

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
09:00-09:30	Welcome			
09:30-10:00	Invited Speaker	Mechanics of MEMS accelerometers (Claudia Comi)	Piezoelectric Microacoustic Metamaterials for Advanced Sensing and Communication at Radiofrequencies (Cristian Cassella)	Invited Speaker
10:00-10:30				
10:30-11:00	coffee break			
11:00-11:30	Mechanics of Microsystems (Valentina Zega)	Electronic interfaces and control for MEMS accelerometers (Giacomo Langfelder)	Piezoelectric MEMS speakers for in-ear applications (Alberto Corigliano)	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 students presentations (3 minutes for each student)	MEMS gyroscopes: mechanical design and modelling (Valentina Zega)	Micromirrors for Laser Beam Scanning applications (Roberto Carminati)	Nonlinearities in MEMS (Attilio Frangi)
14:00-14:30		Electronic interfaces and control for MEMS gyroscopes (Giacomo Langfelder)	Position control of MEMS micromirrors for high-resolution displays: challenges and existing solutions (Paolo Frigerio)	Advanced modeling of electrostatic actuators, with application to frequency tuning of resonators (David Elata)
14:30-15:00				
15:00-15:30	M&NEMS technology: process, integration and applications (Andrea Buffoli)	coffee break		
15:30-16:00	coffee break			
16:00-16:30	MEMS fabrication processes and integration of functional materials (Federico Maspero)	Invited speaker	Piezodevices (tbd)	Final test
16:30-17:00				
17:00-17:30	Welcome cocktail	Team work: Consumer Inertial Sensors – High Tech MEMS in Your Hands	Electromechanical characterization of M(O)EMS by spot optical interferometric techniques (Sabina Merlo)	
17:30-18:00			TCISS and SC activities	
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	Social Dinner			

Tuesday June 3, 2025
Introduction to MEMS

9:00-9:30 *Welcome*

9:30-10:30 *Invited Presentation*
to be defined

Coffee Break

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

Lunch

13:30-15:00 *Lightning round of students presentations*
(3 minutes per student presentation)

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

16:00-18:30 *Invited speaker n. 2*

Team work: Consumer Inertial Sensors – High Tech MEMS in Your Hands

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 ***Piezoelectric MEMS speakers for in-ear applications***

Alberto Corigliano

Politecnico di Milano, Milano, Italy

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 ***Piezodevices***

TBD

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

Sabina Merlo

Università di Pavia, Pavia, Italy

18:00-18:30 ***TCISS and SC activities***

Social Dinner

Friday June 6, 2025
Advanced Simulation in MEMS

09:30-10:30 *Invited speaker n.3*
TBD

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 *Nonlinearities in MEMS*
Attilio Franzi
Politecnico di Milano, Milano, Italy

14:30-15:30 *Advanced modeling of electrostatic actuators, with application to frequency tuning of resonators*
David Elata
Technion, Israel

Coffee Break

16:00-17:00 *Final test*