

**Shyam Prakashrao Tekade**

***B.E., M.Tech., Ph.D. (Chemical Engineering)***

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### ***Professional Profile***

Currently working as an **Associate Professor** at the Department of Chemical Engineering, Gharda Institute of Technology, Lavel, Dist. Ratnagiri, Maharashtra, India. Joined this Institute on **27<sup>th</sup> July 2013**

Handling responsibility as **Head of the Department** Chemical Engineering at Gharda Institute of Technology, Lavel since November 2021

Coordinated the **Chemical Process Safety Course (2022)** for industry professionals in association with **Gharda Chemicals Ltd.** and **Directorate of Industrial Safety and Health, Maharashtra State**

Successfully organized **three AICTE-ISTE sponsored Refresher/Induction programs (2021)** on Computer Aided Software for Process Intensification (Grant Received: 3 Lakh)

Worked as **Senior Supervisor of Mumbai University Examinations** in May-June 2021 (Online Examinations) and November-December 2018

Worked as **Head of the Department**, Chemical Engineering at Gharda Institute of Technology, Lavel from January to July 2016

Worked as **Institute coordinator of Students Feedback** for 4 years between 2015-2019 and initiated **online feedback system** at Gharda Institute of Technology, Lavel

Worked as a **Lecturer/Assistant Professor** between **August 2008 to July 2013** at Department of Chemical Engineering, Anuradha Engineering College, Chikhli, District-Buldana, Maharashtra, India

Worked as an **NBA and NAAC** accreditation team member at Gharda Institute of Technology and Anuradha Engineering College

Lifetime member of Indian Society for Technical Education, ISTE Lifetime membership number: 69609

## *Experience*

**14 years** of teaching experience for teaching **Under-Graduate** Chemical Engineering course. Taught important subjects of Chemical Engineering such as Chemical Reaction Engineering, Process Calculations, Process Dynamics and Control, Fluid Flow Operations, Transport Phenomena, and, Instrumentation and Control

## *Education*

**Ph.D.** in **Chemical Engineering** (30 August 2018) from Visveswarayya National Institute of Technology (VNIT), Nagpur

**Title of the Thesis:** Hydrogen generation by water splitting reaction using aluminum in the annular and batch reactor.

Supervisor: Dr. D. Z. Shende

**Post Graduate course**, ‘**Master of Technology**’, in **Chemical Engineering** in June **2011**, from Anuradha Engineering College, Chikhli; Sant Gadge Baba Amravati University, Amravati, with **first class (74.68%, First Merit)**.

**Under Graduate** course, ‘**Bachelor of Engineering**’, in **Chemical Engineering** in September **2008**, from Karmaveer Kakasaheb Wagh Institute of Engineering Education and Research, Nasik; **Pune University**, with **first class with distinction (69.33%)**.

**Higher Secondary Certificate** (HSC) examination with **First Class with Distinction (76%)** in **2004** from Sitabai Sangai Junior College, Anjangaon (Surji), Amaravati division, Maharashtra Board.

**Senior Secondary Certificate** (SSC) examination with **First Class with Distinction (76%)** in **2002** from Sitabai Sangai High school, Anjangaon (Surji), Amaravati Division, Maharashtra Board.

## *Research Areas*

Hydrogen generation by Aluminum-water reaction, Pyrolysis of waste plastics and biomass, Reactions under annular reactor

## *Research Profile*

Total Number of Publications: **15**

Prominent Publishing Journals: **Bioresource Technology, International Journal of Hydrogen Energy, Science of the Total Environment, Journal of Environmental Management, Chemical Engineering Communications, International Journal of Chemical Reactor Engineering**

Total Scopus Citations to date: **207 (Google Scholar Citations: 224)**

Scopus H-index: **7**

## ***Publications***

1. Nikhil Kirti, **Shyam P. Tekade**, Ankita Tagade, Ashish N. Sawarkar, (2022). 'Pyrolysis of pigeon pea (*Cajanus cajan*) stalk: Kinetics and thermodynamics analysis of degradation stages via isoconversional and master plot methods', **Bioresource Technology** (SCI, IF:9.642), 347, 126440. doi: <https://doi.org/10.1016/j.biortech.2021.126440>.
2. Rajnish Kumar Singh, Trilok Patil, Deeksha Pandey, **Shyam P. Tekade**, Ashish N. Sawarkar, (2022). 'Co-pyrolysis of banana agro-waste and petroleum coke: kinetics, reaction mechanism and thermodynamic analysis', **Journal of Environmental Management** (SCI, IF:6.789), 301, 113854. doi: <https://doi.org/10.1016/j.jenvman.2021.113854>.
3. Sanjay Singh, Trilok Patil, **Shyam P. Tekade**, Manoj B. Gawande, Ashish N. Sawarkar, (2021). 'Studies on individual pyrolysis and of co-pyrolysis of corn cob and polyethylene: thermal degradation behaviour, possible synergism, kinetics and thermodynamic analysis', **Science of the Total Environment** (SCI, IF: 7.963), 783, 147004. doi: <https://doi.org/10.1016/j.scitotenv.2021.147004>.
4. **Shyam P. Tekade**, Gaurav Jadhav, Sunny Kalekar, Amit Pednekar, Diwakar Shende, Kailas Wasewar, Ashish Sawarkar (2021). 'Utilization of human urine and waste aluminum for hydrogen generation', **Bioresource Technology Reports** (Scopus, CS: 3.8), 15, 100821. doi: <https://doi.org/10.1016/j.biteb.2021.100821>.
5. Amit S. Pednekar, **Shyam P. Tekade**, Diwakar Z. Shende, Kailas L. Wasewar, (2021). 'Intensification of Hydrogen Generation through Liquid Metal Gallium in Water Splitting Reaction Using Aluminum in Presence of Potassium Hydroxide', **Chemical Engineering Communications** (SCI, IF: 2.494), 208, 1, doi: <https://doi.org/10.1080/00986445.2019.1694915>.
6. Rajnish Kumar Singh, Trilok Patil, Ashish Verma, **Shyam P. Tekade**, Ashish N. Sawarkar, (2021). 'Insights into kinetics, reaction mechanism, and thermodynamic analysis of pyrolysis of rice straw from rice bowl of India', **Bioresource Technology Reports**, 13, 100639, doi: <https://doi.org/10.1016/j.biteb.2021.100639>.
7. **Shyam P. Tekade**, Prashant P. Gugale, Mitesh L. Gohil, Sandip H. Gharat, Trilok Patil, Parmesh Kumar Chaudhari, Dipesh S. Patle, Ashish N. Sawarkar, (2020). 'Pyrolysis of waste polyethylene under vacuum using zinc oxide', **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects**, (SCI, IF: 3.447), in-press. doi: <https://doi.org/10.1080/15567036.2020.1856976>.
8. Zavin R. Gajera, Komal Verma, **Shyam P. Tekade**, Ashish N. Sawarkar, (2020). 'Kinetics of co-gasification of rice husk biomass and high sulphur petroleum coke with oxygen as gasifying medium via TGA', **Bioresource Technology Reports** (Scopus, CS: 3.8), 11. doi: <https://doi.org/10.1016/j.biteb.2020.100479>.
9. **Shyam Tekade**, Amit Pednekar, Gaurav Jadhav, Sunny Kalekar, Diwakar Shende, Kailas Wasewar, (2020). 'Hydrogen Generation through Water Splitting Reaction Using Waste Aluminum in Presence of Gallium', **International Journal of Hydrogen Energy**,

(SCI, IF: 5.816), 45, 44, 23954-23965, doi:  
<https://doi.org/10.1016/j.ijhydene.2019.09.026>.

10. **Shyam P. Tekade**, Diwakar Z. Shende, Kailas L. Wasewar, (2019). 'Hydrogen generation in an annular micro-reactor: An experimental investigation of water splitting reaction using aluminum in presence of potassium hydroxide', **International Journal of Chemical Reactor Engineering**, 17, 2, 2019. DOI: <https://doi.org/10.1515/ijcre-2018-0104>.
11. **Shyam P. Tekade**, Diwakar Z. Shende, Kailas L. Wasewar, (2019). 'Potassium Hydroxide Activated Hydrogen Generation Using Aluminum in Water Splitting Reaction', **International Journal of Chemical Reactor Engineering**, 17, 3. doi: <https://doi.org/10.1515/ijcre-2018-0193>.
12. **Shyam P. Tekade**, Diwakar Z. Shende, Kailas L. Wasewar, (2018). 'Hydrogen generation in an annular micro-reactor: An experimental investigation and reaction modelling by Shrinking Core Model (SCM)', **International Journal of Chemical Reactor Engineering**, 16, 7. doi: <https://doi.org/10.1515/ijcre-2017-0202>.
13. **Shyam P. Tekade**, Diwakar Z. Shende, Kailas L. Wasewar, (2018). 'Hydrogen Generation in water splitting using aluminum: Effect of NaOH concentration and reaction modelling using SCM', **International Journal of Chemical Reactor Engineering**, 16, 7, 2018. DOI: <https://doi.org/10.1515/ijcre-2017-0250>.
14. Sanjay Singh, Ankita Tagade, Ashish Verma, Ajay Sharma, **Shyam P. Tekade**, Ashish N. Sawarkar, Insights into kinetic and thermodynamic analyses of co-pyrolysis of wheat straw and plastic waste via thermogravimetric analysis, submitted to **Bioresource Technology**, Status: In Press
15. Ashish N. Sawarkar, Nikhil Kirti, Ankita Tagade, **Shyam P. Tekade**, Bioethanol from various types of banana waste, submitted to **Bioresource Technology Reports**, Status: In Press

***Research Project Proposal Submitted to Science and Engineering Research Board for Funding***

**Title of Proposal:** Practical and Commercial Accessibility of In-situ Hydrogen Generated through Aluminum-water Reaction using Human Urine, Animal Urine, Industrial Effluent and Waste Aluminum

**Total Budget:** Rs. 29,65,992/-

***Achievements***

Received the **grant** in the tune of **Rs. 3 Lakh** from **AICTE-ISTE** for conducting the three online **Induction/Refresher programme** on the topic Computer Aided Software for Process Intensification (Feb - May 2021).

Awards won by the project students in four consecutive versions of SChemcon (2020, 2019, 2018 and 2017). SChemcon is the prestigious event conducted by IChE and finds participants across India, including students from IIT's and NIT's.

Project students, Gaurav Jadhav and Sunny Kalekar (BE, 2019-20) received 'Chemical Weekly Prize for Best Research Paper Published in a High Impact Factor Journal by an Undergraduate Chemical Engineering Student' by IChE.

Project students have received VICAL awards for two consecutive years (2020 and 2019).

**Qualified** the Graduate Aptitude Test in Engineering (**GATE**) 2011, with All India Rank 2070.

Awarded with **Dr. J. D. Dhake gold medal** for the first topper in M. Tech. Chemical Engineering in the year 2011, from Anuradha Engineering College, Chikhli.

**First Merit** in M.Tech Chemical Engineering in the year 2011, of **Sant Gadge Baba Amaravati University, Amaravati**.

Received **Second Prize** in **paper presentation** at the national level technical event 'Azeotropy 2K11', held at **Indian Institute of Technology, Powai, Bombay**.

Received **First Prize** in **model making** competition, 'Chem-o-car' at the national level technical event 'Chemozale 08' held at **Nirma University, Ahmedabad**.

Received **Third Prize** in **paper presentation** at the national level technical event 'Chemfest 08' held at Karmaveer Kakasaheb Wagh Institute of Engineering Education and Research, Nashik.

### ***Extra Curricular Activities***

Co-ordinated the STTP on Ansys Fluent (CFD) Software Training held on 9-11 Nov. 2017 at Gharda Institute of Technology, Lavel.

Participated in the competitions like **Paper Presentation** and **Design** of model based on energy transformation, in National Level Technical event 'Azeotropy 2K11' held at Indian Institute of Technology, Powai, Bombay.

Participated in the competitions like **Paper Presentation** and **Design** of models based on energy transformation and Adsorption, in National Level Technical event 'Azeotropy 2K10' held at Indian Institute of Technology, Powai, Bombay.

Attended a **workshop** on 'Eco-friendly Techniques in Chemical engineering' in January 2010 at Anuradha Engineering College, Chikhli.

Worked as one of the **event coordinators** of 'CHEMCON 09' a National level Paper and poster presentation held at Department of Chemical Engineering, Anuradha Engineering College, Chikhli.

Attended a **workshop** on 'Advances in Process Modeling and Simulation' in September 2009 at Anuradha Engineering College, Chikhli.

Participated in the competitions like **Paper Presentation** and **Design** of a model called Chem-o-Car in National Level Technical event 'Chemozale 08' held at Nirma University, Ahmadabad.

Participated in National Level Technical **Paper Presentation** competition 'Chemfest 08' held at Karmaveer Kakasaheb wagh Institute of Engineering Education and research, Nashik.

**Presented a Project** in National Level technical project exhibition 'Karmaveer Expo 08' at Karmaveer Kakasaheb Wagh Institute of Engineering Education and research, Nashik.

Attended and participated in **Rocket Making Workshop** in National Level Technical Event 'Perception 08' held at Visweswaraya Institute of Information Technology, Pune

Participated in the competitions like **Design** of model called '**Chem-o-Car**' and **Poster Presentation** in National Level Technical event 'Chemozale 07' held at Nirma University, Ahmadabad.

### *Personal details*

Date of Birth: **11<sup>th</sup> August 1987**

Languages knew: Marathi, English, and Hindi

Marital Status: Married

Father's Name: Mr. Prakash Govind Tekade

Mother's Name: Mrs. Nalini Prakash Tekade

### *Declaration*

The information provided in the curriculum vitae is true and best of my knowledge.

Sincerely,

Shyam P. Tekade

PhD