



**McDonnell Academy Global Energy and Environmental Partnership (MAGEEP)
4th International Symposium on Energy and Environment
December 6 to 12, 2012
Oberoi Hotel, Nariman Point, Mumbai**

**Co-hosted by
Indian Institute of Technology, Bombay
Tata Institute of Social Sciences, Bombay
Washington University in St. Louis, USA**

SYMPOSIUM SUMMARY

An international meeting, the 4th International Symposium on Energy and Environment: ACCESS, of the partner universities of the McDonnell Academy Global Energy and Environmental Partnership was convened in Mumbai between December 6 to 12, 2012. The Symposium was attended by about 350 faculty, students, government and corporate leaders. The Symposium included speakers and attendees who are academic, corporate and government leaders. The speakers included representatives from the Indian Government (Union and State Ministers, Chairman of Coal India, Secretary Ministry of New and Renewable Energy), United States Environmental Protection Agency and United States Department of Energy, United Nations, several Corporate CEOs and leaders from Solar and Coal companies. In addition, several NGO leaders attended the Symposium. Presidents / Directors/ Chancellors/ Faculty from the partner Universities were in attendance. As in previous Symposia, results of existing projects were discussed, and new projects launched. Details of the various presentations and copies are available on the website – <http://mageep.wustl.edu/Symposium2012> . Notable events of the Symposium included – short courses and launch of a MAGEEP Educational Network partnership with University-Government-Corporate sectors to address energy and environmental education; launch of the India-US Solar Energy Research Institute funded by the Governments of India and the US; creation of a global network to address clean coal technologies involving India, US, China and Australia; and to address issues related to Clean Water and Clean Air / Aerosol Science and Technology. A brief description of the various initiatives is listed:

- **Global Network for Coal R&D** - Researchers from Washington University in St. Louis, the University of Queensland in Brisbane, Australia, Tsinghua University in Beijing, China and the Indian Institute of Technology Bombay will work collaboratively to address the environmental challenges from the use of coal. In addition to joint research and development programs, partners plan to share unique facilities, including the Advanced Coal and Energy Research Facility at

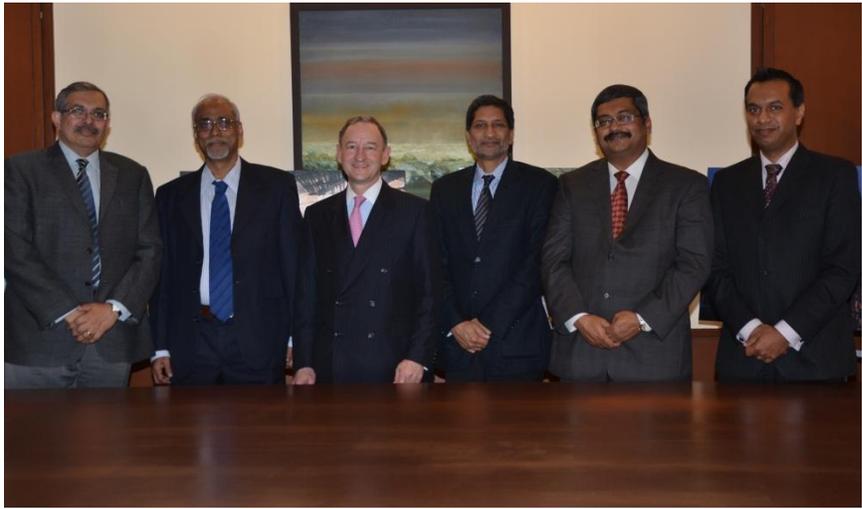
Washington University, and potentially develop an advanced technology park near Mumbai.

- **SERIUS—the Solar Energy Research Institute for India and the United States-** A \$62 million venture jointly funded by Government of India and the U.S.

Department of

Energy (\$25 million split between the two governments) and global corporations (\$37 million), SERIUS was created to advance solar technology research with the goal of lowering the cost of implementation. SERIUS will also develop education and training programs to help the deployment of solar technology in rural India. Additional interactions with researchers from countries such as Israel, Turkey, Australia and others will be explored.

- **Clean Water Issues and Energy-Water Nexus** - The immense challenges faced in reducing the huge amounts of power consumed in water/wastewater treatment (specifically desalination), water reclamation, water distribution were discussed. Also huge amounts of water are consumed in power generation such as cooling water for power plants, hydraulic fracturing etc. Future projects are to focus on the sustainable use of energy for water and water for energy.
- **Global Aerosol Network** – Representatives from IIT Bombay, Tsinghua University, Fudan University, Chulalongkorn, Yonsei University, and Washington University have a network of aerosol researchers that study wide facets of the discipline, with applications in energy, environment, materials, and climate change. The group, using a collaborative framework set up through the MAGEEP Educational Network will develop various modalities of interaction and collaborative action.
- **MAGEEP Educational Network-** Students from the 28 MAGEEP partner institutions now will have access to innovative educational opportunities and internships around the world that focus on major issues such as air quality, energy-water nexus, solar energy and energy storage, and energy and environmental technology. The opportunities, developed through the MAGEEP network, include partnerships with corporations and governments.



D. Khakhar, Director, IIT Bombay, S. Parasuraman, Director, TISS, Mark Wrighton, Chancellor, WUSTL, G. Yadama, Professor, WUSTL, P. Biswas, Chairman, EECE, WUSTL, S. Krishnan, Advisor to Secretary General, United Nations at the Symposium.



Presidents and Representatives of the 28 partner Universities at the Presidents Forum of the 4th International Symposium on Energy and Environment. Chancellor Mark Wrighton is summarizing the events and highlighting the initiatives that will be scaled up by MAGEEP.

- Joint Executive MBA program-** Washington University in St. Louis and IIT Bombay intend to offer an Executive Masters of Business Administration, targeting middle- and senior-level executives in India. The new program, a first-of-its kind in India where students may earn MBA degrees from two leading institutions, will develop deeper managerial, leadership, and critical knowledge among rising executives.

The McDonnell International Scholars Academy (<http://mcdonnell.wustl.edu>) was founded to build an infrastructure for collaborative education and research and to prepare the next generation of society's global leaders. The McDonnell Academy is a unique, one of its kind, global partnership that was launched in 2005 involving 28 leading institutions. The partner institutions include 17 in Asia (including three in India: IIT Bombay, TISS, Mumbai; and JNU, Delhi); 2 in Australia; 4 in the Middle East; 2 in Latin America; and 2 in Europe and 1 in the United States.

The collaborative research programs have focused on issues related to energy, environment and sustainability. We have formed the McDonnell Academy Global Energy and Environment Partnership (MAGEEP, <http://mageep.wustl.edu>) in 2007, which has fostered collaborative research and education among our partners.

Useful Websites:

MAGEEP: <http://mageep.wustl.edu>

Symposium: <http://mageep.wustl.edu/Symposium2012>

McDonnell International Scholars Academy: <http://mcdonnell.wustl.edu>

Indian Institute of Technology, Bombay: www.iitb.ac.in

Tata Institute of Social Sciences: www.tiss.edu

Washington University in St. Louis: www.wustl.edu