



Evaluation of Mechanical Properties of Date Palm Fronds Polymer Composites

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Abstract : Now a day's researchers are focusing on wood based composites as alternative to conventional composites materials because woods are available in nature which are eco friendly, can be easily processed and also have superior strength. Many of the wood materials like coconut, palm, rubber, wood etc are considered as waste product after yielding. The researchers have extracted fibers from these materials and developed many natural fiber composites. The date palm wood fronds were used as reinforcement and polyester was used as matrix in this study. The date palm fronds were collected from five different regions of Sultanate of Oman. The composite laminates were prepared using hand layup method and tested for different mechanical properties like tensile, impact and bending strengths in order to evaluate the strength of the composites as per the ASTM standards. The Fourier transform infrared spectroscopies (FTIR) were used to analyse the functional groups.

Key words : Date palmfronds, Fiber polymer composite, Tensile strength, Impact strength, Bending strength.

Tabassum Sadik *et al* / International Journal of ChemTech Research, 2017,10(6): 558-564.
