Prof. Carmelina Ruggiero PhD DIC Dr Ing

CURRICULUM VITAE

Professor of Bioengineering

Department of Informatics, Bioengineering, Robotics and Systems engineering (DIBRIS)
University of Genoa, Italy
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Responsibilities

- Chair of the Bachelor's Degree course in Biomedical Engineering and of the Master's Degree course in Bioengineering (2010-2013) at Genoa University

- Member of the Steering Committee of the Department of Communication Computer and System Sciences (1996-2004, 2007-2012)

- Member of the Steering Committee of the Department of Informatics, Bioengineering, Robotics and Systems Engineering (2012-2015)

- Member of the Board of Faculty of Engineering

- Member of the Committee for the Organisation and Planning of the teaching activities for the degree in Electronics (1983-1996)

- Member of the Committee for the Organisation and Planning of the PhD course in Bioengineering (1984-2007)

- Member of the Committee for the Organisation and Planning of the PhD course in Nanotechnology (2008-2015)

- Member of the Committee for the Organisation and Planning of the teaching activities for the degree in Biomedical Engineering (B-Sc) and in Bioengineering (M-Sc) (1997-)

- Member of the International Relations Committee of the Engineering Faculty, as representative for the degree in Biomedical Engineering and Bioengineering
- Member of the Committees for the Organisation and Planning of the M.D. specialization courses in: Cardiosurgery (1990-), Orthopaedics and Traumatology (1990-2002), Psychiatry (1990-1997), General Surgery (1991-), Microbiology and Virology (1993-2000), Vascular Surgery(1999-2011)

Career related activities

- *Founding Editor-in-Chief of IEEE Transactions on Nanobioscience* (2002-2007)

- Member of the editorial board of Integrated Computer – Aided Engineering (2003-)

- *Conference Chair*

  ➢ First IFMBE Anglo-Italian meeting on Bioengineering, Genoa (Italy) September 1977

  ➢ IEEE-EMBS Special Topic Conference on Molecular, Cellular and Tissue Engineering, 2002 Genoa (Italy) 6-9 June 2002

  ➢ The IASTED International Conference on Biomedical Engineering Biomed 2006, Innsbruck (Austria) February 15 – 17, 2006

  ➢ IEEE Nano 2009, Genoa (Italy) 26-30 July 2009

- Representative of IEEE Nanotecnology Council for Region 8
- Chapter Chair of IEEE Italian Nanotecnology Chaper
- Evaluator of grants applications for the European Union (4th, 5th, 6th and 7th Framework) for the EPSRC, for the Swedish research Council and for Italian sponsoring bodies
- Member of Committees for selection in competitions for positions in Italian Universities and in the Italian Research Council
- Project Technical Advisor for the EU (7th Framework)
- Member of the Working Party on Nanotechnology of OECD (2010-2014)
- Member of the Working Party on Biotechnology, Nanotechnology and Converging Technologies (BNCT) (2015-)
- Member of the Administrative Committee of EMBS/IEEE (2002-2007)
- Member of the Administrative Committee of the IEEE Nanotechnology Council (2003-2009)
- Chair of the Technical Committee on Nanobiotechnology and Molecular Bioengineering of IEEE/EMBS (2008-2010)
- Co-Chair of the Technical Committee on Energy of the IEEE Nanotechnology Council (2010-)

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- Involvement in the organization of several Conferences, including Conferences organized by IEEE/EMBS, IFMBE, BMES, IOMP. Track chair/chair of sessions in some of such Conferences

Invited Lectures

- "Molecular, Cellular and Tissue Engineering: a review" Plenary Lecture, The Anglo-Japanese Healthcare Conference – Imperial College London 29 - 31 March 2001
- "Cellular Engineering: present state and future development" Plenary Lecture, 2nd European Medical and Biological Engineering Conference EMBEC'02, Vienna (Austria): Dec. 04 - 08, 2002
- "L'ingegneria molecolare, la nanobioscienza e la bioinformatica: sinergie tra comunità scientifiche" Plenary Lecture, Metodi Avanzati di Elaborazione di Segnali Biomedici, Bressanone (Italy), Sept 2004
- "Genomics and nano-molecular aspects in cellular and tissue engineering", Plenary Lecture, The Second International Forum on Post-Genome Technologies Genomic Analysis and Bio-Nanoscience (2'IFPT) Nanjing, May 26-27, 2004
- "Nanobiotechnology for Synthetic Biology" Plenary Lecture, Royal Academy of Engineering UK Focus for Biomedical Engineering, London 19th July 2005
- "Nanobioscience: an overview" Plenary Lecture, SouthEast Collaborative Alliance Biocomputing Center (SECABC 2005) Symposium, Atlanta, Georgia 27 October 2005
- "Nanotechnology and Personalized Medicine" Keynote Lecture, IEEE-NANOMED 2008, Suzohou (China) 6-9 November 2008
- "Emerging Biological Nanosystems" in Pre-conference workshop, IEEE-EMBC 2010, Buenos Aires (Argentina) August 31 - September 4 2010
- "Trends and Prospects in Nanobiotechnology and Molecular Bioengineering" Keynote Lecture, ANDESCON 2010 - IEEE Andean Council Congress, Bogotá (Colombia)
- "Nanofabrication for Targeted Drug Delivery" in Pre-conference workshop, IEEE-EMBC 2011, Boston (USA) August 30 – September 3 2011

Main research interests

Molecular, cellular and tissue engineering, the study of biological systems by modelling, data and signal analysis, and experimental techniques, nanobiotechnology, bioinformatics and medical informatics with special reference to knowledge based systems and telemedicine, computer based modelling. Osteoarthritis, cancer bioengineering and atherosclerosis

Patent

Title invention: New RAC1 inhibitors as potential pharmacological agents for heart failure treatment. Publication number: WO 2010119050 (A1) (21 October 2010)

Research Projects

Research grants both from national sources (Italian Research Council, Ministry of University and Research, Ministry of Health, Scientific and Technological Park of Liguria Region) and from the European Union (within the AIM Programme - 3rd Framework; within the Programmes Biomed 2, Info2000, Telematics Applications - 4th Framework; within the Quality of Life Programme - 5th Framework; within the Life sciences, genomics and biotechnology for health Activity area and within the Nanotechnologies and nano-sciences, knowledge-based multifunctional materials and new production processes and devices Activity area - 6th Framework; within the Nanotechnology and Nanosciences Activity area - 7th Framework)

Specifically:

EUROPEAN PROTOTYPE FOR INTEGRATED CARE (EPIC) (1992-1994)

The chief aim of the EPIC project is to improve the quality of community care provided to vulnerable people through the development of an information system for integrated care, which supports the sharing of information between health and social care professionals.

CLINICAL ONCOLOGY NETWORK FOR QUALITY IN EUR. STANDARD OF TREATMENT (CONQUEST). TELEMATICS APPLICATIONS PROGRAM-EU-4THFRAMEWORK (1996-99)

The aim of the project was to improve the treatment of oncologic diseases on a European scale. The project focused specifically on radiotherapy and chemotherapy

BREAST CANCER INFORMATION KIT (BREAK-IT), INFO2000 PROGRAM- EU-4TH FRAMEWORK (1997).

The project focused on educational aspects about breast cancer. Knowledge dissemination for the general public was achieved through web based tools, electronic support and publication of a book

BIOARTIFICIAL ORGANS AND TISSUES. BIOMED2 PROGRAM- EU-4TH FRAMEWORK (1997-2000)

The project focused on a co-ordinated, inter-disciplinary, programme which aimed at advancing knowledge in critical cellular aspects of the field of organ and tissue repair and replacement. The main objective was to improve prospects for the successful development and use of selected bioartificial tissues and organs

CELLULAR ENGINEERING. PROJECT SPONSORED BY THE ITALIAN DEPT OF UNIVERSITY AND RES.(1997-2000).

This project focused on modelling of the cell structure and function and on cell culture onto substrates, with special reference to retina cells

A database for radiol. images funded by the Scient. and Techn. Park of Liguria (STPL)(1998-2001)

The project focused on the design and implementation of a general database of radiological images starting from the system present at the San Martino Hospital in Genoa

METHODS FOR RAPID IDENTIFICATION OF BACTERIA IN WATER FUNDED BY STPL (1998-2001)

The aim of the project was to develop an innovative identification system based on the use of neural networks. Gascromatography data were analyzed

NERVE, NEURAL TISSUE ENG.CELL FACTORY KEY ACTION QUAL. OF LIFE PROGRAM -EU-V FRAMEWORK (1998-2002)

The overall aim was to develop novel cell engineered 'bioartificial nerve grafts' with which to optimise and dramatically improve, surgical peripheral nerve (PN) repair (and potentially, spinal injuries). Simultaneously, it provided a paradigm for tissue repair engineering in general

BITES, BIOMECHANICAL INTERACTIONS IN TISSUE ENG. AND SURG. REPAIR CELL FACTORY KEY ACTION QUAL. OF LIFE PROGRAM -EU-V FRAMEWORK (1999-2003)

The overall aim of this project was to conduct multidisciplinary research to create bioartificial organs capable of functional load bearing, linking partners from research institutes, emerging industries and hospital end-users. In particular the project aimed to investigate the use of autologous cell seeded resorbable scaffolds for replacing load bearing tissues, cartilage and bone, with a specific application of osteochondral defects

ARTIFICIAL INTELLIGENCE BASED SOFTWARE FOR INDUSTRIAL APPLICATIONS. GENSYM COMPANY (2000-2001)

The aim of the project was the translation of meta-languages for software implementation for process control

TISSUE ENGINEERING FOR RETINA SPONSORED BY THE ITALIAN DEPT. OF UNIVERSITY AND RES. (2001-2003)

The project focused on the study of the process leading to the formation of the retinal mosaic and on the role of the retinal cell cytoskeleton. The project brought together experimental work and mathematical modelling

GRANT FOR WORK ON CELLULAR ENGINEERING, FROM GENOA UNIVERSITY

PLANT, QUALITY OF LIFE PROGRAM-EU-V-FRAMEWORK (2001-04)

The aim of the project was to explore artistic masterpieces in several other European countries so as to compare and contrast the wider symbology and use of the plants. A database was implemented and electronic and informatics tools for knowledge transfer to the general public were set up

ADHESTOP, NANOBIOTECHNOLOGY FOR PERITONEAL CATHETERISM, GROWTH PROGRAM-EU-V-FRAMEWORK (2001-04)

Medical device associated infections are thought to strongly involved with the attachment of bacteria to the device surface. Therefore, the primary goal of the project was the establishment of an optimal function of a catheter surface by making highly specific biomimetic modifications in order to avoid bacterial adhesion as the prerequisite of infections. The main purpose of this project was to create a thin but very stable anti-adhesive barrier onto different polymer surfaces

ASIA RESIST, IDENTIFICATION OF BACTERIA IN WATER, QUALITY OF LIFE PROGRAM EU-V-FRAMEWORK (2005-08)

Core objectives: assessment of the extent of antibiotic resistance in the aquaculture environment in South East Asia (SEA). Assessment of the potential for transfer of antibiotic resistance from the aquaculture environment to the broad public environment

GRANT FROM THE ITALIAN MINISTRY FOR FOREIGN SCIENTIST- RESEARCH PROJECT ON BIOREACTORS AND ON NEAR-INFRARED SPECTROSCOPY(2004-07)

TASNANO, TOOLS AND TECHNOLOGIES FOR THE ANALYSIS AND SYNTHESIS OF NANO STRUCTURES, EU-VI FRAMEWORK (2005-08)

The project focuses on nanotechnologies and nano-sciences, knowledge-based multifunctional materials and new production processes and devices and on the development of a new generation of tools for molecular level characterization and manipulation

CARDIOWORKBENCH, DRUG DESIGN FOR CARDIOVASCULAR DISEASES: INTEGRATION OF IN SILICO AND IN VITRO, LIFE SCIENCES, GENOMICS AND BIOTECHNOLOGY FOR HEALTH ACTIVITY AREA EU-VI FRAMEWORK. (2006-09) – *PROJECT COORDINATOR*

The aim of this project is to discover new factors involved in atherogenesis and their related Caridiovascular Diseases (CAD) for the design and synthesis of new drugs. The project combines computational (bioinformatics, cheminformatics and bioengineering) and experimental (clinical medicine and biology) expertises

DEVELOPMENT OF NEW TECNOLOGIES FOR THE PRODUCTION OF BIOLOGICAL MOLECULES WITH ANTICANCER ACTION. GRANT FROM THE ITALIAN MINISTRY OF HEALTH (2005-08)

The project aims to identify new systems for the production of taxol from vegetable species different from yew tree.

IDRO-RIN TRANS-GENESI GRANT FROM THE ITALIAN MINISTRY FOR UNIVERSITY AND SCIENTIFIC RESEARCH (2011-2014)

The project focuses on technologies for large scale generation of hydrogen from renewable sources for transportation (land and sea) and for distributed generation

LANIR EU-VII FRAMEWORK PROGRAM (2012-2015)

The project focuses on label free nanoscopy using infra-red and on tools and methodologies for imaging structures and composition at the nanometer scale

INNOVATION CHALLENGE FINCANTIERI (2014-)

The project focuses on the development of antifouling and friction reduction biomimetic coatings for ships

Main collaborations and contacts

- Prof R.I Kitney - Imperial College (UK)
- Dr Maryse Bailly - University College London (UK)
- Dr James Phillps - University College London (UK)
- Prof Steve Brocchini - University College London (UK)
- Prof Tofail Syed - University of Limerick (IE)
- Prof Tewfik Soulimane - University of Limerick (IE)
- Prof Adam Curtis - University of Glasgow (UK)
- Prof Zuhong Lu - Peking University
- Prof Wen J. Li - University of Hong Kong (HK)
- Prof Pamela Habibovic - University of Maastricht
- Prof Damijan Miklavcic - University of Ljubljana
- Prof. Ali Khademhosseini - MIT-Harvard (USA)
- Dr Stephen Goodnick - Arizona State University (USA)
- Prof Toshio Fukuda – Nagoya University (JP)
- Prof Oscar Herrera Sandoval - University of Bogotà (Colombia)
- Prof Jerzy Mielczarski - Institute National Politechnique de Lorraine (FR)
- Prof Nikos Glezos - National Center for Scientific Research "Demokritos" (GR)
- Dr Ejaz Huq - Rutherford Appleton Laboratory (UK)
- Prof Ivo Rangelow - University of Kassel (D)
- Dr Patrizio Arrigo – National Research Council (I)
- Prof Alberto Corsini - University of Milan (I)
- Prof Paola Petrini – Polytechnic University of Milan (I)
- Prof Alberto Diaspro – Italian Institute of Technology (I)

Publications

Author or co-author of about 400 research articles, book chapters and conference communications

1. E. Lazarova, S. Mora, N. Maggi, C. Ruggiero, A. Cosolito Vitale, P. Rubartelli, M. Giacomini, "An Interoperable Electronic Health Record System for Clinical Cardiology", Informatics, 9 (2), 47, 2022

2. C. Bersani, C. Ruggiero, R. Sacile, A. Soussi, E. Zero, "Internet of Things Approaches for Monitoring and Control of Smart Greenhouses in Industry 4.0", Energies, 15(10), 3834, 2022

3. R Gazzarata, N Maggi, LD Magnoni, ME Monteverde, C Ruggiero, M. Giacomini, "Semantics Management for a Regional Health Information System in Italy by CTS2 and FHIR", Studies in health technology and informatics, 287, 119-123, 2021

4. N. Maggi, A. Boaglio, C. Ruggiero, R. Fancellu, F. Cocchiara, D. Coviello, D. Capanna, M. Giacomini, "Interoperability Standards for Data Sharing as a Basis to Fill in a Tailored EHR for Undiagnosed Rare Diseases", Studies in health technology and informatics, 287, 114-118, 2021

5. E. Lazarova, S. Mora, P. Rubartelli, A. Cosolito Vitale, L. Pareto, N. Maggi, C. Ruggiero, M. Giacomini "Integrating an Electronic Health Record System into a Regional Health Information System: An HL7 FHIR Architecture", Studies in health technology and informatics, 281, 1087-1088, 2021

6. S. Mora, N. Maggi, C. Ruggiero, A. Venturini, G. Cenderello, D. Fiorellino, A. Pilotto, M. Giacomini, "A Web-Based Data Collection Platform for Frailty Evaluation in Senior HIV+ Patients", European journal for Biomedical informatics, 16(2), 3-6, 2020

7. N. Maggi, A.M. Schito, V. Iobbi, A. Bisio, C. Ruggiero, M. Giacomini, "Molecular docking of ursolic acid and Staphylococcus aureus ATPase for antibacterial therapy", 2020 IEEE 20th Mediterranean Electrotechnical Conference (MELECON), 372-375, 2020

8. F. FR Damanik, M. Brunelli, L. Pastorino, C. Ruggiero, C. van Blitterswijk, J. Rotmans, L. Moroni, "Sustained delivery of growth factors with high loading efficiency in a layer by layer assembly", Biomaterials science, 8(1),174-188, 2020

9. R. Gazzarata, M. E. Monteverde, C. Ruggiero, N. Maggi, D. Palmieri, G. Parruti, M. Giacomini, "Healthcare Associated Infections: An Interoperable

Infrastructure for Multidrug Resistant Organism Surveillance", Int. J. Environ. Res. Public Health, 17(2), 465, 2020

10. N. Maggi, L. Douglas Magnoni, C. Ruggiero, R. Gazzarata, M. Giacomini, "A Modular Multipurpose, Parameter Centered Electronic Health Record Architecture", Advances in Science, Technology and Engineering Systems Journal, 4 (5), 334-340, 2019.

11. N Maggi, A Adornetto, S Scillieri, ENB Urbina, C Ruggiero, M Giacomini, "Medical Equipment Replacement Prioritisation: A Comparison Between Linear and Fuzzy System Models." Studies in health technology and informatics, 264, 1538-1539, 2019

12. M Bonetto, S Mora, N Maggi, C Ruggiero, M Giacomini "Standards for the Reuse of Clinical Data in Research: the Connection of the Liguria HIV Network and the CISAI Cohort", 2019 Global Medical Engineering Physics Exchanges/Pan American Health Care Exchanges (GMEPE/PAHCE)

13. N Maggi, R Gazzarata, C Ruggiero, C Lombardo, M Giacomini "Cancer precision medicine today: towards omic information in healthcare systems" Tumori Journal, 105 (1), 38-46, 2019.

14. S Sukkar, N Maggi, B Travalca Cupillo, C Ruggiero, "Optimizing texture modified foods for oro-pharyngeal dysphagia: a difficult but possible target?" Frontiers in Nutrition, 5, 2018.

15. N Maggi, C Ruggiero, M Giacomini, "Towards an electronic medical record for precision oncology: information and knowledge management", 4th IEEE International Forum on Research and Technologies for Society and Industry, Palermo 10-13 Settembre 2018

16. N. Maggi, C. Ruggiero "Surface-protein interaction modelling: an application to marine biofouling", Sesto Congresso Nazionale di Bioingegneria, 2018.

17. N. Maggi, C. Ruggiero "Digital Signal Processing Techniques for Identification of Functional Unknown Elements in Ribosomal RNA", 4th IEEE Middle East Conference on Biomedical Engineering (MECBME), 2018.

18. R Mouras, M R Noor, L Pastorino, E Bagnoli, A Mani, E Durack, A Antipov, F D'Autilia, P Bianchini, A Diaspro, T Soulimane, C Silien, C Ruggiero, S AM Tofail "Image-Based Tracking of Anticancer Drug-Loaded Nanoengineered Polyelectrolyte Capsules in Cellular Environments Using a Fast Benchtop Mid-Infrared (MIR) Microscope", ACS Omega, pp. 6143 - 6150, 2018.

19. N Habibi, L Pastorino, G Babolmorad, C Ruggiero, T Guda, JL Ong "Polyelectrolyte multilayers and capsules: S-layer functionalization for improving stability and biocompatibility", Journal of Drug Delivery Science and Technology, pp. 1 - 8, 2017.

20. G. Rauch, C. Ruggiero, M. Giacomini "Evaluating single channel ionic current by fuzzy clustering with a partition validation index", XIV Mediterranean Conference on Medical and Biological Engineering and Computing, pp. 446 - 450, 2016.

21. M. Giacomini, A. Bisio, S. Robaldo, C. Ruggiero, G. Rauch "Toxic activity evaluation by clustering", XIV Mediterranean Conference on Medical and Biological Engineering and Computing, pp. 536 - 539, 2016.

22. Maggi N., Ruggiero C., Arrigo P. "Prediction of potential barcoding sites on ITS1 by wavelet transform", Journal of Biomolecular Structure and Dynamics, pp. 814 - 823, 2016.

23. A Lagazzo, E Finocchio, P Petrini, C Ruggiero, L Pastorino "Hydrothermal synthesis of pectin derived nanoporous carbon material", Materials Letters, pp. 212 - 215, 2016.

24. Stanciu S; Tranca D, Ruggiero C , Stanciu G, Dellacasa E, Antipov A, Hristu R, Pastorino L "Combined Far-field, Near-field and Topographic Imaging of Nano-Engineered Polyelectrolyte Capsules", Materials Letters, pp. 105 - 108, 2016.

25. N. Maggi, P. Arrigo, C. Ruggiero "Identifying Functional Unknown Elements in Ribosomal RNA by Digital Signal Processing", Quinto Congresso Nazionale di Bioingegneria, 2016.

26. M. Paini, B. Aliakbarian, A.A. Casazza, P. Perego, C. Ruggiero,L. Pastorino, "Chitosan/dextran multilayer microcapsules for polyphenol co-delivery", Materials Science and Engineering, pp. 374 - 380, 2015.

27. L. Pastorino, S. Erokhina, C. Ruggiero, V. Erokhin, P. Petrini "Fabrication and Characterization of Chitosan and Pectin Nanostructured Multilayers", Macromolecular Chemistry and Physics, pp. 1067 - 1075, 2015.

28. Elena Dellacasa, Laura Pastorino, Chiara Scanarotti, Stefania Vernazza, Anna Maria Bassi, Ranieri Rolandi, Carmelina Ruggiero "Peroxidated olive oil nanoemulsion for cancer targeted therapy", 37rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015), pp. 2580 - 2583, 2015.

29. L. Pastorino, E. Dellacasa, S. Scaglione, M. Giulianelli, F. Sbrana, M. Vassalli "Oriented collagen nanocoatings for tissue engineering", Colloids and Surfaces B: Biointerfaces, pp. 372 - 378, 2014.

30. N. Habibi, L. Pastorino, C. Ruggiero "Functionalized biocompatible polyelectrolyte multilayers for drug delivery: In situ investigation of mechanical properties by dissipative quartz crystal microbalance", Materials Science and Engineering, pp. 15 - 20, 2014.

31. Pastorino, L., Dellacasa, E., Noor, M.R., Soulimane, T., Bianchini, P., D'Autilia, F., Antipov, A., Diaspro, A., Tofail, S.A.M., C. Ruggiero "Multilayered

polyelectrolyte microcapsules: Interaction with the enzyme cytochrome c oxidase", PLoS ONE, pp. 112 - 192, 2014.

32. C. Ruggiero, P. Petrini, F. Munarin, L. Visai, L. Pastorino "Polysaccharide nanostructured mu- capsules as mu-carriers for 3D cell cultures", Journal of tissue engineering and regenerative medicine, pp. 508 - 508, 2014.

33. N Maggi, P Arrigo, C Ruggiero "Ribosomal DNA analysis by Wavelet Transform", ICNAAM-2014, pp. 1648, 2014.

34. Tayerani, E., Ghoreishi, S.M., Habibi, N., Pastorino, L., Ruggiero, C. "Electrospun chitosan nanofibers for tissue engineering", 37rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015), pp. 943 - 946, 2014.

35. Maggi, N., Baroffio, M., Pastorino, L., Crimi, S., Folli, C., Brusasco, V., Ruggiero, C "Self- assembled polyelectrolyte capsule for drug delivery: In vitro evaluation of their interaction with cell", 37rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015), pp. 521 - 524, 2014.

36. Maggi, N., Arrigo, P., Ruggiero, C. "Optimize ncRNA targeting: A signal analysis based approach", IFMBE Proceedings, pp. 662 - 665, 2014.

37. Giulianelli, M., Pastorino, L., Ferretti, R., Ruggiero, C. "Ultrathin films by LbL self-assembly for biomimetic coatings of implants", IFMBE Proceedings, pp. 1609 - 1612, 2014.

38. S. Erokhina, O. Konovalov, P. Bianchini, A. Diaspro, C. Ruggiero, V. Erokhin, L. Pastorino "Release kinetics of gold nanoparticles from collagen microcapsules by total reflection X-ray fluorescence", Colloids and Surfaces A: Physicochemical and Engineering Aspects, pp. 83 - 88, 2013.

39. M. Salerno, F. Caneva-Soumetz, L. Pastorino, N. Patra, A. Diaspro, C. Ruggiero "Adhesion and proliferation of osteoblast-like cells on anodic porous alumina substrates with different morphology", IEEE TRANSACTIONS ON NANOBIOSCIENCE, pp. 106 - 111, 2013.

40. M Giulianelli, L Pastorino, R Ferretti, C Ruggiero "Biomimetic polyelectrolyte multilayer ultrathin films to promote osseointegration", 13th IEEE Conference on Nanotechnology (IEEE-NANO), 2013, 2013.

41. N Maggi, P Arrigo, C Ruggiero "Toll-like receptor structural determinants: Variability analysis by digital signal processing methods", 13th International Conference on Bioinformatics and Bioengineering (BIBE), 2013 IEEE, 2013.

42. M Giulianelli, L Pastorino, R Ferretti, C Ruggiero "Polyelectrolyte multilayer coatings for implant osseointegration", 13th International Conference on Bioinformatics and Bioengineering (BIBE), 2013 IEEE, 2013.

43.   M Giulianelli, L Pastorino, R Ferretti, C Ruggiero "Ultrathin Films by LbL Self-assembly for Biomimetic Coatings of Implants", XIII Mediterranean Conference on Medical and Biological Engineering and Computing , 2013.

44.   N Maggi, P Arrigo, C Ruggiero "Optimize ncRNA Targeting: A Signal Analysis Based Approach", XIII Mediterranean Conference on Medical and Biological Engineering and Computing , 2013.

45.   N.   Maggi, P. Arrigo, C. Ruggiero "Comparative analysis of Rac1 binding efficiency with different classes of ligands: morpholines, flavonoids and imidazoles", IEEE TRANSACTIONS ON NANOBIOSCIENCE, pp. 181 - 187, 2012.

46.   N. Maggi, P. Arrigo, C. Ruggiero "Potential MiRNAs recognition site identification in 3'UTR regions by DSP methods", 34rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012), 2012.

47.   N. Habibi, L. Pastorino, C. Ruggiero "Biomimetic structures: Incorporation of active bio- molecules in polyelectrolyte shells", 12th IEEE Conference on Nanotechnology (IEEE-NANO), 2012, 2012.

48.   L. Pastorino, S. Erokhina, O. Konovalov, V. Erokin, C. Ruggiero "Capsule nano-ingegnerizzate basate su collagene per rilascio intelligente del farmaco", Terzo Congresso Nazionale di Bioingegneria, 2012.

49.   N. Maggi, P. Arrigo, C. Ruggiero "Analisi di mutazioni della proteina Rac1 mediante Short Time Fourier transform", Terzo Congresso Nazionale di Bioingegneria, 2012.

50.   G. Rauch, S. Bertolini, R. Sacile, M. Giacomini, C. Ruggiero, "Ionic Channel Current Burst Analysis by a Machine Learning Based Approach", IEEE TRANSACTIONS ON NANOBIOSCIENCE, pp. 152 - 159, 2011.

51.   N. Habibi, L. Pastorino, F. Caneva Soumetz, F. Sbrana, R. Raiteri, C.Ruggiero "Nanoengineered Polymeric S-layers Based Capsules with Targeting Activity", Colloids and Surfaces B: Biointerfaces, pp. 366 - 372, 2011.

52.   L. Pastorino, S. Erokhina, P. Bianchini, O. Konovalov, A. Diaspro, C. Ruggiero "Permeability variation study in collagen-based polymeric capsules", BioNanoScience, pp. 192 - 197, 2011.

53.   L. Pastorino, S. Erokhina, F.Caneva Soumetz, P. Bianchini, O. Konovalov, A. Diaspro, C. Ruggiero, V. Erokhin "Collagen containing microcapsules: Smart containers for disease controlled therapy", Journal of Colloid and Interface Science, pp. 56 - 62, 2011.

54.   C. Ruggiero "Molecular Bioengineering and Nanobioscience", Advanced methods of Biomedical Signal Processing, 2011.

55.   N. Maggi, P. Arrigo, C. Ruggiero "Drug design for cardiovascular disease: The effect of solvation energy on Rac1-ligand interactions", 33rd Annual

International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2011), pp. 3237 - 3240, 2011.

56. S. Erokhina, L. Pastorino, O. Konovalov, P. Bianchini, A. Diaspro, C. Ruggiero "Permeability variation study in collagen-containing polymeric capsules", 12th European Conference on Organized Films, 2011.

57. L. Pastorino, N. Habibi, F. Caneva Soumetz, M. Giulianelli and C. Ruggiero "Polyelectrolyte multilayers for cell and tissue engineering", Tissue and Cell Engineering Society (UK) Annual Meeting, 2011.

58. N. Habibi, L. Pastorino, F. Caneva Soumetz, and C. Ruggiero "Permeability of S-layers coated polyelectrolyte capsules", 11th International Conference on Nanotechnology (IEEE Nano 2011), 2011.

59. M. Giulianelli, L. Pastorino, F. Caneva Soumetz, C. Ruggiero "Advances in hydrogen storage capacity in carbon-based materials", NanotechItaly 2011, 2011.

60. F. Caneva Soumetz, Jose F. Saenz, L. Pastorino, C. Ruggiero, D. Nosi, R. Raiteri "Investigation of integrin expression on the surface of osteoblast-like cells by atomic force microscopy", Ultramicroscopy, pp. 330 - 338, 2010.

61. Maggi, N.; Arrigo, P.; Ruggiero, C. "SNP analysis of Rac1 For personalized ligand interaction", 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2010), pp. 1779 - 1782, 2010.

62. N. Habibi, F. Caneva Soumetz, L. Pastorino, O. Herrera and C. Ruggiero "Layer by Layer Self Assembly of Polyelectrolytes and S-Layers", 10th IEEE Conference on Nanotechnology (IEEE- NANO), 2010.

63. C. Ruggiero, Arrigo P, Maggi N "In silico evaluation of nanoparticle cell interaction via human ", 10th IEEE Conference on Nanotechnology (IEEE-NANO), pp. 995 - 998, 2010.

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