

Composite Materials and Advanced Materials Research

Selected peer-reviewed extended papers abstracts
of which were presented at the
7th International Conference on Composite
Materials and Material Engineering (ICCMME),
and the 12th International Conference on Advanced
Materials Research (ICAMR)

Aggregated Book

Edited by

Prof. Jong Hak Kim and Prof. Alan Lau

■
■ *Scientific.Net* ■

Copyright © 2022 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 9 of
Scientific Books Collection
ISBN 978-3-0357-1637-5

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

Printed with permission by
Curran Associates Inc. (2023)

CURRAN ASSOCIATES INC.
proceedings
.com

Additional copies of this
publication are available from:

Web: www.proceedings.com/68397.html

Table of Contents

Preface	v
Conference Committees	vi
Chapter 1: Materials for Biomedical Application	
Effect of Heat-Treatment Temperature on Radial Force of Atrial Depressurized Device Made from Shape Memory Alloys for Heart Failure Treatment	
N. Worawichitraphan, T. Yingchoncharoen, K. Meemook and A. Khantachawana	3
Denture Base PMMA Resin Containing Vanillin Inhibits Biofilm Formation of Bacteria Associated with Malodor	
S. Thaweboon, B. Thaweboon and C. Sopavanit.....	9
Biological Characterization of Different Samples of Chitin and Chitosan for their Application on Biomedical Field	
H. Canahua-Loza, P. Huanca-Zuñiga, B. Chavez, L. Canahua-Sosa, J. Almirón and D. Tupayachy-Quispe.....	15
Development of Orthodontic Resin with Antibacterial Property against Biofilm of Respiratory Pathogens	
S. Thaweboon, B. Thaweboon and C. Sopavanit.....	21
Chapter 2: Composites and Polymers	
Study of Dry Sliding Wear Behaviour of Silicon Carbide Filled Glass-Jute Hybrid Epoxy Composite Using RSM and Taguchi Techniques	
D. Sarkar, D.R. Chetry, R. Kumar, P. Borah, S. Samanta and N. Teyi	29
Simulation Analysis of Polyphenylene Sulfide Composite for Two-Folded Clip Panel by Using Aniform Software	
H. Hasanudin, N. Razali, A.H. Nurfaizey, M.H. Zin, S.H.S.M. Fadzullah and S.A. Rashidi.....	35
Wavy Trailing Edge Feasibility for Aircraft Engine Composite Fan Blade	
P. Jadhav	43
Free Vibration Analysis of Anisotropic Composite Materials of a Fixed-Wing	
N. Alhazmi	49
Measuring the Capacity of a Proposed Vibration Isolator Using Viscoelastic Sheets	
P. Townsend, I. Mendoza, D. Townsend and D. Townsend.....	55
Vanillin-Based Polyimine Vitrimer: Self-Healing and Physical Properties	
Y.F. Shih, J.Y. Xu and Y.H. Chen.....	61
Preparation of Vanillin Derivatives Based on Schiff Base Reaction	
Y.F. Shih, N.Y. Wu and Y.H. Chen.....	67

Chapter 3: Functional and Special Materials

TiO₂- Based Coating for Improving the Quality of Prints on Papers with Supplementary Barley Pulp

I. Plazonić, I. Bates, V.R. Seleš, I. Majnarić, M. Rudolf and K.P. Maretić..... 75

Effective Medium Analysis of Stacked-Nanoparticles Array's Optical Responses

M.T. Pambudi, P. Wulandari and A. Iskandar 81

Chapter 4: Membranes and Membrane Technologies

Enhancement of Antiwetting Properties of Polystyrene Nanofibrous Membrane by Doping with Graphene Nanoplatelets

A. Elrasheedy, M.F. El Kady, M. Bassyouni, T. Yoshitake and A.H. El Shazly 89

Effect of Different Parameters on Lithium Ion Transfer through PVDF-UIO-66 Cation Selective Hybrid Membrane via Electrodialysis Technique

A.U. Zeid, A.H. El Shazly and M.F. El Kady..... 95

Field-Induced Viscoelastic and Creep and Recovery Behavior of Water-Based MR Fluids Using Bentonite and Oleic Acid as an Additive

C.S. Maurya and C. Sarkar 101

Chapter 5: Materials Forming and Additive Manufacturing Technologies

Chaining of Compaction with Flow Simulations to Predict the Filling Behavior in Resin Transfer Molding Processes

D. Bublitz, A. Thalhamer, J. Schwöller, D. Faron, D. Colin and K. Drechsler..... 109

Optimization of Continuous Fiber Path Planning for an Additively Manufactured Open-Hole Specimen

A. Matschinski, D. Bublitz, T. Ihring, C.Y. Chen, S. Grandl, K. Schneider, G. Pearce and K. Drechsler 115

Chapter 6: Materials and Technologies in Construction

Highlights of Earned Value Analysis in Construction Projects

B.B.F.d. Costa, J.G. Farias, M. Najjar, M. Amario, C.A.P. Soares and A.N. Haddad 123

Sustainable Concrete with Coconut Fibers to Improve its Mechanical Characteristics in Buildings

M.M.J. Anderson, S.R. Ruthenford Smith and C.C.E. Carmen 131

Mechanical Behavior of Low Plasticity Clay Soil Stabilized with Rice Husk Ash

B. Jayo and G. Duran 139

Self-Sensing Capabilities of Cement Pastes Treated by Direct Current Curing Technique

M. Al-Qaralleh 145

Strength Development of LC3 Concrete Containing Grade 100 Ground Granulated Blast-Furnace Slag (GGBFS)

I. Orynassarov, A. Kissambinova, S. Sandybay, A. Bazarbekova, D. Syzdykov, Z. Mamesh and C.S. Shon..... 151

Settlement Comparison Research in Response to Gravel Columns with Concrete under a Distributed Vertical Dynamic Load

V. Cardenas, N. Agreda and J. Vasquez 157