COST Office
Avenue Louise 149
1050 Brussels, Belgium
t: +32 (0)2 533 3800
f: +32 (0)2 533 3890
office@cost.eu

www.cost.eu

ESSEM Domain

COST Action TD1105

European Network on New Sensing Technologies for Air-Pollution Control and Environmental Sustainability - EuNetAir

SECOND INTERNATIONAL WORKSHOP on New Sensing Technologies for Indoor and Outdoor Air Quality Control

Brindisi (Italy), 25 - 26 March 2014

Palazzo Nervegna-Granafei (City Mayor Headquarters)
Via Duomo, 20 - 72100 Brindisi, Italy

organized by **ENEA - Brindisi Research Center**	
supported by **Brindisi Municipality**	

AGENDA	
25 March 2014 - Tuesday	
08:30 - 18:00	***REGISTRATION***
09:00 - 09:30	**Welcome Address**
09:30 - 11:00	**Session 1: Plenary Session**
11:00 - 11:30	*Coffee Break*
11:30 - 13:00	**Session 2: Oral Presentation**
13:00 - 14:30	*Lunch*
14:30 - 16:00	**Session 3: Oral Presentation**
16:00 - 16:30	*Coffee Break*
16:30 - 18:30	**Session 4: Oral Presentation**
20:30 - 23:00	*Social Dinner*
26 March 2014 - Wednesday	
08:30 - 16:00	***REGISTRATION***
09:00 - 11:00	**Session 5: Oral Presentation**
11:00 - 11:30	*Coffee Break*
11:30 - 13:00	**Session 6: Oral Presentation**
13:00 - 14:30	*Lunch*
14:30 - 15:30	**Session 7: Poster Presentation**
15:30 - 16:00	*Discussion and Coffee Farewell*
16:00	**Closure of Meeting**

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract

Background and goals

About COST Action TD1105 EuNetAir

COST Action TD 1105 EuNetAir (www.cost.eunetair.it), a Concerted Action on *New Sensing Technologies for Air-Pollution Control and Environmental Sustainability*, is a running Networking funded in the framework *European Cooperation in the field of Scientific and Technical Research* (COST) during 2012-2016.

The main objective of the Concerted Action is to develop new sensing technologies for Air Quality Control at integrated and multidisciplinary scale by coordinated research on nanomaterials, sensor-systems, air-quality modelling and standardised methods for supporting environmental sustainability with a special focus on Small and Medium Enterprises.

This international Networking, coordinated by ENEA (Italy), includes over 75 big institutions from 28 COST Countries (EU-zone: *Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom*) and 7 Non-COST Countries (extra-Europe: *Australia, Canada, China, Morocco, Russia, Ukraine, USA*) to create a S&T critical mass in the environmental issues.

About the Second International Workshop of COST Action TD1105 at Brindisi, 25-26 March 2014

The **2nd International Worskhop** on *New Sensing Technologies for Indoor and Outdoor Air Quality Control* will be held at ENEA (Italian National Agency for New Technologies, Energy and Sustainable Economic Development), Brindisi Research Center (Italy). This second workshop of the Action TD1105 *EuNetAir* follows the first organized at Barcelona (20 June 2013) as Satellite Event inside *Transducers 2013 - Eurosensors XXVII*, as planned in the MoU roadmap.

The **core-issues of the COST Action TD1105** on the new sensing technologies for indoor and outdoor monitoring and air quality control will be surveyed by Action partners with emphasis at sensor materials, functional materials, nanotechnologies for gas sensors, low-cost and low-power chemical sensors, portable systems, sensor-instrumentations, air-pollution modelling, methods, measurements and protocols for air quality control and environmental monitoring.

Speakers, experts, practitioners, stakeholders and other specialists from environmental agencies, academy and industry from Europe will be encouraged to participate and give a Talk on current state-of-art on the environmental research and existing critical issues in the ongoing Revision of the ***Air Quality Directive 2008/50/EC*** and ***EU Thematic Strategy on Air Pollution***. Fruitful discussions between Action TD1105 participants, international experts, regional managers, speakers, including international institutional organizations delegates and policy-makers are strongly expected. A strong impact on focusing of the critical environmental issues related to the new sensing technologies for indoor and outdoor monitoring and air quality control would be mutual benefit.

The accepted contributions (Oral/Poster) will be collected in a ***Booklet*** to be electronically distributed to the participants. Researchers, Scientists, External Experts, Managers, Early Stage Researchers will be involved from COST Countries signing Memorandum of Understanding (MoU) in open and balanced way.

More Information

- Michele Penza, MC Chair/Proposer of *COST Action TD1105 EuNetAir*
  ENEA - PO BOX 51 Br-4, I-72100 Brindisi - ITALY - michele.penza@enea.it
- Marco Alvisi, Action SIG1 Leader and Local Organizing Committee Chair
  ENEA - PO BOX 51 Br-4, I-72100 Brindisi - ITALY - marco.alvisi@enea.it

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract

EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Tuesday, 25 March 2014

COST Action TD1105 EuNetAir WORKSHOP

Palazzo Nervegna-Granafei (City Mayor Headquarters)
Via Duomo, 20 - 72100 Brindisi, Italy

08:30 - 18:00	**COST Event Registration**
09:00 - 09:30	***Welcome Address*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
	Welcome: Mayor of City of Brindisi *Mimmo Consales*, Mayor of Brindisi, Italy
	Welcome: ENEA *Leander Tapfer*, Head of Technical Unit for Materials Technologies - Brindisi Research Center, ENEA, Brindisi, Italy
	Welcome: Puglia Regional Government Technical Representative *Francesco Surico*, InnovaPuglia - Puglia Government for Economic Development, Bari, Italy
09:30 - 11:00	***Session 1 - Plenary Session*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
09:30 - 10:00	**COST Action TD1105: European Network on New Sensing Technologies for Air-Pollution Control and Environmental Sustainability. Overview and Plans of COST Action TD1105** *Michele Penza*, Action Chair, ENEA, Brindisi, Italy
10:00 - 10:30	**Artificial Olfaction Systems for Air-Quality Monitoring Applications** *Krishna Persaud*, The University of Manchester, School of Chemical Engineering and Analytical Science, Manchester, United Kingdom
10:30 - 11:00	**Can Air Quality Low-cost Sensors Help Citizens to Create Smart Cities ?** *Nuria Castell-Balaguer*, NILU - Norwegian Institute for Air Research, Kjeller, Norway
11:00 - 11:30	**Coffee Break**
11:30 - 13:00	***Session 2 - Clean Air for Smart Cities*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
11:30 - 12:00	**Smart Cities: An Opportunity for Sustainability** *Mauro Annunziato*, European Energy Research Alliance Smart Cities Delegate, ENEA, Rome, Italy
12:00 - 12:20	**Low Cost Sensor Networks for Urban Air-Quality Monitoring Applications** *Vivien Bright*, University of Cambridge, Centre for Atmospheric Science, Cambridge, UK
12:20 - 12:40	**Enabling High Resolution Urban Pollution Monitoring through Mobile Sensor Networks** *Adrian Arfire*, EPFL, Lausanne, Switzerland
12:40 - 13:00	**Development of a Low-cost Mobile Sensor-System for Participatory Measurements of Urban Air Quality** *Jan Peters*, VITO, Mol, Belgium
13:00 - 14:30	**Lunch Break**

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract

14:30 - 16:00	***Session 3 - Sensing Technologies for Indoor Applications*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
14:30 - 15:00	**Chemical Sensors for the Detection and Quantification of Indoor Air Pollutants** *Thu-Hoa Tran-Thi*, CEA-CNRS, CEA-Saclay, Francis Perrin Laboratory URA 2453, 91191 Gif-sur-Yvette, France
15:00 - 15:20	**Selective Detection of Indoor VOCs Using a Virtual Gas Sensor Array** *Martin Leidinger*, Saarland University, Saarbrucken, Germany
15:20 - 15:40	**Indoor Environment and Health in Elderly Care Centers: The GERIA Project** *Joao Paulo Teixeira*, National Institute of Health, Porto, Portugal
15:40 - 16:00	**Indoor Air Quality Assessment: Towards a Better Protection of People** *Carlos Borrego*, IDAD - Institute of Environment and Development, Aveiro, Portugal
16:00 - 16:30	**Coffee Break**
16:30 - 18:30	***Session 4 - Methods and Applications for Environmental Sustainability*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
16:30 - 16:50	**COST Action ES1002 WIRE: Weather Intelligence for Renewable Energies** *Annamaria Sempreviva*, Vice-Chair COST Action ES1002, CNR - Institute of Atmospheric Science and Climate, Lamezia Terme, Italy
16:50 - 17:10	**The Urban Control Center: An ICT Platform for Smart Cities in Italy** *Paolo Deidda*, IBM Italia SpA, Rome, Italy
17:10 - 17:30	**The Urban Control Center: KPIs for Decisions Support of Smart Cities in Italy** *Mariagrazia Dotoli and Raffaele Carli*, Politecnico di Bari, Bari, Italy
17:30 - 17:50	**Development of a Portable Sensor-System for Air Quality Monitoring** *Domenico Suriano and Michele Penza*, ENEA, Brindisi, Italy
17:50 - 18:10	**Air Quality in Spanish Cities: First Steps in Smart Sensors Validation** *Mariacruz Minguillon*, CSIC-IDAEA, Barcelona, Spain
18:10 - 18:30	**Particulate Matter in Different Atmospheric Reservoirs: Copenhagen, a Highly Populated Area versus Station Nord, a Remote High Arctic Site** *Andreas Massling,* Aarhus University, Roskilde, Denmark
20:30 - 23:00	**Social Dinner**

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract

Wednesday, 26 March 2014

COST Action TD1105 EuNetAir WORKSHOP

Palazzo Nervegna-Granafei (City Mayor Headquarters)
Via Duomo, 20 - 72100 Brindisi, Italy

08:30 - 16:00	**COST Event Registration**
09:00 - 11:00	***Session 5 - Advanced Materials for Chemical Sensors*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
09:00 - 09:30	**Towards Zero-Power Gas Detection Systems Based on Single Nanowires** *Albert Romano-Rodriguez*, Universitat de Barcelona, Department of Electronics, Barcelona, Spain
09:30 - 10:00	**Gas Sensing with Epitaxial Graphene on Silicon Carbide: Performance Tuning for Air Quality Control** *Jens Eriksson[2], D. Puglisi[2], C. Bur[1,2], M. Andersson[2], A. Lloyd Spetz[2], and A. Schütze[1]*, [1]Saarland University, Saarbrucken, Germany; [2]Linkoping University, Linkoping, Sweden
10:00 - 10:20	**Sensing Devices based on Metallophthalocyanine and Phthalocyanine/Nanocarbons Hybrid Materials: Application to the Aromatic Hydrocarbon Detection** *Jerome Brunet*, Université Blaise Pascal, LASMEA-CNRS, Aubiere, France
10:20 - 10:40	**Detection of Low Concentrations of Volatile Organic Compounds with SiC-Field Effect Transistors** *Donatella Puglisi[2], C. Bur[1,2], J. Eriksson[2], M. Andersson[2], A. Lloyd Spetz[2], and A. Schütze[1]*, [1]Saarland University, Saarbrucken, Germany; [2]Linkoping University, Linkoping, Sweden
10:40 - 11:00	**Electrodeposited Nanostructured Materials for Gas Sensing** *Nicola Cioffi*, University of Bari, Department of Chemistry, Bari, Italy
11:00 - 11:30	**Coffee Break**
11:30 - 13:00	***Session 6 - Sensors and Systems for Air Quality Control*** *Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy*
11:30 - 12:00	**Low-Power and Portable AlGaN/GaN Based Sensor-Systems for Air Monitoring** *Rob van Schaijk*, IMEC Holst-Centre, Eindhoven, The Netherlands
12:00 - 12:20	**CMOS-based Sensors for Ubiquitous Gas Detection - Challenges and Opportunities** *Mohamed Foysol Chowdhury*, Cambridge CMOS Sensors Ltd, Cambridge, UK
12:20 - 12:40	**Graphene-based Gas Sensors** *Tiziana Polichetti*, ENEA, Portici (Naples), Italy
12:40 - 13:00	**Computational Approaches to Wireless Chemical Sensing Challenges** *Saverio De Vito*, ENEA, Portici (Naples), Italy
13:00 - 14:30	**Lunch Break**

COST is supported by the EU Framework Programme
ESF provides the COST Office through a European Commission contract

14:30 - 15:30 ***Session 7 - Poster Session***
Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy

Posters will be presented by Quick Presentations (8-10 minutes, max 10 templated slides) by presenters, preferably Early Stage Researchers. Posters are listed by theme and as-received.

MATERIALS, SENSORS AND SYSTEMS FOR AIR QUALITY MONITORING

P01 **Electrophoretic Au NPs Deposition on Carbon Nanotubes for NO_2 Sensors**
Elena Dilonardo (1), Michele Penza (2), Marco Alvisi (2), Domenico Suriano (2), Riccardo Rossi (2), Francesco Palmisano (1), Luisa Torsi (1), Nicola Cioffi (1); (1)University of Bari, Bari, Italy; (2)ENEA, Brindisi, Italy

P02 **Pd-Doped ZnO Nanorods for VOCs Sensing**
Sadullah Ozturk (1), Zafer Z. Ozturk (1), Marco Alvisi (2), Domenico Suriano (2), Michele Penza (2), (1)GEBZE Institute of Technology, Kocaeli, Turkey; (2)ENEA, Brindisi, Italy

P03 **ZnO Nanorods for Gas Sensors**
R. Yatskiv, M. Verde, J. Grym, Synthesis and characterization of nanomaterials, Institute of Photonics and Electronics AVCR, Prague, Czech Republic

P04 **Nanostructured Schottky Contacts for Gas Sensors**
J. Grym, R. Yatskiv, O. Cernohorsky, M. Verde, Synthesis and characterization of nanomaterials, Institute of Photonics and Electronics AVCR, Prague, Czech Republic

15:30 - 16:00 ***Discussion on R&I Needs of COST Action TD1105***
Chairperson: Michele Penza, Action Chair - ENEA, Brindisi, Italy

15:30 - 15:40 **Research & Innovation Priorities from COST Action TD1105**
Michele Penza, ENEA, Brindisi, Italy

15:40 - 15:50 **Research & Innovation Needs from COST Action TD1105**
Marco Alvisi, ENEA, Brindisi, Italy

15:50 - 16:00 **Discussions from COST Action TD1105 Partners/Stakeholders**

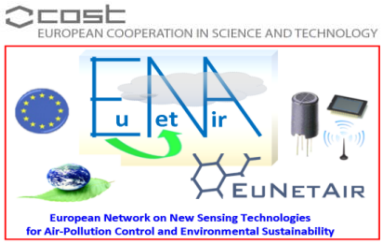
16:00 **Closure of COST Action TD1105 *EuNetAir* WORKSHOP**

COST is supported by the EU Framework Programme
ESF provides the COST Office through a European Commission contract

SECOND INTERNATIONAL WORKSHOP on
New Sensing Technologies for Indoor and Outdoor Air Quality Control

Brindisi (Italy), 25 - 26 March 2014

Palazzo Nervegna-Granafei (City Mayor Headquarters)
Via Duomo, 20 - 72100 Brindisi, Italy



Action Second Workshop Programme Committee

Michele Penza, ENEA, Brindisi, Italy
Marco Alvisi, ENEA, Brindisi, Italy
Anita Lloyd Spetz, Linkoping University, Sweden
Juan Ramon Morante, IREC and Universitat de Barcelona, Spain
Eduard Llobet, Universitat Roviri I Virgili, Tarragona, Spain
Andreas Schuetze, Saarland University, Germany
Ole Hertel, Aarhus University, Denmark
Ingrid Bryntse, SenseAir AB, Sweden
Jan Theunis, VITO, Belgium

Local Organizing Committee

Marco Alvisi, ENEA, Brindisi, Italy - *Local Chair*
Domenico Suriano, ENEA, Brindisi, Italy - *Local Member*
Annamaria Demarinis Loiotile, University of Bari, Italy - *Secretary*
Juliane Rossbach, Eurice, Saarbrucken, Germany - *Grant Holder*
Corinna Hahn, Eurice GmbH, Saarbrucken, Germany - *Grant Holder*

URL: www.cost.eunetair.it

COST Action TD1105 EuNetAir Steering Committee

Michele Penza, ENEA, Brindisi, Italy - *Action Chair*
Anita Lloyd Spetz, Linkoping University, Sweden - *Action Vice-Chair*
Juan Ramon Morante, IREC, Spain
Andreas Schuetze, Saarland University, Germany
Ole Hertel, Aarhus University, Denmark
Ingrid Bryntse, SenseAir AB, Sweden
Jan Theunis, VITO, Belgium
Marco Alvisi, ENEA, Brindisi, Italy
Gianluigi De Gennaro, University of Bari, Italy
Fabio Galatioto, Newscastle University, UK
Ralf Moos, University of Bayreuth, Germany
Mar Viana, CSIC-IDAEA, Barcelona, Spain
Iveta Steinberga, University of Latvia, Riga, Latvia
Roberto Simmarano, Sensichips, Aprilia (Rome), Italy
Julian Gardner, University of Warwick, UK
Rod Jones, University of Cambridge, UK
Giorgio Sberveglieri, University of Brescia, Italy
Eduard Llobet, Universitat Roviri I Virgili, Tarragona, Spain
Thomas Kuhlbusch, IUTA eV, Duisburg, Germany
Albert Romano-Rodriguez, Universitat de Barcelona (UB), Spain
Annamaria Demarinis Loiotile, University of Bari, Italy - *Secretary*
Corinna Hahn, Eurice GmbH, Saarbrucken, Germany - *Grant Holder*

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract