



# **Advanced Research in Materials and Engineering Applications**

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**Edited by**

**Nor Azwadi Che Sidik and Syahrullail Samion**



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**Nor Azwadi Che Sidik  
and Syahruillail Samion**



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*Edited by*

**Nor Azwadi Che Sidik and Syahrullail Samion**



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Syahrullail Samion



## Preface

In the Name of Allah, Most Gracious and Most Merciful.

On behalf of the Faculty of Mechanical Engineering, Universiti Teknologi Malaysia and Akademia Baru Press, the editor would like to thank all the authors that contributed to this proceeding.

The topics covered in this proceeding include application of advanced materials in various engineering fields especially in applied mechanics & design, thermo-fluids, manufacturing process, aeronautics, oceanic, automotive and industrial process.

Because the contributions for this book come from various authors of various backgrounds, who themselves are experienced in their own right, they are responsible towards the contents of their work. Any questions, however, may be directed to the editor to be forwarded to the respective authors.

Finally, all of these chapters are presented as to share the knowledge and research findings with the readers. The editor hopes that this proceeding serves its purpose in disseminating knowledge and creating enthusiasm among the readers in the area of Mechanics and Applied research.

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