



POLYMERUPDATE ACADEMY

EDUCATIONEM RESPONSUM EST

FUNDAMENTALS OF POLYMER RECYCLING AND WASTE MANAGEMENT

Digital Training Conducted by
Dr. Prashant Gupta
B Tech. M. E. PGD - CTM. Ph.D.

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- Introduction to recycling and waste management
- Types of recycling
- Equipment/Machinery in recycling
- Urban waste recycling
- Recycling techniques for specific polymers
- Alternatives to single use plastics as tools for combating plastic waste

SUMMARY

Plastics have increasingly been used in various applications due to their versatility from the perspective of cost, application and properties. The application sectors include electrical and electronics, medical, packaging, civil and construction, chemical, agricultural, textiles, etc. This increased use of plastics and their compounded annual growth rate are evident enough to understand the increase in waste due to the established single use feature of a major quantity of them, especially in packaging. The world is facing a massive challenge today due to mismanagement of plastic waste and it becomes imminent to understand the technologies involved in polymer recycling and waste management.

Two categories of plastics namely thermoplastics and thermosetting plastics exist across the globe. Since thermoplastic polymers can be melted and reformed, they are easily recycled. However, their properties do degrade with each reuse. Thermosetting polymers are much more difficult to recycle. Some of them can be ground up and used as filler for other processes, and, on a case-by-case basis, some can be processed to be broken down into their underlying base units which can be reused. Another approach to reducing the amount of plastic that ends up in our landfills is the development of biodegradable plastic which can be made to breakdown (be compostable). In addition, bioplastics often come from renewable raw materials, making them sustainable in nature.

SUMMARY

The course will be covered in six parts namely introduction to polymer recycling and waste management, types of recycling, equipment/machinery used in recycling, recycling of urban plastic waste, recycling of specific polymers, and tools for combating plastic waste as alternatives to single use plastics.

WHO THIS COURSE IS FOR??

- Any aspiring technologist who wants to enter the polymeric industry dealing in plastics recycling, plastic production such as injection, extrusion, rotational, blow molding, etc.
- Production/ R & D technicians/ Quality Control from the processing and manufacturing and associated polymer industries.
- Marketing/Sales executives inclusive of dealers and distributors who would love to have a competitive edge over other suppliers in convincing their customers with technical knowhow about the product.
- First line and middle level management personnel involved in any technical role in polymer industry with tall organizational structure. Also applicable to top level management in case of a small/medium scale unit having flat organization.
- Any professional who wants to start-up or a company wanting to do backward/forward integration in their unit.
- Purchase department personnel enabling them the knowledge of the process to aid buying of raw materials.

WHAT WILL YOU LEARN??

- Define various methods of plastic recycling and its importance in modern day's life
- Compare recycling and waste management technologies for various polymers.
- Identify the importance of plastics recycling and waste management in various sectors of application
- Analyze the properties and performance of plastics along with its contribution to the properties after recycling
- Evaluate the effectiveness of plastic recycling and waste management methods.
- Design a recycling plan for plastic product based on its applications.

**Dr. Prashant Gupta****B Tech. M. E. PGD - CTM. Ph. D.**

Born on June 6th, 1987, Dr. Gupta is a Polymer Technologist and has obtained his Masters, Post Graduate Diploma and Ph. D. from Institute of Chemical Technology, Mumbai. With virtue of his excellence in PGD-CTM course, Dr. Gupta has been awarded with a Gold Medal for securing top merit in the course.

Dr. Gupta has 5.5 years of academic experience (teaching/research) along with Industrial Research & Development experience in managerial positions for around 3.5 years in polymer compounding, testing, processing, and composites. Dr. Gupta has more than 20 publications to his credit in peer reviewed journals and books with high impact international (Elsevier, Wiley, Springer, Taylor & Francis etc.) publishers.

His areas of expertise and teaching include testing and quality control, polymer additives and compounding, polymer processing technology, polymer recycling and waste management, biodegradable and oxo-degradable plastics for packaging, use of information and communication technology for effective teaching learning, pedagogy related to teaching-learning, artificial intelligence in teaching learning, content creation for virtual laboratory, its development and applications.

Dr. Gupta has offered his expertise in the form of technical presentations at more than 20 international and prestigious national conferences/events across the globe some of which include EUROTEC-France, ANTEC-Mumbai, ICERP-Hyderabad, PPS-Mumbai, APM-Lucknow, APA-Chandigarh, Rangotsav-Mumbai, AMAI-Ahmedabad, etc. and won several awards for best paper, poster, project etc. Dr. Gupta has also been recognized as a certified developer, mentor, and reviewer for Virtual Labs, Mumbai an initiative of IIT M, IIT D and IIT K under MHRD, India.

Work Experience:

Organization Name: Maharashtra Institute of Technology

Tenure: 19th Sep 2016 onwards

Assistant Professor-Plastics and Polymer Engineering Dept. (UGC Approved) Junior Scientist, MIT-Center for Advanced Materials Research and Technology

Organization Name: Loxim Industries Ltd.

Tenure: 1st Sep 2015 – 16th Sep 2016

HOD and Manager: R & D/Quality Control

Management and Customer Representative-ISO-TS 16949

Organization Name : Crest Composites and Plastics Pvt. Ltd,

Ahmedabad Tenure: 21st Apr 14 –31st Aug 15

Assistant Manager, (R & D) Application Development

THANK YOU

PREPARED & CONDUCTED BY

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