

Modelling and analysis of MEMS and NEMS

Organisers:

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The mini-symposium is aimed at gathering together scientists working in various aspects of modelling and analysis of Micro-Electro-Mechanical-Systems (MEMS) and Nano-Electro-Mechanical-Systems (NEMS), and to advance the state of the art in the design, characterization, and control of Micro and Nano systems.

Original contributions are solicited on scientific and engineering advances of MEMS and NEMS sensors and actuators. Theoretical, numerical and experimental works are welcome, including papers developed with a multi-disciplinary approach.

Specifically, contributions that address any of the following areas are sought:

- Modeling and Model Validation of static and dynamic behaviour
- Multiphysics behaviour and multiphysics coupling, including fluid solid interaction
- Damping phenomena
- Measurement techniques and uncertainty quantification
- Device characterization and system identification
- Control
- Optimization of static and dynamic behaviour
- Stiction, contact dynamics, non smooth dynamics
- Nonlinear phenomena, such as self excitation, nonlinear interaction, etc.

Application oriented papers are also encouraged, including but not limited to:

- Accelerometers and gyroscopes
- Mass and gas sensors
- Atomic force microscopes
- Electrostatic and electromagnetic actuators
- IF and RF filters switches
- Micro-mirrors and micro-scanners
- Microphones and micro-pumps
- Carbon-Nano-Tube (CNT) based devices
- Energy harvesting devices