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

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Expertise

- ***Al2O3 nanotubes***: Production of tubes by 4 step electrochemical method.

- ***V nanowires*** : Production by electrochemical route.

- ***ZnO nanoparticles:*** Production undoped ZnO particles by CVD method. (nano seeds, nano rods, tetrapods)

- ***ZnO nanoparticles:*** Production of doped ZnO particles by CVD method.

Current Research Activities

Current research topics at the Trainee organization / Problem statement:

More efficent, more sensitive & wider usuable gas sensors.

The formation and developement mechanism of nano particles.

Ongoing research topics :

Gas sensing abblitiy of :

- Undoped ZnO,
- Doped ZnO,(Ni, Ag, Pd, V),
- Vanadium,
- Formation mechanism of nanoparticles (CVD Technique).

RESULTS and Future Activities

Gained:

- ***The new dopped materials,***
- Different substrates,
- ***New sized; dopped and undopped ZnO structures.***

Expected:

- Sensor characteristics measurements,
- Different surface methods,
- ***Higher sensibility.***

CONCLUSIONS

- ***As prediction:***

  The right surface area; dopping, bonding to the surface combination → Much higher effectivity.

- The surface area can be controlled by using the exp. parameters.

- Dopping is effecting the efficency.

- Bonding to surface is muchly about the formation mechanism and the type fo surface.