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### **Sustainable polymeric composites: An emerging trend for waste management**

Sustainable development is a global challenge to improve the quality of our lives, protect our ecosystem and preserve the natural resources for the future generations. Currently, about 2.01 billion tons of municipal solid waste (MSW) is produced annually worldwide, of which about 15% are plastics. It is estimated that the MSW will increase to 3.40 billion tons by 2050. Only 13.5% of which is recycled and 5.5% is composted. The current study focussed to develop practices for waste management by recycling of the plant and fabric waste into sustainable polymeric composites. The yard cutting and fabric waste is either burnt or landfilled. The cellulosic fillers, waste jute fabric and green epoxy resin were the main constituents used for this study. The cellulosic fillers were obtained from yard cutting of a creeper plant, *Argyrea speciosa* (local name Tezgam). The jute fabric was from waste packaging bags. The sustainable composite materials were fabricated using these materials by compression molding and their mechanical properties (tensile, flexural, and impact) were investigated. The developed composites showed remarkable mechanical performance as compared to glass composites. Hence, the waste materials were effectively used to develop a value-added product with enhanced performance properties. These materials can be used to fabricate components for automotive interior, packaging, tabletop, etc.

### **Biography**

Dr. Khubab Shaker has completed his PhD at the age of 31 years from National Textile University. His area of expertise was particle loaded composite materials. Currently he is working as chairman department of materials at National Textile University. He has published more than 50 papers in reputed journals with a cumulative impact factor of 140, more than 20 conference papers, edited two books and contributed 11 book chapters.

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