



**DEVELOPMENT OF EXPERIMENTAL SETUP AND PROCEDURE FOR  
AXIAL IMPACT TEST OF FIBER METAL LAMINATE (FML) PLATE**

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## **CANDIDATE DECLARATION**

“I declared that this 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**

Fibre metal laminates are hybrid composite structures that are built from combination of metal layers and fibre reinforced composite layers. The primary objective of this research is to design a standard test set-up for experimental axial impact test on fiber metal laminate (FML) and to develop an optimal analysis on the impact responses of fiber metal laminate (FML) plate and its constituents under axial impact loading. Impact test methods of previous research papers were used to develop the experiment set-up. The fabrication of fiber metal laminate is shown in this paper prior to conducting the axial impact test. The composites are manufactured using hand-lay technique with three different layer configuration ( $[0^{\circ}_4]$ ,  $[90^{\circ}_4]$ ,  $[0^{\circ}_2/90^{\circ}_2]$ s. This standard set-up also demonstrates on how to calculate optimal analysis on the impact responses of fiber metal laminate (FML) plate and its constituents under axial impact loading. The impact response will also allow the calculation of absorbed energy and analyse the relationship between analytical data and published experimental data.