Name SURNAME: François-Xavier PERRIN			
Function:	Professor		
Institution:	**MAPIEM Lab**, Matériaux Polymères Interfaces Environnement Marin,	□ ANR □ Nuria Ruiz/Solène Gasnier	
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Division	**Controlled Interphases & Durability of Heterogeneous Materials Group**		

Areas of Expertise:

Fundamental and applied research with regarding new products and technologies, that consider the following directions: **(i) clay chemical functionalization**; **(ii) hydrogel synthesis and characterization**; **(iii) nanosciences and nanomaterials**; **(iv) development of nano-objects with controlled release properties** ; **(v)** design of synthetic methods with minimal environmental impact. **Research contributions** in the main field of expertise refer to ingenuous synthesis approaches by bottom-up or top-down approaches for multifunctional nanostructured organic-inorganic composites. Among the synthetic methods currently being investigated, we are particularly interested in water based process (suspension, emulsion), sol-gel techniques and electrodeposition methods (electropolymerization and electrophoretic methods). Organic-inorganic components that are currently prepared are clay, polyhedral oligosilsesquioxane (POSS), nanosilica, conductive polymers, carbon nanotubes and graphene that can be functionalized or filled with active compounds for various applications (medical, corrosion protection…).

Nd characterization

MAPIEM is a laboratory from the university of Toulon, France composed of 19 lectures and professors and with excellent achievements in the last 5 years e.g. 140 published articles in ISI Journals with an average IF of 3.51, 6 Patents (4 EPO), 125 scientific communications and so on (http://mapiem.univ-tln.fr/). The main research activities developed at MAPIEM laboratory deal essentially with polymers and heterogeneous materials with a polymer matrix (coatings , composites…), with specific functionalities related to the marine environment (resistance to aggressive environments , corrosion protection , anti-fouling properties, hydrodynamic drag reduction...). A wide range of observation techniques (OM, SEM, AFM), thermal and thermo-mechanical characterization (DSC, TGA, DMA), chemical analysis (FTIR, HPLC, SEC, NMR, MS…) and biochemical analysis (BFRT, PCR...) required for the development of these research topics are available in the laboratory. See infrastructure at http://mapiem.univ-tln.fr/-Equipments-.html.

MAPIEM laboratory has a wide experience within materials science; managing or co-managing national projects with over 10 industrial projects with big enterprises and SMEs and 5 FUI/RAPID programs in close connection with socio-economic environment in the period 2011-2016, aiming innovative materials development for various applications. MAPIEM staff developed also a strong partnership with several institutes all over the world and particularly with ICECHIM institute in Romania (http://mapiem.univ-tln.fr/Academic-Partnership.html). The collaboration between MAPIEM and ICECHIM has resulted in 10 published articles in ISI journal in the last 5 years.

Role in the project:

Principal Investigator from behalf of MAPIEM –University of Toulon

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