# ICoFM2016-41: Catalyst-Free Growth Of ZnO Nanowires On ITO Seed/Glass By Thermal Evaporation Method: Effects Of ITO Seed Layer Thickness

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**Abstract:** A seed/catalyst-free growth of ZnO nanowires (ZnO-NWs) on a glass substrate were successfully fabricated using thermal evaporation technique. These nanowires were grown on ITO seed layers of different thicknesses of 25 and 75 nm, which were deposited on glass substrates by radio frequency (RF) magnetron sputtering. Prior to synthesized ITO nanowires, the sputtered ITO seeds were annealed using the continuous wave (CW) $CO_2$ laser at 450 ℃ in air for 15 min. The effect of seed layer thickness on the morphological, structural, and optical properties of ZnO-NWs were systematically investigated by X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), and UV-Vis spectrophotometer.

**Keywords**: ZnO nanowires; Annealing; ITO seed layer; Glass substrate; Thermal evaporation; CW $CO_2$ laser