

## Synthesis and structural characterization of $\text{Li}_2\text{CoSiO}_4$ , as potential Li-battery cathode material

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**Abstract** Lithium cobalt orthosilicate  $\text{Li}_2\text{CoSiO}_4$ , a new material for potential use in Li-battery cathodes, has been prepared successfully by a modified Pechini sol-gel process. The synthesized product was characterized by X-ray powder diffractometry (XRD), thermal analyses (DTA-TG) and electron microscopy. The bulk quantities of nano-sized particles of layered  $\text{Li}_2\text{CoSiO}_4$  have been obtained at 700°C. The mean diameter of  $\text{Li}_2\text{CoSiO}_4$  nanoparticles was about 55 nm.

*Keywords:* cathode material, orthosilicate, cobalt silicate, sol-gel method, XRD.

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