

GEORGIOS C. VOUGIOUKALAKIS

Associate Professor

LABORATORY OF ORGANIC CHEMISTRY, NATIONAL AND KAPODISTRIAN
UNIVERSITY OF ATHENS

Email: vougiouk@chem.uoa.gr

ORCID: 0000-0002-4620-5859

Google scholar:

<https://scholar.google.gr/citations?user=uVguORYAAAAJ&hl=el&oi=ao>

- > 3680 citations (H-index 25)

SCOPUS: <https://www.scopus.com/authid/detail.uri?authorId=6602390166>

Tel.: +30 210 7274 230

WebPage: <http://users.uoa.gr/~vougiouk>

EDUCATION

- 1999** B.Sc. in Chemistry: University of Crete, Department of Chemistry, Heraklion (Greece).
- 2002** M.Sc. in Organic Chemistry: University of Crete, Department of Chemistry, Heraklion (Greece)
- 2004** D.Phil. in Chemistry: University of Crete, Department of Chemistry, Heraklion (Greece).
Research Advisor: Prof. M. Orfanopoulos.

APPOINTMENTS

- 2020 - today** Associate Professor in Organic Chemistry, National and Kapodistrian University of Athens, Department of Chemistry, Laboratory of Organic Chemistry, Athens (Greece)
- 2019** Erasmus+ Teaching Staff Member, Stockholm University, Department of Organic Chemistry, Stockholm (Sweden)
- 2017 –2019** Adjunct Academic Staff in Hellenic Open University, School of Science and Technology
- 2016-2020** Assistant Professor in Organic Chemistry, National and Kapodistrian University of Athens, Department of Chemistry, Laboratory of Organic Chemistry, Athens (Greece)
- 2014-2016** Lecturer in Organic Chemistry, National and Kapodistrian University of Athens, Department of Chemistry, Laboratory of Organic Chemistry, Athens (Greece)
- 2008-2013** Research Associate, National Centre of Scientific Research "Demokritos", IAMPPNM, Department of Physical Chemistry, Athens (Greece)
- 2007-2008** Postdoctoral Scholar, National and Kapodistrian University of Athens, Department of Chemistry, Athens (Greece)
- 2005-2007** Postdoctoral Scholar, California Institute of Technology, Division of Chemistry and Chemical Engineering, Pasadena, California (USA).

RESEARCH FIELDS

- Design, synthesis, and mechanistic studies of organometallic complexes, coordination compounds, organocatalysts, and other catalytic systems that catalyze useful chemical and photochemical transformations.
- Synthesis of nanostructures, typically containing organic sensitizers, coordination

compounds, graphene nanoribbons, fullerenes, and/or carbon nanotubes, mostly related to energy issues and nanotechnology.

- Design, synthesis, and characterization of organic and coordination compounds of biological relevance and potential applications (photodynamic therapy, enzyme inhibition, DNA intercalation, mitochondrial targeting and mitochondrial nanocarriers, endoplasmic reticulum targeting, cellular immunology, etc.).
- Development of synthetic and functionalization methodologies for graphene nanoribbons, carbon nanotubes, fullerene C60, and heterofullerenes.

EDUCATION EXPERIENCE

UNDERGRADUATE COURSES

- "Organic Chemistry I" (National and Kapodistrian University of Athens, Department of Chemistry, 3rd Semester)
- "Organic Chemistry II" (National and Kapodistrian University of Athens, Department of Chemistry, 4th Semester)
- "Contemporary Methods of Organic Synthesis" (National and Kapodistrian University of Athens, Department of Chemistry, 8th Semester)
- "Materials Chemistry" (National and Kapodistrian University of Athens, Department of Chemistry, 7th Semester)
- "Organic Chemistry III Laboratory" (National and Kapodistrian University of Athens, Department of Chemistry, 6th Semester)

POSTGRADUATE COURSES

- "Transition Metal Organometallic Catalysts in Organic Synthesis"
- "Basic Principles of Organic Chemistry for the Synthesis of Well-Defined Macromolecular Architectures"
- "Special Chapters of Catalysts in Organic Synthesis"
- "Organic Transformations in Polymer Synthesis: Principles and Applications"

REVIEWER OF SCIENTIFIC JOURNALS

- Reviewer of 70 international journals

AWARDS AND SCHOLARSHIPS

- "Key Innovator" of "Excellent Innovations" Identified and Highlighted by European Commission's Innovation Radar (June 2022)
- "Key Innovator" of "Excellent Innovations" Identified and Highlighted by European Commission's Innovation Radar (June 2020)
- European Commission's Innovation Radar Prize 2019 for "Innovative Science" Awarded to Project LUMIBLAST (Sept. 2019)
- Greek Representative in the 2016 Young Investigator Workshop of EuCheMs (Sept. 2016 - Invited)
- Foundation for Education and European Culture Research Scholarship (Sept. 2012 – Aug. 2013)
- Greek Representative in the 2013 Young Investigator Workshop of EuCheMs (July 2013 - Invited)
- Commendation from the Academy of Athens (2012)
- Foundation for Education and European Culture Research Scholarship (Sept. 2011 – Aug. 2012)
- Alexander Onassis Foundation Scholarship for Participation in the 60th Meeting of Nobel-Laureates in Lindau (Germany) as Young Scientist (June - July 2010)
- Greek National Scholarships Foundation Research Fellowship (Feb. 2009 – Jan. 2010)
- Research Scholarship from Research and Technology Greek Secretariat (Oct. 2008 – Sept. 2012)
- Marie Curie Outgoing International Fellowship (Oct. 2005 – Oct. 2008)
- Leonidas Zervas Foundation Award for Young Researchers (2004)
- Socrates / Erasmus Fellowship (May 2003 – Aug. 2003)

ADDITIONAL INFORMATION

- 77 publications in journals with peer review
- 106 conference presentations
- 4 invited book chapters in collective volumes
- Supervision of doctoral thesis: 10 (3 finished, 7 ongoing)
- Supervision of graduate students: 26 (18 finished, 8 ongoing)
- Supervision of undergraduate students: 24 (finished)
- Reviewer in Research Programs at European Commission (ERC, Marie Curie, Horizon2020, FP7), French National Research Agency, Portuguese Foundation for Science and Technology, Italian Ministry for University and Research, European Cooperation in Science and Technology, Cyprus Research Promotion Foundation, Science Foundation of the Republic of Serbia, Romanian Executive Agency for Higher Education, The Qatar National Research Fund, Research and Technology Greek Secretariat, King Fahd University of Petroleum and Research, National Technical University of Athens, University of Crete.

RESEARCH GRANTS

- Understanding interaction light – biological surfaces: possibility for new electronic materials and devices - PhoBioS (COST Action CA21159 funded by the intergovernmental framework for European Cooperation in Science and Technology).
- National Contribution-Funding from the Greek General Secretariat for Research and Technology (GSRT) as reward for the participation in competitive research programs of European Innovative Industrial Materials with Advanced Multifunctionality, Prolonged Lifetime and Improved Performance Against Environmental Conditions for Versatile Protective Equipment – PROTECT (Operational Program Competitiveness, Entrepreneurship and Innovation, under the call “Research-Create-Innovate”).
- Advancing the Sustainable Nature of Catalysis: New Synthetic Methodologies and Valuable Organic Architectures - SUSTAIN (University Professors and Researchers Funding Program of the Hellenic Foundation for Research and Innovation).
- National Contribution-Funding from the Greek General Secretariat for Research and Technology (GSRT) as reward for the participation in competitive research programs of European Union.
- Sustainable Catalytic Systems in Organic Synthesis (Operational Program: Human Resources Development, Education and Lifelong Learning, financed by the Greek Ministry of 32 Economy and Development and the European Commission).
- Cobalt and Nickel Complexes with NHC Ligands: Electrochemistry and (Electro)catalysis (Programme for the Promotion of the Exchange and Scientific Cooperation Between Greece and Germany – IKYDA2018).
- A paradigm shift in cancer therapy - using mitochondria-powered chemiluminescence to non-invasively treat inaccessible tumours - LUMIBLAST (Future and Emerging Technologies call - FETOPEN - of the Horizon 2020 Programm funded by European Commission).
- C-H Activation in Organic Synthesis - CHAOS (COST Action CA15106 funded by the intergovernmental framework for European Cooperation in Science and Technology).
- Tailor-made Metal-Organic Frameworks as Trace Gas Detectors for Food Quality Control (Greek-German bilateral collaboration program financed by the Greek Ministry of Education and the European Commission).
- Catalytic Routines for Small Molecule Activation - CARISMA (COST Action CM1205 funded by the intergovernmental framework for European Cooperation in Science and Technology). Participation as Management Committee Member.
- Optimal heterojunction organic photovoltaics bearing self-organized active layers (Greek-French bilateral collaboration program Platon financed by the Greek Ministry of Education and the European Commission).
- Advanced materials and devices for energy collection and administration (Research Program “KRIPIS” financed by the Greek Ministry of Education and the European Commission).
- Organocatalysis - ORCA (COST Action CM0905 funded by the intergovernmental framework for European Cooperation in Science and Technology).
- Dye sensitized solar cells with enhanced stability - DESTINY (Marie Curie Initial Training Network

- financed by the European Commission: FP7-PEOPLE-2012).
- Advanced materials for highly efficient dye-sensitized solar cells – AdMatDSC (Research Program “ΑΡΙΣΤΕΙΑ” - EXCELLENCE - financed by the Greek Ministry of Education and the European Commission).
 - Novel electrolytes for dye-sensitized solar cells: Synthesis and utilization of innovative cobalt-based redox couples (Foundation for Education and European Culture Research Scholarship).
 - Study of novel chemiluminescent systems and elaboration of their applications on the development of new automated analytical methods for the determination of food constituents, environmental pollutants, and active pharmaceutical compounds - LUMEN (Research Program “Thales” financed by the Greek Ministry of Education and the European Commission).
 - Innovative materials for nanocrystalline solar cells - NANOSOLCEL (Research Program “Thales” financed by the Greek Ministry of Education and the European Commission).
 - Synthesis, characterization, and evaluation of the efficiency of new ruthenium photosensitizers in dye-sensitized solar cells (Foundation for Education and European Culture Research Scholarship).
 - Sensitizer activated nanostructured solar cells - SANS (NMP Collaborative Project financed by the European Commission: FP7-NMP-2009 SMALL-3).
 - Development of novel asymmetric titanocene(IV) catalysts: Applications in the coordination polymerization of isocyanates (Greek National Scholarships Foundation Research Fellowship).
 - Development of new catalysts for olefin metathesis: Applications in the synthesis of new polymeric systems - OLEFINMETCAT (Marie Curie Outgoing International Fellowship financed by the European Commission).
 - Synthesis and photochemical studies of novel fullerene C60 adducts (Research Program “ΠΥΘΑΓΟΡΑΣ II” financed by the Greek Ministry of Education). Participation as Researcher.

SELECTED PUBLICATIONS

- Tzouras, N. V.; Gobbo, A.; Pozsoni, N. B.; Chalkidis, S. G.; Bhandary, S.; Van Hecke, K.; Vougioukalakis, G. C.;* Nolan, S. P.* *Chem. Commun.* **2022**, *58*, 8516-8519. “Hydrogen bonding-enabled gold catalysis: ligand effects in gold-catalyzed cycloisomerizations in hexafluoroisopropanol (HFIP)”
- Zorba, L. P.; Egana, E.; Gomez-Bengoa, E.; Vougioukalakis, G. C.* *ACS Omega* **2021**, *6*, 23329-23346. “Zinc Iodide Catalyzed Synthesis of Trisubstituted Allenes from Terminal Alkynes and Ketones”
- Vasilopoulou, M.;* Rashid bin Mohd Yusoff, A.;* Daboczi, M.; Conforto, J.; Ximim Gavim, A. E.; Jose da Silva, W.; Gerniski Macedo, A.; Soultati, A.; Pistolis, G.; Schneider, F. K.; Dong, Y.; Jacoutot, P.; Rotas, G.; Jang, J.; Vougioukalakis, G. C.; Chochos, C. L.;* Kim, J. S.; Gasparini, N.* *Nature Commun.* **2021**, *12*, 4868. “High efficiency blue organic light-emitting diodes with below-bandgap electroluminescence”
- Mikroulis, T.; Consuelo Cuquerella, M.; Giussani, A.; Pantelia, A.; Rodriguez-Muniz, G. M.; Rotas, G.; Roca-Sanjuan, D.;* Miranda, M. A.;* Vougioukalakis, G. C.* *J. Org. Chem.* **2021**, *86*, 11388-11398. “Building a Functionalizable, Potent Chemiluminescent Agent: A Rational Design Study on 6,8-Substituted Luminol Derivatives”
- Tonis, E.; Stein, F.; Stamatopoulos, I. K.; Stubbe, J.; Zarkadoulas, A.; Sarkar, B.;* Vougioukalakis, G. C.* *Synlett* **2021**, *32*, 616-620. “A Pd-free Sonogashira Coupling Protocol Employing an In-Situ-Prepared Copper/Chelating 1,2,3-Triazolylidene System”
- Zorba, L. P.; Vougioukalakis, G. C.* *Coord. Chem. Rev.* **2021**, *429*, 213603. “The Ketone-Amine-Alkyne (KA²) Coupling Reaction: Transition Metal-Catalyzed Synthesis of Quaternary Propargylamines”
- Neofotistos, S. P.; Tzouras, N. V.; Pauze, M.; Gomez-Bengoa, E.; Vougioukalakis, G. C.* *Adv. Synth. Catal.* **2020**, *362*, 3872-3885. “Manganese-Catalyzed Multicomponent Synthesis of

Tetrasubstituted Propargylamines: System Development and Theoretical Study”

- Tzouras, N. V.; Neofotistos, S. P.; Vougioukalakis, G. C.* ACS Omega **2019**, 4, 10279-10292. “Zn-Catalyzed Multicomponent KA^2 Coupling: One-Pot Assembly of Propargylamines Bearing Tetrasubstituted Carbon Centers”
- Papastavrou, A. T.; Pauze, M.; Gomez-Bengoa, E.; Vougioukalakis, G. C.* ChemCatChem **2019**, 11, 5379-5386. “Unprecedented Multicomponent Organocatalytic Synthesis of Propargylic Esters via CO_2 Activation” Part of a Special Issue entitled “New Concepts in Homogeneous Catalysis”, showcasing “some of the best research at the frontiers of homogeneous catalysis” – Guest Editors: Lutz Ackermann and Jean-Baptiste Sortais. Featured in the “Organocatalysis” section of the “Hot Topics” list of Wiley-VCH. Among the 10% of the Most Downloaded Papers in recent publications history (April 2020).
- Liori, A.; Stamatopoulos, I. K.; Papastavrou, A. T.; Pinaka, A.; Vougioukalakis, G. C.* Eur. J. Org. Chem. **2018**, 2018, 6134-6139. “A Novel, Sustainable, User-Friendly Protocol for the Pd-Free Sonogashira Coupling Reaction” Invited Article (Invited Author). 3rd “Most Accessed” article (1st “Most Accessed” research article) of Eur. J. Org. Chem. in December 2018. Part of a Special Issue entitled “C-H Activation in Organic Synthesis”. Among the 10% of the Most Downloaded Papers in recent publications history (April 2020).