Size dependence on infrared spectra of $NaGdF_4$ nanocrystals.

Autorzy

Artur Bednarkiewicz

Mirosław Mączka

Wiesław Stręk

Jerzy Hanuza

Mirosław Karbowiak

Rok wydania

2006

Czasopismo

Chemical Physics Letters

Numer woluminu

418

Strony

75-78

DOI

10.1016/j.cplett.2005.11.090

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The infrared spectra of $NaGdF_4$ nanocrystalline powders were investigated. It was shown that the spectra demonstrated a significant dependence on the size of crystallites. In particular, the intensities of vibrational bands of IR spectra decreased proportionally to the inverse of crystallite size. The results are discussed in terms of confined phonon modes. The phonon confinement effect was most pronounced for lower energy vibrations and was observed both for stretching and bending vibrations of Gd–F and (Gd, Na)–F bonds as well as for T′(Na,Gd) vibrations.

Adres publiczny

https://doi.org/10.1016/j.cplett.2005.11.090

Strona internetowa wydawcy

http://www.elsevier.com