

CURRICULUM VITAE

PERSONAL INFORMATION

SURNAME	Zarkadoulas
NAME	Athanasios
e-mail	azarkadoulas@chem.uoa.gr



CURRENT POSITION

since 15/10/2024	Teaching Fellow Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece
-------------------------	---

RESEARCH INTERESTS

Photochemistry of metal complexes; photocatalytic and electrocatalytic hydrogen evolution; synthesis, characterization, and electronic-structure elucidation of transition-metal complexes bearing non-innocent ligands; catalytic reaction mechanisms; photocatalysis and other light-driven transformations; inorganic oxides, ceramics, and sol-gel-derived materials for photocatalysis, energy-related applications, and latent heat storage/retrieval; inorganic chemical technology.

PREVIOUS POSITIONS

1/2023 -31/8/2024	Postdoctoral Scholar Engineering and Technology Institute Groningen, University of Groningen, the Netherlands
3/2022 -12/2022	Postdoctoral Research Associate Laboratory of Chemistry and Materials Technology, General Department, National and Kapodistrian University of Athens, Psachna Campus, Evia, Greece
5/2021 – 12/2021	Postdoctoral Research Associate Laboratory of Chemistry and Materials Technology, General Department, National and Kapodistrian University of Athens, Psachna Campus, Evia, Greece
4/2020 – 7/2021	Postdoctoral Scholar Laboratory of Organic Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece

EDUCATION

7/2013 – 2/2018	PhD in the Laboratory of Inorganic Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece Thesis title: "Photocatalytic and electrocatalytic hydrogen production with dithiolene complexes"
10/2011 – 5/2013	MSc in Inorganic Chemistry & Technology in the Laboratory of Inorganic Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece Thesis title: "Synthesis and study of chromophores. Application in photocatalytic water splitting"
9/2007 – 7/2011	BSc in Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece

SELECTED PUBLICATIONS

- Book chapter: Coordination compounds of nickel, palladium, and platinum, **Zarkadoulas, A.**, Mitsopoulou, C.A. (2023) in Photochemistry and Photophysics of Coordination Compounds: Fundamentals and Applications (Elsevier), pp. 255-291. <https://doi.org/10.1016/B978-0-12-824493-7.00009-5>
- Ligand-Dependent Reactivity and Stability in Nickel Thiosemicarbazone/Dithiolene Complexes for Photocatalytic Hydrogen Evolution, Kourmoussi, M.; **Zarkadoulas, A.**; Charalampous; Tsoureas, N.;

- Drosou, M.; Damalas, D. E.; Thomaidis, N. S.; Mitsopoulou, C. A., 2026 *Inorganica Chimica Acta* 600 123262. <https://www.sciencedirect.com/science/article/abs/pii/S0020169326002021>
- Assessment of Monel 400 corrosion in hydrofluoric–hydrochloric acid condensation environments for condensing heat exchangers Stathopoulos, V.; Pandis, P.K.; Zarkadoulas, A.; Nanou, P.; Fragkoulis, D.; Poškas, R.; Sirvydas, A.; Poškas, P.; Jankaukas, J.; Jouhara, H., 2026 *Thermal Science and Engineering Progress* 104642. <https://www.sciencedirect.com/science/article/pii/S245190492600168X>
 - Durable bi-functional superhydrophobic and anti-corrosion coating on stainless steel 304 developed by a soot-assisted sol-gel method, Nanou, P.; **Zarkadoulas, A.***; Stathopoulos, V.* 2025 *Sustainable & Green Materials*, 1 (2–4), 221–230. <https://www.tandfonline.com/doi/abs/10.1080/29965292.2025.2590475>
 - Enhanced Homogeneous Photocatalytic Hydrogen Evolution in a Binuclear Bio-inspired Ni-Ni Complex Bearing Phenanthroline and Sulfidophenolate Ligands, Kamatsos, F.; Drosou, M.; **Zarkadoulas, A.**; Bethanis, K.; Mitsopoulou, C. A., *Chemistry–A European Journal*, e202404396, 2025, <https://doi.org/10.1002/chem.202404396>.
 - Opportunities and challenges for direct electrification of chemical processes with Protonic Ceramic Membrane Reactors, Li, N.; **Zarkadoulas, A.**; Kyriakou, V.; *Progress in Energy*, 6 043007, 2024, <https://doi.org/10.1088/2516-1083/ad80f4>.
 - Perovskites: Versatile Weaponry in the Arsenal of Energy Storage and Conversion, **Zarkadoulas, A.**; Stathopoulos, V.N., *Energies* 15 (18), 6555, 2022, <https://doi.org/10.3390/en15186555>
 - Structural modifications on nickel dithiolene complexes lead to increased metal participation in the electrocatalytic hydrogen evolution mechanism Drosou, M.; **Zarkadoulas, A.***; Bethanis, K.; Mitsopoulou, C. A., *Journal of Coordination Chemistry* 74 (9–10), 1425–1442, 2021, <https://doi.org/10.1080/00958972.2021.1918339>
 - Proton-Reduction Reaction Catalyzed by Homoleptic Nickel–bis-1,2-dithiolate Complexes: Experimental and Theoretical Mechanistic Investigations, **Zarkadoulas, A.**, Field, M.J., Artero, V., Mitsopoulou, C.A., (2017) *ChemCatChem*, 9 (12), 2308–2317, <https://doi.org/10.1002/cctc.201601399>
 - Synthesis, characterization and crystal structure of rhenium(I) tricarbonyl diimine complexes coupled with their efficiency in producing hydrogen in a photocatalytic system, Kefalidi, C., Koutsouri, E., Marchiò, L., **Zarkadoulas, A.**, Efstathiadou, S., Mitsopoulou, C.A., (2016) *Polyhedron*, 110, 157–164, <https://doi.org/10.1016/j.poly.2016.02.043>
 - Experimental and Theoretical Insight into Electrocatalytic Hydrogen Evolution with Nickel Bis(aryldithiolene) Complexes as Catalysts, **Zarkadoulas, A.**, Field, M.J., Papatriantafyllopoulou, C., Fize, J., Artero, V., Mitsopoulou, C.A., (2016) *Inorganic Chemistry*, 55 (2), 432–444, <https://doi.org/10.1021/acs.inorgchem.5b02000>
 - Rhenium complexes in homogeneous hydrogen evolution, **Zarkadoulas, A.**, Koutsouri, E., Kefalidi, C., Mitsopoulou, C.A., (2015) *Coordination Chemistry Reviews*, 304–305, 55–72, <https://doi.org/10.1016/j.ccr.2014.11.006>
 - A perspective on solar energy conversion and water photosplitting by dithiolene complexes, **Zarkadoulas, A.**, Koutsouri, E., Mitsopoulou, C.A., (2012) *Coordination Chemistry Reviews*, 256 (21–22), 2424–2434, <https://doi.org/10.1016/j.ccr.2012.04.016>

CONFERENCES/WORKSHOPS/etc

- *Tailoring Perovskite Oxide Fuel Electrodes in Solid Oxide Cells for Syngas Generation from CO₂/H₂O co-electrolysis*, A. De Gregorio, **A. Zarkadoulas**, N. Li, V. Kyriakou **NCCC, The Netherlands' Catalysis and Chemistry Conference** (4 – 6/03/2024, Leiden, the Netherlands)
- *Co-electrolysis of H₂O and CO₂ at industrially-relevant temperatures with protonic ceramic cell reactors*, N. Li, **A. Zarkadoulas**, N. Cucu, P. P. Pescarmona, V. Kyriakou **NCCC, The Netherlands' Catalysis and Chemistry Conference** (4 – 6/03/2024, Leiden, the Netherlands)
- *Biochar-assisted steam electrolysis in symmetrical solid oxide cells with double perovskite electrocatalysts*, N. Berger, **A. Zarkadoulas**, N. Li, V. Kyriakou **NCCC, The Netherlands' Catalysis and Chemistry Conference** (4 – 6/03/2024, Leiden, the Netherlands)
- *Tailoring the properties of perovskite oxide materials towards the development of bifunctional cathodes for solid oxide cells applications*, **A. Zarkadoulas**, V. Kyriakou **2nd Panhellenic Inorganic Chemistry Symposium** (28 – 30/09/2023, Athens, Greece)

▪ <i>Encapsulated Phase Change Materials in clays and ceramics: properties and features</i>, A. Zarkadoulas, J. Konstantaras, P. Nanou, D. Fragkoulis, H. Jouhara, V. Stathopoulos 4th International Conference on Sustainable Energy & Environmental Protection, Brunel University London, (12 - 15/9/2022, UK) oral presentation prize ▪ <i>DFT Studies on the Mechanism of Hydrogen Evolution Catalyzed by Nickel Thiolates</i>, M. Drosou, A. Zarkadoulas, F. Kamatsos, C. A. Mitsopoulou, Spectroscopy and Electronic Structure of Transition Metal Complexes Summer School (29/9 – 4/10/2019, Wissenschaftspark Gelsenkirchen, Germany) poster prize

REVIEWING ACTIVITIES

2018 –	Reviewer for the following journals (no. of manuscripts): Journal of the American Chemical Society (1) § ACS Catalysis (1) § Chemical Communications (4) § Dalton Transactions (4) § Journal of Physical Chemistry C (1) § Catalysts (17) § RSC Advances (2) § Journal of Coordination Chemistry (1) § Inorganic Chemistry Communications (1) § New Journal of Chemistry (1) § Materials (3), Inorganics (2), Molecules (2), Coatings, Chemistry & Biodiversity.
---------------	--

TEACHING

2024 – 2026	Undergraduate: Teaching Group Theory – Photochemistry and its Applications (5 th semester elective) and Inorganic Chemistry Laboratory I, II, and III, Department of Chemistry, National and Kapodistrian University of Athens, Greece
2017 – 2020	Postgraduate: “Photochemistry and Photocatalysis – Applications in Energy and Environmental Protection” (Inorganic Chemistry programme) and “Green Chemistry: Photocatalysis” (Catalysis programme)

FELLOWSHIPS and AWARDS

2023 – 2024	Scholarship from Bodossaki Foundation through a scholarship in the 'Stamatis G. Mantzavinos' Memorial Postdoctoral Scholarships Programme (€50.000 for 20 months, salary) in Postdoctoral studies at the University of Groningen, the Netherlands
2019	Scholarship by the State Scholarships Foundation for postdoctoral studies for research titled “Development of Sustainable Homogeneous Catalytic Systems for the Synthesis of High-added Value Chemicals” (denied due to double funding)
2019	Commendation by Mega S.A. for obtaining PhD Diploma accompanied by €1000 award
2011 – 2013	Scholarship for MSc studies by the State Scholarships Foundation of Greece (IKY)

RESEARCH GRANTS and PARTICIPATION IN RESEARCH PROGRAMMES

Project Title	Funding source	Period	Role
Development of bi-functional cathodes and electrolytes for solid oxide electrolysis cells (SOECs) and solid oxide fuel cells (SOFCs)	Bodossaki Foundation	1/2023 – 8/2024	Postdoctoral researcher/scholar
iWAYS – Innovative WATER recovery Solutions	HORIZON2020	10/2022 – 12/2022 5/2021 – 12/2021	Postdoctoral researcher
Novel coatings for optimization of processes and sources in energy production units (CREATION)	National	3/2021 – 9/2021	Postdoctoral researcher
Sustainable catalytic systems in organic synthesis	National	4/2020 – 7-2021	Postdoctoral researcher

COST Action CA15106 C-H Activation in Organic Synthesis (CHAOS)	EU	6/2019 – 3/2020	Management Committee Member Substitute
IKYDA 2018 collaborative program	Bilateral Greece – Germany (IKYDA)	2 – 20/12/2019	Postdoctoral researcher
CM1202 - Supramolecular photocatalytic water splitting PERSPECTH2O	EU	17 – 28/6/2014	Visiting PhD student in IPHT Jena, Germany
	EU	9 – 10/2013	Visiting PhD student in CEA Grenoble, France

PATENTS

- *Durable bi-functional superhydrophobic and anti-corrosion coating on heat resistant substrates by a soot-assisted sol-gel method: GR1011100B (2025) (HIPO).*