

Synoptic Program

	Tuesday (3/6)	Wednesday (4/6)	Thursday (5/6)	Friday (6/6)
	Introduction to MEMS	Inertial Sensors	Piezoelectric Devices	Advanced Simulation in MEMS
09:00-9:30	Welcome			
09:30-10:00	Murata MEMS technologies (T. Keski-Heikkilä - M. Kautto)	Mechanics of MEMS accelerometers (Claudia Comi)	Piezoelectric Microacoustic Metamaterials for Advanced Sensing and Communication at Radiofrequencies (Cristian Cassella)	Nonlinearities in MEMS (Attilio Frangi)
10:00-10:30				
10:30-11:00	coffee break	coffee break	coffee break	coffee break
11:00-11:30	Mechanics of Microsystems (Valentina Zega)	Electronic interfaces and control for MEMS accelerometers (Giacomo Langfelder)	Design and CMOS Integration of Piezoelectric Micromachined Ultrasonic Transducers (PMUTs): From Fundamentals to Applications (Nuria Barniol)	Lumped-Element Modelling and Equivalent Circuits in Microsystems (Vittorio Ferrari)
11:30-12:00				
12:00-12:30	Lunch break			
12:30-13:30	Lunch break			
13:30-14:00	Lightning round of attendees (1 slide, 2 min. 30 sec. each)	MEMS gyroscopes: mechanical design and modelling (Valentina Zega)	Micromirrors for Laser Beam Scanning applications (Roberto Carminati)	Advanced modeling of electrostatic actuators, with application to frequency tuning of resonators (David Elata)
14:00-14:30				
14:30-15:00	M&NEMS technology: process, integration and applications (Andrea Buffoli)	Electronic interfaces and control for MEMS gyroscopes (Giacomo Langfelder)	Position control of MEMS micromirrors for high-resolution displays: challenges and existing solutions (Paolo Frigerio)	coffee break
15:00-15:30				Final test
15:30-16:00	coffee break	coffee break		
16:00-16:30	coffee break	TCISS and SC activities		
16:30-17:00	MEMS fabrication processes and integration of functional materials (Federico Maspero)	Piezoelectric MEMS speakers for in-ear applications (Alberto Corigliano)		
17:00-17:30		Unveiling piezo-mems dynamics with interferometric eyes (Sabina Merlo)		
17:30-18:00	Welcome cocktail	Tdk's sensors solutions: improving lives through innovation (Carmine Iascone)		
18:00-18:30				
18:30-19:00				
19:00-19:30				
19:30-20:00				
20:00-20:30				
20:30-21:00				
21:00-21:30				
21:30-22:00				

Tuesday June 3, 2025
Introduction to MEMS

9:00-9:30 *Welcome*

9:30-10:30 *Murata MEMS technologies*
T. Keski-Heikkita, M. Kautto
Murata, Vantaa, Finland

Coffee Break

11:00-12:00 *Mechanics of microsystems*
Valentina Zega
Politecnico di Milano, Milano, Italy

Lunch

13:30-15:00 *Lightning round of attendees*
(1 slide, 2 minutes 30 seconds each)

15:00-16:00 *M&NEMS technology: process, integration and applications*
Andrea Buffoli
INGage, Grenoble, France

Coffee Break

16:30-17:30 *MEMS fabrication processes and integration of functional*
Federico Maspero
Politecnico di Milano, Milano, Italy

Welcome Cocktail

Wednesday June 4, 2025

Inertial Sensors

9:30-10:30 ***Mechanics of MEMS accelerometers***

Claudia Comi

Politecnico di Milano, Milano, Italy

Coffee Break

11:00-12:00 ***Electronic interfaces and control for MEMS accelerometers***

Giacomo Langfelder

Politecnico di Milano, Milano, Italy

Lunch

13:30-14:30 ***MEMS gyroscopes: mechanical design and modelling***

Valentina Zega

Politecnico di Milano, Milano, Italy

14:30-15:30 ***Electronic interfaces and control for MEMS gyroscopes***

Giacomo Langfelder

Politecnico di Milano, Milano, Italy

Coffee Break

16:00-16:30 ***TCISS and SC activities***

16:30-19:00 ***Team work: Consumer Inertial Sensors – High Tech MEMS in Your Hands***

Leonardo Gaffuri Pagani, Dusan Radovic, Francesco Sechi

Bosch Sensortec, Germany

Thursday June 5, 2025

Piezoelectric Devices

9:30-10:30 ***Piezoelectric Microacoustic Metamaterials for Advanced Sensing and Communication at Radiofrequencies***

Cristian Cassella

Northeastern University, Boston, USA

Coffee Break

11:00-12:00 ***Design and CMOS Integration of Piezoelectric Micromachined Ultrasonic Transducers (PMUTs): From Fundamentals to Applications***

Nuria Barniol

Universitat Autònoma de Barcelona, Spain

Lunch

13:30-14:30 ***Micromirrors for Laser Beam Scanning applications***

Roberto Carminati

STMicroelectronics, Italy

14:30-15:30 ***Raster-scanning projection based on MEMS micromirrors: challenges of fully-digital closed-loop control***

Paolo Frigerio

Politecnico di Milano, Milano, Italy

Coffee Break

16:00-17:00 ***Piezoelectric MEMS speakers for in-ear applications***

Alberto Corigliano

Politecnico di Milano, Milano, Italy

17:00-18:00 ***Unveiling piezo-mems dynamics with interferometric eyes***

Sabina Merlo

Università di Pavia, Pavia, Italy

18:00-19:00 ***Tdk's sensors solutions: improving lives through innovation***

Carmine Iascone

TDK - Invensense, Milano, Italy

Social Dinner

Friday June 6, 2025
Advanced Simulation in MEMS

09:30-10:30 ***Nonlinearities in MEMS***

Attilio Frangj

Politecnico di Milano, Milano, Italy

Coffee Break

11:00-12:00 ***Lumped-Element Modelling and Equivalent Circuits in Microsystems***

Vittorio Ferrari

Università degli Studi di Brescia, Brescia, Italy

Lunch

13:30-14:30 ***Advanced modeling of electrostatic actuators, with application to frequency tuning of resonators***

David Elata

Technion, Israel

Coffee Break

15:00-17:00 ***Final test***