

### Synthesis of indium tin oxide nanocubes in supercritical methanol

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As an n-type transparent conducting oxide with high electrical conductivity and optical transparency, indium tin oxide (tin-doped indium oxide, ITO) has been widely and necessarily used for various industrial applications including LCDs, solar cells, optical sensors, and chemical sensors.

In this research, cubic nanocrystals of indium oxide and indium tin oxide (ITO), with varying Sn content (0 – 10 atomic %), were synthesized in supercritical methanol. The formation of indium oxide nanoparticles was completed in less than 3 min, and nano-sized particles (~ 20 nm) were obtained. XRD patterns were used to observe the formation of In<sub>2</sub>O<sub>3</sub> nanocrystals. TEM was utilized to check the particle size and morphology with respect to varying reaction time. The electrical resistivity of the ITO particles was also investigated.