

# Preface

2013 3rd International Conference on Materials Engineering for Advanced Technologies (ICMEAT 2013) will be held on December 31, 2013-January 2, 2014, Brisbane Australia.

Materials science is an interdisciplinary field applying the properties of matter to various areas of science and engineering. This scientific field investigates the relationship between the structure of materials at atomic or molecular scales and their macroscopic properties. It incorporates elements of applied physics and chemistry. With significant media attention focused on nanoscience and nanotechnology in recent years, materials science has been propelled to the forefront at many universities. It is also an important part of forensic engineering and failure analysis. Materials science also deals with fundamental properties and characteristics of materials.

The material of choice of a given era is often a defining point. Phrases such as Stone Age, Bronze Age, and Steel Age are good examples. Originally deriving from the manufacture of ceramics and its putative derivative metallurgy, materials science is one of the oldest forms of engineering and applied science. Modern materials science evolved directly from metallurgy, which itself evolved from mining and (likely) ceramics and the use of fire. A major breakthrough in the understanding of materials occurred in the late 19th century, when the American scientist Josiah Willard Gibbs demonstrated that the thermodynamic properties related to atomic structure in various phases are related to the physical properties of a material.

The goal of this conference is to bring together the researchers from academia and industry as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of Materials Engineering for Advanced Technologies. Much of the credit of the success of the conference is due to topic coordinators who have devoted their expertise and experience in promoting and in general co-ordination of the activities for the organization and operation of the conference. The coordinators of four topics have devoted a considerable time and energy in soliciting papers from relevant researchers for presentation at the conference.

The selected, peer reviewed paper from ICMEAT 2013 focus on four topics: (1) Applied Materials and Processing Technologies, (2) Advanced Engineering Solutions in Industry. We expect that the conference and its publications will be a trigger for further related research and technology improvements in this importance subject.

The success of this truly international symposium has attributed to the efforts of the organizing committee. We also want to thank all the invited speakers, oral and poster presenters, reviewers of manuscripts, participants of the symposium who have contributed to the success of this international symposium.

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