Chief Editor's Message

Editorial

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Earth Sustainability & Reinforcing Circular Economy through Plastic & Agro Waste Recycling

At global level plastic waste and Agro-Industrial byproducts are being used in thermal insulation bricks or other innovative applications for sustainability? It is well known that India generates over 3.5 million tonnes of plastic waste annually and India recycles only ~35% of its plastic waste. Also a very large quantity of rice husk, bagasse, and sawdust from agro-industrial waste in which more than 500 million tonnes of agricultural residues are generated annually. Moreover, a significant fraction of these wastes is either landfilled or openly burned to contribute to severe air pollution, GHG emissions for public health at stake. Hence it poses a big challenge, how to mitigate it?

In this direction a Govt Policy has been framed on the use of Plastic Waste and Agro-Industrial By-products for Sustainable Thermal Insulation Materials such as bricks to be used in affordable houses in place of conventional bricks. This policy brief proposes the systematic utilization of plastic waste combined with agro-industrial by-products to manufacture thermal insulation bricks, blocks, and panels for affordable and urban housing. Such composite materials bricks can reduce building energy demand, lower construction costs, and fulfil circular economy objectives of UN SDGs also.

The production of conventional construction materials such as concrete, cement and bricks, has contributed significantly to the high environmental footprint associated with the construction industry. Moreover, there is a global push to deviate from the linear take-use-dispose model to a circular economy model, which incorporates up cycling and reuse of materials. For example: use of 1 ton plastic + 1.5 ton agro waste can produce approximately 2,500 insulation bricks. It results in a cost reduction: ~30–40% vs AAC blocks, finally resulting in CO_2 reduction of: ~1.5 tCO_2 per ton plastic used in it. Finally, it results in huge environmental & sustainability benefits for living beings.

This issue of CNS&E Journal published a manuscript on "Sustainable Thermal Insulation in Bricks Using Plastic Waste and Agro-Industrial Byproducts"

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