

**Michel MORTIER** 50 years old  
**Present position:** Director of Research at CNRS, Head of the Institute of Research in Chemistry of Paris  
Ecole Nationale Supérieure de Chimie de Paris (Chimie ParisTech)  
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**Academic degrees:**

2003: HDR, Habilitation for research supervision, University Pierre and Marie Curie - Paris  
1994: PhD in Materials Science, University Pierre and Marie Curie - Paris, cum laude  
1990: Master in Materials Science, University Pierre and Marie Curie - Paris

**Main collective and official responsibilities:**

- Founder and Head of IRCP "Institut de Recherche de Chimie Paris" (240 staff) since 01/2014
- Senior Advisor of the executive President of CNRS since 05/2010
- Deputy director (CNRS) for the scientific policy of Aquitaine area (Bordeaux University and Idex) since 01/2012

**Research fields**

Main research techniques:

- Spectroscopic techniques: ESR, Raman diffusion, inelastic neutron scattering, Optical spectroscopy of 4f rare earth elements and 3d transition metal ions.
- Materials characterizations: DTA, X-ray scattering, electronic microscopy
- Synthesis of materials: single crystal growth, glass techniques and glass-ceramic preparation, ceramic processing, solid state chemistry and soft chemistry applied to inorganic fluoride compounds, nanoparticle synthesis methods

Main actual interest:

Conception and characterization of rare earth doped materials for optical applications (laser, imaging, photovoltaic, thermal sensing): nanocomposite glass-ceramics, fluoride glasses, transparent fluoride ceramics, single nano-objects.

- 109 references in ISI WoS (of which 46 with impact factor > 2), 6 book chapters, 19 proceedings, 170 communications (of which 22 invited international lectures).
- Supervisor of 9 PhD (of which 1 in progress), 6 postdoctoral researchers, Supervisor of 13 research contracts
- Referee for more than 30 international journals and for the French National Agency for research
- Member of the scientific committee of numerous international symposia and conferences

**Teaching (University Pierre and Marie Curie, Paris and PSL Research University)**

Materials science and engineering (master degree), Solid State Physics (master degree)

**Selected papers:**

*Tuning temperature and size of hot spots and hot spot arrays, Small, 7-2 (2011) 259*  
*Origin of light scattering in ytterbium doped calcium fluoride transparent ceramic for high power lasers, Journal of the European Ceramic Society, 31 (2011) 1619*  
*Near-field Optical Characterization of Interacting and Non-Interacting Gold Nanoparticles Embedded in a Silica Thin Film, Optics Communications, 284 (2011)3118*  
*Strong Near-field Optical Localization on an Array of Gold Nanodisks, Journal of Applied Physics, 110, 044308 (2011)*  
*Effect of Yb<sup>3+</sup> concentration on optical properties of Yb: CaF<sub>2</sub> transparent ceramics, Optical Materials 34, 6(2012) 965*  
*High gain wavelength selective amplification and cavity ring down spectroscopy in a fluoride glass erbium doped microsphere, Optics Letters 37, 22 (2012) 4735*  
*The role of thermal heating on the voltage induced insulator-metal transition in VO<sub>2</sub>, Physical Review Letters, 110, 056601 (2013)*  
*Coupling of high quality factor optical resonators, Physica Scripta 2013, T157, 014024*  
*Mapping and Quantifying Electric and Magnetic Dipole Luminescence at the nanoscale, Physical Review Letters, 113 (2014) 076101*  
*Magnetic and Fluorescent Hybrid Silica Nanoparticles Based on the Co-encapsulation of  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanocrystals and [Mo<sub>6</sub>Br<sub>14</sub>]<sup>2-</sup> Luminescent Nanosized Clusters by Water-in-oil Microemulsion, Key Engineering Materials, 617 (2014) 174*  
*High quality-factor optical resonators, Phys. Scr. T162 (2014) 014032*  
*Inorganic Molybdenum Octahedral Nanosized Cluster Units, Versatile Functional Building Block for Nanoarchitectonics, Journal of Inorganic and Organometallic Polymers and Materials, 25 (2015) 189*  
*Laser performances of diode-pumped Yb:CaF<sub>2</sub> optical ceramics synthesised with an energy-efficient process, Optica, vol. 2, N° 4, (April 2015) 288*  
*Wet-route synthesis and characterization of Yb:CaF<sub>2</sub> optical ceramics, J. of the Amer. Ceram. Soc. 1-9 (2016)*  
*Slow-light microcavity photon lifetime enhancement, Physical Review Letters 116, 133902(2016), 1-6*  
Google scholar: <https://scholar.google.fr/scholar?hl=fr&q=mortier+m&btnG=&lr>  
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