



cost
EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY



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COST Action TD1105

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

FOURTH SCIENTIFIC MEETING

Working Groups and Management Committee

**organized by Linköping University, Division of Applied Sensor Science
3 - 5 June 2015**

**hosted at Physics Building, Department of Physics, Chemistry and Biology
Olaus Magnus väg, Campus Valla, Linköping University
58183 Linköping, Sweden**

Meeting AGENDA

3 June 2015 - Wednesday	
08:30 - 18:00	REGISTRATION
09:00 - 09:30	WELCOME SESSION
09:30 - 11:00	PLENARY SESSION 1: Outdoor Environment Quality Applications
11:00 - 11:30	<i>Coffee-Break</i>
11:30 - 13:00	PLENARY SESSION 2: Indoor Environment Quality Applications
13:00 - 14:30	<i>Lunch</i>
14:30 - 16:30	WG1-WG2 Meeting WG3-WG4 Meeting
16:30 - 17:00	<i>Coffee-Break</i>
17:00 - 18:30	WG1-WG2 Meeting WG3-WG4 Meeting
18:30	<i>Gathering of Day</i>
19:15	<i>Optional Guided Tour at Gamla Linköping Open-Air Museum</i>
20:30 - 23:00	<i>Social Dinner</i>
4 June 2015 - Thursday	
09:00 - 18:00	REGISTRATION
09:00 - 09:30	Wrap-Up and Inputs from Action TD1105
09:30 - 10:30	KEYNOTE SESSION
10:30 - 11:00	<i>Coffee-Break</i>
11:00 - 12:30	SIG SESSIONS: SIG1-SIG4 Meeting
12:30 - 14:00	<i>Lunch</i>
14:00 - 14:50	ROUNDTABLE: The European Sensor Systems Cluster and EC R&I Policy
15:00 - 16:30	POSTER SESSION (outside Planck room)
16:30 - 17:00	<i>Coffee-Break</i>
17:00 - 18:30	Action WGs/SIGs GENERAL ASSEMBLY
18:30	CONCLUSIONS
19:00	<i>Optional Guided Tour at Arwen - Transmission Electron Microscope</i>
20:30	<i>Free Dinner</i>
5 June 2015 - Friday	
09:30 - 13:00	7th MANAGEMENT COMMITTEE MEETING
13:00 - 14:00	<i>Lunch</i>
14:30	Meeting Closing



Background and goals

About COST Action TD1105 *EuNetAir*

COST Action TD 1105 *EuNetAir*, 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 80 big institutions from 31 COST Countries (EU-zone: *Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Luxembourg, The Former Yugoslav Republic of Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom*) and 7 International Partners Countries (extra-Europe: *Australia, Canada, China, Morocco, Russia, Ukraine, USA*) to create a S&T critical mass in the environmental issues.

About the **Fourth Scientific Meeting at Linköping University, Linköping, 3 - 5 June 2015**

The 7th MC Meeting jointly with WG1-4 Meeting will be held at Physics Building of Department of Physics, Chemistry and Biology in Linköping University, under local chairing and organization of Prof. Anita Lloyd Spetz (Action MC Vice-Chair), tentatively organized with a Plenary Session, parallel Inter-WGs Sessions including a General Assembly of the WGs and Special Interest Groups (SIGs), a Roundtable, and finally, the MC Meeting. The Plenary Session will mainly focus on ***New Sensing Technologies for Outdoor Air-Pollution Monitoring*** in a multidisciplinary approach including International Experts and Coordinators of the running FP7 and H2020 research projects to consolidate the **European Sensor Systems Cluster**, supported and sponsored by the EC DG Research and Innovation.

Participation from research, university, industry, environmental agencies, stakeholders, policy-makers and institutional managers is widely planned with large outreach and dissemination activities, at high expected impact (31 Parties involved in the Action on May 2015). Fruitful discussions between Action TD1105 participants, experts, speakers and international organizations delegates (e.g., WHO Europe, JRC, EMRP, EC DG) are strongly expected. At the Open **Fourth Scientific Meeting** of the COST Action TD1105 *EuNetAir*, a strong impact on focusing of the critical outdoor and indoor environmental issues would be mutual benefit.

More Information

Dr. Michele Penza

*MC Chair/Proposer of COST Action TD1105 *EuNetAir**

ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development

Technical Unit for Materials Technologies - Brindisi Research Centre

PO BOX 51 Br-4, I-72100 Brindisi, ITALY. Email: michele.penza@enea.it. Action webpages: www.cost.eunetair.it

Prof. Anita Lloyd Spetz

Local Organizing Team Chair and Action MC Vice-Chair

Division of Applied Sensor Science, Department of Physics, Chemistry and Biology

Linköping University, Linköping, Sweden

Olaus Magnus väg, Campus Valla, 58183 Linköping, Sweden

Email: spetz@ifm.liu.se



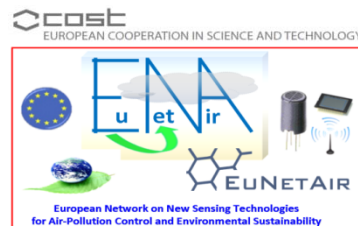


FOURTH SCIENTIFIC MEETING
Working Groups and Management Committee

New Sensing Technologies for Outdoor Air Pollution Monitoring

Linköping (Sweden), 3 - 5 June 2015

**Physics Building at Department of Physics, Chemistry and Biology
 Olaus Magnus väg, Campus Valla, Linköping University, 58183 Linköping, Sweden**



Meeting Venue: Physics Department



TEM by Jens Birch credit



A Linköping symbol

Action Meeting Programme Committee

Michele Penza, ENEA, Brindisi, Italy
Anita Lloyd Spetz, Linköping University, Sweden
Andreas Schuetze, Saarland University, Germany
Ingrid Bryntse, SenseAir AB, Sweden
Zafer Ziya Ozturk, GEBZE Institute of Technology, Turkey
Carlos Borrego, IDAD, University of Aveiro, Portugal
Iveta Steinberga, University of Latvia, Riga, Latvia
Ole Hertel, Aarhus University, Denmark
Juan Ramon Morante, IREC, Spain
Marco Alvisi, ENEA, Italy
Corinna Hahn, Eurice GmbH, Saarbrücken, Germany
Juliane Roszbach, Eurice GmbH, Saarbrücken, Germany
Annamaria Demarinis Loiotile, University of Bari, Italy
Donatella Puglisi, Linköping University, Sweden
Jens Eriksson, Linköping University, Sweden
Mike Andersson, Linköping University, Sweden

COST Action TD1105 EuNetAir Steering Committee

Michele Penza, ENEA, Brindisi, Italy - *Action Chair*
Anita Lloyd Spetz, Linköping 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, Newcastle University, UK
Ralf Moos, University of Bayreuth, Germany
Mar Viana, CSIC-IDAEA, Barcelona, Spain
Iveta Steinberga, University of Latvia, Riga, Latvia
Corinna Hahn, Eurice GmbH, Saarbrücken, Germany - *Grant Holder*
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
Carlos Borrego, IDAD, University of Aveiro, Portugal
Annamaria Demarinis Loiotile, University of Bari, Italy - *Secretary*

URL: www.cost.eunetair.it



Wednesday, 3 June 2015

COST Action TD1105 Working Groups and Special Interest Groups MEETING

Main Hall: Planck Room

8:30 - 18:00 Registration

09:00 - 09:30 Welcome Address Session
Chairman: Anita Lloyd Spetz, Action Vice-Chair - Linköping University, Sweden

09:00 - 09:10 Welcome: Linköping City Council
Helena Balthammar, Linköping Mayor, Sweden

09:10 - 09:20 Welcome: Linköping University
Kenneth Järrendahl, Department Dean, Linköping University, Sweden

09:20 - 09:30 Welcome Address from COST Action TD1105
Michele Penza, Action Chair, ENEA, Brindisi, Italy

09:30 - 11:00 Plenary Session 1: Outdoor Environment Quality Applications
Chairman: Anita Lloyd Spetz, Action Vice-Chair - Linköping University, Sweden

09:30 - 10:00 COST Action TD1105: European Network on New Sensing Technologies for Air-Pollution Control and Environmental Sustainability - Updating
Michele Penza, Action Chair, ENEA, Italy

10:00 - 10:30 Review of Gas Sensors to Monitor Benzene and Other VOCs in Ambient Air in the Framework of the EURAMET Key-VOC Project
Laurent Spinelle and Michel Gerboles, JRC, EC DG ENV, Institute for Environment and Sustainability, Ispra, Italy

10:30 - 11:00 Extended Performance Analysis of a Sensor Unit for O₃ and NO₂ and Operation of a Small Static Sensor Network in Zurich, Switzerland
Christoph Hueglin, MC Substitute, EMPA, Zurich, Switzerland

11:00 - 11:30 Coffee Break

11:30 - 13:00 Plenary Session 2: Indoor Environment Quality Applications
Chairman: Michele Penza, Action Chair - ENEA, Italy

11:30 - 12:00 The FP7 SENSIndoor Project (NMP-2013-5): Increasing Sensitivity and Selectivity of Gas Sensor-Systems by Using Micromachined Pre-Concentrators with MIP and MOF Layers
Andreas Schuetze, Action WG2 Leader & MC Member, Saarland University, Saarbrücken, Germany

12:00 - 12:30 The FP7 IAQSense Project (NMP-2013-5): Sensors for Indoor Air-Pollution Monitoring
Mathias Holz, Nano Analytik GmbH, Ilmenau, Germany

12:30 - 13:00 Development of SenseAir High Performance Platform (HPP) for Indoor Sensing
Ingrid Bryntse, Action WG4 Leader & MC Member, SenseAir AB, Delsbo, Sweden

13:00 - 14:30 Lunch offered by COST Action organization



Wednesday, 3 June 2015

Action TD1105 Working Groups Meetings

Parallel Session of WG1-WG2. Location: Main Hall - Planck Room (Theatre 300 seats)

- 14:30 - 16:30** **WG1: Sensor Materials and Nanotechnology**
Chairman: Jyrki Lappalainen, Action WG1 Vice-Chair - Oulu University, Oulu, Finland
- 14:30 - 14:50** **Effect of Sensor Configuration for Low-Temperature Gas Detection with Semiconducting Oxides**
Azhar A. Haidry, E. Ciftyürek, Bilge Saruhan-Brings, WG Member, German Aerospace Center, Institute of Materials Research, Cologne, Germany
- 14:50 - 15:10** **Pulsed Laser Deposition of Metal Oxide Nanoparticles, Agglomerates, and Nanotrees**
J. Lappalainen¹, J. Huotari¹, T. Baur², J. Puustinen¹, T. Sauerland², and A. Schütze²
¹Microelectronics and Material Physics Laboratories, University of Oulu, Oulu, Finland;
²Laboratory for Measurement Technology, Saarland University, Saarbrücken, Germany
- 15:10 - 15:30** **Graphene Gas Sensors Enhanced by UV Light and Pulsed Laser Deposition**
Raivo Jaaniso, University of Tartu, Tartu, Estonia
- 15:30 - 15:45** **Nanostructured BST based Films with Potential Application in Hazardous Gas Detection**
Cristina F. Rusti, Roxana M. Piticescu, IMNR, Pantelimon, Romania
- 15:45 - 16:00** **Challenges Performing Outdoor Air Pollution Monitoring with Polymer Nanocomposites**
Gita Sakale, M. Knite, S. Stepina, S. Guzlena, I. Klemenoks, Riga Technical University, Latvia
- 16:00 - 16:15** **VOCs Sensing Properties of Hybrid Nanostructures**
Zafer Ziya Ozturk, Gebze Institute of Technology, Kocaeli, Turkey
- 16:15 - 16:30** **Low-Temperature Co-Fired Ceramic Package for Lab-on-Chip Application**
Niina Halonen et al., University of Oulu, Oulu, Finland

16:30 - 17:00 **Coffee Break**

Parallel Session of WG1-WG2. Location: Main Hall - Planck Room (Theatre 300 seats)

- 17:00 - 18:30** **WG2: Sensors, Devices and Systems for AQC**
Chairman: Andreas Schuetze, Action WG2 Chair - Saarland University, Saarbrücken, Germany
- 17:00 - 17:20** **Functionalised Carbon Nanotube Sensors for Detecting Benzene at Trace Levels**
Eduard Llobet, P. Clement, E.J. Parra, MC Member, Universitat Roviri I Virgili, Tarragona, Spain
- 17:20 - 17:40** **The Application of Additive Technologies for Ceramic MEMS Gas Sensors**
A.A.Vasiliev¹, A.V.Sokolov¹, N.N.Samotaev², V.P.Kim³, S.V.Tkachev³, S.P.Gubin³, G.N.Potapov⁴, Yu.V.Kokhtina⁴, A.V.Nisan⁴, ¹NRC Kurchatov Institute, Moscow, Russia, ²National Research Nuclear University "MEPhI", Moscow, Russia, ³LLC AkKo Lab, Moscow, Russia, ⁴LLC Ostec, Moscow, Russia
- 17:40 - 18:00** **Measurement of Monoaromatic Hydrocarbons in Air by Phthalocyanine-based QCM Sensors: Results and Outlooks**
Jerome Brunet, A.Kumar, A.L. Ndiaye, A.Pauly, Université Blaise Pascal/CNRS, Aubiere, France
- 18:00 - 18:15** **New Principle Theory of QCM and SAW Devices in Sensors and Biosensor Applications**
*Marina Voinova^{1,2}, Anton Wikstrom², ¹Chalmers University of Technology, Gothenburg, Sweden
²National Technical University, Kharkiv, Ukraine*
- 18:15 - 18:30** **Views on Inter-Laboratory Reproducibility of Chemosensing Experiments**
J.-M. Suisse¹, M. Bouvet¹, K. Persaud², E. Danesh², ¹Institut de Chimie Moléculaire de l'Université de Bourgogne, UMR CNRS, Dijon, France; ²The University of Manchester, UK



Parallel Session of WG3-WG4. Location: Jordan Fermi Room (40 seats) (two floors right above Planck)

14:30 - 16:30 **WG3: Environmental Measurements and Air-Pollution Modelling**
Chairman: Joao Paulo Teixeira, Action MC Substitute, National Institute of Health, Porto, Portugal

14:30 - 14:50 **Highly Resolved UFP Number Concentration Maps in Zurich based on Data from a Mobile Sensor Network**
Michael Mueller, WG Member, EMPA, Zurich, Switzerland

14:50 - 15:10 **The Use of Sensors for VOC Emission Control at Industrial Sites**
Jan Peters, VITO, Mol, Belgium

15:10 - 15:30 **MOX Sensor Systems in Outdoor Odor Nuisance Monitoring**
Wolfhard Reimringer, WG Member, 3S GmbH, Saarbrücken, Germany

15:30 - 15:50 **Evaluation of Monitoring Gases and PMs with Low-cost and Reference Devices at AMS(s) in Belgrade, Serbia**
Milena Jovasevic-Stojanovic, D. Topalovic, M. Davidovic, M. Zivkovic, I. Lazovic, Z. Ristovski, Action WG3 Member, Institute Vinca, Belgrade, Serbia

15:50 - 16:10 **Using Lichens as Multi-Pollutant Bioindicators in Air Quality Monitoring**
Maja Maslac, Irena Ciglenceki, Rudjer Boskovic Institute, Zagreb, Croatia

16:10 - 16:30 **Transforming AQ Data to Personalised Services**
Kostas Karatzas, Aristotle University of Thessaloniki, Greece

16:30 - 17:00 **Coffee Break**

Parallel Session of WG3-WG4. Location: Jordan Fermi Room (40 seats) (two floors right above Planck)

17:00 - 18:30 **WG4: Protocols and Standardisation Methods**
Chairman: Ingrid Bryntse, Action WG4 Chair - SenseAir SA, Delsbo, Sweden

17:00 - 17:20 **Present IAQ Sensor Technologies and Future Trends**
Olivier Martimort, NanoSense Sarl, Boulogne Billancourt, France

17:20 - 17:40 **Benefits of CMOS Sensors for Environmental Monitoring**
Foysol Chowdhury, Action WG Member, CCMOSS Ltd, Cambridge, UK

17:40 - 18:00 **Low-Cost IR CO₂ Sensor for Battery Powered Applications**
Maksym Bryzgalov, Bengt Jonsson, Action WG Member, SenseAir AB, Delsbo, Sweden

18:00 - 18:20 **Silicon Carbide Sensor Systems for Harsh Environment Market Applications**
Bo Hammarlund¹, Mike Andersson^{1,2}, Anita Lloyd-Spetz², ¹SenSiC AB, Linköping, Sweden; ²Linköping University, Sweden

18:20 - 18:30 *Final remarks, comments and conclusions from WG4 Chair*

18:30 **Gathering of Day**

19:15 **Optional Guided Tour at Gamla Linköping Open-Air Museum**
Register yourself at the Desk for Tour (Contact Point: Donatella Puglisi)

20:30 - 23:00 **Social Dinner at Vårdshuset - a Swedish Typical Restaurant**
Vårdshuset in Gamla (Old) Linköping (20 min. walk or 10 min. by bike from University)
Gastgivaregatan 1, 582 46 Linköping (Gamla Linköping) (See map at the end)



Thursday, 4 June 2015

Action TD1105 Special Interest Groups Meetings

Main Hall: Planck Room

09:00 - 18:00 Registration

09:00 - 09:30 Wrap-up and Inputs from Action TD1105

09:00 - 09:15 Inputs from Action TD1105: Wrap-up and Upcoming Action Events
Michele Penza, Action Chair, ENEA, Brindisi, Italy

09:15 - 09:30 Inputs from Action TD1105: Online Travel Reimbursement Request & Strong Feature Authentication
Juliane Rossbach, Grant Holder Manager, Eurice GmbH, Saarbrücken/Berlin, Germany

09:30 - 10:30 KEYNOTE SESSION: Key Enabling Technologies for Air Quality Control

Chairman: Michele Penza, Action Chair
Italian National Agency for New Technologies, Energy and Sustainable Economic Development - ENEA, Brindisi, Italy

09:30 - 10:00 Towards Zero-Power Gas Detection Systems based on Nanowires: Fabrication, Characterization, Benefits and Challenges
J. Samà¹, J. D. Prades¹, O. Casals¹, S. Barth², J. Santander³, C. Cané³, I. Gracia³, Albert Romano-Rodriguez¹, MC Substitute, ¹Universitat de Barcelona, Barcelona, Spain; ²Technical University of Vienna; ³CSIC, Bellaterra, Spain

10:00 - 10:30 Cost-Efficient Approaches to Measure Carbon Dioxide (CO₂) Fluxes and Concentrations in Natural Environments Using Mini-Loggers
David Bastviken, Expert of Thematic Studies on Environmental Changes, Linköping University, Linköping, Sweden

10:30 - 11:00 Coffee Break

11:00 - 12:30 SIGs Session - SIG1: Network of spin-offs

Chairman: Marco Alvisi, Action SIG1 Leader
Italian National Agency for New Technologies, Energy and Sustainable Economic Development - ENEA, Brindisi, Italy

Specific Presentation from SIG1

11:00 - 11:20 "KOMpetitive Intelligence" - A New Method for the Identification and Assessment of Technological Alternatives
Tiziano Montecchi² and Davide Russo¹, ¹University of Bergamo, ²Bigflo srl, Italy

11:00 - 12:30 SIGs Session - SIG2: Smart Sensors for Urban Air Monitoring in Cities

Chairman: Christoph Hueglin, MC Substitute and SIG2 Member
EMPA, Zurich, Switzerland

Specific Presentation from SIG2

11:20 - 11:40 The 1st EuNetAir Air Quality Joint-Exercise Intercomparison: Assessment of Micro-Sensors Versus Reference Methods (Part II)
Ana Margarida Costa, WG Member, IDAD, Aveiro, Portugal



11:00 - 12:30

SIGs Session - SIG3: Guidelines for Best Coupling Air Pollutants and Transducer

Chairman: Eduard Llobet, Action SIG3 Vice-Chair, Universitat Roviri I Virgili, Tarragona, Spain

Specific Presentation from SIG3

11:40 - 12:00

Graphene Metal-Oxide Hybrids for Gas Sensor Tuning

Jens Eriksson¹, D. Puglisi¹, C. Strandqvist¹, R. Yakimova¹, A. Lloyd-Spez¹, ¹Department of Physics, Chemistry and Biology, Linköping University, Linköping, Sweden

11:00 - 12:30

SIGs Session - SIG4: Expert Comments for the Revision of the Air Quality Directive (AQD)

Chairman: Ana Margarida Costa, WG Member, IDAD, Aveiro, Portugal

Specific Presentation from SIG4

12:00 - 12:20

Preliminary Indoor and Outdoor Air Pollution Investigation in Naturally Ventilated Classrooms: Results from the ARIA Project

Joana Mandureira, Joao Cavaleiro-Rufo, Ines Paciencia, Eduardo de Oliveira Fernandes, Livia Aguiar, Cristiana Pereira and Joao Paulo Teixeira, National Institute of Health, Porto, Portugal

12:20 - 12:30

DISCUSSION on SIG1-SIG4 Presentations

Questions and Answers from Participants
Comments and Inputs from Audience

12:30 - 14:00

Lunch offered by COST Action organization



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Thursday, 4 June 2015

**COST Action TD1105 for the European Sensor-Systems Cluster (ESSC):
The EC DG R&I Policy on the European Clusters**

Main Hall: Planck Room

Action TD1105 ROUND-TABLE DISCUSSION

14:00 - 14:50

Chairman(s):

Michele Penza, Action Chair and ESSC Chairman, ENEA, Brindisi, Italy

Andreas Schuetze, Action WG2 Leader and ESSC WG2 IAQ Leader, Saarland University, Saarbrücken, Germany

**EC Policy of the EU Clusters:
The European Sensor-Systems Cluster (ESSC)**

14:00 - 14:10

The European Sensor-Systems Cluster (ESSC): Vision, Objectives and Position Paper
Michele Penza, COST Action TD1105 Chair and ESSC Chairman, ENEA, Brindisi, Italy

14:10 - 14:20

The Role of the Project Technical Assistants (PTAs) in the EU Projects and Clusters
Eberhard Seitz, EC PTA, Jülich, Germany

14:20 - 14:30

An Industry View in the Commercialization of Gas Sensors for Environmental Sustainability
Hans Martin, R&D Director of SenseAir SA, Delsbo, Sweden

14:30 - 14:50

Discussion of Action/Cluster Participants:
Comments and Inputs on Priorities, R&I Needs, Strategies, Roadmap for future joint-activities of ESSC Cluster and COST Action TD1105 *EuNetAir*
Speeches and Comments from Action WGs/SIGs Leaders and Participants
Free Comments from Action and ESSC Cluster Stakeholders



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Thursday, 4 June 2015

Gallery of Main Hall: Outside Planck Room

15:00 - 16:30 **Poster Session:**
New Technologies and Methods for Environmental Monitoring
 Chairperson: *Andreas Schuetze, Action WG2 Leader, Saarland University, Saarbrücken, Germany*

Posters (max sizes: 90 cm width x 120 height) will be exhibited on Panels. The Poster Presenter, preferably Early Stage Researcher, is required to stay near poster for discussion with interested people.

- P01** **A Local Integrated Assessment of Air Pollution Impacts on Human Health - A Case Study for Portugal and Grande Porto**
S. Costa^(1,2), C. Costa⁽¹⁾, C. Silveira⁽³⁾, M. Lopes⁽³⁾, J. Ferreira⁽³⁾, H. Relvas⁽³⁾, C. Borrego⁽³⁾, P. Roebeling⁽³⁾, A. Miranda⁽³⁾, J.P. Teixeira^(1,2), ⁽¹⁾EPIUnit-Institute of Public Health, University of Porto, Portugal; ⁽²⁾National Institute of Health, Environmental Health Department, Portugal; ⁽³⁾Centre for Environmental and Marine Studies & Department of Environment and Planning, University of Aveiro, Portugal
- P02** **Non-Resonant High-Frequency Excitation of Nanoelectromechanical Oscillators**
A. M. Eriksson, M. V. Voinova, L. Y. Gorelik, Department of Applied Physics, Chalmers University of Technology, Kemigården 1, Göteborg, Sweden
- P03** **Detection of Harmful Pollutions from NO₂ in Gas Phase by Quartz Crystal Microbalance**
I. Nedkov⁵, Action MC Member, Institute of Electronics, Bulgarian Academy of Sciences, Sofia, V. Georgieva¹, Z. Raicheva¹, B. Georgieva², D. Dimova-Malinovska³, S. Boyadjiev⁴, ¹Institute of Solid States Physics, Bulgarian Academy of Sciences, Sofia, Bulgaria; ²UCTM bul. "St. Kliment Ohridski" Sofia, Bulgaria; ³Central Laboratory of Solar Energy and New Energy Sources at the Bulgarian Academy of Sciences, Sofia, Bulgaria; ⁴MTA-BME Technical Analytical Research Group, Budapest, Hungary; ⁵Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria
- P04** **AirSenseEUR: An Open Software/Open Hardware Multi Sensor for the Monitoring of Air Quality**
Michel Gerboles, Laurent Spinelle, Marco Signorini, JRC, EC DG ENV, Institute for Environment and Sustainability, Ispra, Italy
- P05** **Evaluatouon of Electrochemical Sensors by means of an Handheld Device for Air Quality Monitoring**
*Domenico Suriano, Gennaro Cassano, Valerio Pfister, Michele Penza
 ENEA, Technical Unit for Materials Technologies - Brindisi Research Centre, Brindisi, Italy*
- P06** **Sensor of Biogas Ingredient Methane Employing Powerful Pulsed Laser Diodes**
*Vasilka Pencheva, Stoyan Penchev, Ivan Nedkov
 Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria*
- P07** **Effect of Dopants in Semiconductor Oxide Sensing Layers under Low Oxygen Partial Pressures and at Higher Temperatures**
*Azhar A. Haidry¹, Engin Ciftiyürek¹, Bilge Saruhan-Brings¹, Sebastian Schröder², Holger Fritze²;
¹German Aerospace Center, Institute of Materials Research, Linder Höhe, 51147 Cologne, Germany; ²Technical University Clausthal, Institute for Energy Research and Physical Technologies, 38640 Goslar, Germany*



How to Manage a Project of Citizen Science: Olfactory Annoyance Evaluation in Taranto City (Italy)

P08

M. Brattoli^a, L. de Gennaro^c, A. Mazzone^a, S. Petraccone^b, A. Demarinis Loiotile^b, R. Giua^a, G. Assennato^a, G. de Gennaro^{a,b};

^aAgenzia Regionale per la Prevenzione e la Protezione Ambientale Puglia - Corso Trieste 27, 70126 Bari; ^bDipartimento di Chimica, Università degli Studi di Bari, via Orabona, 4, 70126 Bari, Italia; ^cLenviros srl - spin off dell'Università degli Studi di Bari, via Orabona 4, 70126 Bari, Italia

16:30 - 17:00

Coffee-Break



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Thursday, 4 June 2015

Action TD1105 Working Groups and Special Interest Groups Meetings

Main Hall: Planck Room

Action WGs GENERAL ASSEMBLY

17:00 - 18:30 *Chairman: Michele Penza, Action Chair*
Italian National Agency for New Technologies, Energy and Sustainable Economic Development - ENEA, Brindisi, Italy

Specific Presentations from WGs Leaders

17:00 - 17:10 **Summary of Research and Innovation Needs from WG1 Session: Sensor Materials and Nanotechnology**
Jyrki Lappalainen, Action WG1 Vice-Chair - Oulu University, Oulu, Finland

17:10 - 17:20 **Summary of Research and Innovation Needs from WG2 Session: Sensors, Devices and Systems for AQC**
Andreas Schuetze, Action WG2 Chair, Saarland University, Saarbrucken, Germany

17:20 - 17:30 **Summary of Research and Innovation Needs from WG3 Session: Environmental Measurements and Air-Pollution Modelling**
Joao Paulo Teixeira, Action MC Substitute, National Institute of Health, Porto, Portugal

17:30 - 17:40 **Summary of Research and Innovation Needs from WG4 Session: Protocols and Standardisation Methods**
Ingrid Bryntse, Action WG4 Chair, SenseAir SA, Delsbo, Sweden

Action SIGs GENERAL ASSEMBLY

17:00 - 18:30 *Chairman: Anita Lloyd Spetz, Action Vice-Chair*
Linkoping University (Sweden) and Oulu University (Finland)

Specific Presentations from SIGs Leaders

17:40 - 17:50 **Summary of Research and Innovation Needs from SIG1: Network of Spin-offs**
Marco Alvisi, Action SIG1 Leader, ENEA, Brindisi, Italy

17:50 - 18:00 **Summary of Research and Innovation Needs from SIG2: Smart Sensors for Urban Air Monitoring in Cities**
Christoph Hueglin, MC Substitute and SIG2 Member, EMPA, Zurich, Switzerland

18:00 - 18:10 **Summary of Research and Innovation Needs from SIG3: Guidelines for Best Coupling Air Pollutants and Transducer**
Eduard Llobet, Action SIG3 Vice-Chair, Universitat Roviri I Virgili, Tarragona, Spain

18:10 - 18:20 **Summary of Research and Innovation Needs from SIG4: Expert Comments for the Revision of the Air Quality Directive (AQD)**
Ana Margarida Costa, WG Member, IDAD, Aveiro, Portugal

18:30 CLOSING of WGs and SIGs MEETING

19:00 **Optional Guided Tour at Arwen**
Europe's Most Precise Transmission Electronic Microscope (TEM)
 Register yourself at the Desk for Tour (*Contact Point: Donatella Puglisi*)

20:30 Dinner Freely by Participants



Friday, 5 June 2015

Action TD1105 MANAGEMENT COMMITTEE Meeting

Main Hall: Planck Room

Action TD1105 7th MANAGEMENT COMMITTEE MEETING

09:30 - 13:00

Chairman: Michele Penza, Action Chair

Italian National Agency for New Technologies, Energy and Sustainable Economic Development - ENEA, Brindisi, Italy

WORLD ENVIRONMENT DAY (WED) 2015

Global Celebration on 5 June

by United Nations Environment Programme (UNEP)

This year's WED slogan is '**Seven Billion Dreams. One Planet. Consume with Care**'

See more at: <http://www.unep.org/wed/news/wed-2015>

09:30 - 10:00

New Methods for Control of Nanoparticles in Indoor-versus-Outdoor Environment

Anita Lloyd Spetz, Action Vice-Chair, Linköping University (Sweden) and University of Oulu (Finland)

10:00 : 13:00

7th Management Committee Meeting

Michele Penza, Action Chair, ENEA, Brindisi, Italy

- **DISCUSSION** (see MCM AGENDA)
- **Coffee-Break** (timely scheduled)

12:00 : 12:20

Live VideoChat Brussels-Linköping: Inputs from the COST Association

Deniz Karaca, Science Officer of the COST Action TD1105, COST Association, Brussels, Belgium

12:20 : 12:30

- **QUESTION TIME with COST Science Officer**

13:00

- **End of the 7th MCM of the COST Action TD1105 - EuNetAir**

13:00 - 14:30

- **Lunch offered by the Conference Organization**

14:30

- **Meeting Closing**



COST is supported by the EU Framework Programme



ESF provides the COST Office through a European Commission contract



Draft Agenda
7th Management Committee Meeting
COST Action TD1105

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

FOURTH SCIENTIFIC MEETING
Working Groups and Management Committee

New Sensing Technologies for Outdoor Air Pollution Monitoring

Linköping (Sweden), 3 - 5 June 2015

Planck Room - Physics Building at Department of Physics, Chemistry and Biology
Olaus Magnus väg, Campus Valla, Linköping University, 58183 Linköping, Sweden

Management Committee Meeting, 5 June 2015, 9:30 - 14:30 (local time)

To be completed by the meeting secretary and circulated to the MC, the DC Rapporteur(s) and the COST Office (Science and Administrative Officer)

1. Welcome to participants
2. Adoption of agenda
3. Approval of minutes and matters arising of last meeting
4. Update from the Action Chair
 - a. Status of Action, including participating countries
 - b. Action budget status
 - c. STSM status and new applications
5. Promotion of gender balance and of Early Stage Researchers (ESR)
6. Update from the Grant Holder
7. Update from the COST Office
8. Update from the DC Rapporteur
9. Annual Progress Conference (preparation and/or feedback from DC)
10. Follow-up of MoU objectives
 - a. Progress report of working groups
11. Scientific planning
 - a. Scientific strategy
 - b. Action Budget Planning
 - c. Long-term planning (including anticipated locations and dates of future activities)
 - d. Dissemination planning (Publications and outreach activities)
12. Requests for new members
13. Non-COST applications to the Actions
14. AOB
15. Location and date of next meeting
16. Summary of MC decisions
17. Closing

7th MC Meeting Venue/Location of COST Action TD1105 EuNetAir

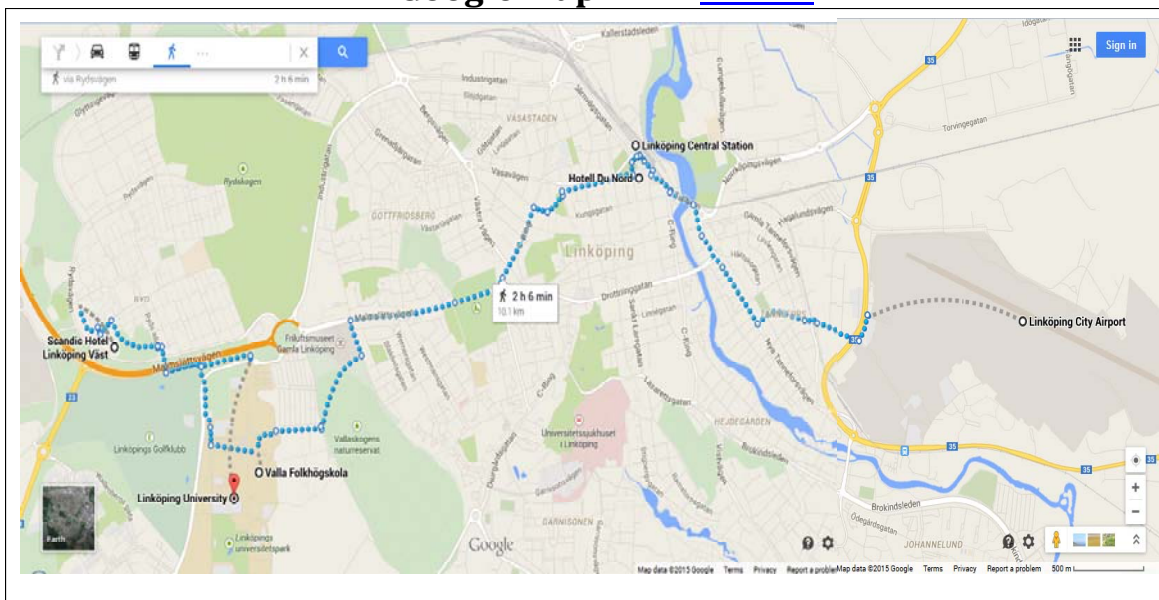
FOURTH SCIENTIFIC MEETING
Working Groups and Management Committee

New Sensing Technologies for Outdoor Air Pollution Monitoring

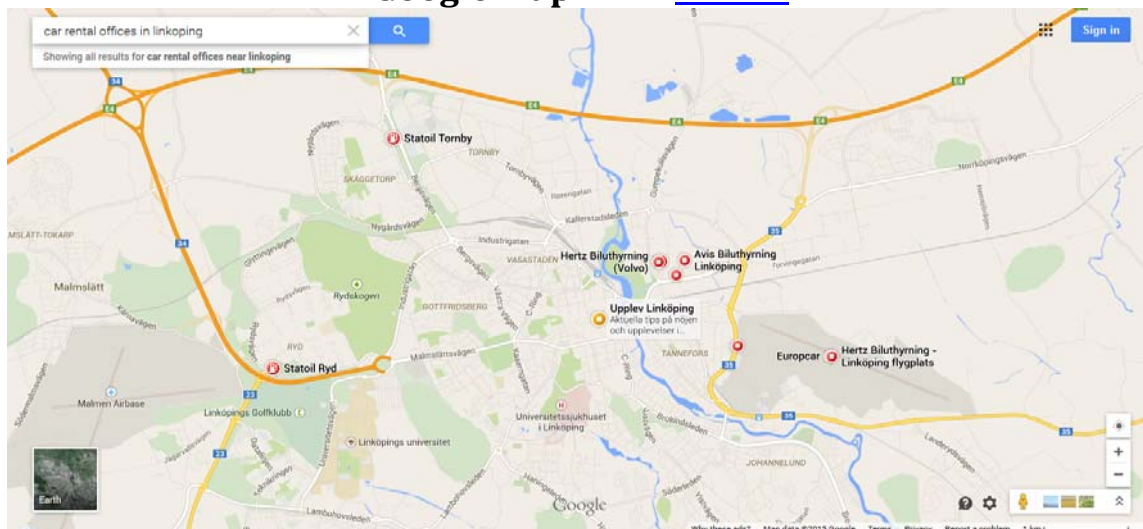
Linköping (Sweden), 3 - 5 June 2015

Physics Building at Department of Physics, Chemistry and Biology
Olaus Magnus väg, Campus Valla, Linköping University, 58183 Linköping, Sweden

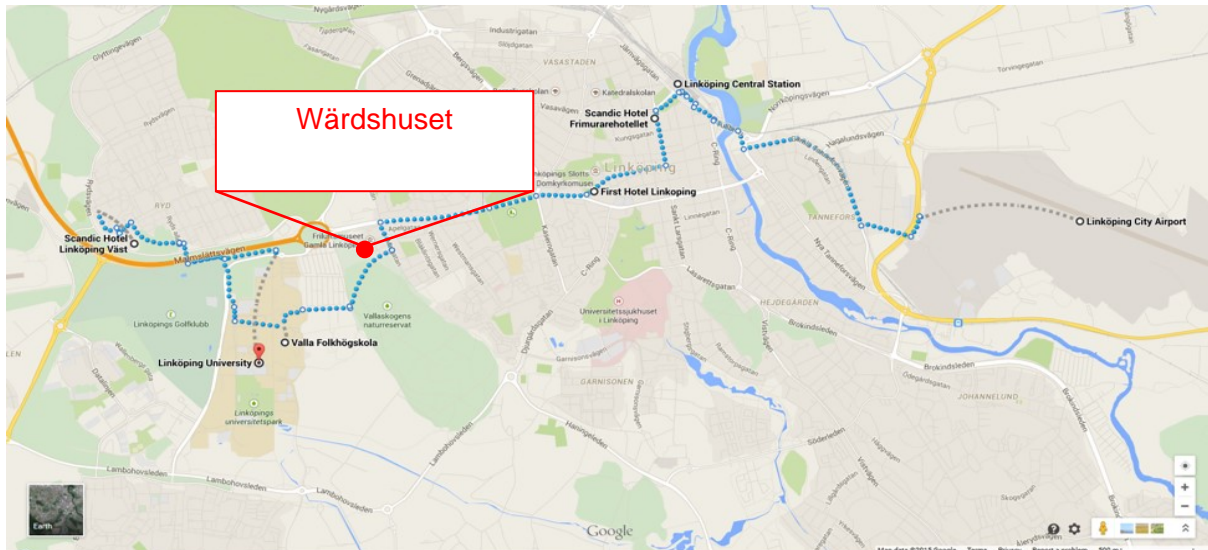
Google Map Link: [MAP-1](#)



Google Map Link: [MAP-2](#)



How to arrive to Wårdshuset restaurant in Gamla Linköping



MAP. Location of Wårdshuset

the restaurant in Gamla (Old) Linköping chosen for the Social Dinner on 3rd June 2015, with respect to the suggested / pre-booked hotels and Linköping University.

Walking distances from:

- Linköping University, Meeting venue = 650 m
- Valla Folkhögskola = 1.2 km
- First Hotel Linköping = 1.7 km
- Scandic Hotel Linköping Väst = 2.4 km
- Scandic Hotel Frimurarehotellet = 2.6 km



Address:

Gästgivaregatan 1
582 46 Linköping (Gamla Linköping)
<http://www.wardshuset.com/>