

PERSONAL INFORMATION

Giannakopoulou Tatiana

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RESEARCH EXPERIENCE

01/07/2000-today Associate researcher at the Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Athens
1985-1996 Scientific researcher at the Laboratory of Polarimetry, Radiophysics department, Kyiv State University Taras Shevchenko

PROFILE

Graphene and graphene analogues (2D materials) such as SiC, hBN - for nanoelectronic applications, g-C₃N₄, MXene as well as carbon nanotubes - for applications in supercapacitors, microwave absorption and shielding materials, for enhancing mechanical properties of polymers and building materials. Conversion of CO₂ gas into nanocarbons. Inorganic and organic semiconductors such as TiO₂, Ag₃PO₄, g-C₃N₄, their heterostructures with other nanomaterials for photocatalytic/electrocatalytic applications (decomposition of gaseous pollutants, production of H₂ and hydrocarbons). Optical properties of thin films of semiconductors, modelling of their optical constant. Metamaterials.

PARTICIPATION in PROJECTS

Participation in national and international projects such as "Sol-gel coatings on metal and ceramic surfaces (E10293)", "Development of metamaterials at microwave frequencies (E11483)", "Development of nanostructured materials active in visible light for water treatment (E11110)", "ARISTON - Development of nanofunctional surfaces for a safer and cleaner environment (E11637)", "NanoMAT - Development of nanocomposite and nanofunctional materials (11947)", "AUTOSUPERCAP - Development of high energy/ high power density supercapacitors for automotive applications (E11628)", "Photoactive TiO₂/graphene paints for air purification (E-11787)", "Advanced materials and devices for energy collection and management (E11812)", "Polymer/graphene composites with enhanced gas barrier properties (E11854)", "2D EMI SHIELD - 2D Lightweight Materials and Coatings for Electromagnetic Interference Shielding Applications (E12338)", "2D PHOTOSTRUCTURE - 2D photocatalytic heterostructures for oxidation of gaseous pollutants (E12255)", "APOGEION - Development of photoactive surfaces with antibacterial and antiviral activity for a clean and safe environment (E12580)".

Currently: postdoctoral researcher, project "2D-ENGINE - Engineering of new 2D materials phases not existing in Nature (E-12669)"

EDUCATION

1993 PhD Diploma, Radiophysics department of Kyiv State University Taras Shevchenko
PhD thesis: "Polarization properties of the diffusely scattered coherent electromagnetic radiation".
1980-1985 Diploma in Physics, Radiophysics department of Kyiv State University Taras Shevchenko, specialty: radiophysics and electronics (including quantum radiophysics)
Diploma grade: 8.85

PERSONAL SKILLS

Foreign languages Greek, English,
Russian, Ukrainian (mother tongues)

Job-related skills Reviewer in Scientific Journals: J. Magn. Mater., IEEE Trans. Ant. Propag., J. Appl. Phys., J. Hazard. Mater., Europhys. Lett., Mater. Lett., Catalysis Lett., J. Photochem. Photobiol., etc.

Digital competence Word, Excel, Powerpoint, Origin, Internet, FORTRAN

Technical skills XRD, FT-IR, UV-Vis, Raman spectroscopies, BET, cyclic voltammetry and electrochemical impedance spectroscopy, SUNTEST accelerated weathering instrument, photocatalytic NO_x oxidation installation, and contact angle device.
Electrochemical deposition, dip and spin-coating deposition techniques. chemical vapor deposition (CVD)

ADDITIONAL INFORMATION

Publications in international scientific journals with reviewers	71
Presentations at international and national conferences with reviewers	> 60
Citations 4055, h-index 34 (Google Scholar 22-12-2025)	

HONOURS / AWARDS

Best Poster Award for poster presentation at 2nd International Workshop on Graphene and C₃N₄-based Photocatalysts, 24-27 March 2017, Wuhan, China (“Photoreduction of electrochemically deposited graphene films: solar vs UV and pre vs post-photoreduction” by T. Giannakopoulou, N. Todorova, C. Trapalis)

Image selected as Cover Page Image of Polymer International (Volume 66, Issue 12, December 2017) from the publication “Mechanical Performance of Re-extruded and Aged Graphene / Polypropylene Nanocomposites”, Polymer International 66 (2017) 1716-1724.

SELECTED PUBLICATIONS

- **T. Giannakopoulou**, N. Todorova, E. Sakellis, N. Plakantonaki, C. Trapalis, Controlling the morphology of nanocarbons produced by CO₂ molten salt electrolysis: Critical role of the electrode material, *Carbon* 238 (2025) 120179.
- **T. Giannakopoulou**, N. Todorova, N. Plakantonaki, M. Vagenas, E. Sakellis, D. Papargyriou, M. Katsiotis, C. Trapalis, CO₂-derived nanocarbons with controlled morphology and high specific capacitance, *ACS Omega* 8 (2023) 29500–29511.
- **T. Giannakopoulou**, N. Todorova, N. Plakantonaki, M. Vagenas, I. Papailias, E. Sakellis, C. Trapalis, CO₂ metallothermic conversion to valuable nanocarbons by mixed Mg/Ca reductant, *J. CO₂ Util.* 65 (2022) 102200.
- **T. Giannakopoulou**, G. Pilatos, N. Todorova, N. Boukos, T. Vaimakis, I. Karatasios, C. Trapalis, Effect of processing temperature on growing bamboo-like carbon nanotubes by chemical vapor deposition, *Mater. Today Chem.* 19 (2021) 100388.
- **T. Giannakopoulou**, N. Todorova, A. Erotokritaki, N. Plakantonaki, A. Tsetsekou, C. Trapalis, Electrochemically deposited graphene oxide thin film supercapacitors: Comparing liquid and solid electrolytes, *Appl. Surf. Sci.* 528 (2020) 146801.
- **T. Giannakopoulou**, I. Papailias, N. Todorova, N. Boukos, Y. Liu, J. Yu, C. Trapalis Tailoring the energy band gap and edges’ potentials of g-C₃N₄/TiO₂ composite photocatalysts for NO_x removal, *Chem. Eng. J.* 310 (2017) 571–580.
- **T. Giannakopoulou**, N. Todorova, M. Giannouri, Jiaguo Yu, C. Trapalis. Optical and photocatalytic properties of composite TiO₂/ZnO thin films, *Catal. Today* 230 (2014) 174–180.
- **T. Giannakopoulou**, N. Todorova, P. Osiceanu, A. Lagoyannis, T. Vaimakis, C. Trapalis. Description of TiO₂ Thin Films Treated in NH₃ Atmosphere by Optical Dispersion Models. *Thin Solid Films.* 517 (2009) 6694–6699.
- **T. Giannakopoulou**, D. Niarchos, C. Trapalis. Experimental investigation of electric and magnetic responses of dielectric resonator inclusions at microwave frequencies. *Appl. Phys. Lett.* 94 (2009) 242506.
- **T. Giannakopoulou**, A. Oikonomou, G. Kordas. Double-layer microwave absorbers based on the materials with large magnetic and dielectric losses. *J. Magn. Magn. Mater.* 271 (2004) 224–229.
- **T. Giannakopoulou**, A. Kontogeorgakos, G. Kordas. Single-layer microwave absorbers: influence of dielectric and magnetic losses on the layer thickness. *J. Magn. Magn. Mater.* 263 (2003) 173–181.
- **T. Giannakopoulou**, L. Kompotiatis, A. Kontogeorgakos, G. Kordas. Microwave behavior of ferrites prepared via sol-gel method. *J. Magn. Magn. Mater.* 246 (2002) 360–365.