

Carlos Manuel
Venâncio **Marques** Serra

Portuguese.
Born July 20, 1962 in Luanda, Angola.
CNRS Senior Scientist

[RID: B-2322-2010](#)

[ORCID: 0000-0002-3952-0498](#)



ENS Lyon - CNRS - UMR 5182
46, Allée d'Italie
69364 Lyon Cedex 07
France

Tel: +33 (0)4 72 72 81 18

Education

web: [web page](#); [Google Scholar](#); [published work](#); e-mail: carlos.marques@ens-lyon.fr

1980-86 Bachelor in Physics, University of Lisbon. Master in Physics, University of Lyon I.

1986-89 PhD: Polymers at Interfaces. ENS Lyon, University of Lyon I.

1994 Habilitation. University of Strasbourg.

Professional Career

1987-89 Teaching assistant at the Ecole Normale Supérieure de Lyon.

1989-95 CNRS Research Scientist at Institut Charles Sadron, Strasbourg.

1989-90 Post Doctoral position, Cavendish Laboratory, Cambridge.

1995-96 Sabbatical leave, University of California in Santa Barbara.

1996-98 C.N.R.S.-Rhodia-Princeton University Complex Fluid Laboratory, visiting scientist Princeton University.

1998-22 CNRS Research Scientist, Institut Charles Sadron, University of Strasbourg. Senior Scientist since 2002

2022- CNRS Senior Scientist, Chemistry Laboratory, Ecole Normale Supérieure de Lyon.

Awards

1994 Bronze CNRS Medal; 1999 CNRS Equipes Jeunes ACI; 2004 Alsace Research Award.

Teaching Experience

1987-89 Condensed Matter and Quantum Mechanics. ENS-Lyon and ULP Strasbourg

1993 Self-Assembled Systems, Curso de Post-Graduação. USP, Brazil.

1993-95 Polymer Physics. Ecole Supérieure de Plasturgie, Oyonnax.

1998 Physics of Membranes, Short Course. Princeton University.

2004-19 A Random Walk in Soft Land. UNAM, Mexico. USP, Brazil. University of Strasbourg

1999-19 Kinetics of Soft Matter and Advanced Soft Matter, University of Strasbourg.

150+ publications, choice of 6

[062] Impact of Polymer Tether Length on Multiple Ligand-Receptor Bond Formation. Jeppesen, C. *et al. Science*, 2001, **293**, 465. [A quantitative study of the role of ligand spacers on bio-adhesion.](#)

[081] Photo-induced Destruction of Giant Vesicles in Methylene Blue Solutions. Caetano, W. *et al. Langmuir*, 2007, **23**, 1307. [First visualisation of photo-induced oxidation of lipid membranes.](#)

[107] Gel-Assisted Formation of Giant Unilamellar Vesicles. Weinberger, A. *et al. Biophys. J.*, 2013, **105**, 154. [The easiest, fastest and most universal giant unilamellar vesicle's growing method.](#)

[110] Enhanced Chemical Synthesis at Soft Interfaces: A Universal Reaction-Adsorption Mechanism in Micro-compartments. Fallah-Araghi, A. *et al. Phys. Rev. Lett.*, 2014, **112**, 028301. [Was life born in a droplet?](#)

[113] Polymer collapse in miscible good solvents is a generic phenomenon driven by preferential adsorption Mukherji, D. *et al. Nature Communications*, 2014, **5**, 4882. [A counterintuitive simple explanation.](#)

[141] [The Giant Vesicle Book](#), Ed. R. Dimova and C. Marques, Boca Raton, CRC Press, 2019.

[148] Accumulation of styrene oligomers alters lipid membrane phase order and miscibility. Morandi, M.I. *et al. PNAS*, 2021, **118**, e2016037118. [The hidden threat of plastic pollution.](#)

Present Research

The science of lipid membranes: giant unilamellar vesicles as lipid bilayer platforms; lipid oxidation; pore formation; DNA, peptide and nanoparticle interactions with lipid membranes; specific adhesion; reaction-diffusion and confinement ... and also co-non-solvency; fiber compression; pebble erosion ...

