# 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

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| 8:45 – 9:00 | Welcome |
| 9:00 – 10:00 | Opening lecture: History and overview of gas sensors and e-noses basic concepts, transducers, and sensing principles. Krishna Persaud, University of Manchester |
| 10:30 – 11:45 | Advanced Operation of gas sensors and systems. Andreas Schütze, Saarland University |
| 11:45 – 12:30 | Industrial Perspective. Stefan Raible, ScioSense |
| 17:30 – 17:45 | Bosch Sensortec – company presentation. Akshay Markanday |
| 17:50 – 18:45 | Who is who? – 2 min flash presentation of participants |
| 18:45 – 19:30 | Exhibition of Industry, show room, and poster session |

### Tuesday: Material Science and Manufacturing

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| 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 | Metal oxide nanostructures in chemical sensing. 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 – 18:10 | From Spark Ablation to Gas Sensors: Manufacturing Advanced Functional Devices. Victoria Shalabaeva, VS Particle |
| 18:10 – 18:40 | VS Particle – company presentation. Victoria Shalabaeva |
| 18:40 – 19:30 | Demonstration of instruments: Jan Mitrovics, Laura Capelli, Christian Bur |

### Wednesday: Bio Sensors and Signal Processing

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| 08:30 – 09:20 | Introduction to bio sensors. Krishna Persaud. University of Manchester |
| 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 | From E-Noses to Olfactory Intelligence: Sensing and Understanding Odors in the Real World. Qi Lu, The Future Lab, Tsinghua University |
| 11:40 – 12:30 | Basics of Signal Processing. Hadar Ben-Yoav, Ben-Gurion University of the Negev |
| 17:30 – 18:00 | JLM Innovation – company presentation. |
| 18:05 – 19:30 | Practical Session I – Signal Processing. Hadar Ben-Yoav, Ben-Gurion University of the Negev |

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## Thursday: Signal Processing and Calibration

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| 08:30 – 09:20 | From PCA to Deep learning: Clustering, Classification, Regression for modern e-noses.<br>Saverio De Vito, ENEA |
| 09:25 – 10:15 | Hardware–Analytics Co-Design for Trust-Enhanced Gas Sensing.<br>Radislav A. Potyrailo GE Vernova Advanced Research Center |
| 10:45 – 11:35 | Calibration of Sensors and Sensor Systems.<br>Field Calibration. Saverio De Vito, ENEA<br>Lab calibration. Christian Bur, Saarland University |
| 11:40 – 12:30 | Calibration Transfer. Luis Fernandez, IBEC, University of Barcelona |
| 17:30 – 18:00 | ScioSense – company presentation. André Sackmann |
| 18:05 – 19:30 | Practical Session II – Calibration Transfer<br>Luis Fernandez, IBEC, University of Barcelona |

## Friday: Applications and Panel Discussion

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| 8:30 – 9:15 | Environmental Monitoring. Carmen Bax, OSMI |
| 9:15 – 10:00 | Health Applications. Raffaele Dellaca, Politecnico di Milano |
| 10:00 – 10:45 | Panel Discussion – Ask the Experts<br>Saverio De Vito<br>Elisabetta Comini<br>Radislav Potyrailo<br>Krishna Persaud |
| 11:15 – 12:00 | Presentation of Research Projects<br>SERENADE<br>SensorTech4Health<br>Amusense |
| 12:00 – 12:30 | Fare well and outlook upcoming events<br>ISOEN 2028<br>Training school in China |



iSOCS
International Society for Olfaction and Chemical Sensing