

## **Biodata**

- 1 Name **Dr. Jigisha K Parikh**
- 2 Highest Qualification Ph D Chemical Engineering
- 3 Designation, Department and Institution



Professor, Chemical Engineering Department,  
Head, Department of Chemistry,  
Former Associate Dean (R & C), & Member Secretary-Centre for  
Industrial Consultancy & Sponsored Research  
Scientist G (2016-19)-SERB, DST-GoI-New Delhi  
Formerly Head (2014-16)- Department of Chemical Engineering  
Sardar Vallabhbhai National Institute of Technology,  
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<https://scholar.google.co.in/citations?user=dIbT1SQAAAAJ&hl=en>

### 4 Academic/Research/Professional Experience:

- a) Academic/Administrative/Research Experience (27 years)
- b) Industrial Experience (04 Years)
- c) Deputed as Scientist G at SERB-DST-GoI-New Delhi (2016-19)

### 5 Publications:

- Book Chapter: 04 Patent (Filed/Granted): 02/02
- International Journal: 100 + National Journal: 05
- International Conference: 50 National Conference: 30

- **Web Courses : 2 Nos.**

1 Chemical Reaction Engineering Part I  
2 Process Plant Safety

### 6 Thesis/Dissertation supervision:

- Ph D Supervised: 10 Nos. Under progress: 10 nos.
- M Tech Regular: 20 Nos. Under progress: 1 no.
- M Tech by Reserch: 5 Nos.

### 7 Professional Recognition/Award/Prize/Certificate, received by the applicant

- Visiting Faculty - University of Saskatchewan, Canada during May-June 2014.
- Summer Faculty Research Fellow - IIT Delhi during May-July 2012.

S. No	Name of Award/Professional Recognition	Awarding Agency	Year
01	Guest Editor-SI: Science of the Total Environment	Elsevier	2022
02	Guest Editor-SI: Waste & Biomass Valorization	Springer	2021-22
03	Managing Guest Editor: Materials Today: Proceedings	Elsevier	2021-22
04	Fellow	under "Prof. B. D. Tilak Visiting Fellowship Endowment"	2021-22
05	Fellow	Royal Society of Chemistry	2020 onwards
06	Ph. D Scholar, Krishna Solanki awarded <b>Second</b> place for research on Cleaner Production and Clean Technology under Integration of Research to Industrial Application	Programme for Interlinking of Government, Academia and Industries - Gujarat Cleaner Production Council (GCPC), Gandhinagar.	2020
07	PhD Scholar-Miral Thakkar awarded <b>First place</b> and received Rs. 10,000/- towards her research in Cleaner production and Clean technology	Gujarat Cleaner Production Centre, Government of Gujarat.	2019
08	Highly cited author ( <b>top 10 % citation -2018</b> )	RSC Advances	2019

### 8 No. of projects completed/ongoing as Principal Investigator/Coordinator

Sr. No.	Name of the funding agency	Name of the Scheme	Project Title	Year	Status: Completed/ Ongoing
01	TIFAC, Mission REACH, GOI, New Delhi.	Center of Relevance & Excellence	Environmental Engineering	2002-07	Completed @ <b>4.2 Cr</b>
02	Gujarat Energy Development Agency, Baroda	R & D Project	Energy Recovery from Waste	2004-07	Completed
03	The Institution Of Engineers (India)	Research & Development	A Study on Behavior of Drug Release Kinetics	2008-10	Completed
04	Gujarat Council on Science and technology, Gandhinagar	Research & Development	Characterization & Performance Assessment of Some Novel Mixed Surfactant Systems	2008-11	Completed
05	Council of Scientific and Industrial Research, New Delhi.	Research & Development	Studies on Novel Techniques for Extraction of Essential oil from Patchouli	2013-16	Completed

06	MHRD, Govt. of India (IIT Kharagpur as the Anchor Institution)	Main Phase of the National Mission Project on Education through ICT	Developing Suitable Pedagogical Methods for Various Classes, Intellectual Calibres and Research in E-Learning	2013-16	Completed @ 1.0 Cr
07	Science & Engineering Research Board (SERB), DST	Core Research Grant	Synthesis of Artificial Sweeteners and High Value Chemicals from Biorenewable Resources using Novel Aerogel Catalysts	2020-23 (upto Dec 2023)	Ongoing (@ 77 Lacs) In collaboration with IIT Delhi
08	Science & Engineering Research Board (SERB), DST	Core Research Grant	Development of drug delivery systems based on phase change materials	2022-2025	Ongoing (@ 44 Lacs)
09	GUJCOST, Gujarat	Research Grant	Synthesis and rheological characterization of liposome Stabilized emulsion-Hydrogel matrix for controlled release of essential oil	2022-2025	Ongoing (@ 44 Lacs)
10	DST, GoI	FIST	Sustainable Research Infrastructure development	2022-27	Ongoing (@ 168 Lacs)
11	Science & Engineering Research Board (SERB), DST	TARE	A stimuli-responsive PNIPAM based block copolymer aggregates as building blocks of smart aggregates for biomedical applications	2022-25	Ongoing (@ 20 Lacs) (Mentor)

## 9 Collaboration with Industries:

- Development of Controlled Drug Delivery System using Biodegradable Polymers
- A Study on Behavior of Drug Release Kinetics
- Process improvisation with Reactive Distillation
- Process Intensification in Hydrolysis reaction by Converting Batch to continuous Process
- Industrial waste water treatment
- Development of catalytic process

## 10. Publications (List of papers 2017 onwards)

1. Prakash Kumar Sarangi, Akhilesh Kumar Singh, Sashi Sonkar, Krushna Prasad Shadangi, Rajesh Kumar Srivastava, Vijai Kumar Gupta, **Jigisha Parikh**, Uttam Kumar Sahoo, Muthusamy Govarthan (2023) Biorefinery solutions for food processing wastes: A sustainable bioeconomic perspective, *Industrial Crops & Products* 205 (2023) 117488.
2. S. N. Derle · P. A. Parikh · **J. K. Parikh** · S. N. Jain, (2023) Caustic soda treated dried foliage of *Arachis hypogaea* as a promising biosorbent for Chromacyl Blue GG dye removal, *Biomass Conversion and Biorefinery*, doi.org/10.1007/s13399-023-04898-z
3. Rashmita Behera, Sanjaykumar R. Patel and **Jigisha K. Parikh**, (2023) Hydrodynamics and Transport Mechanism of Microfluidic Mixing in Precipitation of Nanodrugs: A Review, *Cryst. Res. Technol.* 2300007.
4. Priyank Dave, **J. K. Parikh**, S. A. Channiwala, (2023) Design and Development of a Novel Hybrid Gasifier for High Ash Content Coal as feed stock, *JREAS*, Vol. 08, Issue 02, April 23, 518-523.
5. S.K. Sundar, **Jigisha K. Parikh**, (2023) Advances and trends in encapsulation of essential oils, *International Journal of Pharmaceutics*, 635, 122668.
6. Ankur J. Raval, **Jigisha K. Parikh**, Meghal A. Desai, (2023) Perivascular patch using biodegradable polymers: Investigation of mechanical and drug elution characteristics, *Journal of the Mechanical Behavior of Biomedical Materials*, 142, 105853.
7. Shama P. Bansod, **Jigisha K. Parikh**, Prakash Kumar Sarangi, (2023) Pineapple peel waste valorization for extraction of bio-active compounds and protein: Microwave assisted method and Box Behnken design optimization, *Environmental Research*, 221, 115237.
8. Priyank P Dave, Parth D Shah, Taha Y Poonawala, Salim A Channiwala, **Jigisha K Parikh** (2023) Determination of optimally feasible operating parameters for gasification of high-ash-content coal. *MRS Energy & Sustainability* 10, 100–112.
9. Chetan Sharma, Parth Naik, Ankur Raval, L. Ramanan, Meghal A. Desai, **Jigisha K. Parikh**, Sanjaykumar R. Patel, (2022) Energy dissipation study of ultrasound bath to identify suitable zone for better performance of the bath *Materials Today: Proceedings* 57, 2412–2416.
10. **Jigisha K. Parikh**, Sanjay Srivastava, Parth Shah, (2022) Synthesis of Xylitol from bio-renewables using chemo-catalytic routes: Review *Materials Today: Proceedings*, 57, A1–A8.
11. Rahul Prajapati, Sanjay Srivastava, G. C. Jadeja, **Jigisha Parikh** (2022) A Novel SBA-15/H-ZSM-5 Composite Catalyst for Conversion of Furfuryl Alcohol to Ethyl Levulinate Waste and Biomass Valorization, 14, 609–618.
12. Rajan Singh, Komal Tripathi, Kamal K. Pant, **Jigisha K. Parikh** Unravelling synergetic interaction over tandem Cu-ZnO- ZrO<sub>2</sub>/hierarchical ZSM5 catalyst for CO<sub>2</sub> hydrogenation to methanol and DME Fuel 318 123641 2022
13. Patel, D Ray, Mehul Khimani, **Jigisha Parikh**, P Parekh, Vijay Patel, V K. Aswal, Pratap Bahadur, (2021) Influence of Surfynol® 104 on aggregation behaviour of Triton X-100 micelles *Journal of Molecular Liquids*, 332, 115878,
14. Kanoje, B., Dani, U., Shirdhonkar, M., **Parikh, J.**, Kuperkar, K. (2022). Dye Adsorption Kinetics and Isotherm Study Using Surfactant-Modified Biomass: Influence of pH Substantiated with Quantum Chemical Validation, *Journal of Surface Science and Technology*, 37(1-2), 67–81. <https://doi.org/10.18311/jsst/2021/28588>
15. Piyush Modi, M.A. Desai, **J.K. Parikh**, (2021) Intensified approach towards isolation of cinnamon oil using microwave radiation: Parametric, optimization and comparative studies *Industrial Crops and Products* 173 114088
16. Piyush Modi, M.A. Desai, **J.K. Parikh**, (2021) Inorganic salt mediation for improved isolation of essential oil from the Cinnamon bark *Journal of Chemical Technology and Metallurgy* 56 1181-86

17. B. Kanoje, R. Joshi, T. Joshi, **J. Parikh**, K. Kuperkar, (2020) Surface-activity and antimicrobial performance of synthesized (symmetric and dissymmetric) Gemini surfactant and Silver nanoparticles loaded Gemini surfactants integrated with microscopy and scattering investigation *Emergent Materials*, 3, 213-22.2
18. B. Kanoje, D. Patel, V. Kumar, S. K. Sahoo, **J. K. Parikh**, K. Kuperkar (2019) Unraveling the Solubilization and Cytotoxicity study of poorly water-soluble anti-inflammatory drug in aqueous Gemini Surfactants solution with Physico-chemical characterization and simulation study *Colloids and Surfaces B: Biointerfaces* 179, 437-444.
19. Piyush Modi, M.A. Desai, **J.K. Parikh**, (2019) Sonohydrodistillation: Innovative approach for isolation of essential oil from the bark of cinnamon, *Industrial Crops and Products* Volume 142, 15 December 2019, 111838.
20. Solanki, M.A. Desai, **J.K. Parikh**, (2019) Microwave Intensified Extraction: A Holistic Approach for Extraction of Citronella Oil and Phenolic Compound, *Chemical Engineering and Processing: Process Intensification*. Available online 1 November 2019, 107694.
21. K.P. Solanki, M.A. Desai, **J.K. Parikh**, (2019) Improved hydrodistillation process using amphiphilic compounds for extraction of essential oil from java citronella grass, *Chemical papers*, 1-12. Available online 5 July 2019.
22. **Jigisha Parikh**, Sanjay Srivastava, Girijsinh C Jadeja, (2019) Selective Hydrogenation of Furfural to Tetrahydrofurfuryl Alcohol Using Supported NickelCobalt Catalysts, *Ind. Eng. Chem. Res.* 58, 35, 16138-16152.
23. K.P. Solanki, M.A. Desai, **J.K. Parikh** (2018), Sono hydrodistillation for isolation of citronella oil: a symbiotic effect of sonication and hydrodistillation towards energy efficiency and environment friendliness, *Ultrasonics Sonochemistry*, 49, 145–153.
24. B Kanoje, A Jangir, D Patel, D Ray, V Aswal, H Pal, **J Parikh**, K Kuperkar (2018), Micellar transition (ellipsoidal to ULV) induced in aqueous Gemini surfactant (12-2-12) solution as a function of additive concentration and temperature using experimental and theoretical study, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 555, 227-23.
25. Sanjay Srivastava, G. C. Jadeja, **Jigisha Parikh** (2018), Optimization and reaction kinetics studies on copper-cobalt catalyzed liquid phase hydrogenation of 5 hydroxymethylfurfural to 2,5-dimethylfuran, *International Journal of Chemical Reactor Engineering*, 16(9), 20170197.
26. MR Thakker, **JK Parikh**, MA Desai (2018), Synergism between ionic liquid and ultrasound for greener extraction of geraniol: Optimization using different statistical tools, comparison and prediction, *Chemical Engineering Research and Design*, 134, 162-171.
27. Miral R Thakker, **Jigisha Parikh**, Meghal A Desai (2018), Ultrasound assisted hydrotropic extraction: a greener approach for the isolation of geraniol from the leaves of *Cymbopogon martini*, *ACS Sustainable Chemistry & Engineering*, 6 (3), 3215-3224.
28. Sanjay Srivastava, G. C. Jadeja, **Jigisha Parikh** (2018), Copper-cobalt catalyzed liquid phase hydrogenation of furfural to 2-methylfuran: An optimization, kinetics and reaction mechanism study, *Chemical Engineering Research and Design*, 132, 313-324.
29. Sagar M. Kapadiya, **Jigisha K Parikh**, Meghal A Desai (2018), A greener approach towards isolating clove oil from buds of *Syzygium aromaticum* using microwave radiation, accepted for publication in *Industrial Crops and Products*, 112, 626-632.
30. Bharatkumar Kanoje, **Jigisha Parikh**, Ketan Kuperkara, (2018), Crystallization study and morphology behavior of calcium carbonate crystals in aqueous Surfactant-Pluronic prototype. *J mater res technol*, 7(4):508–514.
31. Bharatkumar Kanoje, Shailesh Padshala, **Jigisha Parikh**, Suban K Sahoo, Ketan Kuperkar and Pratap Bahadur, (2017) Synergism and aggregation behaviour in an aqueous binary mixture of cationic–zwitterionic surfactants: physico-chemical characterization with molecular simulation approach *Phys. Chem. Chem. Phys.* 20 (1), 670-681.

32. Sadafara A. Pillai, Vijay I. Patel, Debes Ray, **Jigisha K. Parikh**, Vinod K. Aswal, Pratap Bahadur, (2016), Microstructural micellar transition in bile salt–ionic liquid mixed systems in water: a DLS and SANS study, RSC Adv., 6, 108488–108497.

**10 Books/Reports/Chapters/Generalarticles etc.**

S.No	Title	Author's Name	Publisher	Year of Publication
01	Chitosan: Derivatives, Properties and Applications	Vineet Kumar Rathore, Jigisha K. Parikh	Springer Nature published in book titled Advances In Chemical, Bio And Environmental Engineering in Book Series “Environmental Science And Engineering”	2022
02	Waste Valorization of Water Hyacinth using Biorefinery Approach: A Sustainable Route	Priti V. Ganorkar, G. C. Jadeja, Meghal A. Desai, Jigisha K. Parikh	Springer Nature K.K. Pant et al. (Eds): Catalysis for Clean Energy and Environmental Sustainability, Volume-I, Biomass Conversion and Green Chemistry, 669-704.	2021
03	An Insight into Extraction of Essential Oil using Sonic Waves	Krishna P. Solanki, Miral R. Thakker, Meghal A. Desai, Jigisha K Parikh	“The Essential Guide to Plant Oils” edited by Holst, B. M. Nova Science Publishers, Inc, USA.	July 2020. ISBN: 1536180084
04	Sustainable Development: Pyrolysis and Gasification of Biomass and Wastes	P. Mondal, J. Parikh, and D.V. Naik	In <i>Encyclopedia of Environmental Management</i> ; S.E. Jorgensen, ed. Taylor & Francis: New York, 2013; Vol. IV, 2509–2525	2013

- **Reviewer for Peer reviewed International Journals:**  
**For ACS, Elsevier, Wiley, Taylor & Francis - publications**

