	T	9L 6O 9S 9I	***Na***		
Appleton A	1	CONTEMP PHYS	6	50	649132	R	9L 5D	***Na***		
Allotey F	1	PHYS REV	157	467	679087	T	9L 5N 5B 5D	***Na***		
Bose S	3	BULL AM PHYSSOC	12	531	679093	T	9L 5Z	***Na***		
Bose S	1	THESIS U MD		1	679114	T	9L	***Na***		
Brouers F	1	PHYS STAT SOLID	22	213	679124	T	9L 6O 9S 9I	***Na***		
Rooke G	1	J PHYS	1C	776	689154	E	9L 9S 5P	***Na***		
Morita A	2	J PHYS SOC JAP	25	1060	689276	T	9L	***Na***		
Rooke G	1	SXS BANDSPECTRA		3	689322	E	9L 9S 9T 5B 6T	***Na***		
Glick A	3	SXS BANDSPECTRA		319	689344	T	9I 5Z 9S 9L	***Na***		
Ausman G	2	PHYS REV	183	687	699001	T	9L 9I	***Na***		
Longe P	2	PHYS REV	177	526	699009	T	9L 9I 9S	***Na***		
Ausman G	1	THESIS U MD		1	699118	T	9L 9S 6O 6Q	***Na***		
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9L 5D	***Na***		
Kobayasi T	2	J PHYS SOC JAP	28	457	709055	T	6T 9E 9L 9T 9R	***Na***		
							4A	***Na***		
Mc Mullen T	1	J PHYS	3C	2178	709123	T	9L 9I 6T 5B	***Na***		
Brouers F	3	SOLIDSTATE COMM	8	1423	709185	T	9A 9I 6Q 9L	***Na***		
Bergersen B	3	BULL AM PHYSSOC	15	1355	709329	T	9A 9L	***Na***		
Bergersen B	3	J PHYS	1F	945	719001	T	9A 9I 6Q 9L	***Na***		
Bergersen B	3	PREPRINT			719003	T	9L 9A	***Na***		100
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0I	Na***Cl***		50
Rooke G	1	SXS BANDSPECTRA		185	689334	E	9L 5D 5B	***Na*** In		
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	Na***O*** Cr		14
							9L 9A	NaO ***Cr***		29
								NaO Cr		57
Fischer D	1	APPL SPECTRY	25	263	719069	E	9L 9A 0O	NaO ***V***		37
							9L 9A 0O	NaO ***V***		50
							9L 9A 0O	NaO ***V***		13
Korsunski M	2	BULLACADSCIUSSR	24		609026	E	9L 9S 5D 9G	***Nb***		
Korsunski M	2	BULLACADSCIUSSR	25	1033	619048	E	9L 9S	***Nb***		
Korsunski M	2	BULLACADSCIUSSR	25	1036	619098	T	9E 9L 0D	***Nb***		100
Korsunski M	2	SOV PHYS DOKL	7	141	629127	R	9L 5D	***Nb***		
Korsunski M	2	BULLACADSCIUSSR	27	819	639119	R	9E 9L	***Nb***		
Shveitser I	3	BULLACADSCIUSSR	28	705	649122	R	9E 9L	***Nb***		
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	***Nb***		
Nemoshkalenk V	2	BULLACADSCIUSSR	31	999	679177	E	9L 9I 5D	***Nb***		100
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	***Nb***		

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Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L	*Nb*		100
Hague C	2	BAND STRU SPECT		251	739004	E	9L	*Nb*		100
Gilberg E	1	MUNICH SYMP			739019	E	9L	*Nb*		100
Watson L	3	J PHYSIQUE	32S	325	719208	E	9L	Nb*Al*	25	75
Watson L	1	BAND STRU SPECT		125	739003	R	9L 9S 5D	Nb*Al*	25	75
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Nb*Al*		
Korsunski M	2	AKADNAUKUKR SSR		15	579023	E	9L 9S	*Nb*B		67
Korsunski M	2	BULLACADSCIUSSR	24		609026	E	9L 9S 5D 9G	*Nb*B		67
Korsunski M	2	AKADNAUKUKR SSR		15	579023	E	9L 9S	*Nb*C		50
Korsunski M	2	BULLACADSCIUSSR	24		609026	E	9L 9S 5D 9G	*Nb*C		50
Nemnonov S	4	PHYS METALMETAL	28	192	699071	E	9L 9S	*Nb*C		46
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 4L 9V 5V 3Q	*Nb*C	43	48
							9K 4L 9V 5V 3Q	Nb*C*	43	48
Gilberg E	1	MUNICH SYMP			739019	E	9L	*Nb*H	40	70
Korsunski M	2	BULLACADSCIUSSR	24		609026	E	9L 9S 5D 9G	*Nb*N		50
Korsunski M	2	BULLACADSCIUSSR	27	371	639118	E	9L	*Nb*N	02	03
Nemnonov S	4	PHYS METALMETAL	28	192	699071	E	9L 9S	*Nb*N		50
Hague C	2	BAND STRU SPECT		251	739004	E	9L	*Nb*Sn		75
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Nd*Al*		67
Horak Z	1	PROC PHYS SOC	77	980	619039	T	9K 9L 9S 0O	*Ne*		
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	*Ng*		100
Cauchois Y	1	PHIL MAG	44	173	539002	E	9L	*Ni*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M 9A	*Ni*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Ni*		
Cauchois Y	2	COMPT REND	245	1230	579015	E	9A 9L 9I 9B 6F	*Ni*		
Van Den b C	1	THESISGRONINGEN			579055	E	9A 9L 0I	*Ni*		
Holliday J	1	J APPL PHYS	33	3259	629095	E	9L 9S	*Ni*		
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Ni*		100
Chopra D	2	BULL AM PHYSSOC	9	404	649104	R	9L 9R 9I 4B	*Ni*		
Liefeld R	2	BULL AM PHYSSOC	9	404	649105	R	9L 9T 9R	*Ni*		
Chopra D	1	THESIS NM STATE			649160	E	9L 9S 9R	*Ni*		100
Chopra D	1	THESIS N MEX ST	1	1	649161	E	9L 9R 9S 9A	*Ni*		
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Ni*		
Cauchois Y	2	OPTPROPS ABELES		83	659083	E	9A 9L	*Ni*		100
Nemnonov S	3	PHYS METALMETAL	21	44	669066	E	9L	*Ni*		
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9L	*Ni*		100
Cuthill J	4	PHYS REV	164	1006	679300	E	9M 9L 5D 9S	*Ni*		100
Liefeld R	1	SXS BANDSPECTRA		133	689330	E	9L 9A 9H 9R 9S	*Ni*		
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9L 9M 5D 5W 6T	*Ni*		100
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9A 9L 5B 5D	*Ni*		
Chopra D	1	PHYS REV	1A	230	709035	E	9A 9L 9R	*Ni*		100 (1)
Holliday J	1	ADV XRAY ANALYS	13	136	709349	E	9L 9R	*Ni*		100
Willens R	2	PHYS REV	5B	1891	729042	E	9L 6X 0T	*Ni*		100
Farineau J	1	J PHYS RADIUM	10	327	399007	E	9K	Ni*Al*	18	100
							9L	*Ni*Al	00	89
Fischer D	2	PHYS REV	145	555	669148	E	9L 9S 9I 4L 5B	*Ni*Al	0	90
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	*Ni*Al	00	90
Cuthill J	3	J APPL PHYS	39	2204	689098	E	9L	Ni*Al*	0	100
							9M	*Ni*Al	0	100
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9M 5D	*Ni*Al	0	100
							9L 5D	Ni*Al*	0	100
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Ni*Al*		50
Watson L	3	MUNICH SYMP			739014	E	9L	Ni*Al*		48
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	Ni*Cu*	9	79
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	Ni*Cu*	09	100

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Solomon J	2	APPL SPECTRY	25		719192	E	9L 9A	Ni*Fe*		40
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	*Ni*Mg		67
							9L	Ni*Mg*		67
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	Ni*Mg*	67	100
Norris P	3	BAND STRU SPECT		229	739009	E	9L	Ni*Mg*		
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	*Ni*O		50
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	*Ni*O		50
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9L	*Ni*O		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*NiO*		50
							9L	*Ni*O		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	*Ni*O		40
Volkov V	2	PHYS METALMETAL	25	185	689196	E	9A 9L	*Ni*Si	33	100
Volkov V	2	PHYS METALMETAL	26	193	689364	E	9L	*Ni*Ti	50	75
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	Ni*Ti*	33	67
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	Ni*Ti*	33	75
Volkov V	2	PHYS METALMETAL	26	193	689364	E	9L	*Ni*V	89	100
Curry C	1	SXSBANDSPECTRA		173	689333	R	9L 5D	*NiZn*	52	64
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	*Np*		
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	O *Al*		
Wiech G	1	Z PHYSIK	193	490	669167	E	9L 0S 4L	*O Al*		40
Fomichev V	1	SOVPHYS SOLIDST	8	2312	679102	E	9A 9K 4L 5D 9R	*O Al*		40
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	*O Al*		40
							9L 9A	O *Al*		40
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	R	9K 9L	O *Al*		40
Chun H	2	Z NATURFORSCH	24A	930	699133	R	9K 9L	O *Al*		40
Hayasi T	2	X RAY CONF KIEV	1	307	699286	E	9E 9L 3Q	O *Al*		40
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	O *Ca*		50
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	O *Co*		43
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O *Co*		43
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	*O Co*		50
							9L	O *Co*		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	O *Co*		40
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	O *Cr*		40
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	O *Cr*		100
Lukirskii A	2	BULLACADSCIUSSR	28	749	649144	E	9L 4A 9I	*O Cr*		40
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O *Cr*		40
Nemoshkalenk V	4	UKRAIN PHYS J	13	837	699109	E	9L	O *Cr*		40
							9A 9K	O *Cr*		40
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	O *Cr*		40
Hague C	2	MUNICH SYMP			739010	E	9L	O *Cr*		40
Fischer D	1	J PHYS CHEM SOL	32	2455	719147	E	9K 9A	*O* CrK		14
							9L 9A	O *Cr*K		29
								O CrK		57
							9K 9A	*O* CrNa		14
							9L 9A	O *Cr*Na		29
								O CrNa		57
Bonnelle C	1	COMPT REND	248	2324	599003	E	9L	O *Cu*	50	66
Fujimori K	1	SCI REP TOHOKUU	47	50	639123	E	9L 9S	O *Cu*	50	67
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	O *Cu*	50	67
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O *Cu*	50	67
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9L	O *Cu*		50
							9E 9L	O *Cu*		67
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	O *Cu*	50	100
Bonnelle C	1	J PHYSIQUE COLL	28	65	679084	E	9A 9L	O *Cu*	50	67
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9L 5D	O *Cu*		67
							9L 5B	O *Cu*		67

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Zyryanov V	2	PHYS METALMETAL	27	191	699116	E	9L 9S 0D	O Cu	50	67
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	O Cu		50
							9L	O Cu		50
Akopdzhanov R	1	SOVPHYS SOLIDST	12	1095	709228	E	9A 9K 9S 5B	O Cu		67
							9L 5B	O Cu		67
Ribble T	1	PHYS STAT SOLID	6A	473	719074	E	9L 9R 9S	O Cu	50	67
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	O Eu		40
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	O Fe		50
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	O Fe		43
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	O Fe		43
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O Fe	40	43
Fischer D	2	TECH REPORT AD	807	479	669226	E	9L	O Fe	40	50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	O Fe		50
							9L	O Fe		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	O Fe		40
Smith D	2	J PHYS	4D	147	719004	E	9L 9I 9R	O Fe		40
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	O Fe	40	50
Hague C	2	MUNICH SYMP			739010	E	9L	O Fe		40
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	O Gd		40
Borovikov G	2	BULLACADSCIUSSR	21	1426	579013	E	9L	O Ge		33
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	O Ho		40
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	O K Mn		17
Sarma A	2	J PHYS CHEM SOL	32	1423	719191	E	9L 9I	O La		40
Bos W	1	INTL MEET H MET		665	720574	E	9L	O La		40
Sarma A	2	J PHYS CHEM SOL	33	935	729039	E	9L 9I	O La		40
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	O Mg		
Fomichev V	3	SOVPHYS SOLIDST	10	2421	689249	E	9A 9L 5B	O Mg		50
Neddermey H	1	THESIS MUNCHEN			699355	E	9L 0I	O Mg		50
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	O Mn		33
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O Mn		33
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	O Mn		40
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	O Mn	33	50
Barinskii R	2	BULLACADSCIUSSR	21	1375	579004	E	9A 9L	O Mo		25
							9A 9L	O Mo		33
Nemnonov S	4	PHYS METALMETAL	28	192	699071	E	9L 9S	O N		50
Bonnelle C	1	THESIS U PARIS			649057	E	9A 9L 9R	O Ni		50
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O Ni		50
Bonnelle C	3	RONTGENCHEMBIND		20	669139	E	9E 9L	O Ni		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	O Ni		50
							9L	O Ni		50
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	O Ni		40
Cauchois Y	1	COMPT REND	239	1780	549006	E	9L	O Pu		67
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9L 5B 4L 0O	O Si		50
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	O Si		
Henke B	2	J APPL PHYS	37	922	669013	E	9L 9G 4L	O Si		67
Wiech G	1	Z PHYSIK	207	428	679261	E	9L 9I 5B 5D	O Si		67
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	O Si	00	67
							9K 5D 5B	O Si	00	67
Urch D	1	J PHYS	3C	1275	709220	T	9S 9K 9L 9I 4L	O Si		80
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	O Si	50	67
Gokhale B	2	J PHYS	2B	282	669007	E	9L 9Q	O Sm	00	60
Gokhale B	2	J PHYS	2B	282	699007	E	9L 9Q	O Sm		60
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	O T		
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	O Tb		60
Deodhar G	3	CAN J PHYS	47	341	699026	E	9E 9L	O Tb		64
Deodhar G	2	PROC PHYS SOC	81	367	639106	E	9L	O Th		

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	O Ti		67
Lukirskii A	2	BULLACADSCIUSSR	28	749	649144	E	9L 4A 9I	O Ti		67 (1)
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	O Ti	47	66
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	O Ti	47	66
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	O Ti		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	O Ti	50	60
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9L	O Ti	20	66
							9K	O Ti	20	66
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	O Ti	48	54
							9L 9I 9S 3Q	O Ti	48	54
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	O Ti	33	67
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	O Ti	25	50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	O Ti		50
							9L	O Ti		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	O Ti		50
							9L 9A 5B	O Ti		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	O Ti	50	67
Holliday J	1	ADV XRAY ANALYS	13	136	709349	E	9L 9R	O Ti		50
							9L 4L	O Ti	0	66
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9A 9L	O Ti	33	67
Fischer D	1	PHYS REV	5	4219	729040	E	9A 9L	O Ti		67
							9A 9L	O Ti		67
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	O Tm		60
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O V		71
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	O V	00	60
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9L 5B	O V		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	O V		50
							9L	O V		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	O V	60	71
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	O V	60	71
Fischer D	1	APPL SPECTRY	25	263	719069	E	9L 9A	O V	60	71
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9L	O V	28	40
Hague C	2	MUNICH SYMP			739010	E	9L	O V		60
Fischer D	1	APPL SPECTRY	25	263	719069	E	9L 9A 0O	O V Na		37
							9L 9A 0O	O V Na		50
							9L 9A 0O	O V Na		13
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9L 9S	O Zn		
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	O Zn		50
Zyryanov V	2	PHYS METALMETAL	27	191	699116	E	9L 9S 0D	O Zn		50
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9L	Os		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	Os		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	Os		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9L 0O	P		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0I	P		100
Fomichev V	3	J PHYS CHEM SOL	29	1025	689141	E	9L 6H 0O	P		100
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B 4N 0O	P		
Wiech G	1	X RAY CONF KIEV	2	25	699287	E	9L 0O	P		
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	P Al		50
Fomichev V	3	J PHYS CHEM SOL	29	1025	689141	E	9K 6H 6U	P B		50
							9L 6H 6U	P B		50
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	P B		50
Rumsh M	4	VESTNIKLEN UNIV	16	49	689371	E	9K 9A	P B		50
							9L 9A	P B		50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	P B		
Wiech G	1	Z PHYSIK	216	472	689248	E	9L 9K 5B	P Ga		50

(1) 1000 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
							9L 9K 5B	*P* In		50
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0O	*P* X		
Wiech G	1	X RAY CONF KIEV	2	25	699287	E	9L 0O	*P* X		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	*Pb*		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	*Pb*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9L 0O	*Pb* X		
Hirsh F	2	PHYS REV	44	955	339000	E	9G 9S 9L	*Pd*		
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Pd*		
Bonnelle C	2	COMPT REND	245	2253	579010	E	9L 9A	*Pd*		
Mande C	1	ANN PHYSIQUE	5	1559	609036	E	9L 9S	*Pd*		100
							9K 9L	*Pd*		100
Bonnelle C	2	COMPT REND	253	95	619017	E	9L	*Pd*		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	*Pd*		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	*Pd*		
Nemoshkalenk V	2	RONTGENCHEMBIND		224	669212	E	9L 9I	*Pd*		100
Nemnonov S	2	PHYS METALMETAL	23	162	679103	E	9L 5D	*Pd*		
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	*Pd*		
Shveitser I	2	BULLACADSCIUSSR	31	962	679169	E	9E 9L 9D 5D	*Pd*		
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9A 9L 5B 5D	*Pd*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Pd*		
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	Pd*Ag*		12
							9L	*PdAg*		71
							9L	*Pd* Ag		88
Nemnonov S	4	PHYS STAT SOLID	43	319	719055	E	9L	Pd*Al*		75
Watson L	3	J PHYSIQUE	32S	325	719208	E	9L	Pd*Al*	50	75
Watson L	1	BAND STRU SPECT		125	739003	R	9L 9S 5D	Pd*Al*		50
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	Pd*Al*		
Mande C	1	ANN PHYSIQUE	5	1559	609036	E	9L 6P	*Pd* Au	21	80
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	*Pd* Au	45	86
							9L	*PdCu*		60
							9K	Pd*Cu*		60
Das Gupta K	1	APPL PHYS LET	6	104	659057	E	9L 9S 0Y	*Pd* H		40
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	*PdRh*		40
Das Gupta K	1	APPL PHYS LET	6	104	659057	E	9L 9S 0Y	*Pd* Si	0	100
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	Pr*Al*		67
							9K 9L	Pr*Si*		33
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	*Pt*		
Deodhar G	2	J SCI INDUS RES	98	263	509004	E	9L	*Pt*		
Deodhar G	2	J SCI INDUS RES	10B	260	519003	E	9L 9S	*Pt*		
Deodhar G	2	NATURE	169	889	529009	E	9L	*Pt*		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	*Pt*		
Nigam A	2	J SCI INDUS RES	19B	111	609044	E	9L	*Pt*		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	*Pt*		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	*Pt*		
Cauchois Y	2	COMPT REND	242	1433	569010	E	9G 9L	*Pu*		
Merrill J	2	PHYS REV	110	79	589017	E	9L	*Pu*		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	*Pu*		
Cauchois Y	1	COMPT REND	239	1780	549006	E	9L	*Pu* O		67
Blokhin S	2	PHYS METALMETAL	19	49	659073	T	9L 9A 4L	*R*		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9L	*Re*		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	*Re*		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	*Re*		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	*Re*		
Gokhale B	2	INDIAN J PAPHYS	1	14	639101	E	9L 9Q	*Re*		
							9E 9L	*Re*		100

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Hirsh F	2	PHYS REV	44	955	339000	E	9G 9S 9L	*Rh*		
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Rh*		
Nemoshkalenk V	2	RONTGENCHEMBIND		224	669212	E	9L 9I	*Rh*		100
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	*Rh*		
Shveitser I	2	BULLACADSCIUSSR	31	962	679169	E	9E 9L 9D 5D	*Rh*		
Ekstig B	1	ARKIV FYSIK	37	107	689138	E	9E 9L 9S 9R	*Rh*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Rh*		
Hedman J	9	PHYS SCRIPTA	4	195	719188	E	9L	*RhPd*		40
Hirsh F	2	PHYS REV	44	955	339000	E	9G 9S 9L	*Ru*		
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Ru*		
Nemoshkalenk V	2	RONTGENCHEMBIND		224	669212	E	9L 9I	*Ru*		100
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	*Ru*		
Shveitser I	2	BULLACADSCIUSSR	31	962	679169	E	9E 9L 9D 5D	*Ru*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Ru*		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9L	*S*		
Tomboulian D	1	PHYS REV	74	1887	489001	E	9S 9L	*S*		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0I	*S*		100
Meisel A	2	X RAY CONF KIEF	1	297	699285	E	9L 5B	*S*		
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*S* Cd		50
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	S *Fe*		50
Koster A	1	PROC KONNEDACAD	74	332	719193	E	9L	S *Fe*	33	50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*S* Fe		67
Barinskii R	2	BULLACADSCIUSSR	21	1375	579004	E	9A 9L	S *Mo*		25
							9A 9L	S *Mo*		33
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0O	*S* X		
Meisel A	2	X RAY CONF KIEF	1	297	699285	E	9L 4L 0O 5B	*S* X		
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*S* Zn		50
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Sb*		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	*Sb*		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	*Sb*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Sb*		
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	Sb*Al*		50
Drahokoup J	3	CZECH J PHYS	18B	1034	689222	E	9K 9L 0X	Sb*Ge*		00
Hague C	2	MUNICH SYMP			739010	E	9L	*Sc*		100
Morlet J	1	BULLACADROYBELG	35	1059	499003	E	9K 9L 9S	*Se*		
Skinner H	1	PHILTRANSROYSOC	239A	95	409005	E	9L	*Si*		
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	*Si*		
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	*Si*		100
Bedo D	2	PHYS REV	104	590	569006	E	9A 9L	*Si*		
Crisp R	2	PHIL MAG	6	365	619025	E	9L	*Si*		
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	*Si*		100
Henke B	2	J APPL PHYS	37	922	669013	E	9L 9G	*Si*		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0I	*Si*		100
Lyapin V	1	SOVPHYS SOLIDST	8	2851	679109	E	9L 9K 5B	*Si*		
Fomichev V	2	SOVPHYS SOLIDST	9	1441	679256		9S 9L	*Si*		
Wiech G	1	Z PHYSIK	207	428	679261	E	9L 9I 5B 5D	*Si*		
Ershov O	2	SOVPHYS SOLIDST	8	1699	679316	E	9A 9L 9S 6U 9B	*Si*		100
Rooke G	1	J PHYS	1C	776	689154	E	9L 9S 5P	*Si*		
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Si*		
							9K 5D 5B	*Si*		
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	*Si*		
Lyapin V	2	SOVPHYS SOLIDST	10	1879	699019	R	9L 4B 5B	*Si*		100
Nemnonov S	2	PHYS METALMETAL	28	68	699218	R	9K 9L 5D	*Si*		
Klima J	1	J PHYS	3C		709004	T	9K 9L 6T	*Si*		100
Wiech G	2	NBS IMR SYMP	3		709118	E	9L	*Si*		100

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Harrison R	1	PHIL MAG	22	131	709184	E	9L 5N	*Si*		100
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*		100
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*Si*		100
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	*SiAl*	5	12
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	*Si*C		
Wiech G	1	Z PHYSIK	207	428	679261	E	9L 9I 5B 5D	*Si*C		50
Zhukova I	4	SOVPHYS SOLIDST	10	1097	689258	E	9L 4N 6G 5B 5D	*Si*C		50
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Si*C	00	50
							9K 5D 5B	*Si*C	00	50
Nemoshkalenk V	2	SOVPHYS SOLIDST	12	46	709196	R	9L 9K 5D	*Si*C		
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*C		50
							9L	*Si*Ca		50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	*Si*Ca	33	67
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*Ca		33
							9K 9L	*Si*Ce		33
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*Co	33	67
							9L	*Si*Cr		50
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	*Si*Cu		75
Harrison R	1	PHIL MAG	22	131	709184	E	9L 5N	*Si*Cu	75	90
Das Gupta K	1	TECH REPORT AD	412	791	639088	E	9L 5B	Si*Fe*	75	91
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*Fe		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*La		33
Das Gupta K	2	PHIL MAG	46	77	559006	E	9L 5B	*SiMg*	10	50
Curry C	1	SXS BANDSPECTRA		173	689333	E	9L 5D	*Si*Mg		67
Harrison R	1	PHIL MAG	22	131	709184	E	9L 5N	*Si*Mg		67
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*Mg		67
							9L	*Si*Mn		50
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*Mo		33
Zhukova I	4	SOVPHYS SOLIDST	10	1097	689258	E	9L 6G 5B 5D 4L	*Si*N		57
							9K 6G 5B 5D 4L	Si*N*		57
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*N		57
Volkov V	2	PHYS METALMETAL	25	185	689196	E	9A 9L	Si*Ni*	33	100
O Bryan H	2	PROC ROY SOC	176A	229	409003	E	9L 5B 4L 0O	*Si*O		50
Das Gupta K	1	PHYS REV	80	281	509003	E	9L	*Si*O		
Henke B	2	J APPL PHYS	37	922	669013	E	9L 9G 4L	*Si*O		67
Wiech G	1	Z PHYSIK	207	428	679261	E	9L 9I 5B 5D	*Si*O		67
Wiech G	1	SXS BANDSPECTRA		59	689325	E	9L 5D 5B	*Si*O	00	67
							9K 5D 5B	*Si*O	00	67
Urch D	1	J PHYS	3C	1275	709220	T	9S 9K 9L 9I 4L	*Si*O		80
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*O	50	67
Das Gupta K	1	APPL PHYS LET	6	104	659057	E	9L 9S 0Y	Si*Pd*	0	100
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*Pr		33
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*Ti		67
Kurmaev E	2	PHYS STAT SOLID	43K	49	719056	R	9K 9L 5D	*SiV*		25
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	*Si*V		67
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	*Si*W		67
Kranner H	1	PHYSIK VERHANDL	13	135	629105	E	9L 5B 4L	*Si*X		
Deodhar G	2	J SCI INDUS RES	15B	615	569014	E	9L	*Sm*		
Gokhale B	2	J PHYS	2B	282	669007	E	9L 9Q	*Sm*O	00	60
Gokhale B	2	J PHYS	2B	282	699007	E	9L 9Q	*Sm*O		60
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Sn*		
Holliday J	1	J APPL PHYS	33	3259	629095	E	9L 9S	*Sn*		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	*Sn*		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	*Sn*		
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Sn*		

b. L–Spectra–Continued

Authors: First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition: Low	Composition: High
Crisp R	1	THESIS U W AUST		1	619046	E	9L 0I	Sn*Mg*		67
Hague C	2	BAND STRU SPECT		251	739004	E	9L	Sn*Nb*		75
							9L	Sn*V*		25
Nemnonov S	2	FIZ METAL METAL	21	211	669151	R	9A 5D 9L 9M	*T*		
Nemnonov S	5	TRANSMETSOCAIME	245	1191	699104	R	9K 9A 9L 5D 3Q	*T* B		67
							9K 9A 9L 5D 3Q	*T* C		
							9K 9A 9L 5D 3Q	*T* N		
							9K 9A 9L 5D 3Q	*T* O		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9L	*Ta*		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	*Ta*		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	*Ta*		
Gokhale B	2	INDIAN J PAPHYS	1	56	639091	E	9L 9Q	*Ta*		
							9L 9S	*Ta*		100
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 3Q 4L	*Ta*C	49	50
								TaC	49	50
Sakellari P	1	COMPT REND	236	1767	539012	E	9A 9L	*Tb*		
Sakellari P	1	COMPT REND	236	1547	539013	E	9A 9L	*Tb*		
Sakellari P	1	J PHYS RADIUM	16	422	559020	E	9L 9F 9I 5B 6U	*Tb*		
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	*Tb*O		60
Deodhar G	3	CAN J PHYS	47	341	699026	E	9E 9L	*Tb*O		64
Randall C	1	PHYS REV	57	786	409004	E	9S 9L	*Te*		
Noreland E	1	ARKIV FYSIK	26	341	649107	E	9E 9L 5B 5D 0D	*Te*		
Noreland E	2	ARKIV FYSIK	26	161	649110	E	9L 9R 9S 0D 5B	*Te*		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	*Th*		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	*Th*		
Deodhar G	2	PROC PHYS SOC	81	367	639106	E	9L	*Th*O		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	*Ti*		
Lukirskii A	2	BULLACADSCIUSSR	28	749	649144	E	9L 4A 9I 6O	*Ti*		100 (1)
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	*Ti*		100
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L	*Ti*		100
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*		100
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	*Ti*		
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9L	*Ti*		100
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	*Ti*		
Nemnonov S	2	PHYS METALMETAL	26	43	689236	R	9K 9L	*Ti*		100
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	*Ti*		
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	*Ti*		
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	*Ti*		100
							9K 9A	*Ti*		100
Fischer D	1	PHYS REV	4B	1778	719106	R	9L 6G	*Ti*		100
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	*Ti*		100
Hague C	2	MUNICH SYMP			739010	E	9L	*Ti*		100
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Ti*Al*		75
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	*Ti*B		67
							9K 4L 4A	Ti*B*		67
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	*Ti*B		67
							9K 4L	Ti*B*		67
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	*Ti*B		67
Holliday J	1	NORELCO REPORTR	14	84	679388	E	9L	*Ti*B		67
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	*Ti*B		67
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	*Ti*B		67
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	*Ti*C	45	50
							9K 4L 4A	Ti*C*		50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	*Ti*C	45	49
							9K 4L	Ti*C*	45	49

(1) 1000 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	TiC		50
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	TiC		50
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	TiC		50
							9K	TiC		50
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9L 5B	TiC		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	TiC		50
							9L 9A 5B	TiC		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	TiC		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	TiC		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	TiC		49
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	TiCo		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	TiCo		50
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	TiCr		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	TiCr		67
							9L 4L	TiFe		50
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	TiN		50
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	TiN		50
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	TiN		50
							9L 9I 9S 3Q	TiN		50
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	TiN		50
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	TiN	17	50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	TiN		50
							9L 9A 5B	TiN		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	TiN		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9K 9L 3Q 5B	TiN		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	TiN	17	44
Volkov V	2	PHYS METALMETAL	26	193	689364	E	9L	TiNi	50	75
Holliday J	1	NBS IMR SYMP	3		709117	E	9L	TiNi	33	67
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9L 4L	TiNi	33	75
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D	TiO		67
Lukirskii A	2	BULLACADSCIUSSR	28	749	649144	E	9L 4A 9I	TiO		67
Holliday J	1	RONTGENCHEMBIND		139	669203	E	9L 9I 4L	TiO	47	66
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9L 4L	TiO	47	66
Nemnonov S	1	PHYS METALMETAL	24	66	679213	R	9K 9L	TiO		50
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	TiO	50	60
Holliday J	1	NORELCO REPORTR	14	84	679388	R	9L	TiO	20	66
							9K	TiO	20	66
Brytov I	3	SOVPHYS SOLIDST	10	621	689041	E	9K 9I 9S 3Q	TiO	48	54
							9L 9I 9S 3Q	TiO	48	54
Fischer D	2	J APPL PHYS	39	4757	689262	E	9A 9L	TiO	33	67
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9L 5D	TiO	25	50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	TiO		50
							9L	TiO		50
Fischer D	1	J APPL PHYS	41	3922	709186	R	9K 5B	TiO		50
							9L 9A 5B	TiO		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	TiO	50	67
Holliday J	1	ADV XRAY ANALYS	13	136	709349	E	9L 9R	TiO		50
							9L 4L	TiO	0	66
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9A 9L	TiO	33	67
Fischer D	1	PHYS REV	5	4219	729040	E	9A 9L	TiO		67
							9A 9L	TiO		67
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	TiSi		67
Bush F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	Tl		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	Tl		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	Tl		

b. L-Spectra—Continued

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Sakellari P	1	COMPT REND	236	1767	539012	E	9A 9L	Tm		
Sakellari P	1	COMPT REND	236	1244	539014	E	9A 9L	Tm		
Sakellari P	1	J PHYS RADIUM	16	422	559020	E	9L 9F 9I 5B 6U	Tm		
Nigam A	2	J PHYS	2B	419	699024	E	9L 9Q	Tm		
Sakellari P	1	J PHYS RADIUM	16	271	559019	E	9L 9S 5B 5D	Tm O		60
Rogosa G	2	PHYS REV	92	1434	539011	E	9K 9L	U		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	U		
Merrill J	2	PHYS REV	110	79	589017	E	9L	U		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	U		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	U		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	V		
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	V		
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	V		
Brytov I	1	PHYS METALMETAL	24	174	679328	E	9L 4A	V		
Nemoshkalenk V	2	SOV PHYS DOKL	12	735	689006	E	9F 9K 9L	V		
Nemnonov S	2	PHYS METALMETAL	26	43	689236	R	9K 9L	V		100
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	V		100
Zhurakovs E	3	INORGANIC MATLS	6	183	709306	E	9L	V		
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	V		100
Zhurakovs E	8	SOV PHYS DOKL	15	877	719021	E	9L	V		
Fischer D	1	PHYS REV	4B	1778	719106	R	9L 6G	V		100
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9L	V		100
Hague C	2	BAND STRU SPECT		251	739004	E	9L	V		100
Hague C	2	MUNICH SYMP			739010	E	9L	V		100
Kapoor Q	3	BAND STRU SPECT		215	739008	E	9L	V Al		
Watson L	3	MUNICH SYMP			739014	E	9L	V Al	10	75
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	V B		67
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	V B		67
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9L	V B		33
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9L 5B	V C		47
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	V C		50
Zhurakovs E	3	INORGANIC MATLS	6	183	709306	E	9L 4A 1H 1B 1T	V C	27	48
							9K 4L	V C	27	48
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	V C		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9K 4L 9V 5V 3Q	V C	42	47
							9L 4L 9V 5V 3Q	V C	42	47
								V C	42	47
Zhurakovs E	8	SOV PHYS DOKL	15	877	719021	E	9L 4A 1H 4L	V C	28	47
							9K 4L	V C	28	47
Fischer D	1	J APPL PHYS	40	4151	699173	E	9L 9A 3Q 9R 9S	V N		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	V N		50
Fischer D	1	APPL SPECTRY	25	263	719069	E	9L 9A 0O	V NaO		37
							9L 9A 0O	V NaO		50
							9L 9A 0O	V NaO		13
Volkov V	2	PHYS METALMETAL	26	193	689364	E	9L	V Ni	89	100
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	V O		71
Holliday J	1	J APPL PHYS	38	4720	679258	E	9L	V O	00	60
Brytov I	3	PHYS METALMETAL	26	178	689363	E	9L 5B	V O		50
Menshikov A	3	PHYS STAT SOLID	35	89	699182	E	9K 5X 5B	V O		50
							9L	V O		50
Fischer D	1	TECH REPORT AD	713	100	709312	R	9A 9L	V O	60	71
Fischer D	1	ADV XRAY ANALYS	13	159	709350	R	9L	V O	60	71
Fischer D	1	APPL SPECTRY	25	263	719069	E	9L 9A	V O	60	71
Senemaud C	2	J PHYSIQUE	32S	193	719205	E	9L	V O	28	40
Hague C	2	MUNICH SYMP			739010	E	9L	V O		60

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Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Kurmaev E	2	PHYS STAT SOLID	43K	49	719056	R	9K 9L 5D	V Si		25
Hayasi Y	2	INTCONF VUVPHYS	3		719173	E	9L	V Si		67
Hague C	2	BAND STRU SPECT		251	739004	E	9L	V Sn		25
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9L 9S	W		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9L	W		
Barrere G	1	COMPT REND	233	376	519001	E	9K 9L	W		
Ferreira J	1	COMPT REND	241	1929	559007	E	9L 9S 9I	W		
Goldberg M	1	J PHYS RADIUM	22	743	619032	E	9L 9I	W		
Meisel A	2	EXP TECH PHYSIK	9	258	619056	E	9L 4A	W		
Merrill J	2	ANN PHYS	14	166	619057	E	9L 4A 9A	W		
Wiech G	2	BAND STRU SPECT		173	739007	E	9K 9L	W Si		67
Blokhin M	2	BULLACADSCIUSSR	24	410	609057	T	9K 9L 9M 9T	X		
Kakushadze T	1	ANN PHYSIK	8	353	619044	T	9S 9K 9L 9M 5B	X		
Mizuno Y	2	J PHYS SOC JAP	25	627	689233	T	9A 9K 9L	X		
Bergersen B	2	X RAY CONF KIEV	2	162	699297	T	9E 9L	X		
Holliday J	1	TECH METALS RES	3	325	709345	R	9K 9L 9M 0I	X		
Fabian D	1	CRREV SOLST SCI	2	255	719070	R	9K 9L 9M	X		
Bergersen B	3	PHYS REV	5B	2385	729041	T	9A 9L	X		
Henke B	2	J APPL PHYS	37	922	669013	E	9L 9G 0O	X Cl		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0O	X Cl		
Gale B	1	PROC PHYS SOC	84	933	649114	E	9L 0D 6F 4A	X Mg		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0O	X P		
Wiech G	1	X RAY CONF KIEV	2	25	699287	E	9L 0O	X P		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9L 0O	X Pb		
Henke B	1	ADV XRAY ANALYS	9	430	669244	E	9L 0O	X S		
Meisel A	2	X RAY CONF KIEF	1	297	699285	E	9L 4L 0O 5B	X S		
Kranner H	1	PHYSIK VERHANDL	13	135	629105	E	9L 5B 4L	X Si		
Thompson B	2	DVP APPL SPCTRY	4	23	649156	R	9K 9L 9M	X X		
							9K 9L 9M	X X		
Lyapin V	2	SOVPHYS SOLIDST	10	1879	699019	T	9K 9L 4B 5B	X X		
							9K 9L 4B 5B	X X		
Randall C	1	PHYS REV	57	786	409004	E	9S 9L 0O	Xe		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9L	Yb		
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9K 9L 9M 9S	Zn		
Korsunski M	2	ISSLAKADNAUKSSR	3	249	589013	E	9L	Zn		
Rumyantse I	2	OPT SPECTR	7	498	599029	E	9L	Zn		
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	Zn		
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	Zn		
Chun H	2	Z NATURFORSCH	22A	1401	679324	E	9L	Zn		100
Liefeld R	1	SXS BANDSPECTRA		133	689330	E	9L 9A 9H 9R 9S	Zn		
Zyryanov V	2	PHYS METALMETAL	27	191	699116	E	9L 9S 0D	Zn		100
Nemnonov S	2	PHYS METALMETAL	29	141	709348	E	9A 9L	Zn		100
Neddermey H	1	MUNICH SYMP			739015	E	9L	Zn		
Fabian D	5	X RAY CONF KIEV	1	26	699280	E	9L 8U	Zn Al	75	100
Fabian D	3	NBS IMR SYMP	3		709114	E	9L	Zn Al		45
Watson L	3	MUNICH SYMP			739014	E	9L	Zn Al	45	90
Lucasson A	1	COMPT REND	245	1794	579024	E	9L 9S 4L 5B	Zn Cu	20	80
Rumyantse I	2	OPT SPECTR	7	498	599029	E	9L	Zn Cu		
Lucasson A	1	ANN PHYSIQUE	5	509	609031	E	9A 9L	Zn Cu	20	100
Nemnonov S	2	PHYS METALMETAL	29	141	709348	E	9L	Zn Cu		52
Neddermey H	1	MUNICH SYMP			739015	E	9K	Zn Mg	33	90
							9L	Zn Mg	33	90
Curry C	1	SXSBANDSPECTRA		173	689333	R	9L 5D	Zn Ni	52	64
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9L 9S	Zn O		
Fischer D	1	J APPL PHYS	36	2048	659063	E	9L 9S 9I 4L 5B	Zn O		50

b. L–Spectra–Continued

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	High
Zyryanov V	2	PHYS METALMETAL	27	191	699116	E	9L 9S 0D	*Zn*O		50
Wiech G	2	J PHYSIQUE	32S	201	719206	E	9R 9L	Zn*S*		50
Hirsh F	2	PHYS REV	44	955	339000	E	9G 9S 9L 9I	*Zr*		
Liefield R	1	DISSERT ABSTR	20	4147	609030	E	9L 9S 5D 9A	*Zr*		
Nemoshkalenk V	2	SOVPHYS SOLIDST	9	268	679111	E	9L 9G 9I 5D	*Zr*		
Nemoshkalenk V	2	BULLACADSCIUSSR	31	999	679177	E	9L 5D	*Zr*		100
Nemoshkalenk V	2	PHYS LET	30A	44	699153	E	9L 4A 5B 5D	*Zr*		
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L	*Zr*		100
Curry C	2	PHIL MAG	21	659	709016	E	9L 5B 5D 6T 5N	Zr*Al*		67
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	E	9L 4L 9V 5V 3Q	*Zr*C		48

c. M–Spectra

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	High
Parratt L	1	PHYS REV	50	598	369004	E	9S 9L 9M 9I 4A	*Ag*		
Lukirskii A	3	OPT SPECTR	16	372	649115	E	9M	*Ag*		
Hoffmann L	3	Z PHYSIK	229	131	699264	E	9M 9I 9R 0S 7D	*Ag*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	Al*Cu*		66
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	Al*Fe*	18	28
							9L	*Al*Fe	18	28
Cuthill J	3	J APPL PHYS	39	2204	689098	E	9L	*Al*Ni	0	100
							9M	Al*Ni*	0	100
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9M 5D	Al*Ni*	0	100
							9L 5D	*Al*Ni	0	100
Kruglov V	2	SOVPHYS SOLIDST	10	170	689016	E	9M 9A	*AsSe*		40
Parratt L	1	PHYS REV	50	598	369004	E	9S 9L 9M 9I 4A	*Au*		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	*Au*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*Au*		
Catterall J	2	PROC PHYS SOC	79	691	629090	E	9M 9S	Au*Cu*		25
							9N 9S	*Au*Cu		25
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	*B*Zr		67
							9M 0I	B *Zr*		67
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M	*Bi*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*Bi*		
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9K	*C*Nb		50
							9M 5D	C *Nb*		50
Nemnonov S	4	PHYS METALMETAL	28	192	699071	R	9M	C *Nb*		46
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9M	C *Nb*		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9M	C *Nb*		54
Ramqvist L	1	JERNKONT ANN	153	159	699176	E	9M	C *Ti*	41	50
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	*C*Zr		50
							9M	C *Zr*		50
Nemnonov S	4	PHYS METALMETAL	28	192	699071	R	9M	C *Zr*		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9M	C *Zr*		50
Crisp R	1	THESIS U W AUST		1	619046	E	9M 0I	*Ca*		100
Lukirskii A	3	OPT SPECTR	16	372	649115	E	9M	*Cd*		
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Ce*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Co*		
Tomboulian D	2	PHYS REV	121	146	619081	E	9M	*Co*		
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Co*		100
Catterall J	2	PROC PHYS SOC	81	1043	639090	E	9M	*Co*Fe	10	100
Gyorgy E	2	PHYS REV	87	861	529014	E	9M	*Cr*		
Gyorgy E	1	TECH REPORT MIT	254	1	539006	E	9M	*Cr*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Cr*		
Agarwal B	2	PHYS REV	107	62	579000	E	9A 9M	*Cr*		

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Sommer G	4	PHYS METALMETAL	30	233	709353	T	9L 9M 9A	*Cr*		100
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Cr*		100
Fischer D	1	PHYS REV	4B	1778	719106	R	9K 9M 6C 5B 9A	*Cr*		100
Gyorgy E	2	PHYS REV	87	861	529014	E	9M	*Cu*		
Gyorgy E	1	TECH REPORT MIT	254	1	539006	E	9M	*Cu*		
Shinoda G	3	PHYS REV	95	840	549019	E	9M	*Cu*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M 9A	*Cu*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Cu*		
Bedo D	2	PHYS REV	113	464	599002	E	9M	*Cu*		
Curry C	2	PROC PHYS SOC	76	791	609002	E	9M 5B 5D	*Cu*		
Crisp R	1	THESIS U W AUST		1	619046	E	9M 0I	*Cu*		100
Catterall J	2	PROC PHYS SOC	79	691	629090	E	9M 9S	*Cu*		100
Tomboulian D	1	J QUAN SPECT RT	2	649	629122	R	9M 9S	*Cu*		
Clift J	3	PHIL MAG	8	639	639083	E	9M 9S	*Cu*		100
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*Cu*		
Appleton A	1	CONTEMP PHYS	6	50	649132	R	9M 5D	*Cu*		
Goodings D	2	J PHYS C	2	1808	699161	T	9L 9M 5D 5B	*Cu*		
Dobbyn R	4	PHYS REV	2B	1563	709080	E	9M 6T 0D	*Cu*		100 (1)
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Cu*		100
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Cu* Al		66
Catterall J	2	PROC PHYS SOC	79	691	629090	E	9M 9S	*Cu* Au		25
							9N 9S	Cu*Au*		25
Clift J	3	PHIL MAG	8	593	639082	E	9M 9S	*Cu* Ni	10	100
							9M 9S	Cu*Ni*	00	90
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*CuNi*		
Clift J	3	PHIL MAG	8	639	639083	E	9M 9S	*CuZn*		70
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*CuZn*		70
							9M	*CuZn*		71
Curry C	1	SXS BANDSPECTRA		173	689333	E	9M 5D	Cu*Zn*		70
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Dy*		
Fischer D	2	NORELCO REPORTR	14	92	679387	R	9M 9R	*Dy*		100
Bonnelle C	2	J PHYSIQUE	32S	230	719207	E	9M 9A	Dy		100
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Er*		
Bonnelle C	2	COMPT REND	268	494	699008	E	9A 9M 9R 9S	*Eu*		
Bonnelle C	2	J PHYSIQUE	32S	230	719207	E	9M 9A	Eu		100
Hague C	2	MUNICH SYMP			739010	E	9M	Eu		100
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Eu* O		
Bonnelle C	2	J PHYSIQUE	32S	230	719207	E	9M 9A	*Eu* O		40
Gyorgy E	1	TECH REPORT MIT	254	1	539006	E	9M	*Fe*		
Gyorgy E	2	PHYS REV	93	365	549010	E	9M	*Fe*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Fe*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Fe*		
Tomboulian D	2	PHYS REV	121	146	619081	E	9M	*Fe*		
Tomboulian D	1	J QUAN SPECT RT	2	649	629122	R	9M 9S	*Fe*		
Catterall J	2	PROC PHYS SOC	81	1043	639090	E	9M	*Fe*		100
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Fe*		100
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	*Fe* Al	18	28
							9L	Fe*Al*	18	28
Catterall J	2	PROC PHYS SOC	81	1043	639090	E	9M	Fe*Co*	10	100
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Gd*		
Bonnelle C	1	SXS BANDSPECTRA		163	689332	E	9M 9A	*Gd*		
Cauchois Y	4	X RAY CONF KIEV	1	43	699281	R	9A 9M	*Gd*		
Bonnelle C	2	J PHYSIQUE	32S	230	719207	E	9M 9A	*Gd*		100
Hague C	2	MUNICH SYMP			739010	E	9M	*Gd*		100
Bonnelle C	2	J PHYSIQUE	32S	230	719207	E	9M 9A	*Gd* O		40
Bedo D	2	PHYS REV	104	590	569006	E	9A 9M	*Ge*		

(1) 580 °C

Authors First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition Low	Composition High
Klima J	1	J PHYS	3C		709004	T	9K 9L 9M 6T	*Ge*		100
Fomichev V	2	SOVPHYS SOLIDST	12	2121	719044	E	9A 9M 0X 0Y	*Ge*		100
							9K 9M 5D	*Ge*		100
							9M	*Ge*O		33
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Ho*		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	*Ir*		
Crisp R	1	PHIL MAG	5	1161	609014	E	9L 9M	*K*		
Crisp R	1	THESIS U W AUST		1	619046	E	9M 0I	*K*		100
Mc Mullen T	1	J PHYS	3C	2178	709123	T	9M 9I 6T 5B	*K*		
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*La*		
							9M 9R 9S	*Lu*		
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	Mg*Ni*		67
							9L	*Mg*Ni		67
Gyorgy E	1	TECH REPORT MIT	254	1	539006	E	9M	*Mn*		
Gyorgy E	2	PHYS REV	93	365	549010	E	9M	*Mn*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*Mn*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Mn*		
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Mn*		100
Rogers J	2	PROC PHYS SOC	67B	348	549016	E	9M 9N 4A	*Mo*		
Holliday J	1	BULL AM PHYSSOC	6	284	619003	R	9M	*Mo*		
Holliday J	1	BULL AM PHYSSOC	8	248	639084	E	9M 6F 4A	*Mo*		
Lukirskii A	2	BULLACADSCIUSSR	27	339	639114	E	9M 9E 9S 0D 9T	*Mo*		
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	R	9M	*Mo*		(1)
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9M 5D	*Mo*		
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M	*Mo*O		25
Bobin J	2	COMPT REND	252	1302	619016	E	9M	Mo*Pu*U		
								Mo*Pu*U		10
								Mo*Pu*U		
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M	N *Nb*		12
Holliday J	1	BULL AM PHYSSOC	6	284	619003	R	9M	*Nb*		
Holliday J	1	PHIL MAG	6	801	619038	E	9M	*Nb*		
Holliday J	1	BULL AM PHYSSOC	8	248	639084	E	9M 6F 4A	*Nb*		
Lukirskii A	2	BULLACADSCIUSSR	27	339	639114	E	9M 9E 9S 0D 9T	*Nb*		
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	R	9M	*Nb*		(1)
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9M 5D	*Nb*		
							9K	Nb*C*		50
							9M 5D	*Nb*C		50
Nemnonov S	4	PHYS METALMETAL	28	192	699071	R	9M	*Nb*C		46
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9M	*Nb*C		50
Holliday J	1	J PHYS CHEM SOL	32	1825	719196	E	9M	*Nb*C		54
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M	*Nb*N		12
							9M	*Nb*O		29
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Nd*		
Gyorgy E	1	TECH REPORT MIT	254	1	539006	E	9M	*Ni*		
Gyorgy E	2	PHYS REV	93	365	549010	E	9M	*Ni*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M 9A	*Ni*		
Shinoda G	1	X SEN	8	55	559023	E	9L 9M	*Ni*		
Curry C	2	PROC PHYS SOC	76	791	609002	E	9M 5B 5D	*Ni*		
Tomboulian D	2	PHYS REV	121	146	619081	E	9M	*Ni*		
Tomboulian D	1	J QUAN SPECT RT	2	649	629122	R	9M 9S	*Ni*		
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*Ni*		
Appleton A	1	CONTEMP PHYS	6	50	649132	R	9M 5D	*Ni*		
Cuthill J	3	PHYS REV LET	16	993	669150	E	9M 9U 6G	*Ni*		100 (2)
Cuthill J	4	PHYS REV	164	1006	679300	E	9M 9L 5D 9S	*Ni*		100
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9L 9M 5D 5W 6T	*Ni*		100 (2)
Curry C	1	SXS BANDSPECTRA		173	689333	E	9M 5D	*Ni*		

(1) Above 1000 °C (2) 960 °C

Authors		Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition	
First	No.								Low	High
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Ni*		100
Cuthill J	3	J APPL PHYS	39	2204	689098	E	9L	Ni*Al*	0	100
							9M	*Ni*Al	0	100
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9M 5D	*Ni*Al	0	100
							9L 5D	Ni*Al*	0	100
Clift J	3	PHIL MAG	8	593	639082	E	9M 9S	Ni*Cu*	10	100
							9M 9S	*Ni*Cu	00	90
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*NiCu*		
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	*Ni*Mg		67
							9L	Ni*Mg*		67
Cuthill J	3	J APPL PHYS	39	2204	689098	E	9M 8C 5D	*Ni*Ti		50
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9M 6T 5D	*Ni*Ti		50
Nagel D	3	MUNICH SYMP			739013	T	9M	*NiTi*		50
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	*NiZn*	52	64
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	O *Eu*		
Bonnelle C	2	J PHYSIQUE	32S	230	719207	E	9M 9A	O *Eu*		40
							9M 9A	O *Gd*		40
Fomichev V	2	SOVPHYS SOLIDST	12	2121	719044	E	9M	O *Ge*		33
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M	O *Mo*		25
							9M	O *Nb*		29
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	O *Yb*		
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M	O *Zr*		67
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M	*Pb*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*Pb*		
Curry C	2	PROC PHYS SOC	76	791	609002	E	9N 9M 5B 5D	*Pd*		
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Pr*		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	*Pt*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*Pt*		
Bobin J	2	COMPT REND	252	1302	619016	E	9M	*Pu* U Mo		
								Pu U Mo		10
								Pu U Mo		
Curry C	2	PROC PHYS SOC	76	791	609002	E	9N 9M 5B 5D	*Rh*		
Holliday J	1	BULL AM PHYSSOC	6	284	619003	R	9M	*Ru*		
Kruglov V	2	SOVPHYS SOLIDST	10	170	689016	E	9M 9A	*SeAs*		40
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Sm*		
Nemnonov S	2	FIZ METAL METAL	21	211	669151	R	9A 5D 9L 9M	*T*		
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Tb*		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M	*Th*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*Th*		
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9M	*Ti*		100
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*Ti*		100
Ramqvist L	1	JERNKONT ANN	153	159	699176	E	9M	*Ti*C	41	50
Cuthill J	3	J APPL PHYS	39	2204	689098	E	9M 8C 5D	Ti*Ni*		50
Cuthill J	4	SXS BANDSPECTRA		151	689331	R	9M 6T 5D	Ti*Ni*		50
Nagel D	3	MUNICH SYMP			739013	T	9M	*TiNi*		50
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M 9L	*Tl*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*Tl*		
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Tm*		
Hirsh F	1	PHYS REV	62	137	429001	E	9S 9I 9T 9M	*U*		
Hirsh F	1	PHYS REV	85	685	529016	E	9S 9M	*U*		
Bobin J	2	COMPT REND	252	1302	619016	E	9M	U Mo*Pu*		
								U Mo*Pu*		10
								U Mo*Pu*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9L 9T 5D 9M	*V*		
Fomichev V	3	SOVPHYS SOLIDST	13	1031	719054	E	9M 6P	*V*		100
Rogers J	2	PROC PHYS SOC	67B	348	549016	E	9M 9N 4A	*W*		

Authors: First	Authors: No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition: Low	Composition: High
Blokhin M	2	BULLACADSCIUSSR	24	410	609057	T	9K 9L 9M 9T	*X*		
Kakushadze T	1	ANN PHYSIK	8	353	619044	T	9S 9K 9L 9M 5B	*X*		
Holliday J	1	TECH METALS RES	3	325	709345	R	9K 9L 9M 0I	*X*		
Fabian D	1	CRREV SOLST SCI	2	255	719070	R	9K 9L 9M	*X*		
Thompson B	2	DVP APPL SPCTRY	4	23	649156	R	9K 9L 9M	*X X*		
							9K 9L 9M	*X X*		
Holliday J	1	BULL AM PHYSSOC	8	248	639084	E	9M 6F 4A	*Y*		
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9M 5D	*Y*		
Fischer D	2	J APPL PHYS	38	4830	679260	E	9M 9R 9S	*Yb*		
							9M 9R 9S	*Yb* O		
Sato M	1	SCI REP TOHOKUU	30	267	419000	T	9A 9K 9L 9M 9S	*Zn*		
Skinner H	3	PHIL MAG	45	1070	549020	E	9M 9A 5D	*Zn*		
Clift J	3	PHIL MAG	8	639	639083	E	9M 9S	*Zn*		100
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*Zn*		
Appleton A	1	CONTEMP PHYS	6	50	649132	R	9M 5D	*Zn*		
Curry C	1	SXS BANDSPECTRA		173	689333	E	9M 5D	*Zn*		
Clift J	3	PHIL MAG	8	639	639083	E	9M 9S	*ZnCu*		70
Thompson B	1	APPL SPECTR	17	137	639098	E	9M	*ZnCu*		70
							9M	*ZnCu*		71
Curry C	1	SXS BANDSPECTRA		173	689333	E	9M 5D	*Zn* Cu		70
Appleton A	2	PHIL MAG	16	1031	679278	E	9M	*ZnNi*	52	64
Holliday J	1	BULL AM PHYSSOC	6	284	619003	R	9M	*Zr*		
Holliday J	1	BULL AM PHYSSOC	8	248	639084	E	9M 6F 4A	*Zr*		
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M 9S	*Zr*		100 (1)
Holliday J	1	SXS BANDSPECTRA		101	689329	E	9M 5D	*Zr*		
Hayasi T	2	SCI REP TOHOKUU	50	228	679151	E	9K 0I	Zr*B*		67
							9M 0I	*Zr* B		67
Holliday J	1	ADV XRAY ANALYS	9	365	669246	E	9K 4L	Zr*C*		50
							9M	*Zr* C		50
Nemnonov S	4	PHYS METALMETAL	28	192	699071	R	9M	*Zr* C		50
Ramqvist L	5	J PHYS CHEM SOL	32	149	719000	R	9M	*Zr* C		50
Zimkina T	3	BULLACADSCIUSSR	28	744	649155	E	9M	*Zr* O		67

(1) Above 1000 °C

d. N and O Spectra

Authors: First	No.	Journal	Vol.	Page	Ref. Number	Type	Properties	Alloy	Composition: Low	High
Curry C	2	PROC PHYS SOC	76	791	609002	E	9N 5B 5D	*Ag*		
Mc Alister A	4	BAND STRU SPECT		191	739001	E	9N	Al*Au*		67 (1)
Catterall J	2	PROC PHYS SOC	79	691	629090	E	9N 9S	*Au*		100
Mc Alister A	4	SOLIDSTATE COMM	9	1775	719034	E	9N 6L	*Au*		100 (2)
Rudnev A	4	SOVPHYS SOLIDST	13	1724	729002	E	9N 9O	*Au*		100
							9N 9O	*Au*		100
Fomichev V	3	SOVPHYS SOLIDST	13	2525	729046	E	9N	*Au*		100
Mc Alister A	4	BAND STRU SPECT		191	739001	E	9N	*Au* Al		67
Catterall J	2	PROC PHYS SOC	79	691	629090	E	9M 9S	Au*Cu*		25
							9N 9S	*Au* Cu		25
							9M 9S	*Cu* Au		25
							9N 9S	Cu*Au*		25
Rudnev A	4	SOVPHYS SOLIDST	13	1724	729002	E	9O	*Hf*		100
							9N 9O	*Ir*		100
							9N 9O	*Ir*		100
							9O	*Lu*		100
Rogers J	2	PROC PHYS SOC	67B	348	549016	E	9M 9N 4A	*Mo*		
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9N	*Mo*		100
Rudnev A	3	SOVPHYS SOLIDST	13	2083	729047	E	9N 6P	*Mo*		100
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9N	*Nb*		100
Rudnev A	3	SOVPHYS SOLIDST	13	2083	729047	E	9N 6P	*Nb*		100
Curry C	2	PROC PHYS SOC	76	791	609002	E	9N 9M 5B 5D	*Pd*		
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9N 6L	*Pd*		100
Rudnev A	3	SOVPHYS SOLIDST	13	2083	729047	E	9N 6P	*Pd*		100
Rudnev A	4	SOVPHYS SOLIDST	13	1724	729002	E	9N 9O	*Pt*		100
							9N 9O	*Pt*		100
Fomichev V	3	SOVPHYS SOLIDST	13	2525	729046	E	9N	*Pt*		100
Hakkila E	2	SPECTROCHIMACTA	23B	97	679152	E	9N 9E	*Pu*		100
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9O 6L	*Re*		
Curry C	2	PROC PHYS SOC	76	791	609002	E	9N 9M 5B 5D	*Rh*		
Rudnev A	3	SOVPHYS SOLIDST	13	2083	729047	E	9N 6P	*Rh*		100
							9N 6P	*Ru*		100
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9N 0O 6L	*Sb*		100
							9O 6L	*Ta*		100
Rudnev A	4	SOVPHYS SOLIDST	13	1724	729002	E	9N 9O	*Ta*		100
							9N 9O	*Ta*		100
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9N 0O 6L	*Te*		
Rogers J	2	PROC PHYS SOC	67B	348	549016	E	9M 9N 4A	*W*		
Lukirskii A	3	SOVPHYS SOLIDST	8	72	669230	E	9O 6L	*W*		100
Rudnev A	4	SOVPHYS SOLIDST	13	1724	729002	E	9O	*W*		100
Rudnev A	3	SOVPHYS SOLIDST	13	2083	729047	E	9N 6P	*Y*		100
							9N 6P	*Zr*		100

(1) 600 °C (2) 580 °C

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Zhurakovskii, E.A. Vasilenko, N.N.	*X-Ray Emission Of The K Alpha Band Of Nitrogen In The Group IV, V, And VI, Transition Metal Nitrides* **(709183)** Sov Phys Dokl, **14**, 710, 1970
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Zhurakovskii, E.A.	*See Frantsevich, I.N.* **(719050)**
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Zhurkova, I.I.	*See Fomichev, V.A.* **(689141)**
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Zimkina, T.M.	*See Lukirskii, A.P.* **(649115)**
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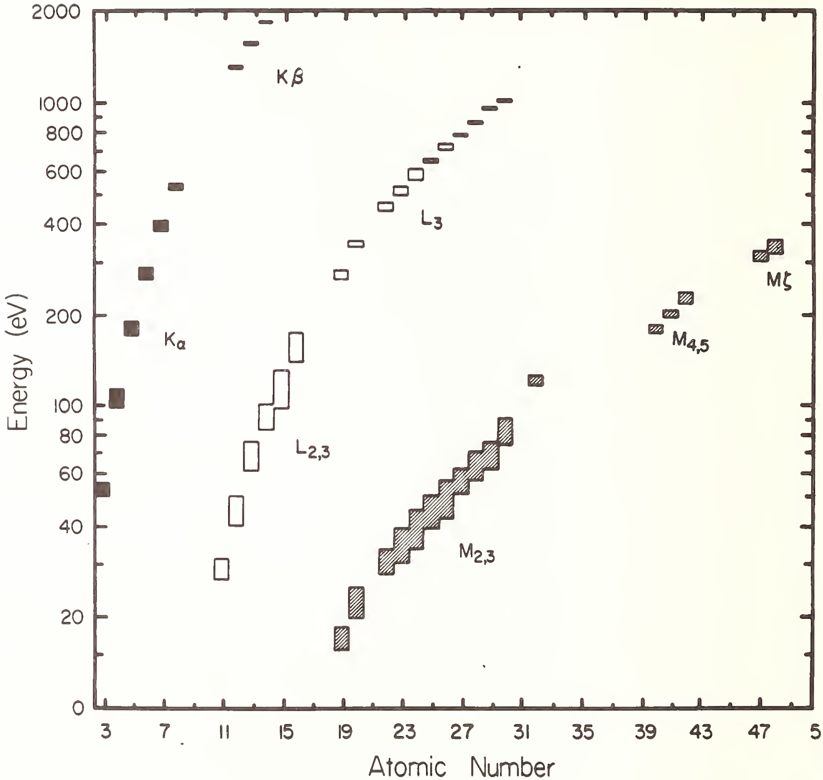

Figure 22. *Chart showing the spectral location in eV of various spectra.*
Bar height represents region within which approximately 90 percent of oscillator strength falls.

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Appendix 1

List of Properties by Categories

The code of the property is the category number followed by the alphabetic symbol at the left of the property. The deleted letters are open for future assignment. First we list the properties by increasing alphanumeric code number, and then alphabetically by property name.

Category 1

Electronic Transport Properties (ETP)

A. Temperature coefficients of resistivity.
B. Electrical resistivity; conductivity.
C. Thermal conductivity; anharmonic force constants.
D. Residual resistivity; mean free path; resistivity ratios.
E. Effective number of charge carriers; number of electrons; number of holes.
F. Ferromagnetic anisotropy of magnetoresistance. (Magnetoresistance, see Category 5.)
H. Hall coefficients, R, R_0; R_s.
I. Peltier coefficient, π.
J. Ettingshausen-Nernst effect.
K. Thompson coefficient.
L. Lorentz number, Wiedemann-Franz ratio.
M. Mobility; drift velocity.
P. Ettingshausen coefficient, P.
Q. Nernst coefficient, Q_N.
S. Righi-Leduc coefficient, S.
T. Thermoelectric power, Seebeck effect.

Category 2

Magnetic Properties (MAG)

B. Electronic magnetic moment; effective number of Bohr magnetons; local moment; (including neutron diffraction results and moments of clusters). (See NEU.)†
C. Curie constants.
D. Néel point; Kondo Temperature; Morin transition; other magnetic transitions, etc. (except 2T, below).
E. Residual inductance; coercive force.
F. Remanent magnetization; saturation remanence; etc.
G. $(HB)_{\max}$; hysteresis.
H. Total energy loss; loss angle; eddy current losses; quality factor, Q.
I. Saturation magnetization; saturation moment; intrinsic moment ($\neq$ 2B).
J. Magnetic exchange energy of electrons, J.
K. Magnetostrictive coupling constant, K (both isotropic and anisotropic).
L. Molecular field coefficient, Weiss constant.
M. Magnetocrystalline anisotropy constant.
N. Magnetocaloric or magnetothermal effect (oscillatory under 5K).
O. Electrostrictive mechanical coupling coefficient; piezoelectric effect; magnetoelectric properties.
P. Permeability: initial; effective; maximum; reversible.
Q. Elastoresistance.
R. Magnetomechanical damping; magnetoelastic effect; (magnetomechanical properties).
T. Curie temperature: paramagnetic, ferromagnetic.
X. Susceptibility (magnetization); antiferromagnetic susceptibility.

Ferromagnetic Kerr effect, see under 6M.

Category 3

Mechanics (MEC)

A. Electron probability density, charge density; Pauling electronegativity, charge transfer.
B. Stacking faults and other interfacial phenomena, such as grain boundary energies; properties of solidliquid interfaces; etc.
C. Viscosity.
D. Density.
E. Acoustic and ultrasonic attenuation. (See ACO.)†
F. Acoustic impedance. (See ACO.)†
G. Elastic properties.
H. Young's modulus (modulus of elasticity in tension or compression). E; compressibility, β.
I. Bulk modulus, K.
J. Shear modulus, shearing modulus; torsion modulus; modulus of rigidity, G.
K. Poisson's ratio, σ.
L. Elastic constants, c_{ij}'s (elastic stiffness parameter, elastic coefficients); s_{ij}'s (elastic compliances).

† Single daggers in these categories refer the reader to List No. 3 for a variety of techniques and their abbreviations.

N. Structure-sensitive properties (e.g., effect of dislocations, irradiation, etc. on physical properties).
O. Lattice parameters, lattice constants, cell dimensions (including c/a ratios); space groups; superlattice formation; coordination number; crystal structures. (See XRA, NEU, etc.)†
P. Nuclear polarization. (See NPL OVR, etc.)†
R. Phonon spectra.
S. Spin wave spectra; spin wave energy, spin wave velocity; magnon spectra. (See SPW.)†
U. Form factors; structure factors; scattering factors.
V. Sound velocity.
W. Electron-phonon interactions; Kohn anomalies.
X. Thermomechanical properties.

Category 4

Nuclear and Other Resonance Properties

(NMR, EPR, etc.)

A. Line width (for *all* spectroscopic techniques).
B. Line shape; line intensity; enhancement factor recoilless fraction (f) (as in MOS). †
C. Hyperfine field, internal field, effective field at the nucleus, etc. (no Knight shifts). (See for example THE, FNR or MOS.)†
E. Electric field gradient at the nucleus; electric quadrupole coupling constant.
F. Spin-lattice relaxation time, T_1, longitudinal relaxation time, thermal relaxation time. (See NMR.)†
G. Spin-spin relaxation time, T_2, transverse relaxation time, spin-phase memory time. (See NMR.)†
H. Nuclear g-factor; nuclear magnetic moment dipole, quadrupole, etc.).
J. Spin echoes, pulsed NMR techniques.
K. Knight shift. (See NMR.)
L. Chemical shift, paramagnetic shift in nonmetals. (See NMR.)† (This is not a metallic property, but is important in Knight shift data evaluations.)
M. Spin diffusion.
N. Isomer shift.
O. Debye-Waller factor. (See MOS or XRA.)†
P. Ferromagnetic shift. (See FER.)†
Q. Electronic g-values and shifts; spectroscopic splitting factors.
R. Nuclear coupling constants, $R-K$, A_{ij}, A_z; hyperfine interaction constant; antishielding factors.
T. Exchange stiffness parameter. (See FER.)†
X. Scattering cross-sections (including electronic, spinflip, etc.)

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†Single daggers in these categories refer the reader to List No. 3 for a variety of techniques and their abbreviations.

Category 5

Quantum Description of Solids (QDS)

A. Fermi velocity; Fermi momentum.
B. Band structure.
C. Cyclotron resonance frequency.
D. Density of states.
E. Effective mass, m^* (as determined by different methods).
F. Fermi surface, Fermi energy surface dimensions.
G. Anomalous skin effect; *rf* size effect, Gantmakher effect.
H. de Haas-van Alphen effect; Oscillatory susceptibility effects in other properties (e.g. oscillatory Knight shifts (4K) are indexed 4K, 5H).
I. Magnetoresistance (nonoscillatory).
J. Magnetic breakdown; magnetic breakthrough.
K. Shubnikov-de Haas effect (oscillatory magnetoresistance).
L. Oscillatory magnetostriction; oscillatory magnetocaloric effect; other oscillatory effects not listed elsewhere.
M. Magnetoacoustic effect, geometric resonance.
N. Screening parameter, k_{FT}, α_{eff}; charge oscillations, RKKY theory; virtual states.
O. Volume per electron; radius per electron, r_s; metallic radius.
P. Pseudopotential, model potential.
Q. Angular correlation or anisotropy of emitted γ rays (including POS).†
R. Disordered alloys: breakdown of translational periodicity (when not otherwise noted).
S. Madelung constant; cohesive energy; electrostatic interaction energy.
T. Various quantum states; total electronic angular momentum, J, etc.
U. Electronic transitions (excluding single-particle transitions, which are listed under 6T); semimetal-to-metal transitions; Mott transitions; energy gaps.
V. Binding, or dissociation energies, including those for foreign particles, pairs, vacancies, etc.
W. Wave functions of electrons in metals.
X. Crystal field splitting; exchange interaction energies and splitting; other characteristic energies of electronic states.
Y. Relaxation times, electronic or other; all except $T_1-(4F)$ and T_2 $(4G)$—this code includes the cross-relaxation time, T_{12}.
Z. Electron-like quasiparticles.

Category 6

Electromagnetic Radiation (RAD)

A. Absorptivity.
B. Emissivity (normal spectral).
C. Transmission.

D. Reflectivity, percent reflectance of (polished) metal.
E. Extinction coefficient $K(\lambda)$.
F. Fermi edge energy, absorption and emission edge energy.
G. Photoemission spectra. (See PES.)†
H. Quantum yield.
I. Index of refraction, $n(\lambda)$, optical and dielectric constants.
J. Impedance; reactance (for acoustic impedance, see 3F).
K. Photoconductivity.
L. $L \cdot S$ splitting of energy levels. (See also 4Q.)
M. Magneto-optical constants; magneto-optical rotation; Kerr effect (also ferromagnetic); magneto-reflectance; Faraday rotation; saturation rotation; Verdet constant.
N. Extinction potential.
O. Plasma oscillations and resonances.
P. Peak energy. (See SXS.)†
Q. Excitonic effects.
S. Synchrotron radiation.
T. Transition probability.
U. Energy level.
W. Work function; thermionic; photoelectric; contact potential.
X. Piezooptical properties.

Note: for line width, see 4A; for line shape, see 4B.

Category 7

Superconductivity (SUP)

A. a of
B. b of $\left.\right\} \dfrac{C_{es}}{\gamma T_c} = a \exp\left(\dfrac{-bT_c}{T}\right)$, where C_{es} is the electronic specific heat in the superconducting state and γ is the coefficient of the linear term of the specific heat in the normal state.
D. Skin depth, penetration depth.
E. Energy gap for superconducting electrons; order parameter.
F. Penetration depth of electron pairs, λ.
G. Flux lines; flux flow; structure of flux lines.
H. Critical field, H_c; H_{c1}; H_{c2}; H_{c3}.
J. Critical current, I_c.
K. Landau-Ginzburg constant, K.
M. Magnetization in superconductors.
S. Superconducting state (to be used only when essential for clarity).
T. Critical temperature, T_c.
V. Electron-electron interaction parameter, V (multiplied by the density of states $= N(E_F)V$).
X. Coherence distance, ξ_0, range of coherence, correlation length.

Category 8

Thermodynamics (THE)

A. Heat capacity, specific heat, C_v, C_p.
B. Nuclear hyperfine structure; spin specific heat (of ions in materials, etc.), nuclear specific heat.
C. Electronic specific heat, γ, γ_{el}.
D. Magnetic specific heat, including that due to magnetic clustering.
E. Stark and other specific heats.
F. Phase transformations and diagrams.
G. Melting point.
H. Boiling point.
I. Latent heats.
J. Entropy of mixing; heat of solution.
K. Entropy (other); entahlpy, heat content; Gibbs free energy, Helmholtz free energy; etc.
L. Cohesion energy (as measured thermodynamically).
M. Solubility.
N. Vapor pressure; evaporation; sublimation.
O. Thermal expansion.
P. Debye temperature.
Q. Diffusion. (See DIF.)†
R. Activation energy. (See DIF.)†
S. Diffusion constant. (See DIF.)†
T. Fermi-Dirac degeneracy temperature.
U. Order-disorder; clustering.

Category 9

Soft X-ray Spectroscopy (SXS)

A. Absorption spectra.
B. Absorption coefficient.
C. Characteristic energy losses of electrons.
D. Isochromat spectra.
E. Emission spectra (i.e., characteristic or band spectra).
F. Fine structure.
G. Fluorescence yield (spectra).
H. Bremsstrahlung, continuous spectra.
I. Intensity determinations, intensity ratios (when used together with 9S).
K. K-spectra.
L. L-spectra.
M. M-spectra.
N. N-spectra.
O. O-spectra.
P. P-spectra.
Q. Higher multipolarity-, forbidden-, nondiagram-transitions (excluding satellites, 9S).
R. Self-absorption effects.

†Single daggers in these categories refer the reader to List No. 3 for a variety of techniques and their abbreviations.

S. Satellites.

T. Auger transition; level and lifetime broadening. (Instrumental, or environmental broadening under OD).

U. Ion neutralization spectra. (See INS.)†

V. X-ray photoelectron spectroscopy, electron spectroscopy for chemical analysis (ESCA). (See also PES and XPS.)†

Appendix 2

Journal Names and Abbreviations

Journal or Reference	Abbreviation
Acta Chemica Scandinavica	ACTA CHEM SCAND
Acta Crystallographica	ACTA CRYST
Acta Metallurgica	ACTA MET
Acta Physica	ACTA PHYS
Acta Physica Austriaca	ACTA PHYS AUSTR
Acta Physica Academiae Scientiarum Hungaricae	ACTA PHYS HUNG
Acta Physica Polonica	ACTA PHYS POLON
Advances in High Pressure Research	ADV HIGH PR RES
Advances in the Physical Sciences (USSR)	ADV PHYSSCIUSSR
Advances in Chemical Physics	ADVAN CHEM PHYS
Advances in Physics	ADVAN PHYS
Agardograph	AGARDOGRAPH
Abstract Bulletin of the American Institute of Mining, Metallurgical, and Petroleum Engineers	AIME ABSTR BULL
Akusticheskii Zhurnal (in Russian)	AKUST ZH USSR
Aluminum	ALUMINUM
American Journal of Physics	AM J PHYS
Analytical Chemistry	ANAL CHEM
Angewandte Chemie International	ANGEW CHEM INTL
Annales of Physics	ANN PHYS
Annalen der Physik	ANN PHYSIK
Annales de Physique	ANN PHYSIQUE
Annual Review of Nuclear Science	ANNREV NUCL SCI
Annual Review of Physical Chemistry	ANNREV PHYSCHEM
Applied Optics	APPL OPT
Applied Physics Letters	APPL PHYS LET
Applied Scientific Research	APPL SCI RES
Applied Spectroscopy	APPL SPECTRY
Archives des Sciences	ARCH SCI
Argonne National Laboratory—Metallurgy Division Annual Report	ARGONNE NL MDAR
Arkiv for Fysik	ARKIV FYSIK
Atomic and Electronic Structures of Metals (Book edited by J. J. Gilman and W. A. Tiller for the American Society for metals)	ASM BOOK GILMAN
Australian Journal of Physics	AUSTRAL J PHYS
Band Structure Spectroscopy of Metals and Alloys, D. J. Fabian and L. M. Watson, Eds., Academic Press, 1973	BAND STRU SPECT
Bell System Technical Journal	BELL SYST TECHJ
Berichte—Bunsengesellschaft für Physikalische Chemie	BERBUN PHYSCHEM
Fluctuation, Relaxation, and Resonance in Magnetic Systems (Book edited by D. Ter Haar)	BOOK D TER HAAR
Boron—Synthesis, Structure, and Properties (Edited by J. A. Kohn, W. F. Nye, and G. K. Gaule)	BORON BOOK KOHN
British Journal of Applied Physics	BRITJ APPL PHYS
Bulletin of the American Physical Society	BULL AM PHYSSOC
Bulletin of the Institute of Theoretical Physics (in Russian)	BULL INSTHEPHYS
Bulletin of the Israel Physical Society	BULL ISRPHYSSOC
Bulletin de l'Academie Polonaise des Sciences	BULLACADPOLSCI
Bulletin of the Academy of Science of the USSR	BULLACADSCIUSSR
Bulletin de l'Institut International du Froid	BULLINSINTFROID
Bulletin de la Societe Francaise de Mineralogie et de Crystallographie	BULSOCFRMINERAL
Cathiers de Physique	CAHIERS PHYS
Proceedings of the Cairo Solid State Conference	CAIRO SOLSTOCONF
Canadian Journal of Chemistry	CAN J CHEM
Canadian Journal of Physics	CAN J PHYS
Canadian Metallurgical Quarterly	CAN MET QUARTER
Československy Časopis Pro Fysiku	CESK CASOPISFYS
Chemical Engineering	CHEM ENG
Chemical Physics Letters	CHEM PHYS LET
Chemical Reviews	CHEM REVS
Comments on Solid State Physics	COM SOL ST PHYS
Conference Proceedings from U.S. Department of Commerce, Office of Technical Services	COMM OTS CONF
Comptes Rendus de l'Academie des Sciences	COMPT REND
Conference on Low Temperature Physics	CONF LOW T PHYS
Conference on the Electronic Structure of Alloys, held at the University of Sheffield	CONF USHEFFIELD
Conference on Magnetic Resonance in Metals	CONFMAGRESMETAL
Conference on the Properties of Liquid Metals (abstracts of papers)	CONFPROP LIQMET
Contemporary Physics	CONTEMP PHYS
Control Engineering	CONTROL ENG
Cornell University Report	CORNELL UNIVREP
Cryogenics	CRYOGENICS
Crystallography	CRYSTALLOGRAPHY
Current Science	CURRENT SCI
Czechoslovak Journal of Physics	CZECH J PHYS
Discussions of the Faraday Society	DISC FARADAYSOC
Dissertation Abstracts	DISSERT ABSTR
Dopovidi Akademii Nauk Ukrans'koi RSR	DOP ACADNAUKUKR
Developments in the Structural Chemistry of Alloy Phases	DVP ST CHEM ALL
Les Electrons Dans Les Metaux (Institut International de Physique Solvay, 1954)	ELECTDANSMETAUX
Electronics and Power	ELECTRON PWR
Elektrotechnische Zeitschrift	ELEKTROTECH Z
Electronic Properties Information Center Data Sheet	EPIC DATA SHEET
Experimentalle Technik der Physik	EXP TECH PHYSIK
Experientia	EXPERIENTA
Fizika Metallov i Metallovedenie (in Russian)	FIZ METAL METAL
Fizika Tverdoga Tela (in Russian)	FIZ TVERD TELA
Fortschritte der Physik	FORTSCHR PHYSIK
General Electric Company Report	GENL ELECT REP
Genshikaku Kenkyu	GENSHIKAK KENKU
Helvitica Chimica Acta	HELV CHIM ACTA
Helvitica Physica Acta	HELV PHYS ACTA
Hyperfine Structure and Nuclear Radiations	HFS NUCL RAD
Hungarian Academy of Sciences Report	HUNGACADSCI REP
Hyperfine Interactions (Book edited by A. J. Freeman and R. B. Frankel)	HYPERFINE INT
IBM Journal of Research and Development	IBM J RES DEVP
Institute of Electrical and Electronics Engineers Transactions of Circuit Theory	IEE T CIRCTHEO
Institure of Electrical and Electronics Engineers Transactions on Magnetics	IEEE TRANS MAG
Institute of Electrical and Electronics Engineers Transactions on Nuclear Science	IEEETRANSNUCSCI
Industrial Electronics	IND ELECTRONICS
Industrial and Engineering Chemistry	IND ENG CHEM
Industrial Laboratory (USSR)	IND LAB
Indian Journal of Pure and Applied Physics	INDIAN J PAPHYS
Indian Journal of Physics	INDIAN J PHYS
Industrial Research	INDUSTRIAL RES

Journal Names and Abbreviations—Continued

Journal or Reference	Abbreviation
Inorganic Chemistry	INORGANIC CHEM
Inorganic Materials	INORGANIC MATLS
Instruments and Control Systems	INSTR CONT SYST
Instruments and Experimental Techniques (USSR)	INSTR EXP TECH
Instrument Practice	INSTR PRACT
Instrument Review	INSTR REV
International Conference on Plutonium	INTL CONF PU
International Instrument Congress	INT INSTR CONG
International Journal of Quantum Chemistry	INT J QUANTCHEM
Colloque International du C.N.R.S. (held at Orsay)	INTCOLLOQ ORSAY
Colloque International du C.N.R.S. (held at Paris)	INTCOLLOQ PARIS
International Conference on Quantum Electronics	INTCONF QUANTEL
International Conference on Solid Compounds of Transition elements	INTCONF SOLCOMP
International Conference on the Electronic Properties of Metals at Low Temperatures (held at Geneva, New York)	INTCONFGENEVANY
International Conference on Low Temperature Physics and Chemistry	INTCONFLOWTPHYS
International Conference on Physics at Very Low Temperatures	INTCONFPHYSLOWT
International Congress of Pure and Applied Chemistry	INTCONG PA CHEM
Introduction to Magnetic Resonance (Book by A. Carrington and A. D. McLachlan)	INTRO MAG RES
Proceedings of an International Symposium on Anisotropy in Single—Crystal Refractory Compounds (held at Dayton, Ohio)	INTSYMP REFCOMP
Institute of Radio Engineers Transactions on Nuclear Science	IRETRANS NUCSCI
Instrument Society of America Transactions	ISA TRANS
Istituto Lombardo—Accademia di Scienze e Lettere (Rendiconti)	IST LOMBARDO
Izvestiya Akademii Nauk SSSR (in Russian)	ISV SSR NEORG
Izvestiya Vysshikh Uchebnyk Zavedenii	IZV VYS UCH ZAV
Journal of the American Ceramic Society	J AM CERAM SOC
Journal of the American Chemical Society	J AM CHEM SOC
Journal of Applied Physics	J APPL PHYS
Journal of Chemical Education	J CHEM EDUC
Journal of Chemical and Engineering Data	J CHEM ENG DATA
Journal of Chemical Physics	J CHEM PHYS
Journal de Chimie Physique	J CHIM PHYS
Journal of Electronics and Control	J ELECTRON CONT
Journal of Inorganic Chemistry USSR	J INORGCHEMUSSR
Journal of the Institute of Metals	J INST METALS
Journal of the Iron and Steel Institute	J IRONSTEELINST
Journal of the Less—Common Metals	J LESS COM MET
Journal of Materials Science	J MATL SCI
Journal of Metals	J METALS
Journal of Nuclear Materials	J NUCL MATL
Journal of the Optical Society of America	J OPT SOC AM
Journal of Physics (The Physical Society, London)	J PHYS
Journal of Physical Chemistry	J PHYS CHEM
Journal of Physics and Chemistry of Solids	J PHYS CHEM SOL
Journal de Physique et le Radium	J PHYS RADIUM
Journal of the Physical Society of Japan	J PHYS SOC JAP
Journal of Physics	J PHYSICS
Journal of Quantitative Spectroscopy and Radiative Transfer	J QUAN SPECT RT
Journal of Research of the National Bureau of Standards	J RES NBS
Journal of Science of the Hiroshima University	J SCI HIROSH U
Journal of Scientific and Industrial Research	J SCI INDUS RES
Journal of Scientific Instruments	J SCI INSTR
Journal of Solid State Chemistry	J SOLID ST CHEM
Journal of Structural Chemistry	J STRUCT CHEM
Journal of Technical Physics	J TECH PHYS
Journal of Vacuum Science and Technology	J VAC SCI TECH

Journal or Reference	Abbreviation
Japanese Journal of Applied Physics	JAP J APPL PHYS
Journal of the Electrochemical Society	JELECTROCHEMSOC
Jernkontorets Annaler	JERNKONT ANN
JETP Letters	JETP LET
Journal of Inorganic and Nuclear Chemistry	JINORG NUCLCHEM
Kristallografiya	KRIST
L'Effet Mossbaüer (Book by A. Abragam)	L EFFET MOSSBAÜ
Low Temperature Physics (Proceedings of an International Conference)	LOW TEMP PHYS
Low Temperature Physics (Edited by C. De Witt, B. Dreyfus, and P. G. De Gennes)	LT PHYS DE WITT
Lubrication Engineering	LUB ENG
Master's Thesis	M THESIS
Machine Design	MACHINE DESIGN
Machinery Lloyd	MACHINERY LLOYD
Magnetism (Book Edited by G. T. Rado and H. Suhl)	MAGNETISM
Magyar Fizikai Folyoirat	MAGY FIZ FOLYO
Materials in Design Engineering	MAT DESIGN ENG
Measurement Techniques USSR	MEAS TECH USSR
Memoires de l'Academie Royale de Belgique	MEMACADROYBELG
Metal Progress	METAL PROGRESS
Metallography	METALLOGRAPHY
Metals Technology	METALS TECH
Metallic Solid Solutions (Proceedings of a Symposium on their Electronic and Atomic Structure)—Edited by J. Friedel and A. Guinier	METALSOLIDSOLNS
Mikrochemica Acta	MIKROCHIM ACTA
Molecular Physics	MOL PHYS
Monatsberichte der Deutschen Akademie der Wissen schaften	MONATSBER DEUT
Monatshefte für Chemie	MONATSH CHEM
Mössbauer Effect Methodology	MOSS EFF METHOD
X-Ray Spectra and Electronic Structure of Matter, A. Faessler, Ed., U. of Munich Press	MUNICH SYMP
National Aeronautics and Space Administration Technical Report	NASA TECH REP
Nature	NATURE
Naturwissenschaften	NATURWISSEN
National Bureau of Standards, Institute for Materials Re-Research Symposium	NBS IMR SYMP
National Bureau of Standards Monograph	NBS MONOGRAPH
National Bureau of Standards Technical Note	NBS TECH NOTE
National Bureau of Standards Technical News Bulletin	NBSTECHNEWSBULL
Nederlands Tijdschrift voor Natuurkunde	NED TIJDS NAT
NMR and EPR Spectroscopy	NMR EPR SPECTRO
Proceedings of the Nuclear Physics and Solid State Symposium (held at Kanpur)	NUCLPHYS KANPUR
Nuclear Physics Symposium (held at Madras)	NUCLPHYS MADRAS
Nuclear Instruments and Methods	NUCL INSTR METH
Nuclear Physics	NUCL PHYS
Nukleonik	NUKLEONIK
Nuovo Cimento	NUOVO CIMENTO
Onde Electrique	ONDE ELECT
Optica Acta	OPT ACTA
Optical Properties and Electronic Structure of Metals and Alloys, F. Abeles, Ed., North Holland, 1966	OPT PROP
Optics and Spectroscopy	OPT SPECTR
Optics Communications	OPTICS COMM
Optika i Spektroskopiia (in Russian)	OPTIK SPEKT
Philosophical Magazine	PHIL MAG
Philips Research Reports	PHILIPS RES REP
Philips Technical Review	PHILIPS TECHREV
Philosophical Transactions of the Royal Society	PHILTRANSROYSOC
Physics and Chemistry of Glasses	PHYS CHEM GLASS
Physics and Chemistry of Solids	PHYS CHEM SOLID
Physik der Kondensierten Materie	PHYS KOND MATER

Journal Names and Abbreviations—Continued

Journal or Reference	Abbreviation
Physics Letters	PHYS LET
Physics of Metals and Metallography	PHYS METALMETAL
Physics of the Solid State (Edited by Balakrishna, Krishnamorthi, and Ramachandra Rao)	PHYS SOLIDSTATE
Physical Review	PHYS REV
Physical Review Letters	PHYS REV LET
Physica Status Solidi	PHYS STAT SOLID
Physics Today	PHYS TODAY
Physikalische Zeitschrift	PHYS Ż
Physica	PHYSICA
Physics	PHYSICS
Physikalische Verhandlungen	PHYSIK VERHANDL
Planseeberichte für Puivermetallurgie	PLANSEE PUL MET
Plansee Seminar	PLANSEE SEMINAR
Powder Metallurgy Bulletin	POWDER MET BULL
Polymer	POLYMER
Pribory i Tekhnika Eksperimenta (in Russian)	PRIB TEK EKSPER
Princeton Applied Research Corporation Technical Note	PRINCETONAPRESS
Private Communication (followed by the initials of the person in the Alloy Physics Section to whom the communication was addressed)	PRIVATECOMM XXX
Proceedings of the Bristol Conference on Defects in Crystallin Solids	PROCBRISTOLCONF
Proceedings of the American Academy of Arts and Sciences	PROC AMACAD A S
Proceedings of the Colloque Ampere	PROC COL AMPERE
Proceedings of the Institute of Electrical and Electronic Engineers	PROC IEEE
Proceedings of the Indian Academy of Sciences	PROC INDACADSCI
Proceedings of Nottingham University Conference	PROC INTCONFMAG
Proceedings of the International Conference on Magnetism	PROC INTCONFMAG
Proceedings of the Enrico Fermi International School of Physics	PROC INTSCHPHYS
Proceedings of the Japan Academy	PROC JAP ACAD
Proceedings of the Koninklijke Nederlandse Academie	PROC KONNEDACAD
Proceedings of the Physical Society (London)	PROC PHYS SOC
Proceedings of the Royal Society	PROC ROY SOC
Proceedings of the Academy of Sciences of the USSR	PROCACADSCIUSSR
Proceedings of the Bulgarian Academy of Sciences	PROCBULGACADSCI
Proceedings of the National Academy of Sciences	PROCNATLACADSCI
Progress in Cryogenics	PROG CRYOGENICS
Progress in Materials Science	PROG MATL SCI
Progress in Non-Destructive Testing	PROG ND TESTING
Progress in Physics	PROG PHYS
Progress in Theoretical Physics	PROG THEO PHYS
Progress in Inorganic Chemistry	PROGINORGANCHEM
Progress in Low Temperature Physics	PROGLOWTEMPPHYS
Semi-annual Progress Report (Solid-State and Molecular Theory Group), Massachusetts Institute of Technology	PROGREP MIT SSG
Platinum Metals Review	PT METALS REV
Quarterly Reviews of the Chemical Society of London	QUARTREVCHEMSOC
Radio Engineering and Electron Physics	RADIOENG E PHYS
Rapport du Commissariat a l'Energie Atomique	RAPPORT CEA
Proceedings of the Rare Earth Conference	RARE EARTH CONF
Report on Progress in Physics	REP PROG PHYS
Report on the Meeting on Semiconductors (London, 1957)	REPMEETSEMICOND
Resonance Paramagnetique Nucleaire (Book)	RES PARAMAG NUC
Resonance and Relaxation in Metals (Book)	RES RELAX METAL
Reviews of Modern Physics	REV MOD PHYS
Revue de Physique Appliquee (Supplement to J Phys Radium)	REV PHYSIQUE AP
Revue Roumaine de Chimie	REV ROUM CHIM
Review of Scientific Instruments	REV SCI INSTR
Revue du Nickel	REVUE DU NICKEL
Roentgenspektren und Chemische Bindung (Book published by the Karl Marx Universitat, Leipzig, 1966)	RONTGENCHEMBIND
Russian Metallurgy	RUSS MET
Scientific American	SCI AMERICAN
Science Progress	SCI PROG
Scientific Reports of Tohoku University	SCI REP TOHOKUU
Science	SCIENCE
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Solid State Physics	SOLIDSTATE PHYS
Solutions Metal—Ammoniac (Proceedings of the Colloque Weyl)—Edited by G. Lepoutre and M. J. Sienko	SOLNSMETALAMMON
Soviet Journal of Nuclear Physics	SOV J NUCL PHYS
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Spectroscopy Symposium (held at Bombay)	SPECTSYM BOMBAY
Steel	STEEL
Soft X-ray Band Spectra and the Electronic Structure of Metals and Materials—Edited by D. J. Fabian, Academic Press, 1968	SVS BANDSPECTRA
Technical Documentary Report	TECH DOC REP
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Technical Report—Air Force Materials Laboratory	TECHREP AFML TR
Technical Report (Deutches Elektronen Synchotron)	TECH REPORTDESY
Techniques of Vacuum Ultraviolet Spectroscopy, J. A. R. Samson, John Wiley & Sons, 1967	TECH VAC UV
The Alkali Metals (Book published by the Chemical Society)	THEALKALIMETALS
Theoretical and Experimental Chemistry	THEO EXP CHEM
Thesis (Doctoral)	THESIS
Technical Report of the Institute for Solid State Physics, Tokyo University	TOKYO U INSTSSP
Transactions of the American Society for Metals	TRANS ASM
Transactions of the Faraday Society	TRANS FARAD SOC
Translation—ASTIA Document (followed by its number)	TRANSLATION AD
Transactions of the Metallurgical Society of the American Institute of Mining, Metallurgical, and Petroleum Engineers	TRANSMETSOCAIME
Ukrains'kii Fizichnii Zhurnal (in Ukrainian)	UKR FIZ ZH
Ukrainian Physics Journal	UKRAIN PHYS J
Union Carbide Metals Company	UNIONCARBMETALS
Uspekhi Fizicheskikh Nauk (in Russian)	USP FIZ NAUK
Vacuum	VACUUM
Le Vide	VIDE

X Sen	X SEN
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Zeitschrift für Anorganische und Allgemeine Chemie	Z ANORGALL CHEM
Zeitschrift für Instrumentenkunde	Z INSTR
Zeitschrift für Metalkunde	Z METALLKUNDE
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Zeitschrift für Physikalische Chemie	Z PHYS CHEMIE
Zeitschrift für Physik	Z PHYSIK
Zavodskaia Laboratoriia (in Russian)	ZAVOD LAB
Zhurnal Neorganicheskoi Khimii (in Russian)	ZH NEORGAN KHIM
Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (in Russian)	ZHEKSPERTEORFIZ

Appendix 3. Special Materials Symbols

A Few Generalized Names for Groups of Materials.

Material codes which have proven to be useful for the inclusion in our files of review articles theoretical papers:

A—alkali metals.
G—garnet (marginal to our scope).
IG—iron garnet (marginal to our scope).
T—transition metals.
R—rare earth metals.
X—an element (metal or non-metal). This has also used to designate complexes in salts, together the descriptor, 0O.

These symbols were chosen so that they differed from those of the elements in the periodic table.

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			6. Performing Organization Code
7. AUTHOR(S) A.J. McAlister, R.C. Dobbyn, J.R. Cuthill, and M.L. Williams			8. Performing Organization
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			14. Sponsoring Agency Code

15. SUPPLEMENTARY NOTES

16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)

Theory and experimental practice in the field of soft x-ray emission from metallic solids are briefly reviewed, and measurements on a number of systems are critically evaluated and compared with the results of other techniques and theory, with a view to establishing the pertinence of the soft x-ray measurements and indicating specific guidelines for further enhancing their value. In addition, an exhaustive annotated index of measured spectra is provided.

17. KEY WORDS (Alphabetical order, separated by semicolons) Alloys; critical review; emission spectra; intermetallic compounds; metals; soft x-ray; spectra.

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