UNIVERSITI TEKNOLGI MARA

EVALUATION OF THE TENSILE PROPERTIES FOR POLYPROPYLENE COMPOSITE – A FINITE ELEMENT AND MECHANIC STUDIES

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Final year project proposal submitted in fulfillment of the requirement of the degree of **Degree of Bachelor of Sciences (Hons.) Polymer Technology**

Faculty of Applied Sciences

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AUTHOR'S DECLARATION

I declare that the work in this proposal was carried out originally with my own work otherwise indicated or acknowledged as a reference work.
I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi Mara regulating the conduct of my study and research.

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ABSTRACT

An investigation to study the accuracy of the Finite Element Analysis (FEA) using ABAQUS and RADIOSS by evaluating the tensile properties of the polypropylene composite was carried out. Despite many studies conducted on the properties of the PP composite, there is lack of understanding in the accuracy of the modelling technique. This study involved the use of ABAQUS and RADIOSS as the tools to evaluate the tensile properties for PP-EPDM composite at different strain rates (1, 10, 30, 100 and 200 mm/ms). The ABAQUS results show more accurate data with 0.89 %, 3.47 %, 6.29 % and 1.68 % of difference and the RADIOSS results were considered inaccurate with the 55.63 %, 83.75 %, 90.91 % and 88.24 % difference in results with respect to the results in literature. The accuracy of the tools had been identified and the recommendation were given to improve the accuracy problems.

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