

Wanda Andreoni: Curriculum vitae

Address

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PERSONAL DATA

Birthdate: 3 November 1949

Birthplace: Ancona (Italy)

Citizenship: Italian and Swiss

Languages: Italian (mother tongue); French, English, German.

CURRENT POSITIONS

- From July 15 Honorary Professor at the Institute of Theoretical Physics, Ecole
Polytechnique Fédérale de Lausanne
- September 15 Visiting Professor at the Donostia International of Physics Center,
San Sebastian (Spain)
- Sept 15 – Aug 16 Part-Time Visiting Professor at the Italian Institute of Technology (Genova)

EMPLOYMENT (last 30 years)

- Dec 10 - Feb 15 Full professor, Chair of Computational Chemical Physics at the Nanoscale
Institute of Theoretical Physics, Ecole Polytechnique Fédérale de Lausanne
- Jan 09 – Dec 12 Director, Centre Européen de Calcul Atomique et Moléculaire,
Ecole Polytechnique Fédérale de Lausanne
- Feb 05 - Nov 10 Program Manager, Deep Computing Applications, IBM Zurich Research
Laboratory.
- 1995-05 Manager, Computational Biochemistry and Materials Science, IBM Zurich
Research Laboratory.
- 1994-95 Project Leader, Computational Chemistry and Physics, IBM Zurich Research
Laboratory.
- 1986-94 Research Staff Member, IBM Research, Zurich Research Laboratory.

Earlier at EPFL, University Geneva, Bell Labs, University of Rome (Italy)

PATENTS

'Photovoltaic Device with Band-Stop Filter' (US2013/0312828 A1)

'Silicon: Hydrogen Photovoltaic Devices, Such As Solar Cells, Having Reduced Light Induced Degradation And Method Of Making Such Device' (US20120216862)

'Method to improve carrier mobility in High K based CMOS devices and to control threshold voltage shift' (CH920070008EP1)

'Method of forming metal/high-k gate stacks with high mobility' (US20080293259)

'Interface Engineering for Enhanced Electron Mobilities in W/HfO₂ Gate Stacks' (US7115959)

'Optimized Dielectric Materials for CMOS devices' (US7057244)

'Materials for use in light emitting devices' (GB 2351974B)

AWARDS

2011	Zernike Chair University of Groningen, NL
2008	Marisa Bellisario Prize for "Innovation"
2007	IBM Outstanding Technical Achievement Award
2007	Adjoint Professor at the Ecole Polytechnique Fédérale de Lausanne
2005	Elected Fellow of the American Physical Society
1999	Elected Member of the IBM Academy of Technology
1993	IBM Outstanding Technical Achievement Award

INVITED PRESENTATIONS

Starting 1980, more than 200 invited presentations at international meetings worldwide, including annual meetings of the American Physical Society, the European Physical Society, the Materials Research Society, the European Materials Research Society and the American Chemical Society, seminars and colloquia at universities and industrial laboratories in several countries including Switzerland, Italy, France, England, Finland, Germany, Spain, The Netherlands, USA, Japan, Mexico, Singapore, Taiwan.

TEACHING EXPERIENCE

Supervised undergraduate students in Lausanne, and PhD theses in Italy, Sweden, Switzerland and Germany (both in physics and chemistry) ; Directed the research work of several post-docs on the physics of clusters, nanostructures and surfaces, physics and chemistry of organic materials, physics and chemistry of high-k dielectrics and nanoscale semiconductors; External examiner for PhD theses at the International School of Advanced Studies in Trieste (IT), at the EPFL, University of Bern, University of Goteborg (Sweden), and University of Tempe (Finland); and of Habilitation theses at the University of Strasbourg (France) and the Humboldt University in Berlin (Germany). Currently is directs two PhD theses at the EPFL. In January 2012, she has given a course on "Density Functional Theory: Fundamentals and Applications" at the University of Groningen (NL), as part of the Master program in Theoretical Chemistry. She has taught General Physics I at the EPFL.

RESEARCH EXPERIENCE WITH INDUSTRIES

During her time at IBM Research, se has been leader of collaborative research projects with: Hoechst AG, Ford Research, Organon Akzo-Nobel, Nestle' Research, Novartis and consultant for Mitsubishi Chemical. She has then held contracts for collaboration with IBM Zurich – Research. Currently she has an Emeritus position.

EDITORIAL EXPERIENCE

Co-editor of Europhysics Letters (1990-1993); Editor of "The Chemical Physics of Fullerenes 10 (and 5) Years Later," NATO ASI Series E: Applied Sciences, Vol. 316 (Kluwer, 1996) ; Editor of "The Physics of Fullerene-Based and Fullerene-Related Materials", Series on the Physics and Chemistry of Materials with Low Dimensional Structures vol. 23, (Kluwer, 2000).

ORGANIZATIONAL EXPERIENCE

Starting 1985 to-date WA has been chair, co-chair, and co-director of many international conferences, workshops and schools in computational physics, chemistry and materials science. She has also been serving as advisory committee member in several international conferences. In 2008 she has been the main organizers of the CECAM workshop "Critical materials issues in photovoltaics: searching for solutions via theory and simulations". Later, as Director of the Centre Europeen de Calcul Atomique et Moleculaire (CECAM), WA has been closely involved with the promotion and organization of many events (more than 100 in Switzerland). In particular, she has been the main organizer of two brainstorm meetings (one on "Computational Science for Energy" (Divonne (FR), 2009) and on " Development of drugs for neurological diseases: computational challenges" (Ascona (CH), 2010)) and the Conference "Energy from the

sun: Computational chemists and physicists take up the challenge” (Chia Laguna (IT), 2012). She has co-organized an international CUSO Doctoral School on “Simulating activated processes in physics and chemistry: Theoretical foundations” (Villars-sur-Ollon (CH), 2013)

OTHER SCIENTIFIC WORK and EXTERNAL RECOGNITIONS

- Referee for several scientific journals, among which:

Science, Physical Review Letters, Physical Review B and A, Zeitschrift für Physik, Europhysics Letters, Journal of Condensed Matter Physics, Journal of the American Chemical Society, Journal of Chemical Physics, Journal of Physical Chemistry, Journal of Applied Physics, Proceedings of the National Academy of Science.

- Referee of the Research Project of the Italian National Institute of the Physics of Matter on “Carbon Clusters Assembled Materials”, 1997-2000.

- SNSF representative in the Steering Committee of the ESF Programme “Challenges in Molecular Simulations: Bridging the Length and Time-Scale Gap (SIMU)”, 1999 – 2003; in the Scientific Council of CECAM, Lyon, 1999 – 2008; in the Steering Committee of the ESF Programme “Simulations in Biology and Materials Science (SimBioMa)” from 2006 to-date; Vice-President from April 2008

- Member of the American Physical Society (Fellow) and of the American Chemical Society.

- Member of the Panel for the Mathematics Excellence Initiative, DFG, 2006-2007; Member of the committee for the Berni J. Alder CECAM Prize 2007; Member of the evaluation panel for the Seed project of CNR – INFN (Italy), 2008; Member of the evaluation panel for Romanian National University Research Council, 2008; Member of the steering panel of UK Collaborative Computational Projects (CCP) from 2008; Member of the Board of Directors of Psi-K (European network electronic structure) from 2009; Member of the European Physical Society (EPS) Computational Physics Board from 2009; Member of the evaluation panel for the Lithuanian National Research Council, 2010; Member of the evaluation committee for “researcher positions” of the Italian National Research Council (CNR) 2011; Member of the physics panel of the Italian National Agency for the Evaluation of Universities and Research Institutes 2012; Member of the evaluation committee for “Institute Director” of the Italian National Research Council (CNR), 2013; Member of the selection committee for the program "Future of Research" of the Italian Ministry of Education, Universities and Research, 2013; Member of evaluation committees at CNR and IIT (Italy), 2015

- - Referee for national and international programs of computational science (CINECA (Italy), PRACE (Juelich, Germany) and for ERC grants.