

## Article Abstract

<b>Title:</b>	A study on the influence of hot press forming process parameters on mechanical properties of green composites using Taguchi experimental design
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<b>Abstract:</b>	Green composites made from natural fibers, and biopolymers offer a potential alternative to the petroleum-based materials, that are currently being used in many nonstructural applications. In spite of being biodegradable and eco friendly, range of applications is limited due to poor mechanical properties. Hence an attempt is made in this work to improve the mechanical properties of green composites by optimizing the hot press forming process parameters using Taguchi experimental design. Process parameters such as temperature, pressure, heating time, cooling system and recrystallization soak time were chosen for evaluation by Taguchi method. An L <sub>16</sub> orthogonal array was chosen for the design of experiments. The optimum combination of process parameters is obtained by using the analysis of the signal-to-noise ratio. The levels of importance of process parameters on mechanical properties were determined by using analysis of variance (ANOVA). The variation of tensile, flexural and impact properties with process parameters were mathematically modeled using the regression analysis. Finally, the presented models are also verified by a set of verification tests.
<b>Keywords:</b>	Green composites, Hot press forming, Taguchi method, Scanning electron microscope.