Boron K-Edge XANES Spectra of Borate Glasses and Crystals

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Abstract

Boron K-edge x-ray absorption spectra of sodium borate glasses and some borate crystals have been measured using the beamline BL-2 of SR Center at Ritsumeikan University. The prominent peak at 193 eV corresponds to the B 1s - π^* transition in sp^2 hybridization and the broad absorption bands ranging in energy from 195 to 210 eV are attributed to the B 1s - σ^* transitions in sp^2 and sp^3 hybridizations. The profile of the latter band shows changes characteristic of different borate glasses and crystals.

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