clearly visible, whereas in those recorded by multiaperture up to the fourth bright fringe is distinguishable. It appears that beyond the fourth fringe the vibrating amplitude is so large that decorrelation occurs. (In the case of single aperture recording the fringe's low visibility is mainly due to the low SNR at higher spatial frequencies.) Judging from the patterns it may be concluded that even in the case of recording surface tilt, multiaperture still results in better whole-field fringes. However, one should also keep in mind that the long exposure time necessitated by the multiaperture arrangement may be taxing on the stability of the laser output as well as the vibrating system as a whole.

The work was accomplished when one of the authors (F.P.C.) was at Tsinghua University in the summer of 1980 as a research scholar under the sponsorship of U.S. National Academy of Sciences.

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For information regarding the length of a Letter, number of illustrations and tables, and general preparation of manuscript, see Information for Contributors on the eighth page of any issue.

Effective optical constants of anisotropic materials: erratum

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0003-6935/81/071124-01$00.50/0.

The lower part of Fig. 1 in the recent Letter[1] did not print well, and the reader would have difficulty in following the argument. It is now being run again so that the dash dot legend as well as the dash and solid legends are legible.

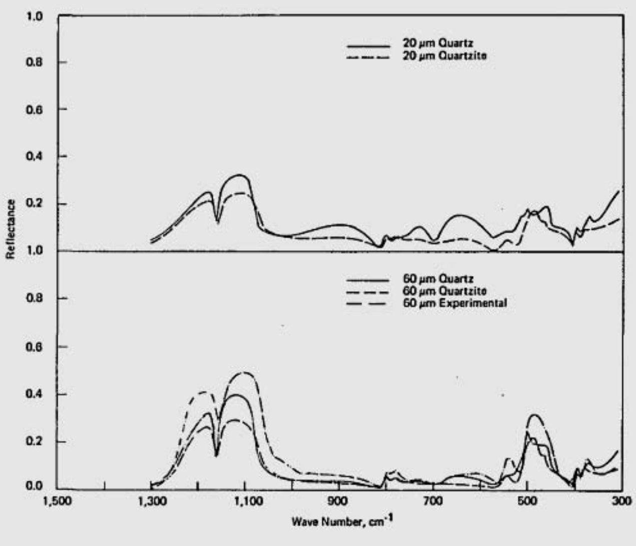

Fig. 1. Comparison of calculated spectra of quartz powder using the optical constants of quartz and quartzite.

Reference

1. J. R. Aronson and A. G. Emslie, Appl. Opt. 19, 4128 (1980).

Optical properties of metals

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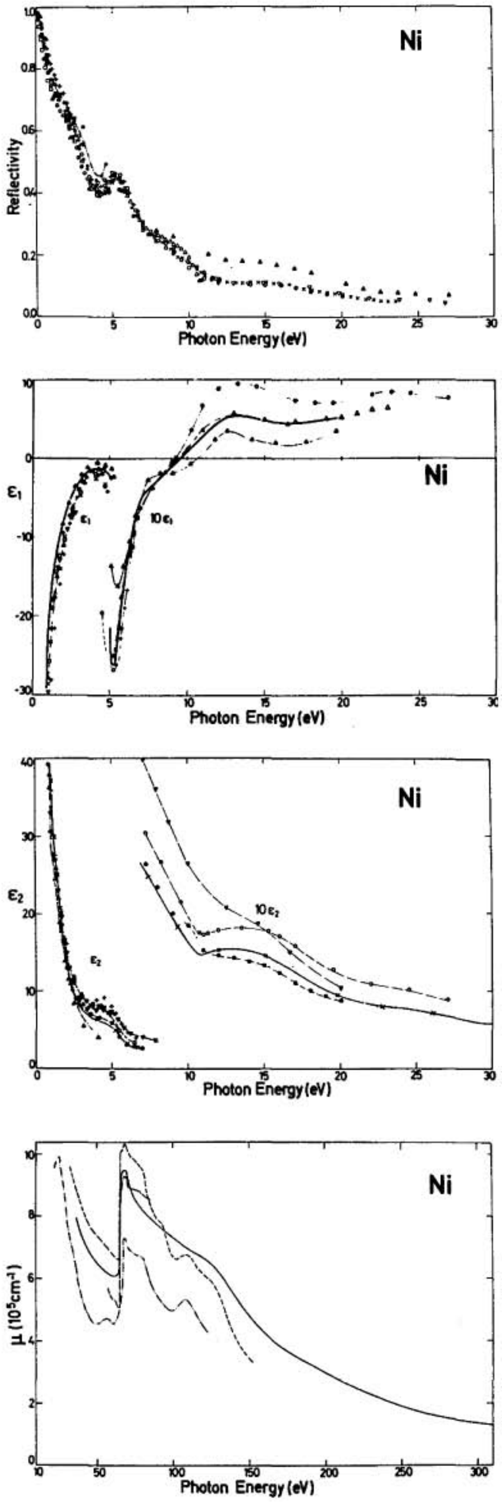
This Letter calls attention to a forthcoming compilation of optical data on all the metallic elements in the photon energy range 0.1–500 eV. The first volume should appear shortly.[1] It covers all the 3d, 4d, and 5d transition metals. The second volume will contain data on Sc, Y, the rare earths, the actinides, the noble metals, and Al. It is our hope that these compilations will be useful in both fundamental and applied research.

The data were obtained from the literature, with emphasis on data since about 1960. A detailed list of references is given, with tables showing the wavelength range covered by each investigation, as well as method of measurement, sample type, and temperature. Figures show the normal incidence reflectivity R, the real and imaginary parts of the dielectric function $\tilde{\epsilon} = \epsilon_1 + i\epsilon_2$, and the absorption coefficient μ, as a function of photon energy in such a way that the agreement or disagreement of the results of different investigators is apparent. For each element a table of recommended optical data [ϵ_1, ϵ_2, n, k, R, and the loss function $Im(-1/\tilde{\epsilon})$] is given as a function of photon energy.

As an example of the contents we show in Fig. 1 plots of the reflectivity, the real and imaginary parts of the dielectric function, and the high energy absorption coefficient for nickel. The data come from a number of sources, not detailed in this Letter. Figure 2 shows the number of literature references (the number of lines) for nickel, along with the energy range covered by each study.



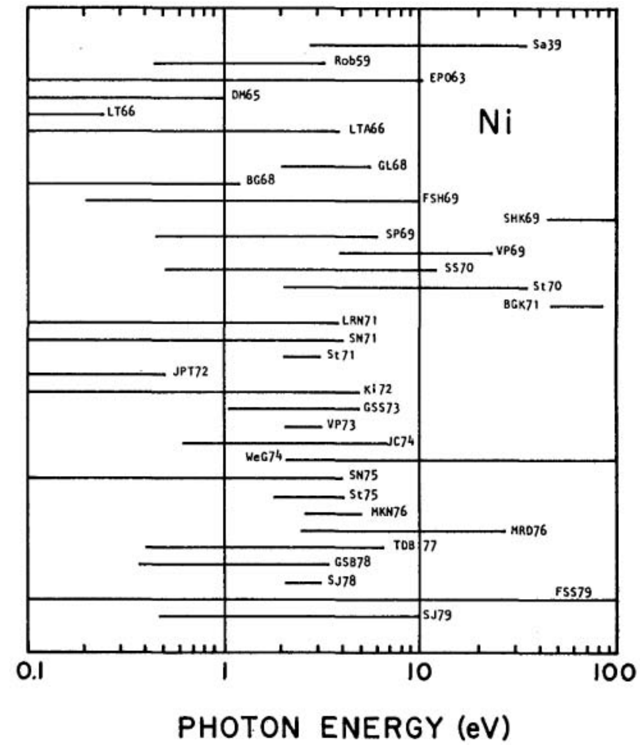


Fig. 2. Diagram of energy range covered by all investigations cited in Ref. 1. Symbols beside each line denote the original source.

Fig. 1. Reflectivity, real and imaginary parts of the dielectric function, and soft x-ray absorption coefficient for nickel. Different curves and symbols denote different investigations, not given in this Letter.

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References

1. Physics Data, Fachinformationszentrum Energie, Physik, Mathematik GmbH, Karlsruhe, Federal Republic of Germany. Vol. 1, 300 pages, in press; Vol. 2, ~200 pages, in preparation.