

**DST's CP-STIO Program: Selected Applications (Dt. February 24,2009)**

<b>S. No.</b>	<b>Project Title</b>	<b>Indian Applicants</b>	<b>Scientists &amp; Technologist of Indian Origin Abroad-(STIO) Applicant</b>	<b>S &amp; T Field / Type of Activity</b>	<b>Focus of project</b>
1	Nano manufactured coatings and lubricants for Automotives	<b>S Mohan</b> , IISc, Bangalore & BR Satyan CMTI Bangalore smohan@isu.iisc.ernet.in	<b>Ajay P Malshe</b> , University of Arkansas, USA apm2@uark.edu	<b>Materials Sc.</b> Nano lubricants / Advanced Research	Develop nano lubricant coating, additive (MoS <sub>2</sub> , WS <sub>2</sub> HCP) for automotive systems
2	Air Pollution Control: Mercury removal from industrial gaseous effluent using catalytic oxidation	<b>M Lakshmi Kantham</b> , Indian Institute of Chemical technology, Hyderabad & V.K.Gupta, IIT Roorkee mlakshmi@iict.res.in	<b>Suresh K Bhargava</b> , RMIT University, Australia suresh.bhargava@rmit.edu.au	<b>Environmental Chemistry</b> Industrial Effluent / Advanced Research	Catalytic oxidation of Hg from effluents of power plant & aluminium refineries
3	Development of Neurofeedback System using EEG & real time Fmri	<b>S.Sujesh</b> Sree Chitra Tirunal Institute of Medical Science and Technology, Trivandrum & C.Keshavdas SCTIMST sujeshs@sctimst.ac.in	<b>Ranganatha Sitaram</b> , Eberhard Karls Unviersity, Germany sitaram.ranganatha@unituebingen.de	<b>Biomedical Devices</b> Real time MRI -Neuroimaging / Insitutional Capacity Building	Development of EEG & fMRI based Brain-Computer Interface prototype for clinical use
4	Development of functionalaly graded patient specific orthopedic implants by rapid prototyping technique and their evaluation in-vitro & in-vivo	<b>Debabrata Basu</b> , CGCRI,Kolkata & Biswanath Kundu CGCRI dbasu@cgcri.res.in	<b>Amit Bandopadhyay</b> , Washington State University USA amitband@wsu.edu	<b>Bio-Materials</b> Bioceramic implant-Rapid Prototyping /Technology Development	Establishment of rapid prototyping facility for bioceramic knee,dental implants/bone fillers & their in-vitro evaluation for bio-mechanical properties
5	Using conformal field theory description of Hawking radiation & matrix representation of plane wave geometry to study gauge/gravity duality	<b>Gautam Mandal</b> , Tata Institute of Fundamental Research, Mumbai mandal@theory.tifr.res.in	<b>Sumit Das</b> , University of Kentucky, USA das@pa.uky.edu	<b>Astro-Physics</b> Black hole geometry / Advanced Research	Understand emergence of black holes in context of D1/D5 system as an ensemble average of pure states.

6	Prediction of crystal morphology distributions using CFD & population balances	<b>Jyeshtharaj B Joshi</b> , University Institute of Chemical Technology Mumbai jbj@udct.org	<b>Doraiswami Ramakrishna</b> , Purdue University USA ramkrish@purdue.edu	<b>Chemical Sc</b> Paracetamol & NaCl Crystal Morphology / Advanced Research	Develop experimental & computational protocol to design crystallizer for spherical sodium chloride & paracetamol
7	Long lived , Large scale , Adhoc wireless sensor networks	<b>Amrutur Bharadwaj</b> , Indian Institute of Science Bangalore amrutur@ece.iics.ernet.in	<b>Anish Arora</b> , Ohio State University USA anish@cse.ohiostate.edu	<b>Sensor Network</b> Wireless Sensor Network/ Advanced research	Improvement of architecture, algorithms, software and platforms for sensing, MAC scheduling & distributed signal processing for large scale sensor networks
8	Precision farming techniques for management of biotic & abiotic stresses in crop plants	<b>V.C Patil</b> , University of Agricultural Sciences Dharwad vcpatiluasd@yahoo.com	<b>Rajiv Khosla</b> , Colorado State Univ. USA (another proposal from the same STIO with different Indian partner at S.No. 12)	<b>Agriculture</b> Geospatial technologies -Agricultural production system/ Human Capacity Building	Impart training to PG students on use of geospatial technologies for crop management strategies /developing DSS
9	Expression of SERK gene in Momordica somatic embryogenesis	<b>Sarmistha Raychaudhuri</b> , University. of Calcutta, Kolkatta sarmishtha_rc@rediffmail.com	<b>Prakash Kumar</b> , National University . of Singapore, Singapore dbskumar@nus.edu.sg	<b>Plant Sc.</b> Plant Molecular Biology / Advanced Research	Induction of somatic embryogenesis in medicinal plant M.charantia (with hypoglycemic properties)-expression of SERK gene
10	Laser assisted surface structuring and machining of ceramics and hard materials	<b>G Padmanabham</b> , ARCI, Hyderabad gp@arci.res.in	<b>Narendra B Dahotre</b> , The University. of Tennessee, USA ndahotre@utk.edu	<b>Materials Sc.</b> Laser based machining of ceramics / Technology Development	Fabrication of advanced ceramics components/tools using laser based machining
11	Database and prediction tool to study mutant HIV reverse transcriptase	<b>G Narahari Sastry</b> , Indian Institute of Chemical Technology, Hyderabad gnsastry@iic.res.in / gnsastry@gmail.com	<b>Rajni Garg</b> , San Diego State University, USA rgarg@csusm.edu / rg004747@yahoo.com	<b>Health Sc.</b> HIV Drug Design / Advanced Research	Computational methods for development of potent anti-HIV Reverse Transcriptase (HIVRT) inhibitors for chemotherapeutic purpose.
12	Development of a novel nondestructive robust structural health assessment technique with minimum noise contaminated information.	<b>Subrata Chakraborty</b> , Bengal Engineering and Science University Howrah & Manish Shrikhande IIT Roorkee schak@civil.becs.ac.in	<b>Achintya Haldar</b> , University of Arizona, USA haldar@u.arizona.edu	<b>Materials Sc.-NDT</b> Structural Health Assessment (SHA) of Infrastructure/ Advanced Research	Develop non-destructive SHA technique that can identify defects in bridges/buildings

13	Distributed knowledge discovery in Ad-hoc and sensor networks for event monitoring	<b>Sangamitra Bandyopadhyay</b> , Indian Statistical Institute, Kolkatta sanghami@isical.ac.in	<b>Hillol Kargupta</b> , University of Maryland, USA hillol@cs.umbc.edu	<b>Sensor Network</b> Computer Sciences-Distributed data mining / Advanced Research	Development of distributed mining algorithms for sensor network management and data analysis
14	Synthesis and spectroscopic characterization porous silicates for carbon capture & storage applications	<b>PSR Prasad</b> , National Geophysical Research Institute, Hyderabad psrprasad@ngri.res.in	<b>Praveen K Thallapally</b> , Pacific Northwest National Laboratory, USA praveen.thallapally@pnl.gov	<b>Materials Sc.</b> Carbon capture Material development / Technology Development	Carbon capture capacity of synthesized silicates and structural behavior studies at different temperatures using insitu FTIR + Raman spectroscopic techniques
15	Investigation into the therapeutic role of antioxidant anti-inflammatory drugs in traumatic brain injury	<b>Rajat Sandhir</b> , Punjab Univ., Chandigarh sandhir@pu.ac.in	<b>Inderjit Singh</b> , Med Univ South Carolina USA singhi@musc.edu	<b>Experimental Medicine</b> Role of peroxynitrie in pathophysiology of brain injury/Advance research	Traumatic brain injury induced production of peroxynitrate levels in brain leading to neurovascular injury ,edema and increased BBB permeability
16	Modelling moisture uptake by plants and irrigation scheduling	<b>K. S. Hari Prasad</b> , IIT Roorkee surayfmt@iitr.ernet.in , harisurya1@yahoo.com	<b>Rao S.GovindaRaju</b> , Purdue University, USA govind@ecn.purdue.edu	<b>Agriculture</b> Crop water requirement-Irrigation scheduling / Analysis Studies	Numerical modelling of root water uptake for two crops plants and establish optimum irrigation schedule strategy
17	Association mapping to characterize various agronomic traits of wheat	<b>H. S. Balyan</b> , Ch. Charan Singh University Meerut hsbalyan@rediffmail.com / hsbalyan@gmail.com	<b>Kulvinder S. Gill</b> , Washington State University , USA ksgill@wsu.edu	<b>Agriculture</b> Crop Biotech./ Advanced Research	Use of association mapping combined with candidate gene approach to characterize wheat traits such as micronutrient uptake, grain quality and kernel/spike .
18	Workshop on Stem cells	<b>S. Vijaya</b> , Indian Institute of Science Bangalore vijaya@mcbl.iisc.ernet.in	<b>Vasanta Subramanian</b> , University of Bath,UK bssvss@bath.ac.uk	<b>Biomedical</b> Embryonic stem cell biology/ HR development	4 week course on maintenance & differentiation of ES cells and application to regenerative medicine;

19	Synthesis and characterization of lead free functional materials by microwave processing technique	<b>Pawan Kumar</b> NIT Rourkela, pawankumar@nitrkl.ac.in	<b>Dinesh Agrawal</b> The Pennsylvania State University USA dxa4@psu.edu	<b>Materials Sc.</b> Interaction of microwave with matter / Advance Research	Improve materials properties and synthesis of special materials through microwave sintering process.
20	Development of diagnostic technologies for emerging mitochondrial diseases	<b>K. Thangaraj</b> Centre for Cellular and Molecular Biology Hyderabad thangs@ccmb.res.in	<b>Keshav K. Singh</b> Roswell Park Cancer Institute, New York keshav.singh@roswellpark.org	<b>Biological Sc.</b> Diagnostic tools for Mitochondrial Disorders /	Develop microarray chip containing mitochondrial genome + nuclear genes involved in mtDNA metabolism
21	Studies on the atomic arrangements and bonding in doped (alloyed) and intercalated carbon nanotubes, graphite and composites	<b>Subrata Ray</b> Indian Institute of Technology Roorkee Roorkee surayfmt@iitr.ernet.in	<b>Jagdish Narayan</b> North Carolina State University ,USA J_NARAYAN@NCSU.EDU/ j_narayan@ncsu.edu	<b>Materials Sc.</b> Atomic scale local structure & bonding / Advance Research	Growing carbon nanotube using Co-Ni-Li bearing catalysts and its characterization . Evaluate influence of catalyst on atomic arrangement & bonding in nanotubes.
22	Molecular typing and development of virus like nano particle towards generation of novel vaccine for infectious bursal disease virus (IBDV)	<b>Sohini Dey,</b> Division of Animal Biotechnology, Indian Veterinary Research Institute, Bareilly sohinimadhan@yahoo.com	<b>Vikram N.Vakharia,</b> University of Maryland, USA vakharia@umbi.umd.edu	<b>Veterinary Sciences</b> Animal Biotech. / Technology Development	Development of recombinant vaccine for IBDV affecting poultry chicks
23	Application of Ultrasonication, Peroxidase mediated Oxidation and Ozonation for Ground water Remediation	<b>V. Himabindu,</b> Jawaharlal Nehru Technological University Hyderabad drvhimabindu@gmail.com	<b>Alok Bhandari,</b> Iowa State University USA alokb@iastate.edu	<b>Environmental Chemistry</b> Contaminated soil & groundwater treatment methods/ Advanced Research	To evaluate feasibility of advanced oxidation techniques - peroxidase mediated oxidation and sonication to treat contaminant soils and ground