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

COST Action TD1105

1ST TRAINING SCHOOL

Universitat de Barcelona, Spain, 13 - 15 June 2013

organized by UB, MIND-IN2UB - Dept. of Electronics and CSIC-IDAEA

Action Start date: 01/07/2012 - Action End date: 30/06/2016

Year 1: 2012 - 2013 (***Ongoing Action***)

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professional apprenticeship

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LEnviroS Ltd - Italy

COST is supported by the EU Framework Programme

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Expertise of the Trainee related to the Action

Monitoring and chemical characterization of odorous emissions through electronic noses and dynamic olfactometry

Drafting of Safety Data Sheet about chemical compounds according the new European regulations REACH and CLP

STSM

COST

Application of lichens as ecological indicators of atmospheric nitrogen deposition

Current research activities of the Trainee (1/2)

Different kind of «noses»

Odour impact assessment:





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a
forecast
system for
odour levels

REPORTS of CITIZENS

traditional questionnaires

The new born:
ODORTEL System

SENSORS Dynamic olfactometry, Citizens' reports)

Gas chromatography

Wind tunnel system

PID

NOx, BTX, NMHC

Electronic Nose

DYNAMIC OLFATTOMETRY

Sensorial methodology for the determination of odour concentration in air samples, according to UNI-EN 13725

Dispersion customized models

Identification and systematization of emission sources for the production process

PEN3

RQBOX

Current research activities of the Trainee (2/2)

Application of lichens as ecological indicators of atmospheric nitrogen deposition

Lichens are symbiotic associations of a fungus and a photosynthetic partner (algae or cyanobacteria).

Lacking roots, they depend on the atmosphere for their nutrition, assimilating all the elements present in the air. Therefore, elemental levels in lichens often reflect air composition, making them effective biomonitors of atmospheric quality.

Among the other, lichens are used as bioindicators of different forms of reactive nitrogen (N).

- Establishing the origin of N through the isotope signature of N compounds in lichens and in passive samplers (ALPHA)
- Investigating how ergosterol (the principal component of fungal plasma membranes) level changes in relation to the different ammonia concentrations

Achieved **RESULTS** and future activities

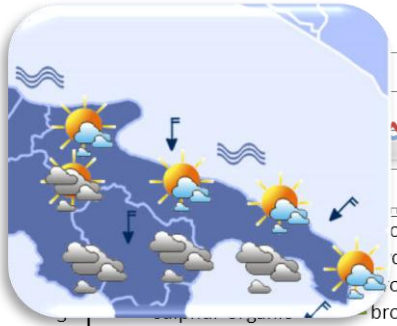
Wheather

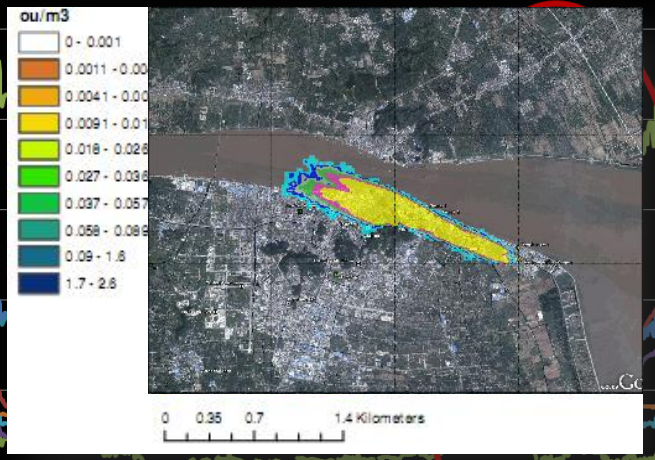
Electronic nose

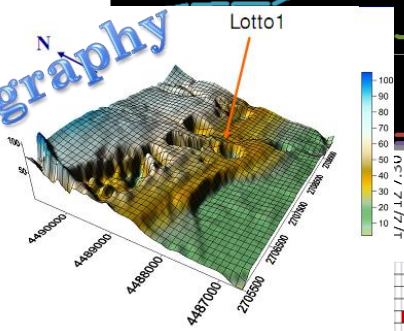
DISPERSION CUSTOMIZED MODEL

Emissions

Orography







Continuous emissions monitoring allows to collect time series. This dataset, after statistical processing (eg. Neural networks), can provide emission forecasts.

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