

**Curriculum Vitae** **Virginie PONSINET****Equipe Méta-atomes | Métamatériaux | Métasurfaces**

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**RESEARCH INTERESTS**

Hybrid materials composed of polymers and dielectric or plasmonic nanoparticles; study of the relation between nanostructure and optical properties - Hybrid materials for passive day-time radiative cooling - Self-assembled nanoresonators and hybrid materials for metamaterial fabrication - Ordered phases and thin films of block copolymers: application to nanoparticle structuration - Structure and alignment of thin films of block copolymers

**CURRICULUM**

- 2012-2013** 1-y visiting professor, *Hybrid colloidal systems*, State Key Laboratory of Chemical Engineering, East China University of Science and Technology, Shanghai, China, Collab: H. Liu, J. Hu, X. Han
- 2004-today** CNRS researcher (DR since 2019), *Functional materials based on self-assembled polymers and colloids, Application to metamaterials*, Centre de Recherche Paul Pascal, Univ. Bordeaux, CNRS UMR 5031 (dir: P. Barois/P. Richetti/C. Zakri)
- 1999-2003** CNRS researcher, *Amphiphilic block copolymers*, Complex Fluids Laboratory, Cranbury, New-Jersey, USA, Rhodia/CNRS UMR 166 (dir: M. Joanicot/M. Morvan)
- 1995-1999** CNRS researcher, *Complex fluids hybridized with magnetic nanoparticles*, Laboratoire de Physique de la Matière Condensée, Collège de France, Paris, CNRS URA 792 (dir: P-G. de Gennes/C. Williams)
- 1994-1995** Post-doctoral researcher, *Electron microscopy studies of colloidal systems*, Department of Chemical Engineering, Technion, Haifa, Israel, Prof. Y. Talmon

**Diplomas**

- 2012** HDR (Habilitation à diriger les recherches), Univ. Bordeaux-1
- 1994** PhD Université P. et M. Curie, Paris-6 (M. Veyssié, P. Fabre)
- 1991** MSc Université P. et M. Curie, Paris-6 and Engineering degree ESPCI, Paris

**CURRENT AND RECENT COLLABORATIONS**

- *Frugal, Sustainable and Reversible Daytime Radiative Cooler Using a Smart Self-Assembled Metamaterial*, with Albert Castell, SEMB, Lleida University, Spain, and Bruno Zappone, CNR-Nanotec, Rende, Italy
- *Plasmonic nanoparticle clusters for non-linear optics*, with Alexandre Baron, CRPP, and Giuseppe Leo, LMPQ, CNRS-Univ. Paris Diderot
- *Artificial Intelligence-guided fabrication of self-assembled metasurfaces*, with Glenna Drisko, ICMCB, CNRS-Univ. Bordeaux, and Peter Wiecha, LAAS, Toulouse
- *The OUZO effect for assembling submicronic plasmonic shells*, with Fabienne Gauffre, ISCR, Univ. Rennes, and Christophe Serra, ICS, Strasbourg
- *Active glazing through plasmonic nanoparticles*, with Frédéric Mondiot, Saint-Gobain SVI, and Thierry Gacoin, LPMC, Ecole Polytechnique, Palaiseau
- *Silicon nanoparticle synthesis, organization and optical properties*, with Glenna Drisko, ICMCB, CNRS-Univ. Bordeaux
- *Hybridization of block copolymer thin films with optical nanoresonators*, with Guillaume Fleury, LCPO, CNRS-Univ. Bordeaux
- *Self-assembled metamaterials based on block copolymers*, with Patrick Guenoun, LIONS, CEA Saclay, and Bruno Gallas, INSP, Paris
- *Plasmonic Metamaterials*, with Morten Kildemo, Physics Department, NTNU, Trondheim, Norway
- *Plasmonic hybrid nanoparticles for the formulation of metamaterials*, with Mona Tréguer-Delapierre and Etienne Duguet, ICMCB, CNRS-Univ. Bordeaux

**(co)SUPERVISION:** 16 PhD students, 11 post-docs

**PRESENTATIONS:** 24 invited talks at international conferences,  
65 talks in conferences, workshop or seminars

**PUBLICATIONS:** 68 publications, ~1400 times cited (W-o-S), 5 patents

### **SOME SIGNIFICANT PUBLICATIONS**

- [Colloidal Self-Assembly of Silver Nanoparticle Clusters for Optical Metasurfaces](#), Maeva Lafitte, *et al.*, *Langmuir* 2024
- [An Ultra-Thin Near-Perfect Absorber via Block Copolymer Engineered Metasurface](#), Cian Cummins, *et al.*, *JCIS* 2022
- [Tailored self-assembled nanocolloidal Huygens scatterers in the visible](#), Rajam Elancheliyan, *et al.*, *Nanoscale* 2020
- [Enabling future nanomanufacturing through block copolymer self-assembly: A review](#), Cian Cummins, *et al.*, *Nano Today* 2020
- [Hyperbolic-by-design self-assembled metamaterial based on block copolymers lamellar phases](#), Xuan Wang, *et al.*, *J. Opt. Laser Techn.* 2017
- [Resonant isotropic optical magnetism of plasmonic nanoclusters in visible light](#), Virginie Ponsinet, *et al.*, *Phys. Rev. B* 2015
- [Plasmonic Optical Interferences for Phase-monitored Nanoscale Sensing in Low-Loss Three-Dimensional Metamaterials](#), Johann Toudert, *et al.*, *ACS Photonics* 2015
- [Polymorphism of natural fatty acid liquid crystalline phases](#), Hélène Fay, *et al.*, *Langmuir* 2012
- [Double-Polyelectrolyte, Like-Charged Amphiphilic Diblock Copolymers: Swollen Structures and pH- and Salt-Dependent Lyotropic Behavior](#), Denis Bendejacq, Virginie Ponsinet, *J. Phys. Chem. B* 2008
- [Well-Ordered Microdomain Structures in Polydisperse Poly\(styrene\)-Poly\(acrylic acid\) Diblock Copolymers from Controlled Radical Polymerization](#), Denis Bendejacq, *et al.*, *Macromolecules* 2002
- [Magneto-optical study of the orientation confinement of particles in ferrolyotropic systems](#), Dimitri Spoliansky, *et al.*, *Europ. Physical J. E* 2000

### **INVOLVMENT IN PROJECT MANAGEMENT**

*Principal investigator, project or work-package coordinator in scientific programs supported by: ANR CES09, ANR CES06, ANR CES05, PHC France-Norway Aurora, Conseil Régional d'Aquitaine, PHC France-China Xu-Guangqi, Labex Amadeus-Idex Bordeaux, ANR Programme P3N, European Union FP7-NMP, GIS-RTRA Matériaux en Aquitaine, ANR Programme Blanc, ANR JCJC, company Rhodia, company Thomson-CSF, company NIPSON.*

### **COMMITTEES AND REFEREING**

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|---------------------|---|
| Scientific:         | <i>Centre de Recherche Paul Pascal UMR5031 Scientific Council (2004-2008 and 2018-today) and Lab. Council (2022-); Team manager (2020-)</i><br><i>Metaconferences (2017-2025); Nanophotonics and nano-optics in C'Nano meetings (2018, 2019); Sino-French Workshop on Nanostructured Polymers and Nanohybrids (2013); SFP Condensed Matter Board (2009-2011); GFP Board (2009-2012); Franco-Israeli Meeting in soft matter, biophysics and microfluidics (2007)</i> |
| Evaluation:         | <i>NOW-The Netherlands panel (2025); HCERES laboratory visit (2024); FCT-Portugal Panel (2022); FNRS-Belgium Panel (2020); CNRS Emergence (2018-2020); ANR CES06 committee (2017-2018); AERES laboratory visit (2012); ILL experiment time sub-committee 9 (2006-2009).</i>   |
| Defense:            | <i>21 committees for HDR and PhD defenses, including 10 as 'rapporteuse'</i>  |
| Recruitment:        | <i>MCF/Prof positions at Universities in Orléans, Toulouse, Le Mans, Poitiers, Paris-Sud, Montpellier, Bordeaux, Evry.</i>  |
| Editorial:          | <i>Reflète SFP (2019-); Europhysics News (2020-); Frontiers in Nanofabrication (2020-today); IOP Nanofutures (2021-)</i>  |
| Equity/Transitions: | <i>Centre de Recherche Paul Pascal UMR5031 'Référénte égalité' CNRS (2022-) and 'Ambassadrice transitions' Univ. Bordeaux (2023-)</i>   |