



EuNetAir

COST Action TD1105

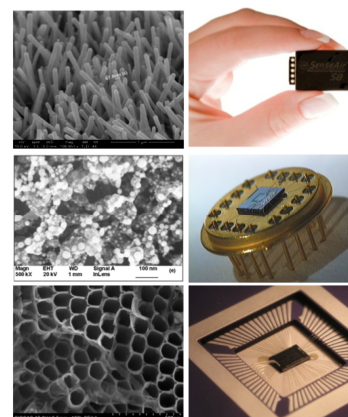
European Network on New Sensing Technologies for Air-Pollution Control and Environmental Sustainability

The main objective of the 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.

Abstract

This Action focuses on a new detection paradigm based on sensing technologies at low cost for Air Quality Control (AQC) and set up an interdisciplinary top-level coordinated network to define innovative approaches in sensor nanomaterials, gas sensors and devices, wireless sensor-systems, distributed computing, methods, models, standards and protocols for environmental sustainability within the European Research Area (ERA). State-of-the-art research on innovative sensing technologies for AQC based on advanced chemical sensors and sensor-systems at low-cost, including functional materials and nanotechnologies for eco-sustainability applications, the outdoor/indoor environment control, olfactometry, air-quality modelling, chemical weather forecasting, and related standardisation methods is performed already at the international level, but still needs intensive coordination efforts to boost new sensing paradigms for research and innovation.

Only a close multidisciplinary cooperation ensures cleaner air in Europe as well as reduced negative effects on human health for future generations in smart cities, efficient management of green buildings at low CO₂ emissions, and sustainable economic development. The objective of the Action is to create a cooperative network to explore new sensing technologies for low-cost air-pollution control through field studies and laboratory experiments, to transfer the results into preventive real-time control practises and to move towards global sustainability via monitoring climate change and outdoor/indoor energy efficiency. Establishment of such a network, involving COST Country top-class participants as well as non-COST key-experts, enables Europe to develop world capabilities in urban sensor technology based on cost-effective nanomaterials, to form a critical mass of researchers suitable for cooperation in science and technology, to give training and education, to coordinate outstanding R&D, to promote innovation towards industry, and to support policy-makers.



Keywords:

sensor functional materials, nanomaterials and sensing nanostructures, gas sensors and wireless sensor-systems with distributed computing, air quality control/monitoring and environmental measurements/modelling, protocols and standardisation methods for environmental sustainability and chemical weather forecasting.

Working Groups

- WG1: Sensor materials & nanotechnology
- WG2: Sensors, devices & systems for AQC
- WG3: Environmental measurements & air-pollution modelling
- WG4: Protocols & standardisation methods

Participating COST Countries and Institutions:

A: Materials Center Loeben Forschung GmbH
BE: University de Liège; VITO; Odometric SA; University Catholique de Louvain
BG: Bulgarian Academy of Sciences; Mircosystems LTD
CH: Ecole Polytechnique Federale de Lausanne; ETH; EnvEye SA; EMPA Swiss Federal Laboratories for Materials Science and Technology; SGX Sensortech
CZ: Academy of Sciences of Czech Republic; Institute of Photonics and Electronics
DE: IUTA; Alfred Becker GmbH; 3S GmbH; Saarland University; University of Bayreuth; University of Paderborn; UST GmbH; MPI for Biogeochemistry; Eurice GmbH; WHO GC; Siemens; University of Stuttgart; Heidelberg University; BAM; DLR
DK: Aarhus University; Technical University of Denmark; National Research Center for Working Environment
EL: Aristotle University; FORTH; ISI-ATHENA; University of Piræus; University of Patras; University of West Macedonia
ES: IREC; CSIC; University Rovira i Virgili; University of Barcelona; Worldsensing SL; Public University of Navarra; University de Santiago de Compostela
EST: University of Tartu
FI: University of Oulu; University of Helsinki; Tampere University of Technology
FR: University de Bourgogne; University Blaise Pascal; Ecole des Mines de Douai; CEA-CNRS; ETHERA; Nano-Sense

Non-COST Participants:

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

HR: Rudjer Boskovic Institute; University of Zagreb
HU: Hungarian Meteorological Service; Szechenyi Istvan University
IE: Trinity College Dublin; University College Cork
IL: AirBase Systems; Technion Institute of Israel
IS: Agricultural University of Iceland
IT: ENEA; ELETTRA; University of Bari; Lenviros srl; Sensichips srl; University of Brescia; University of Trieste; ARPA-Puglia; RED srl; NOVASIS srl; ARIANET srl; CNR
L: Luxembourg Institute for Science and Technology
LV: University of Latvia; Riga Technical University
MK: Ministry of Environmental and Physical Planning; University St. Kliment Ohridski
NL: IMEC; ECN
NO: NILU Norwegian Institute for Air Research
PL: Silesian University of Technology; Warsaw University of Life Science; Czestochowa University of Technology
PT: University of Coimbra; IDAD Institute of Environment and Development; National Health Institute; University of Lisbon; University of Aveiro; University of Porto; LNEG
RO: National R&D Institute for Nonferrous and Rare; SC IPA SA
SE: Chalmers University of Technology; Linköping University; SenseAir AB; SenSIC AB
SI: Aerosol doo; University of Ljubljana
SRB: Institute of Public Health of Belgrade; VINCA Institute
TR: GEBZE Institute of Technology; Middle East Technical University of Ankara; Nigde University; Bahcesehir University
UK: Alphasense Ltd; Cambridge CMOS Sensors Ltd; Imperial College London; Newcastle University; University of Manchester; University of Warwick; University of Cambridge; University of Edinburgh; Worcester University



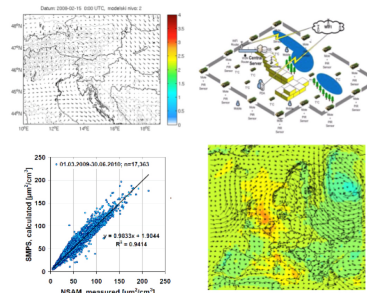
EuNetAir

COST Action TD1105

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

Objectives

The aim of the Action is to form a European-wide science and technology knowledge platform by a multidisciplinary coordinated network at international level on the new sensing technologies for Air Quality Control (AQC) including sensor nanomaterials, portable wireless sensor-systems and distributed computing, air-quality modelling and chemical weather forecasting, standards, methods and protocols for environmental measurements in order to advance R&D and innovation in the European green-economy by strengthening the sustainable development in smart cities, outdoor air-pollution control and indoor energy efficiency in buildings and to foster the technology transfer of the new sensing paradigm of the cost-effective chemical sensors in the European countries with a special focus on SMEs.



Action Details – Action Fact Sheet:

Memorandum of Understanding (MoU)	oc-2011-1-9706
CSO Approval date	01 December 2011
Kick-off Meeting of Action TD1105	16 May 2012
Start of Action	1 July 2012
Entry into force	09 January 2012
End of Action	15 May 2016
Extension of Action	15 November 2016
Period of Action	4 years

Participants of COST Action EuNetAir

At the moment of approval of the Action, 51 big institutions from **17 European Countries** (*Belgium, Bulgaria, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Lithuania (pending), Netherlands, Poland, Slovenia, Spain, Sweden, Switzerland and United Kingdom*) participated in the preparation of the proposal. The Action spans largely across the European Union including a wide geographical coverage and other Countries, such as Norway, Iceland, Latvia, Romania, and Turkey, that signed MoU after its approval from CSO.

At the Kick-off Meeting (May 16th, 2012), **21 COST countries** were participants in the COST Action TD1105 by involving 60 research teams from COST area (Europe-zone).

At the 6th MC Meeting (Istanbul, December 5th, 2014), **29 COST Countries** were participants in the COST Action TD1105 by involving 90 research teams from COST Countries, Near Neighbour Countries (Morocco, Russia, Ukraine) and International Partner Countries (Australia, Canada, China, USA).

At the date of November 2016, **31 COST Countries** (*Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Luxembourg, Former Yugoslav Republic of Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom*) with 123 partner institutions are involved in EuNetAir. The Action participants are from 55 universities (44%), 39 research centres (32%), 4 environmental agencies (3%) and 25 SMEs (21%) including 9 spin-offs (8%). Additional eight top-level institutions from **7 Non-COST Countries** (Australia, Canada, China, Morocco, Russia, Ukraine, USA) are involved in the Action.

COST Action TD1105 EuNetAir – Leaflet Iss. 2 / September 2016

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COST website: http://www.cost.eu/domains_actions/essem/Actions/TD1105?management

Action website: <http://www.eunetair.it>