

## CURRICULUM VITAE

### Vassilios Gavriil

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### EDUCATION

- Ph.D. in Chemical Engineering, School of Chemical Engineering, Aristotle University of Thessaloniki, Greece (2021)
- M.Sc. in Microsystems and Nanodevices, Interdepartmental Program of Postgraduate Studies, National Technical University of Athens, Greece (2015)
- Diploma in Electrical and Computer Engineering, School of Electrical and Computer Engineering, National Technical University of Athens, Greece (2009)

### PROFESSIONAL EXPERIENCE AND APPOINTMENTS

08/2021 - present	Post-doctoral Fellow, Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Greece.
03/2016 - 07/2021	Ph.D. candidate, Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Greece.
3/2015 – 02/2016	Research associate, Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Greece.
7/2011-12/2013	Project manager in Photovoltaic Park installations, Private Sector, Solar Cells Hellas, Greece

### MAIN RESEARCH INTERESTS

- Nanothermodynamics, chaos and complexity in materials and cells.
- Nanoscale 2D topology.
- Stability and hidden symmetries in materials at nanoscale.

- Photonic synthesis of nanostructured materials and photonic surface processing with short light wavelengths.
- Mathematical methods and analysis of complex systems and images.
- Computer and data engineering.

## EXTERNAL FUNDING

- Participant in the project "ELI-LASERLAB Europe Synergy, HiPER and IPERION-CH.gr" (MIS 5002735)
- Participant in the project "Advanced Materials and Devices" (MIS 5002409)
- Participant in the project FP7-NMP-2012- LARGE-6 "CosmoPhos-Nano" (310337)

## PROFESSIONAL AFFILIATIONS & ACTIVITIES

- Member of Technical Chamber of Greece
- Building Energy Assessor

## AWARDS AND DISTINCTIONS

The article "Surface profile gradient in amorphous Ta<sub>2</sub>O<sub>5</sub> semi conductive layers regulates nanoscale electric current stability." picked up as a significance statement in physics for the year 2017 by "Advances in Engineering".

<https://advanceseng.com/surface-profile-gradient-amorphous-ta2o5-semi-conductive-layers-regulates-nanoscale-electric-current-stability/>

## CONFERENCES AND INVITED TALKS

20 international and 3 Greek conferences.

## PUBLICATIONS

7 publications in refereed journals, 1 chapter in books.

## SELECTED RECENT PUBLICATIONS

E. Bakalis, V. Gavriil, A.C. Cefalas, Z. Kollia, F. Zerbetto, E. Sarantopoulou, "Viscoelasticity and noise properties reveal the formation of biomemory in cells", *J. Phys. Chem. B* **2021**, *125*, 10883.

[DOI: 10.1021/acs.jpcc.1c01752](https://doi.org/10.1021/acs.jpcc.1c01752)

A.C. Cefalas, V. Gavriil, A. Ferraro, Z. Kollia and E. Sarantopoulou, "Dynamics and Physics of Integrin Activation in Tumor Cells by Nano-Sized Extracellular Ligands and Electromagnetic Fields.", "The Integrin Interactome.", Springer Science and Business Media, LLC, part of Springer Nature, **2021**.  
[DOI:10.1007/978-1-0716-0962-0](https://doi.org/10.1007/978-1-0716-0962-0)

V. Gavriil, M. Chatzichristidi, D. Christofilos, G. A. Kourouklis, Z. Kollia, E. Bakalis, A.C. Cefalas, E. Sarantopoulou, "Entropy and Random Walk Trails Water Confinement and Non-Thermal Equilibrium in Photon-Induced Nanocavities", *Nanomaterials* **2020**, *10*, 1101.  
[DOI:10.3390.nano10061101](https://doi.org/10.3390.nano10061101)

V. Gavriil, M. Chatzichristidi, Z. Kollia, A.C. Cefalas, N.Spyropoulos-Antonakakis, V.V. Semashko, E. Sarantopoulou, "Photons Probe Entropic Potential Variation during Molecular Confinement in Nanocavities", *Entropy* **2018**, *20*, 545.  
[DOI: 10.3390.e20080545](https://doi.org/10.3390.e20080545)

A.D. Velentzas, P.D. Velentzas, S.A. Katarachia, A.K. Anagnostopoulos, N.E. Sagioglou, E.V. Thanou, M.M. Tsioka, V.E. Mpakou, Z. Kollia, V.E. Gavriil, I.S. Papassideri, G.T. Tsangaris, A.C. Cefalas, E. Sarantopoulou, D.J. Stravopodis, "The indispensable contribution of s38 protein to ovarian-eggshell morphogenesis in *Drosophila melanogaster*.", *Sci. Rep.* **2018**, *8*, 16103.  
[DOI: 10.1038.s41598-018-34532-2](https://doi.org/10.1038.s41598-018-34532-2)

V.V. Semashko, M. S. Pudovkin, A.C. Cefalas, P.V. Zelenikhin, V. E. Gavriil, A.S. Nizamutdinov, Z. Kollia, A. Ferraro, E. Sarantopoulou, "Tiny Rare-Earth Fluoride Nanoparticles Activate Tumour Cell Growth via Electrical Polar Interactions.", *Nanoscale Res. Lett.* **2018**, *13*, 370.  
[DOI: 10.1186.s11671-018-2775-z](https://doi.org/10.1186.s11671-018-2775-z)

A.C. Cefalas, Z. Kollia, N. Spyropoulos-Antonakakis, V. Gavriil, D. Christofilos, G. Kourouklis, V.V. Shemashko, V. Pavlov, E. Sarantopoulou, "Surface profile gradient in amorphous Ta<sub>2</sub>O<sub>5</sub> semi conductive layers regulates nanoscale electric current stability.", *Appl. Surf. Sci.* **2017**, *396*, 1000.  
[DOI: 10.1016.j.apsusc.2016.11.076](https://doi.org/10.1016.j.apsusc.2016.11.076)