

ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

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Education

Ph.D. in Organic Chemistry, Department of Chemistry, University of Crete, Greece (1997).

Diploma in Chemistry, Department of Chemistry, University of Crete, Greece (1992).

Professional Experience & Appointments

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| 04/2021 – present | Director TPCI, NHRF, Athens, Greece. |
| 04/2021 – present | Member of the Board of Directors NHRF, Athens, Greece |
| 11/2020 – present | Member of the Sectorial Scientific Council (ΤΕΣ) of Physical Sciences & Mathematics of the National Council of Research, Technology and Innovation (ΕΣΕΤΕΚ), Greece. |
| 12/2012 – present | Director of Research, TPCI, NHRF, Athens, Greece |
| 07/2006 – 11/2012 | Senior Researcher, TPCI, NHRF, Athens, Greece. |
| 12/2004 – 06/2006 | Collaborating Researcher, TPCI, NHRF, Athens, Greece. |
| 01/2002 – 11/2004 | EC Postdoctoral Fellow & Research Associate, Department of Pharmaceutical Sciences, University of Trieste, Italy. |
| 12/1999 – 11/2001 | JSPS Postdoctoral Fellow, Department of Chemistry, Nagoya University, Japan. |
| 12/1997 – 11/1999 | EC Marie-Curie Postdoctoral Fellow, School of Chemistry, Physics and Environmental Sciences, Sussex University, United Kingdom. |

Main Research Interests

- Chemistry of carbon-based nanostructured materials and two-dimensional analogues of graphene.

- Fullerenes, nanotubes, graphene, diamond, transition metal dichalcogenides.
- Nanoparticles – metallic, semiconducting.
- Chemical functionalization.
- All-organic electron donor-acceptor and organic-inorganic hybrid nanostructured materials.
- Supramolecular chemistry and self-assembly.
- Spectroscopic, thermal and morphological characterization of organic compounds and nanostructured materials.
- Electronic, optical, photophysical and electrochemical properties of organic compounds and nanostructured materials.
- Solar energy conversion, charge-transfer, solar & photoelectrochemical cells, sensors, water splitting & hydrogen evolution, photocatalysis, electrocatalysis.

External Funding

Coordinator, principal investigator (EU-FP7, H2020, EURYI-ESF/EUROHORCS, JSPS, Chinese Academy of Sciences) and participant (EU-FP6, H2020, COST) in numerous competitive international and national (GSRT, HFRI, NSRF 2007-2013, 2014-2020) research projects in collaboration with academic and industrial partners.

Conferences & Invited Talks

- Over 260 announcements at international scientific conferences, universities and research centres, including plethora of invited lectures.
- Co-organizer European Materials Research Society E-MRS 2022 Spring Meeting, Symposium G "*Chemical functionalization of 2D materials*", 2022, Strasbourg, France.
- Organizer and chairman of the "Fullerene Silver Anniversary Symposium – FSAS2010", 4-10 October, 2010, Crete, Greece.
- Organizer and chairman of the "International Conference on Carbon Nanostructured Materials - Cnano'09", 4-8 October, 2009, Santorini, Greece.
- International Scientific Committee Member, Local Organizing Committee Member and International Advisory Committee Member in numerous international conferences.

Teaching Activities

- Course in Laboratory Techniques for Nanomaterials: "*Photoluminescence*", Graduate Program, Department of Applied Mathematics and Physical Sciences, National Technical University of Athens, Greece (2018-present)
- Graduate course in Organic Chemistry: "Carbon-based nanostructured materials", Chemistry Department, University of Athens, Greece (2010-2018).

- Nanodema Summer School: "Multifunctional carbon nanostructures", Departments of Chemistry, Physics, Materials Science and Engineering, University of Patras, Greece (2012).
- Frontiers in Science & Technology of Carbon Nanomaterials, International Summer School: (a) "Azafullerenes – Synthesis, properties and chemistry", (b) "Carbon nanohorns functionalization", Krutyn, Poland (2012).
- Supervision of Diploma, M.Sc. and Ph.D. students as well as postdoctoral researchers.

Research Management & Evaluation

- Director of TPCI, NHRF (04/2021 – present).
- Member of the Board of Directors of NHRF (04/2021 – present).
- Member of the Sectorial Scientific Council (ΤΕΣ) of Physical Sciences & Mathematics of the National Council of Research, Technology and Innovation (ΕΣΕΤΕΚ), Greece (11/2020 – present).
- Alternate Member of the General Assembly of the Hellenic Foundation for Research & Innovation, Athens, Greece (2018-2021).
- Member of Scientific Council of TPCI, NHRF (2009-2018).
- Regular reviewer for a plethora of international journals in the fields of chemistry and materials science.
- Regular reviewer for a plethora of national and international research proposals.

Professional Affiliations & Activities

- Advisory Board Member "*Royal Society Open Science*" (*Chemistry Section*), Royal Society of Chemistry (2020-present)
- Editorial Board Member "Chemistry A European Journal", Wiley (2014-present)
- Editorial Board Member "*Nanomaterials*", MDPI (2019-present)
- Editorial Board Member "Chemistry of Graphene", Versita (2012-2013)
- Editorial Board Member "Current Medicinal Chemistry", Bentham Science (2005-present)
- Editorial Board Member "Medicinal Chemistry", Bentham Science (2004-2015)
- Regional Editor "Mini-Reviews in Medicinal Chemistry", Bentham Science (2004-2015)
- Management Committee Member and National Representative for COST Action MP0901 "Designing Novel Materials for Nanodevices - from Theory to Practice (NanoTP)" (2009-2014)
- International Partner of GDR-I (Group-de-Research) Scientific Coordination Network "Graphene and Nanotubes: Science and Applications" (2009-2016)
- International Partner of GDR-I (Group-de-Research) Scientific Coordination Network "Graphene & Co" (2017-present)

- Scientific Council Member of TPCI (2009-2018)
- Association of Greek Chemists Member (1992-present)

Awards & Distinctions

- Chemistry Europe Fellow Class 2018/2019
- Invited Fellowship for Long-term Research in Japan, by the Japan Society for the Promotion of Science (2013-2014, 2018)
- Visiting Professorship for Senior International Scientists, by the Chinese Academy of Sciences (2011-2012)
- European Young Investigator (EURYI) Award, by EUROHORCs / ESF (2004)

Publications

Over 260 original research papers in peer-reviewed journals, including 30 invited review and highlight articles, 21 publications in refereed conference proceedings, 9 chapters in books, 1 book edited, 1 book-monograph and 3 patents (American, International and European). More than 15,000 citations and h-index = 51 (Google Scholar, 4/2021).

Selected Recent Publications

1. "Unveiling the photoinduced electron-donating character of MoS₂ in covalently linked hybrids featuring perylenediimide", I. K. Sideri, Y. Jang, J. Garcés-Garcés, A. Sastre-Santos, R. Canton-Vitoria, R. Kitaura, F. Fernández-Lazaro, F. D'Souza, N. Tagmatarchis, [Angew. Chem. Int. Ed. 60, 9120 \(2021\)](#).
2. "Noble-metal-free doped carbon nanomaterial electrocatalysts", I. K. Sideri, N. Tagmatarchis, [Chem. Eur. J. 26, 15397 \(2020\)](#).
3. "Covalently functionalized layered MoS₂ supported Pd nanoparticles as highly active oxygen reduction electrocatalyst", D. K. Perivoliotis, Y. Sato, K. Suenaga, N. Tagmatarchis, [Nanoscale 12, 18278 \(2020\)](#).
4. "Laser-deposited carbon aerogel derived from graphene oxide enables NO₂-selective parts-per-billion gas sensing", S. Nufer, P. J. Lynch, M. J. Large, S. P. Ogilvie, J. P. Salvage, M. Pelaez-Fernandez, T. Waters, I. Jurewicz, E. Munoz, R. Arenal, A. M. Benito, W. K. Maser, N. Tagmatarchis, C. Ewels, A. Brunton, A. B. Dalton, [ACS Appl. Mater. Interfaces 12, 39541 \(2020\)](#).
5. "Covalently functionalized MoS₂ with dithiolenes", I. K. Sideri, R. Arenal, N. Tagmatarchis, [ACS Mater. Lett. 2, 832 \(2020\)](#).
6. "Functionalized graphene and targeted applications – Highlighting the road from chemistry to applications", A. Stergiou, R. Canton-Vitoria, M. N. Psarrou, S. P. Economopoulos, N. Tagmatarchis, [Prog. Mater. Sci. 114, 100683 \(2020\)](#).
7. "Preparation, photophysical and electrochemical evaluation of an azaborondipyrromethene/zinc porphyrin/graphene supramolecular

- nanoensemble”, G. Rotas, M. B. Thomas, R. Canton-Vitoria, F. D’Souza, N. Tagmatarchis, [Chem. Eur. J. 26, 6652 \(2020\)](#).
8. “Ping-pong intercomponent energy transfer in covalently linked porphyrin-MoS₂ architectures”, R. Canton-Vitoria, T. Scharl, A. Stergiou, A. Cadranel, R. Arenal, D. M. Guldi, N. Tagmatarchis, [Angew. Chem. Int. Ed. 59, 3976 \(2020\)](#).
 9. “A Long-lived azafullerenyl radical stabilized by supramolecular shielding with a [10]cycloparaphenylene”, A. Stergiou, J. Rio, J. H. Griwatz, D. Arcon, H. A. Wegner, C. P. Ewels, N. Tagmatarchis, [Angew. Chem. Int. Ed. 58, 17745 \(2019\)](#).
 10. “Excited state charge transfer in covalently functionalized MoS₂ with a zinc phthalocyanine donor-acceptor hybrid”, R. Canton-Vitoria, H. B. Gobeze, V. M. Blas-Ferrando, J. Ortiz, Y. Jang, F. Fernandez-Lazaro, A. Sastre-Santos, Y. Nakanishi, H. Shinohara, F. D’Souza, N. Tagmatarchis, [Angew. Chem. Int. Ed. 58, 5712 \(2019\)](#).
 11. “Core-shell Pd@M (M=Ni, Cu, Co) nanoparticles/graphene ensembles with high mass electrocatalytic activity toward the oxygen reduction reaction”, D. Perivoliotis, Y. Sato, K. Suenaga, N. Tagmatarchis, [Chem. Eur. J. 25, 11105 \(2019\)](#).
 12. “(Photo)electrocatalysis of molecular oxygen reduction by S-doped graphene decorated with a star-shaped oligothiophene”, A. Stergiou, D. Perivoliotis, N. Tagmatarchis, [Nanoscale 11, 7335 \(2019\)](#).
 13. “Integrating water-soluble polythiophene with transition metal dichalcogenides for managing photoinduced processes”, R. Canton-Vitoria, E. Istif, J. Hernandez-Ferrer, A. M. Benito, W. K. Maser, N. Tagmatarchis, [ACS Appl. Mater. Interfaces 11, 5947 \(2019\)](#).
 14. “Template synthesis of defect-rich MoS₂-based assemblies as electrocatalytic platforms for hydrogen evolution reaction”, A. Kagkoura, I. Tzanidis, V. Dracopoulos, N. Tagmatarchis, D. Tasis, [Chem. Commun. 55, 2078 \(2019\)](#).
 15. “Interfacing transition metal dichalcogenides with carbon dots for managing photoinduced energy and charge-transfer processes”, L. Vallan, R. Canton-Vitoria, H. B. Gobeze, Y. Jang, R. Arenal, A. M. Benito, W. K. Maser, F. D’Souza, N. Tagmatarchis, [J. Am. Chem. Soc. 140, 13488 \(2018\)](#).
 16. “Supramolecular-enhanced charge-transfer within entangled polyamide chains as origin of the universal blue fluorescence of polymer carbon dots”, L. Vallan, E. P. Urriolabeitia, F. Ruiperez, J. Mattin Matxain, R. Canton-Vitoria, N. Tagmatarchis, A. M. Benito, W. K. Maser, [J. Am. Chem. Soc. 140, 12862 \(2018\)](#).
 17. “Sulfur-doped graphene-supported nickel-core palladium-shell nanoparticles as efficient oxygen reduction and methanol oxidation electrocatalyst”, D. K.

- Perivoliotis, Y. Sato, K. Suenaga, N. Tagmatarchis, [ACS Appl. Energy Mater. 1, 3869 \(2018\)](#).
18. "Nitrogen-doped silver-nanoparticle-decorated transition-metal dichalcogenides as surface-enhanced Raman scattering substrates for sensing polycyclic aromatic hydrocarbons", M. A. Koklioti, C. Bittencourt, X. Noirfalise, I. Saucedo-Orozco, M. Quintana, N. Tagmatarchis, [ACS Appl. Nano Mater. 1, 3625 \(2018\)](#).
 19. "Electrostatic association of ammonium-functionalized layered-transition-metal dichalcogenides with an anionic porphyrin", R. Canton-Vitoria, C. Stangel, N. Tagmatarchis, [ACS Appl. Mater. Interfaces 10, 23476 \(2018\)](#).
 20. "Electronic communication between two [10]cycloparaphenylenes and bisazafullerene (C₅₉N)₂ induced by cooperative complexation", J. Rio, S. Beck, G. Rotas, S. Ahles, D. Jacquemin, N. Tagmatarchis, C. Ewels, H. A. Wegner, [Angew. Chem. Int. Ed. 57, 6930 \(2018\)](#).