

## Preface

Materials science is an interdisciplinary field involving the properties of matter and its applications to various areas of science and engineering; it investigates the relationship between the structure of materials at atomic or molecular scales and their macroscopic properties. Papers in this volume were peer-reviewed and selected from “Materials Science and Engineering Applications” forum which to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in materials science and engineering applications. It also provides opportunities for the delegates to exchange new ideas and application experiences face to face, to establish business or research relations and to find global partners for future collaboration and will create an atmosphere in which young talents get the opportunity to mix with professors and industries. The proceeding provides an international medium for the publication of theoretical and experimental studies related to the load-bearing capacity of materials as influenced by their basic properties, processing history, and micro-structure and operating environment.

This proceeding was selected from 2012 the 2nd International Conference on Materials Science and Engineering Application (ICMSEA 2012), which was held in Xi'an, China from January 7-8, 2012. We received about 230 papers from 5 countries and regions, and more than 103 papers were accepted in this proceeding under strictly peer reviewing process. All the submitted papers in these proceedings have been peer reviewed by at least two reviewers drawn from the chairs of committees depending on the subject matter of the paper. Reviewing and initial selection were undertaken electronically. A joint committee meeting was held to resolve the final paper selection and a draft programme for the conference.