Yuri Gerelli

National Research Council
Institute for Complex Systems
Sapienza University of Rome, Italy
yuri.gerelli@cnr.it
yuri.gerelli@roma1.infn.it

OVERVIEW

Physicist, expert of scattering techniques for soft matter sciences and molecular biophysics.
The main topics of my research activity are in the physics of soft matter and bio-systems. My research activity is focused on the study of structure and dynamics of bio-based and soft matter systems. My work is mostly based on the use of scattering techniques (of neutrons, X-rays and visible light) at large-scale facilities. During the early stage of his career, he studied the formation, the structure and the dynamic of lipid-saccharide nanoparticles and hydrogels designed for drug delivery applications. Later, I have contributed to scientific developments in the fields of bio-membranes and their interaction with particular emphasis on the investigation of structural rearrangements in lipid-based systems. In 2021, my work on lipid flip-flop featured in the Soft Matter Emerging Investigators Issue of the Soft Matter Journal (Royal Society of Chemistry). Throughout my research activity, I have often privileged interdisciplinary and international collaborations, as documented by my list of collaborators, which has allowed me to publish in high impact journals and to secure fundings and access to large-scale facilities.

WORK EXPERIENCES

Researcher, *tenured* 2023–now
Consiglio Nazionale delle Ricerche, Institute for Complex Systems
Sapienza University of Rome, Italy

Assistant Professor 2020–2023
Università Politecnica delle Marche
Department of Life and Environmental Sciences, Italy

Scientist, *tenured* 2014–2020
Coordinator of the Partnership for Soft Condensed Matter
Institut Laue-Langevin, Grenoble, France

Postdoctoral fellow 2011–2013
Institut Laue-Langevin, Grenoble, France

Postdoctoral Fellow 2010
Università degli Studi di Parma, Italy

EDUCATION

PhD in Physics 2007–2009
Università degli Studi di Parma, Italy
"Structure and dynamics of lipid-saccharide complexes" Thesis advisor: Prof. A. Deriu

Master degree in Condensed Matter Physics 2004–2006
Università degli Studi di Parma, Italy

110/110 Cum Laude. Academic advisor: Prof. A. Deriu

Bachelor degree in Physics 2001–2004

Università degli Studi di Parma, Italy

110/110. Academic advisors: Dr. C. Mondelli and Prof. A. Deriu

QUALIFICATIONS

- Habilitation to Full Professorship in Italian Universities in section 03/A2 – *Physical Chemistry - Models and methods for chemistry* (valid from 05/06/2023 to 05/06/2034)
  Evaluation available:
- Habilitation to Full Professorship in Italian Universities in section 02/D1 – *Applied physics* (valid from 04/06/2021 to 04/06/2032)
  Evaluation available:
- Habilitation to function as research director (HDR - Habilitation à Diriger des Recherches) – (obtained the 22 October 2018 at Université Grenoble-Alpes, Doctoral School in Physics, Grenoble, France)
- Qualified to function as Associate Professor in Italian Universities in section 02/B1 – *Experimental physics of matter* (valid from 30/03/2018 to 30/03/2029)
  Evaluation available:

RESEARCH FUNDING AND COMPETITIVE AWARDS

- Fondo Solidarietà Scientifica - UNIVPM , "Purchase and commissioning of a QCM-D apparatus for the investigation of solid-supported lipid layers", 8 k€ (PI, 2020-2021).
- Röntgen-Ångström cluster, "A planar three phase interaction apparatus for Neutron Reflectometry", 900 k€ (co-PI, 2016-2019).
- $>$ **80 days' beamtime awarded** as PI to the Institut Laue-Langevin, the ISIS neutron source, the Paul-Scherrer Institute and the Helmholtz-Zentrum Berlin, "", total commercial value $\sim$ 600 k€ (Research Leader, 2008-now).

SYNERGISTIC ACTIVITIES

- **Member of the Central Selection Panel** for the COFUND project PRISMAS at the Max IV synchrotron (Lund, SE) (2023–now).
- **Member of the Proposal Review Panel** for the Deuteration and Macromolecular Crystallisation platform (DEMAX) at the European Spallation Source (ESS) (2022–now).
- **Referee** for more than 20 peer-reviewed journals.
- **Consulting expert** for the soft matter panel at the Institut Laue-Langevin (2019 – 2020).
- **Executive board member** of the UK Neutron Scattering Group - Institute of Physics (2018 – 2020).
- **College Secretary** (soft matter) at the Institut Laue-Langevin (2015 – 2017).
- **Executive board Secretary** of the Italian Neutron Scattering Society (SISN) (2014 – 2016).

ORGANIZATION OF INTERNATIONAL EVENTS

- Proposed and chaired BILL 2019, Bilayers at the ILL, 11–13 December 2019, Grenoble.
- Organiser for the Interfaces workshop, 10–12 October 2018, Grenoble.
- Proposed and chaired RheoSAS2016, In-situ rheology for neutron and X-ray scattering techniques.
- Proposed and chaired LiQ2015, Current Frontiers in Liquid-Liquid interfaces.
- Other events organization: organisers for 5 national and international workshop and events.

SKILLS

- Computer skills: Fortran, C++, Matlab, Visual Basic, Matlab, OriginPro, Igor.
- Language skills: **Italian** (Mother Tongue), **English** (Fluent spoken and written), **French** (Fluent spoken, fluent reading, basic written)

THESES SUPERVISED

1. ***Amanda Eriksson Skog*** – PhD in chemistry 2020-now "" *Lund University*
2. ***Moritz Frewein*** – PhD in physics 2018-2020 "Coupling of Leaflet Structure and Collective Fluctuations in Asymmetric Lipid Vesicles" *ILL & University of Graz*
3. ***Tetiana Mukhina*** – PhD in physics 2016-2019 "Out-of-equilibrium fluctuations in active membranes" *ILL & University of Strasbourg*
4. ***Olivia Pabois*** – PhD in food science 2016-2019 "Understanding the interfacial behaviour of bile salts to better engineer lipid emulsions" *ILL & King's College London*
5. ***Michal Belička*** – PhD in pharmaceutical sciences 2012-2013 "Neutrons in studies of phospholipid bilayers and bilayer–drug interaction" *ILL & Comenius University, Bratislava*

Supervisor for more than 10 master students since 2010.

TEACHING

@ Marche Polytechnic University

- 2022-2023: **C/C++ programming**
  24 hours/year of frontal lectures for the master's degree in Applied Molecular Biology.
- 2022: **General Physics**
  48 hours/year of frontal lectures and tutorials for the undergraduate degree in Environmental Sciences and Civil Protection.
- 2020-2022: **General Physics**
  56 hours/year of frontal lectures and tutorials for the Undergraduate Degree in Forest and Environmental Sciences.
- 2021-2022: **Dynamic light scattering: theory and applications**
  8 hours of frontal lectures and tutorials for the PhD course in Life Sciences.

- 2021: **Structural dynamics in biological systems**
  8 hours/year of frontal lectures for the PhD course in Life Sciences.

@ International Schools:

- 2022: **3rd International Summer School on Microgels**
  Microgels at liquid interfaces: what can neutron reflectometry tell us?
- 2014–2017, 2022: **Giornate Didattiche SISN**
  A brief introduction to Specular Neutron Reflectometry
- 2017 – now: **HERCULES**
  X-Ray and neutron reflectivity in biophysics

@ University of Naples, Physical Chemistry Dept.:

- Autumn 15: **Small angle scattering and neutron reflectometry**
  10 hours frontal lectures for the PhD course in Physical Chemistry and Engineering.

PEER-REVIEWED JOURNAL PAPERS

h-index 19, 925 citations (source: Scopus, May 2023) [Scopus][Publons][Google Scholar]
Publications for which I am corresponding author are marked with *.

53.* A.E. Skog, G. Corucci, M.D. Tully, G. Fragneto, Y. Gerelli and M. Skepö – *Interaction of a histidine-rich antimicrobial saliva peptide with model cell membranes: the role of histidines* – ***Langmuir***, **2023**, –, –, DOI: 10.1021/acs.langmuir.3c00498

52. M.P.K. Frewein, P. Piller, E.F. Semeraro, O. Czakkel, Y. Gerelli, L. Porcar, and G. Pabst – *Distributing Aminophospholipids Asymmetrically Across Leaflets Causes Anomalous Membrane Stiffening* – ***Biophys. J.***, **2023**, –, –, DOI: 10.1016/j.bpj.2023.04.025

51. Y. Correa, S. Waldie, M. Thépaut, S. Micciulla, Y. Gerelli, M. Moulin, F. Fieschi, R. Del Giudice, H. Pichler, V. T. Forsyth, M. Haertlein, A. Le Brun, T. Darwish, J. Brinck, T. Wodaje, M. Jansen, C. Martín, F. Roosen-Runge and M. Cárdenas – *HDL function is modulated by the SARS-CoV-2 Spike protein and this depends on the type of lipids present* – ***J. Colloid Interface Sci.***, **2023**, 645, 627–638, DOI: 10.1016/j.jcis.2023.04.137

50.* A. Armanious, Y. Gerelli, S. Micciulla, H. Pace, R. Welbourn, M. Sjöberg, B. Agnarsson and F. Höök – *Probing the Separation Distance between Biological Nanoparticles and Cell Membranes Mimics Using Neutron Reflectometry with Sub-Nanometer Accuracy* – ***J. Am. Chem. Soc.***, **2022**, 144, 20726–20738, DOI: 10.1021/jacs.2c08456

49. M.P.K. Frewein, P. Piller, E. F.Semeraro, K. Batchu, F.A. Heberle, H.L. Scott, Y. Gerelli, L. Porcar and G. Pabst – *Interdigitation-induced Order and Disorder in Asymmetric Membranes* – ***J. Membrane Biol.***, **2022**, 255, 407–421, DOI: 10.1007/s00232-022-00234-0

48. C. Minnelli, P. Moretti, E. Laudadio, Y. Gerelli, A. Pigozzo, T. Armeni, R. Galeazzi, P. Mariani, G. Mobbili – *Tuning Curvature and Phase Behavior of Monoolein Bilayers by Epigallocatechin-3-gallate: Structural Insight and Cytotoxicity* – ***Colloids Surf B Biointerfaces***, **2022**, 209, 112171, DOI: 10.1016/j.colsurfb.2021.112171

47.* L. Tavagnacco, G. Corucci and Y. Gerelli – *Interaction of caffeine with model lipid membranes* – ***J. Phys. Chem. B***, **2021**, 125, 10174–10181, DOI: 10.1021/acs.jpcb.1c04360

46. L. Silvestrini, N. Belhaj, L. Comez, Y. Gerelli, A. Lauria, V. Libera, P. Mariani, P. Marzullo, M. G. Ortore, A. Palumbo Piccionello, C. Petrillo, L. Savini, A. Paciaroni, F. Spinozzi – *Dimer-monomer equilibrium of SARS-CoV-2 main protease as affected by small molecule inhibitors. A biophysical investigation* – ***Sci. Rep.***, **2021**, 11, 9283, DOI: 10.1038/s41598-021-88630-9

45.* T. Mukhina, Y. Gerelli, A. Hemmerle, A. Koutsioubas, J. Daillant, T. Charitat and G. Fragneto – *Insertion and activation of functional Bacteriorhodopsin in a floating bilayer* – ***J. Colloid Interface Sci.***, **2021**, 597, 370–382, DOI: 10.1016/j.jcis.2021.03.155

44. S. Waldie, F. Sebastiani, M. Moulin, R. Del Giudice, N. Paracini, F. Roosen-Runge, Y. Gerelli, S. Prevost, J. C. Voss, T. A. Darwish, N. Yepuri, G. Strohmeier, H. Pichler, S. Maric, V. T. Forsyth, M. Haertlein and M. Cárdenas – *ApoE and ApoE nascent-like HDL particles at model cellular membranes: Effect of protein isoform and membrane composition* – ***Front. Chem.***, **2021**, 9, 630152, DOI: 10.3389/fchem.2021.630152

43.* O. Pabois, R. M. Ziolek, C. D. Lorenz, S. Prévost, N. Mahmoudi, M. W. A. Skoda, R. J. L. Welbourn, M. Valero, R. D. Harvey, M. M.-L. Grundy, P. J. Wilde, I. Grillo, Y. Gerelli and C. A. Dreiss – *Morphology of bile salts micelles and mixed micelles with lipolysis products, from scattering techniques and atomistic simulations* – ***J. Colloid Interface Sci.***, **2021**, 587, 522–537, DOI: 10.1016/j.jcis.2020.10.101

42.*[1] Lionel Porcar and Y. Gerelli – *On the lipid flip-flop and phase transition coupling* – ***Soft Matter***, **2020**, 16, 7696–7703, DOI: 10.1039/D0SM01161D

41.* Y. Gerelli – *Applications of neutron reflectometry in biology* – ***EPJ Web of Conferences***, **2020**, 236, 04002, DOI: 10.1051/epjconf/202023604002

40.* Y. Gerelli, A. Eriksson Skog, S. Jephthah, R. J. L Welbourn, A. Klechikov and M. Skepö – *Spontaneous formation of cushioned model membranes promoted by an intrinsically disordered protein* – ***Langmuir***, **2020**, 36, 3997–4004, DOI: 10.1021/acs.langmuir.0c00120

39. O. Pabois, A. Antoine-Michard, X. Zhao, J. Omar, F. Ahmed, F. Alexis, R. D. Harvey, I. Grillo, Y. Gerelli, M. M. Grundy, B. Bajka, P. J. Wilde and C. A. Dreiss – *Interactions of bile salts with a dietary fibre, methylcellulose, and impact on lipolysis* – ***Carbohydrate Polymers***, **2020**, 231, 115741, DOI: 10.1016/j.carbpol.2019.115741

38. A. Malafronte, F. Auriemma, C. Santillo, R. Di Girolamo, R. Barker, Y. Gerelli and C. De Rosa – *Block Copolymers-based Nanoporous Thin Films with Tailored Morphology for Biomolecules Adsorption* – ***Adv. Mater. Interfaces***, **2020**, 7, 1901580, DOI: 10.1002/admi.201901580

37. T. Mukhina, A. Hemmerle, V. Rondelli, Y. Gerelli, G. Fragneto, J. Daillant and T. Charitat – *Attractive Interaction between Fully Charged Lipid Bilayers in a Strongly-Confined Geometry* – ***J. Phys. Chem. Letters***, **2019**, 10, 7195–7199, DOI: 10.1021/acs.jpclett.9b02804

36.* O. Pabois, C. D. Lorenz, R. D. Harvey, I. Grillo, M. M.-L. Grundy, P. J. Wilde, Y. Gerelli and C. A. Dreiss – *Molecular-level insights into bile salts at interfaces reveal contrasting behaviour, a key to their role in lipid digestion* – ***J. Colloid Interface Sci.***, **2019**, 556, 266–277, DOI: 10.1016/j.jcis.2019.08.010

35.* Y. Gerelli – *Phase transitions in a single supported phospholipid bilayer: Real-time determination by neutron reflectometry* – ***Phys. Rev. Letters***, **2019**, 122, 248101, DOI: 10.1103/PhysRevLett.122.248101

[1] This article is part of the themed collection: 2021 Soft Matter Emerging Investigators

34. S. Micciulla, D. Hayward, Y. Gerelli, A. Panzarella, R. von Klitzing, M. Gradzielski and L. Chiappisi – *One-step procedure for the preparation of Polysaccharide/Fatty Acid Multilayered coatings* – ***Communications Chemistry***, **2019**, 2, –, DOI: 10.1038/s42004-019-0155-y

33. J. Eilsø Nielsen, T. Kjellerup Lind, A. Lone, Y. Gerelli, P. R. Hansen, H. Jenssen, M. Cárdenas and R. Lund – *A biophysical study of the interactions between the antimicrobial peptide indolicidin and lipid model systems* – ***Biochim. Biophys. Acta – Biomembranes***, **2019**, 1861, 1355–1364, DOI: 10.1016/j.bbamem.2019.04.003

32. S. Micciulla, Y. Gerelli and E. Schneck – *Structure and conformation of wild–type bacterial lipopolysaccharide monolayers at air/water interfaces* – ***Biophys. J.***, **2019**, 116, 1259–1269, DOI: 10.1016/j.bpj.2019.02.020

31. H. Pace, J. Hannestad, A. Armanious, M. Adamo, B. Agnarsson, A. Gunnarsson, S. Micciulla, P. Sjövall, Y. Gerelli and F. Höök – *Structure and Composition of Native Membrane Derived Polymer-Supported Lipid Bilayers* – ***Anal. Chem.***, **2018**, 90, 13065–13072, DOI: 10.1021/acs.analchem.8b04110

30. R. A. Campbell, Y. Saaka, Y. Shao, Y. Gerelli, R. Cubitt, E. Nazaruk, D. Matyszewska and J. Lawrence – *Structure of Surfactant and Phospholipid Monolayers at the Air/Water Interface modeled from Neutron Reflectivity Data* – ***J. Colloid Interface Sci.***, **2018**, 531, 98–108, DOI: 10.1016/j.jcis.2018.07.022

29. C. Montis, S. Busatto, F. Valle, A. Zendrini, A. Salvatore, Y. Gerelli, D. Berti and P. Bergese – *Biogenic supported lipid bilayers from nanosized extracellular vesicles* – ***Adv. Biosyst.***, **2018**, 2, 1700200, DOI: 10.1002/adbi.201700200

28. S. Micciulla, Y. Gerelli, R. A. Campbell and E. Schneck – *A Versatile Method for the Distance-Dependent Structural Characterization of Interacting Soft Interfaces by Neutron Reflectometry* – ***Langmuir***, **2018**, 34, 789–800, DOI: 10.1021/acs.langmuir.7b02971

27. J.P. Michel, Y.X. Wang, D. Khamis, I. Kiesel, Y. Gerelli and V. Rosilio – *Mechanism of disruption of asymmetric lipid bilayer models mimicking the outer membrane of Gram-negative bacteria by an active plasticin* – ***Langmuir***, **2017**, 33, 11028–11039, DOI: 10.1021/acs.langmuir.7b02864

26. F. Auriemma, C. De Rosa, A. Malafronte, R. Di Girolamo, C. Santillo, Y. Gerelli, G. Fragneto, R. Barker, V. Pavone, O. Maglio and A. Lombardi – *A Nano-In-Nano Approach for Enzyme Immobilization Based on Block Copolymers* – ***ACS Appl. Mater. Interfaces***, **2017**, 9, 29318–29327, DOI: 10.1021/acsami.7b08959

25. A. Martel, L. Antony, Y. Gerelli, L. Porcar, A. Fluitt, K. Hoffmann, I. Kiesel, M. Vivaudou, G. Fragneto and J.J. de Pablo – *Membrane permeation versus Amyloidogenicity: a multi-technique study of Islet Amyloid PolyPeptide interaction with model membranes* – ***JACS***, **2017**, 139, 137–148, DOI: 10.1021/jacs.6b06985

24. A. Luchini, Y. Gerelli, G. Fragneto, T. Nylander, M.S. Appavou and L. Paduano – *Neutron Reflectometry reveals the interaction between functionalized SPIONs and the surface of lipid bilayers* – ***Colloids Surf. B***, **2017**, 151, 76–87, DOI: 10.1016/j.colsurfb.2016.12.005

23.* L. Tavagnacco, Y. Gerelli, A. Cesàro and J. Brady – *Stacking and Branching in Self-Aggregation of Caffeine in Aqueous Solution: From the Supramolecular to Atomic Scale Clustering* – ***J. Phys. Chem. B***, **2016**, 120, 9987–9996, DOI: 10.1021/acs.jpcb.6b06980

22. B. Aoun, E. Pellegrini, M. Trapp, F. Natali, L. Cantù, P. Brocca, Y. Gerelli, B. Demé, M.M. Koza, M. Johnson and J. Peters – *Direct comparison of elastic incoherent neutron scattering*

experiments with molecular dynamics simulations of DMPC phase transitions – ***Eur. Phys. J. B***, **2016**, 39, :48, DOI: 10.1140/epje/i2016-16048-y

21.* Y. Gerelli – *Aurore: a new software for neutron reflectivity data analysis* – ***J. Appl. Cryst.***, **2016**, 49, 330–339, DOI: 10.1107/S1600576716000108

20. C. Montis, Y. Gerelli, G. Fragneto, T. Nylander, P. Baglioni and D. Berti – *Nucleolipid Bilayers: a Quartz Crystal Microbalance and Neutron Reflectometry Study* – ***Colloids Surf. B***, **2016**, 137, 203–213, DOI: 10.1016/j.colsurfb.2015.07.039

19. M. Belička, Y. Gerelli, N. Kučerka and G. Fragneto – *The Component Groups Structure of DPPC Bilayers Obtained by Specular Neutron Reflectometry* – ***Soft Matter***, **2015**, 11, 6275–6283, DOI: 10.1039/C5SM00274E

18.* Y. Gerelli, A. de Ghellinck, J. Jouhet, V. Laux, M. Haertlein and G. Fragneto – *Multi-lamellar organization of fully deuterated lipid extracts of yeast membranes* – ***Acta Crystallogr., Sect. D: Biol. Crystallogr.***, **2014**, 70, 3167–3176, DOI: 10.1107/S1399004714022913

17. W. Knoll, J. Peters, P. Kursula, Y. Gerelli and F. Natali – *Influence of myelin proteins on the structure and dynamics of a model membrane with emphasis on the low temperature regime* – ***J. Chem. Phys.***, **2014**, 141, 205101, DOI: 10.1063/1.4901738

16.* Y. Gerelli, L. Porcar, L. Lombardi and G. Fragneto – *Lipid Exchange and Flip-Flop in solid supported bilayers* – ***Langmuir***, **2013**, 29, 12762–12769, DOI: 10.1021/la402708u

15. W. Knoll, J. Peters, P. Kursula, Y. Gerelli, J. Ollivier, M. Telling, E. Kemner and F. Natali – *Structural and Dynamical Properties of Reconstitutes Myelin Sheaths in Presence of Myelin Proteins MBP and P2 studied by Neutron Scattering* – ***Soft Matter***, **2014**, 10, 519–529, DOI: 10.1039/c3sm51393a

14. S. Bobone, Y. Gerelli, M. De Zotti, G. Bocchinfuso, A. Farrotti, B. Orioni, F. Sebastiani, E. Latter, J. Penfold, R. Senesi, F. Formaggio, A. Palleschi, C. Toniolo, G. Fragneto and L. Stella – *Membrane thickness and the mechanism of action of the short peptaibol trichogin GA IV* – ***Biochim. Biophys. Acta – Biomembranes***, **2013**, 1828, 1013–1024, DOI: 10.1016/j.bbamem.2012.11.033

13. I. Berts, Y. Gerelli, J. Hilborn and A.R. Rennie – *Structure of Polymer and Particle Aggregates in Hydrogel Composites* – ***J. Polym. Sci., Part B: Polym. Phys.***, **2013**, 51, 421–429, DOI: 10.1002/polb.23230

12. F. Natali, C. Dolce, J. Peters, Y. Gerelli, C. Stelletta and G. Leduc – *Water dynamics in neural tissue* – ***J. Phys. Soc. Jpn.***, **2013**, 82, SA017, DOI: 10.1143/JPSJS.82SA.SA017

11. W. Knoll, J. Peters, Y. Gerelli, P. Kursula and F. Natali – *The Influence of the Myelin Basic Protein C8 Mutant on the Dynamics of reconstituted Myelin Membranes* – ***J. Phys. Soc. Jpn.***, **2013**, 82, SA018, DOI: 10.1143/JPSJS.82SA.SA017

10.* Y. Gerelli, L. Porcar and G. Fragneto – *Lipid rearrangement in DSPC:DMPC bilayers: a neutron reflectometry study* – ***Langmuir***, **2012**, 28, 15922–15928, DOI: 10.1021/la303662e

9. C. Chiapponi, M.T. Di Bari, Y. Gerelli, A. Deriu, I. Finelli, G. Paradossi, M. Russina, Z. Izaola, V. Garcia Sakai – *Water dynamics in physical hydrogels based on partially hydrophobized hyaluronic acid* – ***J. Phys. Chem. B***, **2012**, 116, 12915–12921, DOI: 10.1021/jp303657a

8. S.V. Ghugare, E. Chiessi, R. Fink, Y. Gerelli, A. Scotti, A. Deriu, G. Carrot and G. Paradossi – *Structural investigation on thermoresponsive PVA/poly(methacrylate-co-N-isopropylacrylamide) microgels across the volume phase transition* – ***Macromolecules***, **2011**, 44, 4470–4478, DOI: 10.1021/ma200979h

7.* Y. Gerelli, V. Garcia Sakai, J. Ollivier and A. Deriu – *Conformational and segmental dynamics in lipid-based vesicles* – ***Soft Matter***, **2011**, 7, 3929–3935, DOI: 10.1039/C0SM01301C

6. S.V. Ghugare, E. Chiessi, M. T. F. Telling, A. Deriu, Y. Gerelli, J. Wuttke and G. Paradossi – *Structure and dynamics of a thermoresponsive microgel around its volume phase transition* – ***J. Phys. Chem. B***, **2010**, 114, 10285–10293, DOI: 10.1021/jp100962p

5.* Y. Gerelli, M.T. Di Bari, A. Deriu, D. Clemens and L. Almasy – *Lipid Multilayered particles: the role of chitosan on structure and morphology* – ***Soft Matter***, **2010**, 6, 2533–2538, DOI: 10.1039/b924616a

4.* Y. Gerelli, M.T. Di Bari, S. Barbieri, F. Sonvico, P. Colombo, F. Natali and A. Deriu – *Flexibility and drug release features of lipid/saccharide nanoparticles* – ***Soft Matter***, **2010**, 6, 685–691, DOI: 10.1039/b916139b

3. A. Deriu, M.T. Di Bari and Y. Gerelli – *Dynamics of nanostructures for drug delivery: the potential of QENS* – ***Z. Phys. Chem.***, **2010**, 224, 227–242, DOI: 10.1524/zpch.2010.6101

2. Y. Gerelli, S. Barbieri, M.T. Di Bari, A. Deriu, L. Cantù, P. Brocca, F. Sonvico, P. Colombo, R. May and S. Motta – *Structure of Self-Organized Multilayer Nanoparticles for Drug Delivery* – ***Langmuir***, **2008**, 24, 11378–11384, DOI: 10.1021/la801992t

1. F. Natali, J. Peters, D. Russo, S. Barbieri, C. Chiapponi, A. Cupane, A. Deriu, M.T. Di Bari, E. Farhi, Y. Gerelli, P. Mariani, A. Paciaroni, C. Rivessau, G. Schirò and F. Sonvico – *IN13 Backscattering spectrometer at ILL: looking for motions in biological macromolecules and organisms* – ***Neutron News***, **2008**, 19, 14–18, DOI: 10.1080/10448630802474083

REFEREED CONFERENCE PUBLICATIONS

3. F. Natali, Y. Gerelli, C. Stelletta and J. Peters – *Anomalous Proton Dynamics of Water Molecules in Neural Tissues as Seen by Quasi-Elastic Neutron Scattering. Impact on Medical Imaging Techniques* – ***AIP Conf. Proc.***, **2013**, 1518, 551–557, DOI: 10.1063/1.4794632

2. Y. Gerelli, M.T. Di Bari, A. Deriu, L. Cantù, P. Colombo, C. Como, S. Motta, F. Sonvico and R. May – *Structure and organization of phospholipid/polysaccharide nanoparticles* – ***J. Phys.: Condens. Matter***, **2008**, 20, 104211(1)–104211(8), DOI: 10.1088/0953-8984/20/10/104211

1. M.T. Di Bari, Y. Gerelli, F. Sonvico, A. Deriu, F. Cavatorta, G. Albanese, P. Colombo and F. Fernandez-Alonso – *Dynamics of lipid-saccharide nanoparticles by quasielastic neutron scattering* – ***Chem. Phys.***, **2008**, 345, 239–244, DOI: 10.1016/j.chemphys.2007.08.006

BOOKS & BOOK CHAPTERS

- U. Perez-Salas, S. Garg, Y. Gerelli and L. Porcar – "Deciphering lipid transfer between and within membranes with time-resolved small-angle neutron scattering" in Current Topics in Membranes, ed. Michael A. Model and Irena Levitan, Academic Press, 88, 2021, 359-412 ISSN: 1063-5823, DOI: 10.1016/bs.ctm.2021.10.004

- Collaborator for the Italian edition of "Fisica generale, terza edizione, by A. Giambattista *et al.*", ed. McGraw-Hill Education, curatorships Paolo Mariani, Andrea Orecchini, Francesco Spinozzi, 2021

- A. Deriu, M.T. Di Bari and Y. Gerelli – "Sugar–lipid interactions: structural and dynamic effects" in Dynamics of Biological Molecules by Neutron Scattering, ed. S. Magazù and F. Migliardo, Bentham e-books, 2011, 79–84, DOI: 10.2174/97816080521961110101

KEYNOTE AND PLENARY TALKS AT INTERNATIONAL CONFERENCES

1. ECIS 2018 (*Keynote*), Ljubiana (SLO) 2–7 September 2018
   Slow lipid flip-flop revealed by neutron scattering experiments

INVITED TALKS AT INTERNATIONAL CONFERENCES

8. 17th Zsigmondy Colloquium 2022, Aachen (DE) 6–8 April 2022
   Phase transition behaviour in planar lipid bilayers
7. UK Neutrons and Muons Science and User Meeting 2019, Warwick (UK) 29 April 2019
   Support Laboratories and Infrastructures at the ILL
6. NNSP workshop on low-dimensional systems, Lillestrøm (NO) 14–15 May 2018
   Structure and interactions of lipid membranes as seen by neutron reflectometry and diffraction
5. UK Neutron and Muon Science and User Meeting, University of Warwick (UK) 27–29 June 2017
   Slow lipid flip-flop revealed by Neutron Reflectometry
4. SINE2020 Workshop of the Data Treatment Software workpackage, Grenoble (FR) 24–25 April 2017
   Analysis for soft and bio-relevant thin films: needs and bottlenecks
3. Nordic Workshop on Scattering from Soft & Biological Matter, Oslo (NO) 12–13 January 2017
   Molecular transport in lipid membranes: lipid exchange and translocation processes investigated by neutron scattering
2. Science Symposium on Advances in Sample Environment and Experimental Control, Lund (SE) 10–11 September 2015
   The Partnership for Soft Condensed Matter in Grenoble: advanced support and complementary techniques for SAS experiments
1. ILL-Luxembourg Workshop, University of Luxembourg (LU) 11 June 2014
   Neutron scattering and model lipid membranes

CONTRIBUTED TALKS AT INTERNATIONAL CONFERENCES

25. Biophysics@Rome 2023, Rome (IT) 19–20 April 2023
    Probing the separation distance between nanoparticles and cell membrane mimics with sub-nanometer accuracy
24. Second DiSVA-MaSBiC Annual Symposium - Protein Structure and Function in Biology, Medicine and Nanotechnology, Ancona (IT) 13–14 October 2022
    To understand the antimicrobial activity of the salivary protein Histatin 5

23. Italian Soft Days 2020, ~~Bari (IT)~~ *online edition* 21–25 September 2020
On the lipid flip-flop and phase transition coupling
22. 9th International Colloid Conference, Sitges (ES) 16–19 June 2019
Structural processes in supported lipid bilayers: from phase transitions to lipid flip-flop
21. 5th International Conference on Soft Matter (ICSM2019), Edinburgh (UK) 3–7 June 2019
Phase transition behaviour in single solid-supported lipid bilayer
20. Membranes Beyond, Hamilton (CA) 2–4 July 2018
Slow lipid flip-flop revealed by neutron reflectometry experiments
19. FisMat Conference & SISN annual meeting, Trieste (IT) 1–6 October 2017
Slow lipid flip-flop revealed by neutron reflectometry
18. SoftComp Annual Meeting, Venezia (IT) 29–31 May 2017
What's in your coffee? A supramolecular perspective
17. Synchrotron and Neutron Scattering in Biomaterials and Soft Matter workshop, Malmö (SE) 26–28 October 2016
Molecular transport in lipid membranes investigated by neutron scattering
16. 4th International Conference on Soft Matter (ICSM2016), Grenoble (FR) 12–16 September 2016
Lipid exchange and translocation processes investigated by neutron reflectometry
15. 16th International Conference on Organized Molecular Films (ICOMF16)–LB16, Helsinki (FI) 25–29 July 2016
Lipid exchange and translocation processes investigated by neutron reflectometry
14. 6th European Neutron Scattering Conference, Zaragoza (ES) 31 August–4 September 2015
Molecular transport in lipid membranes: lipid exchange and translocation processes investigated by neutron reflectometry
13. SoftComp Annual Meeting, Portonovo (IT) 8–11 June 2015
Neutron Reflectometry, a perfect tool to study soft interfaces: from membranes to liquid-liquid interfaces
12. QENS/WINS 2014, Autrans (FR) 12–16 May 2014
Multi-scale investigation of dynamics in lipid-based systems
11. Annual Meeting of the Italian Neutron Scattering Society, Milano (IT) 11–12 September 2013
Lipid rearrangement in supported bilayers: a neutron reflectometry study
10. NMI3-II/FP7 Satellite Meeting: Advanced Neutron Tools for Soft and Biomaterials, Berlin (DE) 21 June 2013
ILL works towards biological relevant membranes: from synthetic to natural systems
9. SoftComp Annual Meeting, Rimini (IT) 27–31 May 2013
Lipid rearrangement in supported bilayers: a neutron reflectometry study
8. 245th ACS meeting, division of Physical Chemistry, New Orleans (US) 7–8 April 2013
Lipid rearrangement in supported bilayers: a neutron reflectometry study
7. SoftComp Annual Meeting, Heraklion (GR) 28 May–2 June 2012
Lipid rearrangement in supported bilayers: a neutron reflectometry study

6. GEMXV, Paris (FR) 2–4 April 2012
   Lipid rearrangement in supported bilayers: a neutron reflectometry study
5. BILL2011, Grenoble (FR) 12–14 January 2011
   Conformational and segmental dynamics in liposomes
4. Annual Meeting of the Italian Neutron Scattering Society, Rome (IT) 22–23 June 2010
   Conformational and segmental dynamics in lipid-based systems
3. Annual Meeting of the Italian Neutron Scattering Society, Sirolo (IT) 25–26 June 2009
   Dynamics of lipid nanoparticles for drug delivery
2. 9th Conference on Quasi Elastic Neutron Scattering, Villigen (CH) 10–13 February 2009
   Dynamics of lipid nanoparticles for drug delivery
1. Annual Meeting of the Italian Neutron Scattering Society, Sestri Levante (IT) 12–14 September 2008
   Lipid/polysaccharide nanovectors for drug delivery

SEMINARS AND COLLOQUIA

Since 2010, I have given more than 20 seminars and colloquia on my research topics at research institutes and universities.