



Curriculum Vitae of Roberto Pisano

Place and date of birth:

Rivoli (Italy), 10th March 1981

Citizenship

Italian

Home address

17 via Colle del Lys, 10040 Rivalta di Torino (TO), Italy

Work address

Department of Applied Science and Technology, Politecnico di Torino, 24 corso
Duca degli Abruzzi, 10129 Torino (TO), Italy

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Current position

Full Professor at Politecnico di Torino

Education

April 2009

PhD in Chemical Engineering

Department of Material Science and Chemical Engineering, Politecnico di
Torino (Italy)

December 2005

Master of Science in Chemical Engineering

Faculty of Engineering I, Politecnico di Torino (Italy)

Graduated with Highest Honors (summa cum laude)

Academic Appointments

2019 – present

Full Professor

Department of Applied Science and Technology, Politecnico di Torino (Italy)

2014 – 2019

Associate Professor

Department of Applied Science and Technology, Politecnico di Torino (Italy)

2011 - 2014

Assistant Professor

Department of Applied Science and Technology, Politecnico di Torino (Italy)

2009 - 2011 Post-doctoral Fellow
Department of Material Science and Chemical Engineering, Politecnico di Torino (Italy)

Other Appointments

Sept 2016 Visiting Researcher
Department of Chemical Engineering, Massachusetts Institute of Technology (Cambridge, USA)

Jul 2008 – Dec 2008 Visiting Scholar
Centre de Ressources Technologiques – Institut Technique Agro-Industriel (Strasbourg, France)

Professional activities and memberships

Member of the American Chemical Society, Associazione Italiana di Ingegneria Chimica

Industrial collaborations with Advanced Accelerator Technologies, Azbil Telstar Technologies, Chiesi Farmaceutici, Domori, Fresenius Kabi, GiPharma, Glaxo Smith Kline, Novartis, Probiotal, Sanofi Pasteur, Synthron Biopharmaceuticals, Zymenex

Journal referee for ACTA Press, Advances in Materials Science and Engineering, AIChE Journal, Analytical Chemistry, Biosystems Engineering, BioMed Research International, the Canadian Journal of Chemical Engineering, Chemical Engineering Journal, Chemical Engineering Research and Design, Chimica Oggi/Chemistry Today, Current Drug Delivery, Drying Technology, Drug Development and Industrial Pharmacy, Environmental Progress, European Journal of Pharmaceutics and Biopharmaceutics, Frontiers in Chemistry, International Journal of Food Engineering, International Journal of Modeling and Simulation, International Journal of Nanomedicine, International Journal of Pharmaceutics, Journal of Crystal Growth, Journal of Drug Delivery Science and Technology, Journal of Food Engineering, Journal of Food Process Engineering, Journal of Pharmaceutical Sciences, Pharmaceutical Development and Technology, Powder Technology, Processes, Saudi Pharmaceutical Journal, Sensors, Sensors & Actuators: A. Physical

External referee for a number of funding bodies including Massachusetts Institute of Technology (Cambridge, USA), the Natural Sciences and Engineering Research Council of Canada (NSERC), the Research Foundation Flanders (Belgium)

Grants, Honors and Awards

2020 The editors of Journal of Pharmaceutical Sciences selected the paper Arsiccio and Pisano, J Pharm Sci 2020, 109(7): 2116-2130, to be featured under the "Free Virtual Issue" tab (Virtual Issue: Most Original and Most Significant Scientific Findings). This paper was selected for this distinction because the Editors felt it contained "particularly original and significant" scientific findings.

- 2018 The editors of Journal of Pharmaceutical Sciences selected the paper Arsiccio and Pisano, J Pharm Sci 2018, 107(6): 1586-1596, to be featured under the "Free Virtual Issue" tab (Virtual Issue (July 2018): Most Original and Most Significant Scientific Findings). This paper was selected for this distinction because the Editors felt it contained "particularly original and significant" scientific findings.
- 2018 The editorial board of Journal of Pharmaceutical Sciences selected the paper Arsiccio and Pisano, Eu J Pharm Biopharm 2018, 129: 58-65, as a "featured article" for his original and significant scientific findings.
- 2018 The editorial board of Journal of Pharmaceutical Sciences selected the paper Arsiccio and Pisano, Pharm Res 2018, 35, article no. 131, as a "featured article" for his original and significant scientific findings.
- 2018 The editorial board of Journal of Pharmaceutical Sciences selected the paper Arsiccio and Pisano, Eu J Pharm Biopharm 2018, 128: 98-106, as a "featured article" for his original and significant scientific findings.
- 2018 The editorial board of Journal of Pharmaceutical Sciences selected the paper Arsiccio and Pisano, J Pharm Sci 2018, 107(6): 1586-1596, as a "featured article" for his original and significant scientific findings.
- 2018 The editorial board of Stay Current – Formulation of Biopharmaceuticals selected the paper Arsiccio and Pisano, J Chem Phys 2018, 148: 055108 for his original and significant scientific findings in formulation and process development.
- 2013 Professor Louis Rey Award received from the International Society of Lyophilization/Freeze-Drying (Waunakee, WI, USA)
- 2013 The editorial board of Stay Current Journal selected the paper Pisano et al., Pharm Dev Technol, 18(1): 280-295, 2013 for his original and significant scientific findings
- 2013 The editorial board of Stay Current Journal selected the paper Pisano et al., AAPS PharmSciTech, 14(3): 1137-1149, 2013 for his original and significant scientific findings
- 2012 The editorial board of Journal of Pharmaceutical Sciences selected the paper Fissore et al., J Pharm Sci, 100(11):4922-4933, 2011 for his original and significant scientific findings
- 2009 Politecnico di Torino Award for outstanding PhD thesis
- 2009 Award received from the Doctoral School of Politecnico di Torino for the outstanding results obtained during his PhD studies
- 2008 VetterPharma-Fertigung GmbH Conference Fellowship for outstanding poster presentation (6-9 August 2008, Breckenridge, Colorado, USA)
- 2007 Procter & Gamble Fellowship to attend the R&D European PhD Seminar at P&G (2-5 April 2007, Germany)

Supervision of graduate students and postdoctoral fellows

PhD fellows in Chemical Engineering at Politecnico di Torino

Marcello Rospiccio (XXXVI cycle, 2020/2023), Lorenzo Stratta (XXXVI cycle, 2020/2023), Merve Betul Adali (XXXV cycle, 2019/2022), Fiora Artusio (XXXIII cycle, 2017/2020), Andrea Arsiccio (XXXII cycle, 2016/2019), Luigi Carlo Capozzi (XXXI cycle, 2015/2018), Marco Bazzano (XXX cycle, 2014/2017), Irene Oddone (XXVIII cycle, 2013/2016)

Co-supervision of PhD fellows in Chemical Engineering at Politecnico di Torino

Francesca Susa (XXXIV cycle, 2018/2021)

Master of Science students in Chemical Engineering at Politecnico di Torino (Italy)

Giulia Bucca (2019), Dario Casà (2019), Vittorio Casali De Rosa (2019), Simone Franzino (2019), Paolo Giorcello (2019), Yuri Kitamukai (2019), Lorenzo La Cortiglia (2019), Livio Marengo (2019), Gabriele Ruggiero (2019), Maria Valeria Fornaro (2018), Valeria Gigante (2018), Lorenzo Stratta (2018), Estefany Carolina Flores Brun (2017), Baldassare Ingraldi (2017), Andrea Paladini (2017), Alberto Romano (2017), Martina Zappitelli (2017), Andrea Arsiccio (2016), Fiora Artusio (2016), Marco Benedetti (2016), Arianna Bianco (2016), Marco Lattanzio (2016), Donaro Latorre (2016), Fabio Napoletano (2016), Luca Spigarelli (2016), Marco Tartaglino (2015), Marco Bazzano (2014), Rossana Cannatelli (2014), Luigi Carlo Capozzi (2014), Sebastian Gustavo Eluani (2014), Stefania Zemignani (2014), Samuele Stella (2013), Gabriele Cassulo (2012), Irene Oddone (2012), Manuela Novarino (2012), Susanna Sanapo (2012), Alice Martin (2011)

Master of Science students in Industrial Biotechnology at Università di Torino (Italy)

Giulia D'Agostino (2015)

Master of Science students in Materials Engineering at Politecnico di Torino (Italy)

Kliton Cikalleshi (2017), Lucas Dall'Agnol (2015)

Training tutor for Undergraduate Students

Gaetan Guttierrez (2019, École nationale supérieure des Mines d'Albi-Carmaux, France), Anukriti Yadav (2019, Indian Institute of Technology, India), Alexane Mourages (2017, Gaetan Guttierrez (2019, École nationale supérieure des Mines d'Albi-Carmaux, France), France), Tianyi Dang (2015, IUT A – Lyon 1), Florent Pavan (2011, IUT A – Lyon 1, France), Coralie Carle (2010, IUT A – Lyon 1, France), Quentin Chabert (2009, IUT A – Lyon 1, France), Anne Dupressoir (2008, IUT A – Lyon 1, France), Sara Betul Guler (2008, Ege University, Turkey)

Teaching experience

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|----------------|---|
| 2019 – present | Professor – Manufacturing of biopharmaceuticals, MSc in Chemical and sustainable processes engineering, Politecnico di Torino |
| 2014 – present | Professor – Transport Phenomena and Safety, BSc in Material Engineering, Politecnico di Torino |
| 2014 – present | Assistant Professor – Science and Technology of ceramic materials, BSc in Material Engineering, Politecnico di Torino |
| 2011 – present | Assistant Professor – Transport Phenomena II, MSc in Chemical Engineering, Politecnico di Torino |

2011 – 2018	Professor – Control and Instrumentation for chemical processes, BSc in Chemical and Food Engineering, Politecnico di Torino
2011 – 2012	Assistant Professor, Textile Fibres and Technology, MSc in Textile Engineering, Politecnico di Torino
2009 – 2011	Regular graduate lectures on advanced topics in process control and transport phenomena
2006 – 2010	Regular graduate lectures in Numerical Methods course (4 th year undergraduates) at Politecnico di Torino
2006 – 2008	Laboratory demonstrator, Politecnico di Torino. Demonstrated in experimental classes of 1st year chemistry undergraduates

Institutional responsibilities

2015 – present	Member of the Committee on Time Schedule for Chemical Engineering
2015 – present	Member of the Committee on Corporate Image of Department of Applied Science and Technology, Politecnico di Torino
2014 – present	Member of Doctoral School in Chemical Engineering, Politecnico di Torino, Italy
2011 – present	Member of the Faculty Committee of Chemical Engineering and Materials, Department of Applied Science and Technology, Politecnico di Torino, Italy
2010 – present	Graduate Student Advisor, Politecnico di Torino, Italy
2011 – 2015	Tutor for undergraduate students in Chemical and Food Engineering, Politecnico di Torino

Commissions of trust

2020 – present	Member of the Editorial Board for Processes journal
2014 – 2018	Member of the Editorial Board for the Drug Designing journal
2012 – present	Reviewer for: ACTA Press, Advances in Materials Science and Engineering, AIChE Journal, Analytical Chemistry, Biosystems Engineering, BioMed Research International, The Canadian Journal of Chemical Engineering, Chemical Engineering Research and Design, Chimica Oggi/Chemistry Today, Current Drug Delivery, Drying Technology, Drug Development and Industrial Pharmacy, Environmental Progress, European Journal of Pharmaceutics and Biopharmaceutics, Frontiers in Chemistry, International Journal of Food Engineering, International Journal of Modeling and Simulation, International Journal of Nanomedicine, International Journal of Pharmaceutics, Journal of Crystal Growth, Journal of Drug Delivery Science and Technology, Journal of Food Engineering, Journal of Food Process Engineering, Journal of Pharmaceutical Sciences, Pharmaceutical Development and Technology,

	Powder Technology, Processes, Saudi Pharmaceutical Journal, Sensors, Sensors & Actuators: A. Physical
2014 - present	Evaluator of research proposals submitted to various international institutions, including the Research Foundation Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO), Ghent University, the Natural Sciences and Engineering Research Council of Canada
2017 – present	MIT faculty committee to evaluate proposals submitted to MISTI Global Seed Funds
2019	Chair (working with Dr. Jos Corver and Prof. Thomas De Beer) of the 9 th International Conference on Lyophilization/Freeze-drying (ISLFD 2019) organized by the International Society of Lyophilization and Freeze-Drying, Ghent, Belgium
2019	Member of the Organizing Committee for the 7 th European Drying Conference (EuroDrying 2019), Torino, Italy
2017 – 2018	Guest Editor of European Journal of Pharmaceutics and Bipharmaceutics (special issue on “ISLFD-2017: New Ventures in Freeze-Drying”, Pisano R. and De Beer T., editors)2017 Scientific Advisory Board of the International Conference on Lyophilization (ISL-FD2017), International Society of Lyophilization/Freeze-Drying, Cuba
2016	Member of the Committee for the Best Poster Awards and Chairman of the session on “Fundamentals, modeling and simulation” of IDS2016, the 20th International Drying Symposium, Gifu, Japan.
2015	Scientific Advisory Board and chairman of the International Conference on Lyophilization (ISL-FD2015), International Society of Lyophilization/Freeze-Drying, Barcellona, Spain
2014	Reviewer for “ICCMREA 2014”, “IEEE MeMeA2014”, “PCM 2014”, “ISL-FD 2015” conferences

Memberships of scientific societies

2019 – present	Member of the Associazione Italiana di Ingegneria Chimica
2011 – 2016	Member of the American Chemical Society

Other Indicators of Esteem

Invited lectureships & Keynote

Invited lecture: “From batch to continuous: the lyophilization of suspended vials for pharmaceuticals in unit doses” at the 9th International Conference on Lyophilization/Freeze-drying (ISLFD 2019), Ghent, Belgium.

Invited lecture: “Clarifying the role of carbohydrates and other additives in the preservation of proteins during lyophilization. A new approach combining molecular simulations and experiments” at the 2019 Colorado Protein Stability Conference, Breckenridge, Colorado, USA.

Invited lecture: “Modernizing lyophilization of pharmaceuticals in unit doses via continuous manufacturing” at BioProcess International European Summit 2019, Vienna, Austria.

Invited lecture: “Continuous Lyophilization and its relevance to the production of pharmaceuticals and biopharmaceuticals” at the 3rd International Symposium on Continuous Manufacturing of Pharmaceuticals 2018, London, UK.

Invited lecture: “A new concept for the continuous freeze-drying of pharmaceutical products in unit doses” at the Freeze-Drying of Pharmaceuticals and Biologicals Conference 2018, Garmisch-Partenkirchen, Germany.

Invited lecture: “Continuous freeze-drying and its relevance to the pharma/biotech industry” at Integrated Continuous Manufacturing III 2017, Cascais, Portugal.

Invited lecture: “Vacuum induced surface freezing as an effective method for cycle optimization” at The 8th International Conference on Lyophilization and Freeze-Drying 2017, Havana, Cuba.

Invited lecture: “Quality by Design in process development and scale-up for lyophilized parenteral products” at Thematic workshop of Controlled Release Society (Italy Chapter). Pharmaceutical Innovations: Academia meets Industry 2016, Milano, Italy.

Invited lecture: “Mathematical modeling for the freeze-drying of micro- and nanoparticles in packed beds” presented at International Conference on Lyophilization and Freeze Drying 2015, Barcellona, Spain.

Keynote invited lecture: Keynote Address on “Mathematical modelling, design and scale-up of freeze-drying cycles”. Pharmaceuticals and Biopharmaceuticals Lyophilization Conference 2014, London, UK.

Invited lecture: “Toward full noninvasive monitoring of a freeze-drying process” at International Conference on Lyophilization and Freeze Drying 2013, Sao Paulo, Brasil.

Current scientific collaborations

Molecular inclusion of ethylene into cyclodextrin, prof. Claudia Barolo, Department of Chemistry, Università degli Studi di Torino, Italy

On the use of cyclodextrin-based nanosponges as non-polar gas adsorbent, prof. Francesco Trotta, Macromolecular Laboratory, Department of Chemistry, Università degli Studi di Torino, Italy

Synthesis of functionalized surfaces, Dr. Giacomo Ceccone, Joint Research Centre, European Commission, Italy

Development of PAT systems for monitoring the lyophilization process, prof. Thomas De Beer, Department of Pharmaceutical Analysis, Ghent University, Belgium

Spray freeze-drying, prof. Kyuya Nakagawa, Chemical Engineering Department, University of Kyoto, Japan

Lyophilization of the biopharmaceutics, dr. Paul Matejtschuk, National Institute for Biological Standards and Control, London, UK

QbD in freeze-drying of drug products, Prof. Franco Pattarino, Dipartimento di Scienza del farmaco, Università del Piemonte Orientale, Italy

Continuous technologies for the pharmaceutical industry, prof. Bernhardt Trout, Molecular Engineering Laboratory, Department of Chemical Engineering, Massachusetts Institute of Technology, USA

Production of nanocapsules for drug delivery, Prof. Maria Grazia Spillantini, Department of Clinical Neurosciences, University of Cambridge, Cambridge UK; Prof. Giancarlo Rizza, Laboratoire des Solides Irradiés, CEA-IRAMIS-CNRS, Ecole Polytechnique, Palaiseau Cedex, France; Prof. Tara Schiller, Multiscale Materials Group, University of Warwick, UK

Aerosol photopolymerization for the synthesis of micro-particles, Prof. Michael Wörner, Institute of Process Engineering in Life Sciences, Karlsruhe Institute of Technology, Germany

Crystallization of proteins, Dr. José A. Gavira, Laboratorio de Estudios Cristalográficos, IACT (CSIC-UGR), Spain

Molecular simulations applied to pharmaceutical formulations, prof. Joan-Emma Shea, Department of Physics, University of California Santa Barbara, USA

Sterilization of biological products, Prof. Louis Rey (till 2010) and Dr. Florent Kuntz, Centre de Ressources Technologiques, Institut Technique Agro-industriel, France

Investigation of interactions between proteins and excipients, Prof. Gerhard Winter, Department Pharmazie, Ludwig-Maximilians-Universität München, Germany

Recent research projects and funded grants

Research project funded by Compagnia San Paolo, Joint Research Projects with Top University, entitled “Spray freeze-drying as an emerging technology for the preservation of biological macromolecules” (LYOSPRAY), 2019-2022

Research project funded by Fresenius Kabi (Villadose, Italy) entitled “Liofilizzazione di peptidi ad uso terapeutico”, 2019-2020

Research project funded by Novartis DVS Transport D.O.O. (Lubiana, Slovenia) entitled “Supporting services regarding cycle development and scale-up of a pharmaceutical formulation”, 2019

Research project funded by PROBIOTICAL (Novara, Italy) entitled “Liofilizzazione di una biomassa batterica”, 2019

Research project funded by the Joint Research Centre European Commission, Framework of Access to the Joint Research Centre Physical Research Infrastructure (call Nr 2018-1- RD - Nanobiotech), entitled “Surface-induced crystallization”(SIC), 2018-2019

Research project funded by Chiesi Farmaceutici (Parma, Italy) entitled “Sviluppo e trasferimento di un ciclo di liofilizzazione su scala industriale di un surfattante sintetico”, 2018-2019

Research project funded by GiPharma (Saluggia, Italy) entitled “Sviluppo del ciclo di liofilizzazione per una formulazione contenente albumina umana”, 2018

Research project funded by Fresenius Kabi (Villadose, Italy) entitled “Liofilizzazione di una soluzione contenente oligopeptidi”, 2018-2019

Research project funded by Chiesi Farmaceutici (Parma, Italy) entitled “Studio di fattibilità relativo alla rimozione di acetonitrile da un preparato farmaceutico e sua formulazione”, 2017

Research project funded by Synthon Biopharmaceuticals (Nijmegen, The Netherlands) entitled “Development and scale-up of a freeze-drying cycle in the case of a formulation containing organic solvents”, 2017

Research project funded by Compagnia San Paolo & MIT International Science and Technology Initiatives (MISTI), Gobaal Seed Funds – MITOR, entitled “Moving from batch to continuous freeze-drying of biopharmaceuticals”, 2015-2017

Research project funded by Synthon Biopharmaceuticals (Nijmegen, The Netherlands) entitled “Computer-aided development and scale up of freeze-drying cycles”, 2016-2017.

Research project funded by Domori (None, Italy) entitled “sviluppo di un processo di liofilizzazione di un prodotto da destinarsi alla produzione di cioccolata in capsule”, 2016-2017. [In collaboration with Prof. Davide Fissore]

Research project funded by Zymenex A/S (Hilleroed, Denmark) entitled “Freeze-drying of a biopharmaceutical product”, 2015.

Collaborative project funded by Regione Piemonte (Italy) entitled “Sviluppo di materiali attivi per il rilascio controllato di gas nel confezionamento degli alimenti”, 2014-2015.

Research project funded by Azbil-Telstar (Terrassa, Spain) entitled “Support for further validation of monitoring and control tools (Parte II)”, 2014-2015. [In collaboration with Prof. Antonello Barresi]

Research project funded by Chiesi Farmaceutici (Parma, Italy) entitled “Studio di fattibilità e sviluppo del processo produttivo del CHF5633 Surfattante Sintetico mediante liofilizzazione (Parte II)”, 2014-2015. [In collaboration with Prof. Antonello Barresi]

Research project funded by Glaxo Smith Kline Manufacturing (Parma, Italy) entitled “Modeling and optimization of the lyophilization process for pharmaceutical products”, 2009-2010.

Research project funded by Chiesi Farmaceutici (Parma, Italy) entitled “Studio di fattibilità e sviluppo del processo produttivo del CHF5633 Surfattante Sintetico mediante liofilizzazione (Parte I)”, 2012-2013. [In collaboration with Prof. Antonello Barresi]

Research project funded by Telstar (Terrassa, Spain) entitled “Advanced monitoring and control of a freeze-drying process”, 2010-2012. [In collaboration with Prof. Antonello Barresi]

Research project funded by Sanofi Pasteur (Lyon, France) entitled “Definition of the freeze-drying design space of a vaccine”, 2010. [In collaboration with Prof. Antonello Barresi]

Research project funded by IMA-Telstar (Terrassa, Spain) entitled “Investigation of the operating conditions of the chamber, condenser and of the vapour duct to define design criteria for the freeze drier”, 2007-2009. [In collaboration with Prof. Antonello Barresi]

Publications output

To date Roberto Pisano is author of 89 papers on international peer reviewed journals, 11 book chapters, 1 edited book, 4 patents, and various proceeding of international conferences. Scopus H-index: 21. First publication in 2007.

Torino, 1st March 2020

(Prof. Roberto Pisano)
