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**TUTORIAL TOPIC:**

How to fabricate and test Perovskite and Dye-sensitized Solar Cells?

**TUTORIAL:**

The revolution that came along with the discovery of the dye sensitized solar cells in early 90s took us to an era where low cost photovoltaics can be realized. Starting with ca. 7-8% efficiency then, these devices have reached ca. 13% efficiency in laboratory scale. Though DSSC is yet to be congregated into a commercial product despite of some aggressive research and notable scientific contribution over a period of two decades, they have seeded a variety of newer bulk heterojunction structures. Quantum Dot solar cells, Extremely Thin Absorber Cells are among the few that were envisaged as possible alternate avenues. However, in terms of efficiency, any of these technologies is yet to match even with the DSSC. This stalemate took a major boost in late 2012 when organometal halide perovskite emerged out as possible light absorbing material.

In the last couple of years we have witnessed a major jump in terms of device efficiency exceeding 19% using hybrid perovskite materials. Such a leap was possible only through controlling the perovskite composition and morphology to a larger extent. In this presentation the evolution of perovskite-based solar cells will be discussed. The rapid development of the perovskite solar cells is lead by controlling the solution parameter and other related critical control parameters.