



For more information please see the conference website: [www.bms2021.ugent.be](http://www.bms2021.ugent.be)

For information on travelling, visa, sponsorship, please contact: [bms2021@ugent.be](mailto:bms2021@ugent.be)

#### **IFAC Main Sponsoring Technical Committee**

TC 8.2 – Biological and Medical Systems

#### **IFAC Co-Sponsoring Technical Committees**

TC 1.1 – Modelling, Identification and Signal Processing

TC 1.2 – Adaptive and Learning Systems

TC 2.1 – Control Design

TC 4.3 – Robotics

TC 8.4 – Biosystems and Bioprocesses

#### **Organizing Committee:**

NOC Chair: Clara Ionescu, Ghent University, Belgium

IPC Chair: H.C. Steffen Leonhardt, RWTH Aachen, Germany

IPC Co-Chair: Thomas Desaive, University of Liege, Belgium

IPC Vice Chair Industry: Iven Mareels, University of

Melbourne, Bionic Ear Institute, Australia

Proceedings Editor: Balázs Benyó, Budapest University of Technology and Economics, Hungary

NOC Members: Isabela Birs, Annelies Coene, Dana Copot, Denis Dochain, Eveline Volcke.

NOC Co-Chair: Dirk Verellen, Gasthuisberg Hospital Antwerp and Iridium Cancer Network, Belgium

NOC Industry Vice Chairs: Ljiljana Platisa, IMEC-UGent and Dimiter Prodanov IMEC-KULeuven, Belgium

Social Media Chair: Maria Ghita ([maria.ghita@ugent.be](mailto:maria.ghita@ugent.be))

Virtual Platform Chair: Cosmin Copot

([cosmin.copot@uantwerpen.be](mailto:cosmin.copot@uantwerpen.be))

Sponsoring Chair: Mihaela Ghita ([Mihaela.ghita@ugent.be](mailto:Mihaela.ghita@ugent.be))

#### **Important Dates: Paper Submission site OPEN**

Open Invited Track Proposals: 01 December 2020

Draft Paper Submission: 30 April 2021

Paper Review Decision: 14 June 2021

Final Paper: 05 July 2021

#### **Fixed Flatline Registration Fee** (will not change):

300 EUR (allows one paper upload)

Registration Deadline: 30 June 2021

Papercept:

<http://ifac.papercept.net/conferences/scripts/start.pl>

#### **Event type: physical meeting (with hybrid facilities)**

**Scope:** We are confident that by conference time the pandemic context is settled to an operational mode to allow physical meeting of our event. As a backup plan, however, we also enable hybrid participation to foresee difficulties in visa handling, travelling cost limitations or unforeseen limitations.

We encourage participants to cross-fertilize and endorse the interdisciplinarity of this event. Healthcare systems, biological systems, pharmaceutical systems and everything stemming from these are welcomed topics to our 11<sup>th</sup> IFAC Symposium on Biological and Medical Systems (BMS2021), organized in Ghent, Belgium, through 19-22 September 2021 as a physical event with hybrid option.

Experimental, clinical and feasibility studies are particularly welcome contributions. The symposium covers all aspects of biomedicine, physiology, biology, pharmaceutical and epidemiological problems interconnected through multidisciplinary with systems engineering.

**We kindly invite you to propose Open Invited Tracks, disseminate the call of our event to your peer network and warmly looking forward to welcome you in Ghent, Belgium.**

**Plenary Lectures:** see website updates

**Special Issues:** There will be several special issues featuring selected articles from BMS2021. See conference website for information upon conditions, deadlines, topics, and reduced fees for open access publication.

#### **Benchmark Challenge Competition**

A competition for control of anesthetic and hemodynamic states in a multivariable simulated patient model will be released in Matlab/Simulink by end December 2020. See conference website for updates and OIT code.

The symposium will address the latest **progress and challenges** posed in all themes of technical committees:

- model formulation, experiment design, identification and validation, biosignal analysis and interpretation,
- advances in sensing and signal processing,
- tracer kinetic modelling from imaging systems,
- biomedical system approximations
- decision support systems and feedback control
- robotics, devices and sensors
- biological systems and controls
- pharmaceutical processes
- vaccine/drug manufacturing and quality control
- artificial intelligence methods for healthcare
- bionic engineering and biomaterials

**Application areas** may include, but not limited to:

- cellular, metabolic, cardiovascular, neurosystems,
- healthcare and drug delivery management, disease control, critical care, pandemic response
- fractal pharmacokinetics
- decision support systems for the control of physiological and clinical variables,
- biomedical imaging systems,
- medical information systems
- surgical robotics and medical nano-robotics
- control of voluntary movements, respiration, locomotion
- rehabilitation engineering and robotics,
- kinetic modelling and control of biological systems, artificial organs and biomechanical systems,
- continuous production optimization in pharmaceutical industry, vaccine/drug on demand production
- targeted molecular therapies
- artificial intelligence applied to healthcare

#### IFAC Young Author Award

In order to stimulate the involvement of young scientists and engineers in IFAC, as well as to recognize top-level contributions of the younger generation in our field and to support their careers, IFAC presents the Young Author Award. Eligibility criteria is to have the PhD-student status of the first and presenting author, at the time of paper submission.

Proceedings will be delivered electronically – upon submission to proceeding editor, will be published by IFACPapersOnLine, indexed Scopus, Web of Science

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