

EULANETGERMAT – IRELAC SEMINAR BRUSSELS

Title of the presentation/Acronym:

Título de la presentación/Acrónimo:

Synthesis and Characterization of Nanoparticulate Material

Name of the person:

Nombre y Apellidos de la persona que presenta el trabajo:

Nelcy Della Santana Mohallem

Institution represented:

Nombre de la institución que se representa:

Universidade Federal de Minas Gerais

Short CV (5 lines maximum), *Breve CV (no más de 5 líneas)*

PhD in Applied Physics, author of about 75 scientific publications, professor of physical-chemistry and material science in the Federal University of Minas Gerais, UFMG, Chemistry Department, since 1992. Vice-director of the Center of Microscopy of UFMG. She supervised directly 14 PhD and 7 Master Degree students. Current supervision of 2 PD, 2 PhD and 1 Master Degree. She has large experience in coordination of several academic projects, including projects in collaboration with Brazilian companies.

SEMINAR PRESENTATION

DESCRIPTION OF THE OBJECTIVES (5 LINES MAXIMUM)

DESCRIPCIÓN DE LOS OBJETIVOS (5 LÍNEAS MÁXIMO)

We aim to synthesize nanoparticulate oxide materials, controlling their homogeneity, purity, texture, morphology and structure. These materials can be achieved on laboratorial and industrial scale, by non-conventional processes using wet chemistry, with good efficiency and reproducibility.

DESCRIPTION OF THE MAIN RELEVANT RESULTS (10 LINES MAXIMUM)

DESCRIPCION DE LOS RESULTADOS MÁS RELEVANTES (10 LÍNEAS MÁXIMO)

Ceramic nanopowders of alumina, titania, barium titanate, ferrites and silica, among others, were synthesized through non-conventional synthesis processes such as precipitation, hydrothermal and sol-gel process with special drying procedures. The influence of temperature and drying method on the structural, textural, and morphological properties of the material have been studied by powder X-ray diffraction, Raman and infrared spectroscopies, nitrogen adsorption, atomic force microscopy, scanning and transmission electron microscopies. Structural, textural and morphologic properties of the powders were changed under control, due to the different drying routes, and tested in various types of medical, electronic and environmental applications. The materials also were obtained in industrial scale with efficiency and reproducibility.

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**EULANETWORK IN CERAMIC MATERIALS
WITH ENVIRONMENTAL AND INDUSTRIAL
APPLICATIONS**

PART B

PROPOSAL ACRONYM. **EULA-NETCERMAT**