#### **Preface**

2014 5th International Conference on Manufacturing Science and Technology (ICMST 2014) was held in Sarawak, Malaysia on 7-8, June, 2014. The conference provides a platform to discuss Manufacturing Science and Technology etc. with participants from all over the world, both from academia and from industry. Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The present volumes collect accepted papers and represent an interesting output of this conference. This book covers these topics: Acoustics and Noise Control, Aerodynamics, Applied Mechanics, Automation, Mechatronics and Robotics, Automobiles, Automotive Engineering, Ballistics, Biomechanics, Biomedical Engineering, CAD/CAM/CIM, CFD, Composite and Smart Materials, Compressible Flows, Computational Mechanics, Computational Techniques, Dynamics and Vibration, Energy Engineering and Management, Engineering Materials, Fatigue and Fracture, Fluid Dynamics, Fluid Mechanics and Machinery, Fracture, Fuels and Combustion, General mechanics, Geomechanics, Health and Safety, Heat and Mass Transfer, HVAC, Instrumentation and Control, Internal Combustion Engines, Machinery and Machine Design, Manufacturing and Production Processes, Marine System Design, Material Engineering, Material Science and Processing, Mechanical Design, Mechanical Power Engineering, Mechatronics, MEMS and Nano Technology, Multibody Dynamics, Nanomaterial Engineering, New and Renewable Energy, Noise and Vibration, Noise Control, Non-destructive Evaluation, Nonlinear Dynamics, Oil and Gas Exploration, Operations Management, PC guided design and manufacture, Plasticity Mechanics, Pollution and Environmental Engineering, Precision mechanics, Mechatronics, Production Technology, Quality assurance and environment protection, Resistance and Propulsion, Robotic Automation and Control, Solid Mechanics, Structural Dynamics, System Dynamics and Simulation, Textile and Leather Technology, Transport Phenomena, Tribology, Turbulence and Vibrations.

This conference can only succeed as a team effort, so the editors want to thank the international scientific committee and the reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

Prof. Dr. Ashutosh Kumar Singh Department of Computer Application National Institute of Technology Kurukshetra, India

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