



MEDIA RELEASE

State-of-the-art TERI-Deakin ‘Nanobiotechnology Research Centre’ inaugurated to tackle agricultural, biomedical and sustainability issues

New Delhi/Gurgoan Feb 22, 2012: Hon’ble Louise Asher, MP and Minister for Innovation, Services & Small business, Minister for Tourism and Major Events, Australia along with Professor Jane den Hollander, Vice Chancellor, Deakin University and Dr RK Pachauri, Director General TERI today inaugurated the State-of-the-art **TERI-Deakin ‘Nanobiotechnology Research Centre’**, a new research lab facility set up to provide solutions towards a greener and more advanced use of nanotechnology for resolving challenging agricultural, biomedical and sustainability issues.

Speaking at the inauguration of the new lab facilities, **Hon’ble Louise Asher**, MP and Minister for Innovation, Services & Small business, Minister for Tourism and Major Events, Australia said, *“This outstanding facility is the result of a dynamic partnership between The Energy and Resources Institute of India (TERI) and Victoria’s own Deakin University to augment research in the area of Nano Biotechnology, which will enable efficiency, effectiveness and provide solutions for a sustainable future.”*

Highlighting the importance of TERI-DEAKIN partnership, **Dr RK Pachauri**, Director-General, TERI said, *“Research at TERI seeks to find solutions to problems related to attaining sustainability and environmental degradation and has made a difference to the lives of many people. The organization’s commitment to these areas is a continuous process, and setting up the TERI-Deakin Nano Biotechnology Research Centre is one of the means through which, TERI plans to create capacity and expertise for technological solutions to problems of inefficient use of natural resources.”*

Professor Jane den Hollander, Vice Chancellor, Deakin University said that the centre provided a hub for up to 50 PhD students who are undertaking research under the Deakin India Research Initiative (DIRI).

“What is particularly pleasing about this centre is that it is tackling research into global issues such as food security for a growing world population, sustainable agricultural practices and environmental sustainability,” she said.

“These are vital issues for humanity and it is extremely satisfying to think of the hugely positive implications of this research,” she added.

Dr. Alok Adholeya, Director, Biotechnology and Management of Bioresource Division, TERI said, *“The relationship of TERI and Deakin University at this juncture is immensely timely, since the Nano-biotech sphere has to play a pivotal role in application research and ultimately to deliver products and processes those are highly environmental benign and efficient for mankind, specifically, in the health and food sector. The commitment and expertise of TERI and equally important contribution committed by Deakin University would pave the way to achieve the desired goals.”*

The new laboratory will be used to bring together Deakin University's expertise in the design and characterisation of novel nanomaterials and TERI's experience in biotech applications in food, agriculture, environment and pharmacology.

In 2010, TERI and Deakin University, Australia signed a memorandum of understanding (MOU) announcing the setting up of the Nano Biotechnology Research Centre in the field of Nano Biotechnology in India. The centre's development was an outcome of TERI's core capability of knowledge creation and development of efficient, environment friendly technologies and Deakin's India Research Initiative (DIRI) which is committed towards establishing a lasting association with industry partners in India to chart a vibrant culture of research and scholastic excellence.

TERI-DEAKIN Nanobiotechnology Research Centre aims towards a greener and more advanced use of nanotechnology for resolving challenging agricultural and biomedical issues. The Centre aims to contribute to a deeper understanding of Nanobiotechnology in academia and research. Located at TERI Gram, the Centre which has been built on reclaimed land, is not only an architectural delight, but is also planned to provide a setting that enhances learning, and simultaneously showcases the concept of modern green buildings.

The TERI-DEAKIN Nanobiotechnology Research Centre aims to address the physico-chemical interactions of various molecular materials and their behavior in biological systems presents a range of exciting research problems within 'bio-nanotechnology' domain. This technology is viewed to go a long way in helping a country's food security issue, provide benefits in the area of health as well as address environmental issues. There is substantial interest across India in this new field of research as well as in Australia. More prominently, the initiative intends to aim and address areas of mutual interests and envisages that within five years it will have approximately 70 researchers including 50 PhD students enrolled at Deakin and co-supervised by Deakin and TERI practitioners.

This centre aims at a greener and more advanced use of nanotechnology for resolving challenging agricultural and biomedical issues and is working to contribute to a deeper understanding of Nanobiotechnology in academia and research. It is seeking to achieve sustainability in agricultural practices by early detection of phytopathogens by sensitive nano-biosensors and nano carrier-based formulations to improve crop productivity and biotic stress tolerance. Another area of focus is nano delivery of agrochemicals and nanoparticles /nanopolymers along with nanoparticle-based nutrient delivery systems.

Scientists at the centre are currently engaged in research to generate formulations for coating seeds with nanomaterials and biological materials, synthesis of nanoparticles from waste and understand enhanced interaction and secondary metabolites production in a reactor system. The centre is currently looking to develop environment friendly ways of synthesizing nanoparticles using plants and microbes. Innovative solutions are being sought in bio-fuel production. On human health related issues, it is in the process of generating DNA-based nanocarriers or chimeric molecules for target specific gene delivery and drug therapy.

Some of the unique facilities available at the Centre are:-

- Electron microscopy: scanning and transmission
- Advanced microscopy with Confocal Microscope, StereoZoom
- Advanced separation techniques: GC, HPLC
- Seed coating machines, rotary evaporator
- Spectral scanner
- Nanoparticle analyser

- FTIR
- XRF
- Differential scanning calorimeter

About TERI

The Energy and Resources Institute (TERI) was established in 1974. A dynamic and flexible organization, activities in TERI ranges from microbiology to global climate change, from smoke-filled rural kitchens to plush corporate boardrooms, from schoolchildren to heads of state—no sphere of human endeavour is unfamiliar to TERI. The organization works on formulating local and national level strategies to suggesting global solutions to critical energy and environment-related issues. Headed by world-renowned economist Dr R K Pachauri also the head of the Nobel Prize winning UN Climate panel, TERI is best described as an independent, not-for-profit research institute focused on energy, environment, and sustainable development and devoted to efficient and sustainable use of natural resources. TERI is headquartered in New Delhi, TERI has established regional offices in Mumbai, Bangalore, Goa, Guwahati and Mukhteshwer in the Himalaya's and International centers in Japan, Malaysia, the United Arab Emirates, Washington DC, and London.

About DIRI

Deakin University, Australia launched the 'Deakin India Research Initiative' (DIRI) in India in 2009. DIRI builds on Deakin University's world-leading expertise in material sciences, nanotechnology and biotechnology. It is an expansion of Deakin Univerity's ongoing development of research models to bridge the industry-academia divide.

About BMBD

The Biotechnology and Management of Bioresources Division (BMBD) fosters a multidisciplinary approach to solve the environmental problems to improve plant species for sustainable utilization through biotechnology. The Division, on one hand, focuses on basic and applied research on using microbial resources for biotechnological intervention to address agriculture and energy- and environment-related issues, and on the other, supplements conventional methods of improving plant species with biotechnological techniques. The division is also actively involved in the development and application of biofertilizers in a wide range of plants, and has a core competence in technology development, bioremediation, plant tissue culture, and plant genetic engineering.

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