

An Introduction to Organic Solar Cells

**Prof. S. Sundar Kumar Iyer
(IIT Kanpur)**

Talk abstract: Solar cells based on organic material have the potential for large volume and low cost production and hence are attractive. However, low efficiency and poor stability and reliability are challenges to organic solar cells being used in commercial products. Research in the last couple of decades in labs across the world has focused on overcoming these challenges.

In this talk, after an introduction, the fundamental operational difference of organic solar cells with respect to the conventional inorganic material based solar cells will be discussed. The challenges and inherent advantages of organic solar cell devices and the historic evolution of their structures will be presented. The talk will conclude with a glimpse of some of the on-going research and ideas to improve the functional parameters of the organic solar cell.

Speaker biography: S. Sundar Kumar Iyer did his early schooling at Calcutta. He obtained his B.Tech. and M.Tech. degrees at the Indian Institute of Technology (IIT) Madras in electronics and communication engineering and electrical engineering respectively. He went on to complete his PhD degree at the University of California at Berkeley working on a novel method of silicon-on-insulator wafer fabrication. Following this, he spent more than five years at IBM, East Fishkill, New York, where he helped develop and qualify the electrically programmable fuse for the embedded DRAM group. Subsequently, he joined IIT Kanpur in the Electrical Engineering Department. AT IIT Kanpur, he is part of the Samtel Centre for Display Technologies (SCDT) where he does research on organic solar cells and is involved with projects and initiatives on solar photovoltaic at the institute and pan-IIT level.