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CURRICULUM VITAE ET STUDIORUM Prof. CARLA ANDREANI

Current position: Full Professor, Chair of Applied Physics, University of Rome Tor Vergata (TOV), Rome (IT)

Previous positions:

[from 2007] Full Professor Department of Physics, University of Rome TOV (IT)

[from 2013] Director NAST Centre (Nanoscience, Nanotechnology, Instrumentation), University of Rome TOV (IT)

[2012] Visiting Professor at the Compact Pulsed Hadron Source (CPHS), Tsinghua University (Beijing, China)

[2010] Visiting Professor at Sun Yat-Sen University and Shandong University Institute of Crystal Materials (China)

[2007-2013] Vice-Director NAST Centre, University of Rome TOV (IT)

[1998-2007] Associate Professor in Condensed Matter, Dep. Physics, University of Rome TOV (IT)

[1985-1998] Researcher at Dep. Physics, University of Rome TOV (IT)

[1983-1984] Researcher, serving as Material Scientist, at ENEA Research Centre (IT)

[1984-1988] Visiting Scientist at the ISIS Spallation Neutron Source (UK), CNR bursary

[1984] Visiting Scientist at IPNS (Intense Pulsed Neutron Source) Argonne National Lab (IL, USA)

[1981-1983] Visiting Scientist at LINAC Harwell, A.E.R.E. Harwell (Oxfordshire, UK), CNR bursary

[1980-1981] Post Doc Fellow, Fondazione Bordini (IT)

[1977] Degree in Physics cum Laude

NATIONAL AND INTERNATIONAL AWARDS

[2016] Carla Andreani was awarded the prize 100 Eccellenze Italiane 2016

[2016] Carla Andreani was awarded the Occhialini Medal and Prize 2016 (I-UK) – Citation: “For her outstanding contributions to novel experimental techniques and methods in neutron spectroscopy and her tireless commitment to fostering the British-Italian collaboration in neutron science”.

[2011] Fellow, Institute of Physics (UK) – Citation: “In recognition of personal contribution to the advancement of physics as a discipline and a profession”

Services in national and international panels and advisory committees

[2020] Member of the Science Board of the Science Technology Facility Council (UK)

[2013-2020] Founder and Director of the Italian Centre (NAST), University of Rome TOV (IT)

[2015-2020] Member of Governing Board of the Research Institute “Museo Storico della Fisica e Centro Studi e Ricerche “Enrico Fermi” (IT)

[2015-2020] Member of the “Neutron Technology Advice Committee (NTAC) of the Chinese Spallation Neutron Source, Dongguan, Guangdong (China)

[2015-present] Co-Director of International ERICE School “Neutron Science and Instrumentation”, together with I. S. Anderson (Oak Ridge National Laboratory, US) and R. Caciuffo (Institute for Transuranium Elements Karlsruhe, DE)

[2013-2019] Rector Delegate for Network and Research Infrastructures, University of Rome TOV (IT)

[2010-2014] Partner of SVILUPPO CULTURA s.r.l., spin off, Ministry of Research and Innovation (IT)

[2005-2008] Member of Governing Board of the University of Rome TOV (IT)

[2015-2019] Chairperson of the Access Panel FAP 5 (beamtime proposals) at the ISIS Neutron Source Facility (UK)

[2012-present] Member of the Program Committee of UCANS - Union of Union for Compact Accelerator-driven Neutron Sources (UCANS), <http://www.ucans.org>

[2013-2015] Member of the Committee for Neutron Spect. and Synch. Radiation of (CNR)

[2009-2011] Delegate of CNR president in the Committee of the Ministry of Research “Italian Roadmap for Research Infrastructure” and Chairperson of: 1) Science and Humanities, 2) Energy, 2) Material Science and Analytical Facilities, 3) Physical Science and Astronomy

[2011] Delegate of CNR president for the ESS project

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[2011-2015] Chairperson of Scientific and Technical Committee COIRICH
[2011] Delegate of CNR president and coordinator of the workshop ESS Italy (www.ess-italia.it), kick off for the preparatory phase di ESS (European Spallation Source) in Italy
[2009-2010] Chairperson of the "Panel for the Physical Science" of CNR
[2008-2010] Member of the 'International Advisory Board" of ESS Bilbao
[1994-1998] Member and Scientific Secretary of Advisory Scientific Committee for Physical Science of CNR
[1985-present] Spokesperson for CNR within the international agreement CNR-STFC, to coordinate the Italian neutron scattering program at ISIS (UK)
[1994-2013] Member of the Committee for Neutron Spectroscopy of CNR
[2010-2011] Delegate of CNR president of the Interministerial Board "Tavolo di Concertazione MIBAC-MIUR"
[2005-2007] Member of the Novel Instrumentation Think Tank, Oak Ridge National Laboratory (ORNL) (USA)
[1994-2012] Delegate of CNR president within the Round Table on Neutron Sources (NMI3) (FP3-FP7)
[1996-1999] Member of the NEUTRON SOURCES WORKING GROUP (OECD MEGASCIENCE FORUM)
[2010 to present] Member of the International Ph.D. school "Materials for Health, Environment and Energy"
[1999-2014] Director of the Journal "NOTIZIARIO NEUTRONI E LUCE DI SINCROTRONE"

Coordinator of national research projects:

CNR-PANAREA II [2014-2020], CNR-FANES [2015-2017], CNR-ECHIR [2015-2017], CNR-STRASS [2013-2015], CNR-PANAREA I [2008-2014], Spin off SVILUPPO CULTURA [2011-2014], PRIN [2000-2004], PRIN [2000-2002] Scientific Coordinator of international research projects: META [2011-2014], ANCIENT CHARM (FP6) [2005-2009], e.VERDI (FP5) [2001-2006], MAPS (FP5 Marie Curie Training Site) [2002-2006], [2000-2004] TECHNI, (FP5 TMR- Network), [2000-2003] The Microscopic Structure and Dynamics of Supercritical Aqueous Fluids – (FP5 TMR- Network), VESUVIO [1998-2002] (FP4 TMR Access to Large Scale Facility), "Deep Inelastic Neutron Scattering" - (FP1 – TMR Contract N. ST2J-0314-C [1989-1990])

Review panels of national and international academic and research institutions

[2019] Tecnico Scientifico (ETS) per il MIUR - Programma Operativo Nazionale "Ricerca e Innovazione 2014-2020" - [2018] Chair of the evaluation panel NordForsk (Nordic Neutron Science Programme) an organization under the Nordic Council of Ministers. [2016-2017] Member of Nordic Societal Security Programme [2014] Swedish Research Council]; ANVUR (IT) [2012]; EPSRC, UK [2012-today]; Facility Access Panel FAP 5, ISIS UK [2011-today]; Ministry of Research (IT) for PRIN projects [2011-today]; EPSRC, UK [2008-2011], ESS Bilbao (E) [2010-2011]; Member Advisory Panel for Region Lombardy (IT) [2010]; Review Committee Spallation Neutron Source, (ORNL) [2008-2011]; Georgia Nat. Science Foundation (Georgia) [2012], National Science Foundation (US) [2010], New Eurasia Foundation (Russia) [2011], Facility Access Panel FAP 5, ISIS Neutron Source, UK [2008-2011]; Ministry of Research (IT) for Panel Physical Sciences (CIVR) [2002-2009]; Facility Access Panel FAP 5, ISIS UK [2006-2008]; Science Advisory Board di Neutron Research Laboratory (NRL) Studsvik Sweden [2000-2002]

Reviewer for international Journals: American Chemical Society: Journal of Physical Chemistry, American Physical Society: Physical Review and Physical Review Letters, Journal of Chemical Physics, Institute of Physics, ISRN Condensed Matter Physics., Meas. Sci. Technology, Europhysics Letters, Molecular Physics, Nature, Nature Materials, etc.

[2010 to present] Member Editorial Board di ISRN Condensed Matter Physics

Member of committees for the selection of research and professors in Academic and research Institutions in Italy and of several International Academies/Societies: American Chem. Society (ACS), European Phys. Society, Inst. of Physics (IOP), Società Italiana di Fisica (SIF), School of Neutron Scattering "Francesco Paolo Ricci", SoNS Sociedad Española de Tecnicas Neutronica (SETN), IOP Neutron Scattering Group (UK).

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Promoting and mentoring students and young researchers

CA trained undergraduate and graduate students (> 40 PhD). Several of them are professors in national and international universities and research institutions.

Lectures and Conference organization: about one hundred seminars and colloquia delivered throughout the world at major universities, research and industrial laboratories and professional meetings. CA served in the organization of over 50 national and international conference/workshop/schools and as a member of over 35 national and international scientific advisory committees.

PUBLICATIONS

Total H-index: 37 Google Scholar, Total citations: > 4500

<https://scholar.google.co.uk/citations?hl=en&user=EY3AFq0AAAAI>

TOP Italian Scientists:

http://www.topitalinascientist.org/top_italian_scientists_VIAAcademy.aspx?Cerca=andreani

More than 300 publications - 175 of which on international refereed journals, 3 feature/review publications, more than 100 contributions in books of international conferences&proceedings and 26 Technical Reports - 206 indexed in Scopus; 3 special issues in international journals, 3 books in general physics.

Promoting and mentoring students and young researchers

CA trained several students (15 PhD). Several of them are professors in national and international universities and research institutions.

Lectures and Conference organization.

About one hundred seminars and colloquia delivered throughout the world at major universities, research and industrial laboratories and professional meetings. CA served in the organization of over 40 national and international conference/workshop/schools and as a member of over 35 national and international scientific advisory committees.

Research in brief:

- Study of the structure and dynamics of quantum systems, hydrogen bonded molecular fluids and solids, disordered systems
- Design and development of neutron scattering instrumentation at the eV and MeV energies at ISIS neutron facility (UK): PRISMA, TOSCA at ISIS pulsed neutron and muon source (UK)
- Pioneer Deep Inelastic Neutron Scattering -DINS technique on eVs and VESUVIO beamlines at ISIS pulsed neutron and muon source (UK)
- Pioneer the use of MeV energy neutron at spallation neutron sources for fast irradiation SEE in electronic devices and contributed to the design and construction of ChiPIR at at ISIS pulsed neutron and muon source (UK)
- Pioneer industrial applications of neutron scattering through the determination of residual stress in materials
- Exploit eV spectroscopy, DINS techniques, related methods and technologies to enable neutron scattering measurements to reach at to second time scales
- Promote and contributing to exploiting the use of γ detectors in eV neutron spectroscopy at at ISIS pulsed neutron and muon source (UK)
- Pioneer the use of eV neutrons to explore Cultural Heritage artefacts

INTERNATIONAL RESEARCH COLLABORATIONS

[2013-oggi] Prof Loh Kian Ping, National University of Singapore, Singapore, Proton dynamics in superheated graphene-water-pockets

[2013-oggi] David Manolopoulos, University of Oxford, Department of Chemistry, Direct Measurement of Competing Quantum Effects on the Kinetic Energy of Heavy Water upon Melting

[2011-oggi] Prof C. K. Loong, Sun Yet Sen University (China), Inelastic neutron scattering in supercritical water

[2011-oggi] Prof J. Y. Wang and X. Hu, Institute of Crystal Materials, Shandong University, Jinan, Shandong, China – crystal materials

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[2011-oggi] Dr C. Salzman, University College London (UK) - Single particle dynamics of amorphous ice

[2011-oggi] Prof Giulia Galli, University of Chicago (US), Institute of Molecular Engineering, The quantum nature of the OH stretching mode in ice and water probed by neutron scattering experiments

[2010-oggi] Prof R. Car, University of Princeton, (US) - Proton quantum dynamics

[2008-oggi] Dr C. Frost, ISIS Neutron Facility (UK) - Irradiation techniques, neutron technologies with MeV neutrons and realization of ChIPiR beamline

[2007-oggi] Dr A. I. Kolesnikov, SNS, Oak Ridge National Laboratory (US) - Inelastic Neutron scattering of disordered materials

[2007-oggi] Prof I. Anderson, SNS, Oak Ridge National Laboratory (US) - Application of neutron scattering to cultural heritage

[2000-oggi] Prof G. Reiter, University of Houston (US) - DINS scattering in water in bulk and confined materials

[1985-2012] Dr J. Mayers, ISIS Neutron Facility, Oxfordshire (UK) - DINS techniques and neutron technologies with eV neutrons on VESUVIO beamlines

[1981-1990] Prof Colin Windsor (Material Physics Division, Harwell Research Centre, Chilton, UK) CQS techniques and ND for stress analysis in materials

NATIONAL AND INTERNATIONAL GRANTS (TITLE - INSTITUTION)

[2014-2020] PANAREA II - "Agreement concerning collaboration in scientific research at the spallation neutron source ISIS" - CONSIGLIO NAZIONALE DELLE RICERCHE (IT)

[2015-2017] Progetti FANES e ECHIR nell'ambito del ICNRIESS (Italian Contribution to Neutron Research Instrumentation at the European Spallation Source), MIUR

[2013-2015] Progetto STRASS (Sviluppo di Tecnologia e Rivelatori Avanzati per Sorgenti di Neutroni a Spallazione MIUR

[2008-2014] PANAREA I - Project financed within the CNR-STFC Agreement concerning collaboration in scientific research at the spallation neutron source ISIS for the construction of neutron beamlines ChIPiR and IMAT - CONSIGLIO NAZIONALE DELLE RICERCHE (IT)

[2011-2014] META - Materials Enhancement for Technological Applications - FP7 - PEOPLE-2010 IRSES

[2011-2014] SVILUPPO CULTURA Spin off, per la diagnostica di materiali di interesse storico artistico - MIUR

[2005-2009] ANCIENT CHARM: Analysis by neutron resonant capture imaging and other emerging neutron techniques: new cultural heritage and archaeological research methods - FP6, NEST Project, Integrating and Strengthening the European Research Area

[2001-2006] e.VERDI: electron Volt Energy Resonance Detector Instrument - FP5, TMR-Access to Research Infrastructures, RTD

[2002-2006] MAPS: Materials and Plasma Science: Optical Spectroscopy, Neutron Spectroscopy and Theoretical Methods - FP5 Marie Curie Training Site

[2003-2005] Microscopic Dynamics of Water in Confined Geometry by Neutron and X Ray Spectroscopy - MIUR PRIN

[2000-2004] TECHNI: Technology for Neutron Instrumentation

[2000-2003] The Microscopic Structure and Dynamics of Supercritical Aqueous Fluids - FP5 TMRNetwork

[1998-2002] VESUVIO: A Project to provide enhanced neutron Scattering capability at the highest energy transfers - FP4, TMR-Access to Large Scale Facility, RTD

[2000-2002] Study of the microscopic structure and dynamics of aqueous solutions at sub- and supercritical conditions - MIUR PRIN

[1989-1990] 'Deep Inelastic Neutron Scatt - FP1 - TMR Contratto N. ST2]-0314-C