

Morphology and micro-texture of synthetic chalcedony

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Chalcedony, which partially include the moganite-type domains, was synthesized from silica gel under hydrothermal conditions (200degree, 14bar, 120-250hrs.). Silica-X and opal-CT are detected by an X-ray powder diffraction method, and the two phases are precursors for quartz in the reaction. SEM and TEM observations show that quartz growing in early stage of crystallization partially includes moganite-type domains with numerous Brazil twin defects, and the crystals exhibit a plate-like form. With progressing of the growth, Brazil twin defects are decreased in the crystals and the habits of quartz are changed into the euhedral form.