

## SHANTI SWARUP BHATNAGAR PRIZE FOR SCIENCE AND TECHNOLOGY

2005

### *Biological Sciences*

#### **Dr Tapas Kumar Kundu**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Biological Sciences has been awarded to Dr Tapas Kumar Kundu of the Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore. Dr Kundu has done outstanding research in the area of chromatin transcription. He has identified PC4 as a functional component of chromatin and as a unique activator of P53. He has also established the role of acetylation in chromatin transcription and histone chaperone activity, besides using this process for identifying new drug candidates.

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#### **Dr Shekhar Chintamani Mande**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Biological Sciences has been awarded to Dr Shekhar Chintamani Mande of the Centre for DNA Fingerprinting and Diagnostics, Hyderabad. Dr Mande has contributed very richly to the area of structural biology of proteins. His studies have thrown light on the unrecognized function of chaperonin-10 of *Mycobacterium tuberculosis*. His studies have provided unusual insights to the mechanism of action of heat shock proteins and those involved in oxidative stress from *M. tuberculosis*.

### *Chemical Sciences*

#### **Dr Samaresh Bhattacharya**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Chemical Sciences has been awarded to Dr Samaresh Bhattacharya of the Jadavpur University, Kolkata. Dr Bhattacharya has made outstanding contributions to the platinum group coordination compounds and their applications to activation of organic molecules.

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#### **Dr S Ramakrishnan**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Chemical Sciences has been awarded to Dr S. Ramakrishnan of the Indian Institute of Science, Bangalore. Dr Ramakrishnan has made outstanding contributions to the area of design and synthesis of controlled polymer structures with a view to confer on such materials specific property.

*Earth, Atmosphere, Ocean and Planetary Sciences*

**Dr Nibir Mandal**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Earth, Atmosphere, Ocean and Planetary Sciences has been awarded to Dr Nibir Mandal of the Jadavpur University, Kolkata. Dr Mandal has made fundamental contributions in experimental, theoretical and field-related studies towards elucidating the evolution of geological structures.

*Engineering Sciences*

**Dr Kalyanmoy Deb**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Engineering Sciences has been awarded to Dr Kalyanmoy Deb of the Indian Institute of Technology, Kanpur. Dr Deb has made fundamental contributions to the development of multi-objective evolution algorithms and their applications to a number of complex engineering problems.

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**Dr Valipe Ramgopal Rao**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Engineering Sciences has been awarded to Dr Valipe Ramgopal Rao of the Indian Institute of Technology Bombay, (Mumbai). Dr Rao has made outstanding contributions in the area of silicon CMOS device design and optimization, using single halo (SH) or lateral asymmetric channel (LAC) technologies, and their impact on analog/RF circuits.

*Mathematical Sciences*

**Dr Probal Chaudhuri**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Mathematical Sciences has been awarded to Dr Probal Chaudhuri of the Indian Statistical Institute, Kolkata. Dr Chaudhuri has made outstanding contributions to diverse areas of theoretical and applied statistics. His work ranges from statistical smoothing in non-parametric estimation and a multi-scale approach in statistical pattern recognition to the exploratory analysis of large DNA sequences.

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**Dr Kapil Hari Paranjape**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Mathematical Sciences has been awarded to Dr Kapil Hari Paranjape of the Institute of Mathematical Sciences, Chennai. Dr Paranjape has made outstanding contributions in the field of algebraic geometry, especially the theory of algebraic cycles. He has made highly significant contributions in connecting Hodge Theory to the study of Chow Groups. He has also established deep relations between Calabi-Yau varieties and modular forms.

***Medical Sciences***

**Dr Javed Naim Agrewala**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Medical Sciences has been awarded to Dr Javed Naim Agrewala of the Institute of Microbial Technology, Chandigarh. Dr Agrewala has made significant contributions in understanding the bi-directional regulation of Th1 and Th2 cells. He has developed a novel and unique vaccination strategy for inducing protective immunity in *Mycobacterium tuberculosis* infection.

***Physical Sciences***

**Dr Sandip Parimal Trivedi**

The Shanti Swarup Bhatnagar Prize for the year 2005 in Physical Sciences has been awarded to Dr Sandip Parimal Trivedi of the Tata Institute of Fundamental Research, Mumbai. Dr Trivedi has made pioneering contribution towards the resolution in string theory of the cosmological problem of an accelerating universe and providing a credible mechanism for generating a small, positive cosmological constant.