

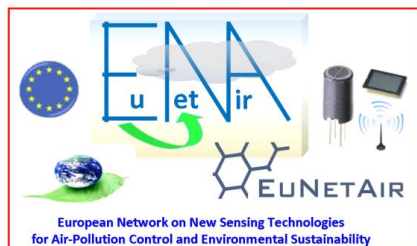


European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir*
COST Action TD1105

COST Action TD1105: Overview

Action Start date: 01/07/2012 - Action End date: 30/06/2016 **Year 3: 1 July 2014 - 30 June 2015**

 **cost**
EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY



Andreas Schütze on behalf of
Michele Penza

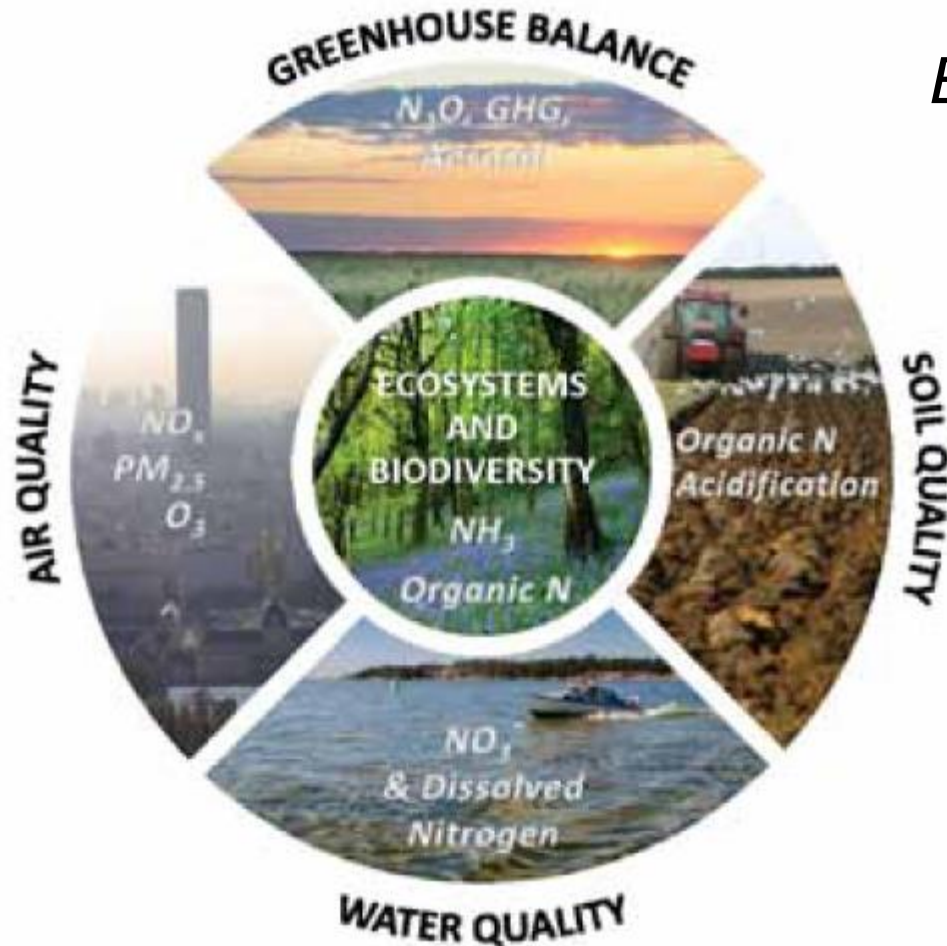
Function in the Action: Action Chair
ENEA - Brindisi, Italy



Scientific context: **Environmental Sustainability**

Nitrogen Pollution and the European Environment Implications for Air Quality Policy

EC In-Depth Report, September 2013



Excess reactive nitrogen represents a major environmental threat that is only now beginning to be fully appreciated. At a global level, humans have more than doubled the production and cycling of reactive nitrogen, leading to a plethora of impacts that interact across all global spheres: atmosphere, biosphere, hydrosphere and geosphere.

Sutton et al., 2009

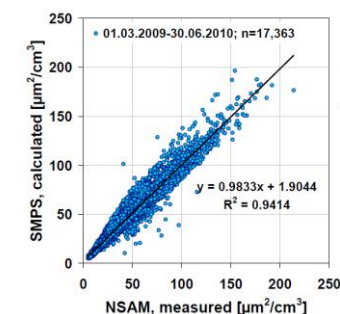
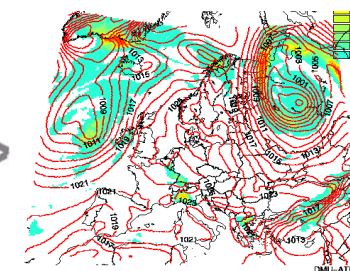
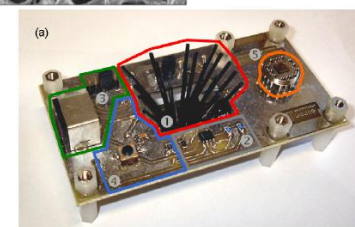
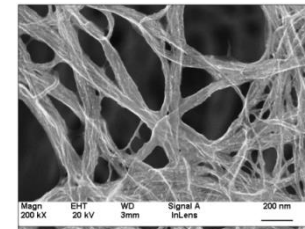
Nitrogen Pollution:

NO_x, N₂O, NH₃, NH₄, NO₂⁻, NO₃⁻, etc.

Source: Sutton and Billen, 2010

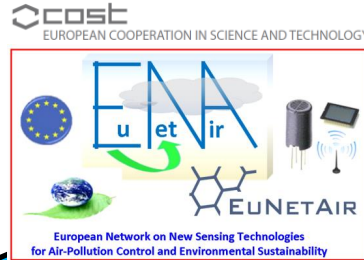
Challenges addressed by Action TD1105

- **Nanomaterials for AQC sensors**
- **Low-cost Gas Sensors**
- **Low-power Sensor-Systems**
- **Wireless Technology (*Environmental Sensors Network*)**
- **Air Quality Modelling**
- **Environmental Measurements**
- **Standards and Protocols**



COST Action TD1105 *EuNetAir*: Organization

www.eunetair.it



WG1:

Sensor Materials
&
Nanotechnologies

WG2:

Sensors, Devices
& Systems for AQC

WG4:

Protocols &
Standardisation
Methods

WG3:

Env. Measurements
&
Air Pollution Modelling

**INTERDISCIPLINARY
SPECIAL INTEREST GROUPS**

MANAGEMENT COMMITTEE:

CORE-GROUP & STEERING COMMITTEE

- *Editorial Board*
- *Dissemination*
- *Training Schools*
- *Gender Balance*
- *Early Stage Researchers (ESR)*
- *Short-Term Scientific Mission (STSM)*
- *Intellectual Property Rights (IPR)*
- *Local Organizing Committee (LOC)*

- **SIG 1:** *Network of Spin-offs*
- **SIG 2:** *Smart Sensors for Urban Air Monitoring in Cities*
- **SIG 3:** *Guidelines for Best Coupling Air Pollutant-Transducer*
- **SIG 4:** *Expert comments for the Revision of the Air Quality EU Directive*

Action Size (2012-2016):

200 Experts from 120 Teams - 31 Countries

31 COST Countries (Parties) have already signed Memorandum of Understanding (MoU)

PARTIES: 31

already accepted MoU

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

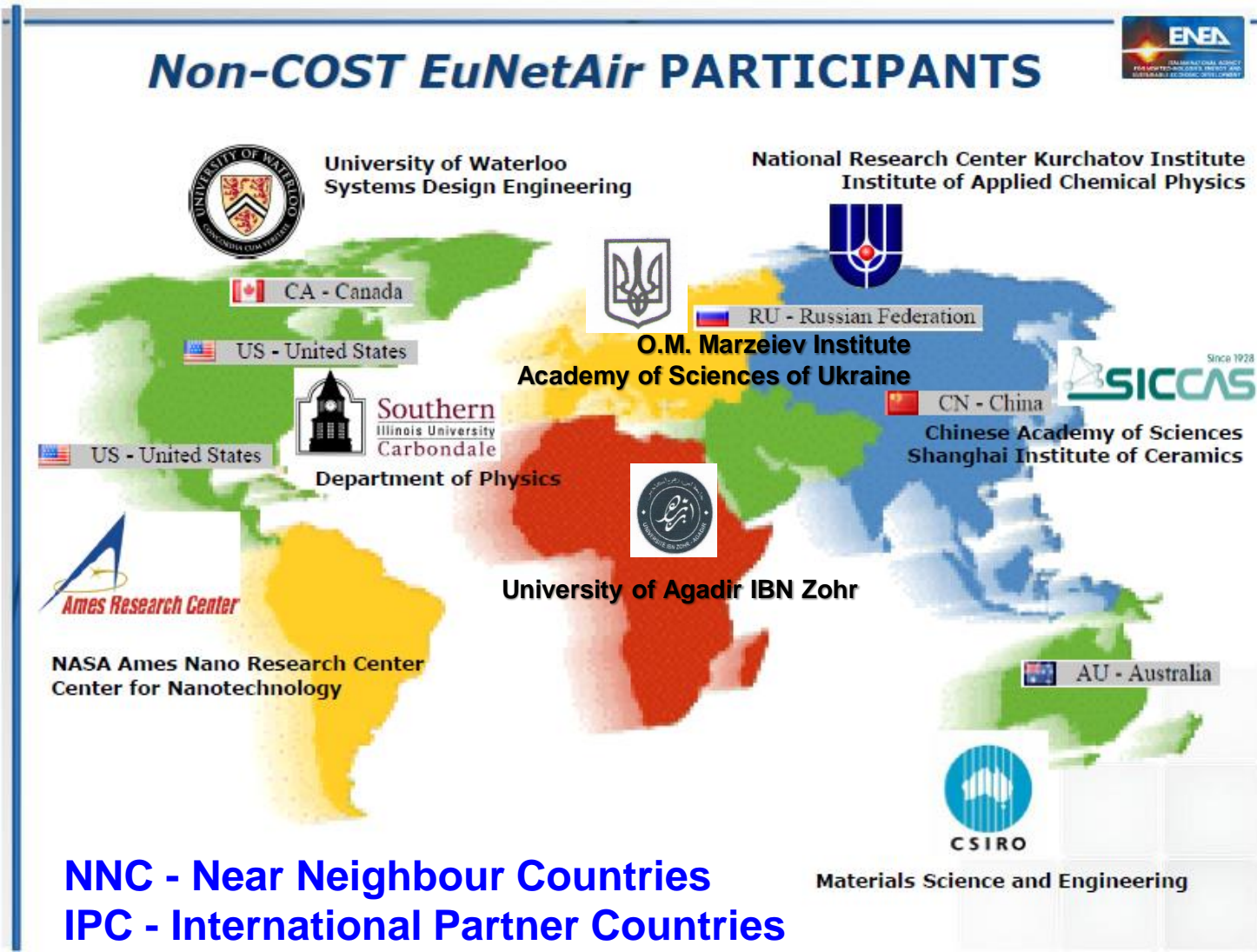


COST Action TD1105 *EuNetAir*:

7 Non-COST Countries and 8 Non-COST Institutions

Non-COST Countries:
Australia, Canada, China,
Morocco, Russia, Ukraine,
USA

Non-COST Institutions:
CSIRO (Australia);
University of Waterloo
(Canada); Chinese Academy
of Sciences, Shanghai
Institute of Ceramics
(China); University of
Agadir IBN Zohr (Morocco);
National Research Center
Kurchatov Institute
(Russia); O.M. Marzeiev
Institute for Hygiene and
Medical Ecology of
Academy of Science of
Ukraine (Ukraine); Southern
Illinois University
Carbondale, NASA Ames
Research Center (USA).



NNC - Near Neighbour Countries
IPC - International Partner Countries

Aveiro Joint-Exercise Intercomparison & WG Meeting

13 - 27 October 2014: Starting Joint-Exercise (2 weeks duration)

14 - 15 October 2014: EuNetAir WG1-WG4 Meeting

EuNetAir Air Quality Joint-Exercise Intercomparison 2014

Local Organizers: Prof. Carlos Borrego and Dr. Ana Margarida Costa (IDAD)

Air Quality Monitoring campaign at Aveiro (Portugal) city centre 2014



Continuous measurements: CO, benzene, NO_x, SO₂, PM₁₀, VOC

Temperature, humidity, wind velocity, wind direction, solar radiation, precipitation

COST partners (15 teams joined from 12 COST Countries) installed their microsensors side-by-side to compare performance with referenced equipment in the Air-Quality Mobile Laboratory

3rd TRAINING SCHOOL *EuNetAir* at Hyytiala Forestry Field Station

Atmospheric Aerosol Physics, Measurements and Sampling

hosted by University of Helsinki, **Hyytiala** (Helsinki), 2 - 8 May 2015

Local Organizer:

Prof. Kaarle Hameri,
University of Helsinki,
Helsinki (Finland)



Participation:

- 13 COST Trainees
- 3 Trainers



FOURTH SCIENTIFIC MEETING: WG & 7th MC Meeting

hosted by Linköping University, **Linköping** (Sweden), 3 - 5 June 2015

Local Organizer:

Prof. Anita Lloyd Spetz,
Linköping University,
Linköping (Sweden)



FOCUS ON:

Outdoor Applications



- 4 June 2015: Roundtable on the *European Sensor-Systems Cluster (ESSC)*
- 5 June 2015: *World Environment Day 2015, 5 June* - Global Day by UNEP
- 22 June 2015: *AMA Science Proceedings* (max 4 pages Templated) with DOI
- 31 October 2015: *Special Issue JSSS (Copernicus)* - Peer Review Process

OUTREACH ACTIVITIES from Action TD1105

COST Action TD1105 - EuNetAir

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

Action website:

www.eunetair.it

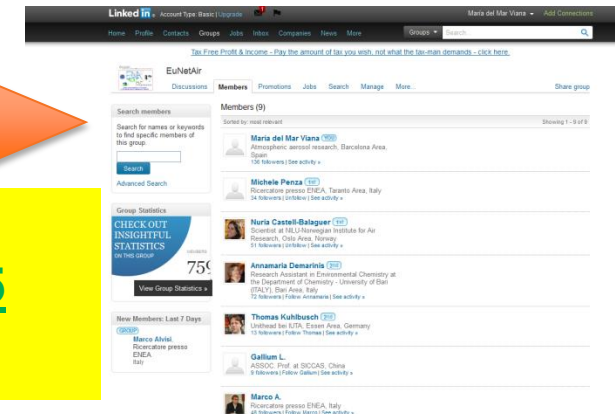
hosted by ENEA

Dr. Marco Alvisi, Webmaster Coordinator

Sebastiano Dipinto, Valerio Pfister, Gianfranco Zingarelli, Webmaster Team

Social Scientific ESRs Network (SSEN) by LinkedIn

Members: >50 - Moderators: M. Viana, M. Minguillon



3^o CALL for Short Exchange Visits launched on June 2014
Short Term Scientific Mission: **13 FUNDED** by 30 June 2015

Dr. Jan Theunis, STSM Coordinator EuNetAir



 EuNetAir Newsletter

COST Action TD1105 Iss. 1/Dec 2012

Opening Editorial

- Issue 1: published on Dec. 2012 ✓
- Issue 2: published on June 2013 ✓
- Issue 3: published on Dec. 2013 ✓
- Issue 4: published on June 2014 ✓
- Issue 5: published on Dec. 2014 ✓
- Issue 6: published on June 2015 ✓

Prof. Ralf Moos, Editor-in-Chief

Dr. Daniela Schonauer-Kamin, Editorial Board Manager

Symposium planned at EMRS Spring Meeting 2016

Lille (France), 2-6 May 2016

Advanced Functional Materials for Environmental Monitoring Sensors and Energy Systems Applications

*Proceedings of Symposium EMRS Spring Meeting 2016 to be published under peer-review process in **Beilstein Journal of Nanotechnologies** (IF 2014: 2.3)*

- **Peer-review process** Open Access journal without publication fee (<http://www.beilstein-journals.org/bjnano>).
- **Symposium Organizers**:
 - ✓ Michele Penza, ENEA, Italy
 - ✓ Anita Lloyd Spetz, Linkoping University, Sweden
 - ✓ Albert Romano-Rodriguez, Barcelona University, Spain
 - ✓ Meyya Meyyappan, NASA Ames Research Center, USA
- **Deadline for abstract submission: 11 January 2016**



<http://www.emrs-strasbourg.com>

Some Spin-Out Activities from COST Action TD1105

- **FP7 Projects funded:**
- SENSIndoor (FP7-NMP): *Indoor Air Quality Sensors*
- MSP (FP7-ICT): *Building Management Nanotech-based Sensors*
- **H2020 Proposals submitted:**
- Graphene Flagship ERA-Net: *Graphene Bio-chemical Sensing*
- Social Challenge 5: *Sensors for Urban Air Quality Monitoring*
- **H2020 Proposals in preparation:**
- MSCA Innovative Training Networks
- Erasmus Mundus Masters Programme



Contact Details

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EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY



CSO Approval: 01 Dec. 2011

Kick-off Meeting: 16 May 2012

Start of Grant: 01 July 2012

End of Grant: 30 June 2016

www.eunetair.it

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michele.penza@enea.it

MC Vice Chair:

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Dr. Andrea Tortajada
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http://www.cost.eu/domains_actions/essem/Actions/TD1105