



# International

*Innovation in Knowledge Based and Intelligent  
Engineering Systems*



## INVITED SESSION SUMMARY

### Title of Session:

Lean practices for sustainable process-product design and management in the Industry 4.0 era

### Name, Title and Affiliation of Chair:

***Prof. Marco Bortolini, Ph.D.***

Associate Professor

Department of Industrial Engineering

Alma Mater Studiorum – University of Bologna, Italy

***Dr. Francesco Gabriele Galizia, Ph.D.***

Assistant Professor

Department of Industrial Engineering

Alma Mater Studiorum – University of Bologna, Italy

### Details of Session (including aim and scope):

Lean production principles and practices are widely accepted in industry since their first appearance in the early 1990s. Relevant features of lean systems include the strict integration of humans in the production process, a strong focus on the continuous improvement as well as on value adding activities to minimize waste. Its simplicity of applicability and up to 25 per cent higher productivity justify why Lean Production has become one of the most relevant production system configurations. Today, we are living the new paradigm called Industry 4.0. Driven by modern information and communication technologies (ICT), Industry 4.0 is a network approach where components and machines are becoming smart and a part of a standardized network based on the well proven internet standards.

This Invited Session is interested in attracting contributions dealing with the sustainable lean practices adoption and implementation for the process-product design and management, i.e., R&D, prototyping, engineering, manufacturing and assembly, in the upcoming Industry 4.0 era, exploiting mathematical models and methods, automation technologies, management techniques and approaches as well as industrial case studies and best practices from the field. Possible topics for this Invited Session include but are not limited to:

- Techniques, methods and standards for R&D, prototyping and engineering of new products and processes
- Design and management of sustainable manufacturing and assembly systems

- Lean tools for Industry 4.0
- Human-Automation interaction in production
- Patterns for sustainable smart products and factories
- Self-adaptive and self-learning production systems
- Just-in-Time approaches for production management and product reconfiguration
- Tools to enhance the Triple Bottom Line principles in smart industries

**Main Contributing Researchers / Research Centres (tentative, if known at this stage):**

Researchers and Professors from Bologna, Modena and Reggio Emilia, Padua and Trento Industrial Systems Engineering research groups;

Researchers and Professors from the Italian Academic Industrial Plant Association;

Researchers and Professors from Universities in partnership with Bologna University (tentative);

Researchers from Interdepartmental Centres for Industrial and Applied Research (tentative);

Managers and Practitioners from SMEs and large-scale industries.

**Website URL of Call for Papers (if any):**

Dedicate positions on:

<https://www.unibo.it/sitoweb/marco.bortolini3/en>

<https://www.unibo.it/sitoweb/francesco.galizia3/en>

<http://www.industrial-engineering.unibo.it/en>

and dedicated messages to researchers and practitioners mailing lists.

**Email & Contact Details:**

E-mail addresses: [marco.bortolini3@unibo.it](mailto:marco.bortolini3@unibo.it); [francesco.galizia3@unibo.it](mailto:francesco.galizia3@unibo.it)

Tel. +39 (0)51 2093414 +39 (0)51 2093405