

Chemical Engineering Department

Dr. Ruta Dhanram Khonde

Designation: Assistant Professor

Type Appointment: Contract

Experience: Teaching – 6 years; Industrial – 2 years

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Google scholar: <https://scholar.google.com/citations?user=Je5SWyoAAAAJ>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57188963094>

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Educational Profile:

Ph.D. Chemical Engineering, Visvesvaraya National Institute of Technology (VNIT), Nagpur, awarded in 2017

M.Tech. Chemical Engineering, Laxminarayan Institute of Technology, Nagpur (First Division)

B.Tech. Chemical Engineering, Dr. C. V. Raman Institute, Nagpur (First Division)

Research Interest:

Biomass gasification, pyrolysis, adsorption, modelling and simulation, MATLAB, COMSOL Multiphysics, Kinetics, esterification, optimization.

Subjects Taught:

UG: Chemical Reaction Engineering, Chemical Engineering Thermodynamics, Transport Phenomena, Mechanical Operations, Numerical Methods, Computer Programming in C, Chemical Process Synthesis & Design.

PG: Advanced Reaction Engineering, Modelling & Simulation of Chemical Processes.

Project Guidance:

UG: 6 (completed)

PG: 2 (completed)

Achievements:

1. 3rd rank in R. T. M. Nagpur University, Summer-2011, M. Tech. Chemical Engineering examination
2. Qualified GATE-2009 and GATE-2011 examinations

Patent (awarded):

1. Chaurasia A S, Khonde R D, Nanda J (2017), Method for converting biomass to hydrogen rich syngas in a two-stage process. Indian Patent No. 356848, granted on 27/01/2021

Journal Publications:

1. Khonde R D, Pandharipande S L. Artificial Neural Network Modeling for Adsorption of Dyes from Aqueous Solutions using Rice Husk Carbon. International Journal of Computer Applications, 41(4), 1-5 (2012) (Impact Factor 0.745)
2. Khonde R D, Chaurasia A S. Pyrolysis of sawdust, rice husk and sugarcane bagasse: kinetic modeling and estimation of kinetic parameters using different optimization tools. Journal of the Institution of Engineers (India) Series E, 96 (1), 23-30 (April 2015) (Impact Factor 0.215) (**Scopus**) DOI: 10.1007/s40034-014-0052-y
3. Khonde R D, Chaurasia A S. Kinetics of tar cracking in two-stage biomass gasifier using distributed activation energy model. Energy Sources Part A: Recovery, Utilization and Environmental Effects, 38(21), 3132-3138 (December 2016) (Impact Factor 1.184) (**SCI**) DOI: 10.1080/15567036.2015.1135212
4. Khonde R D, Chaurasia A S. Rice husk gasification in a two-stage fixed-bed gasifier: production of hydrogen rich syngas and kinetics. International Journal of Hydrogen Energy, 41(21), 8793-8802 (April 2016) (Impact Factor 4.939) (**SCI**) DOI: 10.1016/j.ijhydene.2016.03.138
5. Khonde R D, Chaurasia A S. Tar cracking of rice husk in biomass gasifier: reactor design and experimentation. Indian Journal of Chemical Technology, 24(1), 55-60 (January 2017) (Impact Factor 0.57) (**Scopus**) DOI:
6. Khonde Ruta, Jeetendra Nanda, Chaurasia Ashish. Experimental investigation of catalytic cracking of rice husk tar for hydrogen production. Journal of Material Cycles and Waste Management, 20(2), 1310-1319 (December 2017) (Impact Factor 1.974) (**SCI**) DOI: 10.1007/s10163-017-0695-0
7. Khonde Ruta, Hedao Shubham, Deshmukh Samir, Prediction of product gas composition from biomass gasification by the method of Gibbs free energy minimization, Energy Sources Part A: Recovery, Utilization and Environmental Effects,

43(3), 371-380 (May 2019) (Impact Factor 1.184) (SCI) DOI: 10.1080/15567036.2019.1624890

8. Amol A. Bhusari, Bidyut Mazumdar, Ajit P. Rathod, Ruta D. Khonde, Kinetics of catalyzed esterification of acetic acid with n-butanol using carbonized agro-waste, *International Journal of Chemical Kinetics*, 52(7), 450-462. July 2020, (Impact Factor 1.531) (SCI) DOI: 10.1002/kin.21361
9. Amol A. Bhusari, Bidyut Mazumdar, Ajit P. Rathod, Ruta D. Khonde, Microcontroller Based Automated Reactor for Esterification of Lactic Acid: MATLAB Simulation, *Iranian Journal of Chemistry and Chemical Engineering* 40(5) 1607-1615 (December 2021) (Impact Factor 0.759) (Scopus) DOI: 10.30492/IJCCE.2020.111923.3685
10. Rushikesh Chanpurkar, Gajanan Lakhawat, Ruta Khonde, Synthesis, analysis and application of lactide based polyester as coating with improved mechanical and rheological behavior, *Journal of Coating Technology and Research*, 18, 1659–1668, September 2021, DOI : 10.1007/s11998-021-00525-6 (Impact Factor 1.815) (SCI)

Conference Publications:

1. Harshal Umathe & R D Khonde, Enhancement of Esterification Reaction using Bio-catalyst. Oral presentation in REACT-2019 at LIT, Nagpur
2. R. D. Khonde & Chaurasia, A. S. (2016). Kinetics study of gasification products of rice husk. Proceedings of National Conference on Inter and Intra-disciplinary Blend of Chemical Engineering (CHEMIX 2016), VNIT, Nagpur, India during April 2-3, pp. 70, 2016.
3. Khonde, R. D. & Chaurasia, A. S. (2016). Gaseous products from homogeneous gasification of rice husk in a two-stage gasifier. Proceeding of National Conference on Recent Trends in Chemical Engineering and Technology (REACT 2016) organized by Laxminarayan Institute of Technology, Nagpur, February 27-28, pp. 9, 2016
4. Khonde, R. D. & Chaurasia, A. S. (2015). Homogeneous tar cracking of rice husk in two-stage biomass gasifier and optimization of kinetic parameters. International symposium & 68th annual session of IChE (CHEMCON-2015), Guwahati, December 27-30, pp. 108, India
5. Khonde, R. D. & Chaurasia, A. S. (2014). Optimization of kinetic parameters of rice husk and sugarcane bagasse pyrolysis. International symposium & 67th annual session of IChE (CHEMCON-2014), Chandigadh, December 27-30, India
6. Khonde R D, Pandharipande S L. Application of Artificial Neural Network for Standardization of Digital Colorimeter. Special issue on International Conference in Computational Intelligence & Applications (ICCIA-2012), *International Journal of Computer Applications*, 5, 1-4 (2012)
7. Khonde R D & Pandharipande S L. Silica from rice husk. Proceedings of BIO-CHEMCON-2010

Book Chapter:

1. Ruta D. Khonde, A. Waheed Deshmukh, Abdul Rahim Sheikh, Mayuresh V. Shivramwar, EMPIRICAL MODELING & KINETIC STUDY OF MICROWAVE DRYING PROCESS, book chapter-3 in part-I of book entitled "Sustainable Engineering, Energy and Environment", published by Apple Academic Press, Taylor & Francis Group, New York edited by Dr. K. L. Wasewar and Dr. S. N. Rao (30 June, 2022) e-ISBN: 9781003277484