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EDUCATION

University of Ioannina (Ioannina, Greece) 13/07/2021 – 22/09/2025

Ph.D. in Physics. Successful public defense on 09/07/2025; doctoral degree formally awarded on 22/09/2025.

Dissertation: *“Effect of Architecture on Polymer Dynamics”* (dx.doi.org/10.12681/eadd/59551).

Advisor: Prof. G. Floudas.

University of Ioannina (Ioannina, Greece) 01/10/2019 – 14/06/2021

M.S. in Physics, specialization in Experimental Physics (Grade: 8.67/10)

Thesis: *“Effect of Polyisoprene Chain Architecture on the Dynamics Under Confinement”*.

Advisor: Prof. G. Floudas.

University of Ioannina (Ioannina, Greece) 01/10/2015 – 22/07/2019

B.S. in Physics (Grade: 8.1/10); graduated 2nd among the cohort of ~210 students entering in 2015

Thesis: *“Singularity-free Cosmological Solutions in Generalized Gravitational Theories”*.

Advisor: Prof. I. Rizos.

INTERESTS

- **Computational Physics & Data Analysis:** Application of computational modeling, simulations, and data analysis techniques to complex physical systems.
- **Materials Characterization:** Investigation of structure, thermal properties, dielectric behavior, and mechanical traits of complex materials.
- **Nanoconfined Systems:** Study of polymer adsorption and dynamics under nanometer confinement (e.g., nanopores, thin films).
- **Energy Materials:** Transport phenomena and charge dynamics in energy storage devices (Li-ion batteries, photovoltaics).

HONORS AND AWARDS

- **2025** Competitive travel fellowship awarded for academic participation in the DPG Spring Meeting 2025, Regensburg, Germany (not taken up).
- **2024** “Best Young Talk Award”, conferred by the International Dielectric Society (IDS), 12th International Conference on Broadband Dielectric Spectroscopy (BDS2024), Lisbon, Portugal.

- **2024** “Best Videoposter Award”, conferred by the International Dielectric Society (IDS), BDS2024, Lisbon, Portugal.
- **2023** Competitive Ph.D. fellowship of the Hellenic Foundation for Research and Innovation (HFRI/ELIDEK), 4th Call for HFRI Ph.D. Fellowships, No. 9360.
- **2022** Selected for oral presentation in the Young Researchers’ section, 11th International Conference on Broadband Dielectric Spectroscopy (BDS2022), San Sebastian, Spain.
- **2019** Graduated 2nd (1%) among ~210 students entering the Physics Department in 2015.
- **2018** Scholarship, “Violetta Vimpli” Legacy, 4th academic year of Bachelor studies (academic year 2018–2019).
- **2017** Scholarship, “Violetta Vimpli” Legacy, 3rd academic year of Bachelor studies (academic year 2017–2018).

COMPUTATIONAL AND TECHNICAL SKILLS

- **Programming and data analysis:** Python (NumPy, data analysis), C++.
- **Scientific software:** LaTeX, Mathematica, OriginLab, Office 365.
- **Simulations:** atomistic molecular dynamics of polymers and trajectory analysis with GROMACS and MDAAnalysis (IACM-FORTH).

PUBLICATIONS

1. **Kardasis, P.**; Kalafatakis, N.; Gauthier, M.; Vlassopoulos, D.; Floudas, G. Layers of distinct mobility in densely grafted dendrimer arborescent polymer hybrids. *Phys. Rev. Lett.* **2021**, *126*, **207802**. <https://doi.org/10.1103/PhysRevLett.126.207802>
2. **Kardasis, P.**; Oikonomopoulos, A.; Sakellariou, G.; Steinhart, M.; Floudas, G. Effect of star architecture on the dynamics of 1,4-cis-polyisoprene under nanometer confinement. *Macromolecules* **2021**, *54*, **11392**. <https://doi.org/10.1021/acs.macromol.1c02212>
3. **Kardasis, P.**; Sakellariou, G.; Steinhart, M.; Floudas, G. Non-equilibrium effects of polymer dynamics under nanometer confinement: effects of architecture and molar mass. *J. Phys. Chem. B* **2022**, *126*, **5570**. <https://doi.org/10.1021/acs.jpcc.2c03389>
4. Wu, Z.; Peng, M.; Ji, C.; **Kardasis, P.**; Tzourtzouklis, I.; Baumgarten, M.; Wei, H.; Basché, T.; Floudas, G.; Yin, M.; Müllen, K. A terrylene–anthraquinone dyad as a chromophore for photothermal therapy in the NIR-II window. *J. Am. Chem. Soc.* **2023**, *145*, **26487**. <https://doi.org/10.1021/jacs.3c11314> (open access, CC-BY)
5. **Kardasis, P.**; Sakellariou, G.; Floudas, G. Ultra-slow adsorption of star cis-1,4-polyisoprenes by in situ imbibition in nanopores. *Macromolecules* **2024**, *57*, **481–489**. <https://doi.org/10.1021/acs.macromol.3c01760>
Selected as Journal Front Cover.
6. **Kardasis, P.**; Tzourtzouklis, I.; Nega, A. D.; Sakellariou, G.; Steinhart, M.; Floudas, G. Topology sorting: separating linear/star polymer blend components by imbibition in nanopores. *J. Chem. Phys.* **2024**, *160*, **044912**. <https://doi.org/10.1063/5.0189661>
Selected as Editor’s Pick.
7. Tzourtzouklis, I.; **Kardasis, P.**; Papageorgiou, G. Z.; Floudas, G. Phase diagram, glassy dynamics and crystallization kinetics of the biobased polyester poly(ethylene 2,5-furanoate) (PEF). *Macromolecules* **2024**, *57*, **11395–11406**. <https://doi.org/10.1021/acs.macromol.4c01962> (open access, CC-BY)
Selected as Journal Front Cover.
8. **Kardasis, P.**; Tzourtzouklis, I.; Dong, Y.; Meier-Merziger, M.; Butt, H.-J.; Frey, H.; Floudas, G. Imbibition and adsorption of a bottlebrush polymer in nanopores. *Macromolecules* **2025**, *58* (4), **1950–1963**. <https://doi.org/10.1021/acs.macromol.4c02952> (open access, CC-BY)
9. **Kardasis, P.**; Danikas, M.; Patelis, N.; Ntetsikas, K.; Hadjichristidis, N.; Floudas, G. Effect of polyisoprene microstructure on the thermodynamics, viscoelastic and dielectric properties in

- the bulk and during flow in nanopores. **Macromolecules** **2025**, **58** (12), 6052–6065. <https://doi.org/10.1021/acs.macromol.5c00728> (open access, CC-BY)
10. **Kardasis, P.**; Floudas, G. Segmental equilibration governs the adsorption of confined polymers. **ACS Macro Lett.** **2026**. [Corresponding author](#);
Selected as Journal Front Cover.

CONFERENCE PRESENTATIONS

Oral presentations:

1. “Segmental Equilibration Governs the Adsorption of Confined Polymers”, 13th Conference on Broadband Dielectric Spectroscopy and its Applications (BDS/IDS 2026), 07–11/09/2026, KU Leuven, Leuven, Belgium (accepted, upcoming).
2. “Polymer Imbibition into Nanochannels: From Linear to Branched”, 15th Hellenic Polymer Society International Conference (POLYCONF), 3–6/12/2025, Patras, Greece.
3. “Topology Sorting: Separating Polymer Blend Components of Different Architecture by Infiltration in Nanochannels”, XXXVIII Panhellenic Conference on Solid State Physics & Materials Science, 15–18/09/2024, Ioannina, Greece.
4. “How Do Polymers and Mixtures of Different Architecture Penetrate Nano Channels?”, 12th Conference on Broadband Dielectric Spectroscopy and its Applications (BDS2024), 01–06/09/2024, Lisbon, Portugal.
5. “How Polymers of Different Architecture Penetrate Narrow Pores”, 14th Hellenic Polymer Society International Conference (POLYCONF), 22–25/11/2023, Thessaloniki, Greece.
6. “How Polymers Penetrate Narrow Pores?”, XXXVII Panhellenic Conference on Solid State Physics & Materials Science, 17–20/09/2023, Thessaloniki, Greece.
7. Co-author, “Polymer Dynamics during Flow in Nanopores”, Ostwald Colloquium, 13–15/09/2023, Darmstadt, Germany.
8. Co-author, “Polymer Dynamics during Flow in Nanopores”, IDMRCS, 12–18/08/2023, Chiba, Japan (*invited talk*).
9. Co-author, “Equilibrium and Non-equilibrium Dynamics of Polymers Confined in Nanopores”, APS March Meeting 2023, 05–10/03/2023, Las Vegas, USA.
10. Co-author, “Equilibrium and Non-equilibrium Dynamics of Polymers Confined in Nanopores”, CONFIT, 10–13/10/2022, Grenoble, France (*invited talk*).
11. “Effect of Star Architecture on the Dynamics of cis-1,4 Polyisoprene under Nanometer Confinement”, 11th Conference on Broadband Dielectric Spectroscopy and its Applications (BDS2022), 04–09/09/2022, San Sebastian, Spain.
12. “Layers of Mobility in Densely Grafted Polymers”, 13th Hellenic Polymer Society International Conference (POLYCONF), 12–16/12/2021, Athens, Greece (virtual).
13. “Layers of Mobility in Densely Grafted Polymer Arborescent Hybrids”, International Dielectric Society Online Workshop, 06–09/09/2021 (virtual).