



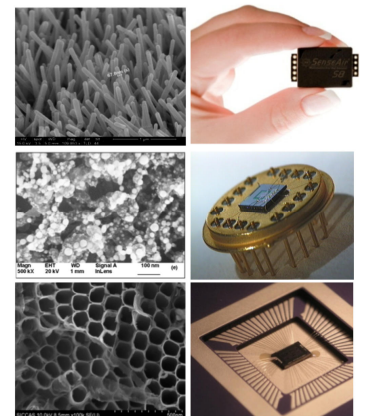
EuNetAir COST Action TD1105
European Network on New Sensing Technologies for Air-Pollution Control and Environmental Sustainability

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 will focus 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 will ensure 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 participants as well as non-COST key-experts, will enable 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:

BE: University de Liège; VITO; Odometric SA

BG: Bulgarian Academy of Sciences

CH: Ecole Polytechnique Federale de Lausanne; E2V Microsensors SA; EnvEve SA; Empa Swiss Federal Laboratories for Materials Science and Technology

CZ: Academy of Sciences of Czech Republic

DE: Institute of Energy and Environmental Technology; Alfred Becker GmbH; 3S GmbH; Saarland University; University of Bayreuth; University of Paderborn; UST GmbH; MPI for Biogeochemistry; University of Applied Science Ostwestfalen-Lippe

DK: Aarhus University; Technical University of Denmark

EL: Aristotle University; FORTH; ISI-ATHENA; University of Piraeus

ES: Catalonia Institute for Energy Research; CSIC; University Rovira i Virgili; University of Barcelona; Worldsensing SL

FI: University of Oulu; University of Helsinki; University of Tampere

FR: University de Bourgogne; University Blaise Pascal; Ecole des Mines de Douai; CEA-CNRS; ETHERA

HU: Hungarian Meteorological Service

Non-COST participants:

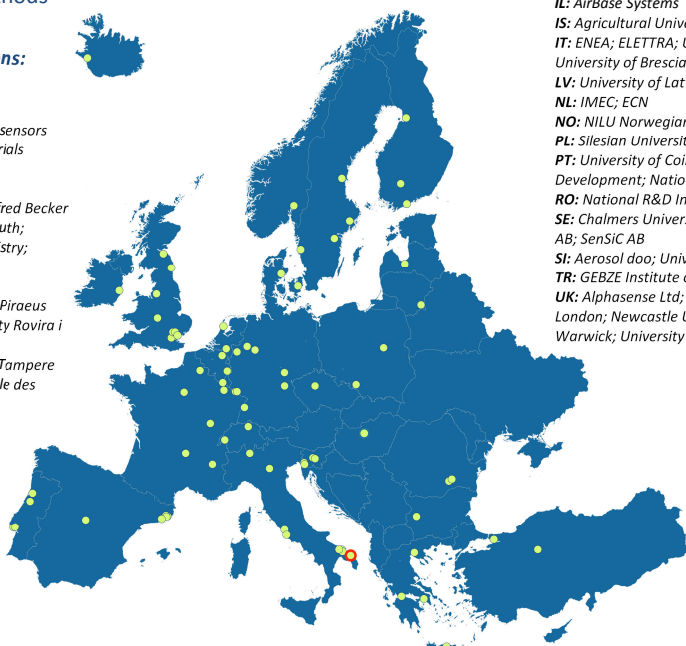
Australia: CSIRO

Canada: University of Waterloo

China: Chinese Academy of Sciences

Russia: National Research Center Kurchatov-Institute

USA: NASA Ames Nano Research Center; Southern Illinois University Carbondale



IE: Trinity College Dublin

IL: AirBase Systems

IS: Agricultural University of Iceland

IT: ENEA; ELETTRA; University of Bari; Lenviros srl; Sensichips srl; University of Brescia; University of Trieste; ARPA-Puglia

LV: University of Latvia

NL: IMEC; ECN

NO: NILU Norwegian Institute for Air Research

PL: Silesian University of Technology; Warsaw University of Life Science

PT: University of Coimbra; IDAD Institute of Environment and Development; National Health Institute; University of Lisbon

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

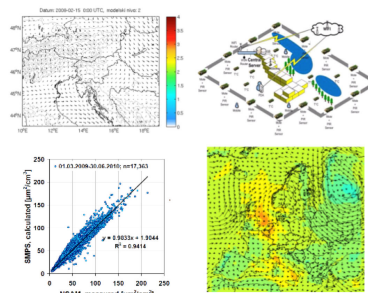
TR: GEBZE Institute of Technology; Middle East Technical University

UK: Alphasense Ltd; Cambridge CMOS Sensors Ltd; Imperial College London; Newcastle University; University of Manchester; University of Warwick; University of Cambridge; University of Edinburgh



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	30 June 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, Switzerland, Germany, Denmark, Greece, Spain, Finland, France, Hungary, Italy, Lithuania, Netherlands, Poland, Sweden, Slovenia, 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, Turkey, 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 date of January 21st, 2013, **25 COST countries** with 78 partner institutions are involved in EuNetAir. The Action participants are from **37 universities**, **22 research centres**, **two environmental agencies** and **17 SMEs** including **seven spin-offs**. Additional six top-level institutions from **five Non-COST countries** (Australia, USA, Canada, China, and Russia) are involved in the Action.

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

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