



Dr. SACHIN RANGNATH SHIRSATH

Professor & Head, Department of Chemical Engineering



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OVERVIEW:

Qualifications: Ph.D. (Chemical Engineering), M. E. (Chem Engg), B. E. (Chem Engg)
Experience: Teaching -29 years Industry – 2 years
Date of Joining STES: 01/08/2003
Skills and Proficiencies: Analytical instruments

SIGNIFICANT ACHIEVEMENTS:

- Selected for Summer Research Fellowship for Teachers jointly sponsored by Indian Academy of Sciences, Bangalore and Indian National Science Academy, New Delhi
- Ex. Member Board of Studies in Chemical Engineering, Savitribai Phule Pune University, Pune
- Ex. Member, Faculty of Engineering, Savitribai Phule Pune University, Pune
- Member, Senate, Savitribai Phule Pune University, Pune

AREA OF EXPERTISE /RESEARCH INTERESTS:

- Sonochemical Reactions, Environmental Engineering

NUMBER OF STUDENTS GUIDED:

- PG – 20 , UG – 50+ Groups

RESEARCH PULICATIONS:

Publication Summary:

Scopus/ SCI-16

International Journal: 16

National Journal: 7

Conference:1

h-index : 15

i10 index : 16

https://scholar.google.co.in/citations?user=dg_Lmc0AAAAJ&hl=en

FUNDED RESEARCH PROJECT:

- Principal Investigator for Research Project on " Ultrasound assisted Saponification of vegetable oils in presence of Phase Transfer Catalyst " sanctioned by BCUD, SPPU, Pune, Amount Rs.2, 40,000/-, Year 2009-2012.

- Principal Investigator for Research Project on " Synthesis of Nanoparticles using plant extracts in microreactor " sanctioned by BCUD, SPPU, Pune, Amount Rs.1,40000/-, Year 2016-2018.

RESEARCH WORK:

Ph. D. Research Work:

- Ultrasound has been shown to have positive effects on many physical and chemical transformations and it is extensively used in chemical processing, material synthesis, wastewater treatment, polymer chemistry etc. Cavitation has got many advantages such as reduction in steps of reaction, reduction in reaction time, use of less forcing conditions, free radical generation due to dissociation of vapours, generation of local turbulence and liquid micro circulation, increase in reaction yield, possible switching of the reaction pathways resulting in increased selectivity and the effectiveness of the catalyst. The objectives of this work are to study the effect of cavitation over different physical/chemical processes viz. hydrogel synthesis and its use for waste water remediation, synthesis of catalyst, ultrasonic crystallization and ultrasound assisted extraction.

NOTABLE GUIDED PROJECTS:

PG projects:

- Effect of ultrasound and phase transfer catalyst on saponification reaction of vegetable oil
- Calcium carbonate nanoparticles synthesis under high intensity ultrasound irradiation
- Ultrasonically synthesized hybrid hydrogels for the removal of dyes
- Ultrasound assisted extraction of curcumin from curcuma aromatica

UG Projects:

- Synthesis and characterization of Ultrasound/ECG gel (AY 2023-24)
- Production of activated carbon from coconut shell and its application for waste water treatment (AY 2022-23)
- Diesel Decontamination through Assisted Blending (AY 2021-22)
- Extraction Of Oil From Cashew Nuts Shell (AY 2020-21)

RESOURCE PERSON TO INDUSTRY/ACADEMIA:

- Reviewer for the prominent journals namely Ultrasonics Sonochemistry, Chemical Engineering Journal, Industrial & Engineering Chemistry Research, Journal of Environmental Chemical Engineering, Progress in Color, Colorants and Coatings, Journal of Food Process Engineering, Food Chemistry (Publisher - Elsevier Ltd.).
- Worked as a Session Chair during CHEMCON 2020 from 27-29 December 2020 organized by IChE headquarters Hyderabad Regional Centre

- Delivered invited lecture on “Continuous Precipitation of Calcium Carbonate using Sonochemical Reactor” at the AOSS-5 (Asia- Oceania Sonochemical Society) 2023 organized by National Institute of Technology, Warangal, Telangana from 28th to 30th September 2023
- Delivered an expert session on “Composite hydrogel for removal of dye from wastewater” in Faculty Development Program (FDP) on “Novel Technology for Environment and Energy Sustainability” organized by Department of Chemical Engineering, Pad. Dr. V. V. Patil Polytechnic, Loni from 20th to 25th Feb 2023
- Delivered an expert session on “Intensification of Extraction of Curcumin from *Curcuma Aromatica* Using Ultrasound Assisted Approach” in Faculty Development Program (FDP) on “Recent Trends in Chemical Engineering” organized by Department of Chemical Engineering, Pad. Dr. V. V. Patil Polytechnic, Loni from 19th to 23rd April 2022
- Delivered an expert session on “Intensification of Extraction of Curcumin From *Curcuma Amada* Using Ultrasound Assisted Approach” in AICTE Sponsored Staff Development Program on “Recent Advances in Process Intensification” organized by Department of Chemical Engineering, Pravara Rural Engineering College, Loni on 6th December 2017

SUBJECTS TAUGHT:

UG:

- Process Design of Equipments
- Chemical Engineering Thermodynamics
- Chemical Reaction Engineering
- Process Calculations
- Mass Transfer
- Heat Transfer
- Principles of Design

PG:

- Fluidization Engineering
- Industrial Pollution Control
- Catalysis and surface phenomenon
- Research Methodology
- Advanced Separation Processes

FDP/STTP/SDP/WORKSHOPS ORGANIZED AS A COORDINATOR:

- **Science and Engineering Research Board, Department of Science and Technology sponsored** One week Workshop on “Nanostructured materials in Catalysis” from 25th March to 29th March 2019 at Chemical Engg Department, Sinhgad College Of Engineering, Pune

- Three day Workshop on “Utilities and Automation in Chemical Process Industries” from 28 June 2017 to 30 June 2017 at Chemical Engg Dept, Sinhgad College Of Engineering, Pune
- **AICTE sponsored Two week Staff Development Programme** on “ Optimization in Chemical Process Industries” for persons from Industry and Academics from 14th to 26th Jun 2010, at Chemical Engg Department, Sinhgad College Of Engineering, Pune
- One week training programme on “Optimization in Chemical Process Industries” for persons from Industry and Academics from 16st to 23rd November 2009, at Chemical Engg Department, Sinhgad College Of Engineering, Pune
- Three day training programme on “Applications of MATLAB in Chemical Engineering ” for persons from Industry and Academics from 21st to 23rd April 2008, at Chemical Engg Department, Sinhgad College Of Engineering, Pune

CONFERENCES ATTENDED:

- International conference on “Materials and system engineering (ICMSE-2021)” organized by Department of Mechanical Engineering, SJB institute of Technology, Bengaluru, 7-8 May 2021
- CHEMCON 2020, Jointly organized by Indian Institute of Chemical Engineers (IChE) and IChE Hyderabad regional Centre, 27-29 December, 2020
- Regional Research Conference “INNOVATION 2017” organized by JSPM’s Rajarshi Shahu College of Engineering, Pune on 13th November 2017.

FDP/STTP/SDP ATTENDED:

- Workshops/ Seminars Attended: 32

RESPONSIBILITIES HANDLED AT STES/SCOE/DEPT:

Society Level

- Worked as Member of OMS admission drive 2024.

Institute Level (SCOE)

- Working as College Examination Officer

Department Level (Chemical Engineering)

- Organizing committee member for various Staff Development Programs & National, Conferences
- Industrial Visit Coordinator
- Class Tests Coordinator
- Industrial Training coordinator for the department
- Project Guide for BE & ME students
- NBA Coordinator

DECLARATION:

I hereby declare that all the above information furnished by me are true to the best of my knowledge.

Date: 09/12/2024

Signature