

Preface

Current generation is ruled by a variety of materials. Materials are fundamental to our civilization. We have come a long way into innovating new materials for all kind of applications. One cannot single out a specific material for an application. It is always a combination of materials with diverse properties that come together to address the need. Further, rapid growth in any sector may it be structural, energy, electronic, aerospace materials is limited by the available materials. It is hence important for material scientists to develop a holistic understanding of the materials domain, even if not in depth. Awareness of the properties of materials under various conditions is a must. Material properties limit material performance. FiMPART is an initiative to promote such awareness on the whole gamut of materials, their properties, ways of testing, and their performance and mitigation methods in case of issues.

FiMPART is first of its kind to cover all major areas of materials research under one common platform. The meeting and discussions in this conference are targeted at enabling innovation. FiMPART will cover all aspects of materials research, processing, fabrication, structure/property evaluation, applications of ferrous, non-ferrous, ceramic, polymeric materials, and composites including biomaterials, materials for energy, fuel cells/hydrogen storage technologies, batteries, super-capacitors, nanomaterials for energy and structural applications, aerospace structural metallic materials, bulk metallic glasses, and other advanced materials.

This materials conference series *Frontiers in Materials Processing, Applications, Research and Technology* has attracted research contributions from 47 countries across 19 thematic symposia.

Several conferences hold focused meetings which are very essential to further the in-depth knowledge into the area concerned. However, every sector demands use of multiple materials put together after thorough understanding of the cross-functional capabilities. FiMPART is an initiative to allow in-depth deliberations under focused symposia as also to enable interdisciplinary knowledge sharing.

The presenting authors are not in obligation to submit their manuscripts for publications. However, from the 200 manuscripts received and peer reviewed, the select few that emerged through the screening process are published here as a book.

The editors encourage readers to consider this publication for cross-breeding knowledge across materials domains.

The editors and the organizers of FiMPART are extremely grateful to all the sponsors of FiMPART 2015, especially Carl Zeiss, without whom the conference that led to this book would not have been possible.

Coimbatore, India
Bordeaux, France
Bangalore, India

Prof. M. Muruganant
Dr. Ali Chirazi
Dr. Baldev Raj

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Muruganant, M.; Ali, C.; Raj, B. (Eds.)

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