

# SCIENCE AND CULTURE

MARCH-APRIL 2007/VOLUME 73/NOS. 3-4

A JOURNAL OF NATURAL AND CULTURAL SCIENCES

PUBLISHED BY THE  
**INDIAN SCIENCE  
NEWS ASSOCIATION**

**EDITORIAL BOARD**

S. C. Roy  
**Editor-in-Chief**

N. D. Paria  
Parimal Chandra Sen  
**Associate Editors**

Amalendu Bandyopadhyay

Syamal Chakraborty

N. C. Datta

Amit Krishna De

Vinod Kumar Gupta

Samarjit Kar

Sudhendu Mandal

**Members of the Editorial Board**

**COLLABORATORS**

S. Aditya

Ananta Krishnan

Amiya Bagchi

A. K. Barua

Biman Basu

B. B. Biswas

Indrani Bose

Sankar Chakravorti

R. N. Chatterjee

D. P. Chattopadhyay

J. K. Datta Gupta

Dibyendu Ganguli

Irfan Habib

A. K. Hati

S. Kailas

Abhijit Lahiri

Balaram Majumdar

Biswapati Mukherjee

S. P. Mukherjee

G. Prathap

R. R. Rao

P. K. Ray

Prabir Roy

S. P. Sengupta

**EDITORIAL**

Physics Beyond Boundaries

— *Indrani Bose and Bikas K. Chakrabarti* ... 53

**ARTICLES**

Econophysics : A Brief Introduction to  
Modeling Wealth Distribution

— *Anirban Chakraborti* ... 55

Hurricanes : Tempests in a Greenhouse

— *Kerry Emanuel* ... 62

Physics Models of Earthquake

— *Srutarshi Pradhan* ... 65

Gene Expression is Noisy

— *Indrani Bose* ... 75

Logic and Pattern Recognition : Mathematics  
and Physical Sciences done by Network Models  
of Brain

— *Bikas K. Chakrabarti* ... 82

**OPINION**

The Entangled Dance of Physics

— *Stephen G. Benka* ... 88

**RESEARCH COMMUNICATION**

Herbaceous Biomass Yield in Two Contrasting  
Habitats of a Dry Tropical Environment

— *Arvind Singh* ... 93

Evaluation of Soil Sulphatase Activity in  
Alfisols and Vertisols

— *S. K. Naik and V. S. Rao* ... 95

Contd. next page.



Indian Science News Association

**President**

Dr. A. P. Mitra

**Vice-Presidents**

Professor Sujit Kumar Basu

Professor B. B. Biswas

Professor P. K. Ray

Professor M. Siddiqi

Professor M. S. Swaminathan

**Hony. Secretaries**

Professor Naresh Chandra Datta

Professor Sudhendu Mandal

**Hony. Treasurer**

Professor Amalendu Bandyopadhyay

**Council Members**

Professor (Mrs.) Julie Banerji

Professor Aravinda Kumar Das

Shri Manas Pratim Das

Dr. Satya Brata Dasgupta

Dr. K. P. Dhara

Dr. Dibyendu Ganguli

Professor Somnath Ghosh

Dr. Rajesh Kochar

Dr. H. S. Maiti

Dr. Balaram Majumder

Dr. Sisir Kumar Majumdar

Professor Biswapati Mukherjee

Professor Debasish Mukherjee

Professor Sankar Pal

Professor Siddhartha Ray

Dr. Amal Roy Chowdhury

Dr. Jnanabrata Sil

Professor S. K. Talapatra

Hepato-toxic Effects of Cypermethrin on some  
Bio-chemical Parameters of Anabas Testudineus

— S. K. Chatterjee, S. Ghosh and

A. Ghosal

... 97

Immobilization of Trichoderma Viride Isolated  
from Semi-arid Tropical Soils of Prasanthinilayam,  
Puttaparthi Mandal, A. P. and its Cellulase  
Activity

— B. S. Vijayakumar, Ganesh Iyer,

Robin Sharma and Kshitij Raya

... 99

**NOTES AND NEWS**

... 101

**OBITUARY**

Professor Asima Chatterjee

— Biswapati Mukherjee

... 109

Professor Sushil Kumar Mukherjee

— S. Aditya

... 111

Cover : Top : (Left) Kinetic scheme for model of gene expression (see p.76 in this issue); (Right) Illustrating the diversity of neuronal morphologies.

Bottom (Left) Three golden columns – the neocortex is organized into thousands of columns of neurons. Each column has a diameter of 0.5 mm and contains 10,000 neurons, (taken from the website of IBM Watson Research Group); (Right) A forest of neurons – A dye is injected into each neuron and then developed in order to reveal morphology. (taken from the website of IBM Watson Research Group)