

On the properties of composites based on wheat husk and poly vinyl chloride

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Abstract This work is aimed to valorise the agricultural waste based on the wheat husk (WH) by its incorporation as the reinforcing filler in poly vinyl chloride (PVC) matrix. To improve interfacial adhesion, the fibre was chemically treated with acetic anhydride (AA). Various composite samples made of PVC and WH fibres having the size length 315-500 μm were prepared at different loading rates, i.e. 10, 20 and 30 wt%. The IRTF results revealed that the reaction of acetylation was occurred. The results indicated a reduction in the mechanical properties according to the load factor as well as an improvement for the treated composites compared to the untreated composites. There is a reduction in the modulus according to the load factor for PVC/WHAA composites compared to the PVC/WH for both the 20 and 30 wt% formulations. However, the stability of the composites was improved with and without treatment compared to virgin PVC.