

Applied Electrostatics and Non-Thermal Plasma for Environmental application and Control of Bio-Particles”

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Overview

The course focusses on application of Electrostatics and Non thermal Plasma for Environmental protection and control of Bio particles. Non thermal plasmas produced by electrical discharges are gaining importance because of their low energy requirement. The present collegiate student community holds a responsibility of sustainable environment. This course intends to provide knowledge about the technologies such as non thermal plasma and electrostatics for environment protection and life sustenance in the present context of highly disturbed and polluted environment. In addition this would also provide gainful career opportunities for the young students. This short-term multi-disciplinary course, covering topics, appropriate in this direction, is very useful and value-addition to the academic qualifications they already possess or that they are studying. In this course, fundamentals of electrostatics and applications on control of bio-particles such as DNA molecules, viruses and microbes, PM2.5 removal are comprehensively described. Non-thermal plasma characteristics including radical formations will be discussed for further development to environmental applications.

Objectives

The primary objective of this course is to introduce and familiarize participants with:

- Current state of the art in Applied Electrostatics and Electrical discharge based Non Thermal Plasma Technologies
- Research opportunities in the area of Electrostatics and Electrical discharge based Non thermal Plasma.
- Practical applications to understand the mechanism of the techniques and to know importance of the fundamental knowledge and hence to develop novel technologies for environmental remediation and protection of human health.
- Career opportunities and job potentiality of students by value-addition to their current academics of Science and Technology towards international standards

Dates	<ul style="list-style-type: none"> • 21st to 26th Dec 2017 • Number of participants for the course will be limited to fifty. • Registration is on first come, first serve basis and space is limited.
You Should Attend If...	<ul style="list-style-type: none"> ▪ Electrical, Electronics, Environmental, engineer or research scientist interested in working with the areas of Electrostatics, Electrical discharge based Non thermal plasma ▪ Executives, engineers and researchers from university, manufacturing, service and government organizations, R&D laboratories. ▪ Students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic and technical institutions. ▪ Any others interested in expanding their qualifications/ knowledge related to environmental sustenance
Pre Requisite	<ul style="list-style-type: none"> • No special prerequisites. However candidates must be interested in expanding their qualifications/knowledge related to environmental sustenance.
Fees	<p>The participation fees for taking the course is as follows: Participants from:</p> <ul style="list-style-type: none"> • Abroad : US \$50 • External participants - Students / Industry / Academic Institutions / Research Organization: Rs. 1000.00 Internal participants: Rs 500.00 • The above fee includes training program, Wi-Fi connectivity, and computer use for tutorials, assignments etc.
General Information	<p>Participants are encouraged to bring their own laptop. Also participants need to make their own arrangements for food and accommodation.</p>

The Faculty



Prof Akira Mizuno is a Senior Researcher, Professor Emeritus, Department of Environmental and Life Sciences, Toyohashi University of Technology, **Japan**. He has contributed significantly to apply the non-thermal plasma in environmental protection, especially in decomposition of gaseous pollutants.

Course Co-ordinator

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Prof. Mizuno has not only made outstanding contributions in the non-thermal plasma processes, but also contributed to develop the field of application of electrostatics such as particle charging by electron beam, electrostatic precipitation, electrical sterilization, weed control by electrical discharge, and manipulation of fine particles including individual cells and DNA molecules using electrostatic force and laser optical force. His method of the laser manipulation with bead-clustering has provided a simple and reliable way to handle single molecules. He has supervised 25 PhD and 200 MSc dissertations. He has acted as external examiner for over 10 PhD thesis. Professor Mizuno is an internationally recognized expert in the field of fundamental and applied electrostatics. He has published over 150 reviewed papers in archival journals, and about 200 papers in international conferences. 4 papers were selected as J. Melcher paper award of EPC, IEEE/IAS. He has also filed about 110 patents. He has given about 20 invited lectures at international conferences in USA, France, UK, Poland, Slovakia, Ukraine, China, Taiwan, Egypt, India, Brazil, Argentina and Japan.



Prof A.D.Srinivasan presently is a professor in the Dept of Electrical and Electronic Engineering, at Sri Jayachamarajendra College of Engineering, Mysuru, India. He has an industrial experience of 2 years, teaching experience of 30 years and research experience of 15years. He has a post graduate and doctoral degrees from The Indian Institute of Science, Bengaluru, India which is from one of the most reputed Institutes across the country. He has established a full pledged electrical discharge based pollution control research lab in the department of electrical and electronics engineering, funded by AICTE, VTU and DST. He has guided several undergraduate and post-graduate student projects some of them have bagged prizes. Presently he is supervising five PhD scholars and has many research publications to his credit. He is a regular reviewer of IEEE journals and transactions, a member of IEEE, ISTE and Electrostatic Society of America. He is a recipient of Dr. S. Radhakrishna award for achievement in research and education, recipient of Best Thesis award and Gold medal for PhD thesis at The Indian Institute of Science, Bengaluru.

