

# Panagiotis Oikonomopoulos

## Ph.D. Candidate

Department of Chemistry  
National and Kapodistrian University of Athens (UoA)  
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Date of Birth: 19 June 1993, Athens, Greece  
Nationality: Greek

## Education

- Researcher / XRD Coordinator (November 2024 – Present)
- Ph.D. Candidate in Inorganic Chemistry (March 2020 - October 2024), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece (Supervisor: Associate Professor Giannis S. Papaefstathiou).  
Thesis Title: “Metal-Organic Frameworks as materials for production of Electrochemical Sensors and heavy metal ion Sorbents”
- Master’s Degree in Inorganic Chemistry and its Applications in Industry (October 2018 - February 2020), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece (Supervisor: Associate Professor Giannis S. Papaefstathiou).  
Thesis Title: “New Heavy Metal Ion Metal-Organic Framework based on Oxalamide Ligands”
- B.Sc. in Chemistry (October 2011 - October 2016), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece. Grade: 7.19 / 10  
Thesis Title: “Polymer Complexes based on Oxalamide Ligands” (Supervisor: Associate Professor Giannis S. Papaefstathiou).

## Experimental Techniques & Skills

- Synthesis of metal ion complexes (monomers, polynuclear metal complexes, coordination polymers, metal-organic frameworks).
- Synthesis of organic compounds (organic ligands with applications in coordination chemistry).
- Purification of chemical compounds.
- Crystallization (growth of single crystals) of chemical compounds.
- Characterization of chemical compounds with a variety of techniques such as: IR spectroscopy, NMR spectroscopy, UV/VIS spectroscopy, Thermal techniques (TGA).
- Trained user of the X-Ray Diffraction instruments of National and Kapodistrian University of Athens.
- Experience at the Single Crystal X-ray Diffraction D8 VENTURE (Crystal mounting, APEX Software, Solving and refining crystal structures).
- In charge of Liquid Nitrogen tank filling for D8 VENTURE.
- Experience at the Powder X-ray Diffraction D8 ADVANCE (Sample preparation, Diffract Commander Software, EVA and Topas Software, Rietveld Analysis, Phase Identification).

- Topological analysis of polymeric networks.
- Usage of Cambridge Structural Database (Cambridge Crystallographic Data Center).

### **Fellowship / Awards**

- 1<sup>st</sup> Prize at Greece – Türkiye Hackathon 2025 as EcoMaris Team
- Excellence fellowship for best performance at courses during first semester of M.Sc. in Inorganic Chemistry and its Applications in Industry, Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece

### **Publications**

- C. Kokkinos, A. Economou, A. Pournara, M. Manos, I. Spanopoulos, M. Kanatzidis, T. Tziotzi, V. Petkov, A. Margariti, P. Oikonomopoulos, G. S. Papaefstathiou. “3D-printed lab-in-a-syringe voltammetric cell based on a working electrode modified with a highly efficient Ca-MOF sorbent for the determination of Hg (II)” *Sensors and Actuators B: Chemical*, 2020, 321, 128508.
- P. Oikonomopoulos, V. Pagkali, E. Kritikou, A. Panara, M. G. Kostakis, N. S. Thomaidis, T. G. Tziotzi, A. Economou, C. Kokkinos and G. S. Papaefstathiou “Oxalamide Based Fe(II)-MOFs as Potential Electrode Modifiers for Glucose Detection” *Chemistry*, 2022, 5(1), 19-30

### **Conferences Participation**

- M. Ladaki, E. Malesiada, P. Oikonomopoulos and G. S. Papaefstathiou, “Exploring Polynuclear SBUs in Dicarboxylate-Based Rare Earth MOFs”, 4th Symposium of Graduate Students of the Chemistry Department, NKUA “Chemistry and its Applications”, 28 - 29 March 2025, Athens, Greece. Poster: M. L.
- P. Oikonomopoulos, V. Ntouros, G. Raptopoulos, K. Kitrilaki, P. Paraskevopoulou, M. N. Assimakopoulos and G. S. Papaefstathiou, “MOF-Composite Materials for CO<sub>2</sub> Capture on Building Surfaces (from Lab to Industry)”, 4th Symposium of Graduate Students of the Chemistry Department, NKUA “Chemistry and its Applications”, 28 - 29 March 2025, Athens, Greece. Talk
- V. Tsonis, P. Oikonomopoulos and G. S. Papaefstathiou, “New terephthalate 3D-MOF based on Y<sub>6</sub> cluster”, Athens Conference on Advances in Chemistry (ACAC2024), 6 - 8 November 2024, Athens, Greece. Poster: V. T.
- P. Oikonomopoulos and G. S. Papaefstathiou, “A Novel Series of Metal-Organic Frameworks Based on Polynuclear Rare-Earth Metal Clusters”, Athens Conference on Advances in Chemistry (ACAC2024), 6 - 8 November 2024, Athens, Greece. Poster
- P. Oikonomopoulos and G. S. Papaefstathiou, “A Novel Series of Metal-Organic Frameworks Based on Polynuclear Rare-Earth Metal Clusters”, 23rd Panhellenic Chemistry Conference, 25 - 28 September 2024, Athens, Greece. Poster
- P. Oikonomopoulos, N. Anastasiadis, M. J. Manos, and G. S. Papaefstathiou “Amide based MOFs for the water purification from heavy metals ions, Synthesis and Post Modification” North America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2024), 21 – 26 April 2024, Protaras, Cyprus. Talk

- G. S. Papaefstathiou, A. Plessas, P. Oikonomopoulos, P. Kotidis, D. A. Evangelou, M. J. Manos, N. Pliatsos and T. Lazarides, "Synthetic routes for functionalization of water stable MOFs for water remediation", North America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2024), 21 - 26 April 2024, Protaras, Cyprus. Talk: G.S.P.
- M. J. Manos, N. Anastasiadis, D. A. Evangelou, G. S. Papaefstathiou, P. Oikonomopoulos, T. Lazarides and N. Pliatsios, "MOFs for water remediation", North America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2024), 21 - 26 April 2024, Protaras, Cyprus. Talk: M.J.M.
- T. Lazarides, N. Pliatsios, S. A. Tsoni, S. A. Diamantis, A. Chatz-Giacha, N. Anastasiadis, P. Oikonomopoulos, M. J. Manos and G. S. Papaefstathiou, "Luminescent Metal-Organic Frameworks as Sensors for Environmental Pollutants", North America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2024), 21 - 26 April 2024, Protaras, Cyprus. Talk: T.L.
- N. Pliatsios, S. A. Diamantis, N. Anastasiadis, P. Oikonomopoulos, M. J. Manos, G. S. Papaefstathiou and T. Lazarides, "Luminescent metal-organic frameworks as an effective alternative for wastewater treatment". North America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2024), 21 - 26 April 2024, Protaras, Cyprus. Talk: N.P.
- P. Oikonomopoulos and G. S. Papaefstathiou "Solvothermal synthesis and crystal structure of two new formate-acetate MOFs based on Ni and Co", 2nd Panhellenic Workshop on Inorganic Chemistry 28 – 30 September 2023, Athens, Greece. Poster
- A. K. Plessas, P. Oikonomopoulos, P. Kotidis, G. S. Papaefstathiou, "Synthesis and characterization of MOF-COOHs for water remediation: Pre- and post-synthetic modification approach of amide ligands" 2nd Panhellenic Workshop on Inorganic Chemistry 28 - 30 September 2023, Athens, Greece. Poster: A.K.P.
- P. Oikonomopoulos and G. S. Papaefstathiou, "Amide based MOFs for the water purification from heavy metals ions, Synthesis and Post Modification", 2nd Symposium of Graduate Students of the Chemistry Department, NKUA "Chemistry and its Applications", 8 - 9 June 2023, Athens, Greece. Awarded as best Poster
- P. Oikonomopoulos and G. S. Papaefstathiou, "Amide based MOFs for the water purification from heavy metals ions, Synthesis and Post Modification", 1st Mediterranean Conference on Porous Materials, 17 - 19 May 2023, Crete, Greece, Poster
- A. K. Plessas, P. Oikonomopoulos, P. Kotidis, G. S. Papaefstathiou, "Synthesis and characterization of MOF-COOHs for water remediation: Pre- and post-synthetic modification approach of amide ligands", 1st Mediterranean Conference on Porous Materials, 17 - 19 May 2023, Crete, Greece, Talk: A.K.P.
- P. Oikonomopoulos and G. S. Papaefstathiou, "Two novel porous MOFs based on 3d transition metal ions, Synthesis and Post Modification", Athens Conference on Advances in Chemistry (ACAC2022), 26 June - 1 July 2022, Athens, Greece. Poster
- G. S. Papaefstathiou, G. D. Tarlas, N. Moutzouris, A. K. Plessas, P. Oikonomopoulos, P. Kotidis, E. Mavridou, D. Zisimopoulou and I. Vagiakos "Amide based ligands for the synthesis of new Metal-Organic Frameworks", Athens Conference on Advances in Chemistry (ACAC2022), 26 June - 1 July 2022, Athens, Greece. Poster: G.S.P.
- P. Oikonomopoulos and G. S. Papaefstathiou, "Synthesis, characterization and potential applications of new oxalamide-based MOFs with 3d Transition Metal ions 2022", North

America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2022), 9 - 13 May 2022, Ayia Napa, Cyprus. Talk

- G. S. Papaefstathiou, G. D. Tarlas, N. Moutzouris, A. K. Plessas, P. Oikonomopoulos, P. Kotidis, E. Mavridou, D. Zisimopoulou and I. Vagiakos "Metal-Organic Frameworks based on bis and tris-amide organic Ligands", North America - Greece - Cyprus Conference on Paramagnetic Materials (NAGC 2022), 9 - 13 May 2022, Ayia Napa, Cyprus. Talk: G.S.P.
- P. Oikonomopoulos and G. S. Papaefstathiou, "Synthesis, characterization and potential applications of new oxalamide-based MOFs with 3d Transition Metal ions", 1st Symposium of Graduate Students of the Chemistry Department, NKUA "Chemistry and its Applications", 17 - 18 March 2022, Athens, Greece. Talk
- P. Oikonomopoulos and G. S. Papaefstathiou, "A new oxalamide-based 3D Fe-MOF for potential glucose sorption and electrochemical detection in human perspiration via electrode modification", Athens Conference on Advances in Chemistry (ACAC2020), 10 - 14 March 2021, Athens, Greece. Flash Talk
- P. Oikonomopoulos, A. Margariti, S. Rapti, A. D. Pournara, A. D. Katsenis, T. Friščić, T. Lazarides, M. J. Manos and G. S. Papaefstathiou "Hg(II) Metal-Organic Framework: Material Model as a result of Alkaline earths ion exchange by Hg(II)" 21st Postgraduate Conference Chemistry (Department of Chemistry, University of Crete), 15 -17 May 2019, Heraklion, Greece. Talk
- P. Oikonomopoulos, A. Margariti, A. D. Pournara, A. Economou, C. Kokkinos, M. J. Manos and G. S. Papaefstathiou "Heavy metal ion MOFs as models for the sorption of metal ions in aqueous solutions from an alkaline earth-based MOF" Green Chemistry and Sustainable Development, 6th Panhellenic Symposium with International Participation, 18 - 20 October 2019, Athens, Greece. Poster

## Supervising

- Laboratory/Teaching assistant for Inorganic Chemistry I and III courses for undergraduate students of the Chemistry department of the National and Kapodistrian University of Athens. 2021-2022, 2023
- Maria Ladaki - M.Sc. Thesis" (October 2024 - Present), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece.  
Thesis Title: Pending
- Vassileios Tsonis - "M.Sc. Thesis" (October 2023 - February 2025), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece.  
Thesis Title: Synthesis and Characterization of Novel Bridging Ligands and Metal–Organic Frameworks
- Nefeli Manou - "Diplomatic thesis" (October 2023 - Present), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece.  
Thesis Title: Pending
- Dimitra Zisimopoulou - "M.Sc Thesis" (October 2021 - February 2023), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece.  
Thesis Title:  $\text{Ce}^{\text{IV}}$  - amino-acid clusters as starting materials for the synthesis of UiO-66 analogues.

- Myrianthy Demetriou - “Diplomatic thesis” (October 2020 – October 2021), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece. Thesis Title: MILs as materials for production of Electrochemical Sensors for Glucose.
- Panagiota Mourtzinou - “Diplomatic Thesis” (October 2020 – October 2021), Department of Chemistry, National and Kapodistrian University of Athens (UoA), Athens, Greece. Thesis Title: MILs as materials for production of Electrochemical Sensors for Glucose.

### **Work Experience**

- May 2017 - July 2018 IKOCHIMIKI SA: Quality Control and Quality Assurance Senior (QC, QA, RnD)

### **Languages**

- Greek (native)
- English (C2) Certificate of Proficiency in English, University of Michigan.
- German (B1) Goethe-Zertifikat B1, Goethe Institut.
- Swedish (A2) Foreign Language Teaching Center, National and Kapodistrian University of Athens (UoA).