

عنوان مقاله:

Optical Properties of Cordierite Nanopowders by Kramers-Kronig Equations

محل انتشار:

دومین همایش بین المللی علوم و فناوری نانو دانشگاه تهران (سال: 1400)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

In this research cordierite nanopowders were synthesized by modified sol-gel method (Pechini) at different synthesized temperatures. Scanning Electron Microscopy (SEM) were used for morphological sample analysis. Using the FTIR spectra, the optical parameters of cordierite was detected. The refractive index and permittivity of the synthesized samples were calculated by Kramers-Kronig relations. The optical constants of nanopowders were strongly related to different synthesized temperatures. This is because by increasing the synthesized temperatures, both the real/imaginary parts of the refractive index were increased. Consequently, the transversal (TO) and longitudinal (LO) phonon frequencies were detected. The TO and LO frequencies shifted to the red frequencies by increasing the synthesized temperatures.

کلمات کلیدی:

.cordierite, sol-gel, Kramers-Kronig, refractive index

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