

Dr. Apeksha Madhukar



Assistant Professor

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1. Academics

A. Academic qualifications

- B.E. Degree (Electrical and Electronics Engineering), Shri Sankaracharya Technical Campus, Bhilai, Chhattisgarh, June 2014
- M.Tech. Degree (Power System Engineering), Indian Institute of Technology, Bhubaneswar, June 2016
- PhD. (Electrical Engineering), Department of High Voltage Engineering, Indian Institute of Science, Bangalore, February 2019

B. Research Experience

- Research Associate at Electrical Engineering Department, Indian Institute of Science, Bangalore, Nov. 2018- Nov. 2019

C. Professional Experience

- Assistant Professor at Department of Electrical Engineering, Central University of Karnataka, Gulbarga (Dec. 2019- Present)

2. Award & Fellowship

A. Awards

- National Budding Innovators Award by National Research & Development Corporation (NRDC), Govt. of India, 2018
- National Science Congress participants, 2008

B. Honors & Recognitions

- Reviewer of manuscript submitted to IEEE Transactions on Plasma Sciences (IEEE-TPS)
- Reviewer of manuscript submitted to International Journal of Plasma Science & Technology (IJPEST)
- Reviewer of manuscript submitted to Basic & Applied Sciences

3. Research Areas

- Environmental pollution control
- Utilization of wastes to reduce waste
- Industrial application of High voltage
- Non-thermal plasma Technique

4. Publications

A. Journals

1. Apeksha Madhukar and B. S. Rajanikanth, "Augmenting NO_x reduction in diesel exhaust by combined plasma/ozone injection technique: A laboratory investigation," IET High Voltage, vol. 3. no. 1, pp. 60-66, Mar. 2018, ISSN: 2397-7264, DOI: **10.1049/hve.2017.0153**
2. Apeksha Madhukar and B. S. Rajanikanth, "Plasma/adsorbent system for NO_x treatment in diesel exhaust: a case study on solid industrial wastes," International Journal of Environmental Science and Technology, Springer, vol 16, no. 7, pp. 2973-2988, July 2019, ISSN: 1735-2630, DOI: **<https://doi.org/10.1007/s13762-018-1776-x>**.
3. Apeksha Madhukar and B. S. Rajanikanth, "Waste foundry sand/Bauxite residue for enhanced NO_x reduction in diesel exhaust pre-treated with plasma/O₃ injection", IEEE transaction on plasma Science, vol. 47, issue 1, pp 376-386, Jan 2019, ISSN: 0093-3813, DOI: **10.1109/TPS.2018.2877824**
4. Apeksha Madhukar and B. S. Rajanikanth, "Cascaded plasma-ozone injection system: a novel approach for mitigating total hydrocarbons in diesel exhaust," Plasma Chemistry and Plasma Processing, Springer, vol 39, no. 4, pp. 845-862, July 2019, ISSN: 1572-8986, DOI: **10.1007/s11090-019-09959-8**
5. Sankarsan Mohapatro, Nikhil Kumar Sharma and Apeksha Madhukar, " Abatement of NO_x using compact high voltage power supply: Towards retrofitting to automobile vehicle", IEEE trans. on Dielectric and electrical insulation, vol 24, issue 5, pp. 2738-2745, 2017, ISSN: 1070-9878, DOI: **10.1109/TDEI.2017.006052**

6. Sankarsan Mohapatro, Srikanth Allamsetty, Apeksha Madhukar and Nikhil Kumar Sharma "Study of nano-second pulse discharge-based nitrogen oxides treatment using different electrode configuration", IET high voltage, vol 2, issue 2, pp. 60-68, 2017, ISSN: 2397-7264, DOI: **10.1049/hve.2017.0011**
7. Sankarsan Mohapatro, Srikanth Allamsetty, Apeksha Madhukar and Nikhil Kumar Sharma, "Study on the effect of electrode configurations on NO_x removal from diesel engine exhaust", Journal of CPRI, vol. 13, no. 4, pp. 79-84, 2017
8. Nishanth K, Apeksha Madhukar and Rajanikanth B. S., "Estimation of Ozone generation in DBD plasma using response surface Methodology and Fuzzy Logic Methods" International Journal of Environmental Science and Technology, Springer, *under review*.

B. Conferences

1. Apeksha Madhukar, Pragati K.M, Janardhana M and Rajanikanth B.S, "Agricultural rice husk waste for cleaning diesel exhaust pre-treated by non-thermal direct/indirect Plasma," The 11th International Symposium on Non-Thermal/Thermal Plasma Pollution Control Technology and Sustainable Energy, ISNTP-11, Padova, Italy, P-39, July 2018.
2. Sankarsan Mohapatro, Srikanth Allamsetty, Apeksha Madhukar and Nikhil Kumar Sharma, "Study on the effect of electrode configurations on NO_x removal from diesel engine exhaust", 18th Asian Conference on Electrical Discharge (ACED), IIT Madras, Chennai, India, Dec. 8-10, 2016

5. Portfolios

A. Courses Handled

- Basic Control Theory EE1210 (Dec- April)
- Control Systems EE2220 (Dec- April)
- Power Electronics EEL702 (Dec-April)

B. Responsibility Handled

- Branch Counselor, IEEE Student Branch, Central University of Karnataka (January 2020- Present)
- In-Charge, SPARSH Committee, School of Engineering, Central University of Karnataka (January 2020- Present)
- Local Purchase Committee member, School of Engineering, Central University of Karnataka (March 2020- Present)