

## Modeling the Optical Constants of Diamonds from 0.06 to 30 eV

Aleksandra B. Djurišić and E. Herbert Li »[View Author Affiliations](#)

Applied Optics, Vol. 37, Issue 31, pp. 7273-7275 (1998)  
<http://dx.doi.org/10.1364/AO.37.007273>

[View Full Text Article](#)



[Acrobat PDF](#) (71 KB)

- [Abstract](#)
- [Article Info](#)
- [References \(16\)](#)
- [Cited By](#)
- [Metrics](#)
- [Related Content](#)

### Abstract

The optical properties of diamonds are modeled over a wide spectral range with the modified Adachi's model. Model parameters were estimated by use of the acceptance-probability-controlled simulated annealing algorithm. The employed model is quite flexible, as it uses an adjustable broadening function at each critical point. The broadening function can vary over a range of functions with similar kernels but different wings, so that extended absorption tails inherent to the conventional Lorentzian broadening can be eliminated. Good agreement with the experimental data is obtained in the entire investigated range. The obtained relative rms error for the real part of the index of refraction equals 4.7%, whereas for the imaginary part of the index-of-refraction relative rms error is 3.6%.

© 1998 Optical Society of America

[Optical Society of America ]

### OCIS Codes

([120.4530](#)) Instrumentation, measurement, and metrology : Optical constants

([160.4760](#)) Materials : Optical properties

### Citation

Aleksandra B. Djurišić and E. Herbert Li, "Modeling the Optical Constants of Diamonds from 0.06 to 30 eV," Appl. Opt. **37**, 7273-7275 (1998)  
<http://www.opticsinfobase.org/ao/abstract.cfm?URI=ao-37-31-7273>

You do not have subscription access to this journal. Citation lists with outbound citation links are available to subscribers only. You may subscribe either as an OSA member, or as an authorized user of your institution.

Contact your librarian or system administrator

or

[Log in to access OSA Member Subscription](#)

You do not have subscription access to this journal. Cited by links are available to subscribers only. You may subscribe either as an OSA member, or as an authorized user of your institution.