

CURRENT SCIENCE

351
43

Volume 116 Number 7

10 April 2019



1042 In this issue

EDITORIAL

- 1043 Social determinants of health: past, present and future**
H. Paramesh

CORRESPONDENCE

- 1045 Is domestication of nilgai possible?**
Suday Prasad, Raj K. Sah, Chandra S. Prabhakar and Ajay Kumar

NEWS

- 1047 Science Last Fortnight** ■ **1051 Computational gastronomy**, K. P. Madhu
■ **1052 The art of science writing**, Ravi Mishra, Amruta Nair, Mabel Merlin and Pratik Pawar

OPINION

- 1054 Waste management, carbon economy and white biotechnology: prospects and challenges**, Nilakshi Gohain and Durlav Narayan Singha

COMMENTARY

- 1055 Antibiotic abuse: post-antibiotic apocalypse, superbugs and superfoods**
Renu Bisht and Priti Saxena

SCIENTIFIC CORRESPONDENCE

- 1057 Is the Pine Island glacier, Antarctica calving triggered by earthquakes and tsunamis?**, Simone Darji, Rajesh Shah, Sandip Oza and I. M. Bahuguna ■ **1060 Healing sacred forest in western Madhya Pradesh, India**, Vijay V. Wagh and Ashok K. Jain

GENERAL ARTICLE

- 1062 Possibility of hydrological connectivity between Manasarovar Lake and Gangotri Glacier**
S. P. Rai, D. Singh, R. Saini, D. S. Rathore, S. Kumar, S. K. Jain and N. Pant

REVIEW ARTICLE

- 1068 Tuberculosis and social networks: a narrative review on how social network data and metrics help explain tuberculosis transmission**
Karikalan Nagarajan and Bagavan Das

SPECIAL SECTION: HYPERSPECTRAL IMAGING

1081 Preface

Raj Kumar and Robert O. Green

1082 An overview of AVIRIS-NG airborne hyperspectral science campaign over India

Bimal K. Bhattacharya, Robert O. Green, Sadasiva Rao, M. Saxena, Shweta Sharma, K. Ajay Kumar, P. Srinivasulu, Shashikant Sharma, D. Dhar, S. Bandyopadhyay, Shantanu Bhatwadekar and Raj Kumar

1089 Retrieval of atmospheric parameters and data-processing algorithms for AVIRIS-NG Indian campaign data

Manoj K. Mishra, Anurag Gupta, Jinya John, Bipasha P. Shukla, Philip Dennison, S. S. Srivastava, Nitesh K. Kaushik, Arundhati Misra and D. Dhar





- 1101 An empirical comparison of calibration and validation methodologies for airborne imaging spectroscopy**
K. N. Babu, A. K. Mathur, David R. Thompson, Robert O. Green, Piyushkumar N. Patel, R. P. Prajapati, Brian D. Bue, Sven Geier, Michael L. Eastwood and Mark C. Helmlinger
- 1108 Crop type discrimination and health assessment using hyperspectral imaging**
Rahul Nigam, Rojalin Tripathy, Sujay Dutta, Nita Bhagia, Rohit Nagori, K. Chandrasekar, Rajsi Kot, Bimal K. Bhattacharya and Susan Ustin
- 1124 Characterization of species diversity and forest health using AVIRIS-NG hyperspectral remote sensing data**
C. S. Jha, Rakesh, J. Singhal, C. S. Reddy, G. Rajashekar, S. Maity, C. Patnaik, Anup Das, Arundhati Misra, C. P. Singh, Jakesh Mohapatra, N. S. R. Krishnayya, Sandhya Kiran, Phil Townsend and Margarita Huesca Martinez
- 1136 Mangrove species discrimination and health assessment using AVIRIS-NG hyperspectral data**
Nilima R. Chaube, Nikhil Lele, Arundhati Misra, T. V. R. Murthy, Sudip Manna, Sugata Hazra, Muktipada Panda and R. N. Samal
- 1143 Potential of airborne hyperspectral data for geo-exploration over parts of different geological/metallogenic provinces in India based on AVIRIS-NG observations**
Satadru Bhattacharya, Hrishikesh Kumar, Arindam Guha, Aditya K. Dagar, Sumit Pathak, Komal Rani (Pasricha), S. Mondal, K. Vinod Kumar, William Farrand, Snehamoy Chatterjee, S. Ravi, A. K. Sharma and A. S. Rajawat
- 1157 Coastal sediment dynamics, ecology and detection of coral reef macroalgae from AVIRIS-NG**
R. Ratheesh, Nandini Ray Chaudhury, Preeti Rajput, Mohit Arora, Ashwin Gujrati, S. V. V. Arunkumar, Ateeth Shetty, Rakesh Baral, Rakesh Patel, Devanshi Joshi, Harshad Patel, Bharat Pathak, K. S. Jayappa, R. N. Samal and A. S. Rajawat
- 1166 Distribution of coloured dissolved and detrital organic matter in optically complex waters of Chilika lagoon, Odisha, India, using hyperspectral data of AVIRIS-NG**
Arvind Sahay, Anurag Gupta, Gunjan Motwani, Mini Raman, Syed Moosa Ali, Meghal Shah, Shard Chander, Pradipta R. Muduli and R. N. Samal
- 1172 Water quality assessment of River Ganga and Chilika lagoon using AVIRIS-NG hyperspectral data**
S. Chander, Ashwin Gujrati, K. Abdul Hakeem, Vaibhav Garg, Annie Maria Issac, Pankaj R. Dhote, Vinay Kumar and Arvind Sahay
- 1182 Characterization and retrieval of snow and urban land cover parameters using hyperspectral imaging**
S. K. Singh, Gaurav Jain, Asfa Siddiqui, Smruti Naik, B. P. Rathore, Vaibhav Garg, Snehmani, Vinay Kumar, I. M. Bahuguna, S. A. Sharma, Chander Shekhar, Praveen K. Thakur, Kavach Mishra, Pramod Kumar, T. H. Painter and J. Dozier
- 1196 Cloud microphysical characterization during AVIRIS-NG campaign**
Bipasha Paul Shukla, Jinya John and Sambit Kumar Panda

RESEARCH ARTICLES

- 1201 Surface soil and subsoil acidity in natural and managed land-use systems in the humid tropics of Peninsular India**
K. M. Nair, K. S. Anil Kumar, M. Lalitha, Shivanand, S. C. Ramesh Kumar, S. Srinivas, Arti Koyal, S. Parvathy, K. Sujatha, C. Thamban, Jeena Mathew, K. P. Chandran, Abdul Haris, V. Krishnakumar, V. Srinivasan, Jessy, James Jacob, J. S. Nagaraj, Maria Violet D'Souza, Y. Raghuramulu, R. Hegde and S. K. Singh

- 1212 **Trade-off between salt secretion and gas exchange by stomata in the leaves of *Glycyrrhiza uralensis***
Peng You Chen, Miao Ma and Ling yu Shi
- 1218 **Transcriptome profile of polycyclic aromatic hydrocarbon-degrading fungi isolated from *Taxus rhizosphere***
Rui Gao, Da Cheng Hao, Wenli Hu, Song Song, Shi Yang Li and Guang Bo Ge

RESEARCH COMMUNICATIONS

- 1229 **Apoptosis time window induced by cold atmospheric plasma: comparison with ionizing radiation**
Gordana Joksić, Ana Valenta Šobot, Jelena Filipović Tričković, Dejan Maletić, Nevena Puač, Gordana Malović, Zoran Lj. Petrović and Saša Lazović
- 1233 **Indole-3-acetic acid production by the cyanobacterium *Fisherella muscicola* NDUPC001**
S. K. Mishra, Jyoti Singh, Astha Raj Pandey and N. Dwivedi
- 1237 **Pedotransfer functions for predicting soil hydraulic properties in semi-arid regions of Karnataka Plateau, India**
S. Dharumarajan, Rajendra Hegde, M. Lalitha, B. Kalaiselvi and S. K. Singh
- 1246 **Impact of Pusa hydrogel application on yield and productivity of rainfed wheat in North West Himalayan region**
Trisha Roy, Suresh Kumar, Lekh Chand, D. M. Kadam, Bankey Bihari, S. S. Shrimali, Rajesh Bishnoi, U. K. Maurya, Madan Singh, M. Muruganandam, Lakhana Singh, S. K. Sharma, Rakesh Kumar and Anil Mallik

BOOK REVIEWS

- 1252 **Ethnobotany of India.** T. Pullaiah, K. V. Krishnamurthy and Bir Bahadur (eds); reviewed by Anantanarayanan Raman ■ **1256 Annual Review of Physical Chemistry, 2018.** Mark A. Johnson and Todd J. Martínez (eds); reviewed by N. Sathyamurthy

PERSONAL NEWS

- 1258 **John Tyler Bonner (1920–2019),** Vidyanand Nanjundiah
- 1261 **Bhaskar Dattatraya Kulkarni (1949–2019),** V. Ravi Kumar and S. Sivaram



- ◀ COVER. ISRO–NASA Airborne Hyperspectral Campaign results. See special section.

The editor thanks Dr Raj Kumar (Space Applications Centre, ISRO, Ahmedabad, India) and Dr Robert O. Green (Jet Propulsion Laboratory, USA) for agreeing to be Guest Editors for special section.

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