Dr. Ashish N. Sawarkar, FIIChE, FIE
Associate Professor
Department of Chemical Engineering
Motilal Nehru National Institute of Technology Allahabad
Prayagraj-211004, Uttar Pradesh, INDIA
Mobile: +91 8795291646
E-mail: ansawarkar@mnnit.ac.in
http://www.mnnit.ac.in/profile/ansawarkar

(*Featured in the list of World's Top 2% Scientists, created by Stanford University, United States and published by Elsevier, in 2023 and 2024, based on the citations received*)

Awards/Honors to my students:

1) **Mr. Saurav Kandpal, PhD scholar (Reg. No. 2024RCL02)** was adjudged with the **HABIT-2025 Young Researcher Award** for the paper titled "*Hydrogen-rich syngas production through co-gasification of biomass and petcoke in a horizontal tubular furnace and modeling the intricate process through machine learning*" authored by Saurav Kandpal, Mohammad Anas, Suantak Kamsonlian, and Ashish N. Sawarkar, in the session "Interdisciplinary approaches in Health, Food, Agriculture, and Environment" of ***International Conference on Health and Agricultural Biotechnology: Interdisciplinary Trends*** **(HABIT-2025)**, organized by **Department of Biotechnology, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India** during February 28-March 2, 2025.

2) **Mr. Saurav Kandpal [M.Tech. (2023-24)] (Reg. No. 2022CL02)** was awarded with the **Ambuja's Young Researcher's Award [2024]** for doing post-graduate studies in India after GATE Examination for the thesis titled **"*Prediction of Biochar Yield and Higher Heating Value from Biomass Pyrolysis through Machine Learning*"** by the **Indian Institute of Chemical Engineers (IIChE)** during inaugural function of the **77th Annual Session of IIChE, Indian Chemical Engineering Congress (CHEMCON-2024)** held at **Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Punjab, India** during December 27-30, 2024.

3) **Mr. Saurav Kandpal [M.Tech. (2023-24)] (Reg. No. 2022CL02)** was adjudged with the **Best M.Tech. Thesis Award** for the thesis titled "***Prediction of Biochar Yield and Higher Heating Value from Biomass Pyrolysis through Machine Learning***" during the *4th International Symposium on Analytical and Applied Pyrolysis* **(PYROASIA 2024)**, a flagship annual event of **Pyro Asia Forum**, organized by **IIT Guwahati, India** and **Frontier Laboratories, Japan**, held during November 28-29, 2024 at IIT Guwahati.

4) **Ms. Ankita Tagade, PhD scholar (Reg. No. 2020RCL05)** bagged **Best Paper Award** for the paper titled "*An in-depth analysis of biochar synthesis via slow pyrolysis of banana agro-residue: characterization and emerging applications*" authored by Ankita Tagade, Saurav Kandpal, and Ashish N. Sawarkar, in one of the technical sessions of the **National Conference on Recent Trends in Biotechnology Research – HAPTEN2024** organized by Department of Biotechnology, **Arunai Engineering College, Affiliated to Anna University, Tiruvannamalai, Tamilnadu, India** in association with *BRSI* held on March 22, 2024.

5) **Mr. Saurav Kandpal, [M.Tech. (2023-24)] (Reg. No. 2022CL02)** bagged **Best Paper Award** for the paper titled "*Novel rotary kiln reactor for biochar production through biomass pyrolysis and its application in microbial fuel cells*" authored by Saurav Kandpal, Ankita Tagade, and Ashish N. Sawarkar, in one of the technical sessions of ***1st International Conference on Advancement in Energy*** **(ऊर्जाSangam-2023)** organized by the **Department of Mechanical Engineering, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India** during December 18-20, 2023.

6) **Ms. Ankita Tagade, PhD scholar (Reg. No. 2020RCL05)** bagged **Best Paper Award** for the paper titled "*A comprehensive evaluation on the synthesis and characterization of biochar*

derived from slow pyrolysis of sorghum millet straw for its prospective applications" authored by Ankita Tagade and Ashish N. Sawarkar, in the National Conference on "Sustainable Technologies in Chemical-Biological Systems" (STCBS-2023) held at **Arunai Engineering College, Affiliated to Anna University, Tiruvannamalai, Tamilnadu, India in association with BRSI, IIChE and ISTE** during April 5-6, 2023.

7) **Ms. Lakshmi Rajpoot [M.Tech. (2021-22)] (Reg. No. 2020CL06)** was adjudged with **Ambuja's Young Researcher's Award [2022]** for doing post-graduate studies in India after GATE Examination for the thesis titled "*Pyrolysis of Flaxseed De-oiled Cake: Physico-chemical Characterization, Kinetics, and Thermodynamic analysis*" by **Indian Institute of Chemical Engineers (IIChE), Kolkata**.

8) **Ms. Ankita Tagade, PhD scholar (Reg. No. 2020RCL05)**, bagged **First Prize** in *Poster presentation* for the poster titled "*Millets: a "wonder crop" for food security, health and a plausible solution for sustainable future*" in the workshop on "Introduction of millets in day-to-day life for a healthy well being" organized by **Central Library, Motilal Nehru National Institute of Technology Allahabad, Prayagraj** on November 30, 2022.

9) **Mr. Nikhil Kirti [M.Tech. (2020-21)] (Reg. No. 2019CL05)** secured admission for Ph.D. programme in the **University of Adelaide, Australia** with ***graduate research scholarship*** as well as ***complete tuition fees waiver*** based on his research credentials.

10) **Mr. Zavin Gajera (Reg. No. 2018CL06)** [M.Tech. Chemical Engineering (2019-20)] received **ISTE-IPCL National Award for Best M.Tech. Thesis in Chemical Engineering (First Prize)** for the thesis titled "*Studies on Co-gasification of Petcoke and Biomass*".

11) **Mr. Nikhil Kirti (Reg. No. 2019CL05)** [M.Tech. Chemical Engineering (2020-21)] received **ISTE-IPCL National Award for Best M.Tech. Thesis in Chemical Engineering** (**Second Prize**) for the thesis titled "*Kinetic and Thermodynamic Analysis of Pyrolysis of Pigeon Pea (Cajanus cajan) Stalk*".

12) **Mr. Ramprakash Nagar (Reg. No. 20189042)** (Final year B.Tech. Chemical Engineering (2021-22)) was adjudged with the **First Runner-up Presenter** award for the paper titled "*Bioenergy potential of sugarcane leaves via pyrolysis: Characterization, kinetics, and reaction mechanism*" authored by *Ramprakash Nagar, Avadhesh Sehra,* and *Ashish N. Sawarkar*, in one of the technical sessions (Biomass Utilization and Bioenergy (Part-1)) of the ***International Conference on Technological Interventions for Sustainability*** **(CHEM-CONFLUX[22])** jointly organized by **MNNIT Allahabad** and **USM Malaysia** during April 14-16, 2022.

13) **Mr. Gunavant Deshpande**, **Ph.D. scholar (Reg. No. 2019RCL51)** was adjudged with the **Best Oral Presenter** award for the paper titled "*Multiobjective optimization with minimization of eco-indicator and damage index for ultrasound intensified in situ biodiesel production from microalgae*" authored by *Gunavant Deshpande, Dipesh S. Patle,* and *Ashish N. Sawarkar*, in one of the technical sessions (Biomass Utilization and Bioenergy (Part-2)) of the ***International Conference on Technological Interventions for Sustainability*** **(CHEM-CONFLUX[22])** jointly organized by **MNNIT Allahabad** and **USM Malaysia** during April 14-16, 2022.

14) **Ms. Ankita Tagade, PhD scholar (Reg. No. 2020RCL05)** was adjudged with the **Best Oral Talk** for the paper titled "*Valorization of finger millet straw as a precursor for biochar production: production, characterization, and applications*" authored by *Ankita Tagade* and *Ashish N. Sawarkar*, in one of the technical sessions (*Renewable and Sustainable Energy*) of the National Conference on "**Advances in Chemical Engineering and Science" (ACES-2022)** held at **Indian Institute of Science Education and Research (IISER) Bhopal** during 25-26 March, 2022.

15) **Mr. Trilok Patil (Reg. No. 20169024)** (Final year B.Tech. Chemical Engineering (2019-20), Motilal Nehru National Institute of Technology Allahabad, Prayagraj, Uttar Pradesh) received

financial award by **MNNIT Alumni Association (MAA)** for publishing paper in SCI Journal (***Bioresource Technology; Impact Factor (2021): 11.889***)

16) **Mr. Sagar Hatwar** (Final year B.Tech. Chemical Engineering (2012-13), Anuradha Engineering College, Chikhli, Maharashtra) won **First Prize** for the paper titled "*Ionic liquids: Novel versatile lubricants/lubricant additives*" in ***National Level Technical Paper Presentation Competition*, THRESHOLD-2012** held at **Babasaheb Naik College of Engineering, Pusad, Maharashtra**.

Details of Papers Published in Peer-reviewed Journals:

1. Tagade, A., Kandpal, S., Singh, S., **Sawarkar, A. N., 2025**. Kinetic and thermodynamic analyses of pyrolysis of finger millet (*Eleusine coracana*) straw through both model-free and model-based methods and application of ANN-based machine learning model to predict thermal degradation. ***Bioresource Technology Reports***, 30, 102139. https://doi.org/10.1016/j.biteb.2025.102139
2. Bharti, B., Kandpal, S., **Sawarkar, A. N.,** Patle, D., **2024**. Holistic approach for sequential transesterification and pyrolysis of microalgal biomass: Kinetic and thermodynamic analysis of pyrolysis using model-free and model-based approaches. ***Renewable Energy***, 235, 121319. https://doi.org/10.1016/j.renene.2024.121319
3. Kandpal, S., Tagade, A., **Sawarkar, A. N., 2024**. Critical insights into ensemble learning with decision trees for the prediction of biochar yield and higher heating value from pyrolysis of biomass. ***Bioresource Technology,*** 411, 131321. https://doi.org/10.1016/j.biortech.2024.131321
4. Gautom, S., Bora, B., Talukdar, P., Ahmed, A., **Sawarkar, A. N.,** Saikia, R., Geed, S.R., Verma, J.S., **2024**. Optimized approach for naphthalene wastewater biodegradation by *Enterobacter ludwigii* NS12 isolated from petroleum industry sludge: Bioreactor study and kinetic investigation. ***Journal of Water Process Engineering***, 62, 105359. https://doi.org/10.1016/j.jwpe.2024.105359
5. Tagade, A., Kandpal, S., **Sawarkar, A. N., 2024**. Insights into pyrolysis of pearl millet (*Pennisetum glaucum*) straw through thermogravimetric analysis: Physico-chemical characterization, kinetics, and reaction mechanism. ***Bioresource Technology***, 391, 129930. https://doi.org/10.1016/j.biortech.2023.129930
6. Tagade, A., **Sawarkar, A. N., 2023**. Valorization of millet agro-residues for bioenergy production through pyrolysis: Recent inroads, technological bottlenecks, possible remedies, and future directions. ***Bioresource Technology***, 384, 129335. https://doi.org/10.1016/j.biortech.2023.129335
7. Sharma, A., Aravind Kumar, A., Mohanty, B., **Sawarkar, A.N., 2023.** Critical insights into pyrolysis and co-pyrolysis of poplar and eucalyptus wood sawdust: Physico-chemical characterization, kinetic triplets, reaction mechanism, and thermodynamic analysis. ***Renewable Energy***, 210, 321-334. https://doi.org/10.1016/j.renene.2023.04.066
8. Sharma, A., Suryawanshi, B., Mohanty, B., **Sawarkar, A.N., 2023**. Comparison of artificial neural network and response surface methodology for evaluation of the predictive capability of bio-oil yield from pyrolysis of *Mangifera indica* wood sawdust. ***Fuel***, 338, 127251. https://doi.org/10.1016/j.fuel.2022.127251
9. Kumar, P., Singh, V.P., Tagade, A., **Sawarkar, A.N., 2023**. Thermochemical characterization of post-phytoremediated vetiver (*Vetiveria zizanioides* (L.) Nash) root and shoot for their prospective bioenergy potential. ***Industrial Crops and Products***, 191, 115964. https://doi.org/10.1016/j.indcrop.2022.115964
10. Rajpoot, L.,Tagade, A., Deshpande, G., Verma, K., Geed, S.R., Patle, D.S., **Sawarkar, A.N., 2022**. An overview of pyrolysis of de-oiled cakes for the production of biochar, bio-oil, and pyro-gas: Current status, challenges, and future perspective. ***Bioresource Technology Reports***, 19, 101205. https://doi.org/10.1016/j.biteb.2022.101205

11. Deshpande, G., Shrikhande, S., Patle, D.S., **Sawarkar, A.N., 2022**. Simultaneous optimization of economic, environmental, and safety criteria for algal biodiesel process retrofitted using dividing wall column and multistage vapor recompression. ***Process Safety and Environmental Protection***, 164, 1-14. https://doi.org/10.1016/j.psep.2022.05.059

12. Geed, S.R., **Sawarkar, A. N.,** Singh, R. S., Rai, B. N., **2022**. New approach for biodegradation of Malathion pesticide by *Bacillus* sp. isolated from agricultural field: Bioreactor and kinetics. ***Journal of Environmental Chemical Engineering***, 10, 107936. https://doi.org/10.1016/j.jece.2022.107936

13. **Sawarkar, A. N.,** Kirti, N., Tagade, A., Tekade, S. P., **2022**. Bioethanol from various types of banana waste: A review. ***Bioresource Technology Reports***, 18, 101092. https://doi.org/10.1016/j.biteb.2022.101092

14. Singh, S., Tagade, A., Verma, A., Sharma, A., Tekade, S.P., **Sawarkar, A. N., 2022**. Insights into kinetic and thermodynamic analyses of co-pyrolysis of wheat straw and plastic waste via thermogravimetric analysis. ***Bioresource Technology***, 356, 127332. https://doi.org/10.1016/j.biortech.2022.127332

15. Deshpande, G., Shrikhande, S., **Sawarkar, A.N.,** Patle, D.S., **2022**. Multiobjective optimization of ultrasound intensified and ionic liquid catalyzed in situ algal biodiesel production considering economic, environmental and safety indicators. ***Chemical Engineering Research and Design***, 180, 134-152. https://doi.org/10.1016/j.cherd.2022.02.011

16. Kirti, N., Tekade, S.P., Tagade, A., **Sawarkar, A. N., 2022**. Pyrolysis of pigeon pea (*Cajanus cajan*) stalk: Kinetics and thermodynamic analysis of degradation stages via isoconversional and master plot methods. ***Bioresource Technology***, 347, 126440. https://doi.org/10.1016/j.biortech.2021.126440

17. Singh, R.K., Patil, T., Pandey, D., Tekade, S.P., **Sawarkar, A. N., 2022**. Co-pyrolysis of petroleum coke and banana leaves biomass: Kinetics, reaction mechanism, and thermodynamic analysis. ***Journal of Environmental Management***, 301, 113854. https://doi.org/10.1016/j.jenvman.2021.113854

18. Verma, K., Gajera, Z.R., **Sawarkar, A. N., 2022**. Kinetics of gasification and co-gasification petcoke and coal. ***Journal of Institution of Engineers India (Series E)***, 103, 31–39. https://doi.org/10.1007/s40034-020-00178-x

19. **Sawarkar, A. N., 2022**. Reaction kinetics and coke forming propensities of Arabian mix asphalt vis-a-vis Arabian mix vacuum residue. ***Petroleum Science and Technology***, 40, 1333-1348. https://doi.org/10.1080/10916466.2021.2022695

20. Tekade, S.P., Jadhav, G.R., Kalekar, S.E., Pednekar, A.S., Shende, D.Z., Wasewar, K.L., **Sawarkar, A. N., 2021**. Utilization of human urine and waste aluminum for generation of hydrogen. ***Bioresource Technology Reports***, 15, 100821. https://doi.org/10.1016/j.biteb.2021.100821

21. Singh, R.K., Patil, T., Pandey, D., **Sawarkar, A. N., 2021**. Pyrolysis of mustard oil residue: A kinetic and thermodynamic study. ***Bioresource Technology***, 339, 125631. https://doi.org/10.1016/j.biortech.2021.125631

22. Tagade, A., Kirti, N., **Sawarkar, A. N., 2021**. Pyrolysis of agricultural crop residues: An overview of researches by Indian scientific community. ***Bioresource Technology Reports***, 15, 100761. https://doi.org/10.1016/j.biteb.2021.100761

23. Shrikhande, S., Deshpande, G., **Sawarkar, A.N.,** Ahmad, Z., Patle, D.S., **2021**. Design and retrofitting of ultrasound intensified and ionic liquid catalyzed in situ algal biodiesel production. ***Chemical Engineering Research and Design***, 171, 168-185. https://doi.org/10.1016/j.cherd.2021.05.010

24. Singh, S., Patil, T., Tekade, S.P., Gawande, M.B., **Sawarkar, A. N., 2021**. Studies on individual pyrolysis and co-pyrolysis of corn cob and polyethylene: thermal degradation behavior, possible

synergism, kinetics, and thermodynamic analysis. ***Science of the Total Environment***, 783, 147004. https://doi.org/10.1016/j.scitotenv.2021.147004

25. Singh, R.K., Patil, T., Verma, A., Tekade, S.P., **Sawarkar, A. N., 2021**. Insights into kinetics, reaction mechanism, and thermodynamic analysis of pyrolysis of rice straw from rice bowl of India. ***Bioresource Technology Reports***, 13, 100639. https://doi.org/10.1016/j.biteb.2021.100639

26. Patle, D.P., Pandey, A., Srivastava, S., **Sawarkar, A. N.,** Kumar, S., **2021**. Ultrasound-intensified biodiesel production from algal biomass: A review. ***Environmental Chemistry Letters***, 19, 209–229. https://doi.org/10.1007/s10311-020-01080-z

27. Tekade, S.P., Gugale, P.P., Gohil M.L., Gharat, S.H., Patil, T., Chaudhari, P.K., Patle, D.S., **Sawarkar, A.N., 2020.** Pyrolysis of waste polyethylene under vacuum using zinc oxide. ***Energy Sources, Part A: Recovery, Utilization, and Environmental Effects***, https://doi.org/10.1080/15567036.2020.1856976

28. Singh, S., **Sawarkar, A. N., 2020.** Pyrolysis of corn cob: Physico-chemical characterization, thermal decomposition behavior and kinetic analysis. ***Chemical Product and Process Modeling***, 16, 117-127. https://doi.org/10.1515/cppm-2020-0048

29. Singh, R.K., Patil, T., **Sawarkar, A. N., 2020**. Pyrolysis of garlic husk biomass: Physico-chemical characterization, thermodynamic and kinetic analyses. ***Bioresource Technology Reports***, 12, 100558. https://doi.org/10.1016/j.biteb.2020.100558

30. Gajera, Z.R., Verma, K., Tekade, S. P., **Sawarkar, A. N., 2020**. Kinetics of co-gasification of rice husk biomass and high sulphur petroleum coke with oxygen as gasifying medium via TGA. ***Bioresource Technology Reports***, 11, 100479. https://doi.org/10.1016/j.biteb.2020.100479

31. Singh, R.K., Pandey, D., Patil, T., **Sawarkar, A. N., 2020**. Pyrolysis of banana leaves biomass: Physico-chemical characterization, thermal decomposition behavior, kinetic and thermodynamic analyses. ***Bioresource Technology***, 310, 123464. https://doi.org/10.1016/j.biortech.2020.123464

32. Singh, P., Singh, R.K., Gokul, P.V., Hasan, S.H., **Sawarkar, A. N., 2020**. Thermal degradation and pyrolysis kinetics of two Indian rice husk varieties using thermogravimetric analysis. ***Energy Sources, Part A: Recovery, Utilization, and Environmental Effects***, https://doi.org/10.1080/15567036.2020.1736215

33. Singh, S., **Sawarkar, A. N., 2020**. Thermal decomposition aspects and kinetics of pyrolysis of garlic stalk. ***Energy Sources, Part A: Recovery, Utilization, and Environmental Effects***, https://doi.org/10.1080/15567036.2020.1716891

34. Gokul, P.V., Singh, P., Singh, V.P., **Sawarkar, A. N., 2019**. Thermal behavior and kinetics of pyrolysis of arecanut husk. ***Energy Sources, Part A: Recovery, Utilization, and Environmental Effects***, 41, 2906–2916. https://doi.org/10.1080/15567036.2019.1582733

35. **Sawarkar, A. N., 2019**. Cavitation induced upgrading of heavy oil and bottom-of-the-barrel: A review. ***Ultrasonics Sonochemistry***, 58, 104690. https://doi.org/10.1016/j.ultsonch.2019.104690

36. **Sawarkar, A. N., 2019**. Upgrading of Mumbai High vacuum residue. ***Petroleum Science and Technology***, 37, 1090–1098. https://doi.org/10.1080/10916466.2019.1575875

37. Sharma, D., Prajapati, A.K., Chaudhari, R., Kaushal, R.K., Pal, D., **Sawarkar, A. N., 2018**. Preparation and characterization of CuO catalyst for the thermolysis treatment of distillery wastewater. ***Environment Technology***, *39*, 2604-2612.

https://doi.org/10.1080/09593330.2017.1362476

38. Choudhary, R., Jyoti., G., Ghosh, P., **Sawarkar, A. N.,** Chaudhari, P.K., **2017**. Electrocoagulation process to remove contaminants of coking wastewater using aluminum electrode. ***Desalination and Water Treatment,*** *86*, 68-79.

https://www.deswater.com/DWT_abstracts/vol_86/86_2017_68.pdf

39. Disale, S., Kale, S., Abraham, G., Kahandal, S., **Sawarkar, A.N.,** Gawande, M.B., **2016**. A sustainable and efficient synthesis of benzyl phosphonates using PEG/KI catalytic system. ***Frontiers in Chemistry***, *4*, 1-6. https://doi.org/10.3389/fchem.2016.00035

40. Murthy, B.N., **Sawarkar, A. N.,** Mathew T., Deshmukh, N. A., Joshi, J. B., **2014**. Petroleum coke gasification: A review. ***The Canadian Journal of Chemical Engineering***, *92,* 441-468. https://doi.org/10.1002/cjce.21908

41. **Sawarkar, A. N.,** Pandit, A. B., Samant, S. D., Joshi, J. B., **2009**. Use of ultrasound in petroleum residue upgradation. ***The Canadian Journal of Chemical Engineering***, *87***,** 329-342. https://doi.org/10.1002/cjce.20169

42. Joshi, J. B., Pandit, A. B., Kataria, K. L., Kulkarni, R. P., **Sawarkar, A. N.,** Tandon, D., Yad Ram, Kumar, M.M., **2008**. Petroleum residue upgradation via visbreaking: A review. ***Industrial and Engineering Chemistry Research***, *47*, 8960-8988. https://doi.org/10.1021/ie0710871

43. **Sawarkar, A. N.,** Pandit, A. B., Joshi, J. B., **2007**. Studies in coking of Arabian mix vacuum residue. ***Trans IChemE, Part A, Chemical Engineering Research and Design***, *85* (A4), 481-491. https://doi.org/10.1205/cherd06159

44. **Sawarkar, A. N.,** Pandit, A. B., Samant, S. D., Joshi, J. B., **2007**. Petroleum residue upgrading via delayed coking: A review. ***The Canadian Journal of Chemical Engineering***, *85*, 1-24. https://doi.org/10.1002/cjce.5450850101

Book Chapter:

- Deshpande, G., **Sawarkar, A.N.,** Patle, D.S., 2024. Analysis of safety and economic objectives for intensified algal biodiesel process. In 'Control and Safety Analysis of Intensified Chemical Processes', (Eds.) Patle, D.S. and Rangaiah,G.P., Wiley. ISBN: 978-3-527-35262-3. https://doi.org/10.1002/9783527843657.ch12

Book / Conference Proceedings /Special Issue:

- Pandey, A., Pandey, A., Tiwari, A., Kumar, A., **Sawarkar, A.N.,** Kumar, D., Nath, G., Gangwar, J.N., Yadav, M., Kumar, R., Joseph, S., Srivastava, S., Kumar, S. (Eds.). Abstract Proceedings of International Conference on "*Technology and Innovations for Sustainable Development*" (TISD-2023) held during October 27-30, 2023 at Motilal Nehru National Institute of Technology Allahabad, Prayagraj.
- Kumar, S., Patle, D., Katiyar, P., **Sawarkar, A. N.** (Eds). Proceedings of International Conference on *"Technological Interventions for Sustainability"* (CHEM-CONFLUX[22]) held during April 14-16, 2022 at Motilal Nehru National Institute of Technology Allahabad, Prayagraj.
- Chaudhari, P.K., Keshav, A., **Sawarkar, A. N.** (Eds). Proceedings of *National Symposium on Reaction Engineering* (NSRE-2010), held during January 22-23, 2010 at National Institute of Technology, Raipur.

Patent Granted:

Patent Title	Semi-Continuous Biochemical Reactor for Biodiesel Production
Registration Number	6310987
Inventors	Saurabh Yadav, Suantak Kamsonlian, Ashish N. Sawarkar, Shailendra Kumar Pandey, and Arvind Kumar Gautam
Country	UK
Status	Granted
Date of Grant	25/09/2023

Papers Presented *by me* in National/International Conference:

1. **Sawarkar, A. N.** Bioenergy potential of waste sugarcane leaves via pyrolysis. Paper presented at the *International Conference on Advances in Chemical and Materials Sciences* (ACMS-2022) organized by Indian Institute of Chemical Engineers (IIChE), Kolkata in association with Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Heritage Institute of Technology, Kolkata, and Osmania University College of Technology, Hyderabad during April 14 - 16, **2022**.
2. **Sawarkar, A. N.** Petroleum coke gasification: Status and future perspective in Indian context. Paper presented at the 74th *Annual session of IIChE* (CHEMCON-2021) organized by Indian Institute of Chemical Engineers Bhubaneswar Regional Centre & CSIR- Institute of Minerals and Materials Technology, Bhubaneswar in association with Institute of Chemical Technology-IndianOil Odisha Campus, Bhubaneswar during December 27-30, **2021**.
3. **Sawarkar, A. N.** Pyrolysis of waste tyres in the presence of rice husk ash. Paper presented at the 72nd *Annual session of IIChE* (CHEMCON-2019) held at IIT Delhi during December 16-19, **2019**.
4. **Sawarkar, A. N.** Heavy crude oil upgrading: Recent advances and possible way forward. Paper presented at the 71st *Annual session of IIChE* (CHEMCON-2018) held at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar during December 27-30, **2018**.
5. Verma, A., Singh, H., **Sawarkar, A. N.** Kinetics of pyrolysis of rice straw. Paper presented at the *70th Annual session of IIChE* (CHEMCON-2017) held at Haldia Institute of Technology, Haldia during December 27-30, **2017**, pp.35-36.
6. Gokul, P.V., Singh, P., Hasan, S., **Sawarkar, A. N.** Bio-oil and bio-char potential of arecanut husk. Paper presented at the *International Conference on Emerging Materials & Applications" (ICEMA-2017) held* at Allahabad University, Allahabad, Uttar Pradesh during February 20-22, **2017**.
7. Gokul, P.V., **Sawarkar, A. N.** Utilization of rice husk through pyrolysis. *69th Annual session of IIChE* (CHEMCON-2016) held at Anna University, Chennai during December 27-30, **2016**.
8. **Sawarkar, A. N.,** Singh, V.P. Disparities in the kinetic results of pyrolysis of biomass: Recent advances and the possible way forward. Paper presented at the 1st *International Conference on Recent Advances in Bio-Energy Research* (ICRABR-2015) held at Sardar Swaran Singh National Institute of Renewable Energy, Kapurthala during March 14-17, **2015**.
9. **Sawarkar, A. N.** Processing of heavy crude oils: A challenge as well as an opportunity for petroleum refiners. Paper presented at the *67th Annual session of IIChE* (CHEMCON-2014) held at Punjab University, Chandigarh during December 27-30, **2014**.
10. **Sawarkar, A. N.** Novel batch reactor for pyrolysis of waste tyres into useful products. Paper presented at the *International Conference on Environment and Energy* (ICEE) held at Jawaharlal Nehru Technological University, Hyderabad on during December 15-17, **2014**.
11. **Sawarkar, A. N.**, Kashyap R., Pandey A., Sawhney S., Ritendra Kumar, Sharma R., Numerical investigation of cavitation for simple geometries and study of effect of geometry on cavitation number. Paper presented at the National conference on *Applications of Mathematics in Engineering and Sciences* (AMES-2014) held at MNNIT, Allahabad during November 29-30, **2014**.
12. **Sawarkar, A. N.** Value addition via pyrolysis of North Gujarat vacuum residue. Paper presented at the *66th Annual session of IIChE* (CHEMCON-2013) held at Institute of Chemical Technology, Mumbai during December 27-30, **2013**.

13. Jain, S., **Sawarkar, A. N.** Role of plant derived-derived biopesticides for sustainable agricultural activities. Paper presented at the *International conference on Health, Environment and Industrial Biotechnology* held at MNNIT, Allahabad during November 21-23, **2013**.
14. **Sawarkar, A. N.** Studies in delayed coking of Bombay high vacuum residue. Paper presented at the National conference on *Recent Advances in Chemical Engineering* held at UDCT, Jalgaon on 4th February, **2012**.
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16. **Sawarkar, A. N.,** Pandit, A. B., Joshi, J. B. Studies in delayed coking of Arabian mix asphalt. Paper presented at the *61st Canadian Chemical Engineering Conference* held at London, Ontario, Canada during October 23-26, **2011**.
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Details of Publication/Presentation in International Conference:

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2. Kandpal, S., **Sawarkar, A.N.** Prediction of synthesis gas composition and yield from co-gasification of biomass with other carbonaceous wastes through machine learning. *7th International Conference on Bioenergy, Environment and Sustainable Technologies*, organized by Department of Biotechnology, Arunai Engineering College, Tiruvannamalai, Tamilnadu, India in association with BRSI on January 29-31, **2025**.
3. Kandpal, S., Tagade, T., **Sawarkar, A.N.** Multi-target prediction of biochar yield and HHV using ensemble of decision trees. *4th International Symposium on Analytical and Applied Pyrolysis* **(PYROASIA 2024)**, a flagship annual event of **Pyro Asia Forum**, organized by **IIT Guwahati, India and Frontier Laboratories, Japan**, held during November 28-29, **2024**.
4. Kandpal, S., **Sawarkar, A.N.** Efficient prediction of biochar yield from pyrolysis of agro-residues using ensemble learning with decision trees. *International Conference on Biotechnological Intervention for Health, Agriculture and Circular Economy* (Biosangam-2024) organized by Department of Biotechnology, MNNIT Allahabad during February 23-25, **2024**.
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9. Singh, S., **Sawarkar, A. N.** Co-pyrolysis of garlic stalk and polyethylene waste: kinetics, thermodynamics, and synergistic effect. *International Conference on Technological Interventions for Sustainability* (CHEM-CONFLUX[22]*)* jointly organized by MNNIT Allahabad and USM Malaysia during April 14-16, **2022**.
10. Deshpande, G., Patle, D.S., **Sawarkar, A.N.** Multiobjective optimization with minimization of eco-indicator and damage index for ultrasound intensified in situ biodiesel production from microalgae. *International Conference on Technological Interventions for Sustainability* (CHEM-CONFLUX[22]*)* jointly organized by MNNIT Allahabad and USM Malaysia during April 14-16, **2022**.
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15. Tagade, A., Rajpoot, L., **Sawarkar, A.N.** Recent advances in microwave assisted pyrolysis of biomass. 3rd International Conference on Recent Advances in Bio-Energy Research (ICRABR-2022) organized by Sardar Swaran Singh National Institute of Bio-Energy, Kapurthala, Punjab, India during March 9-11, **2022**.
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37. Satheesh, R., Singh, G., **Sawarkar, A. N.** Power generation from bagasse- A step towards sustainable development. *Proc. of International Conference on Advances in Renewable Energy*, June 22-24, **2010**, Maulana Azad National Institute of Technology (MANIT), Bhopal, India, pp. 210-221.

Details of Publication/Presentation in National Conference:

1. Tagade, A., Kandpal, S., **Sawarkar, A.N.** An in-depth analysis of biochar synthesis via slow pyrolysis of banana agro-residue: characterization and emerging applications. National Conference on Recent Trends in Biotechnology Research – HAPTEN2024 organized by Department of Biotechnology, Arunai Engineering College, Tiruvannamalai, Tamilnadu, India in association with BRSI on March 22, **2024**.
2. Kandpal, S., Tagade, A., **Sawarkar, A.N.** Prediction of biochar yield and higher heating value from pyrolysis of biomass through machine learning approaches. National Conference on Recent Trends in Biotechnology Research – HAPTEN2024 organized by Department of Biotechnology, Arunai Engineering College, Tiruvannamalai, Tamilnadu, India in association with BRSI on March 22, **2024**.
3. Tagade, A., **Sawarkar, A.N.** A comprehensive evaluation on the synthesis and characterization of biochar derived from slow pyrolysis of sorghum millet straw for their prospective applications. National Conference on *Sustainable Technologies in Chemical-Biological Systems* (STCBS 2023) organized by Arunai Engineering College, Tiruvannamalai, Tamilnadu, India in association with Biotech Research Society of India, Indian Institute of Chemical Engineers, and Indian Society for Technical Education during April 5-6, **2023**.
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5. Kandpal, S., Tagade, A., **Sawarkar, A.N.** Status of biorefineries in India: progress, bottlenecks, and future perspectives. National Conference on *Advances in Chemical Engineering and Science* (ACES-2023) held at Indian Institute of Science Education and Research (IISER) Bhopal during March 31 to April 1, **2023**.
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9. Verma, K., Gajera, Z.R., **Sawarkar, A. N.** Kinetics of co-gasification of petcoke and coal. *National Conference on Advances in Chemical Engineering and Science* (ACES- 2020) held at IISER, Bhopal during February 28-26, **2020**.
10. Patil, T., **Sawarkar, A. N.** Banana agro-residue as a potential source of bioenergy. *15th Students' Chemical Engineering Congress* (SCHEMCON-2019) to be held at SRICT, Ankleshwar during October 17-18, **2019**.
11. Nandan, D., Patil, T., Gupta, S., **Sawarkar, A. N.** Waste to wealth: Case study of wheat straw. *15th Students' Chemical Engineering Congress* (SCHEMCON-2019) to be held at SRICT, Ankleshwar during October 17-18, **2019**.
12. Pandey, D., Singh, R.K., **Sawarkar, A. N.** Physico-chemical characterization and kinetics of thermo-chemical conversion of petcoke through TGA. *14th Annual session of Students' Chemical Engineering Congress* (SCHEMCON-2018) held at ICT, Mumbai during October 26-27, **2018**.
13. Patil, T., Patle, D.S., **Sawarkar, A. N.** Kinetics of pyrolysis of banana trash via iso-conversional approach. *14th Annual session of Students' Chemical Engineering Congress* (SCHEMCON-2018) held at ICT, Mumbai during October 26-27, **2018**.
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