

Synthesis and structural studies of lithium metasilicate (Li_2SiO_3) nanoparticles via hydrothermal method

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Abstract: The hydrothermal method due to advantages of low reaction temperatures and achieving fine particles in synthesized samples was used. Li_2SiO_3 has orthorhombic structure with Cmc21 space group and cell parameters $a = 9.392$, $b = 5.397$ and $c = 4.660 \text{ \AA}$. The structure, size and morphology of nano particles were investigated by XRD, FT-IR and SEM analysis methods. In addition, the cell parameters of lithium metasilicate nano particles were determined by CELREF software version 3. Optical properties of synthesized silicates were investigated by UV-vis and PI analysis methods.

Keywords: *Lithium metasilicate; nano particles; hydrothermal; spectroscopy; optical properties.*

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