



IIT Bombay to be a major participant in the Solar Energy Research Institute for India and the United States (SERIUS)

IIT Bombay will be a key participant in the **Solar Energy Research Institute for India and the United States (SERIUS)**, which was launched in Mumbai on December 8, 2012.

SERIUS is jointly funded by the Government of India (through the Department of Science and Technology) and the U.S. Department of Energy (DOE) over a 5-year period starting October 1, 2012, with funding of \$25 million for 5 years in a 50%/50% split between the two countries. The Consortium is also supported by cost sharing from its members—more than 30 partners from India and the US—with at least \$25 million in matching funds.

The lead institutions for **SERIUS** are the Indian Institute of Science (IISc) in India and the National Renewable Energy Laboratory (NREL) in the USA. The other organizations which are involved in this multi-party consortium-based activity are:

From India: Clique Developments Ltd.; Center for Study of Science, Technology and Policy (“C-STEP”); Hindustan Petroleum Corporation, Ltd.; Indian Association for the Cultivation of Science; Indian Institute of Technology Bombay; Indian Institute of Technology Madras; International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI); Moserbaer India Ltd.; Thermax Ltd.; TurboTech Precision Engineering Ltd.; and Wipro, Ltd.

From USA: Arizona State University; Carnegie Mellon University; The Colorado School of Mines; Corning Incorporated; Cookson Electronics; General Electric Company; Lawrence Berkeley National Laboratory; Massachusetts Institute of Technology; MEMC Electronic Materials, Inc.; Purdue University; RAND Corporation; Sandia National Laboratories; Solarmer Energy, Inc.; Stanford University; University of Central Florida; University of South Florida; and The Washington University at St. Louis.

The *vision of SERIUS* is to create an environment for cooperation and innovation “without borders” to develop and ready emerging and revolutionary solar electricity technologies toward the long-term success of India’s Jawaharlal Nehru National Solar Energy Mission and the U.S. DOE SunShot Initiative. It will enhance existing and develop new scientific and research collaborations in solar energy science and technology to provide concerted, joint efforts that leverage the extensive body of existing research programs, capabilities, experience, and knowledge within the large multidisciplinary team of world-renowned universities, premier national laboratories/institutes focusing on solar energy R&D, and leading companies that comprise **SERIUS**.

The *overall goal of SERIUS* is to accelerate the development of solar electric technologies by lowering the cost per watt of photovoltaics (PV) and concentrated solar power (CSP) through a bi-national consortium that will innovate, discover, and ready emerging, disruptive, and revolutionary solar technologies that span the gap between fundamental science and applied R&D, leading to eventual deployment by sustainable industries. **SERIUS** will address critical issues in fundamental

and applied research, analysis and assessment, outreach, and workforce development. Throughout this joint effort, a key element is engaging a significant base of Indian and U.S. industry that is *dedicated and committed* to developing solar energy for both India and the United States.

SERIIUS has established three research thrusts with the following objectives to ensure high impact R&D to address key technical barriers in solar electricity generation:

- **Sustainable Photovoltaics:** Develop next-generation materials, devices, and manufacturing processes tailored to India's needs, environment, and resource availability
- **Multiscale Concentrated Solar Power:** Overcome critical science and engineering challenges for reliable multiscale CSP systems
- **Solar Energy Integration:** Identify and assess key technical, economic, environmental, and policy barriers to enable a research agenda for technical readiness in India and to benefit the United States.

More details of SERIIUS and the work proposed to be done are available at www.seriius.org.

Twenty faculty members from 5 Departments at IIT Bombay will participate in SERIIUS. Professor Shaibal Sarkar will be the Principal Investigator at IIT Bombay, and Professors Prakash Ghosh and Suneet Singh will be the co-PIs. In addition, Professor Juzer Vasi will be the Photovoltaics Research Thrust Leader for India.

The India launch of SERIIUS was held at The Rooftop, Oberoi Trident Hotel, Mumbai on December 8, 2012, and was attended by SERIIUS partners from India and the USA, as well as leaders from industry, academia and research. Speaking on the occasion, Prof. Devang Khakhar, Director, IIT Bombay, said, "IIT Bombay is delighted to be a key player in this important bilateral multi-partner initiative, which will focus on distributed solar energy. The collaboration will foster flow of technology between the two countries, and will tap into the wealth of expertise and talent available in India and the USA. SERIIUS will add on to the significant amount of work in solar energy already being done at IIT Bombay."



Prof. Devang Khakhar, Director of IIT Bombay, speaking at the launch of SERIIUS



Prof. Kamanio Chattopadhyay, IISc, India Co-Director of SERIIUS, with Mr. F. C. Kohli at the launch of SERIIUS