SYNTHESIS OF LAYERED DOUBLE HYDROXIDE-PAMOIC ACIDS VIA DIRECT CO-PRECIPITATION METHOD AND ITS CONTROLLED RELEASED BEHAVIOURS

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This Final Year Project Report entitled **"Synthesis of Layered Double Hydroxide-Pamoic Acids via Direct Co-Precipitations Method and Its Controlled Release Behaviours"** was submitted by Nurain Binti Adam, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Chemistry, in the Faculty of Applied Sciences, and was approved by

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TABLE OF CONTENT

ABSTRACT

SYNTHESIS OF LAYERED DOUBLE HYDROXIDE PAMOIC ACID VIA DIRECT CO-PRECIPITATION METHOD AND ITS CONTROLLED RELEASE BEHAVIOURS.

Pamoic acids were successful intercalated into the layered double hydroxide by using direct co-precipitation method to form layered double hydroxide pamoic acid. The result obtained from the FTIR spectroscopy shows that the appearance of the pamoic acid peak into the intercalated compound which are 3503.96 cm^{-1}, 1639.20 cm^{-1}, 1454.84 cm^{-1}, 739.20 cm^{-1}, and 1199.11 cm^{-1} indicate the OH stretching, C=O stretching, C=C stretching, C-H of the aromatics ring out of plane bending and C-O stretching frequency. The basal spacing of nanocomposites increases from 9.061Á to 17.661Å shows that the nitrate disappearance from the nanocomposites. The amount of pamoic acid loaded into the layered double hydroxide was estimated to be 50.23%, which can be calculated from the percentage of C that was 35.7%. The release of the nanocomposites by using sodium carbonate as the aqueous solution show slow release of the pamoic acids over extended period of time with saturated release of around 70%.