

Curriculum Vitae

Lorenzo Avaldi

Education , Working experience

2019 (November)		Visiting Professor Swiburne University of Technology (Australia)
2014 (June 1 st)	2019 (Sept 17 th)	Director Institute of Structure of Matter (ISM)-CNR (Sections: Rome, Trieste e Potenza)
2015	2017	President Area di Ricerca Roma 1
2008 (April 16 th)	2014 (April 15 th)	Director Institute of Inorganic Methodologies and Plasmas (IMIP)-CNR (Sections : Roma, Bari e Potenza)
2012		Full professor habilitation : Structure of Matter (class 02/B1)
2002	2008 (April 15 th)	Research Director at Institute of Inorganic Methodologies and Plasmas d (IMIP)-CNR Rome
2005 June		Professor Invitè at Università Paris XI.
2002	2008	Coordinator of the group “Dinamics of atomic and molecular processes” at CNR-IMIP (staff : 21 people)
2001	2008	Leader of research group at the Gas Phase Photoemission Beamline - Elettra Synchrotron, Trieste (staff : 7 people)
2001 June		Professor Invitè at Università Paris XI.
1998 January		Professor Invitè at Università Paris XI.
1997	2002	Senior researcher at Institute of Advanced Inorganic Methodologies (IMAI)-CNR-Rome
1996 May		Max Planck visiting scientist al Fritz Haber Institute-Berlin
1995 May	1995 November	Max Planck visiting scientist al Fritz Haber Institute-Berlin
1987 July	1987 December	Visiting scientist at Physics and Astronomy Department University of Manchester
1984	1997	Researcher at Institute of Advanced Inorganic Methodologies (IMAI)-CNR-Rome
1982	1983	Post doc at EU Central Bureau for Nuclear Measurements (CBNM) Geel, Belgium
1979	1982	Scholarship at X-ray Laboratory, Università di Milano
1979 (October 1 st)		Degree in Physics at Università di Milano Thesis: “Application of Statistical Multistep Direct Emission theory to experimental data” (110/110 con lode)

Scientific Interests

Fundamental processes (excitation, single e multiple ionization, dissociation and fragmentation) in the interaction of radiation (synchrotron radiation, laser and FEL, electron and ion beams) with low density matter and applications to radiation damage in biological systems, enviromental phenomena and processes for material preparation. Role of electron correlation in many-electron processes. Spectroscopy and reactivity of molecular ions and clusters. Development of instrumentation for electron spectroscopies and mass spectrometry.

Awards

- 2014** N.N.Semenov Medal (Russian Academy of Engineering Sciences)
1985 Italian Physical Society: “Young researcher award”.

Project, Collaborations, Participation to Scientific Committees

2021-2023 Principal Investigator of the project “Deposizioni per ElectroSpray Ionization e biosensori (BioDivErSI), Regione Lazio (Italy)
2020-2021 CNR coordinator of the project “Sensocard”, Progetti Strategici Regione Lazio (Italy)
2019-2023 Italian representative in the Management Committee of the COST Action CA18212 “Molecular Dynamics in the GAS phase”;
2018-2020 Principal Investigator of the project “Deposizioni per ElectroSpray Ionization e biosensori” (DESIR), Regione Lazio (Italy);
2018-2020 Principal Investigator of the project of particular relevance Italy-Sweden “Novel molecular tools for the exploration of the nanoworld” of the Italian Ministry of Foreign Affairs;
2014-2016 Principal Investigator of the project of particular relevance Italy-Serbia “Nanoscale Insights in Radiation Damage” of the Italian Ministry of Foreign Affairs;
since 2013 CNR coordinator for the INFN/CNR/Sincrotrone Trieste FOE EUROFEL project
since 2012 CNR representative in the CINECA Administrative Board (Bologna);
2011-2014 Italian representative in the Management Committee of the COST Action MP1002 “Nanoscale insights in ion beam cancer therapy”;
2011-2013 Principal Investigator of the project of particular relevance Italy-Slovenia “Dynamics at nanoscale” of the Italian Ministry of Foreign Affairs;
2010-2011 Principal Investigator the exchange project Italy-Japan “Unravelling and control of matter at atomic level with novel radiation sources” of the Italian Ministry of Foreign Affairs;
2009 Scientific unit coordinator of the PRIN project “Ionization and reactivity of systems of increasing complexity”;
2008-2010 *Co-investigator* of the ARC-Discovery Grant “Sub-picosecond studies of matter using intense light from a Free Electron Laser” (PI : P. Hammond , University of Western Australia);
2008 CNR representative in the European Physical Society board
2008-2010 Italian coordinator of the project “Novel correlation effects in multi-photoionization and Auger processes” [2-year renewal] (Bilateral agreement CNR-Russian Academy of Science);
2006-2010 Scientific unit coordinator of the MIUR project “SPARX : an evolutive source for the production of X rays”;
2005-2008 Scientific unit coordinator of the FIRB project “Microscopic dynamics of chemical reactivity”;
2005-2007 Italian coordinator of the project “Novel correlation effects in multi-photoionization and Auger processes” [2-year renewal] (Bilateral agreement CNR-Russian Academy of Science);
2004-2007 Scientific unit coordinator of the FISR “SPARC: Self-amplified pulsed source of coherent radiation”;
2004-2008 Italian coordinator of the INTAS project “Dynamics of correlated particles in the continuum”;
2003-2005 *Co-investigator* of the ARC-Discovery Grant “Uncovering highly excited states of quantum three body systems using new technological approaches” (PI : P. Hammond , University of Western Australia);
2002-2008 Member of the CNR-IMIP Scientific Committee;
1996 Member of the Management Committee of the National Institute for Innovative Chemistry Methodologies and Technologies of the
1996-1998 Principal investigator of the NATO CRG960141 “Inner Valence Ionization/Excitation of Molecules”;
1995-2001 Member of the CNR-IMAI Scientific Committee
1994-1997 Italian representative in the Council of the European Synchrotron Radiation Society;
1992-1994 Principal Investigator of the project “Application of PCs for the control of instrumentation for chemical spectroscopies “ (Project of teh CNR-ICT Committee- 5 scientific units);
1992-1993 Italian coordinator of the NATO-CRG920101 “The ionization of neutral atoms by photon and electron impact”(PI : C.T. Whelan DAMPT University of Cambridge);
1992-1993 Scientific unit coordinator of the CNR-NFR exchange program (IMAI-Roma, Univ. di Roma “La Sapienza”, Royal Institute of Technology Stokholm)
1990-1993 Italian coordinator of a bilateral CNR-Royal Society (UK) program;
1989 Member of the Management Committee of the “Agreement among CNR and the Universities “La Sapienza”, “Tor Vergata”, Perugia, Trieste, Padova, Cagliari and Basilicata for the construction of Beamlines devoted to chemistry research at Elettra”;
1988-1989 Italian coordinator of a bilateral CNR-British Council program;
1986-1990 Member of the CNR-IMAI Scientific Committee;

Scientific Committees of Conferences

Member of the International Scientific Committee of the *International Workshop on Photoionization* (San Francisco 1994, Chester 1997, Marseille 2000, Erice 2014),

Member of the International Scientific Committee of the *20th International Symposium on Correlation, polarization and Ionization in Atomic and Molecular Collisions, COPLAMC* (Metz, 2019)

Member of the International Scientific Committee of the International Symposium on “*(e,2e), Double Photoionization and Related Topics*” (Vancouver 1995, Brest 1998, Beijing 1999, Rolla 2001, Metz 2002, Königstein 2003, Louvain La Neuve 2004, Lexington 2009, Dublin 2011, Hefei 2013, San Sebastian 2015, Palm Cove 2017),

Member of the International Scientific Committee of the International Conference on *Many Particle Spectroscopy of Atoms, Molecules and Solids* (Halle 2000, Paris 2008, Berlin 2012, Metz 2014, Moscow 2016, Budapest 2018, Oulu 2020)

Member of the International Scientific Committee of the XIV International Conference on *Vacuum Ultraviolet Radiation Physics* (Cairns 2004).

Member of the General Committee dell' *International Conference on Photonic, Electronic and Atomic Collisions* (1997-2001, 2005-2009, 2013-2017)

Member of the International Advisory Board del Workshop “*Intense field, Short Wavelength Atomic and Molecular Processes-2*” (Xian 2013, Hamgurg 2015)

Editorial Experience

- 1999-2011** **Member** of the Editorial Board of the “Notiziario Neutroni e Luce di Sincrotrone”
- 2007** **Editor** with G. Stefani of the Special Issue del Journal of Electron Spectroscopy (**161**, October 2007) “Many Particle Spectroscopy of Atoms, Molecules and Solids”
- 2015** **Editor** with M. Meyer of the Special Issue del Journal of Electron Spectroscopy “Gas phase spectroscopic and dynamical studies at Free-Electron Lasers and other short wavelength sources”

Teaching

- 2018** Invited lecture for first year students (Physics and Chemistry) on “Imaging orbitals ...e il gioco delle biglie”-Sapienza Università di Roma
- 2017** Lecturer at the school “Frontiers of attosecond and ultrafast X-ray science” (Erice, Italy)
- 1998** Course on Electronic Spectroscopies (Scuola Normale Superiore - Pisa);
- 1998** Lecturer at “European School for Synchrotron radiation “ (Luso, Portugal)
- 1997-1998** Course on Experimental Physics for undergraduate students in Physics (Università Cattolica, Brescia);
- 1996** Lecturer “European School for Synchrotron radiation “ (Maratea, Italy)
- 1995-1996** Course on Modern Physics for undergraduate students in Mathematics (Università Cattolica sede di Brescia);
- 1989-1997** Course on General Physics for undergraduate students in Mathematics (Università Cattolica, Brescia);
- 1986-1987** Course on Experimental Physics for undergraduate students in Chemistry (Università della Basilicata);
- 1983-1984** Course on "Atomic and nuclear methods for elemental analysis" for undergraduate students in Physics (Università di Milano);
- 1980-1982** Course on Nuclear Physics Laboratory for undergraduate students in Physics (Università di Milano);

Supervisor of **13** Thesis and **3** Phd Thesis (Università di Milano, Brescia, Perugia e Roma “La Sapienza”);

External Examiner for **14** Phd Thesis (1 in Italy, 13 abroad)

External Examiner for the “Habilitation a diriger des recherches” Dr. Bruno Rouvellou (Université de Bretagne Occidentale, Brest).

Tutor of **6** CNR scholarships and **1** TRIL (Training in Italian Laboratories) of the International Centre for Theoretical Physics (ICTP, Trieste) scholarship.

Referee and Evaluator

Referee for Science, Nature, Nature Communications, Physical Review Letters, Scientific Reports, Physical Review A, Physical Review Research, Journal of Physics B, Journal of Electron Spectroscopy and Related Phenomena, Journal of Physical Chemistry Letters, Journal of Physical Chemistry A, Journal of Chemical Physics, Journal of Selected Topics in Quantum Electronics;

Referee for special issues of Journal de Physique, Chemical Physics and Canadian Journal of Physics;

2021	<i>Evaluator</i> for DFG Research Grants Programme-Individual Proposal
2021	<i>Evaluator</i> for Israel Science Foundation (ISF)
2020	<i>Evaluator</i> for Czech Science Foundation
2019	<i>Evaluator</i> for the Academic Promotions Committee of The Indian Institute of Science Education and Research (IISER)
2019	<i>Evaluator</i> for PALM-Laboratory of excellence (French Ministry of Research)
2018	<i>Evaluator</i> for DFG Research Grants Programme-Individual Proposal
2018	<i>Evaluator</i> Call FAR 2018- Università di Camerino
2017	<i>Evaluator</i> for DFG Collaborative Research Center 1319 “Extrem light for sensing and driving molecular chirality
2017	<i>Evaluator</i> for the “Grant-in-Aid for Specially Promoted Research” of the Japan Society for the Promotion of Science (JSPS)
2017	<i>Evaluator</i> for the PON 2014-20 Call “Borse di dottorato”
2015-2016	<i>Member</i> of the ANVUR Physics-GEV for VQR 2011-2014
2014	<i>Evaluator</i> MIUR-SIR projects
2013	<i>Evaluator</i> for the Pleiades beamline at Soleil synchrotron
2012	<i>Evaluator</i> ANVUR for VQR 2004-2010
2012	<i>Evaluator</i> AERES for Laboratoire de Chimie-Physique, Matière et Rayonnement, LCPMR, UMR7614, Paris;
2012	<i>Evaluator</i> per Postdoctoral Fellowship della Research Foundation Flanders (FWO) (Belgio)
dal 2011	<i>Evaluator</i> of the beamtime applications of the Canadian Light Source
2010	<i>Evaluator</i> for the Czech Republic Operational Programme Research and Development for Innovation
2010	<i>Evaluator</i> for the Academic Promotions Committee, The University of Western Australia, (Perth, Western Australia)
2003-2008	<i>Member</i> of the Facility Access Panel of the Synchrotron Radiation Source (Daresbury,UK);
2005	<i>Evaluator</i> for CIVR
2002	<i>Evaluator</i> of the NSERC Research Grant-Individual (Canada)
dal 1998	<i>Evaluator</i> of the MIUR COFIN and PRIN projects;
1998	<i>Evaluator</i> of the research program of the Peter Wall Institute (Canada) ;
1996-1997	<i>Evaluator</i> of the Large Research Grants Program- Australian Research Council;

Organization of Conferences and Schools

2020 January	(Trieste) Workshop MOST@Elettra2.0
2016 September	(Warsaw) Polish-Italian workshop on Science and Technology with Synchrotron radiation
2014 August	(Erice) International Workshop on Photoionization and Resonant Inelastic X-ray Scattering (with A. Foëhlisch, U. Becker e M. Zitnik)
2011 December	(Trieste) Workshop “New frontiers in Atomic, Molecular and Cluster Physics and Chemistry”
2010 November	(Roma) International Conference “Dynamics of system on the nanoscale, DYSON 2010” (with F. Gianturco e A. Solov’ov)
2007 May	(Trieste) Workshop “10 years of Atomic and Molecular Science @ Elettra” (with K.C. Prince, M. Coreno e M. deSimone)

2006 June	(Rome) Int. Conf. on Many Particle Spectroscopy of Atoms, Molecules and Solids (with G. Stefani);
2005 November	(Trieste) EU-I ³ Workshop on “Two colour experiments at synchrotron radiation sources: present and future” (with K. Prince and R. Richter);
2005 February	(Trieste) “Second Italian - Australian Workshop on future directions in spectroscopy and imaging with synchrotron radiation” (with K. Prince and M. Kiskinova);
2001 October	Course “La radiazione di sincrotrone e nuove metodologie” (Area della Ricerca di Montelibretti)
1996 October	(Maratea) European School for Synchrotron Radiation (con M. Cooper, University of Warwick, and D. Maes, University of Bruxelles) nell’ambito dell’ EU-Training and Mobility Program;
1997 August	(Frascati) Int. Symposium on (e,2e), Double Photoionisation and Related Topics (with G. Stefani, R. Camilloni and S. Iacobucci);
1990 November	(Roma) Int. Conf. “90 (e,2e) and related problems” (with G. Stefani e R. Camilloni)

Bibliometrics

Author of about **250 papers** in referred journals (11 Phys. Rev. Lett., 2 Nature Comm., 1 Science, 3 J. Phys. Chem. Lett., 2 Sci. Rep. and 2 invited Topical Review in J. Phys. B:At. Mol. Opt. Phys.), **40 contributions** to books and referred Conference Proceedings and more than **100 invited talks and seminars**.

Bibliometric indexes according WOS (Sept. 2021) : **h-index 37, citations 6388**

“Consapevole delle sanzioni penali, nel caso di dichiarazioni non veritiere, di formazione o uso di atti falsi, richiamate dall’art. 76 del D.P.R. 445/2000, dichiaro che quanto sopra corrisponde a verità. Ai sensi della Legge 675/96 dichiaro, altresì, di essere informato che i dati personali raccolti saranno trattati, anche con strumenti informatici, esclusivamente nell’ambito del procedimento per il quale la presente dichiarazione viene resa e che al riguardo competono al sottoscritto tutti i diritti previsti dall’art.13 della medesima legge”

September 25th, 2021