A STUDY OF WASTE POLYESTER FABRIC USED AS FILLER IN NATURAL RUBBER COMPOUND

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This Final Year Project Report entitled "**A Study of Waste Polyester Fabric Used as Filler in Natural Rubber Compound**" was submitted by Ruqaiyah Bt Hj Abdul Rahim, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Polymer Technology, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

A STUDY OF WASTE POLYESTER FABRIC USED AS FILLER IN NATURAL RUBBER COMPOUND

The effects of the waste polyester fabric used as filler in natural rubber compound were studied. Six types of testing were conducted to determine the properties of waste polyester fabric used as filler in natural rubber compound such as the tensile testing, hardness test, resilience test, ageing test, density test and Mooney viscosity. The phase morphology for tensile surface failure of rubber compound was observed. NR compounded with waste polyester fabrics by using internal mixer machine and two roll mills machine. The physical properties of these composite were investigated. The results show the physical properties of NR compound without filler for tensile is better than NR compound with filler. The hardness, resilience, density and Mooney viscosity of NR compound with filler is better than NR compound without filler. The tensile surface failure has been studied by using Field Emission Scanning Electron Microscopy (FESEM) shows that the waste polyester fabrics and NR compound were mixed together with poor bonding between each other.