



Sunil Dhole (PhD, Chem Engg)

Dr. Sunil Dhole After completing his bachelor's in Chemical Engineering from Amravati University Maharashtra did Masters (2002) and Ph. D. (2006) from IIT Kanpur. After a post-doctoral research fellowship at *non-Newtonian Rheology group at UCL, Belgium* (2007-2008) he joined Reliance Technology Group as Senior Research Scientist (2008-2011).

His journey of entrepreneurship started in 2011 with the formation of Kanpur based company "*Technorbital Advanced Materials Pvt. Ltd.*" The company has been started with the objective of converting potential lab-scale research in to the commercial reality. Sunil's expertise is in *new generation water filtration membranes*, air purification membranes, and new generation waste water treatment technologies. The non-electric water purification solutions commercialized (e.g., **Tata Swach Desire Plus, Tata Swach Crystella Advanced, Tech Jal Inline, Tech Jal community water purifier, GRAFiL industrial UF membranes**) by Technorbital are serving around 3 million people in India per day.

He is currently:

- Founder and director at Technorbital Advanced Materials Pvt. Ltd., Kanpur
- Founder and director at Chemdist Membrane Systems Pvt. Ltd., Pune
- Technical director at Espin Nanotech Pvt. Ltd., Kanpur
- Founder and director at Indeema Fibers Pvt. Ltd., Kanpur

PAST RESEARCH EXPERIENCE

Senior Research Scientist

Reliance Industries Limited, Polyester Sector, Reliance Technology Group, Patalganga, , India.

Post-Doctoral Research Fellowship (Université Catholique de Louvain, Louvain-la-Neuve, Belgium)

EDUCATION

Ph.D. (Chemical Engineering), IIT Knpur, UP, India

Master of Technology in Chemical Engineering, IIT Knpur, UP, India

Bachelor of Technology in Chemical Engineering, Amravati University, MS, India

INTERNATIONAL RESEARCH PUBLICATIONS

S. D. Dhole, A. Leygue, C. Bailly, R. Keunings, A Single Segment Differential Tube Model with Interchain Tube Pressure Effect. *J. Non-Newtonian F. Mech.* 161, 10-18 (2009)

S. D. Dhole, A. Leygue, C. Bailly, R. Keunings, Tube Theory for Entangled Linear Polymers: Influence of Different Molecular Mechanisms in Non-Linear Flows. AIP Conference Proceedings, 1027, 336-338 (2008), (Pt. 1, 15th International Congress on Rheology, 2008)

S. D. Dhole, R. P. Chhabra, V. Eswaran, Mass Transfer from a Spherical Bubble Rising in Power-Law Fluids at Intermediate Reynolds Numbers, *Int. Commun. Heat Mass Transfer*, 34, 971-978 (2007)

S. D. Dhole, R. P. Chhabra, V. Eswaran, Drag of a Spherical Bubble Rising in Power Law Fluids at Intermediate Reynolds Numbers, *Indus. Eng. Chem. Res.* 46, 939-946 (2007)

S. D. Dhole, R. P. Chhabra, V. Eswaran, Forced Convection Heat Transfer from a Sphere to Non-Newtonian Power Law Fluids, *AIChE. J.* 52, 3658-3667 (2006)

S. D. Dhole, R. P. Chhabra, V. Eswaran, Flow of Power Law Fluids Past a Sphere at Intermediate Reynolds Numbers, *Indus. Eng. Chem. Res.* 45, 4773-4781 (2006)

S. D. Dhole, R. P. Chhabra, V. Eswaran, A Numerical Study on the Forced Convection Heat Transfer from an Isothermal and Isoflux Sphere in the Steady Symmetric Flow Regime. *Int. J. Heat Mass Transfer*, 49, 984-994 (2006)

S. D. Dhole, R. P. Chhabra, V. Eswaran, Power Law Fluid Flow through Beds of Spheres at Intermediate Reynolds Numbers: Pressure Drop in Fixed and Distended Beds, *Chem. Eng. Res. Des.*, 82, 642-652 (2004)

Rupali Shukla, S. D. Dhole, R. P. Chhabra, V. Eswaran, Convective Heat Transfer for Power Law Fluids in Packed and Fluidised Beds of Spheres, *Chem. Eng. Sci.*, 59, 645-659 (2004)

PATENTS

1. Spinneret with Reduced Wiping (Reliance Ind. Ltd.)
2. Low Shrinkage, Low Creep and High Tenacity Industrial Yarn (Reliance Ind. Ltd.)
3. Formulation of appropriate pore sized hollow fiber membrane for clarification of tender coconut water with long shelf life (with Prof. Sirshendu De, IIT KGP, Chem Engg)

CONFERENCE PRESENTATIONS

S. D. Dhole, A. Leygue, R. Keunings, C. Bailly, Single Segment Differential Tube Model with Interchain Tube Pressure Effect: Analysis of Elongation and Shear Data of Monodisperse Polystyrene Melts, Society of Rheology Meeting, Wisconsin, Madison, USA, October, 2009.

S. D. Dhole, A. Leygue, R. Keunings, C. Bailly, Tube Theory for Entangled Linear Polymers: Influence of Different Molecular Mechanisms in Non-Linear Flows, *International Congress of Rheology*, California, Monterey, USA, August, 2008.

S. D. Dhole, A. Leygue, C. Bailly, R. Keunings, Single Segment Conformation Tensor Differential Toy Model with Inter-Chain Tube Pressure Effect, *Society of Rheology Meeting*, Salt Lake City, USA, October, 2007. [Poster session]

S. D. Dhole, R. P. Chhabra, V. Eswaran, Momentum and Heat Transfer to Newtonian and Non-Newtonian Fluids from a Sphere in 2-D Flow symmetric Regime, *58th Annual*

Session Of Indian Institute Of Chemical Engineers, Chemcon-2005, Delhi, India (IIT Delhi), December, 2005.

R. P. Bharti, A. K. Dhiman, S. D. Dhole, R. P. Chhabra, V. Eswaran, Steady Flow and Forced Convection Heat Transfer to Non-Newtonian Power Law Fluids from Heated Complex Geometries, *55th Canadian Chemical Engineering Conference, [CSCHE 2005](#)* Toronto, Ontario, Canada, October, 2005. [[Abstract](#) only]

S. D. Dhole, R. P. Chhabra, V. Eswaran, Power Law Fluid Flow Through Beds of spheres at Intermediate Reynolds Numbers, *56th Annual Session Of Indian Institute Of Chemical Engineers, Chemcon-2003, Bhubaneswar, India (Regional Research Labs), December, 2003.*

INVITED PRESENTATIONS

“Newton’s Laws of entrepreneurship” , **India International Science Festival, Lucknow**, October 2018

“Newton’s Laws of entrepreneurship” , **Indian Institute of Technology, Kanpur**, November 2017

“Newton’s Laws of entrepreneurship” , **Sagar Institute of Science and Technology, Bhopal**, September 2017

“Newton’s Laws of entrepreneurship” , **Indian Institute of Technology Guwahati, 2016**

“Understanding rheology of polymer melts through tube model”, **Thapar University, Patiala, India**, September 2013.

“In to the mind of a young entrepreneur” , **Indian Institute of Technology, Kanpur India**, November 2011.

“Understanding rheology of polymer melts through tube model”, **University of Erlangen, Erlangen, Germany**, July 2008.

“Micro-structural modelling: a promising tool to understand and improve polymer melt processing”, **GE Plastic, Bangalore, India**, May 2008.

“Micro-structural modelling: a promising tool to understand and improve polymer melt processing”, **Polyester Research and Technology Center-Reliance Industries Limited, Mumbai, India**, May 2008.

“Understanding rheology of the linear entangled polymers through differential micro-structural constitutive models”, **National Chemical Laboratory Pune, India**, September 2007.

AWARDS

- 2018 Technology selected by United Nations STI forum New York
- 2018 Made in final rounds of BM Munjal Awards
- 2018 Invited at MINT Technology Talks
- 2018 Best technology award by the World Disaster Management Forum
- 2018 SRIJAN-TIFAC funds of \$115k awarded by Department of Science and Technology, India
- 2017 Water Award by FICCI along with the water ministry
- 2017 CII green Technology award
- Technology of the year award by CSIR-NCL Research Foundation 2016
- Recognition by WASRAG, Rotary Club program on Water supply to remote areas 2014
- Best innovation award 2010 in Polyester Sector by Reliance Inc. Ltd.
- Awarded research fellowship by University of Catholique Louvain, Belgium to carry out post-doctoral research (Feb 2007 - Sept 2009)
- Awarded MHRD fellowship to carry out research for masters and doctoral degree at I. I. T. Kanpur India (Jan 2001-Nov 2006)
- Best paper award in *56th Annual Session Of Indian Institute Of Chemical Engineers*, Chemcon-2003, Bhubaneswar, India (Regional Research Labs) (2003).
- All India Rank 181 in Graduate Aptitude Test in Engineering, India (2000)
- Best under graduate academic award (1998)