

# **International Conference on Recent Advances in Mechanical Engineering and Nanomaterials**

Selected peer-reviewed extended articles  
based on abstracts presented at the  
3<sup>rd</sup> International Conference on Recent Advances in  
Mechanical Engineering and Nanomaterials  
(ICRAMEN 2023)

Aggregated Book

*Edited by*

**Dr. Manoj A. Kumbhalkar  
and Dr. Radheshyam H. Gajghat**

■  
■ **Scientific.Net** ■

**Copyright** © 2023 Trans Tech Publications Ltd, Switzerland

All rights reserved. No part of the contents of this publication may be reproduced or transmitted in any form or by any means without the written permission of the publisher.

Trans Tech Publications Ltd  
Seestrasse 24c  
CH-8806 Baech  
Switzerland  
<https://www.scientific.net>

Volume 106 of  
*Scientific Books Collection*  
ISBN 978-3-0364-0231-4

Full text available online at <https://www.scientific.net>

***Distributed worldwide by***  
Trans Tech Publications Ltd  
Seestrasse 24c  
CH-8806 Baech  
Switzerland  
Phone: +41 (44) 922 10 22  
e-mail: [sales@scientific.net](mailto:sales@scientific.net)

***Printed with permission by***  
Curran Associates Inc. (2024)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

Additional copies of this  
publication are available from:

Web: [www.proceedings.com/72595.html](http://www.proceedings.com/72595.html)

# Table of Contents

<b>Preface</b>	v
<b>Chapter 1: Functional Composites</b>	
<b>Fabrication and Characterization of Jute/Human Hair Reinforced Polyester Hybrid Composite</b>	
R.K. Mishra.....	3
<b>A First Principles Investigation of the Bulk and Electronic Properties of Doped Armchair Graphene Nanoribbon for Sensing Dimethyl Disulphide</b>	
J.S. Phull, H. Kaur, M. Singh, B. Singh and H. Sarangal.....	17
<b>Analysis of Thermal Performance of Polylactic Acid Nanocomposite by Using T-History Method</b>	
D. Banjare, R. Chouhan, J. Verma, R. Dewangan, G. Sahu and C.P. Dewangan .....	29
<b>Chapter 2: Materials Processing and Forming</b>	
<b>Recent Advances in Machining of Composite Materials by Electrical Discharge Machine</b>	
D. Kumar and R.K. Porwal.....	45
<b>Study the Effect of Fluxes on Weld Penetration during Activated TIG Welding of SS304</b>	
V. Sancheti, D. Patel and N. Ghetiya.....	63
<b>Role and Effect of Friction Stir Welding Tool pin Profiles on Tensile Characteristics of Dissimilar Al6061-Al2014 Welded Joints</b>	
B.K.B. Nadikudi.....	71
<b>Experimental Investigation for Minimization of Casting Defects Using Taguchi Method</b>	
A.P. Edlabadkar, S.S. Chaudhari and C. Mankar .....	77
<b>Chapter 3: Production Equipment and Mechanics</b>	
<b>Comparative Finite Element Analysis of a Novel Robot Chassis Using Structural Steel and Aluminium Alloy Materials</b>	
A. Rajurkar, K. Dangra, A. Deshpande, M. Gosavi, T. Phadtare and G. Gambhire .....	87
<b>Keyword Index</b> .....	101
<b>Author Index</b> .....	103