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TOPIC:

Increasing Efficiency in Organic Solar Cells and Modules

ABSTRACT:

Increasing organic solar cell efficiency is an active area of research with much success reported from researchers around the world. Some of the efforts we have taken to improve cell and module efficiency at our lab are – (i) silver metal nano particles have been incorporated with and without buffer layer to increase light absorption; (ii) optical spacers have been studied to identify optimum light coupling in active layer; (iii) active photovoltaic layers have been annealed in the presence of electric field to increase their charge carrier efficiency; (iv) cell dimensions have been optimised to achieve the maximum module efficiency. Together, these techniques help build improved performance of organic solar cells and modules. The understanding gathered from these approaches will be shared during talk.

PROFILE:

S. Sundar Kumar Iyer did his early schooling in Calcutta. He got his bachelors and masters degrees in Electrical Engineering Department at IIT Madras. He obtained his doctoral degree in Semiconductor Device Processing at the University of California at Berkeley. After a five year stint at IBM Microelectronics, New York, he joined a decade ago at IIT Kanpur in the Electrical Engineering Department as a faculty member. He is also a member of the Samtel Centre for Display Technologies at that institute. He is currently focusing his research in the area of large area flexible electronics in general and in organic solar cells in particular.