RESEARCH CENTER FOR ENGINEERING AND MANAGEMENT OF INNOVATION

Contact details

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**Site**: www.resin.utcluj.ro

**Address**: 103-105 Muncii Av., Cluj-Napoca, Romania

**Faculty Department**: Faculty of Machine Building

**Design Engineering and Robotics Department**

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**Areas of expertise**

**Innovation in engineering**: disruptive and reverse innovation, directed evolution, blue design, methods and methodologies for complex design

**Innovation in management and economics**: smart specialization in peripheral zones, polycentric innovation, resilient economies, lean entrepreneurship, sustainable social entrepreneurship, cluster initiatives, assessment of intangibles, economic competitiveness, business model innovation, innovation assessment

**Smart technologies and applications in robotics and production**: smart units (sensors, actuators, etc.); plug-and-play fast reconfigurable smart control systems; intuitive human-machine interfaces; algorithms and solutions for intelligent robotics; IoT in production

**Team**


**Representative projects**

- **MARKET IT: Demonstrating the industrial validity and market feasibility of IT Tool to support SMEs in systematic innovation processes**, European FP7 Project Grant, (2012-2013)
- **TECH-IT-EASY, "IT Tool to Support SMEs in Systematic Innovation, Based on Consolidated Methodology and Innovation Knowledge Domain Structured through Specific Ontologies"**, European FP7 Project, (2009-2011)

**Innovation in management and economics**:


**Smart technologies and applications in robotics and production**:

- **“Smart Redesign of Clamp-hook Tool to Achieve a Mass Reduction with 70%”, CSt Industries B.V. Holland, (2013-2014)**
Significant results

The most representative publications of the past 5 years:

Smart technologies and applications in robotics and production:
1. Brad, Stelian; Murar, Mircea; Brad, Emilia. Design of smart connected manufacturing resources to enable changeability, reconfigurability and total-cost-of-ownership models in the factory-of-the-future INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH Volume: 56 Issue: 6 Pages: 2269-2291 Published: 2018

Innovation in engineering:

Innovation in management and economics:

Significant solutions:
1. business eXXplorer: expert system for assessing business excellence
2. qost eXXplorer: expert system for quality cost management
3. inovex: software platform for supporting knowledge management and process innovation (TRIZ-M; ARIZ-M)
4. MARKET-IT: web application of advanced web semantic technologies to support the innovation processes in SMEs
5. Pattern eXXplorer: expert system for optimizing box arrangements in robotic palletizing applications and sales support tool

Technologies:
SMART_R : smart units and reconfigurable controller with plug-and-play capability

International patents:

The offer addressed to the economic environment

Research & development
Development of software tools to implement methods of innovation and competitive engineering, expert systems in product innovation and process innovation
Product-service systems in software development and green design
Integrated innovation management systems, LCM and LCC
Information creation and management in industrial robotic systems
Smart units in manufacturing, building management, water management

Consulting
We provide various types of consulting services on innovation and competitiveness issues. They include innovation audits, intellectual property reviews, business reviews, technology reviews, competitiveness assessment, smart strategy development, process innovation, lean production, LCC, etc. Most of the consulting services are customized to requirements.

Training
Management of innovation and innovation management systems
Microeconomics of competitiveness (delivered in affil. with Harvard Business School)
Product manager (both the training and assessment of product managers are based on the corresponding Romanian occupational standard). Design for innovation and competitiveness;