

# Indian Journal of Chemical Technology

## Editorial Board

Dr D K Tuli  
DBT-IOC Centre for Advanced Bio-Energy Research  
R & D Centre, Indian Oil, Faridabad 121 007, India

Dr G S Mukherjee  
G-FAST, Defence Research & Development Organization  
P-1, Metcalfe House Complex  
New Delhi 110 054, India

Prof. J B Joshi  
Institute of Chemical Technology (UDCT)  
Matunga, Mumbai 400 019, India

Prof. P K Bhattacharya  
Department of Chemical Engineering  
Indian Institute of Technology  
Kanpur 208 016, India

Dr R B N Prasad  
CSIR-Indian Institute of Chemical Technology Tarnaka  
Hyderabad 500 007, India

Prof. V K Tyagi  
Oil Technology Department  
Harcourt Butler Technological Institute  
Kanpur 208 002, India

Dr C S Gopinath  
Catalysis Division & Center of Excellence on Surface Science  
CSIR-National Chemical Laboratory  
Pune 411 008, India

Prof. Deepak Kunzru  
Department of Chemical Engineering  
Indian Institute of Technology  
Kanpur 208 016, India

Prof. Y C Sharma  
Department of Applied Chemistry  
Indian Institute of Technology (Banaras Hindu University)  
Varanasi 221 005, India

Prof. A P Gupta  
Applied Chemistry & Polymer Technology, Delhi  
Technological University, Delhi 110 042, India

Prof. W U Xinqiang  
Environmental Corrosion Research Centre  
Institute of Metal Research  
Chinese Academy of Sciences (IMR CAS)  
62 Wencui Road, Shenyang, China

Prof. Peter Gardner  
School of Chemical Engineering and Analytical Science  
UMIST, Manchester, UK

**Dr Manoj Kumar Patariya**  
**Director, CSIR-NISCAIR (Ex-Officio)**

**Editor: Manju D Choudhary (manju@niscair.res.in)**

**Phone:** 25841146, 25846301-07, Ext. 321, **Fax:** 0091-011-25847062, 25849949

**E-mail:** ijct@niscair.res.in, **Website:** www.niscair.res.in; http://nopr.niscair.res.in

**Published by National Institute of Science Communication and Information Resources, Dr K S Krishnan Marg, New Delhi 110 012**

The *Indian Journal of Chemical Technology* is issued bimonthly by CSIR-NISCAIR in association with the Indian National Science Academy. CSIR-NISCAIR assumes no responsibility for the statements and opinions advanced by the contributors. The editorial staff in the work of examining papers received for publication is assisted, in an honorary capacity, by a large number of distinguished scientists and engineers.

Communications regarding contributions for publication in the journal should be addressed to the Editor, *Indian Journal of Chemical Technology*, CSIR-National Institute of Science Communication and Information Resources, Dr K S Krishnan Marg, New Delhi 110 012.

Correspondence regarding subscriptions and advertisements should be addressed to the Sales & Distribution Officer, CSIR-National Institute of Science Communication and Information Resources, Dr K S Krishnan Marg, New Delhi 110 012. [For subscription complaints: 25843359 (Tel.)]

**Annual Subscription:** Rs 1600.00 \$ 300.00\* **Single Copy:** Rs 320.00 \$ 60.00\*  
(\*Inclusive of first class mail)

For inland outstation cheques, please add Rs 50.00 and for foreign cheques, please add \$ 10.00.

Payments in respect of subscriptions may be made through NEFT/RTGS payable to NISCAIR, New Delhi.

The details of Bank account for NEFT/ RTGS transactions are as follows:

Bank name : Syndicate Bank	Address: Pusa Campus, IARI, New Delhi 110 012, India	Branch: Pusa Campus, IARI, New Delhi
Account No.: 90292160000079	Account name: NISCAIR, New Delhi 110 012	IFSC code: SYNB0009029
MICR code : 110025041	Branch code : 9029	SWIFT code: SYNBINBB019

**Phone:** 25843359; 25846301-07 **Ext:** 288 **Fax:** 0091-011-25847062 **E-mail:** sales@niscair.res.in

Claims for missing numbers of the journal will be allowed only if received within 3 months of the date of issue of the journal plus the time normally required for postal delivery of the journals and the claim.

© 2017 The Council of Scientific & Industrial Research, New Delhi 110 001

### To Our Readers

*Indian Journal of Chemical Technology* has established itself as the leading journal in the field of chemical engineering and technology. It is intended for rapid communication of new R & D developments to the research community engaged in the area of chemical technology.

Novel and original research findings are being published in this bimonthly journal in the following areas:

- Catalysis
- Polymerization
- Leather processing
- Petroleum technology
- Analytical chemistry
- Applied chemistry
- Biochemical engineering
- Corrosion
- Metallurgy
- Pharmaceuticals
- Drugs
- Other related fields of engineering

The journal is covered by the following leading abstracting, indexing and current awareness services:

- \* Science Citation Index
- \* Sci-search
- \* Engineering Index
- \* Chemical Abstracts
- \* PASCAL
- \* NCI Current Contents
- \* Scopus
- \* Current Contents
- \* Research Alert
- \* Cambridge Scientific Abstracts
- \* INSPEC
- \* Indian Science Abstracts
- \* ARAI Automotive Abstracts
- \* Directory of Open Access Journals

---

**Impact Factor (2016) : 0.568**