



# Yuri Gerelli

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## OVERVIEW

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Physicist, expert of scattering techniques for soft matter sciences and molecular biophysics.

## WORK EXPERIENCES

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**Researcher** 2021–  
*Consiglio Nazionale delle Ricerche, Institute for Complex Systems, La Sapienza University, Italy*

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

- Research: physics of biomembranes and self-assembly in solution. Surface-controlled assembly for biosensors development. Structure and dynamics of hydrogels. Biophysics.
- Teaching: lecturer of general physics for the two bachelor's degrees (Environmental Sciences and Agricultural Sciences). Lecturer at international schools.

**Scientist** 2014–2020  
*Institut Laue-Langevin, Grenoble, France*

- Research: physics of biomembranes and self-assembly in solution
- Management: coordinator of the [Partnership for Soft Condensed Matter - PSCM](#)
- Local contact activity for external users
- Project leader for the development of a new apparatus for neutron reflectometry (*3phaseNR grant*) (2017–2019)
- Teaching: supervisor for several master and PhD students and postdoctoral fellows. Lecturer at international schools and universities.

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

- Research on development of biomembrane systems, neutron reflectometry, surface sensitive techniques, light scattering

**Postdoctoral Fellow** 2010  
*Università degli Studi di Parma, Italy*

- Department of physics: research on structure and dynamics of biomembranes for pharmaceutical applications
- Teaching: co-supervisor for 2 master students

## EDUCATION

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- HDR (*Habilitation à Diriger des Recherches*)** 22-10-2018  
*Université Grenoble-Alpes, Doctoral School in Physics, Grenoble, France*  
“Physics of bio-membranes and their functional organisation”  
Evaluation Committee: Prof. J-L. Barrat (Université Grenoble-Alpes), Prof. J. Seddon (Imperial College London), Prof. P. Mariani (Università politecnica delle Marche), Dr. Patricia Bassereau (Institut Curie), Prof. Thierry Charitat (Université de Strasbourg)
- 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

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- Qualified to function as Full Professor in Italian Universities in section 02/D1 – *Applied physics* (valid from 04/06/2021 to 04/06/2030)  
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 30/03/2027)  
Evaluation available: 

## RESEARCH FUNDING AND COMPETITIVE AWARDS

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- 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).

## AWARDS

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- 2011 Società Italiana di Spettroscopia Neutronica: Young Researcher Award
- 2007 Società Italiana di Spettroscopia Neutronica: Award for the best scientific communication presented at the SISN annual meeting

## SYNERGISTIC ACTIVITIES

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- **Member of the Proposal Review Panel** for the Deuteration and Macromolecular Crystallisation platform (DEMAX) at the European Spallation Source (ESS) (2022–now).
- **Member of the Editorial Board** of Frontiers in Physics – Soft Matter Physics (2021–now).
- **Member of the Editorial Board** of Frontiers in Soft Matter – Self-Assembly and Self-Organisation (2021–now).
- **Referee** for: ACS Applied Materials & Interfaces, ACS Chemical Neuroscience, ACS Macro Letters, ACS Omega, Acta Biomaterialia, Advances and Applications in Bioinformatics and Chemistry, Applied Surface Science, Biochimica et Biophysica Acta – Biomembranes, Biofactors, Biophysical Journal, Biointerphases, Biomacromolecules, Colloid and Interface Science Communications, Colloids and Surfaces B: Biointerfaces, Frontiers in Chemistry, Frontiers in Physics, Frontiers in Soft Matter, Journal of Applied Crystallography, Journal of Colloid and Interface Science, Journal of Food Process Engineering, Langmuir, Macromolecules, Molecular Pharmaceutics, New Journal of Chemistry, Physical Chemistry Chemical Physics, Royal Society Open Science, Scientific Reports, Soft Matter, The European Physical Journal E, The Journal of Physical Chemistry.
- **Consulting expert** for the College 9 panel at the Institut Laue-Langevin (2019 – 2020).
- **Executive board member** of the UK Neutron Scattering Group - Institute of Physics (2018 – 2020).
- **College Secretary** at the Institut Laue-Langevin (2015 – 2017).
- **Executive board Secretary** of the Italian Neutron Scattering Society (SISN) (2014 – 2016).

## ORGANIZATION OF INTERNATIONAL EVENTS

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- 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

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- 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

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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*
6. Master thesis  
Anastasia Anconetani 2021 (*Università Politecnica delle Marche*), Eduardo Forli 2020 (*Università Politecnica delle Marche*), Amanda Eriksson Skog 2019 (*Lund University*), Federica Belgrado 2018 (*Università Politecnica delle Marche*), Giacomo Mariani 2011 (*University of Parma*), Andrea Scotti 2011 (*University of Parma*) and Davide Mefli 2010 (*University of Parma*)

## TEACHING

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@ Marche Polytechnic University, Department of Agricultural, Food and Environmental Sciences:

- 2020-2022: **General Physics**  
56 hours/year of frontal lectures and tutorials for the Undergraduate Degree in Forest and Environmental Sciences.

@ Marche Polytechnic University, Department of Life and Environmental Sciences:

- 2022: **General Physics**  
48 hours/year of frontal lectures and tutorials for the undergraduate degree in Environmental Sciences and Civil Protection.
- 2021-2022: **Dynamic light scattering: theory and applications**  
8 hours of frontal lectures and tutorials for the PhD course in Life Sciences.
- 2021-2022: **Atomic Force Microscopy**  
8 hours/year 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?
- 2022: **Giornate Didattiche SISN**, A brief introduction to Specular Neutron Reflectometry
- 2018 – now: **HERCULES: X-Ray and neutron reflectivity in biophysics**
- 2014–2017: **Giornate Didattiche SISN, Specular Neutron Reflectometry Evaluation for the 2017 edition**, scores /10  
Lectures: interest 8.5, clarity 8.8, difficulty 6.3.  
Tutorials: interest 9.2, clarity 9.0, data analysis 9.5, difficulty 5.7.
- March 2017: **HERCULES: X-Ray and neutron reflectivity in biophysics**  
Note: 18.8/20. “Very good lecture, one of the best. Excellent and clear explanation of the topic. Material was perfectly adapted for everyone”.

*@ 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.

*@ University of Parma, Physics Dept.:*

- 2007–2008: **Course of Fisica D (Frontal lectures: Matlab programming for data analysis, systematic and statistical error analysis. Practicals: programming, Compton effect), Master in Mech. Engineering for a total of 30 hours.**

## PEER-REVIEWED JOURNAL PAPERS

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h-index 18, 878 citations (source: Scopus, December 2022) [Scopus][Publons][Google Scholar]  
Publications for which I am corresponding author are marked with \*.

51. 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* – ***Biophysical Journal***, submitted 12/2022, –, –, DOI: –
- 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](https://doi.org/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](https://doi.org/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](https://doi.org/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.jpccb.1c04360](https://doi.org/10.1021/acs.jpccb.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](https://doi.org/10.1038/s41598-021-88630-9)
- 45.\* T. Mukhina, Y. Gerelli, A. Hemmerle, A. Koutsioubas, J. Daillant, T. Charitat and G. Fragneto – *Incorporation of Bacteriorhodopsin in a floating bilayer* – ***J. Colloid Interface Sci.***, 2021, 597, 370–382, DOI: [10.1016/j.jcis.2021.03.155](https://doi.org/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](https://doi.org/10.3389/fchem.2021.630152)
- 43.\* O. Pabois, R. M. Ziolk, 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](https://doi.org/10.1016/j.jcis.2020.10.101)
- 42.\*<sup>1</sup> Lionel Porcar and Y. Gerelli – *On the lipid flip-flop and phase transition coupling* – ***Soft Matter***, 2020, 16, 7696–7703, DOI: [10.1039/D0SM01161D](https://doi.org/10.1039/D0SM01161D)

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<sup>1</sup>This article is part of the themed collection: 2021 Soft Matter Emerging Investigators

- 41.\* Y. Gerelli – *Applications of neutron reflectometry in biology* – **EPJ Web of Conferences**, **2020**, 236, 04002, DOI: [10.1051/epjconf/202023604002](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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.jpcllett.9b02804](https://doi.org/10.1021/acs.jpcllett.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](https://doi.org/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](https://doi.org/10.1103/PhysRevLett.122.248101)
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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1021/acs.analchem.8b04110)
30. R. A. Campbell, Y. Saaka, Y. Shao, Y. Gerelli, R. Cubitt, E. Nazaruk, D. Matyszevska 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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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.jpcc.6b06980](https://doi.org/10.1021/acs.jpcc.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](https://doi.org/10.1140/epje/i2016-16048-y)
- 21.\* Y. Gerelli – *Aurora: a new software for neutron reflectivity data analysis* – **J. Appl. Cryst.**, **2016**, 49, 330–339, DOI: [10.1107/S1600576716000108](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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 Reconstituted Myelin Sheaths in Presence of Myelin Proteins MBP and P2 studied by Neutron Scattering* – **Soft Matter**, **2014**, 10, 519–529, DOI: [10.1039/c3sm51393a](https://doi.org/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.bbmem.2012.11.033](https://doi.org/10.1016/j.bbmem.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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1080/10448630802474083)

## REFEREED CONFERENCE PUBLICATIONS

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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](https://doi.org/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](https://doi.org/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](https://doi.org/10.1016/j.chemphys.2007.08.006)

## BOOKS & BOOK CHAPTERS

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- 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](https://doi.org/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
- Y. Gerelli, “[Lipid–saccharide complexes for drug delivery](#)” (LAP Lambert Academic Publishing, 2011)
- 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 eISBN: 978-1-60805-219-6 ISSN: 978-1-60805-219-6, DOI: [10.2174/97816080521961110101](https://doi.org/10.2174/97816080521961110101)

## KEYNOTE AND PLENARY TALKS AT INTERNATIONAL CONFERENCES

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

## **INVITED TALKS AT INTERNATIONAL CONFERENCES**

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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**

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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**

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15. Seminar @ 3rd International Summer School on microgels, Monschau (DE) 19–22 September 2022  
*Microgels at interfaces: what can neutron reflectometry tell us?*
14. Seminar @ Graz University, Graz (AT) 15 June 2021  
*On the lipid flip-flop and phase transition coupling*
13. Shots of Science seminar @ Marche Polytechnic University, Ancona (IT) 3 February 2021  
*Membrane Permeation versus Amyloidogenicity: the case of the islet amyloid polypeptide*
12. Seminar @ Marche Polytechnic University, Seminari Contagiosi series, Ancona (IT) 5 May 2020  
*Biomembranes and neutron scattering*
11. Public Discussion for the HDR degree at Institut Laue - Langevin, Grenoble (FR) 22 October 2018  
*Physics of bio-membranes and their functional organisation*
10. Seminar at Institut Charles Sadron, Strasbourg (FR) 31 October 2017  
*Dynamics in phospholipid membrane systems: a multi-scale characterization by neutron scattering techniques*
9. 3ème journée thématique du GDR Bio-Ingénierie des Interfaces, Grenoble (FR) 9 October 2017  
*Complementarity with Synchrotron Radiation and laboratory techniques*
8. European Spallation Source, Lund (SE) 7 June 2017  
*Slow lipid flip-flop revealed by neutron scattering experiments*
7. Seminar at Institut Charles Sadron, Strasbourg (FR) 4 October 2016  
*Neutron Scattering for Soft Matter: from membranes to self-assembly*
6. Seminar at CERMAV, Grenoble (FR) 1 October 2015  
*Structure of lipid-saccharide nanoparticles for drug delivery*
5. Lunch Seminar Series at Ludwig-Maximilians Universität, Munich (DE) 9 December 2014  
*Lipid exchange and flip-flop kinetics in solid supported lipid bilayers*

4. Soft Matter Café, Grenoble (FR) 9 January 2014  
*Lipid rearrangement in supported bilayers*
3. Seminar at Elettra Synchrotron, Trieste (IT) 5 December 2013  
*Neutron reflectometry and diffraction for bio-membranes*
2. Soft Matter Café, Grenoble (FR) 10 February 2011  
*Structure and dynamics of lipid nanoparticles for drug delivery*
1. SOLEIL Synchrotron (Prof. Kneller's group), Gif-sur-Yvette (FR) 5 November 2010  
*Structure and dynamics of lipid nanoparticles for drug delivery*