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### Personal Details

Date of Birth 26th of January 1965

Place of Birth: Bari

Sex: Male

Nationality: Italian

Status: Married.

## Research Projects and Grants

- 2003-2004 – *Inter and Intra Molecular Interaction in Porphirin photosynthetic systems*. Principal Investigator: Prof. A. Agostiano, grant from the Italian Minister of University and Research and the University of Bari (PRIN 2002), participation as member.
- 2003-2006 – Action D27: Prebiotic Chemistry and Early Evolution, Chair of Action Prof. G. Von Kiedrowski, grant from COST EU, participation as leader of the team 6 in working group D27/0007/03: Functionalized Self-Reproducing Vesicles as precursors for Early Cells.
- 2006-2008 – *SYNthesis of novel oRGanic materials and supramolecular architectures for high efficiency optoelectronic and photonic systems*. Principal Investigator: Prof. F. Naso, grant from the Italian Minister of University (FIRB 2003), participation as member.
- 2007-2010 – Computational and Simulative Methods suitable for studying chemical physic properties of materials and complex systems dynamics. Group Leader Fabio Mavelli, grant from Bari University, participation as group leader.
- 2010-2012 – *Experimental and theoretical approaches to the construction of semi-synthetic minimal cells*. Principal Investigator: Prof. P.L. Luisi, financed by the Italian Minister of University and Research (PRIN 2008), participation as Local Unit Leader.
- 2010-2011 - Parallelization of the software platform ENVIRONMENT suitable for simulations of artificial minimal cells, Scientific Leader Fabio Mavelli, grant ISCRA-C from CINECA (HP10CVJLGZ).
- 2011-2012 - *Implementation of a sweep parameters procedure in the ENVIRONMENT platform*, Scientific Leader Fabio Mavelli, grant ISCRA-C from CINECA (HP10CR2XF8).
- 2010-2012 - Team Leader of the University of Bari Unit in the Working group 3: *Integration of metabolic and compartmentalization subsystems*, coordinated by Peter Walde in COST Project CM0703 *Systems Chemistry*.
- 2012-2015 – “Laboratorio per lo Sviluppo Integrato delle Scienze e delle TECnologie dei Materiali Avanzati e per dispositivi innovativi (SISTEMA)”. Grant PON R&C (PONa3\_00369), Leader of research unit.
- 2013-2016 – *Soft Matter Nanostrutturata: dall'indagine chimico-fisica allo sviluppo di applicazioni innovative*. Principal Investigator: Dr. D. Berti, grant (PRIN 2010-11) from the Italian Minister of University and Research, participation as Local Unit Member (2010BJ23MN\_003).
- 2013-2017 – UE-COST Action CM1304: “*Emergence and Evolution of Complex Chemical Systems*”, member of the Management Committee and team leader.
- 2016-2017 - ELSI Origins Network (EON): “*Construction of minimal “cell mimicry” towards understanding of fundamental principles for origin of life*”, Principal Investigator: Dr. Soichiro Tsuda School of Chemistry, Glasgow University (UK), Leader of research unit.
- 2013-2018 – Basque Government Grant (code: IT-590-13 Titled: “*General Grant to consolidate the research group from the Basque Country*”), Principal Investigator: prof. Alvaro Moreno.

## Research Stages

- 09/1993-01/1994: Research Activity on the "autopoietic micelles project" in the group of Prof. P.L. Luisi at ETH-Zurich
- 10/1994-05/1995: Research Activity on the "autopoietic vesicles project" in the group of Prof. P.L. Luisi at ETH-Zurich .
- 10/1997-05/1998: Research Activity on the "autopoietic vesicles project" in the group of Prof. P.L. Luisi at ETH-Zurich
- 08/2002-31.09.2002: Research Activity on the "matrix effect project" in the group of Prof. P.L. Luisi at ETH-Zurich
- 02/2005-03/2005 Research Stage in the group of Prof. F.Sagues at Department of Chemical-Physics, University of Barcelona, thanks to a grant of the HPC-Europa Transnational Access program.
- 11/2011-12/2011 - Research Stage in the group of Prof. P.Walde at Institut fuer Polymere, ETH Zentrum of Zurich.
- 10/2017-11/2017 Visiting Researcher in the laboratory for "Functional Fluorescence Microscopy Imaging (fFMI)" at the Center for Molecular Medicine (CMM), Department of Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden

## Papers on Scientific Journals

1. **Fanti A., Gammuto L., Mavelli F., Stano P., Marangoni R.,** *Do protocells preferentially retain macromolecular solutes upon division/fragmentation? A study based on the extrusion of POPC giant vesicles.* Integrative Biology 10, (2018) 6-17, DOI: 10.1039/c7ib00138j
2. **Fayolle D., Altamura E., D'Onofrio A., Madanamothoo W., Fenet B., Mavelli F., Buchet R., Stano P., Fiore M., Strazewski P.,** *Crude phosphorylation mixtures containing racemic lipid amphiphiles self-assemble to give stable primitive compartments.* Scientific Reports 7 (2017) DOI:10.1038/s41598-017-18053-y
3. **Depalo, N., Corricelli, M., De Paola, I., Valente, G., Iacobazzi, R. M., Altamura, E., Debellis, D., Comegna, D., Fanizza, E., Denora, N., Laquintana, V., Mavelli, F., Striccoli, M., Saviano, M., Agostiano, A., Del Gatto, A., Zaccaro, L., Curri, M. L.** NIR Emitting Nanoprobes Based on Cyclic RGD Motif Conjugated PbS Quantum Dots for Integrin-Targeted Optical Bioimaging. ACS Applied Materials & Interfaces 9 (2017) 43113-43126, doi: 10.1021/acsami.7b14155
4. **Stano P., Altamura E., Mavelli F.,** *Novel directions in molecular systems design: the case of light-transducing synthetic cells.* Communicative & integrative biology 10 (2017) e1365993, doi: 10.1080/19420889.2017.1365993
5. **Altamura E., Fiorentino R., Milano F., Trotta M., Palazzo G., Stano P., Mavelli F.,** *First moves towards photoautotrophic synthetic cells: In vitro study of photosynthetic reaction centre and cytochrome bc1 complex interactions,* Biophysical Chemistry 229C, (2017) 46-56
6. **Piedrafita G., Monard P.A, Mavelli F., Ruiz-Mirazo K.,** *Permeability-driven selection in a semi-empirical protocell model: the roots of prebiotic systems evolution.* Scientific Reports 7(1), (2017) 3141.
7. **Altamura E., Milano F., Tangorra R.T., Trotta M., Omar O.H., Stano P., Mavelli F.,** *Highly oriented photosynthetic reaction centers generate a proton gradient in synthetic protocells.* PNAS 114(15), (2017) 3837-3842.
8. **Küchler A., Yoshimoto M., Luginbühl S., Mavelli F., Walde P.,** *Enzymatic Reactions in Confined Environments,* Nature Nanotechnology 11, (2016) 409–420.
9. **Giorgio G., Colafemmina G., Mavelli F., Murgia S., Palazzo G.,** *The impact of alkanes on the morphology of Triton X100 micelles.* RCS Advances 6, (2016) 825-836
10. **Mavelli F., Stano P.,** *Experiments and numerical modelling on the capture and concentration of transcription-translation machinery inside vesicles.* Artificial Life 21 (2015) 1–19
11. **Mavelli F., Marangoni, R., Stano, P.,** *A Simple Protein Synthesis Model for the PURE System Operation.* Bulletin of Mathematical Biology 77 (6), (2015), 1185-1212
12. **Altamura E., Stano P., Walde P. and Mavelli F.,** *Giant Vesicles as Micro-Sized Enzymatic Reactors: Perspectives and Recent Experimental Advancements.* International Journal Of Unconventional Computing 11(1), (2015), 5-21.
13. **D'Aguzzo E., Altamura E., Mavelli F., Fahr A., Stano P., Luisi P.L.,** *Physical routes to primitive cells: An experimental model based on the spontaneous entrapment of enzymes inside Micrometer-Sized liposomes.* Life 5(1), (2015), 969-996.

14. **Stano P., de Souza Pereira T., Carrara P., Altamura E., D'Aguzzo E., Caputo M., Luisi P.L., Mavelli F.,** *Recent Biophysical Issues About the Preparation of Solute-Filled Lipid Vesicles.* Mechanics Of Advanced Materials And Structures 22 (2015) 748-759.
15. **Rampioni G., Mavelli F., Damiano L., D'Angelo F., Messina M., Leoni L., Stano P.,** *A synthetic biology approach to bio-chem-ICT: first moves towards chemical communication between synthetic and natural cells,* Natural Computing 13(3), (2014), 333-349, DOI: 10.1007/s11047-014-9425-x.
16. **Shirt-Ediss B., Ruiz-Mirazo K., Mavelli F., Sole RV.,** *Modelling Lipid Competition Dynamics in Heterogeneous Protocell Populations,* Scientific Reports 4, (2014), Article Number: 5675, DOI: 10.1038/srep05675.
17. **Mavelli F., Trotta M.; Ciriaco F.; Agostiano A., Giotta L., Italiano F., Milano F.,** *The binding of quinone to the photosynthetic reaction centers: kinetics and thermodynamics of reactions occurring at the Q(B)-site in zwitterionic and anionic liposomes.* European Biophysics Journal With Biophysics Letters 43(6-7), (2014), 301-315, DOI: 10.1007/s00249-014-0963-z.
18. **Mavelli F., Altamura E., Cassidei L., Stano P.,** *Recent Theoretical Approaches to Minimal Artificial Cells.* Entropy 16(5), (2014), 2488-2511, DOI: 10.3390/e16052488
19. **Walde P., Umakoshi H., Stano P., Mavelli F.,** Emergent properties arising from the assembly of amphiphiles. Artificial vesicle membranes as reaction promoters and regulators. Chemical Communications 50(71) (2014) 10177-10197, DOI: 10.1039/c4cc02812k
20. **Calviello L., Stano P., Mavelli F., Luisi P.L., Marangoni R.,** *Quasi-cellular systems: stochastic simulation analysis at nanoscale range,* BMC Bioinformatics 14(7), (2013) S7, DOI: 10.1186/1471-2105-14-S7-S7.
21. **Grotzky, A., Atamura, E., Adamcik, J.; Carrara, P., Stano, P., Mavelli, F. Nauser, T., Mezzenga, R., Schluter, A.D., Walde, P.,** *Structure and Enzymatic Properties of Molecular Dendronized Polymer–Enzyme Conjugates and Their Entrapment inside Giant Vesicles.* Langmuir 29, (2013) 10831-10840
22. **Ciriaco, F., Mavelli, F., Cassidei, L.,** Benchmark calculations of density functionals for organothiol adsorption on gold surfaces. Comp. Theo. Chem. 1009, (2013) 60-60.
23. **Mavelli F., Ruiz-Mirazo K.,** Theoretical conditions for the stationary reproduction of model protocells. Integrative Biology 5, (2013) 324-341.
24. **Mavelli F.,** Stochastic simulations of minimal cells: the Ribocell model, BMC Bioinformatics 13(4), (2012) S10.
25. **Losito I., Mavelli F., Demarinis Loiotile A., Palmisano F.,** A support for the identification of non-tryptic peptides based on low resolution MS/MS and MS3 data: the INSPIRE software, Analytica Chimica Acta 718, (2012) 70-77.
26. **F. Mavelli, K. Ruiz-Mirazo** (2010) ENVIRONMENT: a computational platform to stochastically simulate reacting and self reproducing compartments, Physical Biology 3, 36002.
27. **F. Mavelli, P. Della Gatta, L. Cassidei, P.L. Luisi** (2010) *Could the Ribocell be a feasible protocell model?* Origins Of Life And Evolution of The Biosphere 40, 459-464.
28. **G. Bruno, F. Babudri, A. Operamolla, G.V. Bianco, Losurdo M., M.M. Giangregorio, O. Hassan, F. Mavelli, G.M. Farinola, C. Pio, F. Naso** (2010) *Tailoring Density, Optical and*

*Thermal Behavior of Gold Surfaces and Nanoparticles Exploiting Aromatic Dithiols*, Langmuir 6, 8430-8440.

29. **S. Laricchia, F. Ciriaco, L. Cassidei, F. Mavelli** (2010) *DFT study of 1,3-benzenedimethanethiol adsorption on Au(111)*. Sensor Letters (in press: June special issue).
30. **F. Mavelli, P. Stano**, (2010) Kinetic models for autopoietic chemical systems: role of fluctuations in homeostatic regime. Physical Biology 7, doi:10.1088/1478-3975/7/1/016010.
31. **F. Mavelli** (2009). *La ricerca che si è fatta in tre*. Sapere 5, 12-20, ISSN: 0036-4681
32. **E. Bianchino, S. Piotto, F. Mavelli, M. L. Curri, M. Striccoli**, (2009) DPD simulations of PMMA-Oleic Acid Mixture behaviour in organic capped nanoparticle based polymer nanocomposite. Macromolecular Symposia 286, 156-163.
33. **S. Piotto, S. Concilio, F. Mavelli, P. Iannelli**, (2009) *Computer Simulations of Natural and Synthetic Polymers in Confined Systems*. Macromolecular Symposia 286, 25-33.
34. **Fiorentino G., Caracuta V., Calcagnile L., Delia M., Matthiae P., Mavelli F., Quarta G.** (2008) Third millennium B.C. climate change in Syria highlighted by Carbon stable isotope analysis of <sup>14</sup>C-AMS dated plant remains from Ebla-Tell Mardikh. Palaeogeography Palaeoclimatology Palaeoecology 266, 51-58.
35. **Ruiz-Mirazo K., Mavelli F.** (2008). On the way towards basic autonomous systems: stochastic simulations of minimal lipid-peptide cells, BioSystems 91, 374-387.
36. **Piotto S., Concilio S., Iannelli P., and Mavelli F.** (2008) *DDFT Simulations of the Assembly of Block Copolymers in Confined Systems*, AIP Conf. Proc. 1042, 44-45.
37. **Bianchino E., Piotto S., Concilio S., Sciancalepore C., Curri M. L., Agostiano A., Striccoli M., Mavelli F.**, *Investigation of morphology of nanocrystal based nanocomposites. Theoretical and computational analysis* AIP Conf. Proc. 1042, (2008) 261-262.
38. **Mavelli F., Ruiz-Mirazo K.** (2007). *Stochastic simulations of minimal self-reproducing cellular systems*. Philosophical Transactions Of The Royal Society Of London Series B: Biological Sciences 362, 1789-1802, (doi:10.1098/rstb.2007.2071).
39. **Mavelli F., Ruiz-Mirazo K.** (2007). *Question 8: Bridging the Gap Between In Silico and In Vitro Approaches to Minimal Cells*. Origins Of Life And Evolution Of The Biosphere 37, 455-458, (doi:10.1007/s11084-007-9085-2)
40. **Ruiz-Mirazo K., Mavelli F.** (2007). *Modelling minimal 'lipid-peptide' cells*. Origins Of Life And Evolution Of The Biosphere. 37, 433-437 (doi:10.1007/s11084-007-9089-y).
41. **Mavelli F., Piotto S.**, (2006), *Stochastic Simulations of Homogeneous Chemically Reacting Systems*, Journal Of Molecular Structure 771, 55-64 (doi:10.1016/j.theochem.2006.03.016).
42. **Luisi P.L., Stano P., Rasi S., Mavelli F.**, (2004), *A Possible Route To Prebiotic Vesicle Reproduction*, Artificial Life 10:3, 297-308
43. **Agostiano A., Mavelli F., Milano F., Giotta L., Trotta M., Nagy L. and Maroti P.**, (2004), *pH-sensitive fluorescent dye as probe for proton uptake in photosynthetic reaction centers*, Bioelectrochemistry 63, 125-128.
44. **Piotto S., Mavelli F.**, (2004), *Monte Carlo simulations of vesicles and fluid membranes transformations*, Origins of Life and Evolution of the Biosphere 34, 225-235.
45. **Rasi S., Mavelli F., Luisi P. L.**, (2004), *Matrix Effect In Oleate Micelles-Vesicles Transformation*, Origins of Life and Evolution of the Biosphere 34, 215-224.

46. **Rasi S., Mavelli F., Luisi P.L.**, (2003) *Cooperative Micelle Binding and Matrix Effect in Oleate Vesicles Formation*, Journal of Physical Chemistry B 107 14068-14076.
47. **Milano F., Agostiano A., Mavelli F., Trotta M.**, (2003), Kinetics of the Quinone Binding reaction at the QB site of Reaction centers from the purple bacteria Rhodobacter sphaeroides reconstituted in liposomes, Eur J. Biochem. 270, 4595-4605.
48. **Maestro M., Mavelli F., Paiano G., Polacco E.**, (2002), *Optical rotation second-order effects*, Chemical Physics 280, 103-109 .
49. **Curri M.L., Agostiano A., Mavelli F., Della Monica M.**, (2002), *Reverse micellar systems: self organised assembly as effective route for the synthesis of colloidal semiconductor nanocrystals*, Materials Science and Engineering C 22, 423-426.
50. **Mavelli F., Maestro M.**, (1999), *A Stochastic Simulation of the Micellization Kinetics*, Journal of Chemical Physics 111, 4310-4318.
51. **Inglese A., Mavelli F., De Lisi R., Milioto S.**, (1997), Group Contribution to the Infinite Dilution Partial Molar Volume of Alkanes, Alcohols, and Glycols in Polar Organic Solvents, Journal of Solution Chemistry 26, 319-336.
52. **Mavelli F.**, (1997), *Stochastic Simulation of Surfactant Aggregation Kinetics*, Progr. Colloid Polym. Sci. 103, 155-159.
53. **Mavelli F., Luisi P.L.**, (1996) *Autopoietic Self-Reproducing Vesicles: a Simplified Kinetic Model*, J. Chem. Phys 100, 16600-16607.
54. **Chizmadzhev Y.A., Maestro M., Mavelli F.**, (1994) *A simplified kinetic model for an autopoietic synthesis of micelles*, Chem. Phys. Lett. 226, 56-62.

## Papers on Books

1. **Altamura E., Milano F., Trotta M., Stano P., Mavelli F.**, *Modelling Giant Lipid Vesicles Designed for Light Energy Transduction*. in Piotto S., Rossi F., Concilio S., Reverchon E., Cattaneo G. Eds.: “Advances in Bionanomaterials”, in book series: Lecture Notes in Bioengineering, Vol. 1, 97-109, (2017).
2. **Stano P., Rampioni G., D’Angelo F., Altamura E., Mavelli F., Marangoni R., Rossi F., Damiano L.** *Current Directions in Synthetic Cell Research*. in Piotto S., Rossi F., Concilio S., Reverchon E., Cattaneo G. Eds.: “Advances in Bionanomaterials”, in book series: Lecture Notes in Bioengineering, Vol. 1, 141-154, (2017).
3. **Altamura E., Mavelli F., Milano F., Trotta M.**, *Photosynthesis Without the Organisms: The Bacterial Chromatophores*. in Piotto S., Rossi F., Concilio S., Reverchon E., Cattaneo G. Eds.: “Advances in Bionanomaterials”, in book series: Lecture Notes in Bioengineering, Vol. 1, 165-175, (2017).
4. **Mavelli F., Altamura E., Stano P.**, *Giant vesicles as compartmentalized bio-reactors: a 3D modelling approach*, , in Rossi F., Mavelli F., Stano P., Caivano D. Eds.: “Advances in Artificial Life and Evolutionary Computation”, in book series: Communications in Computer and Information Science, Vol. 587, 184-196, (2016).

5. **Mavelli F., Rampioni G., Damiano L., Messina M., Leoni L., Stano P.**, Molecular communication technology: General considerations on the use of synthetic cells and some hints from in silico modelling, in Pizzuti C., Spezzano G. Eds.: “Advances in Artificial Life and Evolutionary Computation”, in book series: Communications in Computer and Information Science, Vol. 445, 169-189, (2014), DOI: 10.1007/978-3-319-12745-3\_14
6. **Piedrafita G, Mavelli F, Morán F, Ruiz-Mirazo K .**, *On the transition from prebiotic to proto-biological membranes: from ‘self-assembly’ to ‘self-production’*. In: Kampis G., Karsai I. And Szathmary E., “Advances in Artificial Life. Darwin Meets von Neumann”. LNAI-I vol. 5777, 256-264, Springer-Verlag (2011) ISBN: 978-364221282-6.
7. **Ruiz-Mirazo K., Piedrafita G., Ciriaco F., Mavelli F.**, *Stochastic Simulations of Mixed-Lipid Compartments: from self-assembling vesicles to self-producing protocells*, in: Arabnia H.R., "Software Tools and Algorithms for Biological Systems" in books Series: Advances in Experimental Medicine & Biology, vol. 696, 689-696, Springer (2011) ISBN: 978-1-4419-7045-9.
8. **Mavelli F.**, *Theoretical Approaches to Ribocell Modelling*. In Luisi PL and Stano P. (eds) The Minimal Cell, Springer (2011) ISBN 978-90-481-9943-3.
9. **Della Gatta P., Mavelli F.**, *Ribocell Modeling*. In: Miglino O., Ponticorvo M., Rega A., Rubinacci F., Modelli, sistemi e applicazioni di Vita Artificiale e Computazionale Evolutiva. NAPOLI: Fridericiana Editrice Universitaria (2009) p. 55-65, ISBN: 978-88-8338-091-4
10. **Mavelli F., Ciriaco F., Cassidei L., Lamanna U.T.**. *Stochastic Simulations of Proto-Cells: Lipid Vesicles Dynamics*. In: Macagnano A., Ramundo Orlando A., Allen Farrelly F., Petri A., Girasole M., Advanced Topics in Cell Model Systems. HAUPPAUGE NY: Nova Science Publishers (UNITED STATES), (2009) ISBN: 978-1-60692-906-3.
11. **Mavelli F., Lerario .M., Ruiz-Mirazo K.**, ‘ENVIRONMENT’: A Stochastic Simulation Platform to Study Protocell Dynamics. In: Arabnia H.R., Yang M.Q., Yang J.Y. Proceedings of the 2008 International Conference on Bioinformatics & Computational Biology II, (2008) 934-941, Las Vegas: CSREA press, UNITED STATES, ISBN:1-601132-053-1.
12. **Mavelli F., Ruiz-Mirazo K.**, *Stochastic Simulation of fatty-acid proto cell models*. In: Sergey M. Bezrukov. “Noise and Fluctuations in Biological, Biophysical, and Biomedical Systems”. Bellingham, Washington: SPIE (United States) (2007), 1B1-1B10. ISBN: 9780819467393.
13. **Ruiz-Mirazo K., Mavelli F.**, *Simulation Model for Functionalized Vesicles: Lipid-Peptide Integration in Minimal Protocells*. In: F. Almeida e Costa et al. (Eds.): “Advances in Artificial Life”, ECAL (2007), LNAI 4648, 32-41, Berlin/Heidelberg: Springer (Germany), ISBN: 978-3-540-74912-7 (doi:10.1007/978-3-540-74913-4\_4).
14. **Ruiz-Mirazo K., Mavelli F.**, *Stochastic Simulations of proto-cellular self-assembling systems*. In: “Science and Supercomputing in Europe: report 2006”. BOLOGNA: CINECA (ITALY) (2006), 170-179. ISBN: 978-88-86037-19-8.
15. **Fresta M., Maestro M., Mavelli F.**, *A self-catalyzed (autopoietic) synthesis of an anionic surfactant; experimental evidence and theoretical modeling*. In: “Self-Production of Supramolecular Structures”, G.F. Fleischaker, S. Colonna e P. L. Luisi eds., NATO ASI Series C, 446, (1994) 285-290, ISBN 978-0-7923-3163-6.



## Conferences Partecipation from 2005

*Towards the preparation of autotrophic protocells: transducing light giant lipid vesicles*, 4BIO Summit 4-5 December 2017 London [**Invited** as free delegate].

*Transducing light Giant Lipid Vesicles: towards the preparation of autotrophic protocells*, SYSCHEM 2017 Emergence and Evolution of Complex Chemical Systems, Sopron (Hungary) 11-15 September 2017.

*Synthetic biology at work: light-transducing protocells*. Symposium organized by IAS Research Group: "Synthetic Biology: past, present and future" San Sebastian (Spain) 8th September, 2017 [**Invited**].

*Improving Giant Unilamellar Vesicles for light energy transduction*. COST CM1304 WG 3: Integration of metabolic and compartmentalization subsystems, Warsaw (PL), 30th of March 1st of April 2017.

*In vitro and in silico models of minimal cells*. International Workshop on Synthetic Approach to Origin of Life, Glasgow University (UK), 29th-30th of November 2016.

*Modeling Enzymatic Pathways in Giant Lipid Vesicles*. COMSOL Conference, Munich (Germany), 12nd-14th of October 2016.

*Different theoretical approaches in simulating Giant Lipid Vesicles as protocell models*. WIVACE 2016-BIONAM 2016, Salerno (IT) 4th-7th of October 2016

*Giant Lipid Vesicles As Light Into Chemical Energy Trasducers*, XXIII Congresso Nazionale SIPBA, Cortona-Arezzo (IT) 18th-21st of September 2016.

*Photoconversion of light into chemical energy by giant lipid vesicles"*, SYSCHEM 2016, Valtice Chateau (CZ), 8th-12nd of May 2016.

*Modelling Enzymatic Reactions in Giant Vesicles*, SYSCHEM 2015, Rolduc - the Netherlands, 19th-22nd May, 2015.

*In vitro and in silico minimal cell models*, 2nd International Summit on Integrative Biology, Chicago USA, 4th-5th August 2014 [**Invited**].

*In silico minimal cell model systems*, CoSMoS Satellite Workshop of ALIFE14, New York USA, 30th July 2014

*In silico minimal cell model systems*, SYSCHEM 2014, San Sebastian-Spain, 9th-12th June, 2014.

*Giant vesicles as minimal cell models*, Working group meeting COST CM1304. Munich Germany, 20th-22nd November 2014

*Stochastic Simulations of Minimal Cell Model Systems*, XLI Congresso Nazionale di Chimica Fisica, Alessandria 23th-27th June 2013.

*Stochastic simulations of minimal cell model systems*, 12th Joint European Thermodynamics Conference Brescia, 1st-5th July 2013 [**Invited**].

*Modelling Protein Expression in Compartmentalized Lipid Systems*, Third COBRA Workshop (BioChemIT2013) Milano-Bicocca 5th of July 2013

*In Silico Minimal Cell Model Systems*, Workshop: Protocelles: Back to the future, Satellite meeting at ECAL'13, Taormina 2nd of September 2013. [**Invited**]

*Stochastic simulations of minimal cell models* European Genomics Meeting, (CNR) Area Tor Vergata, 10-11 October 2011 [**Invited**].

*Ribocell Modelling.*, Artificial Life XII. Odense, 19-23 August 2010.

*Deterministic and Stochastic approaches to minimal cell models: the Ribocell case study.* SynBioNet Meeting. Nottingham, 18-22 March 2010.

*Stochastic simulations of proto-cell dynamics.* Congress of the World Association of Theoretical and Computational Chemists (WATOC 2008), Sydney 14-19 September 2008,

*Ab-initio structural study of dithiol adsorption on Au(111).* Congress of the World Association of Theoretical and Computational Chemists (WATOC 2008), Sydney 14-19/09/2008.

*Theoretical approaches to the Ribocell.* XV International Conference on the Origin of Life, Firenze 24-29 of August 2008, 206.

*Stochastic simulations of proto-cell dynamics.* Acta Biophysica Romana 2008. Roma. 10-11 of March 2008.

*Stochastic simulations of proto-cell dynamics.* XXXVI Congresso Nazionale di Chimica Fisica, 17-22 June 2007 Gallipoli (Lecce) - Italy.

*Stochastic Simulation of proto-biological cells.* International School on Complexity (4th Course). 2-5 October 2006 Erice (Trapani) – Italy. [**Invited**]

*Working towards 'basic autonomy' a simulation model to study minimal self-producing cells.* Alife X: Workshop on advances in simulation models of autonomous systems. June 3-7 2006 Venice – Italy [**Invited**]

*Stochastic Simulation of chemically Reacting Systems.* WATOC 2005, Modelling Structure and Reactivity. 16-21, January. Cape-Town, South Africa.

## Conferences Committee

**CIBB2017** - Special Session: *En route to the synthesis of artificial cells by combining bio-interfaces engineering and systems biology modelling.* Cagliari (ITALY) 7-9 September 2017, Special Session Chair.

**CIBB2016** - Special Session: *Engineering Bio-interfaces and Rudimentary Cells as a way to develop Synthetic Biology.* Stirling (UK) 1-3 September 2016, Organizing Committee Member.

**WG COST MEETING 2015**, Action CM1304 *Biomimetic compartmentalized chemical systems*, 25th-26th of September 2015, Bari Italy, Local Chair.

**WIVACE 2015**: Italian Workshop of artificial Life and Evolutionary Computing, 22nd-24th of September 2015, Bari Italy (<http://wivace.org>), General Chair.

**INTEGRATIVE BIOLOGY 2014**, 2nd International Summit on Integrative Biology, Chicago USA, 4th-5th August 2014, Organizing Committee Member.

## Editorial works

Guest Editor of the special issue: *Protocell: designs for Life*, Life MDPI, along with P.Stano.

## Computational Stages

1994: 3rd Summer school for parallel computing, CINECA, Bologna, Italy.

1996: Parallel Programming and High Performance Computing Course at the European Molecular Biology Laboratory, Heidelberg, Germany.

2003: Clusters Linux Laboratory, CINECA, Bologna, Italy.

2003: National School on Multiscale Simulations Applied to Material Science, University of Modena.

2004: Message Passing and OpenMP Parallel Coding Paradigms, CINECA, Bologna, Italy.

2004: Debugging and Optimization and Scientific Codes, CINECA, Bologna, Italy.

2008: DEISA Training Session presso High Performance Computing Center –HLRS, Stoccarda

2010: HPC User Day, CINECA, Bologna, Italy.

2010: Elementi di amministrazione di un sistema Windows Server, CASPUR, Roma Italy

2011: Data Mining, CASPUR, Roma Italy

2011: 7<sup>th</sup> Advanced School of Parallel Computing, CINECA, Bologna Italy.

## Teaching Courses at Bari University

*Chemical Kinetics and Molecular Dynamics* (Master Degree in Chemistry) from 2000 to 2006

*Informatics* (Bachelor Degree in Chemistry) from 2002 to 2007

*Nano Materials – Module on Modelling* (Master Degree in Chemical Science and Technology) from 2004 to 2011

*Computational Quantum Chemistry* (Master Degree in Chemical Science and Technology) from 2007 to 2009

*Chemical Physics* (Bachelor Degree in Material Science) from 2011 up to now.

*Modelling of Biological Systems* (Master Degree in Biotechnology) from 2008 up to now.

*Computational Chemistry* (PhD Course to the Doctoral School of Chemical Science at the Chemistry Department) from 2004 up to now