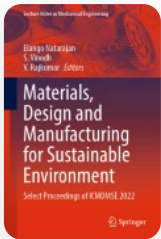


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Studies of Effects of Pollutants M Sand, Wood Ash, Rice Husk Ash and Graphene on Mechanical Properties of Recycled Aluminium

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Materials, Design and Manufacturing for Sustainable Environment

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Abstract

The present study focuses on the influence of pollutants that affects the microstructural and mechanical characteristics of recycled Al 6063 grade

aluminium alloy and affect its inherent characteristics. As the recycled scraps shown to have more contaminants, known pollutants like carbon, ash, graphene powder and sand were introduced in a control percentage to the recycled aluminium. The samples were fabricated with a common 4wt% addition of the materials. The material characteristics considered for analysis are hardness and tensile strength. Further, the properties were correlated with the microstructure which was analysed through the microstructural analysis of the samples. The Brinell hardness of the recycled alloy samples that were subjected to the addition of wood ash and graphene increased by 6% and 15%, respectively, due to the modified SDAS in the samples. The tensile strength of the samples with the added impurities reduced by 7%.

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