

International Conference on Emerging Materials for Technological Applications

Selected peer-reviewed extended articles
based on abstracts presented at the
International Conference on Emerging Materials
for Technological Applications (ICEMTA-2022)

Aggregated Book

Edited by

**Prof. Sabu Thomas, Dr. CH. V. V. Ramana,
Dr. Santhosh Kumar Alla and Dr. R. Hanumantha Rao**



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 99 of
Scientific Books Collection
ISBN 978-3-0364-0154-6

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/71587.html

Table of Contents

Preface

v

Chapter 1: Structural Metals

Development of Graphitic 2024 Al Alloy by Mechanical Alloying

R.B. Singh, S. Kumar and K. Sahu 3

Investigation of Mechanical Properties in Ductile Iron with Alloyed and Unalloyed at Time and Temperature on Austempering

T.L. Rao, V. Lakshminarayana and Y.B. Shankar Rao 11

Chapter 2: Functional Composites and Ceramics

Synthesis and Characterization of Shape-Stable Bio-Char Composite PCM Material for Solar Desalination Application

K. Ravikumar, G.V. Nagesh, R. Venkateswara Rao, A. Saikiran, R. Swapna, T.G. Naidu and S. Hariprasad 21

Polythiophene/ Reduced Graphene Oxide Nanocomposites for Humidity Sensing Application

M.M. Kumar, P.K. Patil, K. Lakshmi, S. Reddy, S. Manjunatha, Y.T. Ravikiran and M. Revanasiddappa 31

Effect of Platinum Oxide in Enhancing EMI Shielding Effectiveness of Silver Doped Polyaniline-Platinum Oxide Composites

K.R. Hemantha Kumar, M. Revanasiddappa, V. Srinivasa Murthy and Y.T. Ravikiran 37

Dielectric and Humidity Sensing Properties in Iron Nanoparticle Substituted Polyaniline Composite

D. Patil, Y.B.S. Rao, N.S. Kumari, M. Revanasiddappa, M.M. Kumar, M. Prashantkumar, K. Vinay, Y.T. Ravikiran and D. Devika 47

Dielectric Response and Electric Modulus Studies of Polythiophene/Reduced Graphene Oxide Nanocomposites

M.M. Kumar, G.V. Nagesh, S. Deepthi, Y.T. Ravikiran, D. Patil, M. Revanasiddappa and S. Manjunath 55

Exploring the Preparation of Calcium-Doped Zinc Aluminate Ceramic Nanoparticles for Microstrip Patch Antenna Fabrication

S. Didde, R.S. Dubey, S.K. Panda and G.S. Babu 61

Chapter 3: Chemical Research and Assessment

Effect of Plant Leaf Mediated Natural Extracts as Natural Stabilizers on Synthesis and Characterization of Nano-Hydroxyapatite Powders

V. Madhusudhan Rao, S. Nimishakavi, A.K. Singh and T.N. Aishwarya 75

Synthesis and Photoluminescence Properties of Aryloxyethyl Coumarin Dyes: An Experimental and Computational Study

P.K. Ingalgondi, O. Patil, S.R. Inamdar, T. Sankarappa and S.M. Hanagodimath 87

New Insight into CO₂ Sequestration: A Blended Approach of Artificial Intelligence and Machine Learning Tools	
G. Gaddamanugu and K. Paku.....	101
Detection of Precious Trace Metallic Elements in Charnockite Composition by PIXE Technique	
A.V.S. Satyanarayana, M. Jagannadha Rao and T.V.S.P.V.S. Guru.....	111
 Keyword Index	117
Author Index	119