

## Bio sketch of Prof. Shishir Sinha

**Shishir Sinha, Ph.D., FIE(I), FIChE, FRSC, FIEEES**

**Professor**

Department of Chemical Engineering

Indian Institute of Technology Roorkee

Roorkee-247667 (India)

Ph.: +91-9719633333

Email : [shishir@ch.iitr.ac.in](mailto:shishir@ch.iitr.ac.in)

Webpage: <https://www.iitr.ac.in/~CH/shishir>



### Personal Profile:

Prof. Shishir Sinha, is a Professor in the Department of Chemical Engineering, Indian Institute of Technology Roorkee. He is also Adjunct faculty Centre for Disaster Mitigation and Management, IIT Roorkee. Presently he is holding the position of Director, Kamla Nehru Institute of Technology Sultanpur (An autonomous technical institute of Government of U.P.). He is among the leading academicians in India who are working on technologies of national importance such as waste polymer to value added products. Prof. Sinha has more than **22 years of academic and industrial research experience** with **83 reputed publications** besides more than **100** in conference proceedings. Apart from this he has written **10 books** and **several book chapters**. Successfully completed over **22 high impact projects and consultancies valued more than 152.79 million Indian Rupees**. Prof. Sinha has developed two technologies and transferred them to different organizations. Apart from he has filed **five** patents as on date. He has also organized many conferences on areas related to his specialization. He is member of various government and scientific bodies. Apart from this he has formulated several national and international MoUs between IIT Roorkee and institution/ university of repute like University of Strasbourg, University of Cranfield, RGIPT etc.

Prof. Sinha is a **Fellow of Royal Society of Chemistry, Fellow of Indian Institute of Chemical Engineers, Fellow of Institution of Engineers (India) and Fellow of International Society for Energy, Environment and Sustainability**. He is also member of many expert committees constituted by government and non-government organizations. His research interests are in the areas related to Membrane Separation, Water Treatment, Polymer Synthesis and Modification, Ion Exchangers, Composites.

### Research Interests and Projects:

- ❖ **Research Areas:** Polymer Reaction Engineering, Polymer Composites, Ion Exchangers, Waste water treatment for Tanneries and petrochemical plants, fluidized catalytic cracking, development of eco-friendly energy improvisers for carbon black.
- ❖ **Current Projects:** Waste water treatment for tanneries and petrochemical processes. Enhancement of energy efficiencies carbon black production plants. Development of fire retardant eco-friendly polymer composites.

### Qualification:

- Ph. D. in Chemical, IIT- Kanpur, India, 2001
- M. Tech in Chemical, HBTI Kanpur, India, 1995
- B. Tech in Chemical, HBTI-Kanpur, India, 1993

### Professional Experience: (Total: Twenty Two Years)

- April 2021- Till date : **Director**, Kamla Nehru Institute of Technology Sultanpur
- April 2014– Till date : **Professor**, Department of Chemical Engineering, IIT Roorkee

- Sep. 2009 – April 2014 : **Associate Professor**, Department of Chemical Engineering, IIT Roorkee
- Jul.2006– Sep 2009 : **Assistant Professor**, Department of Chemical Engineering, IIT Roorkee
- Feb 2003 – Jul.2006 : **Assistant Professor**, Chemical Engineering Department, TIET-Patiala
- Jul 1999-Jan 2003 : **Lecturer**, Chemical Engineering Department, TIET-Patiala

#### Theses Supervised:

- PhD Supervised: 14, Ongoing: 11
- Masters Supervised: >52

#### Publication Data:

| Paper Published | Paper Presented in Conferences | Patents Applied | Books Published | Courses Developed |
|-----------------|--------------------------------|-----------------|-----------------|-------------------|
| 83              | 106                            | 5               | 10              | 4                 |

#### Administrative Positions:

- 2021-todate : **Director**, KNIT Sultanpur (An autonomous Institute of UP Govt.)
- 2018- 2021 : **Head**, Department of Chemical Engineering
- 2021-to date : **Chairman**, Departmental Research Committee
- 2020-todate : **Chairman**, Roorkee Local Centre, IChE
- 2012-2019 : **Professor In Charge Guest House** IIT Roorkee
- 2012-2014 : **Honorary Secretary**, Institution of Engineers(India) RLC
- 2012-2016 : **Coordinator, Aarohi (Children Academy)**, IIT Roorkee
- 2016-2017 : **Treasurer**, Anushruti (Academy for Deaf students) IIT Roorkee
- 2013-2014 : **Chief Warden Ravindra Bhawan**, hostel IIT Roorkee
- 2009-2013 : **Chief Warden Govind Bhawan** hostel, IIT Roorkee
- 2008-2009 : **Chief Warden Azad Bhawan** hostel, IIT Roorkee
- 2007-2008 : **Warden Azad Bhawan**, hostel, IIT Roorkee
- 2012-2016 : **Institute Coordinator Cognizance** Annual Technical Festival of IIT Roorkee (except 2013)
- 2009-2014 : **Departmental Faculty In charge**, Training & Placement
- 2009-2014 : **Departmental Faculty In charge** Building and Maintenance
- 2015-2017 : **Chairman**, Departmental Research Committee
- 2002-2006 : **Founder President** of I.I.Ch.E. student chapter of the T.I.E.T. Patiala
- 2002-2006 : **President** of I.S.T.E. student chapter of the T.I.E.T. Patiala
- 2000-2006 : **Student Counselor** of Department, T.I.E.T. Patiala.
- Misc. : Chairman of several purchase committee. Convener of several board of studies, academic mentor and advisor of several institutions.

#### Membership of Scientific and Government bodies

- **Fellow** “Royal Society of Chemistry”.
- **Fellow** “Indian Institute of Chemical Engineers”.
- **Fellow** “Institution of Engineers (India)”
- **Fellow** “International Society for Energy, Environment and Sustainability”
- **Member Project Advisory Committee (PAC)** (under Ministry of New and Renewable Energy) for Waste to Energy programme and Goshala programme.
- **Member State Level Hearing Committee** for Plastic Management Govt of Uttrakhand
- **Member, Board of Governors**, BIET Jhansi from 2020

#### Affiliation of Professional bodies

- **Fellow** “Royal Society of Chemistry”.
- **Fellow** “Indian Institute of Chemical Engineers”.
- **Fellow** “Institution of Engineers (India)”
- **Fellow** “International Society for Energy, Environment and Sustainability”
- **Life Member** “Asian Polymer Association”
- **Life Member** “International Society for Energy, Environment and Sustainability”

- **Life Member** “The Society for Polymer Science, India”
- **Life Member** “Indian Desalination Association
- **Life Member** “Materials Research Society of India”
- **Life Member** “ Oil Technologists Association of India”
- **Member** “International Association of Engineers”
- **Member** “American Institute of Chemical Engineers”
- **Life Member** “Indian Society for Technical Education”

### Awards and Honours

- **Distinguished Alumnus Award**, H. B. Technological University Kanpur 2020
- **Fellow** “Royal Society of Chemistry”.
- **Fellowship** of Institution of Engineers
- **Elected Fellowship** of Indian Institute of Chemical Engineers
- **Elected Fellow** “International Society for Energy, Environment and Sustainability”
- **Ranked First** in entire M.Tech.
- **Marquis Who’s Who** year 2007
- **Awarded best technical presentation** of the session in CHEMCON-2000 organized by I.I.Ch.E. held at Calcutta during Dec.17-19,2000.
- **Member**, Academic Council H.B. Technical University Kanpur.
- **Member** board of studies H.B. Technical University Kanpur, Dr. A.P.J. Abdul Kalam Technical University Lucknow, SLIET Longowal.
- **Member** Research Degree Committee, Dr. A.P.J. Abdul Kalam Technical University Lucknow
- **Member** Board of Studies, Dr. A.P.J Abdul Kalam Technical University Lucknow
- **Member** Research Degree Committee, H.B. Technical University Kanpur
- **Member** Board of Studies I.P. University New Delhi
- **Member** Board of Studies, UPES Dehradun
- **Member** Board of Studies, IET Lucknow
- **Member** Board of Studies, Chemical Engineering, AMU Aligarh
- **Member** Academic Council NIET Noida
- **Member** Board of Governors, B.I.E.T. Jhansi
- **Vice President** Research Investigation and Implementation Committee, OTAI

### Patents Applied

- Development of epoxy composites reinforced by waste Kans grass (*Saccharum Spontaneum*) filler by hand-layup method. **Shishir Sinha** and **G. L. Devnani [No. 202011051143]**
- A Flame Retardant Natural Fiber Reinforced Composite Material and its Method of Preparation Thereof, **Shishir Sinha** and **Jyoti Jain [No. 202011056780 dated. 28.12.2020]**
- Mo-V-Nb-Te-O catalyst for the ammoxidation of propane to acrylonitrile, **Shishir Sinha** and **Prakash Biswas. [No. 202011055866 dated. 22.12.2020]**
- PVA composite film reinforced by Moringa Oleifera (*Sahajana*) seed filler by solution casting method, **Shishir Sinha** and **Kajal Mishra [202111004106 dated. 29.01.2021]**
- One-pot process for poly-hydroxy urethane from propylene carbonate, **Shishir Sinha** and **V. C. Srivastava.**

### Development of Courses

- **Chemical Process Safety**, (under platform of National Program on Technology Enhanced Learning (NPTEL) (Ministry of Human Resource and Development, Govt. of India)
- **Food Technology**, (under platform of National Program on Technology Enhanced Learning (NPTEL) (Ministry of Human Resource and Development, Govt. of India)
- **Chemical Engineering Thermodynamics: MHRD sponsored National Mission on Education through ICT.**
- **Polymer Reaction Engineering (in process)** (under platform of National Program on Technology Enhanced Learning (NPTEL) (Ministry of Human Resource and Development, Govt. of India)

### Technology Developed

- Developed an entirely new technique for preparation of anion exchange resin through gas phase nitration.

- Developed a process for low cost manufacturing tool for the production of fire retardant brick and tiles from waste plastic and natural fiber for rural applications

### **International Research Collaboration**

Having active research collaborations with following foreign universities

Department of Material Science, University of Utah USA, Department of Energy and Carbon Capture, University of Cranfield, UK, Universite de Strasbourg, Strasbourg

### **MoU Formulated**

- Instrumental in formulating the MoU between IIT Roorkee and Universite de Strasbourg, Strasbourg (University of Strasbourg).
- Instrumental in formulating the MoU between IIT Roorkee and University of Cranfield.
- Instrumental in formulating the MoU between IIT Roorkee and RGIPT Raibareli.

### **Conferences Organized : 10**

### **Overseas Academic cum Networking Visits**

Visited Australia, United States of America, Canada, France, Portugal, Austria, Hong Kong, United Kingdom, Italy and Switzerland for various academic activities.

For details, welcome to my website: <https://www.iitr.ac.in/~CH/shishir>