

Abstract Submitted
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Optimizing electrical conductivity and optical transparency of IZO thin film deposited by radio frequency (RF) magnetron sputtering¹

LEI ZHANG, Winston Salem State University — Transparent conducting oxide (TCO) thin films of In₂O₃, SnO₂, ZnO, and their mixtures have been extensively used in optoelectronic applications such as transparent electrodes in solar photovoltaic devices. In this project I deposited amorphous indium–zinc oxide (IZO) thin films by radio frequency (RF) magnetron sputtering from a In₂O₃–10 wt.% ZnO sintered ceramic target to optimize the RF power, argon gas flowing rate, and the thickness of film to reach the maximum conductivity and transparency in visible spectrum. The results indicated optimized conductivity and transparency of IZO thin film is closer to ITO's conductivity and transparency, and is even better when the film was deposited with one specific tilted angle.

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