

## **Prediction of Biocomposite Boards Tensile Strength Using Neural Networks**

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Biocomposite boards with different composition of fibre and polymer matrix are created for the generation of real world data towards creating – learning dataset, testing dataset. All of the biocomposite boards were exposed to the same operational parameters with respect to processing, production and curing of the materials. The tensile test data sets were divided with a ratio of 2:3 for the creation of a learning data set. A back propagation neural network is trained using the learning data set with learning algorithms “Powell Beale Conjugate Gradient algorithm” and “Adaptive Learning algorithm”. The back propagation (BP) neural network was successfully trained using the two learning algorithms. The neural network model was developed with MATLAB – upon successful completion of the neural network – it was observed that the neural net is able to successfully predict the tensile properties of biocomposites of different composition. The experiment goes on to show that biological materials based composite materials can be successfully predicted with the aid of Neural networks. At the same time it was successful in showing tensile property of unknown composition and thus was able to cut down product development time and cost.