

Grigoras Amalia Malina

Curriculum Vitae

EDUCATION

PhD student

Perugia, November 2021 - October 2024

University of Perugia - Departement of Chemistry, Biology and Biotechnology

Curriculum: Methods and materials for catalysis, energy, the environment and cultural heritage, XXXVII Cycle.

Nano4Light lab under the supervision of Prof. Loredana Latterini.

Project title: "Development and Synthesis of Bismuth - Based Nanomaterials for Photocatalysis";

Abroad period at cMACS: centre for Membrane Separations, Adsorption, Catalysis and Spectroscopy for Sustainable Solutions of the University of Leuven from 01/10/2023 to 30/04/2024 under the direction of Prof. Maarten Roefsaers;

In progress: end on October 2024.

Master Degree

Perugia, October 2019 - July 2021

University of Perugia - Departement of Chemistry, Biology and Biotechnology

Physical chemistry curriculum:

Thesis title: 'Effect of synthesis conditions on the electronic properties of CdTe and ZnTe nanocrystals';

Vote: 110/110 cum laude.

Bachelor Degree

Perugia, October 2016 - September 2019

University of Perugia - Departement of Chemistry, Biology and Biotechnology.

Thesis title: 'Effect of adsorbates on the luminescence of silica nanoparticles doped with Eu(III) or Tb(III)';

High School Graduation

Liceo scientifico IIS Sansi-Leonardi-Volta indirizzo scienze applicate, Spoleto (PG)

ACADEMIC EXPERIENCES

- EChemTest in Physical Chemistry taken on 21 June 2018 with grade "Passed"
- Participation in the virtual workshop "The Fundamentals of AFM Probe Selection - 2021 Edition";
- Participation in the Division of Physical Chemistry's Online Scientific Workshop on 24 February 2021;
- Participation in the Quantum Optics Conference proposed by Attocube Systems AG on 26 October 2021;
- Participation in the "Early Career Members meeting of the Photophysics and Photochemistry Group of the RSC" on 6/8 December 2021;
- Attended and pass the doctoral course "Functional materials & devices" held by Prof. Sergei Manzhos, Tokyo Institute of Technology, at the University of Perugia- 9-11,15-17 May 2023

CONGRESS ACTIVITIES

- Contribution as co-author XXVII National Congress of SCI 2021;
- Participation and poster contribution to the "Italian Photochemistry Meeting" proposed by the GIF on 16/18 December 2021;
- Participation and poster contribution to the XXXVIII Interregional Meeting of the Società Chimica Italiana-Sections of Toscana, Umbria, Marche, and Abruzzo on 1-2 September 2022;
- Participation and oral contribution to the "Italian Photochemistry Meeting" proposed by the GIF on 15/17 December 2022;
- Participation and poster contribution to the 29th PhotoIUPAC on 14-19 July in Valencia, Spain;
- Participation and oral contribution at the XXVIII Nation Congress of Italian Chemical Society on 26/30 August in Milan, Italy

SUPPORTING TEACHING ACTIVITIES

- Tutoring Instrumental analytics laboratory CdL in Chimica A.A. 2021/2022 – Dott.ssa Catia Clementi on May 2022;
- Tutoring Instrumental analytics laboratory CdL in Chimica A.A. 2022/2023 – Dott.ssa Catia Clementi on May 2023.

SUPPORTING THESIS CO-ADVISOR ACTIVITIES

Co-supervisor 2 bachelor thesis student:

- Maria Teresa-Tiberi: "Study of the interaction between lysozyme and 2D materials" (1 article submitted);
- Fadi Haitham Saadeh: "Study of the interraction between ZnSe nanocrystals and lysozyme" using optical and morfological characterization such as UV-Vis absorption; Circular Dichroism; photoluminescence spectroscopy, micro-Raman, Circular Dichroism, DLS.

Co-supervisor 1 Master thesis student:

- Francesco Vinti: "Nanostructured materials for up-conversion of incoherent radiation" using optical and morphological characterization such as UV-Vis absorption; photoluminescence spectroscopy, Raman, SEM, TEM.

CURRENT RESEARCH TOPIC

- Synthesis, Engineering, and Characterization of Bismuth oxide nanomaterials for photocatalytic purposes (Nitrogen photofixation; dyes photodegradation and adsorption);
- Characterization of graphene-based materials using microscopies such as SEM, TEM, AFM;

SKILLS ACQUIRED

Mastery of spectroscopic techniques such as:

- **UV-Vis absorption spectroscopy, photoluminescence spectroscopy, time-resolved photoluminescence, micro-Raman, dynamic light scattering;**

Mastery of microscopy techniques such as:

- **SEM, EDX, AFM;**

Good knowledge of techniques such as:

- **FT-IR, Circular Dichroism TEM, XRD, Ion Chromatography.**

Attained the necessary mindset to effectively develop and improve nanomaterial's properties for different applications. Demonstrated expertise in working with quantum dots, semiconductors and carbon-based materials.

Experience with software as:

- Origin Pro 2018-2021;
- Adobe Photoshop CC;
- ChemSketch, ChemDraw, Avogadro;
- Gwyddion, ImageJ;
- MDI Jade 6 XRD;
- Microsoft Office Suite.

PUBLICATIONS

ORCID: 0009-0007-0048-4913; scopus author id: 58786047900

- Baldinelli, L.; Rodriguez, G. M.; D'Ambrosio, I.; Grigoras, A. M.; Vivani, R.; Latterini, L.; Macchioni, A.; Angelis, F. D.; Bistoni, G. Harnessing the Electronic Structure of Active Metals to Lower the Overpotential of the Electrocatalytic Oxygen Evolution Reaction. Chem. Sci. 2024, 15 (4), 1348–1363.
- Valentini, F; Grigoras, A. M.; Vaccaro, L.; Latterini, L. Sustainable nitrogen photofixation: considerations on the state of the art of non-critical carbon materials. Carbon Energy.
- Grigoras, A. M.; Valentini, F; Latterini, L.; Vaccaro, L. Heterogeneous iron-based catalysts for a sustainable photoinduced nitrogen fixation. In Press, Journal Pre-proof; DOI: <https://doi.org/10.1016/j.gee.2024.07.003>;
- Rinaldi, S.; Grigoras, A. M.; Caporali, M.; Serrano Ruiz, M.; Peruzzini, M.; Ienco, I.; Latterini, L. Exploring phosphorene-protein Interactions: An integrated computational and spectroscopic investigation for advancing biomedical applications. In Press, Journal Pre-proof, DOI: 10.2139/ssrn.4773322.