

# CURRENT SCIENCE



Volume 109 Number 11

10 December 2015

**1906 In this issue**

**GUEST EDITORIAL**

**1907 Industry–University collaboration – more bang for the same buck**  
Ashwini Nangia

**CORRESPONDENCE**

**1909 How IISc can contribute to society?**, H. S. Gopala Krishna Murthy ■ **1910 Teaching science of biosecurity at schools**, R. S. Daniel ■ **1912 Window towards bygone life – world wide open access**, Nilay Govind and Annamraju Rajanikanth ■ **1913 Widening the character base for distinctness in cotton plants**, V. Santhy and Mithila Meshram ■ **1914 A rare incidence of polypetalae in *Convolvulus arvensis* L. (Convolvulaceae)**, Shimpale Vinod B. and Rani B. Bhagat



**NEWS**

**1915 Infosys Prize 2015**  
B. Sandhya Rani

**1915 Database on nutritional composition of food fishes from India**  
Bimal Prasanna Mohanty *et al.*

**1917 Inflammation**  
S. Chandrashekara, P. Renuka and M. Balasubramanyam

**1919 Network programme on convergence of traditional knowledge systems for sustainable development in the Indian Himalayan region**  
S. C. Garkoti and Rajeev Semwal

**1921 Conserving biodiversity through transboundary landscape approach**  
Prasanna K. Samal, K. S. Kanwal, M. S. Lodhi, S. C. Arya, O. P. Arya and P. P. Dhyani

**RESEARCH NEWS**

**1923 Elephant's deterrence to cancer decoded**  
B. Sandhya Rani

**COMMENTARY**

**1925 Books or articles: which are more important in the scientific evaluation of different disciplines?**  
Ge Qian

**SCIENTIFIC CORRESPONDENCE**

**1929 Genomic variation studies in *Glycine max* and *Glycine soja* using SSR markers**  
Yashpal, D. R. Rathod, Jyoti Devi, Anil Kumar, Keya Mukherjee, Deepika Cheruku, Subhash Chandra, S. K. Lal and Akshay Talukdar

**1931 Alkaline lamprophyre (camptonite) from Bayyaram area, NE margin of the Eastern Dharwar Craton, southern India**  
Tushar M. Meshram, Devasheesh Shukla and Kallola K. Behera

**SPECIAL SECTION: QUANTUM MEASUREMENTS**

**1935 Preface**  
N. D. Hari Dass

**1939 Quantum state estimation using weak measurements**  
Debmalya Das and Arvind



- 1946 **Gravity, Bose–Einstein condensates and Gross–Pitaevskii equation**  
Patrick Das Gupta
- 1951 **Coherence versus decoherence – a few illustrative examples**  
Sushanta Dattagupta
- 1958 **Experimental tests of macrorealism: an assessment**  
Anupam Garg
- 1965 **Three results on weak measurements**  
N. D. Hari Dass
- 1972 **Uncertainty relation and quantum Cheshire-Cat: studied with neutron polarimeter and interferometer**  
Yuji Hasegawa
- 1980 **Facets of the Leggett–Garg inequality: some recent studies**  
Dipankar Home
- 1987 **Ancilla-assisted measurements on quantum ensembles: general protocols and applications in NMR quantum information processing**  
T. S. Mahesh, Abhishek Shukla, Swathi S. Hegde, C. S. Sudheer Kumar, Hemant Katiyar, Sharad Joshi and K. R. Koteswara Rao
- 1997 **A class of distance-based incompatibility measures for quantum measurements**  
Prabha Mandayam and M. D. Srinivas
- 2002 **Weak value amplification in resonance fluorescence**  
U. Satya Sainadh, S. N. Sandhya, Radhika Vathsan and Andal Narayanan
- 2006 **Heisenberg’s original derivation of the uncertainty principle and its universally valid reformulations**  
Masanao Ozawa
- 2017 **An evolutionary formalism for weak quantum measurements**  
Apoorva Patel and Parveen Kumar
- 2023 **Protective measurements: probing single quantum systems**  
Tabish Qureshi and N. D. Hari Dass
- 2029 **Arthurs–Kelly joint measurements and applications**  
S. M. Roy
- 2039 **Weak measurements: typical weak and superweak values**  
Pragya Shukla
- 2044 **Uncertainty trade-off and disturbance trade-off for quantum measurements**  
M. D. Srinivas and Prabha Mandayam
- 2052 **Quantum non-demolition measurements: concepts, theory and practice**  
C. S. Unnikrishnan
- 2061 **Unsharp measurements and joint measurability**  
H. S. Karthik, A. R. Usha Devi and A. K. Rajagopal
- 2069 **Quantum measurements with superconducting circuits**  
Tanay Roy, A. M. Vadiraj, Madhavi Chand, A. Ranadive, Suman Kundu, Meghan P. Patankar and R. Vijay

---

**GENERAL ARTICLE**

- 2077 **Open access disciplinary repository in S&T: a potentiality study for SAARC countries**  
Chandana Patra

---

**RESEARCH ARTICLES**

- 2084 **Predicting future changes in temperature and precipitation in arid climate of Kutch, Gujarat: analyses based on LARS-WG model**  
Jayanta Sarkar, J. R. Chicholikar and L. S. Rathore



- 2094 **Experimental determination of statistical parameters associated with uniaxial compression behaviour of brick masonry**  
S. R. Balasubramanian, D. Maheswari, A. Cynthia, K. Balaji Rao, A. Meher Prasad, R. Goswami and P. Sivakumar
- 2103 **Draft genome sequence of *Cercospora canescens*: a leaf spot causing pathogen**  
Ramesh Chand, Chhattar Pal, Vineeta Singh, Manoj Kumar, Vinay Kumar Singh and Pallem Chowdappa

---

#### RESEARCH COMMUNICATIONS

- 2111 **A study of CO<sub>2</sub> and related trace gases using a laser-based technique at an urban site in western India**  
S. Lal, N. Chandra and S. Venkataramani
- 2116 **Observations of snow-meteorological parameters in Gangotri glacier region**  
H. S. Gusain, Manish Kala, Ashwagosh Ganju, V. D. Mishra and Snehmani
- 2121 **Unprecedented drought in North East India compared to Western India**  
Bikash Ranjan Parida and Bakimchandra Oinam
- 2126 **Performance of residential buildings during the M 7.8 Gorkha (Nepal) earthquake of 25 April 2015**  
Durgesh C. Rai, Vaibhav Singhal, S. Bhushan Raj and S. Lalit Sagar

---

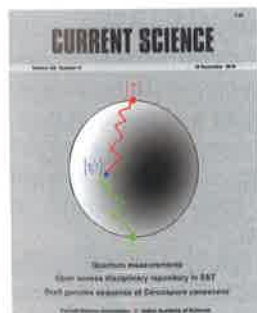
#### BOOK REVIEWS

- 2136 **The Peacock in Splendour: Science, Literature and Art in Ancient and Medieval India** by B. M. Deb, *reviewed by* Sourav Pal
- 2137 **Annual Review of Genetics, 2014**, Bonnie L. Bassler, Michael Lichten and Gertrud Schüpbach (eds), *reviewed by* K. P. Arunkumar and Nagraj Sambrani
- 2139 **Bridges Over Water: Understanding Transboundary Water Conflict, Negotiation and Cooperation, Second Edition**, Ariel Dinar *et al.*, *reviewed by* T. V. Ramachandra and Mukta Batra

---

#### PERSONAL NEWS

- 2143 **Syed Zahoor Qasim (1926–2015)**, Satish R. Shetye
- 



- ◀ COVER. A random walk of a qubit in its state space in the course of repeated weak measurements. Picture Credit: Mamta R. Jotkar, TCIS-TIFR, Hyderabad. See special section.

The editor thanks Dr N. D. Hari Dass, Centre for Interdisciplinary Sciences, Tata Institute of Fundamental Research, Hyderabad; Dr Anil Kumar, Department of Physics, Indian Institute of Science, Bengaluru and Dr Apoorva Patel, Centre for High Energy Physics, Indian Institute of Science, Bengaluru for agreeing to be guest editors for the special section.

Indexed in CURRENT CONTENTS/GEOTitles/CHEMICAL ABSTRACTS/IndMED/SCOPUS/  
WEB OF SCIENCE