

# POZVÁNKA NA SEMINÁŘ

## RISK LEVEL ASSESSMENT AND ITS USE IN THE DESIGN OF SAFE WORKPLACES FOR R+D WITH NANOPARTICLES

**Kdy:** 18. července 2017 od 9.00 – 11.00

**Kde:** TUL, budova L, seminární místnost (4.003), 4. patro

**Lektoři:** *Dr. Ing. Vicenç Martí*  
Doctor in Chemical Engineering by Universitat Politècnica de Catalunya, R+D in CTM Centre Tecnològic

*Irene Guell Jubany*

Ph.D. in wastewater treatment, modelling, mikrobiology and process control by Universitat Autònoma de Barcelona, researcher in CTM Centre Tecnològic

**Abstract:** Risk Level Assessment (RLA) by Using Control Banding (CB) is a qualitative approach that allows to assess risks and design a safe workplace when nanomaterials are used.

Briefly, the toxicity assessment of the nanomaterial is established in terms of Severity and the exposure assessment as Probability.

Severity includes surface chemistry, particle shape and diameter, solubility and several toxicities types (carcinogenesis, mutagenicity, reproductive toxicity, dermal toxicity, asthma) linked to the particle and the material used for the nanomaterial.

Probability is a function of amount of nanomaterial used, dustiness/mistiness, number of employees with similar exposure and frequency and duration of the operation involved with nanomaterials.

The combination of ranks of severities and probabilities give four RL that allow the implementation of the specific prevention solutions, (General ventilation, Fume hoods or local exhaust ventilation, Containment and other measures).

This methodology has been applied and illustrated with scenarios linked to research with nanoparticles (either bottom-up or top to down approach) held in Universitat Politècnica de Catalunya (UPC) and CTM-EURECAT.

As a result of the methodology, a detailed flowchart diagram showing the engineered control measures in a process of R+D could be obtained.