Dr. Bharat A. Bhanvase

Professor and Head

Chemical Engineering

Laxminarayan Institute of Technology

Cell Phone: 9850637449

Personal Email: bharatbhanvase@gmail.com

Academic Qualifications:

B. E. (Chem. Engg.), Savitribai Phule Pune University, Pune: May 2000

M. E. (Chem. Engg.), Bharti Vidyapeeth, Pune: May 2006

Ph. D. (Chem. Engg.), Savitribai Phule Pune University, Pune: February 2013

Countries Visited: Australia

Research Interests:

Wastewater Treatment, Solid Waste Processing, Cavitation based processes for Nanomaterials Synthesis, Process Intensification, Microfluidics, Nanofluids

Positions Held in Past: (Professional (Teaching) Experience)

- **30 April 2019 – Till date**: Professor in Chemical Engineering Department of Laxminarayan Institute of Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
- **10 Oct. 2016 to 29 April 2019:** Professor (CAS) in Chemical Engineering Department of Laxminarayan Institute of Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
- **10 Oct. 2013 to 09 Oct. 2016:** Associate Professor in Chemical Engineering Department of Laxminarayan Institute of Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
- **1 July 2013 to 9 Oct. 2013:** Associate Professor in Chemical Engineering Department of BRACT's Vishwakarma Institute of Technology, Pune.
- **1 August 2007 to 30 June 2013:** Assistant Professor in Chemical Engineering Department of BRACT's Vishwakarma Institute of Technology, Pune.
- **13 Oct. 2003 to 31 July 2007:** Lecturer in Chemical Engineering Department of Sinhgad College of Engineering, Pune.

Administrative Experience:

- **April 2023 – Till Date**: Member of Board of National and International Linkages, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- **1st September 2022 – Till date**: Director-IQAC, Laxminarayan Institute of Technology, Nagpur
- **21st September 2021 – Till date**: Member (Teacher Representative) of Board of Governors (LIT Committee) constituted for Laxminarayan Institute of Technology, Nagpur
- **31st December 2020 – Till date**: Director, University Sophisticated Instrumentation Centre (USIC), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- **1 August 2019 – Till date**: Professor and Head of Chemical Engineering Department of Laxminarayan Institute of Technology, RTM Nagpur University, Nagpur.

Membership of Professional Societies:

- **Life Member** – Indian Science Congress Association (Engineering Sciences Section) Membership No.: L42121
- **Life Member** – Indian Institute of Chemical Engineers (LM-38183) in year 2022.
- **Fellow** - Maharashtra Academy of Sciences (MASc) 2020 (Fellowship No.: HLF1109).
- **Young Associate Fellow** - Maharashtra academy of Sciences (MASc) 2015 (Young Associateship No.: HYA46)
- **Life Associate Member** – Indian Institute of Chemical Engineers (LAM-38183) in year 2010.

Awards and Honors:

- listed in **top 2% Among Researchers in Chemical Engineering** in the year 2022 (Global Rank 666 and overall 161046) as per the Standard Citation Matrics Database created by **Stanford University, USA.**
- **IIChE Awards for the Year 2021: Chemical Weekly Award** for the Best Paper published in the "Indian Chemical Engineer" in its issues for 2020.
- **IIChE Awards for the Year 2021: IIChE NRC Award Best Paper** in "Indian Chemical Engineer" 2020.
- **IIChE Awards for the Year 2021: Kuloor Memorial Award** for the Best Technical Paper published in the Institute Journal "Indian Chemical Engineer" in its issues for 2020.
- listed in **top 2% Among Researchers in Chemical Engineering** in the year 2021 (Global Rank 1155 and overall 174997) as per the Standard Citation Matrics Database created by **Stanford University, USA**
- Listed in **top 2% Among Researchers in Chemical Engineering** in the year 2020 (Global Rank 973 and overall 171905) as per the Standard Citation Matrics Database created by **Stanford University, USA**.
- **Best Scientist Award** from Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur on 5th September 2017.
- **Young Scientist (Award) start-up research grant** from Science and Engineering Research Board, New Delhi in the year 2015
- Selected for the **Summer Research Fellowship of Indian Academy of Sciences**, Bangalore in the year 2008-09. Under this fellowship I have worked at ICT, Mumbai on the project polymer nanocomposite under the guidance of Prof. A. B. Pandit.
- Awarded with "**Recognition of Performance Certificate – 2013**" and "**Letter of Appreciation**" in 2012-13 on 31st Foundation Day of Vishwakarma Institute of Technology, Pune.
- Awarded with "**Recognition of Performance Certificate – 2012**" and "**Letter of Appreciation**" in 2011-12 on 30th Foundation Day of Vishwakarma Institute of Technology, Pune.
- Awarded with "**Vishwakarma Institute of Technology-Shri 2011 Award**" and "**Letter of Appreciation**" in 2010-11 on 29th Foundation Day of Vishwakarma Institute of Technology, Pune.
- Appreciated by Vishwakarma Institute of Technology, Pune for the contribution to the Internal Revenue Generation for the Institute on 26th Foundation Day of Vishwakarma Institute of Technology, Pune (1st September 2008).
- Awarded with Late Shri. Sadashiv Dattatraya Revankar Memorial Certificate for **standing first in Physics, Chemistry and Mathematics i.e., Group A**, at the H.S.C. Science Examination held in April/May 1996 at DBF Dayanand College of Arts and Science, Solapur.
- Awarded with Late Smt. Kaveribai Kulkarni Memorial **Certificate for standing first in Chemistry** at the H.S.C. Science Examination held in April/May 1996 at DBF Dayanand College of Arts and Science, Solapur.

Research Projects:

- **2009-12:** Ultrasound Assisted in-situ Emulsion Polymerization for Preparation of Polymer Nanocomposite **FUNDED BY**: BCUD, University of Pune, Pune **PROJECT COST**: 2.00 Lakhs (BCUD/OSD/184 Dated 11/05/2009).
- **2015-18:** Experimental and Theoretical Investigation on Thermal Conductivity and Convective Heat Transfer with Fluids Containing Nanoparticles **FUNDED BY**: SERB, New Delhi **PROJECT COST**: 24.456 Lakhs. (Young Scientist Start up Research Grant, YSS/2014/000889 Dated 17/08/2015)
- **2015-18:** Studies on the specialty/fine chemicals and nanoparticles synthesis using microstructured reactor **FUNDED BY**: RTM Nagpur University, Nagpur **PROJECT COST**: 3.00 Lakhs. (Dev./AH/2137 Dated 16/11/2015).
- **2015-17:** Nanocomposite - Photocatalyst for removal of dyes **FUNDED BY**: RTM Nagpur University, Nagpur **PROJECT COST**: 1.75 Lakhs. (विकास/जावक/2277 Dated 7/10/2015).
- **2020-Ongoing:** Development of Efficient Hydrodynamic Cavitation Based Process for the preparation liquid Emulsion Membrane (LEM) and its Application in Recovery of Hazardous and Value-added heavy metals from wastewater **FUNDED BY**: AICTE, New Delhi under Research Promotion Scheme **PROJECT COST**: 17.64706 Lakhs. (File No. 8-702/FDC/RPS (Policy-1)/2019-20 Dated 14/08/2020).
- **2020-Ongoing:** Utilization of lignin and Soy-oil-derivative polyols for synthesis of Biodegradable Rigid Polyurethane Foams **FUNDED BY**: RTM Nagpur University, Nagpur under RGSTC Scheme "Assistance for S&T Applications through University System" **PROJECT COST**: 3.00 Lakhs. (File No. RTMNU/IIL/RGSTC/P/2021/787 Dated 12/02/2021).
- **2022-Ongoing:** Investigation on enhancement in the electrical performance of Solar Photovoltaic system utilising Nanofluids **FUNDED BY**: Maharashtra Energy Development Agency (MEDA), A Government of Maharashtra Institute, Pune **PROJECT COST**: 102.15 Lakhs.

List of Publications:

Patents:

Patents Filed:

1. S. A. Kapole, S. H. Sonawane, R. D. Kulkarni, A. B. Pandit, **B. A. Bhanvase**, D. V. Pinjari, P. R. Gogate, Synthesis of Corrosion Inhibiting Nano Pigment Compraising of Nano Container for Corrosion Inhibitive Coating, Indian Patent No. 1539/MUM/2012, **Publication Date: 22/06/2012**.
2. **B.A. Bhanvase**, S. A. Parbat, Hydrodynamic Cavitation Based Process for Preparation of Emulsion Liquid Membrane for Extraction, Separation of Metals, Dyes and Other Pollutants from Wastewater and Thereof, **Indian Patent Application No. 201821041504 dated 02-11-2018, Publication date: 23/11/2018.**
3. **Bharat A. Bhanvase**, Nishikant A. Raut, Dadasaheb M. Kokare, Sanjay J. Dhoble, A multifocal device for disinfection of Covid-19 and viral contaminated surfaces, **Indian Patent Application No. 202021015726 dated 10-04-2020, Publication Date: 28/08/2020.**
4. Vijay B. Pawade, **Bharat A. Bhanvase**, Sanjay J. Dhoble, A process for synthesis of metal doped aluminisoilicate photocatalyst for waste water treatment, **Indian Patent Application**

No. 202021018562 (TEMP/E-1/20249/2020-MUM), dated 30-04-2020, Publication Date: 03/07/2020.

5. **Bharat A. Bhanvase**, Divya P. Barai, Sohan A. Parbat, Method of Manufacturing of Carbon Black Nanostructures from Pyrolytic Carbon Char, **Indian Patent Application No. 202021023180 (TEMP/E-1/25576/2020-MUM), dated 02-06-2020.**
6. R. P. Birmod, R. K. Zod, A. P. Patil, N. G. Kanse, **B. A. Bhanvase**, S. L. Bhagat, Four Plate Double Effect Jaw Crusher, **Indian Patent Application No. 202021040231, dated 17/09/2020, Publication Date: 09/10/2020.**
7. **Bharat A. Bhanvase**, Akshay R. Kale, Divya P. Barai, Ultrasound-Assisted Minireactor Micro-Emulsion System for Continuous Production of Metal Oxide Nanoparticles and Thereof, **Indian Patent Application No. 202121027624, dated 21/06/2021**.
8. **Bharat A. Bhanvase**, Divya P. Barai, Sanket A. Gulhane, Direct Cooling System of Solar Panels Using Modified Cooling Fluid, **Indian Patent Application No. 202321012348, dated 23/02/2023**.

Patents Granted:

1. S. H. Sonawane, **B. A. Bhanvase**, Y. Pydisetty, Srinath S., System for Preparation of Nano Organic Pigment Dispersion Using Cavitation Reactors, Indian Patent No. 233/MUM/2013, **Publication Date: 08/03/2013, Patent No. 306507, Date: 29/01/2019.**
2. **Bharat A. Bhanvase**, Nishikant A. Raut, Dadasaheb M. Kokare, Sanjay J. Dhoble, A drone-based disinfection device, **Indian Patent Application No. 202021015725 dated 10-04-2020, Publication Date: 28/08/2020, Patent No. 382970, Date: 29/11/2021.**

Books:

1. **B. A. Bhanvase**, R.P. Ugwekar (Eds.), Process Modelling, Simulation and Environmental Applications in Chemical Engineering, Apple Academic Press, (Partnered with CRC Press, a Taylor & Francis Group), USA, 2016, ISBN 9781771883245.
2. **B. A. Bhanvase,** R.P. Ugwekar, R. B. Mankar (Eds.), Novel Water Treatment and Separation Methods: Simulation of Chemical Processes, Apple Academic Press, (Partnered with CRC Press, a Taylor & Francis Group), USA, 2017, ISBN 9781771885782.
3. **Bharat A. Bhanvase**, Vijay B. Pawade, Sanjay J. Dhoble, S. H. Sonawane, M. Ashokkumar, Nanomaterials for Green Energy, Elsevier, 2018. ISBN: 978-0-12-813731-4
4. Shirish Hari Sonawane, **Bharat A Bhanvase**, Manickam Sivakumar, Encapsulation of Active Molecules and Their Delivery System, Elsevier, 2020. (ISBN: 978-0-12-819363-1).
5. Vijay B. Pawade, Paresh H. Salame and **Bharat A. Bhanvase**, Multifunctional Nanostructured Metal Oxides for Energy Harvesting and Storage Devices, Taylor & Francis Group (CRC Press) **2020.** ISBN: 9780429296871.
6. **Bharat A. Bhanvase**, S. H. Sonawane, Vijay B. Pawade, A. B. Pandit, Handbook of Nanomaterials for Wastewater Treatment: Fundamentals and Scale up issues, **Elsevier, 2021.** ISBN: 9780128214961
7. **Bharat A. Bhanvase,** Divya P. Barai, Nanofluids for Heat and Mass Transfer: Fundamentals, Sustainable Manufacturing and Applications, **Academic Press (Elsevier), 2021.** ISBN: 9780128219553.

Research Papers Published in Refereed International Journals

1. **B. A. Bhanvase,** S. P. Gumfekar, S. H. Sonawane, Water based PMMA-nano $CaCO_3$ nanocomposite by in-situ polymerization technique: synthesis, characterization and mechanical properties, Polymer-Plastics Technology and Engineering, 48 (2009) 939-944.
2. **B. A. Bhanvase,** S. H. Sonawane, New approach for simultaneous enhancement of anticorrosive and mechanical properties of coatings: Application of water repellent nano $CaCO_3$-PANI emulsion nanocomposite in alkyd resin, Chemical Engineering Journal, 156 (2010) 177-183.
3. **B.A. Bhanvase,** D.V. Pinjari, P.R. Gogate, S.H. Sonawane, A.B. Pandit, Process intensification of encapsulation of functionalized $CaCO_3$ nanoparticles using ultrasound assisted emulsion polymerization, Chemical Engineering and Processing: Process Intensification, 50 (2011) 1160-1168.
4. **B.A. Bhanvase,** D.V. Pinjari, S.H. Sonawane, P.R. Gogate, A.B. Pandit, Analysis of semibatch emulsion polymerization: Role of ultrasound and initiator, Ultrasonics Sonochemistry, 19 (2012) 97-103.
5. **B. A. Bhanvase,** D. V. Pinjari, P.R. Gogate, S. H. Sonawane, A. B. Pandit, Synthesis of exfoliated poly(styrene-co-methyl methacrylate)/montmorillonite nanocomposite using ultrasound assisted in-situ emulsion copolymerization, Chemical Engineering Journal, 181–182 (2012) 770-778.
6. **B. A. Bhanvase,** A. Kavathekar, W. Khairdi, K. Rajamohan, S. H. Sonawane, Preparation and characterization of poly (acrylic acid) – polyethylene glycol hydrogels, International Journal of Advances in Chemical Engineering & Technology (IJACET), 1(2011) 28-33.
7. S. H. Sonawane, **B. A. Bhanvase**, A. A. Jamali, S. K. Dubey, S. S. Kale, D. V. Pinjari A. B. Pandit, Improved active anticorrosion coatings using layer-by-layer assembled ZnO nanocontainers with benzotriazole, Chemical Engineering Journal 189– 190 (2012) 464–472.
8. G. A. Patil, M. L. Bari, **B.A. Bhanvase,** Vivek Ganvir, S. Mishra S. H. Sonawane, Continuous synthesis of functional silver nanoparticles using microreactor: Effect of surfactant and process parameters, Chemical Engineering and Processing: Process Intensification, 62 (2012) 69– 77.
9. M. A. Patel, **B. A. Bhanvase,** S. H. Sonawane, Production of cerium zinc molybdate nano pigment by innovative ultrasound-assisted approach, Ultrasonics Sonochemistry, 20 (2013) 906–913.
10. S. Varma, D. Sarode, S. Wakale, **B. A. Bhanvase**, M. P. Deosarkar, Removal of nickel from waste water using graphene nanocomposite, International Journal of Chemical and Physical Sciences, 2 (2013) 132-139.
11. M. P. Deosarkar, S. M. Pawar, S. H. Sonawane, **B. A. Bhanvase,** Process intensification of uniform loading of SnO_2 nanoparticles on graphene oxide nanosheets using a novel ultrasound assisted in situ chemical precipitation method, Chemical Engineering and Processing: Process Intensification, 70 (2013) 48-54.
12. **B. A. Bhanvase**, Y. Kutbuddin, R. N. Borse, N. Selokar, D. V. Pinjari, S. H. Sonawane, A. B. Pandit, Ultrasound assisted synthesis of calcium zinc phosphate pigment and its application in nanocontainer for active anticorrosion coatings, Chemical Engineering Journal, 231 (2013) 345–354.
13. S. A. Kapole, **B. A Bhanvase**, D. V. Pinjari, R. D. Kulkarni, U. D. Patil, P. R. Gogate, S. H. Sonawane, A. B. Pandit, Intensification of corrosion resistance of 2K epoxy coating by encapsulation of liquid inhibitor in nanocontainer core of sodium zinc molybdate and iron oxide, Composite Interfaces 21 (2014) 469-486.

14. Megha Tyagi, **Bharat A. Bhanvase**, S.L Pandharipande, Computational studies on release of corrosion inhibitor from layer-by-layer assembled silica nanocontainer, Industrial & Engineering Chemistry Research, 53 (2014) 9764–9771.
15. **B. A. Bhanvase**, M. R. Sarode, L. A. Putterwar, Abdullah K. A., M. P. Deosarkar, S. H. Sonawane, Intensification of convective heat transfer in water/ethylene glycol based nanofluids containing TiO_2 nanoparticles, Chemical Engineering and Processing: Process Intensification, 82 (2014) 123–131.
16. **B. A. Bhanvase,** M. A. Patel, S. H. Sonawane, Kinetic properties of layer-by-layer assembled cerium zinc molybdate nanocontainers during corrosion inhibition, Corrosion Science 88 (2014) 170-177.
17. M. P. Deosarkar, S. M. Pawar, **B. A. Bhanvase**, In-situ sonochemical synthesis of Fe_3O_4-graphene nanocomposite for lithium rechargeable batteries, Chemical Engineering and Processing: Process Intensification, 83 (2014) 49–55.
18. **B. A. Bhanvase**, S. H. Sonawane, Ultrasound assisted in-situ emulsion polymerization for polymer nanocomposite: A review, Chemical Engineering and Processing: Process Intensification, 85 (2014) 86-107.
19. **B. A. Bhanvase**, S. H. Sonawane, D. V. Pinjari, P. R. Gogate, A. B. Pandit, Kinetic studies of semibatch emulsion copolymerization of methyl methacrylate and styrene in the presence of high intensity ultrasound and initiator, Chemical Engineering and Processing: Process Intensification, 85 (2014) 168–177.
20. S. A. Kapole, **B. A Bhanvase**, D. V. Pinjari, P. R. Gogate, R. D. Kulkarni, S. H. Sonawane, A. B. Pandit, Investigation of corrosion inhibition performance of ultrasonically prepared sodium zinc molybdate nanopigment in two-pack epoxy-polyamide coating, Composite Interfaces, 21 (2014) 833-852.
21. S. E. Karekar, **B. A. Bhanvase**, S. H. Sonawane, M. P. Deosarkar, D. V. Pinjari, A. B. Pandit, Synthesis of zinc molybdate and zinc phosphomolybdate nanopigments by an ultrasound assisted route: Advantage over conventional method, Chemical Engineering and Processing: Process Intensification, 87 (2015) 51–59.
22. A J. Jadhav, S. E. Karekar, D. V. Pinjari, Y. G. Datar, **B. A. Bhanvase**, S. H. Sonawane, A. B. Pandit, Development of smart nanocontainers with a zinc phosphate core and a pH-responsive shell for controlled release of imidazole, Hybrid Materials 1 (2015) 71–79.
23. **B. A. Bhanvase,** N. S. Darda, N. C. Veerkar, A. S. Shende, S. R. Satpute, S. H. Sonawane, Ultrasound assisted synthesis of PANI/$ZnMoO_4$ nanocomposite for simultaneous improvement in anticorrosion, physico-chemical properties and its application in gas sensing, Ultrasonics Sonochemistry, 24 (2015) 87–97.
24. L. I. Bhagawat, V. S. Patil, B. B. Kale, S. H. Sonawane, **B. A. Bhanvase**, D. V. Pinjari, M. Ashokkumar, Sonoprocessing of $LiFePO_4$ nanoparticles and nanocomposites for cathode material in Lithium Ion Batteries, Polymer Composites, 37 (2016) 1874-1880.
25. S. Appalakutti, S. H. Sonawane, **B. A. Bhanvase**, Vikas Mittal, M. Ashokkumar, Process intensification of copper chromite ($CuCr_2O_4$) nanoparticle production using continuous flow microreactor, Chemical Engineering and Processing: Process Intensification, 89 (2015) 28-34.
26. N. P. Badgujar, Y. E. Bhoge T. D. Deshpande, **B. A. Bhanvase**, P.R. Gogate, S. H. Sonawane, R. D. Kulkarni, Ultrasound assisted organic pigment dispersion: advantages of ultrasound method over conventional method, Pigments & Resin Technology, 44 (2015) 214 - 223.
27. S. Ghodke, **B. A. Bhanvase,** S. Sonawane, S. Mishra, K. Joshi, Studies on Fragrance Delivery from Inorganic Nanocontainers: Encapsulation, Release and Modeling Studies, Journal of the Institution of Engineers (India): Series E 96 (2015) 45-53.

28. **B. A. Bhanvase,** V. B. Kadam, T. D. Rode, P. R. Jadhao, Sonochemical process for the preparation of Novel calcium zinc molybdate nanoparticles, International Journal of Nanoscience, 14 (2015) 1550014-1 – 1550014-9 (9 pages).
29. P. D. Jolhe, **B. A. Bhanvase,** V. S. Patil, S.H. Sonawane, Sonochemical synthesis of peracetic acid in a continuous flow microstructured reactor, Chemical Engineering Journal, 276 (2015) 91-96.
30. S. R. Shirsath, A.P. Hage, **B.A. Bhanvase**, S.H. Sonawane, Ultrasonically prepared poly(acrylamide)-kaolin composite hydrogel for removal of crystal violet dye from wastewater, Journal of Environmental Chemical Engineering 3 (2015) 1152-1162.
31. P. Gurav, Srinu Naik S., **B. A. Bhanvase**, D. V. Pinjari, S. H. Sonawane, M. Ashokkumar, Heat Transfer Intensification using Polyaniline based Nanofluids: Preparation and Application, Chemical Engineering and Processing: Process Intensification, 95 (2015) 195–201.
32. **B. A. Bhanvase,** S. H. Sonawane, Effect of type and loading of surfactant on ultrasound-assisted synthesis of $CaZn_2(PO_4)_2$ nanoparticles by chemical precipitation, Chemical Engineering and Processing: Process Intensification 95 (2015) 347–352.
33. M. L. Bari, P. L. Surwyanshi, **B. A. Bhanvase,** S. H. Sonawane, J. S. Narkhede, S. Mishra, Effect of Process Parameters on Properties of Colloids in a Continuous-Flow Microreactor System, Chemical Engineering & Technology, 38 (2015) 1765–1773.
34. B. Bethi, S. H. Sonawane, G.S. Rohit, C. R. Holkar, D. V. Pinjari, **B. A. Bhanvase**, A. B. Pandit, Investigation of TiO_2 photocatalyst performance for decolourization in the presence of Hydrodynamic cavitation as hybrid AOP, Ultrasonics Sonochemistry 28 (2016) 150–160.
35. **B. A. Bhanvase,** M. A. Patel, S. H. Sonawane, A. B. Pandit, Intensification of Ultrasound-Assisted Process for the Preparation of Spindle – Shape Sodium Zinc Molybdate Nanoparticles, Ultrasonics Sonochemistry 28 (2016) 311–318.
36. **B. A. Bhanvase, S.** D. Kamath, U. P. Patil, H. A. Patil, A. B. Pandit, S. H. Sonawane, Intensification of Heat Transfer Using PANI Nanoparticles and PANI-CuO Nanocomposite Based Nanofluids, Chemical Engineering and Processing: Process Intensification, 104 (2016) 172–180.
37. N. R. Sikwal, S. H. Sonawane, **B. A. Bhanvase**, K. Ramisetty, D. V. Pinjari, P. R. Gogate, R. Satish Babu, Ultrasound-assisted preparation of ZnO nanostructures: Understanding the effect of operating Parameters, Green Processing and Synthesis 5 (2016) 163-172.
38. P. D. Jolhe, **B. A. Bhanvase,** V. S. Patil, S. H. Sonawane, Green Route for Silver Nanoparticles Synthesis by Raphanus Sativus Extract in a Continuous Flow Tubular Microreactor, International Journal of Nanoscience, 15 (2016) 1650019 (11 pages).
39. B. Bethi, S. H. Sonawane, **B. A. Bhanvase**, S. Gumfekar, Nanomaterials based Advanced Oxidation Processes for Waste Water Treatment: A review, Chemical Engineering and Processing: Process Intensification, 109 (2016) 178–189.
40. S. R. Shirsath**, B. A. Bhanvase**, S. H. Sonawane, P.R. Gogate, A.B. Pandit, A novel approach for continuous synthesis of calcium carbonate using sequential operation of two sonochemical reactors, Ultrasonics Sonochemistry, 35 (Part A) (2017) 124–133.
41. S. Shabana, S.H. Sonawane, V. Ranganathan, P.H. Pujjalwar, D.V. Pinjari, **B.A. Bhanvase**, P.R. Gogate, M. Ashokkumar, Improved synthesis of aluminium nanoparticles using ultrasound assisted approach and subsequent dispersion studies in di-octyl adipate, Ultrasonics Sonochemistry 36 (2017) 59–69.
42. **B.A. Bhanvase**, T.P. Shende, S. H. Sonawane, A review on graphene-TiO_2 and doped graphene-TiO_2 nanocomposite photocatalyst for water and wastewater treatment, Environmental Technology Reviews, 6 (2017) 1-14.
43. B. Bethi, S. H. Sonawane, I. Potoroko, **B. A. Bhanvase**, S. S. Sonawane, Novel Hybrid System Based on Hydrodynamic Cavitation for treatment of Dye Waste Water: A First report on bench scale study, Journal of Environmental Chemical Engineering 5 (2017) 1874–1884.

44. S. M. Gaikwad, P.D. Jolhe, **B.A. Bhanvase**, A. Kulkarni, V. S. Patil, M. S. Pimplapure, S. Srinath, I. Potoroko, S. H. Sonawane, S. S. Sonawane, Process Intensification for Continuous Synthesis of Performic Acid Using Corning® Advanced-Flow™ Reactors, Green Processing and Synthesis, 6 (2017) 189-196.
45. P. D. Jolhe, **B. A. Bhanvase**, V. S. Patil, S.H. Sonawane, I. Potoroko, Ultrasound Assisted Synthesis of Performic Acid in a Continuous Flow Microstructured Reactor, Ultrasonics Sonochemistry, 39 (2017) 153–159.
46. S. A. Ghodke, S. H. Sonawane, **B. A. Bhanvase**, S. Mishra, K. S. Joshi, I. Potoroko, Halloysite Nanocontainers for Controlled Delivery of Gibberellic Acid, Russian Journal of Applied Chemistry 90 (2017) 120–128.
47. P. J. Fule, **B. A. Bhanvase**, S. H. Sonawane, Experimental Investigation of Heat Transfer Enhancement in Helical Coil Heat Exchangers Using Water Based CuO Nanofluid, Advanced Powder Technology 28 (2017) 2288–2294.
48. **B. A. Bhanvase**, S. D. Sayankar, A. Kapre, P. J. Fule, S. H. Sonawane, Experimental investigation on intensified convective heat transfer coefficient of water based PANI nanofluid in vertical helical coiled heat exchanger, Applied Thermal Engineering 128 (2018) 134–140.
49. T. P. Shende, **B. A. Bhanvase**, A. P. Rathod, D. V. Pinjari, S. H. Sonawane, Sonochemical synthesis of Graphene-Ce-TiO_2 and Graphene-Fe-TiO_2 ternary hybrid photocatalyst nanocomposite and its application in degradation of Crystal Violet Dye, Ultrasonics Sonochemistry 41 (2018) 582-589.
50. P. L. Suryawanshi, S. H. Sonawane, **B. A. Bhanvase**, M. Ashokkumar, M. S. Pimplapure, P. R. Gogate, Synthesis of iron oxide nanoparticles in a continuous flow spiral microreactor and Corning® advanced flow™ reactor (AFR™), Green Processing and Synthesis 7 (2018) 1-11.
51. U. D. Bagale, S. H. Sonawane, **B.A. Bhanvase**, R.D. Kulkarni, P.R. Gogate, Green Synthesis of nanocapsules for self-healing anticorrosion coating using ultrasound assisted approach, Green Processing and Synthesis, 7 (2018) 147-159.
52. S. E. Karekar, U. D. Bagale, S. H. Sonawane, **B. A. Bhanvase,** D. V. Pinjari, A smart coating established with encapsulation of Zinc Molybdate centred nanocontainer for active corrosion protection of mild steel: Release kinetics of corrosion inhibitor, Composite Interfaces, 25 (2018) 785-808.
53. P. L. Suryawanshi, S. P. Gumfekar, **B. A. Bhanvase**, S. H. Sonawane, M. S. Pimplapure, A review on microreactors: Reactor fabrication, design, and cutting-edge applications, Chemical Engineering Science 189 (2018) 431–448.
54. M. Suresh Kumar, S. H. Sonawane, **B. A. Bhanvase**, B. Bethi, Treatment of ternary dye wastewater by hydrodynamic cavitation combined with other advanced oxidation processes (AOP's), Journal of Water Process Engineering, 23 (2018) 250-256.
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Ph.D. Students Registered: 04

Mr. Yogesh P. Moharkar: Studies on Chemicals and Nanoparticle Synthesis in Microreactor (21/01/2016).

Ms. Gauri Abhay Kallawar: Ultrasound Assisted Preparation of Graphene Based Nanocomposite Photocatalyst for Efficient Mineralization of Dyes (29/10/2018).

Ms. Divya Barai: Experimental and Theoretical Investigation on The Heat Transfer Characteristics of Fluid Containing Nanoparticles (22/05/2019).

Ms. Neha P. Thakare: Investigation on hydrodynamic cavitation-based process for removal of ammoniacal nitrogen from waste water (15/03/2022)

M.E./M.Tech. Students Guided: 26 Competed + 02 Ongoing

As A Resource Person (Expert Talk, Invited Talk, Plenary lecture, Technical session Chair etc.): 33

Reviewer For Journals: 115+

Conferences, Workshops & Seminars Organized/Co-Ordinated:26

Conferences, Workshops and Seminars Attended: 33