European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir* COST Action TD1105 1<sup>ST</sup> 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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## **My expertise**

- Study & characterization of gas sensors: metal oxides and carbon-based sensors.
- Electrical measurements.
- Flexible electronics: polyamides as substrates
- Spray deposit: fast and easy prototyping



### **Current research activities**

MIND: Applied Nanoelectronics Group

Gas Sensors and Nanosensors



Computing for Nanotechnology



Advanced Material Characterization



#### **Smart Sensor Electronics**



EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Graphene Printed Electronics



## **Current research activities**

- My research:
  - Carbon nanofibers (CNFs) gas sensors
    - Improvement of its characteristics
    - Different sensing strategies
  - Flexible electronics
    - Development of flexible substrates
  - Metal oxides (MOXs) gas sensors
    - Nanofibers fabricated with electrospinning









# Achieved RESULTS and future activities

- Characterization of CNFs with different stimuli
  - Control of stress applied to the flexible sensor
- Decoration of CNFs
  - Other functionalizations

S&A B. In press http://dx.doi.org/10.1016/j.snb.2012.12.093 Talanta 117, 239–247



- Continue the research in MOXs sensors
  - Pass to flexible devices







## **CONCLUSIONS**

#### Topics of research

- Gas sensors
- Materials
- Electronics

#### Sensor devices have been fabricated, tested and characterized

- To different stimuli
- Functionalization with metal nanoparticles have been achieved
- Further studies are coming!

