## IMSmC2021

## **Topic packages**

## Recommended but not limited

- General Mechatronics
  - Mechatronics in Industry
  - Mechatronics in Manufacturing
  - Mechatronics Education
  - o Mechatronic System Design
  - Mechatronics in Forestry and Agriculture
  - Sensors, Drivers and Actuators used in Mechatronic Systems
  - o Industrial Wired- and Wireless Communication in Mechatronic
  - o Industry 4.0 (Cloud Technology, IoT, PLC Networks)
- Mechatronics in vehicle engineering
  - EV, HEV Vehicles (architectures, principles of operations, classifications, control)
  - Most Modern Sensors and Actuators Used in Field Vehicles (ECU, ABS, TCR, ... modules used in vehicles)
  - o Vehicle Communication's Networks and Methods (V2V, ..., V2X)
  - Mechatronics in Logistics
  - Mechatronics in Aeronautics
  - Mechatronics of Maritime and River Vehicles (e.g.: most modern navigation's methods)
  - Mechatronics in Aeronautics
- Bio-, Micro-, and Nano-mechatronic Systems
  - o Biometric sensors used in vehicle engineering
  - o Bionics, embodied robotics
  - o Brain interfaces
  - o Micro-Mechatronic Systems
  - Nano-Mechatronic Systems
  - o Micro- and Nano-mechatronic Systems used in Health Industry
- Intelligent mechatronic Systems
  - Fuzzy Based Control Systems in Mechatronic
  - Neural Network Based Control Systems (CNN, RNN)
  - Neuro-Fuzzy Systems Used in Mechatronics (FCM, BIOFAM)
- Measurement, Signal Processing, Mechatronic Control Systems & Modelling
  - Controlled Mechanical Systems
  - o Control Devices used in Mechatronic Systems
  - Advanced Control Systems used in Mechatronics
  - Physical Systems Modelling
- Mechatronics for Environmental Sustainability
- Material Science for Mechatronic Systems