Panagiotis Dallas

Senior Researcher (B')
Theoretical and Physical Chemistry Institute

E-mail: pdallas@eie.gr
Website: https://scholar.google.com/citations?user=ky0BABoAAAAJ&hl=el&oi=ao

Experience

- Senior Researcher (B'). Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation. 12/2024-present
- Research Associate. Institute of Nanoscience and Nanotechnology, NCSR "Demokritos" 2018-2024
- Postdoctoral Research Assistant. Department of Materials, University of Oxford, United Kingdom. 2013-2018
- Postdoctoral Research Associate. Department of Materials Science and Engineering, Cornell University, U.S.A. 2010-2013
- Scientific Worker. Department of Physical Chemistry, Palacky University, Czech Republic. 2009-2010
- Research Associate. Institute of Materials Science, NCSR "Demokritos". 2008-2009
- PhD Fellow. Institute of Materials Science, NCSR "Demokritos". 2002-2007

Education

- PhD. Department of Chemistry, National and Kapodistrian University of Athens. 2008
- MSc. Department of Chemistry, National and Kapodistrian University of Athens. 2004
- BSc. Department of Chemistry, University of Ioannina. 2002

Teaching activities

- Mentor and Supervisor, Integrative Graduate Education and Research Traineeship (IGERT) and "Research experience for undergraduates" programs of National Science Foundation, Cornell University, USA
- Academic supervisor of Part II students, Department of Materials, University of Oxford
- Lecturer, Elementary Quantum Theory and Bonding, Department of Materials, University of Oxford

Memberships and activities as evaluator

- Association of Greek Chemists (member)
- American Chemical Society (member)
- Petroleum Research Fund, American Chemical Society (peer reviewer)
- Science Fund of the Republic of Serbia (peer reviewer)

Funding

- "2-D semiconductors coupled with plasmonics as advanced photocatalysts and light emitters" Hellenic Foundation for Research and Innovation, 9/2018-3/2022. Role: Principal Investigator. Budget: 190.000 €
- «Advanced nanocomposite materials for oil wastewater treatment through selective adsorption of heavy metals and crude oil» Operational Program ATTIKA 2014-2020, Research and Innovation Cooperations in the region of Attica (ATTP4-0359579), 6/2023-6/2025. Role: Principal Investigator. Budget: 149.517 €

Publications

Original research papers

1. "Influence of TFSI post-treatment on surface doping and passivation of lead halide perovskites" K. Gkini, S. Orfanoudakis, F. Harlaftis, P. Dallas, C. Kouzios, P. Tsipas, A.G Kontos, M. Konstantakou, T. Stergiopoulos J.Mater.Chem.A. 2024, 12, 31291-31300
2. "Electron transfer and energy exchange between a covalent organic framework and $CuFeS_2$ nanoparticles" P. Bika, V. Tzitzios, I. Sakellis, S. Orfanoudakis, N.

Boukos, S.M. Alhassan, P. Tsipas, V. Psycharis, T. Stergiopoulos, P. Dallas. J.Mater.Chem.C. 2024, 12, 10475

3. "Enhancing the Visible Light Photocatalytic Activity of TiO_2-Based Coatings by Addition of Exfoliated g-C_3N_4" I. Papailias, N. Todorova, T. Giannakopoulou, N. Plakantonaki, M. Vagenas, G. Anyfantis, P. Dallas, I. Arabatzis, C. Trapalis. Catalysts 2024, 14, 333
4. "Exploring the potential of powder-to-film processing for proof-of-concept BaZrS3 perovskite solar cells" P. Dallas, K. Gkini, A. Kaltzoglou, L. Givalou, M. Konstantakou, S. Orfanoudakis, N. Boukos, E. Sakellis, P. Tsipas, A. Kalafatis, A.G. Karydas, A. Lagogiannis, P. Falaras, V. Psycharis, and T. Stergiopoulos Materials Today Communications 2024, 39, 108608
5. "Prominent COF, g-C_3N_4 and Their Heterojunction Materials for Selective Photocatalytic CO_2 Reduction". P. Bika, I. Papailias, T. Giannakopoulou, C. Tampaxis, T.A. Steriotis, C. Trapalis, P. Dallas. Catalysts. 2023, 13, 1331
6. "Photocatalytic degradation of organic micropollutants under UV-A and visible light irradiation by exfoliated g-C_3N_4 catalysts". M. Antonopoulou, P. Bika, I. Papailias, S-K. Zervou, A. Vrettou, I. Efthimiou, G. Mitrikas, N. Ioannidis, C. Trapalis, P. Dallas, D. Vlastos, A. Hiskia. Science of The Total Environment 2023, 892. 164218
7. "Exploring seebeck-coefficient fluctuations in endohedral-fullerene, single-molecule junctions". A.K. Ismael, L. Rincon-Garcıa, C. Evangeli, P. Dallas, T. Alotaibi, A.A. Al-Jobory, G. Rubio-Bollinger, K. Porfyrakis, N.s Agrait, C.J. Lambert. Nanoscale Horizons 2022, 7, 616.
8. "Copper Coordination and the Induced Morphological Changes in Covalent Organic Frameworks". P. Bika, N. Ioannidis, M-A. Gatou, Y. Sanakis, P. Dallas. Langmuir 2022, 38, 3082-3089
9. "Photocatalytic Reduction of CO_2 over Iron-Modified g-C_3N_4 Photocatalysts". M. Edelmannová, M. Reli, K. Kočí, I. Papailias, N. Todorova, T. Giannakopoulou, P. Dallas, E. Devlin, N. Ioannidis, C. Trapalis. Photochem 2021, 1, 462-476
10. "An insight study into the parameters altering the emission of a covalent triazine framework". P. Bika, V. Osokin, T. Giannakopoulou, N. Todorova, M. Li, A. Kaidatzis, R.A. Taylor, C. Trapalis, P. Dallas. J.Mater.Chem.C. 2021, 9, 13770

11. "Electrochemical Deposition of Highly Hydrophobic Perfluorinated Polyaniline Film for Biosensor Applications." E. Tomšík, P. Dallas, I. Šeděnková, J. Svoboda, Martin Hrubý. RSC Advances, 2021, 11, 18852
12. "Photocatalytic H_2 Evolution, CO2 Reduction, and NOx Oxidation by Highly Exfoliated g-C3N4". N. Todorova, I. Papailias, T. Giannakopoulou, N. Ioannidis, N. Boukos, P. Dallas, M. Edelmannová, M. Reli, K. Kočí, C. Trapalis. Catalysts. 2020, 10, 1147
13. "Torus Shaped g-C_3N_4 by Flame Spray Pyrolysis" I. Papailias, N. Todorova, T. Giannakopoulou, N. Ioannidis, P. Dallas, D.Dimotikali, C.Trapalis. Applied Catalysis B: Environmental, 2020, 268, 118733
14. "Electrochemically active water repelling perfluorinated polyaniline films" P. Dallas*, E. Tomšík, R.S. Jones, A. Xiao, E. Milnes-Smith, N. Grobert, K.Porfyrakis. Chemical Physics 2020, 528, 110540
15. "Detecting the photosensitization from fullerenes and their dyads with gold nanoparticles with singlet oxygen sensor green" P. Dallas*, P.Q. Velasco, M. Lebedeva, K. Porfyrakis. Chemical Physics Letters 2019, 730, 130-137
16. "Assembly and Interaction of Polyaniline Chains: Impact on Electro- and Physical-Chemical Behavior" E.N. Tomšík, O. Kohut, I. Ivanko, M. Pekárek, I. Bieloshapka, P. Dallas. Journal of Physical Chemistry C. 2018, 122 (14), 8022–8030
17. "CF_2-bridged C_{60} dimers and their optical transitions" P.Dallas*, S.Zhou, S.Cornes, H.Niwa, Y.Nakanishi, T.Puchtler, Y.Kino, R.A.Taylor, H.Shinohara, K.Porfyrakis. ChemPhysChem 2017, 730, 130-137.
18. "Long Stokes shifts and vibronic couplings in perfluorinated polyanilines" P.Dallas*, I.Rašović, T.Puchtler, R.A.Taylor, K.Porfyrakis. Chem.Commun. 2017, 53, 2602-2605.
19. "Ultra-stiff large-area carpets of carbon nanotubes". S.S.Meysami, P.Dallas, J. Britton, J.G Lozano, A.T Murdock, C.Ferraro, E.S.Gutierrez, N.Rijnveld, P.Holdway, K.Porfyrakis, N.Grobert. Nanoscale 2016, 8, 11993-12001.
20. "Mapping and Tuning the Fluorescence of Perfluorinated Polyanilines Synthesized through Liquid-Liquid interfaces". P.Dallas*, I.Rašović, K.Porfyrakis. J.Phys.Chem.B. 2016, 120(13), 3441-3454

21. "Classification of carbon nanostructure families occurring in a chemically activated arc discharge reaction" P.Dallas, S.S.Meysami, N.Grobert, K.Porfyrakis RSC Advances 2016, 6, 24912-24920
22. "Charge separated states and singlet oxygen generation of Mono and Bis Adducts of C_{60} and C_{70}" P.Dallas*, G.Rogers, B.Reid, R.Taylor, H.Shinohara, A.Briggs, K.Porfyrakis. Chem.Phys. 2016, 465, 28-39
23. "Redox-dependent Franck-Condon blockade and avalanche transport in a graphene-fullerene nanoelectromechanical oscillator" C.S.Lau, H.Sadeghi, G,Rogers, S.Sangtarash, P. Dallas, K.Porfyrakis, J.Warner, C.Lambert, A.G.Briggs, J.Mol. Nano Letters. 2016, 16(1), 170.
24. "Self-suspended permanent magnetic FePt ferrofluids" P.Dallas, A.Kelarakis, R.Sahore, F.J.DiSalvo, S.Livi, E.P.Giannelis. J.Coll.Int.Sci. 2013, 407, 1-7
25. "Formation mechanism of carbogenic nanoparticles with dual photoluminescence emission" M.Krysmann, A.Kelarakis, P.Dallas, E.P.Giannelis. J.Am.Chem.Soc. 2012, 134(2), 747-750
26. "Magnetic nanoparticles for tunable microwave metamaterials" N.Noginova, Q.L. Williams, P.Dallas, E.P.Giannelis. Proceedings of SPIE - The International Society for Optical Engineering 2012, 8455, 845531
27. "Pyrolytic formation of a carbonaceous solid for heavy metal adsorption" A.B.Bourlinos, M.A.Karakassides, P.Stathi, Y.Deligiannakis, R.Zboril, P.Dallas, T.A.Steriotis, A.K.Stubos, C.Trapalis. J.Mater.Sci. 2011, 46, 975-982
28. "Effect of Surface Modification on Fluorescence and Morphology of CdSe Nanoparticles Embedded in 3D Phosphazene-Based Matrix: Nanowire-like Quantum Dots" K.Siskova, M.Kubala, P.Dallas, D.Jancik, A.Thorel, P.Ilik, R.Zboril. J.Mater.Chem.C. 2011. 21, 1086-1093
29. "Electrogenerated chemiluminescence from carbon dots" L.Sun, T.H.Teng, Md.H.Rashid, M.Krysmann, P.Dallas, Y.Wang, B.R.Hyun, A.C.Bartnik, G.Malliaras, F.W.Wise, E.P.Giannelis, Materials Research Society Symposium Proceedings 2011, 1284, 131-136
30. "Fullerol ionic liquids" N.Fernandes, P.Dallas, R.Rodriguez, A.B.Bourlinos, V.Georgakilas, E.P.Giannelis. Nanoscale 2010, 2, 1653-1656

31. "Cornet-like phosphotriazine/diamine polymer as reductant and matrix for the synthesis of silver nanocomposites with antimicrobial activity" P.Dallas*, R.Zboril, A.B. Bourlinos, D.Jancik, D.Niarchos, A.Panacek, D.Petridis. Macromol. Mater. Eng. 2010 295(2), 108 - featured on the front cover of Vol.295, Issue 2.
32. "Magnetically controllable silver nanocomposite with multifunctional phosphotriazine matrix and high antimicrobial activity". P.Dallas*, J.Tucek, D.Jancik, M.Kolar, A.Panacek, R.Zboril. Adv.Funct.Mater. 2010, 20(14), 2347-2354.
33. "Organic functionalization of graphenes" V.Georgakilas, A.B.Bourlinos, R.Zboril, T.Steriotis, P.Dallas, A.Stubos, C.Trapalis. Chem.Commun. 2010, 46, 1766-1768.
34. "Polypyrrole/MWNT nanocomposites synthesized through interfacial polymerisation" V.Georgakilas, P.Dallas, Ch.Trapalis, D.Niarchos. Synth.Metals 2009, 159, 632-636
35. "Silver nanoparticles and graphitic carbon through thermal decomposition of a silver/acetylenedicarboxylic salt" P.Dallas, A.B.Bourlinos, Ph.Komninou, M.Karakassides, D.Niarchos. Nanoscale Res. Lett. 2009, 4, 1358-1364.
36. "One step solid state synthesis of capped γ-Fe_2O_3 nanocrystallites" R.Zboril, A.Bakandritsos, M.Mashlan, V.Tzitzios, P.Dallas, Ch.Trapalis, D.Petridis. Nanotechnology 2008, 19, 096602-095610
37. "Synthesis and characterization of 2-D and 3-D covalent networks derived from triazine central cores and bridging aromatic diamines" P.Dallas*, A.B.Bourlinos, D.Petridis, N.Boukos, K.Papadokostaki, D.Niarchos, N.Guskos. Polymer 2008, 49(5), 1137-1144
38. "Synthesis of tunable sized capped magnetic iron oxide nanoparticles highly soluble in organic solvents" P.Dallas, A.B. Bourlinos, D. Petridis, D. Niarchos. J. Mater. Sci. 2007, 42, 4996-5002
39. "Characterization, magnetic and transport properties of polyaniline synthesized through interfacial polymerization" P.Dallas, D.Stamopoulos, N.Boukos, V.Tzitzios, D.Niarchos, D.Petridis. Polymer 2007, 48, 3162-3169
40. "Silicone-functionalized carbon nanotubes for the production of new carbon based fluids" A.B.Bourlinos, V.Georgakilas, N.Boukos, P.Dallas, Ch.Trapalis, E.P.Giannelis. Carbon 2007, 45, 1583-1585

41. "Preparation of water-dispersible carbon nanotubes-silica hybrid" A.B.Bourlinos, V.Georgakilas, R.Zboril, P.Dallas. Carbon 2007, 45 (10), 2136-2139
42. "Interfacial polymerization of pyrrole and in situ synthesis of polypyrrole/silver nanocomposites" P.Dallas, D.Niarchos, D.Vrbanic, N.Boukos, St.Pejovnik, Ch.Trapalis, D.Petridis. Polymer 2007, 48, 2007-2013
43. "Synthesis and characterization of a π-conjugate, covalent network derived from condensation polymerization of the 4,4'-bipyridine-cyanuric chloride couple" A.B.Bourlinos, P.Dallas, Y.Sanakis, D.Stamopoulos, Ch.Trapalis, D.Niarchos. Eur.Pol.J. 2006, 42, 2940-2948
44. "Characterization, electrical and magnetic properties of polyaniline/maghemite nanocomposites" P.Dallas, N.Moutis, E.Devlin, D.Niarchos, D.Petridis. Nanotechnology 2006, 17, 5019-5026
45. "Synthesis, characterization and thermal properties of polymer/iron oxide nanocomposites" P.Dallas, V.Georgakilas, D.Niarchos, Ph.Komninou, Th.Kehagias, D.Petridis. Nanotechnology 2006, 17, 2046-2053
46. "Crystal Structure and Solid-State Reactivity of a Cd (II) Polymeric Complex with Acetylenedicarboxylic Acid" St.Skoulika, P.Dallas, M.G.Siskos, Y.Deligiannakis, A.Michaelides. Chem.Mater. 2003, 15, 4576-4582

Review articles and editorials

47. "Process parameter optimization for endohedral metallofullere synthesis via the arc discharge method" S. Sinha, K. Sanfo, P. Dallas, S. Kumar, K. Porfyrakis. Inorganics 2024, 12, 38
48. "Recent Advances in Covalent Organic Frameworks for Heavy Metal Removal Applications." M-A. Gatou, P. Bika, T. Stergiopoulos, P. Dallas, E.A. Pavlatou. Energies, 2021, 41, 3197
49. "Sensors for Environmental Monitoring" L.Fu, P.Dallas, V.K. Sharma, K. Zhang. Journal of Sensors 2016, Editorial for special issue on sensors.
50. "Silver polymeric nanocomposites as advanced antimicrobial agents: classification, synthetic paths, applications and perspectives" P.Dallas, V.Sharma, R.Zboril. Adv.Coll.Int.Sci. 2011, 166, 119-135

51. "Interfacial polymerization of conductive polymers: generation of polymeric nanostructures in a 2-D space" P.Dallas*, V.Georgakilas. Adv.Coll.Int.Sci. 2015, 224, 46

Books and book chapters

52. "Magnetic properties of endohedral fullerenes: applications and perspectives" P. Dallas, R. Harding, S. Cornes, S. Sinha, S. Zhou, I. Rašović, E. Laird, K. Porfyrakis. "21st Century Nanoscience – A Handbook: Low-Dimensional Materials and Morphologies (Volume Four)", CRC Press, Taylor and Francis. Editor: Klaus Sattler. June 2020.
53. "Generation of polymers and nanomaterials at liquid-liquid interfaces" book by P.Dallas, Elsevier, 2020, second edition.
54. "Polymers and Nanomaterials from Liquid-Liquid Interfaces: Synthesis, Self-Organization and Applications"; book by P.Dallas. Smithers Rapra, April 2017, 254 σελίδες.
55. "Endohedral metallofullerenes: optical properties and biomedical applications" P.Dallas, I.Rašović, G.Rogers, K.Porfyrakis. "Carbon nanomaterials sourcebook" Taylor & Francis Publisher, Editor: Klaus Sattler 2016, 255-271
56. "Nanostructured materials for environmentally conscious applications" P.Dallas, A.Kelarakis, E.P.Giannelis "Sustainable Nanotechnology and the Environment" ACS Symposium Book Series 2013, 1124, 59-72

Conference participation

1. "Permanent magnetic ferrofluids: FePt functionalized with ionic liquids". Invited (oral) presentation in the 243rd American Chemical Society Meeting, San Diego CA, USA, 24-29 March 2012.
2. "2-D and 3-D triazine based polymers and their silver and magnetic composites" oral presentation in NANOCON, Czech Republic, 20-22 October 2009.
3. "π-conjugate, covalent layered networks derived from cyanuric chloride and certain aromatic diamines" poster presentation at the 47th Microsymposium Advanced polymer materials for photonics and electronics" Prague, Czech Republic, 15-19 July 2007.

4. "Interfacial polymerization of pyrrole and aniline. In situ synthesis of silver/polypyrrole nanocomposites" poster presentation at the 45th Microsymposium Structure and dynamics of selforganized macromolecular systems Prague, Czech Republic, 9-13 July 2006.
5. "Preparation of ferrofluids and the effect of the organic molecules absorption in the magnetic properties of magnetite nanoparticles" oral presentation at the 6th Ferrofluid Workshop, Saarbrucken, Germany, 20-22 July 2005
6. "Study of the electrical and structural properties of polyaniline/magnetite nanocomposites" oral presentation at the IV Symposium of science and technology of nanomaterials in Slovenia, Jožef Stefan Institute, Ljubljana, Slovenia, 24-25 October, 2005.
7. "Crystal Architecture of Cd(II) coordination polymers with unsaturated dicarboxylic acids" poster presentation at the 4th Conference of Chemistry Department, Ioannina, Greece, 18-21 May 2001