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TUTORIAL TOPIC:

How to fabricate and test Silicon Solar Cells?

TUTORIAL:

The goal of the tutorial is to give a detailed hands-on view of silicon solar cell fabrication. Idea is to teach "How solar cells are made" instead of "How solar cells work". We will start with a basic overview of Si solar cell technology. Common cell architectures will be presented along with a discussion on their advantages/disadvantages. Finally, fabrication of a single-junction solar cell will be discussed in detail. Common mistakes, possible optimizations, and common industrial practices will be highlighted wherever relevant.

PROFILE:

Sushobhan Avasthi received the B.Tech degree in electrical engineering from the Indian Institute of Technology Kanpur, Kanpur, India, in 2005, and the M.A. and Ph.D. degrees in electrical engineering from Princeton University, Princeton, NJ, USA, in 2007 and 2011, respectively. From 2011 to 2014, he worked as a Postdoctoral Associate with the Princeton Institute of Science and Technology of Materials, Princeton University. Currently he is an Assistant Professor at the Center for Nanoscience and Engineering (CeNSE) at Indian Institute of Science (IISc), Bangalore. His research interests are: Low-cost photovoltaics, specifically silicon/organic and silicon/metal-oxide heterojunctions; Large-area electronics, specifically p-channel metal-oxide TFTs; and power electronics.