

isocs Short Course Winter 2027

17 - 22 January 2027 – Bormio, Italy

FROM SENSOR MANUFACTURING TO APPLICATION OF CHEMICAL SENSORS

Monday: State of the art and Industrial needs

8:15 – 8:45 Welcome

8:45 – 9:25 Opening lecture: From MEMS to application. Bosch Sensortec (tbc)

9:30 – 10:40 Overview of gas sensors and systems. Andreas Schütze, Saarland University

11:15 – 12:30 Higher order chemical sensing: sensor arrays, dynamic operation, and GC-sensor systems.
Laura Capelli, Politecnico di Milano
Andreas Schütze, Saarland University

17:30 – 19:00: Poster Session and presentation of participants.
Exhibition and Show room

Tuesday: Material Science and Manufacturing

08:30 – 09:20 An overview of nanomaterials for chemical sensors. Gianaurelio Cuniberti, TU Dresden

09:25 – 10:15 Fundamentals of surface/ analyte interactions and their impact on sensor performance.
Mike Andersson, EmiSense

10:45 – 11:35 Role of nano materials I – Metal Oxides. Elisabetta Comini, University of Brescia

11:40 – 12:30 Role of nano materials II – TMDs and MOFs. Eduard Llobet, Universitat Rovira i Virgili

17:30 – 18:15: Industrial Session I

18:15 – 19:30: Industrial Session II

Wednesday: Bio Sensors and Signal Processing

08:30 – 09:20 Introduction to bio sensors. Krishna Persaud

09:25 – 10:15 Olfactory biosensors and biomimetic electronic noses.

Yanxia Hou-BROUTIN, French National Center for Scientific Research (CEA-CNRS)

10:45 – 11:35 tbd. The Future Lab, Tsinghua University

11:40 – 12:30 Basics of Signal Processing. Hadar Ben-Yoav, Ben-Gurion University of the Negev

17:30 – 19:15: Practical Session I – Signal Processing

Hadar Ben-Yoav, Ben-Gurion University of the Negev

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Thursday: Signal Processing and Calibration

08:30 – 09:20 Advanced Methods and AI. Saverio De Vito, ENEA

09:25 – 10:15 Hardware–Analytics Co-Design for Trust-Enhanced Gas Sensing.
Radislav A. Potyrailo GE Vernova Advanced Research Center

10:45 – 11:35 Calibration of Sensors and Sensor Systems. tbd

11:40 – 12:30 Calibration Transfer. Luis Fernandez, IBEC, Univ. of Barcelona

17:30 – 19:15: Practical Session II – Calibration of Sensors

Luis Fernandez, IBEC, Univ. of Barcelona

Friday: Applications and Panel Discussion

8:30 – 10:00 Applications

- * Environmental Monitoring
- * Health applications
- * Food applications

10:00 – 10:45 Panel Discussion – Ask the Experts
tbd

11:15 – 12:00 Presentation of Research Projects
tbd

12:15 – 12:30 Closing school

ISOCS

International Society for
Olfaction and Chemical Sensing