

**Editorial Board**

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**Recent Publication**

Edited Book  
AB Abdullah and MS Sapuan, (Editor) **“Hole-Making Technologies for Composites: Advantages, Limitations and Potential”**, Woodhead Publishing Series in Composites Science and Engineering, In Press, April 2019.

**Active Grants**

Bridging Grant  
1. Title: Bearing Strength and Progressive Failure Analysis of Punched Hole Under Tensile Loading., 2018-2019.

RUI Grant  
2. Title: Formability Analysis of Tailor Welded Blank of Steel and Aluminum Alloys., 2018-2021.



**Preface**

Uncontrolled dimensional variation due to springback may cause assembly difficulty of sheet metal parts. The *springback* is caused by the release of residual stresses in a work piece after forming process. There are many design and material parameters that are significant to the springback formation. Young’s Modulus, thickness, temperature and many more are among the most important parameters that influence plastic-forming quality of component such as springback. Non-uniform thickness makes the springback control more difficult to be predicted. Know that thickness is one the major parameter that influencing springback pattern. Strain hardening due to formation of the non-uniform thickness thru forging or rolling process is probably one of the parameters that need to be focused in predicting the springback behavior. At the MFRL, one of our researches is on the post-forming behavior evaluation of sheet metal part and the effect of such dimensional variation like springback to component assembly. The aim of the research is to come out with a quantitative evaluation method and to control the defect by introducing embedded mechanism within the tooling.

**New Member**

The Metal Forming Research Lab. would like to welcome Muhammad Ajwad to the group. The title of his research is on Springback behavior of aluminum alloys strip after U-bending process. He graduated from Vanderbilt University (US) in Mechanical Engineering and is a self-sponsored student. Registered as Master student effectively on 1<sup>st</sup> of March 2019. Hope that he can contribute to the group in realizing group’s target, gain valuable experience and knowledge during his study and most importantly realizing his dream to hold MSc.

<b>Name</b>	Muhammad Ajwad bin Roslee
<b>Research Title</b>	Springback behavior on Aluminum Alloys Strip after U-Bending Process
<b>Main Supervisor</b>	Associate Professor Ir. Dr. Ahmad Baharuddin Bin Abdullah
<b>Start</b>	March 2019



(MSc)

**Visit AMTEEx, UiTM Shah Alam**

Metal Forming Research Lab. USM delegate leads by Assoc. Prof. Ir. Dr. Ahmad Baharuddin Abdullah had paid a visit to Advanced Manufacturing Technology Excellence Centre (AMTEEx), one of active research centre at Faculty of Mechanical Engineering Universiti Teknologi MARA Shah Alam. The visit was welcomed by Prof. Yupiter Manurung, Director of the centre and few post-graduate students. Prof. Yupiter briefed us about the centre, research focus and achievements of the centre. Then, we are brought for a lab tour to see latest research projects and facilities available at AMTEEx. The center strength is on welding and forming simulation. The group has a very good networking with various organization and research center locally and internationally. Before leave, both parties have identified few projects for research collaboration in the future.



**Contact Details**

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## Hole-Making and Drilling Technology for Composites Advantages, Limitations and Potential, 1st Edition

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15. Electro-Discharge Drilling of Metal Matrix Composites
16. Comparison between drilling and punching in terms of quality and productivity

### Description

*Hole-Making and Drilling Technology for Composites: Advantages, Limitations and Potential* presents the latest information on hole-making, one of the most commonly used processes in the machining of composites. The book provides practical

guidance on hole-making and drilling technology and its application in composite materials and structures. Chapters are designed via selected case studies to identify the knowledge gap in hole-making operations in composites and to highlight the deficiencies of current methods. The book documents the latest research, providing a better understanding of the pattern and characterization of holes produced by various technologies in composite materials. It is an essential reference resource for academic and industrial researchers and professional involved in the manufacturing and machining of composites. In addition, it is ideal for postgraduate students and designers working on the design and fabrication of polymeric composites in automotive and aerospace applications.

### Key Features

- Features updated information on the most relevant hole-drilling methods and their potential in aircraft and other structural applications
- Features practical guidance for the end user on how to select the most appropriate method when designing fiber-reinforced composite materials
- Demonstrates systematic approaches and investigations on the design, development and characterization of 'composite materials'

### Readership

Academic and industrial researchers and professional involved in the manufacturing and machining of composites as well as postgraduate students and designers working on the design and fabrication of polymeric composites in automotive and aerospace applications

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### About the Editors



Ahmad Baharuddin Abdullah obtained his PhD from the Universiti Putra Malaysia, Malaysia. His research interests include precision metal forming, tool and die design, and product design and development. He has published more than 100 research papers in various international journals, and 6 books. He is actively involved as a reviewer for the International Journal of Advanced Manufacturing Technology (Springer, USA), the Journal of Material Processing Technology and Measurements (Elsevier), and the Journal of Testing and Evaluation (ASTM International). He is member of the Board of Engineers Malaysia. He is Associate Professor at the School of Mechanical Engineering, Universiti Sains Malaysia, Penang, Malaysia



SM Sapuan is currently head of the Laboratory of Biocomposite Technology, Institute of Tropical Forestry and Forst Products (INTROP), and Professor of composite materials at the Universiti Putra Malaysia. His research interests include natural fiber composites, materials selection and concurrent engineering. To date he has published more than 570 journal and 580 conference/seminar papers, 17 books, 5 edited books and 74 chapters in books. He is a lecturer at the Department Mechanical and Manufacturing Engineering, Faculty of Engineering, Universiti Putra Malaysia, Malaysia.