



## PREFACE

**The 10<sup>th</sup> International Conference on Manufacturing Science and Education – MSE 2021** was organized by the Industrial Engineering and Management Department and Industrial Machines and Equipment Department from Faculty of Engineering – Lucian Blaga University of Sibiu, Romania during **2 – 4 June, 2021**.

The conference website is located at <http://site.conferences.ulbsibiu.ro/mse/>.

The goal of MSE 2021 Conference was to bring together specialists from universities, institutions and companies to provide an opportunity for the exchange of knowledge and ideas regarding trends in new industrial revolution, to promote modern and innovating manufacturing processes and systems as well as modern educational methods used in technical universities.

Some raw numbers are as follows: **216** papers were received and **151** of them have been accepted to be presented at the conference. All the submitted papers were subjected to a rigorous peer review process, each paper being reviewed by minimum two members of the Reviewing Committee. The accepted papers works have been presented ON-LINE at MSE 2021 Conference and people from **16** countries have been involved as authors and co-authors.

Finally, we would like to thank all people who have been supportive to MSE 2021 Conference: the expert refers whose enormous work for assessing the papers is gratefully appreciated, the invited keynote speakers and those who serve as chairmen for their invaluable contribution, the authors themselves for contributing research papers without whose expert input there would have been no conference, the sponsor organizations for their financial sponsorship, the members of the International and Organizing Committee that have been extremely helpful in successfully organizing of the conference and last but not least, we would like to express our gratitude to MATEC team for its support in online publishing of MSE 2021 Proceedings.

We consider that the 10<sup>th</sup> International Conference on Manufacturing Science and Education – **MSE 2021** has been a stimulating and memorable conference that has generated numerous fruitful discussions and laid the foundations of new future collaborations.

Chairman of MSE 2021 Conference

Prof. Eng. Nicolae Florin COFARU, PhD.

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## **INVITED KEYNOTE SPEAKERS**

**Dorel BANABIC**

*Romanian Academy*

**Recent Developments in The Simulation and Modelling of Sheet Metal Forming Processes**

**Ian CAMPBELL**

*Loughborough University*

**How Design for Additive Manufacturing has Created New Product Design Opportunities**

**Anca DRĂGHICI**

*Politehnica University of Timișoara, Romania*

**Multimedia Competencies for University Staff to Empower Manufacturing Science Education**

**Nicolae BÂLC**

*Technical University of Cluj-Napoca, Romania*

**3D Printing Applications and Perspectives**

## **PARALLEL SESSIONS**

- SESSION 1** - Design, Manufacturing and Management of Machine Elements, Technological Equipment and Systems
- SESSION 2** - Management, Modelling and Monitoring of Manufacturing Processes
- SESSION 3** - Advanced Manufacturing Technologies
- SESSION 4** - Computer-aided technologies (CAD/CAM/CAE - CAx), Virtual Engineering and Reverse Engineering
- SESSION 5** - Quality Engineering and Management
- SESSION 6** - Transport Engineering and Road Vehicles, Traffic Management
- SESSION 7** - Management and Economic Engineering
- SESSION 8** - Mechanical Engineering, Mechatronics and Robotics
- SESSION 9** - Engineering in Oil and Gas Field, Environmental Engineering
- SESSION 10** - Safety and Health at Work
- SESSION 11** - Academic Education and Management

## **WORKSHOPS**

### **WORKPLACE SOCIAL INCLUSION, OCCUPATIONAL SAFETY AND ENVIRONMENTAL RISK ASSESSMENT**

Chairpersons: Diana Cocârță, Maria Cruz Lopez Escalante, Massimiliano Fabbicino, Lucian-Ionel Cioca