

## **[Keynote Talk]: Ultrasound Assisted Synthesis of ZnO of Different Morphologies by Solvent Variation**

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**Abstract :** ZnO nanoparticles have been synthesized by ultrasonic irradiation from simple linear alcohols and water/ethanolic mixtures, at 50 oC. By changing the composition of the solvent, the shape could be altered. While no product was obtained from methanolic solutions, in ethanol, sheet like lamellar structures prevail. n-propanol and n-butanol resulted in needle like structures. The morphology of ZnO could be thus tailored in a simple way, by varying the solvent, under ultrasonic irradiation, in a relatively less time consuming method. Variation of the morphology and size of Zn also provides a means for modulating the band-gap. Although the chemical effects of ultrasound do not come from direct interaction with molecular species, the high energy derived from acoustic cavitation creates a unique interaction of energy and matter with great potential for synthesis.

**Keywords :** ultrasound, ZnO, linear alcohols, morphology

**Conference Title :** ICC 2018 : International Conference on Chemistry

**Conference Location :** Dublin, Ireland

**Conference Dates :** August 16-17, 2018