

CURRICULUM VITAE ET STUDIORUM

Associate Professor of Inorganic Chemistry at the University of Eastern Piedmont (Italy)

Member of the Academic Board of the Doctoral School in Chemistry&Biology
Head of the LumiMol Lab research group

Affiliation

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Education

PhD in Physics (Condensed Matter Physics), University of Cagliari (Italy). Title of the dissertation: "*Light Conversion Processes in Lanthanide-Based Molecular Materials*" defended in date 21.05.2015. Final grade: excellent.

PhD in Chemistry (Inorganic Chemistry), University of Cagliari (Italy), with the additional qualification of *Doctor Europaeus*. Title of the dissertation: "*Near-Infrared Luminescent Lanthanide Complexes of Quinolinol Ligands: Structure/Properties Relationship*" defended in date 28.01.2008. Final grade: excellent.

Master Degree (Laurea) in Chemistry with honours (110/110 summa cum laude), in date 29 April 2004, with a thesis on "*Erbium quinolinolato complexes as luminescent materials for applications in photonics.*"

Additional academic certificates

Italian qualification for the role of Associate Professor in four academic scientific sectors: Physical Chemistry (03/A2), Inorganic Chemistry (03/B1), Chemical Fundamentals of Technologies (03/B2) obtained in date 12.04.2017 (ASN 2016) and Condensed Matter Physics (02/B1) obtained in date 31.05.2021 (ASN 2018). **Qualification for the role of Full Professor** in Inorganic Chemistry (03/B1), obtained in date 06/12/2023.

Research

The research activity is developed within the LumiMol Lab research group currently involving 1 PhD student, 1 co-supervised PhD student with Ghent University (Belgium), 1 postdoctoral researcher and 2 foreign long-term visiting PhD students. The research lines are mainly focused on the design, synthesis and characterization of novel materials, molecular, organic-inorganic and nanostructured systems, based on *d*- and *f*-metal ions, showing single or cooperative optical functionalities as well as on advanced studies of the photophysical properties of luminescent materials. Scientific interest is also directed towards the investigation of novel strategies for the recovery and valorization of precious and lanthanide metals from scrap materials with green chemistry approaches. These research lines are further developed in the framework of three granted research projects, HE EIC Pathfinder Challenges “ARTEMIS”, PRIN2022 “GREEN SM” and PRIN 2022 PNRR “QuantaMol” started in autumn 2023 (See Projects section).

Research results have been the subject of numerous communications to Italian and international conferences, including 2 invited talks and of **79 published papers** on international peer-reviewed journals (3 on invitation, 16 as first author, 26 as last or corresponding author, 3 Front Covers, 3 Hot Paper, 1 Highlight) and **3 conference proceedings**. Furthermore, **1 book** and **1 book chapter** are added to the publication production.

h index **26**, total number of citations **2129** (source: Scopus, 07.07.2025).

A brief summary of the main research lines follows:

Luminescent lanthanide-based molecular materials. Design, synthesis, characterization and study of the photophysical properties of luminescent molecular materials, either single molecules and extended networks such as MOFs, HOFs and COFs, based on lanthanides, with particular focus on: i) novel quantum light sources and single-photon emitters; ii) near-infrared emitters for application in photonics, specifically for signal amplification in telecommunication technology; iii) visible emitters for anticounterfeiting and sensing. Heterolanthanide molecular materials, either as discrete molecules and extended frameworks are also developed. Interest is also directed towards the processing of these compounds as hybrid materials (doped glasses, polymers) and thin films for functional devices.

Luminescent lanthanide-based nanomaterials. This research line is oriented towards luminescent nanostructured materials with the aim to achieve more efficient emission performances by overcoming the limitations of molecular complexes and novel potential applications. In particular, current research interests are focused on multilayered nanoarchitectures based on silica, fluorides and lead halide/lead free perovskites combined with luminescent lanthanide ions. These materials are deeply investigated through steady-state and time-resolved techniques, including ultra-fast transient absorption experiments.

Mono- and multifunctional molecular materials. Design, synthesis, characterization and study of the optical (linear and non-linear properties), magnetic and conducting properties of *d* and *f* metal complexes with suitable organic ligands showing simultaneous or cooperative multifunctionalities. In this framework, of particular interest in recent times, are square-planar Ni-triad complexes as NLO-phores, also showing unusual optical properties with anti-Kasha emissive behavior responsive to external stimuli (pH, presence of metal ions).

Green chemistry. This research line is addressed to the recovery, recycling and revalorization of Rare Earths from electronic waste with green chemistry approaches. Strategies for the efficient leaching of these metals from scrap materials are studied with the use of opportunely functionalized ligands with the double role of chelating and oxidizing agents. The products of these treatments can afterwards be re-employed as valuable resources for applicative purposes (e.g. phosphors). More recently, strategies for the direct refunctionalization of Nd and Dy from end-of-life supermagnets as luminescent materials are developed in the framework of the PRIN2022 project “GREEN SM”.

The above described research themes on molecular materials have been recently subject of a book titled “*Functional Molecular Materials: An Introductory Textbook*”, by Flavia Artizzu and Matteo Atzori, which delivers a broad overview of the main classes of transition and lanthanide-based molecular materials with optical, magnetic and conducting properties (Chapter 1), provides a rigorous but easy-to-read description of the fundamental physical principles of the functionalities exhibited by molecular materials (Chapter 2), presents functional molecular materials through archetypical examples for each type of functionality

(Chapter 3), and multifunctional materials based on the assembly of molecular building blocks (chapter 4). Finally, it provides a brief description of prototype devices (OLEDs, solar cells, magnetic materials on surfaces) based on molecular materials.

Main collaborations.

Established International Collaborations: Ghent University (Belgium), Southwest University Chongqing (China), Hubei University Wuhan (China), Sao Paulo State University (Brazil), Bern University (Switzerland), Institute of General and Applied Chemistry and Institute of Physics, Belgrade (Serbia), KU Leuven (Belgium), University of Vigo (Spain); School of Physical Sciences, Kent University (UK), CNRS-Grenoble (France); Ecole Centrale de Marseille (France); University of Namur (Belgium),

National (Italy): University of Cagliari; University of Parma; CNR-ISASI (Naples), University of Genoa, University of Milan, Istituto Sup. delle Telecom. e delle Tecn. dell'Inf., (formerly ISCOM) Italian Ministry of Economic Development;

Projects

Principal Investigator:

Financed

- **2023-2027. ARTEMIS** – “*molecULAR maTerials for on-chip intEgrated quantuM lIght sourceS*” HORIZON-EIC-2022-PATHFINDERCHALLENGES-01-06, GA n. 101115149. Role: co-Coordinator, PI of UPO unit, leader of WP2. 10 partners from 7 countries. Duration 48 months. Total amount granted 3.217M€, UPO funding 363k€. (International);
- **2023-2025. GREEN SM** “*Green processes for Rare Earth Elements Separation, recovery & valorization from permanent Magnets*” – PRIN 2022. Prot. 2022T3H2CW. Role: PI of UPO unit. Partners University of Cagliari (Project Coordinator), University of Parma. Duration 24 months. Total granted budget: 203750€, UPO budget: 61614€. (National - Italy);
- 2017-2020. Marie Skłodowska Curie Action FWO [Pegasus]² grant “*Nanocomposite materials for highly efficient sensitized lanthanide emission*”, 12U3417N LV (International);
- 2010-2012. Project "Young Researchers" granted by the Sardinian Local Government, L.R. 7/2007, project: "*Lanthanide complexes as luminescent materials for photonic applications*" - CRP2_502 University of Cagliari (Italy); €70000 (Local);

Ranked but not financed due to lack of funding:

- 2022. HYPER “*Hybrid photonic-plasmonic sensors for in situ environmental monitoring of metal(loid)s towards more sustainable mining*” - HORIZON-CL4-2022-DIGITAL-EMERGING-01-03 – 2022. Proposal n. 101092679. Role: consortium Coordinator. 14 partners from 7 countries. Duration 48 months. Total requested budget 4.902M€, UPO requested budget 812k€. ESR 10.00/15.00 (Threshold 10.00) (International).

Participant in financed projects:

- **2023-2025 QuantaMol** “*Molecular Quantum Light Sources*” – PRIN 2022 PNRR. Prot. P2022PKW4T. Role: Participant of UPO Unit (coordinator). Partner: University of Cagliari: Total Budget: 275745€, UPO budget: 138556€. (National - Italy);
- 2019-2020. FWO Middelzware Onderzoeksinfrastructuur (Medium Research Infrastructure) I004420N – “*NoLIMITS: a facility for non-linear optical microscopy, spectroscopy and fabrication*” (€ 634871.71€) (National – Belgium)
- 2016-2017. ORISHA - Organics Integrated on Silicon Hybrid Amplifier” financed by the Italian Ministry of Economic Development, Institute for Telecommunication Technology, (€ 25200), (National – Italy);
- 2015-2017. “Design and development of SERS platforms based on graphene for the detection of pollutants in waste water”, CRP 30, granted by the Sardinian Local Government, (€ 70000), (Local).
- 2012-2014. LR 7/2007, CRP-17571, “Near-infrared emitting lanthanide complexes:

- structure/properties relationship towards molecular photonics” (€ 207000); (Local);
- 2007-2008. Fondazione Banco di Sardegna, “From Molecules to Molecular devices for applications in Photonics and Molecular Electronics” (€25000) (Local);
- 2005-2007. PRIN05/07 ”Molecular Materials for Applications in Optics and Photonics” (€130000) (National – Italy);
- 2006-2011. COST WG D35-11 “Multifunctional and Switchable Molecular Materials: Design, Synthesis, Characterization and Preparation as Crystals and Thin Films”. (International)
- 2008. POR Sardegna 2000-06, Misura 3.13, Rete Regionale per l’Innovazione, “Recycle and Recovery of Reactants for the Recovery of Gold from Electric Waste” (Local).
- 2012-2016. COST Action CM1202. "Supramolecular photocatalytic water splitting (PERSPECT-H₂O)" (International)
- 2012. Fondazione Banco di Sardegna, "Composti funzionali basati su complessi di metalli di transizione (d e f) per applicazioni High-Tech” (Local);

Awards and recognitions

- INSTM award (€500) for the best oral communication (4^o National Young Researchers Forum, Padova, 28-30 May 2012)
- Enrico Marcialis” Rotary Club Award (€2500) for the most original and innovative master thesis in chemistry (2005)

Editorial Activity

- Associate Editor of *Materials Research Bulletin*, Elsevier, since September 2025.
- Associate Editor of *Frontiers in Chemistry*, Inorganic Chemistry section since May 2023.
- Guest Editor for *Molecules* (mdpi), special issue “Metal Complexes for Optical and Electronics Applications”.

Reviewing activity

- Outstanding Reviewer 2021 for Chemical Communications. Active expert reviewer for: Royal Chemical Society (Chem. Soc. Rev., Chem. Comm., Dalton Trans., J. Mater. Chem. C, J. Mater. Chem. A, Nanoscale), American Chemical Society (Chem. Rev., J. Am. Chem. Soc., Inorg. Chem., Chem. Mater.), Wiley (Angew. Chemie, Adv. Mater., Adv. Opt. Mater., Adv. Funct. Mater., Aggregate), American Institute of Physics (App. Phys. Lett.), Elsevier (Materials Today, J. Lum., J. Rare Earth, Photosc. Photobio.), Optical Society of America (Optics Letters, Optics Express), Chinese Optical Society, American Scientific Publishers (J. Nanosc. Nanotech.).
- Research projects evaluator for the Research Foundation Flanders (FWO) and for the University of Parma.

Previous Research Experience

- 01.06.2017 to 31.05.2020. Marie Słodowska Curie Fellow cofund FWO (Research Foundation Flanders) [PEGASUS]², on a project titled “*Nanocomposite materials for highly efficient sensitized lanthanide emission*”, Condensed Matter and Physical Chemistry panel, Ghent University, Belgium.
- 14.12.2016 to 31.05.2017. Post-doctoral fellow on project titled “*Synthesis and characterization of emissive organic/inorganic systems for integrated silicon devices*”, University of Cagliari (Italy).
- 11.06.2012 to 10.06.2014; 21.07.2014 to 20.07.2015; 29.07.2015 to 28.07.2016. Post-doctoral fellow on project titled: “*Lanthanide complexes with luminescent properties in the near-infrared: study of the structure/properties relationship for molecular photonics*”, University of Cagliari (Italy).
- 15.04.2010 to 14.04.2012. Post-doctoral fellow “Young Researcher” granted by the Sardinian Local Government, L.R. 7/2007, project: “*Lanthanide complexes as luminescent materials for photonic applications*” - CRP2_502 University of Cagliari (Italy);
- 23.10.2006 to 22.10.2006; 23.10.2007 to 22.10.2008. Research fellow on project titled: “*Molecular Materials for Applications in Photonics*”, University of Cagliari (Italy);
- 01.09.2005 to 31.08.2006. Research fellow on project titled: “*Molecular Materials for Applications in Optics and Electronics*” University of Cagliari (Italy).

- 01.09.2004 to 31.01.2005. Research fellow on project titled: “*New light emitters for telecommunications based on organic complexes of lanthanides*” University of Cagliari (Italy);

Research stages

Visiting Professor/Scientist

- 11.07-21.07.2026 (planned) Invited Visiting Professor, Southwest University Chongqing (China), Southwest Global Immersion Programme 2026, Teaching course “*Inorganic materials for optics and photonics*”, 32 teaching periods, with final exams.
- 19-21.07.2024 Invited Visiting Professor, Hubei University Wuhan (China), seminar “*Lanthanide-based emitters: from molecules to nanomaterials*”.
- 05.07-18.07.2024 Invited Visiting Professor, Southwest University Chongqing (China), Southwest Global Immersion Programme 2024, Teaching course “*Chemistry and Physics of Functional Materials*”, 32 teaching periods, with final exams.
- 20.03-20.04.2023. Visiting Researcher, Department of Chemistry, Ghent University (Belgium) granted by FWO (Research Foundation Flanders) Travel Grant ID V506423N.
- 07.01-07.02.2020. Invited Visiting Researcher, Department of Mechanical, Chemical and Materials Engineering, University of Cagliari, Cagliari, Italy;
- 5-20.03.2019. Invited Visiting Researcher, NABLA Laboratory, King Abdullah University of Science and Technology, KAUST, (Saudi Arabia);
- 07.04.2014 to 07.05.2014; Visiting Foreign Researcher – VBO-BOF Special Research Fund University of Ghent (Belgium) on a project titled “*Quantum yield determination of lanthanide quinolinolato complexes*”;
- 1-20.05.2013. Visiting Scientist Department of Chemistry, University of Pisa;
- 01.02.2007 to 30.04.2007. Research Stay supported by COST ACTION D35 "From Molecules to Molecular Devices", Catholic University of Leuven (Belgium);

Other Work Experience

01.09.2020 – 31.08.2021 and 01.09.2016 – 13.12.2016 High School Teacher (Chemistry)

Teaching Activity

Fundamentals of Chemistry, bachelor course in Environmental Management and Sustainable Development, University of Eastern Piedmont, since a. y. 2021/2022, 7 CFU

Stoichiometry, bachelor course in Chemistry, University of Eastern Piedmont, since a. y. 2022/2023, 6 CFU

Stoichiometry, bachelor course in Green Chemistry, University of Eastern Piedmont, a. y. 2021/2022, 2022/2023, 4 CFU

Spectroscopic Methods, module Magnetic Resonance Techniques, bachelor course in Green Chemistry, University of Eastern Piedmont, since a. y. 2024/2025, 3 CFU

Characterization techniques of inorganic compounds, bachelor course in Chemistry, University of Eastern Piedmont, a. y. 2022/2023 and 2023/2024, 3 CFU

Metals and Circular Economy, bachelor course in Green Chemistry, University of Eastern Piedmont, since a. y. 2023/2024, 3 CFU

Teaching activity for the Doctoral School of Chemistry&Biology Photonic Materials and Photophysical Methods for Chemistry&Biology (8 hours); Optical Thermometry (4 hours).

Teaching activity abroad

2026 Southwest Global Immersion Programme, Southwest University Chongqing (China). Teaching course “*Inorganic materials for optics and photonics*”, 32 teaching periods, with final exams.

2024 Southwest Global Immersion Programme, Southwest University Chongqing (China). Teaching course “*Chemistry and Physics of Functional Materials*”, 32 teaching periods, with final exams.

Supervisor of postdoctoral fellows.

Dr. Rodolpho Alessandro Nesta Silva, 13.10.2024 – Today. University of Eastern Piedmont.

Dr. Dimitrije Mara, 10.01.2024 – 09.01.2025. University of Eastern Piedmont.

Promoter of PhD students

Zhiwang Cai “*Plasmon enhanced hybrid luminescent nanomaterials*”, PhD course in Chemistry, Ghent University, 1.11.2022-ongoing;

Silvia Bonabello “*Lanthanide-based molecular materials for quantum light generation*”, PhD course in Chemistry&Biology, University of Eastern Piedmont, 1.11.2023-ongoing.

Former students.

Promoter of PhD students. Min Zeng, “*Luminescent lanthanide-doped perovskite quantum dots*”, Ghent University (Belgium), 2016-2020, defended in date 24.09.2020; Chaoqing Yang “*Synthesis and properties of hydrogen-bonded organic frameworks involving europium and terbium*” Ghent University (Belgium), 2016-2021, defended in date 06.07.2021; Jingyuan Xue, “*Rare-earth/inorganic/organic host materials for near-infrared optical waveguides*”, Ghent University (Belgium), 2017-2021.

Supervisor of long-term visiting PhD students. André Lucas Costa, Sao Paulo State University (Brazil) “*Design of a core@multishell type luminescent and magnetic inorganic-organic hybrid nanoplatform applicable in magnetic hyperthermia and cellular imaging*” 01.06.2024 – 30.11.2024 (6 months). Ariane Carolina Ferreira Beltrame, Sao Paulo State University (Brazil) “*Design, Synthesis, and Characterization of Luminescent Materials based on Eu³⁺ and Tb³⁺ complexes for applications in light-converting devices*” 01.10.2024 – 30.03.2025 (6 months).

Promoter of master thesis students. Stef Goethals “*Influence of the host composition on the emission properties of lanthanide upconversion nanoparticles*” Master of Science in Chemistry, Ghent University (Belgium), 2023/24. Maxim Van de Steen “*Nd- and Dy- based luminescent materials from end-of-life supermagnets*”, Master of Science in Chemistry, Ghent University (Belgium), 2018/19; Ignasi Fort Grandas, “*Lanthanide-based luminescent nanocomposites for white light generation*”, Master of Science in Chemistry, Ghent University (Belgium), 2017/18.

Promoter of bachelor thesis students. Giada Bausani, “*Development of hybrid materials doped with lanthanide complexes as white-light emitters for low-cost lighting devices*”, Bachelor in Green Chemistry, University of Eastern Piedmont (Italy), 2024/2025. Vittoria Pizzetti, “*NIR emissive materials based on Nd and Dy obtained by the direct treatment of end-of-life supermagnets*”. Bachelor in Green Chemistry, University of Eastern Piedmont (Italy), 2023/2024. Eduard Narcis Paporigoiu, “*Green strategies for the recovery and valorization of Sm from end-of-life SmCo magnets through direct functionalization into luminescent metal complexes*”, University of Eastern Piedmont (Italy), 2023/2024. Baldwin Bontinck, “*Luminescent PMMA Polymers doped with Ln³⁺ Complexes for White Lighting*” Bachelor of Science in Chemistry, Ghent University (Belgium), 2019/20. Astrid Quaak, “*Luminescent PMMA Polymers doped with Ln³⁺ Complexes for White Lighting*” Bachelor of Science in Chemistry, Ghent University (Belgium), 2019/20.

Past teaching activity

Elements, laboratory course for students in Chemistry, Ghent University (Belgium), academic year 2019/2020.

Chemistry 1 (Chemie 1) laboratory course for students in Bioengineering, Ghent University (Belgium), academic years 2017/2018 and 2018/2019.

Molecular Materials based on Transition Metal Complexes Faculty of Sciences, Master Degree in Chemistry and Doctoral Schools in Chemistry and Physics, University of Cagliari (Italy), academic year 2012/2013.

General and Inorganic Chemistry, course in Medicine and Surgery, University of Cagliari (Italy), academic year 2010/2011.

Co-author of a textbook titled **“Functional Molecular Materials: an Introductory Textbook”**, edited by Pan Stanford Publishing, 2018, addressed to master and PhD students and early-stage researchers. The book covers the fundamental physical principles of photophysics, magnetism and conductivity and presents the design tools to achieve the desired physical properties in molecules.

Conference/School Organization

International PhD Summer School (Quantum Flagship) “Quantum Optics&Quantum Materials”, May 26-30, 2025, Lecce, Italy.

Final COSTD35 Meeting “From Molecules to Molecular Devices”, 10-14 Sept 2011, S. Margherita di Pula (Ca), Italy.

Other certificates and linguistic skills

- **European Computer Driving Licence (ECDL)**, obtained in 2002.
- **Qualification as professional Chemist**, obtained 2004.
- Member of **Società Chimica Italiana (SCI)**, **Royal Chemical Society (RSC)**, **Materials Research Society (MRS)** and **Istituto Nazionale per la Scienza e la Tecnologia dei Materiali (INSTM)**.
- **European C1 level certificate in English** QCER (TOEFL - Test of English as Foreign Language) obtained in 2008.
- **European A2 level certificate in Spanish** QCER, obtained in 2011.
- **Certificate Dutch 2nd language – grade 1**, Provincie Oost-Vlaanderen, Belgium, 2018.

LIST OF PUBLICATIONS

Articles

1. **Engineering the Thermometric Response of Dinuclear Eu^{III} Complexes via Terminal Ligand-Induced Nonradiative Processes** Ariane C. F. Beltrame, Rodolpho A. N. Silva, Sergio A. M. Lima, Luciano Marchiò, Matteo Melegari, Flavia Artizzu, Airton G. Bispo, Jr., and Ana M. Pires, *ACS Omega*, **2026**, DOI: 10.1021/acsomega.6c00433.
2. **Metal-Dependent Photodissociation of Hydrazone Photoswitches from Rare Earth Complexes** Matteo Melegari, Randall K. Wilharm, Rodolpho Alessandro Nesta Silva, Flavia Artizzu, Angela Serpe, Dirk H. Trauner, Matteo Tegoni, Eric J. Schelter, Luciano Marchiò, *Journal of the American Chemical Society*, **2026**, DOI: 10.1021/jacs.6c03443.
3. **Beyond-Kasha Photochemistry in a heteroleptic platinum dithiolene complex** Michela Gazzetto, Flavia Artizzu, Salahuddin Attar, Jakob Casanova, Luciano Marchiò, Luca Pilia, Antonio Monari, Paola Deplano, Andrea Cannizzo *Journal of the American Chemical Society*, **2026**, DOI: 10.1021/jacs.6c00565.
4. **Design of molecular lanthanide-based quantum light sources for on-chip integration** Silvia Bonabello, Rodolpho Alessandro Nesta Silva, Dimitrije Mara, Fabio Travagin, Marzia Petreti, Marco Saccone, Matteo Melegari, Luciano Marchiò, Luca Pilia, Giovanni Battista Giovenzana, and Flavia Artizzu*, *Advanced Optical Materials*, **2026**, *20*, e03824., DOI: 10.1002/adom.202503824. Special collection Rising Stars (on invitation).
5. **A Dual-Mode Magnetic–Luminescent Hybrid: Fe₃O₄@Y₂O₃:Yb³⁺,Tm³⁺ Decorated with a Eu³⁺ β-Diketonate Complex** André Lucas Costa, Clara Johanna Pacheco, Julieth Caro Patiño, Angelo Márcio de Souza Gomes, Flavia Artizzu, Sergio Antonio Marques Lima, Airton Germano Bispo-Jr, Ana. Maria Pires, *Materials Research Bulletin* **2026**, *197*, 113943. DOI: 10.1016/j.materresbull.2025.113943.
6. **HX-linear and nonlinear optical responsiveness of rationally designed heteroleptic d⁸-metallo-dithiolene complexes** Salahuddin S. Attar, Flavia Artizzu, Luca Pilia, Angela Serpe, Alessia Colombo, Claudia Dragonetti, Francesco Fagnani, Dominique Roberto, Daniele Marinotto, Paola Deplano, *Molecules*, **2025**, *30*, 4004 DOI: 10.3390/molecules30194004 *ChemRxiv*. **2025**. DOI:10.26434/chemrxiv-2025-wh61k.
7. **Pb²⁺ and Mn²⁺ Codoped Cs₂CdCl₄ Nanocrystals with Tunable Emission** Min Zeng,* Rui Wang, Xi Zeng, Dixi Ke, Lijie Wei, Hang Wang, Yiren Cen, Gen Li, Federico Locardi,* Flavia Artizzu,* Yongming Hu, Haoshuang Gu, Yuebin Li, *ACS Applied Nano Materials* **2025**, *8*, 1471-1478. DOI: 10.1021/acsanm.4c06072.
8. **Tailoring the use of 8-Hydroxyquinolines for the Facile Separation of Iron, Dysprosium and Neodymium** Matteo Melegari, Martina Neri, Alex Falco, Matteo Tegoni, Monica Maffini, Fabio Fornari, Claudio Mucchino, Flavia Artizzu, Angela Serpe, Luciano Marchiò, *ChemSusChem* **2024**, *17*, e202400286. DOI: 10.1002/cssc.202400286.
9. **Spectral tuning and emission enhancement through lanthanide coordination in a dual Vis-NIR emissive cyanide-bridged heterometallic Ru(II)-Er(III) complex** Dimitrije Mara, Zhiwang Cai, Silvia Bonabello, Stefano Penna, Rik Van Deun, Luciano Marchiò, Luca Pilia, Flavia Artizzu*, *Crystal Growth & Design* **2024**, virtual special issue “Structure-Property Interplay in Nanocrystals”, *24*, 3798-3808. DOI: 10.1021/acs.cgd.4c00115. Deposited in ChemRxiv DOI: 10.26434/chemrxiv-2024-hg1wn
10. **Simultaneously excited downshifting/upconversion luminescence from lanthanide-doped core-shell lead-free perovskite nanocrystals for encryption and data storage** Endian Cui, Gaoyuan Xing, Xiangyang Yuan, Yi Zhang, Flavia Artizzu, Ziaoling Liao, Jianfeng Tang, Yanan

Zhao, Pengzhou Zhao, Kai Liu, Jing Liu, *Mater. Chem. Front.* **2024**, 8, 2173. DOI: 10.1039/D3QM01077E.

11. **EHDTA: a green approach to efficient Ln³⁺-chelators** Fabio Travaglini, Maria Ludovica Macchia, Toni Grell, Judit Bodnár, Zsolt Baranyai, Flavia Artizzu, Mauro Botta, Giovanni B. Giovenzana, *Dalton Transactions*, **2024**, 53, 1779-1793. DOI: 10.1039/D3DT03292B.
12. **Lanthanide phosphonate coordination polymers** Maya Boone, Flavia Artizzu, Joydeb Goura, Dimitrije Mara, Rik Van Deun, Matthias D'hooge, *Coordination Chemistry Reviews*, **2024**, 501, 215525. DOI: 10.1016/j.ccr.2023.215525.
13. **Triple-Mode Upconversion Emission for Dynamic Multicolor Luminescent Anti-Counterfeiting** Xiangyang Yuan, Endian Cui, Kai Liu, Flavia Artizzu, Xiaoling Liao, Juntao Zhao, Jianfeng Tang, Wei Sun, Jing Liu, Yingshuai Liu, *Journal of Colloid and Interface Science* **2023**, 641, 961-971. DOI: 10.1016/J.JCIS.2023.03.125. IF: 9.965
14. **Anion-Induced Structural Diversity and Optical Chromism in a Series of Cyano-Bridged Heterometallic 3d-4f Coordination Polymers** Flavia Artizzu*, Luca Pilia, Angela Serpe, Dimitrije Mara, Maria F. Casula, Luciano Marchiò, Paola Deplano*, *Molecules* **2023**, 28, 2871. DOI: 10.3390/molecules28062871. IF: 4.927
15. **Near-IR Absorbers Based on Pt(II)-Dithiolene Donor–Acceptor Charge-Transfer (CT) Systems: A Structural Analysis to Highlight DA Interactions** Davide Espa, Luca Pilia, Flavia Artizzu, Angela Serpe, Paola Deplano, Luciano Marchiò, *Molecules* **2023**, 28, 2566. DOI: 10.3390/molecules28062566. IF: 4.927
16. **Photophysical and Primary Self-Referencing Thermometric Properties of Europium Hydrogen-Bonded Triazine Frameworks** Chaoqing Yang, Dimitrije Mara, Joydeb Goura, Flavia Artizzu*, Rik Van Deun, *Molecules* **2022**, 27, 6687, DOI: 10.3390/molecules27196687. IF: 4.927
17. **Heteroleptic Co(III) bisdithiocarbamate-dithione complexes: Synthesis, Structure and Bonding of [Co(Et₂dtc)₂(R₂pipdt)]BF₄ (R = Me, **1**; Ph, **2**; pipdt = piperazin-2,3-dithione) Complexes** Flavia Artizzu, Luciano Marchiò, Luca Pilia, Angela Serpe, Paola Deplano, *Journal of Coordination Chemistry*, Special Issue dedicated to Prof. G. De Munno, **2022**, DOI: 10.1080/00958972.2022.2126770.
18. **Progress and perspectives on strategies to control photochemical properties in Metallo-Dithiolene Donor-Acceptor systems** Flavia Artizzu*, Davide Espa, Luciano Marchiò, Luca Pilia*, Angela Serpe, Paola Deplano*, *Inorganica Chimica Acta*, Special Issue dedicated to Prof. R. Ugo, **2022**, 531, 120731 DOI: 10.1016/j.ica.2021.120731. IF: 3.118
19. **Molecular dysprosium complexes for white-light and near-infrared emission controlled by the coordination environment** Dimitrije Mara, Flavia Artizzu, Joydeb Goura, Manjari Jayendran, Bojana Bokic, Branko Kolaric, Thierry Verbiest, Rik Van Deun, *Journal of Luminescence*, **2022**, 243, 118646, DOI: 10.1016/j.jlumin.2021.118646. IF: 4.171
20. **Single-component panchromatic white light generation, and tuneable excimer-like visible orange and NIR emission in a Dy quinolinolate complex** Dimitrije Mara, Luca Pilia, Maxim Van de Steen, Ivana Miletto, Min Zeng, Kristof Van Hecke, Angela Serpe, Paola Deplano, Rik Van Deun, Flavia Artizzu* *Journal of Materials Chemistry C*, **2021**, 9, 15641-15648, DOI: 10.1039/d1tc04191f. IF: 8.067
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SELECTED COMMUNICATIONS TO CONFERENCES

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- **Lanthanide-mediated photophysical dynamics in antenna ligands for quantum optics, white light emission and molecular photoswitching** 7th International Conference on Rare Earth Materials (REMAT26), Palermo (Italy), November 3-6, 2026. **(Invited Oral Communication)**.
- **Engineering Energy Transfer Dynamics in Lanthanide-Based Materials: Strategies for Enhanced Emission**, 30th Rare Earth Research Conference (RERC30), Argonne National Lab, Chicago, IL (USA), June 15-19, 2025. (Oral communication)
- **Chair** of a session in Spectroscopy at the International Conference on f-Elements (ICFE-11), Strasbourg (France) August 23-26, 2023
- **Energy and charge transfer pathways at the organic-lanthanide interface**, at the 10th International Conference on f-Elements (ICFE-11), Strasbourg (France) August 23-26, 2023 **(Invited oral communication)**
- **Luminescent lanthanide materials: a road to quantum efficiency**, China Platform AcademicForum 2021, “Sino-Belgian Seminar on Organometallic and InorganicFunctional Materials”, Organisers: Prof. Francis Verpoort, Ghent University & Dr. Yu Baoyi, Beijing University of Agriculture & Prof. Dr Jing Liu, Southwest University. September 15, 2021 **(Invited oral Communication)**
- **Controlling energy transfer routes in dye-sensitized lanthanide-based nanoparticles for enhanced emission** SPIE Photonics West 2020, Moscone Center, San Francisco (CA, US), February 2-6, 2020 (Oral communication).
- **Lanthanide-based 2D-layered MOFs with high NIR-emission quantum yield**, CRF-2 Chemical Research in Flanders conference, 14-16 October 2019 (oral communication).
- **From Molecular complexes to a «Molecule-on-a-Particle» Approach Toward Optical Amplification in the NIR**, at the 10th International Conference on f-Elements (ICFE-10) Swiss Federal Institute of Technology Lausanne (EPFL), September 3-6, 2018 **(Invited oral communication)**.
- **Multi-NIR-Emissive Materials based on Heterolanthanide Molecular Assemblies** Flavia Artizzu, Francesco Quochi, Luciano Marchiò, Michele Saba, Angela Serpe, Andrea Mura, Maria Laura Mercuri, Giovanni Bongiovanni, Paola Deplano, MRS Spring Meeting 2016, Phoenix, AZ, USA, March 28th-April 1st 2016. (oral communication)
- **Lanthanide Quinolinolates as Potential SMMs**, Flavia Artizzu, Raquel Correia, Matteo Atzori, Elisa Sessini, Angela Serpe, Paola Deplano, Masahiro Yamashita, Maria Laura Mercuri, European Conference on Molecular Magnetism ECMM 2013, Karlsruhe (GER), 6-10 October 2013
- **Dual Emitting (Vis and NIR) Properties of Lanthanide (Er, Yb) 8-Quinolinolato(Q) Complexes as Dopants of Sol-gel Glasses**, Flavia Artizzu, Francesco Quochi, Maria Laura Mercuri, Angela Serpe, Andrea Mura, Giovanni Bongiovanni, Paola Deplano, Dalton Discussion 13 “Inorganic Photophysics and Photochemistry – Fundamentals and Applications”, 10-12 September 2012, University of Sheffield (UK). (oral communication)
- **Photosensitising properties of quinolinol antenna ligands toward NIR-emissive lanthanide ions**, Flavia Artizzu, Francesco Quochi, Maria Laura Mercuri, Angela Serpe, Andrea Mura, Giovanni Bongiovanni, Paola Deplano, 8th International Conference on f-Elements, Udine, ITALY, August 26-31, 2012 (oral communication)
- **NIR-Emitting Lanthanide Quinolinolates: from Molecules to Optical Materials**, Flavia Artizzu, Francesco Quochi, Maria Laura Mercuri, Angela Serpe, Andrea Mura, Giovanni Bongiovanni, Paola Deplano, Final COSTD35 Meeting “From Molecules to Molecular Devices”, S. Margherita di Pula (Cagliari), 10-14 September 2011.
- **Luminescent Materials based on Lanthanide Quinolinolates**, Flavia Artizzu, Paola Deplano, Maria Laura Mercuri, Luca Pilia, Angela Serpe, Francesco Quochi, Giovanni Bongiovanni, Andrea

Mura, Materials Research Society Fall Meeting 2010, Boston, MA, USA, November 29th –December 3rd 2010.

- **Near-Infrared Emitters based on Erbium-Quinolinolates** [Flavia Artizzu](#), Paola Deplano, Maria Laura Mercuri, Luca Pilia, Angela Serpe, PHOTO-COST D35 workshop, 17-20 May 2010, Prague (CZ).
- **Cyanido-bridged d-f assemblies as promising molecular materials combining magnetic and luminescent properties.** [Flavia Artizzu](#), Kevin Bernot, Andrea Caneschi, Paola Deplano, Luciano Marchiò, Maria Laura Mercuri, Luca Pilia, Angela Serpe, The 11th International Conference on Molecule-based Magnets (ICMM2008), Convitto della Calza, Florence, Italy 21 - 24 September 2008.
- **Crococonato-containing M(III) (M=Cr, Er) complexes as suitable building blocks for multifunctional materials** Maria Laura Mercuri, Flavia Artizzu, Paola Deplano, Angela Serpe, Luca Pilia, Luciano Marchiò. International Symposium on Crystalline Organic Metals, Superconductors and ferromagnets, ISCOM 2007.
- **Synthesis, X-ray Characterization and Physical Properties of Novel CT-Salts based on the M(croconate)₃ Chiral Anions**, Maria Laura Mercuri, Paola Deplano, Flavia Artizzu, Luca Pilia, Angela Serpe, COST WG D35-0011-05, Athens, 17-19 June 2009 Structure/property relationship in erbium-quinolinolate complexes Flavia Artizzu, P. Deplano, L. Marchiò, M.L. Mercuri, L. Pilia, A. Serpe, F. Quochi, R. Orrù, A. Mura, G. Bongiovanni; Summer School 2005 “Advanced Luminescent Materials Based on Lanthanide Organic/Inorganic Complexes”, Krutyn, Mazurian Lake District, Poland, 16-23 September 2005.
- **Structure and Emission Properties of Erbium Quinolinolate Complexes** Flavia Artizzu, P. Deplano, L. Marchiò, M. L. Mercuri, L. Pilia, A. Serpe, F. Quochi, R. Orrù, A. Mura, G. Bongiovanni; XX Congress of the International Union of Crystallography, Florence, 23-31 August 2005.

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- **Lanthanide-based Near-Infrared and Multicolor Emitters for Photonic Integrated Circuits and Quantum Optics**, Flavia Artizzu, Jing Liu, Dimitrije Mara, Pieter Geiregat, Luca Pilia, Rik Van Deun. INORG2023, 49^o Congresso Nazionale di Chimica Inorganica SCI, Perugia 12-15 settembre 2023. “Ad hoc” oral communication for session opening and characterization.
- **Dual Emitting (Vis and NIR) Properties of Lanthanide (Er, Yb) 8-Quinolinolato(Q) Complexes**, Flavia Artizzu, Francesco Quochi, Maria Laura Mercuri, Angela Serpe, Andrea Mura, Giovanni Bongiovanni, Paola Deplano, 4^o INSTM Young Researchers National Forum, Padua, Italy, 28-30 May 2012. *Award for the best oral communication*
- **Near Infrared Emitting Lanthanide Complexes: Chemistry, Photophysical properties and Optical Materials**, Flavia Artizzu, Francesco Quochi, Maria Laura Mercuri, Angela Serpe, Andrea Mura, Giovanni Bongiovanni, Paola Deplano, Convegno “La Chimica in Sardegna nell’anno della Chimica”, Alghero, Italy 21 October 2011 (oral communication).
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- **Molecular materials based on Near-Infrared Luminescent Lanthanide Complexes: Structure/Properties Relationship**, Flavia Artizzu, Paola Deplano, Maria Laura Mercuri, Luca Pilia, Angela Serpe, Luciano Marchiò, Francesco Quochi, Giovanni Bongiovanni, Andrea Mura, Andrea Caneschi. VI CONVEGNO NAZIONALE MATERIALI MOLECOLARI AVANZATI PER FOTONICA ED ELETTRONICA, 25-27 June 2009, Tortolì, Italy (oral communication).
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- **Synthesis, Crystal Structure and Physical Properties of TTF(ET)/M(dithiocroconate)₂ (M = Cu, Au) CT salts** Marco Salidu, M. L. Mercuri, Flavia Artizzu, P. Deplano, C. Faulmann, L. Pilia, A. Serpe; XXXIII Congresso Nazionale della Divisione di Chimica Inorganica della Società Chimica Italiana, Siena, 11-16 July 2005.
- **An effective method for gold dissolution in microelectronic devices failure analysis;** Flavia Artizzu, M. Cristina Cabras, Paola Deplano, M. Laura Mercuri, Andrea Morelli, Angela Serpe, Emanuele F. Trogu, Massimo Vanzi; XXXII Congresso Nazionale della Società Chimica Italiana, Divisione di Chimica Inorganica, Rome, September 2004.

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- **Lanthanide-based nanomaterials for telecommunication technology and solar energy conversion.** Department of Mechanical, Chemical and Materials Engineering, University of Cagliari, Cagliari, Italy, 28.01.2020.
- **Dual Emissive (visible and near-infrared) Properties of Lanthanide (Er, Yb) quinolinolato Complexes,** Department of Chemistry, University of Pisa, 13.07.2013