J. Appl. Phys. **85**, 2854 (1999); http://dx.doi.org/10.1063/1.369605 (*7 pages*)

Modeling the optical constants of $Hg_xCd_{1-x}Te$ alloys in the 1.5–6.0 eV range

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(Received 17 September 1998; accepted 3 December 1998)

The optical constants of $Hg_xCd_{1-x}Te$ as a function of energy and composition x are modeled over a wide spectral range from 1.5 to 6 eV. The model employed represents an extension of Adachi's model and incorporates the adjustable broadening function rather than the conventional Lorentzian one. In this way, greater flexibility of the model is achieved, enabling us to obtain an excellent agreement with the experimental data. The relative rms errors obtained for all compositions are below 2.5% for the real part and below 6% for the imaginary part of the index of refraction. The lowest rms errors are obtained for $x = 0$ (0.6% for the real part and 0.7% for the imaginary part of the index of refraction), and the highest for the $x = 0.91$ (2.4% for the real part and 5.8% for the imaginary part). © *1999 American Institute of Physics.*

ERRATUM

1. Erratum: "Modeling the optical constants of $Hg_xCd_{1-x}Te$ alloys in the 1.5–6.0 eV range" [J. Appl. Phys. **85**, 2854 (1999)]
Aleksandra B. Djurišić *et al.*
J. Appl. Phys. **86**, 4713 (1999)

KEYWORDS and PACS

Keywords

mercury alloys, cadmium alloys, tellurium alloys, II-VI semiconductors, optical constants, refractive index, dielectric function

PACS

78.20.Bh
Theory, models, and numerical simulation

78.20.Ci
Optical constants (including refractive index, complex dielectric constant, absorption, reflection and transmission coefficients, emissivity)

81.05.Dz
II-VI semiconductors

ARTICLE DATA

Digital Object Identifier

http://dx.doi.org/10.1063/1.369605

PUBLICATION DATA

ISSN

0021-8979 (print)
1089-7550 (online)

Publisher

American Institute of Physics

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