MODELLO **A**

Daniela Lalli

Curriculum vitae

PERSONAL INFORMATION

Current position: Assistant Professor
Affiliation: Department of Science and Technology Innovation, University of Eastern Piedmont
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CURRICULUM VITAE ET STUDIORUM

2021 Assistant Professor (SSD CHIM/03), Department of Science and Technology Innovation, University of Eastern Piedmont 'Amedeo Avogadro', Alessandria, Italy;

2018 Researcher (RTDB, SSD CHIM/03), Department of Science and Technology Innovation, University of Eastern Piedmont 'Amedeo Avogadro', Alessandria, Italy;

2011 PhD in Chemical Sciences, with a thesis on "*Structure and Dynamics of Complexes and Molecular Aggregates trough NMR: from Protein-Ligand Interactions to Nanobioreactors*", University of Florence, Italy;

2007 Master Degree in Chemistry of Biological Molecules, with a thesis on: "*NMR study of Protein-Ligand Interactions for Drug Discovery*", University of Florence, Italy.

EDUCATION

2021 - Present	Assistant Professor (SSD CHIM/03), Department of Science and Technology Innovation, University of Eastern Piedmont
2018 - 2021	Researcher (RTDB), Department of Science and Technology Innovation, University of Eastern Piedmont
2015 - 2018	Post-doctoral fellow, Center of Nuclear Magnetic Resonance at Very High Fields (CRMN), University of Lyon, France Research topic: "ssNMR of proteins in native and artificial membrane environments"
2011-2015	Post-doctoral fellow, Center of Magnetic Resonances (CERM), University of Florence, Italy Research topic: "Structural characterization of protein-protein and protein-small molecule adducts through NMR"
2010	Visiting Scientist, Leibnitz Institute for Molecular Pharmacology (FMP) Berlin, Germany Research topic: "NMR Pulse Sequence for Resonance Assignment of Proteins by Magic-Angle-Spinning NMR"
2008 - 2011	PhD in Chemical Sciences, Department of Chemistry, University of Florence, Italy Research topic: "Structure and Dynamics of Complexes and Molecular Aggregates trough NMR: from Protein-Ligand Interactions to Nanobioreactors"

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SCIENTIFIC POSITIONS

2022 - Present	Representative of the International Relations Committee, University of Eastern Piedmont, for the course of Chemistry, Alessandria
2022 - Present	Member of the User Selection Panel of the Pan-European Solid-State NMR Infrastructure for Chemistry-Enabling Access (PANACEA)
2020 - 2021	Member of the Quality Management Group of the Master Degree in Pharmaceutical Biotechnology, DSF, Novara
2019 - Present	Member of the Italian Discussion Group on Magnetic Resonance Imaging (GIDRM)
2019 - Present	Member of the Italian Chemical Society (Division of Inorganic Chemistry)

MAIN FIELDS OF INTEREST

1. Structural biology
2. NMR method development
3. MRI Contrast Agents
4. Drug Discovery
5. Metabolomics

CURRENT RESEARCH TOPICS

1. Structural biology

NMR characterization of the structure and dynamics of biomolecules and their functional interactions, with particular attention to structure-function relationships.

2. NMR method development

Combination of solution and solid-state NMR methods to elucidate the activity of metalloproteins with high molecular weight; development of fast magic angle spinning NMR methods for the characterization of biomolecular assemblies like membrane proteins, viral capsids, sedimented assemblies, and amyloid fibrils, with particular attention to membrane proteins in native and artificial membrane environments.

3. MRI Contrast Agents

Development of paramagnetic complexes as MRI contrast agents and characterization of their relaxation properties by relaxometry. Investigation of the structural and dynamic properties of lanthanide chelates conjugated to nanomaterials by using chemical exchange saturation transfer and relaxometric techniques.

4. Drug Discovery

NMR characterization of protein-ligand interactions for drug discovery.

5. Metabolomics

Characterization of the chemical composition of complex matrices (biofluids and tissues extracts)

using NMR spectroscopy. Applications of NMR-based metabolomics in biomedicine for diagnostic and prognostic purposes.

FUNDED PROJECTS

GRANT	PROJECT TITLE
2023-2024 Cassa di Risparmio di Torino	BOTTICELLI "Pre-analytical laboratory for biomedical metabolomics, integrated between the Alessandria Hospital and the University of Eastern Piedmont" - € 35000
2023-2024 UPO 2022 Research Call	"Metabolomics approach for predicting response to immunotherapy in patients with lung cancer" - € 48750
2021-2024 Cariplo (Biomedical Research conducted by Young Researchers 2020)	"DNA replicative helicase loading in Mycobacterium tuberculosis: understanding the molecular details of bacterial replication in active tuberculosis" - € 250000
2017-2020 University Research Funds (FAR 2017)	"Development of fluorescent probes for Intraoperative Imaging and Photodynamic Therapy" - € 21000
2014 Italian Foundation "Veronesi"	"Interactions between BCL-2 family members by NMR: understanding the molecular basis of cancer" - € 27000

TOP FIVE PAPERS

1. Lalli D., Turano P., 'Solution and solid state NMR approaches to draw iron pathways in the ferritin nanocage', *Acc. Chem. Res.*, **2013**, 46(11), 2676-85; IF 20.8
2. Lalli D., Idso M.N., Andreas L.B., Hussain S., Baxter N., Songi H., Chmelka B.F., Pintacuda G., 'Protons as structural NMR reporters throughout a hepta-helical membrane protein in lipid bilayers', *J. Am. Chem. Soc.*, **2017**, 139(37), 13006-13012; IF 13.8
3. Bahri S., Silvers R., Michael B, Jaudzems K., Lalli D., Casano G., Ouari O., Lesage A., Pintacuda G., Linse S., Griffin R.G., '1H detection and dynamic nuclear polarization–enhanced NMR of Aβ1-42', *Proc. Natl. Acad. Sci. U S A*, **2022**, 119(1), 1-7; IF 11.2
4. Le Marchand T., Schubeis T., Bonaccorsi M., Paluch P., Lalli D., Pell A., Andreas L.B., Jaudzems K., Stanek J., Pintacuda G., '1H-Detected Biomolecular NMR under Fast Magic-Angle Spinning', *Chemical Reviews*, **2022**, 122(10), 9943-10018; IF 60.622
5. Lalli D., Ferrauto G., Terreno E., Carniato F., and Botta M., 'Mn(II)-Conjugated silica nanoparticles as potential MRI probes' *J. Mater. Chem. B.* **2021**, 9, 43, 8994 - 9004; IF 6.3

PREMI E RICONOSCIMENTI

2016: Young investigator Award in recognition of substantial contribution to the field of magnetic resonance in biological systems: The 27th International Conference on Magnetic Resonance in Biological Systems, Kyoto (Japan)

2015: Prix de la meilleur conference XVIe Journée Rhône Alpes de RMN, Marseille (France)