



# Autonomous sensing platforms for health, security and environmental applications - ASAP

Miguel Urbiztondo Castro Universidad de Zaragoza

Zaragoza, April 25th 2017









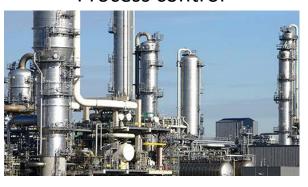




Food industry



**Process control** 



Health and life sciences



# **GAS SENSOR FOR...**



Smart cities & Smart environment



**Environmental monitoring** 







Security, public safety and emergencies

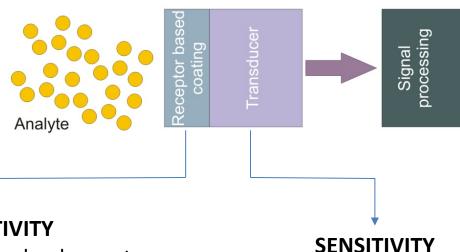








# **GAS SENSOR**



### **SELECTIVITY**

Ability to respond only, or at least predominantly, to certain components in a mixture, and not to others.

# Nanostructured materials

# NEMS/MEMS







capability of sensing ever smaller

amounts of a given compound.







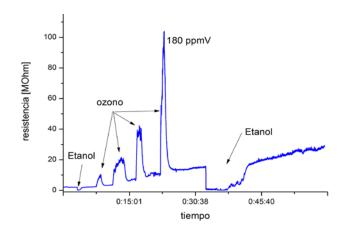
# Nanosensors for environmental pollutant control Integrated in street lights (2012-2015)



microhotplates



WO<sub>3</sub>
Hydrothermal synthesis provide better surface/volumen ratio.





IPT-2012-0749-310000

Farolas inteligentes con nanosensores para control de calidad del aire. NANOSENSOR



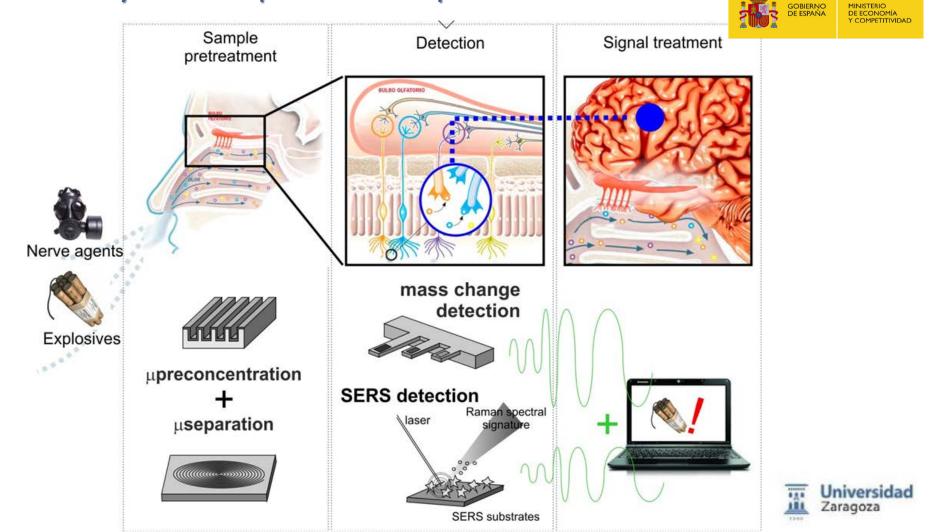






Microsystems based on nanostructured materials for explosive and chemical warfare agents







## 2. Action Plan





Interreg Sudoe Programme supports regional development in Southwest Europe Submitted on Nov2015 / rejected on Feb2016



Research and Innovation Staff Exchange (RISE) Submitted on abril 2017





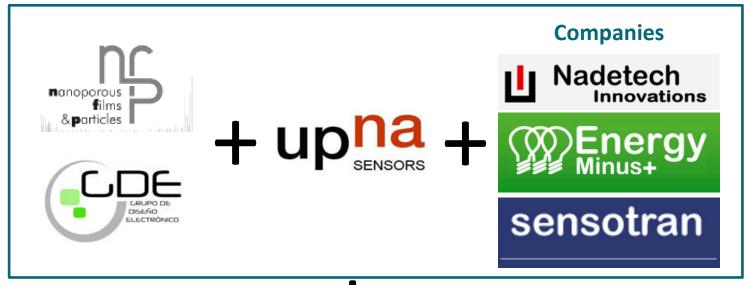






# 3. Members



















### **SENSORS**

AUTONOMOUS SENSING PLATFORMS FOR HEALTH, SECURITY AND ENVIRONMENTAL APPLICATIONS: ASAP



Mª Pilar Pina - Universidad de Zaragoza Contact: mapina@unizar.es







