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Thin films to single crystals: Organometal halide perovskite materials for advanced optoelectronics

The recent emergence of perovskite materials has revolutionized the photovoltaic technology and offers solutions to contemporary energy and environmental issues. Moreover, the capabilities of single crystals are far superior to the thin film counterparts. This presentation outlines the growth parameters and crystal kinetics involved in the perovskite single crystal growth process for superior wafer-style solar cell devices. Typically, perovskite solar cells with perovskite in the film form are attractive with their higher performance but, they degrade at faster rate, suffer immensely from a high density of traps and grain boundaries, which markedly limit the potential performance in devices.

Biography

Padmaja Guggilla is an Associate Professor of Physics at Alabama A&M University. She has 10+ years of teaching, research, and service experience at the university level. She has over 60+ publications in reputed journals and conference proceedings. She received about two million dollars in grants as PI and over two million dollars as Co-I from various funding agencies in the past nine years. Her research interests include nanocomposite materials, chemical sensors, radiation detectors, energy harvesting, and nanotechnology. Her research interests include chemical sensors, radiation detectors, energy harvesting, and nanotechnology etc.

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