

ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

Nikos Tagmatarchis

Director of Research
Theoretical and Physical Chemistry Institute

Phone: + 30 210 7273835

Fax: + 30 210 7273794

E-mail: tagmatar@eie.gr



Education

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

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

Professional Experience & Appointments

- | | |
|-------------------|----------------------------------------------------------------------------------------------------------------------|
| 12/2012 – present | Director of Research, TPCI, NHRF, Athens, Greece. |
| 07/2006 – 11/2012 | Senior Researcher, TPCI, NHRF, Athens, Greece. |
| 12/2004 – 05/2006 | Collaborating Researcher, TPCI, NHRF, Athens, Greece. |
| 01/2002 – 11/2004 | Research Associate, Department of Pharmaceutical Sciences, University of Trieste, Italy. |
| 12/1999 – 11/2001 | Research Associate, Department of Chemistry, Nagoya University, Japan. |
| 12/1997 – 11/1999 | Postdoctoral Researcher, School of Chemistry, Physics and Environmental Sciences, Sussex University, United Kingdom. |

Main Research Interests

- Carbon-based nanostructured multifunctional materials – fullerenes, nanotubes, graphene, diamondoids.
- Nanoparticles – metallic and semiconducting.

- Supramolecular chemistry and self-assembly.
- Chemical functionalization, all-organic electron donor-acceptor and organic-inorganic hybrid materials.
- Spectroscopic, thermal and morphological characterization.
- Electronic, optical, photophysical and electrochemical properties.
- Solar energy conversion, photovoltaic/solar and photoelectrochemical cells, water splitting and H₂ evolution, catalysis and photocatalysis, non linear optics.

External Funding

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

Conferences & Invited Talks

- Over 200 announcements in international scientific conferences including plethora of invited lectures.
- Organizer and chairman of the "International Conference on Carbon Nanostructured Materials - Cnano'09", 4-8 October, 2009, Santorini, Greece.
- Organizer and chairman of the "Fullerene Silver Anniversary Symposium – FSAS2010", 4-10 October, 2010, Crete, Greece.
- Advisory Committee Member of the Workshop "Nanomaterials, Nanofabrication, Nanoengineering and Nanoconstruction" at the "International Conference on Nanosciences & Nanotechnologies" (annually since 2011), Thessaloniki, Greece.
- Local Committee Member of the International Conference "*graphene Hellas – grapHEL*", 27-30 September, 2012, Myconos, Greece.
- Advisory Committee Member of the "5th International Conference on Micro-Nanoelectronics, Nanotechnologies and MEMs – Micro&Nano2012", 7-10 October 2012, Crete, Greece.
- Local Committee Member of the "Joint European Magnetic Symposia – JEMS 13", 25-30 August 2013, Rhodes, Greece.

Teaching Activities

- Graduate course in Organic Chemistry: "Carbon-based nanostructured materials", Chemistry Department, University of Athens, Greece (since 2010).
- 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.

Professional Affiliations & Activities

- Editorial Board Member "Chemistry A European Journal" published by Wiley (2014)
- Editorial Advisory Board Member "Chemistry of Graphene" published by Versita (since 2012)
- Editorial Board Member "Current Medicinal Chemistry", "Medicinal Chemistry", and "Mini-Reviews in Medicinal Chemistry" published by Bentham Science (since 2004)
- Management Committee Member and National Representative for COST Action MP0901 "Designing Novel Materials for Nanodevices - from Theory to Practice (NanoTP)" (2009-2014)
- Invited International Partner of GDR-I (Group-de-Research) Scientific Coordination Network "Science and Applications of Graphene and Nanotubes" (since 2008)
- Scientific Advisory Council Member of TPCI (since 2010)
- Reviewer for scientific research proposals (EU-FP7, American Chemical Society Petroleum Research Fund, Research Promotion Foundation of Cyprus, European Science Foundation, GSRT)
- Reviewer for scientific research journals in the fields of chemistry and materials science
- Association of Greek Chemists Member (since 1992)

Awards & Distinctions

- Invited Fellowship for Long-term Research in Japan, by the Japan Society for the Promotion of Science (2013-2014)
- Visiting Professorship for Senior International Scientists, by the Chinese Academy of Sciences (2011-2012)
- European Young Investigator (EURYI) Award, by EUROHORCs / ESF (2004)
- Nominate scientists for “Nobel Awards in Chemistry” (annually since 2007, invited by “The Nobel Foundation”).

Publications

Over 170 original research papers in peer-reviewed journals, 12 invited review and highlight articles, 23 publications in refereed conference proceedings, 5 chapters in books, 1 book edited, 1 book-monograph and 3 patents (American, International and European). More than 5700 citations and h-index = 32.

Selected Recent Publications

1. “Covalent functionalization of exfoliated graphene”, S. P. Economopoulos and N. Tagmatarchis, [Chem. Eur. J. 19, 12930 \(2013\)](#).
2. “A corrole-azafullerene dyad: Synthesis, characterization, electronic interactions and photoinduced charge separation”, G. Rotas, G. Charalambidis, L. Glatzel, D. Gryko, A. Kahnt, A. G. Coutsolelos and N. Tagmatarchis, [Chem. Commun. 49, 9128 \(2013\)](#).
3. “Rational design on n-type organic materials for high performance organic photovoltaics”, C. L. Chochos, N. Tagmatarchis and V. Gregoriou, [RSC Advances 3, 7160 \(2013\)](#).
4. “Benzyne cycloaddition on carbon nanohorns”, D. Chronopoulos, N. Karousis, T. Ichihashi, M. Yudasaka, S. Iijima and N. Tagmatarchis, [Nanoscale 5, 6388 \(2013\)](#).
5. “Carbon nanohorn – porphyrin dimer hybrid material for enhancing photo-energy conversion”, G. Pagona, G. Zervaki, A. S. D. Sandanayaka, O. Ito, G. Charalambidis, T. Hasobe, A. G. Coutsolelos and N. Tagmatarchis, [J. Phys. Chem. C 116, 9439 \(2012\)](#).
6. “Azafullerene C₅₉N – phthalocyanine dyad: Synthesis, characterization and photoinduced electron transfer”, G. Rotas, J. Ranta, A. Efimov, M. Niemi, H. Lemmetyinen, N. Tkachenko and N. Tagmatarchis, [Chem. Phys. Chem. 13, 1246 \(2012\)](#).

7. "Microwave-assisted functionalization of carbon nanohorns via [2+1] nitrenes cycloaddition", N. Karousis, T. Ichihashi, M. Yudasaka, S. Iijima and N. Tagmatarchis, [Chem. Commun. 47, 1604 \(2011\)](#).
8. "Graphene with covalently linked porphyrin antennae: Synthesis, characterization, and photophysical properties", N. Karousis, A. S. D. Sandanayaka, T. Hasobe, S. P. Economopoulos, E. Sarantopoulou and N. Tagmatarchis, [J. Mater. Chem. 21, 109 \(2011\)](#).
9. "Exfoliation and chemical modification using microwave irradiation affording highly functionalized graphene", S. P. Economopoulos, G. Rotas, Y. Miyata, H. Shinohara and N. Tagmatarchis, [ACS Nano 4, 7499 \(2010\)](#).
10. "Microwave assisted covalent functionalization of C₆₀@SWCNT peapods", N. Karousis, S. P. Economopoulos, Y. Iizumi, T. Okazaki, Z. Liu, K. Suenaga and N. Tagmatarchis, [Chem. Commun. 46, 9110 \(2010\)](#).
11. "Current progress on the chemical modification of carbon nanotubes", N. Karousis, N. Tagmatarchis and D. Tasis, [Chem. Rev. 110, 5366 \(2010\)](#).
12. "Carbon nanotubes decorated with palladium nanoparticles: Synthesis, characterization and catalytic activity", N. Karousis, G. -E. Tsotsou, F. Evangelista, P. Rudolf, N. Ragoussis and N. Tagmatarchis, [J. Phys. Chem. C 112, 13463 \(2008\)](#).
13. "Alignment of carbon nanotubes in weak magnetic fields", J. Tumpane, N. Karousis, N. Tagmatarchis and B. Norden, [Angew. Chem. Int. Ed. 47, 5148 \(2008\)](#).
14. "Azafullerene encapsulated within single-walled carbon nanotubes", G. Pagona, G. Rotas, A. N. Khlobystov, T. W. Chamberlain, K. Porfyrakis and N. Tagmatarchis, [J. Am. Chem. Soc. 130, 6062 \(2008\)](#).
15. "TerpyridineCu^{II}-carbon nanohorns: Metallo-nanocomplexes for photoinduced charge-separation", G. Rotas, A. S. D. Sandanayaka, N. Tagmatarchis, T. Ichihashi, M. Yudasaka, S. Iijima and O. Ito, [J. Am. Chem. Soc. 130, 4725 \(2008\)](#).