A STUDY ON THE EFFECT OF MECHANICAL PROPERTIES AND RHEOLOGYCAL BEHAVIOUR OF POLYPROPLENE REINFORCED MONTMORILLONITE

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"I declare that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree."

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ABSTRACT

This research focused on the mechanical properties of polypropylene (PP) reinforced montmorillonite (MMT). The aim of this research is to determine the mechanical properties of PP/MMT nanocomposite with different concentration (2 wt%, 4 wt%, 6 wt% , 8 wt% and 10 wt%) of MMT. PP and MMT were mix by using Dispersion Mixer. The material was mixed at temperature 190°C. After that, the material was fabricated by using hot press with 190°C for both upper and lower compressor. Mechanical properties of the sample were evaluated by tensile test, impact test, and three point bending test according to BS EN ISO 527, BS EN 60811 and BS 6319 respectively. From the tensile test, the result obtained shown that the sample of 2wt.% and for impact test shown 6wt.% of clay loading which has the better mechanical properties. The rheological behavior also determined. All the concentration have pseudoplastic, but the better pseudoplastic is 8wt.% of loading clay.

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