



**Northumbria  
University**  
NEWCASTLE



## Preface

### 15<sup>th</sup> International Conference on Materials Processing and Characterization ICMPC 2023

*September 05-08, 2023, at Northumbria University Newcastle, England*

ICMPC 2023 is the 15<sup>th</sup> version organized at Northumbria University Newcastle, England from 05-08 September 2023

ICMPC 2023 focused primarily the role of manufacturing in the country's economy and societal development which has long been established through their wealth creation activities. To deepen and broaden our knowledge of materials and to increase innovation and responsiveness to ever-increasing international needs, more in-depth studies of functionally graded materials/ tailor-made materials and their sustainability are needed at present. The objective of this conference is to bring together experts from academic institutions, industries and research organizations and professional engineers for sharing of knowledge, expertise and experience in the emerging trends related to advanced materials processing, and characterization.

#### *Topics/Tracks of the Conference:*

- Material Characterization (Room and at Elevated Temperatures)
- Sustainable materials
- Green Manufacturing
- Shape memory alloys
- Environmental aspects of traditional materials
- High strain rate deformation of Materials
- Bio-materials
- Advanced machining processes
- Advanced metal forming, bending, welding & casting techniques
- Alternate materials /material substitution
- Applications FEA
- Composite and Polymer Manufacturing
- Composites, Intermetallics
- Fabrication Process of Nano materials and Nano devices
- Functionally Graded Materials
- Future generation materials
- Electric Transportation and Vehicle Systems
- Power Electronic Systems and Energy Efficient Drives
- Communication Protocols and Systems used in Electric Transportation and Smart Grids
- Modelling, Simulation and Control of EV Systems
- Wired and Wireless Charging Systems

- Charging Infrastructure, Standards and Guidelines
- Machine Learning and IOT Applicable to Sustainable Energy and Electric Transportation
- New Battery Technologies
- Renewable Energy Systems, Smart Grids, Micro grids and HVDC Transmission
- Additive and lean Manufacturing Technologies
- Product Development: Effective Strategies for Moving from Engineering to Production

ICMPC 2023 followed double blind review with minimum of two reviewers for each paper submitted. Care has been taken for plagiarism of all the article. Licensed plagiarism tool (Turnitin) has been used and ensured each article has less than 20% plagiarism

The ICMPC 2023 peer-reviewed and accepted papers have been edited as conference proceedings to be published with E3S Web of Conferences (Open Access proceedings in Environment, Energy and Earth Sciences), which is indexed by Scopus, CPCI (Web of Science), Google Scholar, CAS, DOAJ, EBSCO, ProQuest and Ei Compendex.

As an editor of this special issue of the ICMPC 2023 proceedings, I wish to express our sincere gratitude to the plenary speakers, authors, participants, reviewers, program and technical committee members, and organizing members, who have contributed to organization of the conference and publication of this special issue.

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*Editor of ICMPC 2023 Proceedings*

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