

Prof. Dr. Luc Vellutini

During his thesis, L. Vellutini designed new organosilyl building blocks to achieve successfully the formation of chiral (left- and right-handed helices) hybrid silica as well as lamellar hybrid silicas. From this work, he showed that it was possible to transcribe the chirality and also the self-assembled structures of the building block precursors to the resulting materials using the sol-gel process.

After his thesis, Luc Vellutini was a postdoctoral fellow in the Institut des Matériaux Jean Rouxel de Nantes between 2003 and 2005. He worked in the field of the porous silicon nanocomposites filled by optically active polymers. He has explored successfully the use of intermolecular H-bond interactions between monomers to control the polymer chain organization after the polymerization process.

L. Vellutini, is presently associate professor at ISM of the University of Bordeaux. He is working on the design and the development of new biosensors for applications in analysis and biological diagnoses. Progress in this field depends on the control of surface properties *via* the functionalisation and biofunctionalisation of surfaces. Within this context, he performs the grafting of new functionalized coupling agents (linear or dendritic structure) to covalently immobilize biomolecules (antibodies, protein, bacteria ...) onto solid substrates (glass and silicon). He is also closely working on the functionalization of core-shell superparamagnetic nanoparticles (MNPs) for biotechnology applications.