



## 18th IFAC Symposium on Information Control Problems in Manufacturing (INCOM 2024)

### **Invited Session: New developments in the biological transformation in manufacturing**

Organizers from the HUN-REN Institute for Computer Science and Control (Hungary):

#### **Invited session chairs**

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... Under discussion		

#### **Abstract:**

The biological transformation in manufacturing (biologicalisation) is considered as one of those approaches, which partly based on the development of cyber-physical production systems, can give promising answers to important questions, i.e. how to achieve competitiveness and sustainability at the same time, or how to balance between complexity, robustness and efficiency in manufacturing.

The invited session aims to investigate new trends and challenges in biologicalisation from a multidisciplinary perspective.

Original research papers, methodological papers, case studies, and short communications on the theme of this special session are welcomed.

Topics may include but are not limited to:

- Bio-based design methodologies for products, machine tools, and processes
- Bio-inspired robotics and assembly
- Bio-inspired design and control of manufacturing systems, supply chains and organisations
- Bio-integration technology solutions for sustainable manufacturing
- Application of biologically-inspired artificial intelligence and machine learning techniques in production and logistics
- Production of biological materials (e.g. cells, tissues and organs)
- Challenges in co-existence and co-evolution of physical, ICT, and biological ingredients in complex systems
- Structured approaches for bi-directional mapping the biological phenomena and the challenges in manufacturing
- Ways towards living manufacturing systems
- Ethics and biologicalisation in manufacturing

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All papers must be submitted through [IFAC PaperPlaza Conference Manuscript Management System](#)

INVITATION CODE: TBD

Draft papers reporting original research (limited to 6 pages in IFAC format) are welcome. When you submit your paper to the IFAC system, you will be required the invitation code in order to associate your paper to the invited track: <https://ifac.papercept.net> IMPORTANT DATES:

Draft papers submission deadline: 31.01.2024 Reviewing papers: 15.03.2024 Final papers submission deadline: 15.04.2024 Early registration deadline: 30.04.2024.

Conference website: <https://www.incom2024.org>.

Accepted papers will be published open access in Elsevier's IFAC-PapersOnLine. Post-conference special issues for extended versions of accepted papers are planned in high-ranked journals.