GP GLOBALIZE RESEARCH JOURNAL OF CHEMISTRY An International Peer Reviewed Journal of Chemistry RNI No: MAHEN/2017/74063 ISSN (Print) No: 2581-5911 CODEN : GPGRAG ISI Impact Factor 1.246 (2021-2022) **Editor-in-Chief** Dr. D.V. Prabhu Former Head and Adjunct Professor, Department of Chemistry, Wilson College (Autonomous), (aff. University of Mumbai, Mumbai-400 007, India Email : dvprabhu48@gmail.com, Contact: +91 9870 22 68 99 **Editors** Prof. Dr. Irena Kostova Prof. Dr. Anna Pratima Nikalje Professor, Department of Chemistry, Principal and Professor of Chemistry, Faculty of Pharmacy, Medical University, Wilson College (Autonomous), (aff. University of Mumbai), Mumbai, India Sofia, Bulgaria Email: irenakostova@yahoo.com Email: annapratimanikalje@gmail.com **Consulting Editors** Prof. Dr. Tulsi Mukherjee Prof. Dr. Arun D. Sawant Former Group Director, Chemistry Group, Former Head, Department of Chemistry, BARC, Mumbai. Institute of Science, Homi Bhabha State Professor, Homi Bhabha National Institute, University, Mumbai, India BARC, Mumbai, India Former Pro Vice-Cancellor, Email: tulsi.mukherjee@gmail.com University of Mumbai, Mumbai, India Former Vice-Cancellor, University of Rajasthan, Jaipur, India Email: arundsawant@gmail.com Prof. Dr. G. Ramakrishnan President, Chromatographic Society of India Former SIES Institute of Chromatography and Spectroscopy, Navi Mumbai, India Former Managing Director, Thermo Fisher Scientific, India., Former Vice President, Agilent Technologies, India Email: ramakrishnan.g@chromsocindia.org Managing Editor Mr. Rajan Pendurkar Gaurang Publishing Globalize Private Limited, Mumbai. Email: gpglobalize@gmail.com, Contact: +91 99693 92245 Printed and Published by Gaurang Rajan Pendurkar on behalf of Gaurang Publishing Globalize Private Limited and printed at NIL CREATION, Shop No. 7, 35/55, Bandu Gokhale Path, Mugbhat Cross Lane, Jivanji Maharaj

Chawl (Shree Swami Samarth Nagar), Girgaon, Mumbai 400004 and published at Gaurang Publishing Globalize

Editor-in-Chief : Dr. D.V. Prabhu.

Private Limited 1, Plot 72, P M M M Marg, Tardeo, Mumbai-400034.



- Prof Dr Rameshwar Adhikari, Former Executive Director, Research Centre for Applied Science and Technology, Tribhuvan University, Kathmandu, Nepal.
- Prof Dr Ram K Agarwal, Editor-in-Chief, Asian Journal of Chemistry, Sahibabad, Ghaziabad, India.
- Prof Dr Amani S Awaad, Department of Chemistry, King Saud University, Riyadh, Saudi Arabia.
- Prof Dr Sultan T Abuorabi, Department of Chemistry, Yarmouk University, Jordan Secretary General, Association of Arab Universities, Jubeyha, Amman, Jordan.
- Prof Dr Rafia Azmat, Department of Chemistry, University of Karachi, Karachi, Pakistan.
- Prof Dr B S Balaji, Department of Biotechnology, Jawaharlal Nehru University, New Delhi, India.
- Prof Dr Mahmood M Barbooti, Department of Appied Sciences, University of Technology, Baghdad, Iraq.
- Prof Dr Ghanashyam Bez, Department of Chemistry, North Eastern Hill University (NEHU), Shillong, Meghalaya, India.
- Prof Dr Ajay Bissessur, Department of Chemistry, University of Kwazulu-Natal, Durban, South Africa.

- Prof Dr Satish A Bhalerao, Former Head, Department of Botany and Environment, Wilson College, Mumbai, India.
- 11) Prof Dr Kamala N Bhat, Department of Chemistry, Alabama A & M University, Alabama, USA.
- Prof Dr Sheashanath V Bhosale, UGC Professor, University of Goa, Goa, India. ARC Future Fellow, School of Applied Science, RMIT University, Melbourne, Australia.
- 13) Prof Dr Zhigang Chen,
 Director, Jiangsu Key Laboratory of Environment Functional Materials,
 School of Chemistry, Biology and Materials,
 Suzhov University of Science and Technology,
 Suzhov, Jiangsu, China.
- 14) Dr Prabodh Chobe,Former Senior General Manager-Development and Head R & D Centre,BASF India Limited, Mumbai, India.
- 15) Prof Dr Eva ChmiedewskaDepartment of Environmental Ecology,Faculty of Natural Sciences,Comenius University, Bratislava,Slovak Republic.
- 16) Prof Dr Abdalla M Darwish, School of STEM, Department of Physics, Dallard University, New Orleans, Louisiana, USA.
- 17) Prof Dr Ajit Datar, Advisor, Shimazdu Analytical (India) Private Limited, Mumbai, India.



- 18) Prof Dr Ranjan Dey,Department of Chemistry,BITS Pilani, K K Birla Campus, Goa, India.
- 19) Dr Shivani S Dhage,Former Deputy Director, CSIR NationalEnvironmental Engineering Institute, (NEERI),Mumbai, India
- 20) Prof Dr E S Dragan,Petruponi Institute of Macromolecular Chemistry,Aleea Grigore Voda, Iasi, Romania.
- 21) Prof Dr Priy Brat Dwivedi, Faculty-Chemical Sciences, College of Engineering, National University of Science and Technology, Muscat, Oman.
- 22) Dr Chandrakant Gadipelly Formerly The Wolfson Department of Chemical Engineering, Technion- Israel Institute of Technology, Haifa, Israel.
- 23) Prof Dr Shankar Lal Garg, Editor-in-Chief, Research Journal of Biotechnology, Director, World Research Journals Group Patron, World Researchers Associations, Indore, India.
- 24) Prof Dr Kallol K Ghosh, Head, Department of Chemistry, Pandit Ravi Shankar Shukla University, Raipur, India.

- 25) Prof Dr Pushpito Ghosh,
 K V Mariwala-J B Joshi Distinguished
 Professor, Institute of Chemical Technology,
 Mumbai, India
 Former Director, CSIR Central Salt and
 Marine Chemical Research Institute,
 Bhavnagar, India.
- 26) Prof Dr Wasudeo B Gurnule, Department of Chemistry, Kamla Nehru Mahavidyalaya, Nagpur, India.
- 27) Prof Dr Fathy Hassan, Department of Chemistry, UAE University, Al-Ain, UAE.
- 28) Prof Dr Falah H Hussein,Professor of Physical Chemistry,College of Science,University of Babylon, Babylon, Iraq.
- 29) Prof Dr Sudha Jain, Former Head, Department of Chemistry, University of Lucknow, Lucknow, India
- 30) Prof Dr Shehdeh Jodeh,Department of Chemistry, Najah National University, Nablus, Palestine.
- 31) Prof Dr Hidemitsu Katsura, University of Tsukuba, Sakado, Japan, Universiti Kuala Lumpur, IPROM, Kuala Lumpur, Malaysia.
- 32) Prof Olga Kovalchukova,Department of General Chemistry, People's Friendship University of Russia, Moscow, Russia.



- 33) Dr Sudhir Kapoor, Head, Nanochemistry Section, Radiation and Photochemistry Division, BARC, Mumbai
 Professor, Homi Bhabha National Institute, BARC, Mumbai, India.
- 34) Dr Anna D Kudryavtseva,P N Lebedev Physical Institute,Russian Academy of Sciences, Moscow, Russia
- 35) Prof Dr Rama S Lokhande, Head, Department of Chemistry, Director, University Research Cell, Jaipur National University, Jaipur, India
- 36) Prof Dr Dhananjay Mane, Regional Director, Yashwantrao Chavan Maharashtra Open University (YCMOU), Nashik, India.
- 37) Prof Dr Jose R Mora, Universidad San Francisco de Quito, Ecuador Venezuelan Institute for Science Research, Centre of Chemistry, Caracas, Miranda, Venezuela.
- 38) Dr Reji Nair, Research Chemist, Sensor Development, Profusa Inc., Emeryville, CA, USA.
- 39) Dr Venkat Narayan, Anthara Technologies Consulting, Texas, USA Formerly De Puy Orthopaedics Inc., Warsaw, IN, USA.
- 40) Prof Dr Vishwanath R Patil,Department of Chemistry,University of Mumbai, Kalina, Mumbai, India

- Prof Dr Harichandra A Parbat, Head, Department of Chemistry, Wilson College (Autonomous), Mumbai, India.
- 42) Prof Dr Sourav Pal,Director, IISER- Kolkta, Kolkata, IndiaFormer Director, CSIR National ChemicalLaboratory (NCL), Pune, India.
- 43) Prof Dr Pradnya J Prabhu, Principal, K J Somaiya College of Science and Commerce, Mumbai, India.
- 44) Prof Dr Surendra Prasad, Professor of Chemistry and Head, School of Agriculture, Geography, Environment, Ocean and Natural Sciences, The University of the South Pacific, Suva, Republic of Fiji.
- 45) Dr A V R Reddy.
 Former Head, Analytical Chemistry Division, BARC, Mumbai
 Professor, Homi Bhabha National Institute, BARC, Mumbai, India.
- 46) Prof Dr Genserik Reniers,Department of Chemistry, University of Antwerpen, Antwerp, Belgium.
- 47) Prof Dr Ponnudurai Ramasami, Computational Chemistry Group, Department of Chemistry, Faculty of Science, University of Mauritius, Republic of Mauritius.
- 48) Dr Shyam Rele, Senior Advisor, Vaccine Translational Research Branch, DAIDS, National Institute of Health, Bethesda, USA.



- 49) Prof Dr Anil Kumar Singh, Former Head, Department of Chemistry, IIT-Bombay, Mumbai.
 Adjunct Professor, Institute of Chemical Technology, Mumbai.
 Director, RCF Limited, Mumbai.
 Former Vice-Chancellor, University of Allahabad, Allahabad, India.
- 50) Prof Dr M S Sadjadi, Professor of Chemistry, Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran.
- 51) Prof Dr Sri Juari Santosa, Department of Chemistry, Faculty of Mathematics and Natural Sciences, Gadjah Mada University, Yogyakarta, Indonesia.
- 52) Prof Dr Pradeep K Sharma, Head, Department of Chemistry, J N V University, Jodhpur, India.
- 53) Prof R K Sharma, Coordinator, Green Chemistry Network Centre, Department of Chemistry, University of Delhi, Delhi, India.
- 54) Prof Sanjay K Sharma,Editor-in-Chief, Rasayan Journal of Chemistry,Head, Department of Chemistry, JECRCUniversity, Jaipur, India.
- 55) Dr S Sivaram, INSA Senior Scientist, IISER-Pune, Pune Former Director, CSIR National Chemical Laboratory (NCL), Pune, India.

- 56) Prof Dr P Sivaswaroop, Regional Director, Indira Gandhi National Open University (IGNOU), Nagpur, India.
- 57) Dr B Sreedhar,
 Senior Principal Scientist, Physical and Inorganic Chemistry Division,
 CSIR Indian Institute of Chemical Technology (IICT), Hyderabad, India
 Professor, Academy of Scientific and Innovative Research (AcSIR).
- 58) Prof Dr Alok Srivastava, Head, Department of Chemistry, Panjab University, Chandigarh, India.
- 59) Prof Dr M Swaminathan,
 Emeritus Professor, Nanomaterials Laboratory,
 Department of Chemistry,
 International Research Centre, Kalasalingam
 University,
 Krishnankoil, Tamil Nadu, India.
- 60) Prof Dr Chittaranjan Sinha, Department of Chemistry, Jadavpur University, Kolkata, India.
- 61) Prof Dr Toyohide Takeuchi,Department of Chemistry, Faculty ofEngineering, Gifu University, Gifu, Japan.
- 62) Dr S Vasudevan, Principal Scientist, CSIR Central Electrochemical Research Institute, Karaikudi, India.



- 63) Prof Dr Suresh Valiyaveettil,
 Materials Research Laboratory,
 Department of Chemistry,
 National University of Singapore, Singapore.
- 64) Dr Roshankumar Yadav,Member, Nepal National Commission for UNESCO,Ministry of Education, Science and Technology,Government of Nepal, Kathmandu, Nepal.
- 65) Prof Dr Shuli You, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, China.