

# NICOLETA CORNEI

## Research areas

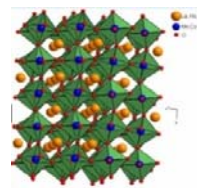
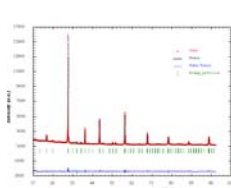
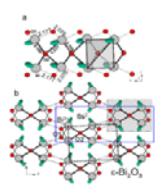
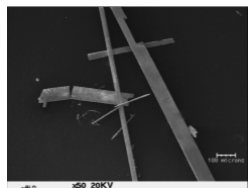
- **Inorganic chemistry:** chemistry of metals and non-metals
- **Solid state chemistry:** Synthesis and characterisation of oxide materials with special properties.

**Inorganic chemistry:** Synthesis and characterisation of inorganic compounds by X-ray diffraction, FT-IR and UV-vis analysis, electronic microscopy (SEM)

**Solide state chemistry:** -synthesis by solid state reaction, sol-gel and hydrothermal methods of perovskites compounds  
-preparation of hydrophilic thin films of doped-TiO<sub>2</sub> deposited on glass and silicon substrates;

- synthesis of nanocrystalline ferrites with technical and medical applications;  
- characterisation by X-ray diffraction, FT-IR and SEM and analysis of electric and magnetic properties of oxides compounds.

**Keywords:** oxides, perovskites, spinels, thin films, sol-gel method, hydrothermal method, X-ray diffraction, magnetic and electric properties, magnetoresistance.



## Publications (selection)

Craus, M.L., Islamov, A. Kh., Anitas, E.M., **Cornei, N.**, Luca, D., Microstructural, magnetic and transport properties of La<sub>0.5</sub>Pr<sub>0.2</sub>Pb<sub>0.3-x</sub>Sr<sub>x</sub>MnO<sub>3</sub> manganites, *J. Alloys and Compounds*, 592, 121-126, **2014**.

Gherca, D., **Cornei, N.**, Menré, O., Kabbour, H., Daviero-Minaud, S., Pui, A., In situ surface treatment of nanocrystalline MFe<sub>2</sub>O<sub>4</sub> (M=Mg, Mn, Co, Ni) spinel ferrites using linseed oil, *Appl. Surface Science*, 287, 490– 498, **2013**.

Pui, A., Gherca, D., **Cornei, N.**, Synthesis and characterization of MFe<sub>2</sub>O<sub>4</sub> (M = Mg, Mn, Ni) nanoparticles, *Materials Research Bulletin*, 48(4), 1357-1362, **2013**.

Mardare, D., Yildiz, A., Girtan, M., Manole, A., Dobromir, M., Irimia, M., Adomnitei, C., **Cornei, N.**, Luca, D., Surface wettability of titania thin films with increasing Nb content, *J of Applied Physics*, 112, 073502, **2012**.

D. Mardare, F. Iacomi, **N. Cornei**, M. Girtan, D. Luca, Undoped and Cr-doped TiO<sub>2</sub> thin films obtained by spray pyrolysis, *Thin Solid Film*, 518(16), 4586-4589, **2010**.

Bulimestru, I., Menré, O., Tancret, N., Rolle, A., Djelal, N., Burylo, L., **Cornei, N.**, Popa, N., Gulea, A., Heterobimetallic Ba-Co aminopolycarboxylate complexes as precursors for BaCoO<sub>3-d</sub> oxides; towards a one-stage-deposition of cobaltite films, *J. of Materials Chemistry*, 20, 10724-10734, **2010**.

**Cornei, N.**, Tancret, N., Abraham, F., Menré, O., The new ε-Bi<sub>2</sub>O<sub>3</sub> metastable polymorph, *Inorganic Chemistry*, 45, 4886-4888, **2006**.

**Cornei, N.**, Craus, M-L., Influence of the rare earth cation (Ln =La, Nd, Sm) on the properties in the Ln<sub>0.44</sub>Hf<sub>0.11</sub>Sr<sub>0.45</sub>MnO<sub>3±δ</sub> manganite oxides, *J. of Alloys Compounds*, 368, 58-61, **2004**.



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**Inorganic chemistry  
Solide state  
chemistry**

**PhD**

„Alexandru Ioan Cuza”  
University of Iași, 2003

**Postdoctoral  
fellowship**

Ecole Nationale  
Supérieure de Chimie  
de Lille Unité de  
Cristallochimie et  
Physico-Chimie du  
Solide (10 monts -  
2005)

**Visiting Professor**

Ecole Nationale  
Supérieure de Chimie  
de Lille, France