

CURRICULUM VITAE

Carlo Castellano

Place and date of birth: Rome (Italy), 30th December 1974

Assistant Professor at Università degli Studi di Milano, Dipartimento di Chimica

Education

Degree (“Laurea”) in Physics *cum laude*, University of Rome “La Sapienza” (1998), Thesis on “Local order and metal-insulator transition in manganites studied by Synchrotron radiation”;

PhD in Physics, University of Rome “La Sapienza” (2002), Thesis on “Study of local structure and dynamics in perovskite manganites”.

Professional preparation

PostDoctoral Fellowships from 2002 to 2010 at several Research Institutions (National Institute for the Physics of Matter (INFM), University of Rome “La Sapienza”, National Research Council (CNR) and University of Milan). In detail: **PostDoctoral position** at the Department of Physics, University of Rome “La Sapienza” on the “Study of local structure and dynamics in colossal magnetoresistive manganites” (2002-2003); at the Institute Laue – Langevin (ILL – Grenoble, France) on: “Study of biosystems dynamics by quasiclastic neutron scattering”, (2003-2004); at the Department of Physics, University of Rome “La Sapienza”, on the “characterization of the dynamical properties of biomolecules deposited on solid substrates” (2004-2006); at the Laboratory of Innovative and Artificial Materials (LAMIA-INFM-CNR) on “Synthesis and characterization of manganites nanometric powders by neutron powder diffraction, EXAFS and XANES” (2006-2007); at the University of Milan, Department of Structural Chemistry and Stereochemistry on “New strategies for the control of metal-assisted reactions”, (2008-2009) and on the research program “Porous materials having nano-channels for hydrogen and methane storage” (2010).

Teaching activity

Teaching of: “Mechanics and Thermodynamics”, A.A. 2003/2004 (University of Rome “La Sapienza”);

“Physics I”, A.A. 2005/2006 (University of Rome “La Sapienza”); “General and Inorganic Chemistry”, A.A. 2011/2012-2016/2017 (Faculty of Pharmacy, University of Milan); “Chemistry I”, A.A. 2016/2017-2018/2019 (Dept. of Physics, University of Milan).

Peer-reviewed publications selection

C. Castellano, J. Generosi, A. Congiu, and R. Cantelli, *Glass transition temperature of water confined in lipid membranes as determined by anelastic spectroscopy*, Appl. Phys. Lett. **89**, 233905 (2006).

Mauro Missori, Claudia Mondelli, Marco De Spirito, Carlo Castellano, Marina Bicchieri, R. Schweins, G. Arcovito, M. Papi, Agostina Congiu Castellano, *Modifications of the mesoscopic structure of cellulose in paper degradation*, Phys. Rev. Lett. **97**, 238001 (2006).

M. De Spirito, M. Missori, M. Papi, G. Maulucci, J. Teixeira, C. Castellano, G. Arcovito, *Modifications in solvent clusters embedded along the fibers of a cellulose polymer network cause paper degradation*, Phys. Rev. E **77**, 041801 (2008).

F. Domenici, C. Castellano, A. Congiu, G. Pompeo, R. Felici, *Ordering and lyotropic behavior of a silicon-supported cationic and neutral lipid system studied by neutron reflectivity*, Appl. Phys. Lett. **92**, 193901 (2008).

F. Domenici, C. Castellano, F. Dell’Unto, A. Albinati, A. Congiu, *Silicon supported lipid–DNA thin film structures at varying temperature studied by energy dispersive X-ray diffraction and neutron reflectivity*, Colloids and Surfaces B: Biointerfaces **88**, 432 (2011).

F. Domenici, C. Castellano, F. Dell’Unto, A. Congiu, *Temperature-dependent structural changes on DDAB surfactant assemblies evidenced by energy dispersive X-ray diffraction and dynamic light scattering*, Colloids and Surfaces B: Biointerfaces **95**, 170 (2012).

C. Castellano, A. Martinelli, M. Ferretti, M.R. Cimberle, C. Mondelli, *Small angle neutron scattering study of magnetic clustering in $(Pr_{0.55}Ca_{0.45})(Mn_{1-y}Cr_y)O_3$ manganites*, J. All. and Compd. **542**, 63 (2012).

F. Domenici, F. Dell’Unto, D. Triggiani, C. Olmati, C. Castellano, F. Bordi, A. Tiezzi, A. Congiu, *Vertical ordering sensitivity of solid supported DPPC membrane to alamethicin and the related loss of cell viability*, Biochimica et Biophysica Acta, General Subjects **1850**, 759 (2015).

Research topics

a) Study of the structure, magnetic and conductive properties of strongly correlated electron systems like transition metals and rare earth oxides (manganites, spinels, pyrochlores etc...);

b) Study of the structure and dynamics of lipid membranes and of their DNA and drug complexes;

c) Study of dynamics and structure of nano-structured inorganic polymers based on nitrogen ligands and transition metals (suitable for gas and solvents absorption).

Synthesis of the studied materials and their study by Extended X-ray Absorption Fine Structure (EXAFS), neutron and X-ray single crystal and powder diffraction, small angle neutron scattering (SANS), neutron and X-ray reflectivity, neutron and X-ray scattering. Principal Investigator of **26** research projects approved by scientific panels at international facilities (synchrotron and neutron facilities) and funded by EC.

Author of **102** peer-reviewed publications on international journals.