

Curriculum Vitae of Riccardo Sacco

Date of birth, Citizenship and Home Residence:

March 13, 1962, Italian, Milano, Italy

Contacts:

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Academic Position:

- 11/2001-present: Associate Professor of Numerical Analysis, PoliMi
- 03/2017: Received the Habilitation at the rank of Full Professor in Numerical Analysis

Bibliometric data (Google Scholar):

- h-index: 30
- i10-index: 69
- citations: 6066
- total number of cited publications: 249

Total received financial support (1998-present): 784000 \$

Teaching appointments at PoliMi (present academic year):

- Numerical Analysis (Fall Semester, MS in Civil Engineering: 160 enrolled students)
- Computational Modeling in Electronics and Biomathematics (Spring Semester, MS in Mathematical, Electronic, Biomedical and Physics Engineering: 40 enrolled students)
- Numerical Analysis (Spring Semester, BS in Electronic Engineering: 100 enrolled students)

Student and PhD mentoring (2000-present):

- 6 undergraduate students
- 50 MS students (among whom 16 females)
- 7 PhD students (among whom 4 females)

Editorial and reviewing activities:

- Associate Editor for Modeling and Artificial Intelligence in Ophthalmology, Kugler Publications
- Associate Editor for the Journal of Coupled Systems and Multiscale Dynamics, American Scientific Publishers
- Reviewer for the American Mathematical Society since 2006
- Review Editor in Frontiers in Neuroscience - Neurodegeneration
- Reviewer for more than 30 international scientific journals
- Member of the Register of Expert Peer Reviewers for Italian Scientific Evaluation (REPRISE)
- Reviewer for international funding agencies including National Science Foundation (USA), Austrian Science Fund, Deutsche Forschungsgemeinschaft (DFG), Fund for Scientific Research-FNRS (Belgium), National Sciences and Engineering Research Council of Canada, Cyprus Research Promotion Foundation (RPF) Nycosia, Cyprus

Honors and Awards:

- 2001: included in the "Who's Who in the World 2001", 18th Edition, p. 1877, New Providence NJ
- 2013: co-author of the "Most Downloaded Article" in the Journal Computer Methods in Applied Mechanics and Engineering (CMAME): de Falco C, Sacco R, Verri M. Analytical and numerical study of photocurrent transients in organic polymer solar cells. CMAME. Vol. 199 (2010) 1722-1732

1 More details on the activities of Riccardo Sacco

Professional Preparation:

- 02/1989: B.S./M.Sc. Electronic Engineering, PoliMi
- 11/1989-06/1993: PhD, Appl. Math., Università degli Studi di Milano, Italy (UniMi)
- 06/1993-06/1994: Post-Doc Fellowship in Applied Mathematics, CNR, Italy
- 06/1994-12/1995: Post-Doc Fellowship in Applied Mathematics, UniMi

Appointments:

- 02/1989-09/1989: Lecturer in Calculus and Researcher, PoliMi
- 02/1989-09/1989: Scientific Consultant, ST Microelectronics, Agr. Br. Italy
- 09/1989-09/1990: Serve as corporal in the Italian Military Army
- 11/1990: Visiting scientist, AT&T Bell Labs. Murray Hill NJ, USA
- 12/1995-11/2001: Assistant Professor in Numerical Analysis, PoliMi
- 08/2003: Visiting scientist, Georgia Tech, Atlanta GE, USA
- 01/2015-05/2015: Visiting scientist, Universite' de Strasbourg, Strasbourg FR
- 09/2018-05/2019: Visiting scientist, North Carolina State Univ., Raleigh NC, USA, Univ. of Missouri, Columbia MO, USA, George Washington Univ., Washington DC, USA
- 01/2014-2019: Scientific Consultant, Micron Semiconductor Italia S.r.l., Vimercate (MB), Italy
- 11/2010-present: Member of the Board of the PhD School Mathematical Models and Methods in Engineering, Dipartimento di Matematica PoliMi
- Moderator in the Poster Session "Aqueous humor dynamics and IOP" held on May 1, 2022 at ARVO 2022 Annual Meeting, Denver, May 1-4, 2022, CO, USA.

Journals for reviewing: Computer Methods in Applied Mechanics and Engineering, Biotechnology and Bioengineering, Mathematical Biosciences, Journal of Theoretical Biology, Scientific Reports, Materials Today Communications, Molecules, International Journal for Numerical Methods in Engineering, Applied Physics Letters, Applied Mathematics Letters, Applied Mathematical Modelling, Computers & Mathematics with Applications, Applied Mathematics, Numerische Mathematik, SIAM Journal on Numerical Analysis, SIAM Journal on Applied Mathematics, SIAM Journal on Scientific Computing, Mathematics of Computation, Journal of Computational Physics, Nonlinear Analysis Series A: Theory, Methods & Application, Numerical Methods for Partial Differential Equations, Numerical Algorithms, COMPEL, Applied Mathematics and Computation, Mediterranean Journal of Mathematics, Acta Mathematica Scientia, Physica B, Computing in Science and Engineering, Processes, Materials, Polymers, Communications in Applied and Industrial Mathematics, SN (Springer Nature) Applied Sciences, Applicable Analysis (Taylor & Francis), Bio-Design and Manufacturing (BDMJ, Springer), Computation (MDPI), Journal of Applied Mathematics and Computing (JAMC), Comptes Rendus Mathématique, Frontiers in Medicine, Biomedical Microdevices, Acta Biotheoretica.

2 Research Grants financed by Italian National Agencies (1999-2013)

Principal Investigator: Riccardo Sacco. Total amount: 653000 \$.

1. 1999-2000: Innovative methods in computational fluid-dynamics. Funding agency: Ministry of University, Research, Science and Technology (MURST): 56000 \$.
2. 2001-2002: Advanced numerical for partial differential equations and their applications. Funding agency: MURST: 57000 \$.
3. 2004-2005: Numerical and modeling adaptivity for partial differential problems. Funding agency: MURST: 118000 \$.
4. 2007-2008: Electrochemical models and fluid-dynamics. Funding agency: PoliMi: 24000 \$.
5. 2008-2009: Adaptive and non-conforming techniques for the numerical approximation of multi-physics problems. Funding agency: MURST: 92000 \$.
6. 2009-2013: Computational models in nano-bio-electronics. Funding agency: PoliMi: 300000 \$

7. 2010: Computational models for multiphysics/multiscale problems with biological interfaces. Funding agency: MURST: 6000 \$.

3 Project Grants Financed by Private Companies (1998-2017)

Principal Investigator: Riccardo Sacco. Total amount: 131000 \$. Note: the grant 2. in the list below was financed by the Italian branch of Federal-Mogul (27300 W 11 Mile Rd, Southfield, MI 48034 USA). The grants 5., 6. and 7. were financed by the Italian branch of Micron Technology Inc. (8000 South Federal Way, Boise, ID 83707-0006 USA).

1. 1998: Numerical Simulation of Semiconductor Devices in Optoelectronics. Industrial partner: CoReCoM Milano, Italy: 12000 \$
2. 2002-2003: Modeling and Numerical Simulation of the Short-Circuit Process in Spark Plugs. Industrial partner: Federal Mogul Ignition s.r.l. Carpi (Mo), Italy: 10000 \$
3. 2003-2004: Numerical Simulation of Tethered Buoy Dynamics. Industrial partner: Resinex s.p.a., Brescia, Italy: 19000 \$
4. 2009-2010: Thermo-fluid computational models for a two-phase cooling system. Industrial partner: ABB Research Laboratory, Baden-Dattwil, Switzerland: 12000 \$
5. 2014-2015: Mathematical models for the simulation of ferroelectric behavior in semiconductor devices. Industrial partner: Micron Technology Italia, Vimercate (MB), Italy: 36000 \$
6. 2015-2016: Financial support for "The International Congress of Advanced Technologies and Treatments for Glaucoma", October 29-31, 2015, PoliMi. Industrial sponsor: Micron Foundation: 6000 \$
7. 2016-2017: Modeling of tunneling and charging dynamics. Industrial partner: Micron Technology Italia, Vimercate (MB), Italy: 36000 \$.

4 Advanced Education

1. 2003: Numerical Modeling of the Vascular Flow. International School on Biomathematics, Bioengineering and Clinical Aspects of Blood Flow. Mathematical Sciences Research Institute, University of California, Berkeley, CA USA, July 2003. Lecturer: Riccardo Sacco
2. 2003, 2004: The Finite Element Method: Foundations and Advanced Applications. Corsi di Formazione Permanente, PoliMi. Organizers: Prof. Alfio Quarteroni, Prof. Riccardo Sacco. NOTE: these courses were provided to PhD students of PoliMi and other Italian Institutions, and to personnel of private companies such as ENI and MathWorks. A registration fee was required for attendance.
3. 2007, 2009: An Introduction to Mixed and Hybrid Finite Element Methods in Computational Fluid-Mechanics. PhD course in Mathematical Engineering, PoliMi. Lecturer: Riccardo Sacco
4. 2010: Hybridizable Discontinuous Galerkin Methods. PhD course in Mathematical Engineering, PoliMi. Lecturer: Riccardo Sacco
5. 2014: Multiscale Modeling of Interface Phenomena in Biology. PhD course in Mathematical Engineering/Mobility Project "Athens", PoliMi. Lecturer: Riccardo Sacco. NOTE: this course was an initiative under the auspices of the Athens network (Advanced Technology Higher Education Network/SOCRATES), made up of 14 prestigious technical European universities. Initially funded in 1996 thanks to the European Community Socrates Programme, the mission of the Athens Programme is to facilitate the exchange of students, of professors, of researchers within the network and to encourage integration, cooperation and the creation of innovative projects for the technological development of Europe. In the specific case of the course I hold in 2014, I registered the participation of 10 foreign students from all Europe.
6. 2021: Physically Based Advanced Mathematical Models and Methods in Life Sciences and Engineering, PhD Course at PoliMi. Lecturer: Riccardo Sacco A number of 10 PhD students was enrolled in the course, including PhD students in Mechanical Engineering, Electronic Engineering, Nuclear Engineering and Biomedical Engineering at PoliMi.

5 Synergistic Activities (2008 - present)

- Guest Co-editor (jointly with Giovanna Guidoboni, Lorena Bociu and Yoichiro Mori) of the Special Issue: Complex fluids in living systems: theory and applications. Mathematical Biosciences and Engineering, 2021, Volume 18, Issue 6, AIMS Press.
<http://www.aimspress.com/mbe/article/5633/special-articles>
- Co-organizer (jointly with Prof. Giovanna Guidoboni and Prof. Roderick Melnik) of the minisymposium "Multidisciplinary alliance in Biosciences: Modeling, Computing, Technology and Clinical Applications", 14th World Congress in Computational Mechanics and ECCOMAS Congress 2020 (WCCM XIV), Paris, Virtual Congress, 11-15 January 2021.
- Co-organizer (jointly with Prof. Roderick Melnik and Prof. Giovanna Guidoboni) of the minisymposium "Multidisciplinary alliance in Biosciences: Modeling, Computing, Technology and Clinical Applications", 13th World Congress on Computational Mechanics (WCCM XIII), New York, 22-27 July 2018
- Local organizer of the Course "Thermodynamics II", PoliMi, May 28 - June 22 2018. Lecturer: Prof. P. J. Pinhero, Univ. of Missouri, Columbia, MO 65211
- Director of the PhD course "Life2Math: A Mathematical Shuttle from Molecules to Neurons to Functions and Back". Doctorate School of PoliMi, Italy, November 14-18, 2016. Main instructors: Proff. R.S. Eisenberg, G. Guidoboni and A. Harris, MSc A.G.Mauri.
<https://www.eko.polimi.it/index.php/LIFE2MATH/>
- Local Organizer of "The International Congress of Advanced Technologies and Treatments for Glaucoma", October 29th-31st, 2015, PoliMi. Congress Chairs: Prof. A. Harris, Prof. G. Guidoboni. Committee Members: Prof. I. Januleviciene, Prof. R. Sacco.
<https://www.icatto.org/archive/icattg2015/>
- Director of the PhD course "Multidisciplinary approaches in the study of biological fluids and tissues: mathematical modeling and clinical experience", Doctorate School of PoliMi, April 20-24, 2015. Main instructors: G. Guidoboni, A. Harris, J. Arciero.
<https://www.eko.polimi.it/index.php/EyePhD2015/EyePhD2015>
- Guest Co-editor (jointly with G. Guidoboni) of the special issue on Multiphysics/Multiscale Modeling and Applications of Coupled Processes in Biological and Nanotechnological Systems. Journal of Coupled Systems and Multiscale Dynamics, American Scientific Publishers, 2015
- Co-organizer (jointly with Prof. Roderick Melnik and Prof. Giovanna Guidoboni) of the minisymposium "Computational Modeling of Multiphysics/Multiscale Coupled Processes in Biological and Nanotechnological Systems", WCCMXI Conference, July 20-25, 2014, Barcelona Spain
- Proposer (jointly with G. Guidoboni) and representative of PoliMi for the Agreement of academic collaboration between the Trustees of Indiana University on behalf of the School of Science at IUPUI and PoliMi, signed on 07/2014
- Co-organizer (jointly with P. Causin, A. Harris and G. Guidoboni) of the International workshop "Integrated Multidisciplinary Approaches in the Study and Care of the Human Eye", PoliMi and UniMi, June 26-27 2013
- Co-organizer (jointly with Prof. Roderick Melnik) of the minisymposium "Mathematical Modeling and Numerical Simulation of Coupled Multiphysics Systems in Nano and Biotechnologies". WCCM8 Conference, 06/30/-07/04/2008, Venice Italy