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Near-Edge Optical Properties of Layered Tin Sulfide (Selenide) Crystals

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Abstract

Absorption (K), reflection (R) and wavelength modulated transmission ($\Delta T/\Delta \lambda$) spectra in SnS, SnS₂ and SnSe crystals

were investigated in temperature range from 300 to 10 K. Excitonic states were discovered in all investigated compounds. Parameters of observed excitons and character of electron transitions participating in absorption edge formation were determined. Optical anisotropy in interband gap minimum was investigated.