FLORIN TELEANU

"The unexamined life is not worth living" - Socrates

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EDUCATION

Ph.D. Candidate

Interdisciplinary School of Doctoral Studies, University of Bucharest

October 2020 – Ongoing Bucharest, Romania

- **Thesis title:** Long-lived nuclear spin order as magnetization storage for the study of biomolecular structure and kinetics in water
- **Supervisor:** Prof. Paul R. Vasos

Master Degree in Advanced Chemistry

Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University

October 2018 – July 2020 Cluj-Napoca, Romania

- **Thesis title:** Long-lived spin order in multiple-spin systems suited for *in-vivo* studies

Bachelor Degree in Chemistry

Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University

October 2015 – June 2018 Cluj-Napoca, Romania

- **Thesis title:** A DFT study of inorganic amines and isoelectronic compounds: Correlation between hyperconjugation and planarity

EXPERIENCE

Research Affiliate

New York University

June 2024 – Ongoing 32 Waverly Pl, New York City, NY, US

- Computational and experimental investigations of nuclear spin and molecular dynamics in electrolytes in ultralow to high fields (Prof Alexej Jerschow's Lab)

Doctoral Research Assistant

Extreme Light Infrastructure - Nuclear Physics, Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering

September 2019 – Ongoing Str. Reactorului 30, Magurele, Romania

- Biomedical Applications of High-Power Lasers, Laser Driven Experiments Department ("Dr. Laser" National Project)
- Computational investigations of molecular effects of high-dose radiation

EGI-ACE VM Manager

Quantum Chemistry and Molecular Dynamics Simulations @ ELI-NP

August 2022 – Ongoing

- Implementing computational chemistry investigations for biophysics studies

Physics Technician

Research Institute of the University of Bucharest

September 2018 – December 2019 90-92 Sos. Panduri, Bucharest, Romania

SCHOLARSHIPS

Student Fellowship

***Next Generation* Virtual College for Excellence, Babeş-Bolyai University**

October 2018 – October 2019

- **Research Scholarship:** A computational analysis of synergistic hyperconjugative interactions

Student Researcher Fellowship

College for Advanced Performance Studies, Babeş-Bolyai University

October 2019 – October 2020

- **Funded project:** Long-lived nuclear spin states for protein structural determination and metabolomics

iNEXT Research Fellowship

Centro Risonanze Magnetiche, Firenze

May 2022 – March 2023

- **Project:** Relaxation dispersion experiments using long-lived spin order to monitor chemical exchange in proteins (Dr. Isabella Felli)

DAAD Short-Term Scholarship

Max Planck Institute for Multidisciplinary Sciences, Goettingen

August 2022 – November 2022

- **Project:** Magnetization transfer from long-lived nuclear spin order via cross-correlated mechanisms (Dr. Stefan Gloeggler)

FULBRIGHT Scholarship

New York University, New York City

September 2023 – June 2024

- **Project:** 31P spins as sources for long-lived magnetization storage (Prof. Alexej Jerschow)

PROFESSIONAL SKILLS

Spectroscopy | Theoretical Chemistry | Spin Dynamics | Python | Mathematica | Matlab | Computational Chemistry | Molecular Dynamics | Gaussian09 | ORCA | Data Analysis | Scientific Writing

LANGUAGES

English
French

PUBLICATIONS & PATENTS

- Fabricant, A.M., Picazo-Frutos, R., Teleanu, F., Rees, G.J., Kircher, R., Lin, M., Evans, W., Luc, P.-M., House, R., Bruce, P.G., Krüger, P., Blanchard, J.W., Eills, J., Sheberstov, K.S., Körber, R., Budker, D., Barskiy, D.A. and Jerschow, A.
  Enabling nondestructive observation of electrolyte composition in batteries with ultralow-field nuclear magnetic resonance.
  Chemical Science, (2026) https://doi.org/10.1039/D5SC04419G
- Jerschow, A., Fabricant, A., Picázo-Frutos R., Teleanu, F., Barskiy, D., Budker, D.
  Battery Electrolyte Characterization using Low-Field Nuclear Magnetic Resonance
  US Patent (2025) WO2025245002A1
- Li, Y., Teleanu, F., Jerschow, A.
  Identifying intermolecular multiple-quantum coherences in ionic liquids
  Journal of Magnetic Resonance, 381, 107984 (2025) https://doi.org/10.1016/j.jmr.2025.107984
- Gao, Z., Teleanu, F., Marr, K.A., Jerschow, A.
  Molecular Shells and Range of Interactions in Ionic Liquids as a Function of Temperature
  Journal of Physical Chemistry Letters, 16, 8, 2120–2127 (2025) https://doi/10.1021/acs.jpclett.4c03576
- MRI4ALL Collaboration
  MRI4All: A Week-Long Hackathon for the Development of an Open-Source Ultra-Low-Field MRI System
  Proceedings of the Annual Meeting of ISMRM & ISMRT 2024
- Lu, J., Teleanu, F., Zou, H., Zhang, C., Hollingsworth, A., Jerschow, A.
  Conformational Landscape of NADH and Ion Binding in Water/DMSO Mixtures via 31P NMR Spectroscopy
  Journal of Physical Chemistry B 128, 35, 8504–8511 (2024) https://doi.org/10.1021/acs.jpcb.4c03162
- Ianc O., Teleanu, F., Ciumeica, A., Lupulescu, A., Sadet, A., Vasos, P.R.
  Improved detection of magnetic interactions in proteins based on long-lived coherences
  Communication Chemistry, 7, 112, (2024) https://doi.org/10.1038/s42004-024-01195-2
- Teleanu, F., Hanganu, A., Tuta, C., Sadet , A., Voda, M.A., Vasos, P.R.,
  Multiple Stroboscopic Detection of Long-Lived Nuclear Magnetization for Glutathione Oxidation Kinetics
  Journal of Physical Chemistry Letters, 14, 4247–4251 (2023) https://doi.org/10.1021/acs.jpclett.2c03924
- Teleanu, F., Lupulescu, A., Vasos, P.R.,
  Selective Excitation of Long-lived Nuclear Spin States
  Journal of Physical Chemistry Letters, 13, 29, 6731–6736 (2022) https://doi.org/10.1021/acs.jpclett.2c01749
- Moraru, I.T., Teleanu, F., Silaghi-Dumitrescu, L., Nemes, G.,
  Offsets between hyperconjugations, p $\rightarrow$ d donations and Pauli repulsions impact the bonding of E-O-E systems. Case study on elements of Group 14.
  Physical Chemistry Chemical Physics, 24, 13217-13228 (2022) https://doi.org/10.1039/D2CP00869F
- Teleanu, F., Topor, A., Serafin, D., Sadet, A., Vasos, P.R.
  Rotating-Frame Overhauser Transfer via Long-Lived Coherences.
  Symmetry, 13(9), 1685 (2021) https://doi.org/10.3390/sym13091685
- Teleanu, F., Vasos, P.R.
  Mechanisms of coherent re-arrangement for long-lived spin order.
  Magnetic Resonance Discussion, 2, 741–749 (2021) https://doi.org/10.5194/mr-2-741-2021
- Teleanu, F., Sadet, A., Vasos, P.R.
  Symmetry versus Entropy: Long-Lived States and Coherences.
  Progress in Nuclear Magnetic Resonance Spectroscopy, 122, 63-75 (2021) https://doi.org/10.1016/j.pnmrs.2020.12.002
- Teleanu, F., Tuță, C., Cucoanes, A., Vasilca, S., Vasos, P.R.
  Magnetization Lifetimes Prediction and Measurements Using Long-Lived Spin States in Endogenous Molecules
  Molecules, 25, 5495 (2020) https://doi.org/10.3390/molecules25235495
- Moraru, I.T., Teleanu, F., Nemes, G.
  Theoretical Insights into the Structural Differences between Organic and Inorganic Amines /Ethers
  Journal of Physical Chemistry A 124, 40, 8246–8253 (2020) https://doi.org/10.1021/acs.jpca.0c07093
- Sadet, A., Sarkar, R., Teleanu, F., Bodenhausen, G., Vasos, P.R. Book Chapter entitled:
  Long-Lived Coherences in **Long-Lived Nuclear Spin Order: Theory and Applications**,
  The Royal Society of Chemistry, Editor Giussepe Pileio (2020) ISBN: 978-1-78801-998-9
- Sadet, A., Stavarache, C., Teleanu, F., Vasos, P.R.
  Water hydrogen uptake in biomolecules detected via nuclear magnetic phosphorescence
  Scientific Reports 9, 17118 (2019). https://doi.org/10.1038/s41598-019-53558-8

CONFERENCES & SCHOOLS

- **ACS Spring 2026 – Synergizing Crystallography and Spectroscopy: From Order to Dynamics**
  Oral Presentation (Digital): Studying electrolytes by NMR and MD simulations
  (22 - 26 March 2026)
- **Global NMR Online Conference 2025**
  2^{nd} Prize: Ions dance, nuclei talk: understanding intermolecular Overhauser transfer in ionic liquids.
  16 – 18 July 2025 (Online)
- **Gordon Research Seminar & Conference in Computational Aspects of Biomolecular NMR**
  Discussion Leader & FEBS Poster Award: Toward Understanding of Nuclear Spin Relaxation at Zero-to-Ultralow Fields
  31 May – 6 June 2025 (Vaud, Switzerland)
- **ENC - ISMAR Joint Conference 2025**
  Oral Presentation: In Situ Zero- and Ultralow-Field (ZULF) NMR of Electrolytes in Rechargeable Batteries
  6 – 10 April 2025 (Asilomar, USA)
- **European Conference on Magnetic Resonance EUROMAR 2024**
  Poster: Towards Integrative Spin and Molecular Dynamics Modelling of Relaxation Mechanisms: A case study of electrolyte solutions
  30 June – 04 July 2024 (Bilbao, Spain)
- **ISMRM & ISMRT Annual Meeting & Exhibition 2024**
  Oral Presentation:MRI4All: A Week-Long Hackathon for the Development of an Open-Source Ultra-Low-Field MRI System
  4 – 9 May 2024 (Singapore)
- **Experimental Nuclear Magnetic Resonance Conference ENC 2024**
  Oral Presentation: First Principles Calculations of Molecular Properties in Electrolytes from Spin and Molecular Dynamics Simulations Coupled with Experimental Relaxation Rates
  7 – 11 April 2024 (Asilomar, USA)
- **MRI4All Hackathon 2023**
  Member of the Magnet Team developing an open-source, 3D-printed, low-field MRI system
  16 – 21 October 2023 (New York City, USA)
- **European Conference on Magnetic Resonance EUROMAR 2023**
  Oral Presentation: Steady-state generation of long-lived nuclear spin states using cascades of pulses
  9 – 13 July 2023 (Glasgow, UK)
- **"Games of Science" National Science Communication Contest**
  Winner: Quantum physics phenomena underlying biological processes
  10 – 11 June 2023 (Bucharest)
- **European Conference on Magnetic Resonance EUROMAR 2022**
  Poster: Selective Excitation of Long-lived Nuclear Spin States
  10 – 15 July 2022 (Utrecht, Netherlands)
- **TIMB3 Workshop: NMR of paramagnetic proteins and applications**
  7 – 8 April 2022 (Centro Risonanze Magnetiche, Firenze, Italy)
- **Kazan Modern Development of Magnetic Resonance**
  Poster: Rotating-frame Overhauser Enhancement using Long-lived Coherences
  1 – 5 November 2021 (Online)
- **Magurele Science Summer School**
  Mentor on Atomic and Molecular Magnetism courses for high-school students
  21 August – 04 September 2021 (Magurele, Romania)
- **Zakopane Ampere NMR School**
  Poster: Relaxation Dispersion Experiments Using Long-Lived Nuclear Spin Order
  21 – 23 June 2021 (Online)
- **"UBTalks" Science Communication Contest**
  Winner: Cooking with Darwin: Searching for the ingredients of origin of life
  23 May 2021 (Bucharest)
- XV^{th} **International Conference Students for Students**
  Oral Presentation: Oligomers of Inorganic Ethers. A DFT Study ($1^{st}Place$)
  3 – 7 April 2019 (Cluj-Napoca, Romania)
- **MOLMOD- Molecular Modeling in Chemistry and Biochemistry**
  Poster #1: Towards a unitary description of E-O and E-N bonds (E = Si, Ge, Sn) from inorganic ethers to amines and isoelectronic species
  Poster #2: Antiaromaticity comes in six – A HOMA/NICS study of [n]helicenes (n = 6 - 24)
  28 – 30 October 2018 (Cluj-Napoca, Romania)
- **The National Session of Student Scientific Communications**

Oral Presentation: A theoretical investigation of electronic interactions in inorganic amines and isoelectronic compounds with Silicon, Germanium and Tin
1^{st} Place $\&$ Special Prize from the American Chemical Society (Romania Chapter); 25 – 26 May 2018 (Bucharest, Romania)