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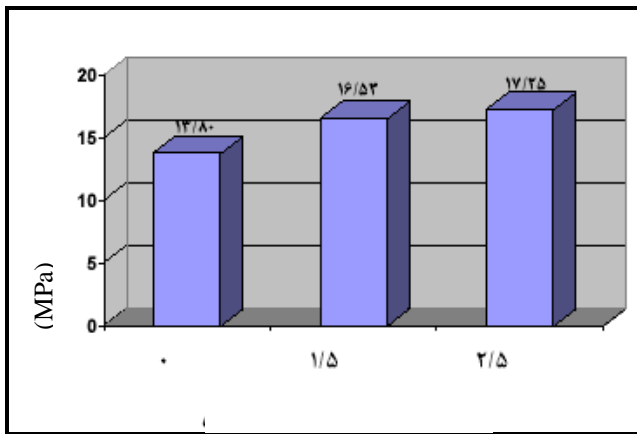
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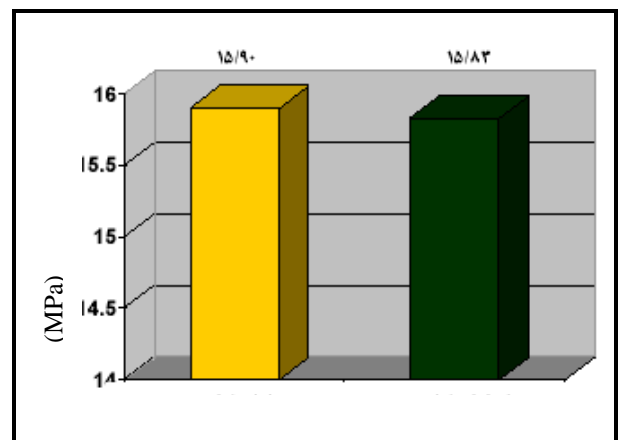
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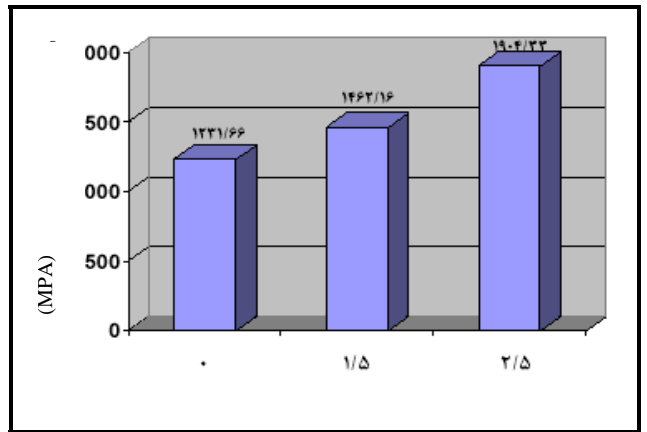
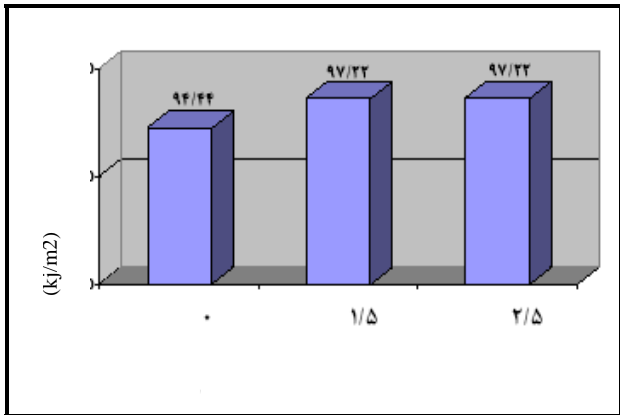
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Investigation of the effect of wood extractive and coupling agent on mechanical properties of Paulownia wood fibers/polypropylene composites

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(Received: 18 February 2007, Accepted: 15 March 2008)

Abstract

In this research the effect of Paulownia fibers (*Paulownia fortunei*) extractive including extractive free and with extractive and three levels (0, 1.5, 2.5 percent) of coupling agent on the strength cellulosic fibers and polymer matrix (polypropylene) composite is investigated. Melt-blended method and moulded composites were produced. Then the mechanical properties of polypropylene / wood fibers composites were measured according to ASTM testing procedures. Mechanical properties were analyzed using factorial experimental with completely randomized design. The results show that the best treatment for tensile strength was the application of 2.5 percent coupling agent and extractive free fibers, But the best treatment for MOE includes using 2.5 percent coupling agent, and for Impact resistance the best results were obtained using either 1.5 and 2.5 percent of coupling agent.

Key words: Paulownia wood fibers, Polypropylene, Coupling agent, Extractive, Mechanical strength