EFFECTS OF FILLER CONCENTRATION ON THE IONIC CONDUCTIVITY OF PVC+ $(NH_4)HSO_4$ + Al_2O_3 (80nm) POLYMER ELECTROLYTES

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This Final Year Project Report entitled **'EFFECTS OF FILLER CONCENTRATION ON THE IONIC CONDUCTIVITY OF PVC + $(NH_4)HSO_4$ + Al_2O_3 (80nm) POLYMER ELECTROLYTES'** was submitted by Noor Shuhada Binti Hamzah partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Industrial Physics, in the Faculty of Applied Sciences and was approved by

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TABLE OF CONTENT

ABSTRACT

In this work nanocomposite polymer electrolytes based on PVC is the host polymer with $(NH_4)HS0_4$ as the doping salt in different ratios and have been preapared. Al_20_3 (80nm), an inorganic filler were added to the highest conducting sample of PVC- $(NH_4)HS0_4$ polymer electrolytes in order to enhance the conductivity to higher values. The highest conductivity was achieved for PVC-$(NH_4)HSO_4$- Al_2O_3 (80nm) with concentration Al_2O_3 with 94 wt % of PVC -$(NH_4)HSO_4$ and 6 wt % of Al_2O_3 with a value 3.75E-05 Scm^{-1}. The rise in conductivity with additional of Al_2O_3 attributed to the filler helped to generate more charge carriers.