



Rémi CARMINATI

Born February 17, 1971 in Thonon (France)

Married, two children

Nationality: French

Professional address

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Current position: Professor at ESPCI Paris (<http://www.espci.fr>)

Area of expertise: Optics of complex media

Education

- 1993: Engineer Degree from Ecole Centrale Paris (France)
 - 1993: Master Degree in Transport Phenomena and Heat Transfer, Ecole Centrale Paris (France)
 - 1993 - 1996: PhD in Optical Physics, Ecole Centrale Paris, defended in Sept 1996
Subject : *"Analysis of the image formation in near-field optics"*
Members of Committee : Profs. Boccara, Chavel (President), Girard, Greffet (Advisor), Nieto-Vesperinas (Referee), Pohl et Van Labeke (Referee)
 - 2002: "Habilitation à Diriger des Recherches" from the University of Paris-Sud, Orsay, defended in Nov 2002 Subject: *"Propagation, scattering and thermal emission of electromagnetic radiation at small scales"*
Members of Committee : Profs. Aspect (President), Boccara (Referee), Greffet, Sandoghdar (Referee), Van Labeke (Referee), Sáenz
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Employment history

- Oct 1996 - Sept 1997: Post-doctoral fellowship under a grant from the European Union, Department of Theoretical Condensed Matter Physics (Prof. M. Nieto-Vesperinas), Institute of Material Science of Madrid (Spain)
 - Oct 1997 - Sept 2003: Assistant Professor (Maitre de Conférence) at Ecole Centrale Paris (France), Physics Department
 - Oct 2003 - Nov 2007: Professor at Ecole Centrale Paris, Physics Department
 - Since Dec 2007: Professor at ESPCI Paris, Paris (France)
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Research topics

- 1993-2000 **Theory of image formation in near-field optics** (with Pr J.J. Greffet, PhD advisor, and Pr M. Nieto-Vesperinas)
 - Concept of transfer function of a near-field optical microscope, inverse problem
 - Perturbation theory for near-field scattering
 - Reciprocity and time reversal with evanescent fields
- 1998-2006 **Electromagnetic thermal fluctuations** (with Pr J.J. Greffet and Dr K. Joulain)
 - Coherence of thermal near fields, coherent thermal emission
 - Near-field radiative heat transfer
 - Introduction of the concept of thermal radiation STM (with Pr J.J. Sáenz) (experimentally realized by Dr Y. De Wilde in 2006)
- 2000 - **Nanophotonics and plasmonics** (since 2009 with Dr Y. De Wilde, Dr R. Pierrat and Dr V. Krachmalnicoff)
 - Enhancement and quenching of molecular fluorescence in nanostructured media
 - Magneto-optical interactions at the nanoscale
 - Electromagnetic densities of states at the nanoscale (from concepts to practical measurements)
- 2003 - **Multiple scattering of light in disordered media** (with Dr R. Pierrat, since 2015 with Dr Arthur Goetschy)
 - Transport models for diffuse light in scattering media (including applications to biomedical imaging)
 - Correlations and information in optical speckles
 - Coherence and polarization in electromagnetic speckles
 - Light scattering and absorption in correlated disorder
- 2010 - **Electrodynamics in disordered media** (with Dr Y. De Wilde, Dr R. Pierrat and Dr V. Krachmalnicoff)
 - Statistics of local density of states in disordered scattering materials
 - Proposals for the characterization of Anderson localization
 - Dynamics of quantum emitters in complex media

Scientific coordination and networking

Deputy Director for Research at ESPCI Paris, 2015-2019 (4 years)

Associate Director of the Langevin Institute (<http://www.institut-langevin.espci.fr>), 2009-2018 (10 years)

Coordinator of the research theme on "Waves in Complex Media" at the Langevin Institute

Referee of many international journals in physics and optics

Expert for French National Agency for Research (ANR) programs

Member of the International Scientific Committee of the international conferences Trends in Nanotechnology and ImagineNano

Coordinator of the "Waves and imaging in complex media" group of the CNRS French Research network on "Waves" (french name GDR Ondes), 2004-2012

Member of the French Optical Society, of the French Physical Society, of the European Optical Society and of the Optical Society of America.

Awards

Fabry-De Gramont Prize of the French Optical Society in 2006

Prize of the iXCore Foundation for Research in 2009 (in the form of a research grant)

Fellow of the Optical Society of America (2015)

Publications records (January 2019)

132 papers in international journals

10 book chapters

63 invited talks in international conferences

22 invited lectures in summer/winter schools

h-index: 40 (Scopus database)