Preface

2014 3rd International Conference on Chemical, Mechanical and Materials Engineering (CMME 2014), will be held on October 24-25, 2014, Riga, Latvia.

2013 2nd International Conference on Chemical, Mechanical and Materials Engineering (CMME 2013) has been held on January 20-21, 2013, Melbourne, Australia, which has been indexed by EI Compendex after three months.

CMME 2014 will be the most comprehensive conference focused on the various aspects of advances in Chemical, Mechanical and Materials Engineering. This Conference provides a chance for academic and industry professionals to discuss recent progress in the area of Chemical, Mechanical and Materials Engineering.

Chemical engineering is the branch of engineering that applies the physical sciences (e.g., chemistry and physics) and/or life sciences (e.g., biology, microbiology and biochemistry) together with mathematics and economics to processes that convert raw materials or chemicals into more useful or valuable forms. In addition, modern chemical engineers are also concerned with pioneering valuable materials and related techniques – which are often essential to related fields such as nanotechnology, fuel cells and biomedical engineering. Within chemical engineering, two broad subgroups include 1) design, manufacture, and operation of plants and machinery in industrial chemical and related processes ("chemical process engineers"); and 2) development of new or adapted substances for products ranging from foods and beverages to cosmetics to cleaners to pharmaceutical ingredients, among many other products ("chemical product engineers").

Mechanical engineering is a discipline of engineering that applies the principles of engineering, physics and materials science for analysis, design, manufacturing, and maintenance of mechanical systems. It is the branch of engineering that involves the production and usage of heat and mechanical power for the design, production, and operation of machines and tools. It is one of the oldest and broadest engineering disciplines. The engineering field requires an understanding of core concepts including mechanics, kinematics, thermodynamics, materials science, structural analysis, and electricity. Mechanical engineers use these core principles along with tools like computer-aided engineering and product lifecycle management to design and analyze manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircraft, watercraft, robotics, medical devices, and others.

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.

We would like to thank the organization staff, the members of the program committees and reviewers.

They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. Special thanks go to the organizing committee, program committee members, and TTP Publisher. Finally, the conference would not have been a success without the support of the authors. We would like to acknowledge and thank all authors who submitted their research work to the conference, whether the submission made it to the proceedings or not.

Committee