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Evaluation of lignocellulosic and plastic wastes in composite production by using flat press method

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Abstract: The aim of study was to evaluate the wastes generated from sawdust in the composite production. Five different compositions were used in production of composites. For production of composites, polystyrene (PS) as polymer matrix and maleic anhydrite grafted polypropylene (MAPP) as binding agent were chosen. Composite samples were produced at the size of 250 mm x 25 mm x 5 mm by hot press with the compression molded technique. The several mechanical tests, (e.g., tensile strength, bending strength, young modulus tests), physical tests (water uptake, swelling etc.) of PS-based composite were investigated in the case of using flat press. The results showed that the mechanical and physical properties of the composite sample added the coupling agent (3%) was better that composite without MAPP. When amount of lignocellulosic fibers in composites was increased, mechanical and physical properties of composite samples slightly decreased. The results showed that the PS-based composites could be used for the production of composite material to be used in several field.
Keywords: Waste sawdust, Flat press, Wood plastic composites