

UKIERI Research Awards Announcements 2007- 08

UKIERI-DST Science and Technology Awards 2007				
S.No	Title	UK Lead Researcher and Institution	Indian Lead Institution	Summary
1	Tunable and Hierarchical Self-organized meso-structuring using Electric Fields	Prof. Ullrich Steiner, Cambridge University	Prof. Ashutosh Sharma, Indian Institute of Technology, Kanpur	Creating insitu-tunable and hierarchical patterns using electrohydrodynamic lithography of nano particle filled polymer thin films.
2	Spin-wave and domain wall dynamics in vertical magnetic nanowires	Prof. Robert Hicken, Exeter University	Prof. Anjan Barman, Indian Institute of Technology, Delhi	Development of low cost materials for high speed and high density spintronics.
3	Fabrication and scanning tunnelling microscopy characterisation of ZnO-based optoelectronic devices	Dr. Paul Dawson, Queen's University of Belfast	Dr. Karunakar Nanda, Indian Institute of Science, Bangalore	Investigating the optical and electrical properties of ZnO nano-entities for application in light emitters and detectors.
4	Biliary Duct Stem Cells for Cell Replacement Therapy in Diabetes	Dr. David Tosh, Bath University	Dr. Anandwardhan Hardikar, National Centre for Cell Science (NCCS), Pune	To generate the pancreatic beta-cells from the gall bladder for transplantation into diabetic patient.
5	Gene expression and chromatin organisation during stem cell cardiovascular differentiation.	Prof. Peter Andrews, Sheffield University	Prof. VijayRaghavan K, National Centre for Biological Sciences, Bangalore	Focuses on identifying the mechanisms that control the differentiation of human embryonic stem cells into cell types found in the cardiovascular system.
6	Cellular fate of novel nanomaterials for therapeutics and consumer products	Prof. Diana Anderson, Bradford University	Dr. Alok Dhawan, Industrial Toxicology Research Centre, Lucknow	Determining effects of nanoparticles in consumer products and medicines on cellular functions.
7	Zinc oxide nanowires and nanostructured films for novel device applications	Dr. Judith Driscoll, University of Cambridge	Dr. Neeraj Khare, Indian Institute of Technology, Delhi	Nanoscale doped zinc oxide for uv light emitting and solar cell devices.
8	Quantum logic with semiconductor quantum dots	Prof. Maurice Skolnick, Sheffield University	Dr. Venu Gopal Achanta, Tata Institute of Fundamental Research, Mumbai	To explore light-nanodot interactions for futuristic quantum logic devices.
9	NanoBALLS: Dynamical interaction of nanoparticles	Dr. Beverley Inkson, University of Sheffield	Dr. Musuvathi S Bobji, Indian Institute of Science, Bangalore	To study the interactions of nanoparticles and surfaces in real-time, with the aim of reducing friction at the nanoscale.
10	Sensitized nanoparticles as new hybrid photo-driven devices	Dr. Jim Thomas, University of Sheffield	Dr Amitiva Das, Central Salt and Marine Chemicals Research Institution, Gujarat	Nanoparticles as sensitizers for photodynamic therapy - using light to treat cancer.
11	Transceiver Chip for the Next Generation of Networks in Telecommunications	Prof. Andrew Gibaon, The University of Manchester	Prof. Animesh Biswas, Indian Institute of Technology, Kanpur	A low cost, low power miniaturised trans-receiver design for establishing communication network connection to some deprived regions in the world.
12	A Biologically Inspired Approach to Distributed Sensor Signal Processing	Prof. Bernard Mulgrew, The University of Edinburgh	Prof. Ganapati Panda, National Institute of Technology, Rourkela	Combining information from networks of sensors and mimicking nature's solutions to such problems.
13	Indo-UK Virtual Graduate Research School in Next Generation Networks	Prof. Gerard Parr, University of Ulster	Prof. Ashok Jhunjhunwala, Indian Institute of Technology, Chennai	It will provide the support mechanisms for research mobility and knowledge transfer via PhD research training/exchange between UK and India.

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1	River dynamics and hazard assessment in the Himalayan foreland	Prof. Stuart Lane, Durham University	Prof. Rajiv Sinha, Indian Institute of Technology, Kanpur	Working with Indian colleagues we will use state-of-the-art remote sensing and modelling technologies to explore flood-related hazards in the Gangetic plains.
2	Fire Resistance and repair of earthquake damaged structures	Prof. Asif Usmani, Edinburgh University	Prof. Pradeep Bhargava, Indian Institute of Technology, Roorkee	Fire Resistance and repair of earthquake damaged structures. Post-earthquake fires present a great risk to society. Research will be undertaken to mitigate this risk.
3	Distance education for sign language users	Prof. Ulrike Zeshan, Central Lancashire University	Prof. P. Renga Ramanujam, Indira Gandhi National Open University, Delhi	This project develops new approaches to distance education and e-learning for deaf sign language users.
4	High-Energy Astrophysics with ASTROSAT: Understanding the Variable X-ray Universe.	Dr. Gordon Stewart, Leicester University	Prof. Kulinder Pal Singh, Tata Institute of Fundamental Research, Mumbai	To understand the Variable X-ray Universe; data from the first dedicated Indian astronomical satellite, ASTROSAT, will be used to study the most extreme and energetic objects in the Universe.
5	Quantum Probability, Noncommutative Geometry and Quantum Information	Prof. J. Martin Lindsay, Lancaster University	Prof. Kalyan B. Sinha, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	This project will promote fundamental research in quantum probability and non-commutative geometry, and develop new applications in quantum statistical information and control.
6	Red mud catalyst for hydrocarbon cracking and carbon adsorbent production	Dr. Justin Hargreaves, Glasgow University	Dr. Vidya Subramanian Batra, The Energy and Resources Institute, Delhi	Generation of H ₂ and water purification from renewable resources using industrial waste.
7	Ligated Nanoparticle Catalysis: New Approaches to Fine Chemical Synthesis	Prof. Simon Woodward, University of Nottingham	Prof. Amitabha Sarkar, Indian Association for the Cultivation of Science, Kolkata	Project is about Ligated Nanoparticle Catalysis and new approaches to Fine Chemical Synthesis.
8	Preclinical Analysis and Development of Improved Acetabular Prostheses	Dr. Andrew New, Southampton University	Dr. Sanjay Gupta, Indian Institute of Technology, Kharagpur	To investigate mechanical factors in natural and implanted pelvic bones and their relation to implant loosening, in order to design improved acetabular prostheses.
9	Microbes involved in methane assimilation in meteor impact Crater Lake.	Prof. Colin Murrell, University of Warwick	Dr. Yogesh Shouche, National Centre for Cell Science	Bacterial oxidation of methane in the extreme environment of an alkaline soda lake.
10	Innovations in Intelligent Assistive Robotics	Dr. Girijesh Prasad, Ulster University, Magee Campus (UUM)	Dr. Laxmidhar Behera, Indian Institute of Technology, Kanpur	The project will investigate three specific aspects namely, a brain actuated command system, a smart wheelchair and a visually controlled manipulator system associated with an intelligent assistive robotic device for people with severe movement disabilities.
11	Application Specific Thermal NDE	Prof. Darryl Almond, University of Bath	Prof. Suneet Tuli, Indian Institute of Technology, Delhi	An evaluation of a novel Indian thermography technique for imaging defects in industrial components.
12	Widening Participation: Diversity, isolation or integration in Higher Education?	Prof. Mary Thornton, University of Hertfordshire	Prof. Govardhan Wanhkhede, TATA Institute of Social Science, Mumbai	To be better prepared for, and to thrive in social networks and work-related arenas which are increasingly diverse, multicultural, interdependent and global it is essential that students in higher education are helped to develop and value intercultural knowledge and skills, and that staff, students and campuses model the integration, cohesion and social interaction that underpins their development.

13	Bioinformatics Approaches to Study Protein Assemblies and Networks.	Dr. Jim Warwicker, University of Manchester	Prof. Narayanaswamy, Srinivasan Indian Institute of Science, Bangalore	Using computers to understand how proteins talk to each other.
14	Ultrashort Pulse Laser Waveguide Inscription in Glasses for Integrated Optics	Dr. Ajoy Kar Heriot, Watt University	Prof. Sundarajan Asokan, Indian Institute of Science, Bangalore	We aim to develop compact, efficient and multifunctional optical integrated circuits for optical networks, sensing and bio-medicine.
15	Sustainable high performance concrete infrastructure	Prof. Ravindra Dhir, Dundee University	Dr. Shamsheer Singh, Birla Institute of Technology and Science, Pilani	A collaboration aiming to facilitate the creation of high performance, sustainable concrete infra-structure.
16	Understanding high activity enzyme preparations for organic media	Prof. Peter Halling, University of Strathclyde	Prof. Munishwar Nath Gupta, Indian Institute of Technology, Delhi	By making enzymes work better in chemical processes, we will get purer, safer products and with less environmental impact
17	Development of thin film varistors for low voltage applications	Dr. Kevin Knowles, University of Cambridge	Dr. Anjan Sil, Indian Institute of Technology, Roorkee	Zinc oxide-based thin film current surge protectors for use in miniaturised electronics.
18	Low Cost Ventricular Assist Device (LVAD)	Dr. Geoff Tansley, Aston University	Dr. Ramchandra Bhide, Wanless Hospital, Miraj Medical Centre, Maharashtra	Development of a low-cost 'artificial heart' for heart disease patients worldwide.
19	Interdisciplinary Oxford-India Research Network in Theoretical Physics	Dr. Roderich Moessner, Oxford University	Prof. Deepak Dhar, Tata Institute of Fundamental Research, Mumbai	To strengthen existing, and promote the formation of new research collaborations, in the fields of condensed matter, statistical, high-energy and astrophysics.
20	Linking biodiversity to ecosystem services in a global biodiversity hotspot	Dr. Jacobus Biesmeijer, Earth and Biosphere Institute, Leeds University	Dr. M.D. Madhusudan, Nature Conservation Foundation, Mysore	Towards landscapes that allow people and biodiversity to live in harmony in South India.
21	Direct Production of Biodiesel from Non-edible Oilseeds by Reactive Extraction	Dr. Adam Harvey, Newcastle University	Dr. Madhukar Onkarnath Garg, Indian Institute of Petroleum, Dehradun	To demonstrate production of biodiesel directly from non-edible oilseeds, particularly jatropha. This should render small-scale distributed production of biodiesel more economically viable.
22	Large Scale Image and Video Retrieval	Prof. Andrew Zisserman, University of Oxford	Dr. Jawahar C.V., International Institute of Information Technology, Hyderabad	Visual recognition and retrieval from very large image and video databases (e.g. from Youtube).
23	Development of Nanocomposites from Ethylene Vinylacetate, Chitin and Fibres	Dr. Jim Guthrie, Leeds University	Dr. Unnikrishnan Gopalakrishna Panicker, Calicut National Institute of Technology, Calicut	Functional nanocomposite materials from ethylene-co-vinyl acetate blends with chitin and other fibres.
24	PRAMA: Probabilistic Risk Assessment Modelling to inform groundwater Arsenic mitigation	Dr. David Polya, University of Manchester	Dr. Ashok Giri, Indian Institute of Chemical Biology, Kolkata	Arsenic Hazard in West Bengal Groundwaters: Identifying At-Risk Populations and Evaluating Mitigation Options.