



Crystal-field analysis of low-temperature UCl_3 and UBr_3 absorption spectra.

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Rok wydania

2003

Czasopismo

Journal of Solid State
Chemistry

Numer woluminu

170

Strony

443-449

DOI

10.1016/S0022-
4596(02)00162-7

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

High-resolution absorption spectra of thin films of UCl_3 and UBr_3 have been measured at 4.2 K in the 4000–30 000 cm^{-1} range. The determined crystal-field lines were used in a computational analysis employing free-ion operators, one-electron crystal-field operators as well as two-particle correlation crystal-field operators. The performed analysis enabled the determination of the Hamiltonian parameters and an unambiguous assignment of 57 and 46 crystal-field levels with a mean error of 31 cm^{-1} for UCl_3 and UBr_3 , respectively.

Słowa kluczowe

Uranium trichloride, Uranium tribromide, Low temperature absorption spectra, Crystal-field parameters, Correlation crystal-field parameters, Energy levels

Adres publiczny

[https://doi.org/10.1016/S0022-4596\(02\)00162-7](https://doi.org/10.1016/S0022-4596(02)00162-7)

Strona internetowa wydawcy

<http://www.elsevier.com>