

Bio sketch of Prof. Shishir Sinha

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

Professor

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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. 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 **21 years of academic and industrial research experience** with **79 publications** besides more than **100** in conference proceedings. Apart from this he has written **9 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 **four** 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.

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 improvisors 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 Engineering, IIT- Kanpur, India, 2001
- M. Tech in Chemical Engineering, HBTI Kanpur, India, 1995
- B. Tech in Chemical Engineering, HBTI-Kanpur, India, 1993

Professional Experience: (Total: Twenty Years)

- 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

Thesis Supervised:

- PhD Supervised: 14, Ongoing:11
- Masters Supervised: >50
- List enclosed

Publication Data:

Paper Published	Paper Presented in Conferences	Patents Applied	Books Published	Courses Developed
79	77	5	10	4

Administrative Positions:

- 2018- 2021 : **Head**, Department of Chemical Engineering
- 2021-to date : **Chairman**, Departmental Research Committee
- 2020-to date : **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 Uttarakhand
- **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** 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 FlameRetardant 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

Books Published

- **Shishir Sinha** and **G. L. Devnani**, **Chemical Plant Safety and Risk Assessment: A Modern Approach**, book proposal accepted by CRC press, Taylor and Francis
- **Shishir Sinha** and **G. L. Devnani**, **Natural Fiber Composites: Processing, Characterization, Applications, and Advancements**, book proposal accepted by CRC press, Taylor and Francis

- **Shishir Sinha**, *Biodiesel, Past, Present and Future* (2009), Published by Quality Improvement Programme, I.I.T. Roorkee.
- **Shishir Sinha and Vinay Kumar** *Polymeric Systems and Applications* (2010) Published by Studium Press LLC. (ISBN No. 9789380012100).
- **Shishir Sinha, O.P. Pandey and, Vinay Kumar**, *Advances in Polymer Science* edited book series published by Studium Press India (ISBN No. 9789380012285) ,(2011)
- **Shishir Sinha and Naveen Kumar Navani** *Compendium on Nanotechnology (edited)* -A twelve volume set. Published by Studium Press LLC. USA (2014). (ISBN No. 1626330107) (2014).
- **Shishir Sinha and J. N. Govil**, (edited) *Bioprocess Engineering*, Studium Press LLC. USA (2014). (ISBN No. 1626990271) (2014)
- **K. K. Pant, Shishir Sinha and Shailendra Bajpai**, *Advances In Petroleum Engineering I (Refining)* Published by Studium Press LLC. USA (ISBN No. 1-62699-047-6). (edited) (2015)
- **K. K. Pant, Shishir Sinha and Shailendra Bajpai** *Advances In Petroleum Engineering II (Petrochemical)* Published by Studium Press LLC. USA (ISBN No. 1-62699-047-6). (edited) (2015)
- **Shishir Sinha, K.K. Pant and Shailendra Bajpai**, *Fertilizer Technology I (Synthesis)* Published by Studium Press LLC. USA (ISBN No. 1-62699-046-8). (edited) (2015)
- **Shishir Sinha, K.K. Pant and Shailendra Bajpai** *Fertilizer Technology II (Biofertilizers)* Published by Studium Press LLC. USA (ISBN No. 1-62699-046-8). (edited) (2015)
- *Electronic Waste Management*, Manuscript approved for publication.

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