

SDG12: RESPONSIBLE CONSUMPTION AND PRODUCTION

India's Efforts on SDG 12 - Responsible Consumption and Production:

Policy and Regulations: The Indian government has introduced policies and regulations aimed at promoting responsible consumption and sustainable production practices across various industries.

Waste Management Initiatives: Efforts to manage waste and promote recycling and circular economy models are being encouraged to reduce environmental impact.

Resource Efficiency: Programs focusing on efficient use of resources, reducing food waste, and minimizing environmental degradation are being advocated.

UPES University's Approach towards Responsible Consumption and Production:

Campus Initiatives: UPES implements eco-friendly practices within its campus, emphasizing waste reduction, recycling, and energy conservation.

Sustainable Curriculum: The university integrates sustainability principles into its curriculum, emphasizing responsible consumption and production in various academic disciplines.

Awareness Campaigns: UPES conducts awareness campaigns and workshops, engaging students and the community in discussions and practices promoting responsible consumption and production.

Future Objectives and Impact:

UPES University's efforts to instill responsible consumption and production practices align with the government's focus on sustainable resource management. By continuing to expand sustainable campus initiatives, embed sustainable principles in education, and conducting widespread awareness campaigns, UPES contributes to fostering a culture of responsible and sustainable consumption and production.

In summary, while India focuses on policy measures and waste management initiatives for responsible consumption and production, UPES University's commitment to sustainable practices

within its campus and educational curriculum reflects an alignment with national goals, advancing responsible resource usage and environmental sustainability.

Waste Paper Recycling Laboratory

<https://research.upes.ac.in/waste-paper-recycling-laboratory/>

Primarily focus of this research laboratory is on waste paper recycling. The rationale of this focus stems mainly from the fact that the world consumption of paper products is massive and therefore the DISPOSAL problems are enormous; traditionally involving either incineration or landfill. Our basic idea was to bring a balance between the environment and the use of technology for the economic independence of rural women. This project aimed to help rural women from the indigenous community to earn a fair wage by teaching them how to make high-quality goods using waste paper viz paper pencils, jewellery, stationery items etc.

In a lab we have a set of six machines Rolling Machine, oven, cutting machine, abrading machine and coating machine. The cost of machines is around 9.5 lakhs [Including about 50kgs of gum and 10 cartons [3500 of HB lead per carton].



Stop Plastic Solution

<https://www.facebook.com/greenupupes/photos/a.1519593978254906/3067931463421142/>



Plastic pollution has become a global concern, as our planet is drowning in plastic litter and microplastics. While plastic has many valuable uses, societies have become highly dependent on single-use or disposable plastic — with severe environmental consequences.

Plastic pollution is the build-up of plastic objects and particles in the environment (for example - bags, plastic containers, and microbeads) that harms wildlife, natural and wildlife habitats, and mankind. Plastics that pollute the environment are classified as micro, meso, or macro debris, depending on their size.

Only 9% of all plastic waste ever produced has been recycled. About 12% has been incinerated, while the rest — 79% — has accumulated in landfills, dumps or the natural environment. This accumulated plastics on our land deteriorates its fertility and in water bodies ruins its purity, thus affecting the marine life.

As plastic is a global issue, international cooperation is needed to coordinate actions to have an efficient decision making in order to tackle this major environmental problem. Several initiatives and activities exist aiming at addressing the plastic waste problem and eliminating plastic litter entering the oceans. There are a few things that governments can do — from running public awareness campaigns, to offering incentives for recycling, to introducing levies or even banning certain products outright.

It is not only the responsibility of our government but also our individual responsibility to do our part in reducing the use of plastics. We can use cloth bags and paper bags as alternatives to plastic bags. It is only when we, as responsible global citizens are aware of the harmful impacts of plastic on our environment and by taking initiatives to reduce its usage, can reduce the plastic pollution.

Let's Learn Waste Management

<https://www.facebook.com/greenupupes/photos/a.1519593978254906/3044270325787256/>

Whenever it comes to Production, Manufacture, and Process, a term is common - Waste and management of waste is most important for a better future but when it comes to management, humans fall back to their skills. But still, there are many who are holding the pillars who believe in the idea of Improved Human Health, Preserving The Environment, Protecting Marine and Animal Life, and a clean future for the coming generation. Waste management is the key to many new ways of production methodologies new alternatives and who knows many new products yet to be discovered. Waste management has a lot of potential only thing is how much you desire to discover!



LET'S LEARN WASTE MANAGEMENT



Advancements and Innovations in Recycling Engineering (AIR 2021)

<https://easychair.org/cfp/air2021>

Recycling engineering and Waste Management is one of the key problems of modern society due to the ever-expanding volume and complexity of discarded domestic and industrial waste. It has become one of the most significant environmental issues, particularly in developing countries like India. In India, approach towards solid waste management is unscientific. Even today, a large portion of solid waste is being dumped indiscriminately on the outskirts of towns or cities, without any prior treatment, which is leading to groundwater contamination and an increase in pollution across the country.

India has been rather struggling with its policies to mitigate the problem of solid waste management. Recent advancements in this field are being introduced and research and development is occurring continuously. Considering the case on a global scale, the increasing trend in solid waste generation throughout the world can be ascertained with the rapid industrialization, urbanisation, population growth rate and economic growth of each nation. The global trend varies from nation to nation. Some countries have rather taken important measures and introduced new technology in this field to curb the menace of solid waste. But the underdeveloped and developing nations find it hard to introduce new measures and implement it.

The Department of Health Safety Environment & Civil Engineering, University of Petroleum & Energy Studies, Dehradun in collaboration with The Department of Chemical Engineering, Hindustan

Institute of Technology & Science (HITS), Chennai, India & The Department of Hydrology and Hydrogeology, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, Uzbekistan, is pleased to announce the International Conference on Advances and Innovations in Recycling Engineering (AIR-2021) scheduled on 06-07 August 2021.

The conference provides a forum for the exchange of scientific information and work on the current situation of waste management amongst professionals, researchers, Government departments and local authorities.

AIR-2021 aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of waste management and recycling. It also provides an interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Waste management. AIR-2021 will furnish a study and energetic manifesto and it focuses to boost the refurbishment of spectra of "Recycle today, for a better tomorrow."

Submission Guidelines

Authors are invited to submit full paper by July 20 2021 to AIR 2021. Authors are requested to visit the "Authors Section" at <https://air2021.upes.ac.in/>. Upload the Abstracts and full paper to <https://easychair.org/conferences/?conf=air2021> or by email to The Conference Secretary at air@ddn.upes.ac.in.

All papers must be original and not simultaneously submitted to another Journal or Conference.

The interests of the conference include, but are not limited to, the topics related to Waste Management.

The broad areas for the conference are as under:

- Application of Nanotechnology in Waste Management.
- Sustainability and Environment.
- Clean Development Mechanism.
- Municipal & Agriculture Waste Management.
- Paper & Plastic waste management.
- E-waste & Biomedical Waste Management.
- Waste Management in Oil & Hydrocarbon Industry.
- Reduce, Reuse, Recycle and Recovery (4Rs).
- Energy from Waste.
- Hazardous Waste Management.
- Waste Treatment Technology, Innovation and Planning.
- Construction & Demolition Waste Management.

Environmental Club brings recycling to MSMS, MSES, and UPES

<https://mshsprospector.org/18457/showcase/environmental-club-brings-recycling-to-msms-mses-and-upes/>



The recycling symbol is iconic as a symbol of renewability and reusability all throughout the world.

In recent years, the Manitou Springs High Schools' Environmental Club has brought more attention to environmental issues through its events and hard work toward promoting planet health and awareness. More recently, interest has been brought towards starting recycling programs at the Manitou School Districts lower grade schools, such as the Manitou Spring Elementary School and Ute Pass Elementary School.

While much has been done to bring awareness to recycling and the benefits of reducing waste in our schools, some may still question how much recycling benefits our community. Does it make a difference?

The short answer is yes. Recycling has been shown to substantially impact areas such as climate change and waste reduction. The United States Environmental Protection Agency quotes Waste Reduction and Economic Security as among the benefits of recycling.

Not only that, but numerous green jobs in recycling and manufacturing have sprouted from recycling being enforced in communities countrywide. These manufacturers depend on recycling programs for recyclable waste, which can then be reused rather than dumped into landfills. Not only do these manufacturers provide green jobs, but they have an essential role in economic stability in their conservative energy efforts.

“Because recycled materials have already been refined and processed once; manufacturing the second time is much cleaner and less energy-intensive than the first,” Stanford’s website said.

In short, recycling has many positive environmental and economic effects that rely on recycling programs in multiple communities.

However, these reasons alone are not the only benefits of starting recycling programs in our schools. Recycling programs in the other schools of Manitou Springs School District would promote planet care and awareness to young students, some of the most influential people in our community.

As young students grow, it is natural that they will eventually take what they've learned from school to ultimately impact the world around them. That is why I believe it is important that these students learn the importance of recycling early.

This would not be a drastic change for students at MSES, where already planet awareness is strongly advertised to younger students through little ways, such as the outdoor and indoor gardens cared for by the school. A recycling program would not only be beneficial to the student's future but could quickly be adopted by everyone at the school, staff and students alike.

No matter what one's view on climate change, it is always important that communities know the importance of recycling and its positive effects. I believe that the decision to start recycling programs at these schools would not only be a beneficial decision but a positive influence on Manitou's community as a whole.

Researchers from UPES Dehradun Develop Novel Method to Convert PPE into Biofuels

<https://weather.com/en-IN/india/coronavirus/news/2020-08-05-researchers-from-upes-dehradun-develop-novel-method-to-convert>



PMC health workers in PPE kits at their swab testing duty at a centre on Sinhagad road, Pune.

(Aditya Waikul/BCCL, Pune)

Plastic from used personal protective equipment (PPE) can and should be transformed into renewable liquid fuels, according to Indian researchers.

The study, published in the journal *Biofuels*, suggested a strategy that could help to mitigate the problem of dumped PPE - currently being disposed of at unprecedented levels due to the current COVID-19 pandemic - becoming a significant threat to the environment.

The research from the University of Petroleum and Energy Studies (UPES) in Uttarakhand shows how billions of items of disposable PPE can be converted from its polypropylene (plastic) state into biofuels - which is known to be at par with standard fossil fuels. "The transformation into biocrude, a type of synthetic fuel, will not just prevent the severe aftereffects to humankind and the environment but also produce a source of energy," said study lead author Dr Sapna Jain from UPES.

There is high production and utilisation of PPE to protect the community of health workers and other frontline workers of COVID-19. The disposal of PPE is a concern owing to its material i.e. non-woven polypropylene. "The proposed strategy is a suggestive measure addressing the anticipated problem of disposal of PPE," Jain said.

During the current COVID-19 pandemic specifically, PPE is being designed for single-use followed by disposal. Once these plastic materials are discharged into the environment they end up in landfills or oceans, as their natural degradation is difficult at ambient temperature. They need decades to decompose.

Recycling these polymers requires both physical methods and chemical methods. Reduction, reuse and recycling are the three pillars of sustainable development that can help to prevent the disposal of plastic in the environment. The research team reviewed many related research articles as they looked to explore the current policies around PPE disposal, the polypropylene content in PPE, and the feasibility of converting PPE into biofuel.

In particular, they focused on the structure of polypropylene, its suitability for PPE, why it poses an environmental threat and methods of recycling this polymer. Their conclusive findings call for the PPE waste to be converted into fuel using pyrolysis. This a chemical process for breaking down the plastic at high temperature - between 300-400 degrees centigrade for an hour - without oxygen.

According to the researchers, this process is among the most promising and sustainable methods of recycling compared with incineration and landfill.

"Pyrolysis is the most commonly used chemical method whose benefits include the ability to produce high quantities of bio-oil which is easily biodegradable," said study co-author Bhawna Yadav Lamba.

"There is always a need for alternative fuels or energy resources to meet our energy demands. The pyrolysis of plastics is one of the methods to mitigate our energy crisis," she noted.

Green business ideas that are a testament to UPES values of innovation and inclusivity

<https://blog.upes.ac.in/green-business-ideas-that-are-a-testament-to-upes-values-of-innovation-and-inclusivity/>



With meticulous planning and commitment to the society, some young entrepreneurs from UPES are positively impacting the planet and finding commercial success in the process

For a nation's progress, it is important that the universities equip their students with robust entrepreneurial skills and help them create jobs. UPES has been a wellspring and breeding ground of entrepreneurs with smart business ideas contributing to the nation's economy. Read on to know more about some of the start-ups strengthened by the student entrepreneurship ecosystem at the campus. These are run by eco-minded entrepreneurs who are seeking to make a positive impact on the global and local environment through their sustainable business ideas.

Environ Tech

Nishant Belwal, Nandit Srivastava and Neel Adwani from UPES School of Engineering thought of an innovative waste bin that is as convenient as a normal bin, but smart enough to segregate waste on its own. The bin ensures separation of waste at the source and can be used in all the metropolitan and local municipalities. It is aimed at making the waste collection service and recycling of waste more efficient, thereby protecting the environment.

Highlighting the need for effective waste management measures, Nishant says, “The amount of waste our country generates is enormous. India is also one of the largest importers of scrap material. We researched the process of waste management and disposal. We realized that people were not segregating the waste; instead disposing of all the waste together. If this waste had been segregated right at the source, it could be used in a variety of ways.”

Speaking about the challenges, Nishant adds, “Contacting people and creating awareness about waste segregation was a big problem for us. We intend to get a contract from the Uttarakhand government and place bins all over the state. We will contact the private sector to install bins in their area and efficiently manage waste. The application process we roll out will gather global users.”

Talking about the role of UPES in nurturing their business idea, Nandit says, “UPES will help us in testing and deployment of the product by providing us with a platform to place it on the campus. Our mentors helped us with all the documentation and guided us through our business model.”

From And To Nature LLP

Paurush Dobhal from UPES School of Engineering, along with Tanmay Benjwal, Vibhor Singh, and Utkarsh Singh, wanted the environment to be a little greener. From And To Nature is a green tech startup revolutionising the bottled water industry with its unique bamboo bottles and supply chain. Commended on multiple platforms for their mission against plastic and vision to empower local craftsmen communities, they now have some of the most reputed hotels, cafes, restaurants, and corporate institutions as their customers.

“I embarked on this journey to provide an eco-friendly sustainable plastic-free alternative to PET bottled water. Our bottles are locally hand-crafted, all-natural, 100% biodegradable, reusable, food-grade, eco-friendly, sustainable, and best-in-line with quality and aesthetics and a food-grade inner inert coating. With our business model, we not only tackle the plastic waste, but empower and employ the local handicraft communities as well,” says the founder of From And To Nature LLP, Paurush.

He adds, “With the constant guidance our mentors at UPES we were able to build a business model and a scalability plan. We are about to launch the 1st pilot run soon.”

[Reduce Reuse Recycle](https://www.facebook.com/greenupupes/photos/a.1533322970215340/3022352494645706/)

<https://www.facebook.com/greenupupes/photos/a.1533322970215340/3022352494645706/>

Reduce Reuse Recycle are the three words that can save us for many future catastrophes that are showing their faces in form of Climate Change, Land and Sea pollution, Food Scarcity and many unknown issue yet to be discovered and we are lucky that we still have time in our hand to change things all it will take is a small step.



Recycling Engineering

<https://www.facebook.com/greenupupes/photos/a.1519593978254906/2995589413988681/>

Recycling is significant in today's world, as we need to leave this planet for our future generations. Recycling starts at home. We've been indiscreet so far with the manner in which we've treated Mother Earth, and it's an ideal opportunity to change, not just the way in which we do things yet the way in which we think.

As time passes, the population is expanding. With that, the amount of waste so delivered is additionally expanding manifolds. The more the waste creation, the more is the measure of room needed to dump these wastes. Presently, it should be recalled that the space accessible on earth is extremely restricted, and it is clearly dependent upon us to utilize it prudently.

Participate in the Panel discussion, hear from knowledgeable speakers, and learn about Advances and Innovations in Recycling Engineering on 22 October 2021 from 9.30 AM-11:30 AM.

Theme:- Recycling for Strengthening Economic Growth, Social Equity and Environmental Conversation

For more details, Visit: <https://air2021.upes.ac.in>

Zoom meeting link: <https://zoom.us/j/9897106992>






International Conference on
Advances and Innovations in Recycling Engineering
 21-22 October 2021

Panel Discussion on 22 October 2021 from 9:30 AM to 11:30 AM

Theme
Recycling for Strengthening Economic Growth, Social Equity and Environmental Conversation



Speakers

 Veleran Sgl S Sandrakumaran Commissioner Odigere Municipality Govt. of Puducherry Puducherry	 Dr. Richa Singh Professor/Officer IITEST Center for Safety and Environment, Delhi
 Mr. V Seenivasan General Manager, Zero Plastic Waste: India Young Environment Club Puducherry	 Dr. A. Arumugam Senior Lect. Professor School of Chemical and Biotechnology SASTRA Deemed University, Thanjavur
 Er. T. Sivacooumar Asst. Project officer/IC-2016, Odigere Municipality, Govt. of Puducherry, Puducherry	 Mr. K. Arul Asst. Professor Railway Design Department, National Institute of Indian Technology Chennai

[Recycle today, for a better tomorrow.](https://www.facebook.com/greenupes/photos/a.1519593978254906/2994523190761970/)

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Sustainability Cluster, School Of Engineering
International Conference on Advances and Innovations in Recycling Engineering (AIR-2021)
 Theme - Recycle today, for a better tomorrow.
 October 21-22, 2021

KEYNOTE SPEAKERS

 Dr. Niranjan Bagchi Former Director, MOEFCC, India	 Mr. Devedra Gill General Manager - Safety Delhi Metro Rail Corporation, India
 Prof. Ajay S. Kalamachari Professor, Department of Civil Engineering, Indian Institute of Technology Guwahati	 Mr. Vikas Singhal Sr. DDM - Environment Delhi Metro Rail Corporation, India
 Prof. Manish Kumar Professor & Cluster Head - Sustainability of University of Petroleum and Energy Studies	 Prof. V. Pannusami Associate Dean (Chemical & Biotechnology) SASTRA Deemed University
 Dr. Ruben Sudhakar D Assistant Professor, Department of Energy and Environment, IIT Trichy (IITR),	 Dr. Satya Sundar Bhattacharya Faculty and Incharge of Soil & Agro-bio engineering lab, Department of Environmental Science, Tezpur University.

On a daily basis, the world produces close to 4 million tonnes of waste. Waste recycling is one of the well-known initiatives for combating overflowing landfills and polluted water bodies. Recycling is one of the 3 R's, reduce, reuse, and recycle, which aims at promoting sustainable living. It's evident, now more than ever, that we are not doing enough.

Participate in the conference, hear from knowledgeable speakers, and learn about advances and innovations in recycling engineering.

Theme:- Recycle today, for a better tomorrow.

For more details, Visit: <https://air2021.upes.ac.in>

