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Biocarbon innovation in sustainable manufacturing

The unwanted odor of natural fibre during melt processing and in finished products, along with their supply chain concern, their limitation for use in high melt temperature engineering plastic reinforcements, and their hydrophilicity pose considerable challenges for their widespread applications. The thermo-chemical conversion of biomass (pyrolysis) is utilized to overcome the key challenges associated with the use of traditional natural fibres in melt

processed composites uses. A group of researchers at the Bioproducts Discovery and Development Centre (BDDC) at the University of Guelph have designed and engineered a range of multifunctional biocarbons and their hybrid biocomposites that show significant weight saving with a very high greenhouse gas emission (GHG) reduction potential and comparable properties to their counterparts for sustainable automotive and packaging applications.

Biography

M Misra is a Professor in the School of Engineering and holds a joint appointment in the Dept. of Plant Agriculture at the University of Guelph. Her current research focuses primarily on novel bio-based composites/nanocomposite from agricultural and forestry resources for the sustainable bio-economy targeting the development of bio-based and eco-friendly alternatives to the existing petroleum-based products. She has authored more than 500 publications, including 299 peer-reviewed journal articles, 266 conference presentations/abstracts/papers, 5 edited books, 23 book chapters, and 42 patents granted/applied worldwide, related to 22 inventions. She was the 2009 President of the BioEnvironmental Polymer Society (BEPS). In 2012, She received the prestigious "Jim Hammar Memorial Award" from the BEPS and University of Guelph's Innovation of the year award in 2016 for the involvement in developing the "compostable single-serve coffee pods". In 2017, she received American Institute of Chemical Engineers Andrew Chase Division Award.

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