

Curriculum Vitae

Personal Information:

Family Name, First Name: ELLINAS, KOSMAS

Marital Status: Married, 1 child

Gender: Male



- Number of Publications: Total: 31 (Peer-reviewed journal publications 25+4 under preparation + 2 Book chapters (invited) + 4 indexed conference proceedings).
- Number of Conference presentations > 35
- Number of Citations: 975 (889 citations since 2015).
- h-index: 14 google scholar
- Patents: 2+2 under preparation
- Funding: >320k Euros (2017-2020), 150k Euros Equity investment Nanoplasmas, Fellowships : 109 k Euros, Prizes 8.5k Euros, Research contracts: 52k Euros
- Google scholar profile:
<https://scholar.google.gr/citations?user=n5BBY00AAAAJ&hl=en&oi=ao>
- Scopus profile:
<https://www.scopus.com/authid/detail.uri?authorId=37090458900>

Education

- PhD: 2015, National and Kapodistrian University of Athens, Department of Chemistry, Greece, Thesis work done at the National Centre for Scientific Research “Demokritos” supervised by Dr. Evangelos Gogolides, Thesis title: “Amphiphilic and amphiphobic surfaces incorporated inside microfluidic devices for applications in chemical analysis”. Grade: “Excellent”
- M.Sc.: 2009, National and Kapodistrian University of Athens, Department of Informatics and Telecommunications and Department of Physics, Greece, Master’s Degree in Microelectronics. Thesis work done at the National Centre for Scientific Research “Demokritos” supervised by Dr. Evangelos Gogolides. Thesis title: “Dual scale superhydrophilic, superhydrophobic, and oleophobic surfaces fabricated by colloidal lithography and plasma etching”.
- B.Sc.: 2007, National and Kapodistrian University of Athens, Department of Physics, Greece, Bachelor Degree.

Current Positions

- 1) 7/2017-present, National Center for Scientific Research Demokritos Institute of Nanoscience and Nanotechnology, Aghia Paraskevi, Attiki, Greece & BicViorex SA. Industrial Postdoc Researcher with the support of Stavros Niarchos Foundation (SNF). Project title: Optimizing razor blades using plasma processing (20% of the time at BIC Viorex SA.)
- 2) 2016-present, Nanoplasmas Private Company spin-out company of NCSR Demokritos, Aghia Paraskevi, Attiki, Greece. Nanoplasmas is operating in the rapidly developing field of life sciences, preparing high-end consumables for diagnostic applications: 1) 3D Microarrays, 2) Cell culture surfaces / petri dishes, 3) Microfluidics. Nanoplasmas pioneered a generic biomolecule capture platform for DNA, proteins and antibodies: “The Nanotextured 3D substrates”.
Main Tasks:
 - Product development
 - ManagementRole: Co-founder and Managing Director
- 3) 10/2018-present, Member of the research team, National Center for Scientific Research Demokritos Institute of Nanoscience and Nanotechnology, Aghia Paraskevi, Attiki, Greece

(HierARchical Multiscale NanoInterfaces for enhanced Condensation processes) project, Grant agreement ID: 801229 FET-Open research and innovation actions.

Previous Positions

- 1) 1/2016-7/2017, National Center for Scientific Research Demokritos Institute of Nanoscience and Nanotechnology, Aghia Paraskevi, Attiki, Greece. Research contract for “Design and Fabrication of Superhydrophobic surfaces” supporting the internal research program of NCSR Demokritos “Micro and Nano lithography and etching - Processes molding microengineering and nanotechnology”
Main Tasks:
 - Microfluidics, Surface engineering, Plasma processing
 - Support of the ICT-FP7 research European program «LOVE FOOD-Love wave fully integrated Lab-on Chip platform for food pathogen detection»Training and co-supervising MSc students in laboratory techniques
Role: Postdoctoral scientist, Research Associate
- 2) 1/2015-7/2015, National Center for Scientific Research Demokritos, Institute of Nanoscience and Nanotechnology, Aghia Paraskevi, Attiki, Greece. Research contract on the National General Secretariat for Research and Technology (GSRT) Funded Project “SYNERGASIA” (COOPERATION), project No 11Syn_5_502. “Converging Lamb wave sensors with microtechnologies towards an integrated Lab –on-chip for clinical diagnostics.”
Main Tasks:
 - Fabrication of microfluidic devices for PCR (bonding optimization, characterization)Role: Research Associate
- 3) 2015, Latsis Foundation, Project title: ‘Nanostructured, superhydrophobic, superoleophobic, self-cleaning, antimicrobial and antireflective surfaces fabricated by atmospheric pressure plasma for protection of sensitive archeological objects’.
 - Characterization of superhydrophobic and superoleophobic surfacesRole: Research Associate
- 4) 2011-2015, National Center for Scientific Research Demokritos, Institute of Nanoscience and Nanotechnology Athens, Aghia Paraskevi, Greece. Contract under the Hellenic and European Regional Development Funds (ERDF) under the Hellenic National Strategic Reference Framework (NSRF) 2007-2013, of the Project “THALIS-DESIGN and fabrication of Robust superhydrophobic/philic surfaces and their application in the realization of “smart” microfluidic valves”.
Main Tasks:
 - Responsible for successful implementation of 2 Work Packages
 - Design, fabrication and characterization of superhydrophobic and superoleophobic surfaces
 - Design, fabrication and characterization of passive valves and microfluidics
 - Training and co-supervising MSc students in laboratory techniquesRole: PhD candidate, Research Associate
- 5) 2009-2011, National Center for Scientific Research Demokritos, Institute of Microelectronics, Aghia Paraskevi, Attiki, Greece. Research contract for “Design and Fabrication of Superhydrophobic surfaces” supporting the internal research program of “Micro and Nano lithography and etching - Processes molding micro-engineering and nanotechnology”.
Main Tasks:
 - Microfluidics (Design & characterization)
 - Superhydrophobic surfacesRole: Research Associate

Fellowships/Prizes/Awards

- 1) 2019, Post-doc State Scholarships Foundation of Greece
- 2) 2017, Stavros Niarchos Foundation fellowship
(<https://www.snf.org/en/grants/grantees/d/demokritos---national-center-for-scientific-research/program-support/>).
- 3) 2015, Best PhD Thesis for the years 2014-2015 in applied sciences, NCSR Demokritos.
- 4) 2013, 2nd award in Applied Research and Innovation Contest for Excellence "Kainotomeis" with “Smart nanostructured surfaces and bioanalytic labs-on-chip” September 2013.

5) 2010, Best oral presentation, Micro & Nano Conference 2010.

Educational skills

Co-supervision of:

- 1 PhD student (Panagiotis Sarkiris (ongoing))
- 7 MSc students (Thodoris Christoforidis, Andreas Passos, Dionysia Kefallinou, Panangiotis Sakiris, Maria Tzianou, Dimosthenis Ioannou, Dimitris Nioras, 1 year each, Institute of Nanoscience and Nanotechnology in collaboration with National Technical University, NCSR Demokritos.
- 1 BSc student (Christos Iordanidis), 1 year, Institute of Nanoscience and Nanotechnology, NCSR Demokritos in collaboration with National Technical University, School of Mechanical Engineering of NTUA

Teaching:

- **2018 & 2019** Master program “preservation of monuments of cultural heritage” University of West Attica.
- Educational lectures in NCSR Demokritos Summer School.
2018 lecture title: Biomimetic, nanotextured surfaces that repel water.
2019 lecture title: Micro and Nano-textured surfaces for water harvesting and improved optical properties under fog.

Major Collaborations

- BIC Viorex SA. Dr. Kostas Mavroidis and Dr. Christos Pandis, Topic: Optimizing razor blades (<https://www.bicworld.com/en>)
- National Technical University, School of Mechanical Engineering 2012-2016, Prof. D. Mathioulakis, Topic: Characterization of Superhydrophobic surfaces with micro Particle Velocimetry, supervision of two MSc thesis (see above).
- National Technical University, School of Mechanical Engineering 2014-2016, Assistant Professor L. Alexopoulos, Topic: Lab on chip applications (see reference No 12).
- National Technical University, School A.M.P.S., Department of Physics, Associate Professor Ioanna Zergioti, 2014-2015, Responsible for the design, fabrication and characterization of the superamphiphobic surfaces. (see reference No 8)
- Wageningen University, 2013-2014, Responsible for the design, fabrication and characterization of the plasma micro-nanotextured surfaces. (see publication list No 5)
- National Technical University, School of Chemical Engineering and Department of Chemical Engineering, University of Patras, 2011-2015, under the Hellenic National Strategic Reference Framework (NSRF) 2007-2013, of the Project “THALIS-DESIGN and fabrication of Robust supErhydrophobic/philic surfaces and their application in the realization of “smart” microfluidic valves”. Responsible for successful implementation of 2 Work Packages
- Protavio Ltd (formerly known as ProtATonce Ltd) (<http://www.protatonce.com>), Dr. Leonidas Alexopoulos.

Mobility-Experience in other laboratories

- BIC Viorex SA. (<https://www.bicworld.com/en>) R&D Blade Department.
- Institute of Nuclear & Radiological Sciences & Technology, Energy & Safety, NCSR Demokritos, Laboratory directed by Dr. Sotirios Kakabakos.
- Institute of Biosciences and applications, NCSR Demokritos, Laboratory directed by Dr. Kostas Stamatakis.
- Department of Electronics, University of West Attica, Professor Grigoris Kaltsas.

Communication skills

- Excellent communication skills acquired through the experience to work as a team member of a relatively large research group in NCSR Demokritos.
- Excellent presentation skills (presentations international scientific conferences, presentations in several European and National funded research projects meetings).

Job-related skills

- Working practices in a Clean room
- Micro-Nanofabrication techniques (micromilling, etc.)
- Plasma Processes (deposition, etching)

- Lithographic techniques
- Polymer micro-replication processes
- Microfluidics (design & fabrication)
- Surface engineering & modification
- Efficient composition of scientific articles, reports, etc.
- Prototyping
- Process scale-up
- Scanning electron microscopy user
- Wetting and surface science characterization

Other skills

- Excellent knowledge in data and text processing. (Microsoft Office, Origin).
- Excellent knowledge in mask designing (Clewinn software).
- Image and video processing.
- Entrepreneurship skills

Administrative experience

3/2016-present

Managing Director Nanoplasmas Private Company

Funding

(2019) Post-doctoral scholarship, State Scholarships Foundation of Greece. Grant requested: 26.4 K€, status: Approved (grade: 96.75/100, Top 5%)

(2019) Equity investment in Nanoplasmas (as Managing Director) from Unifund scheme (Unifund, Equifund). Investment requested 150 K €, status: Approved

(2017) Key person in writing and implementation of the following program: HARMoNIC (HierARchical Multiscale NanoInterfaces for enhanced Condensation processes) project, Grant agreement ID: 801229 FET-Open research and innovation actions.

(2017) Three-year industrial post-doctoral scholarship with the courtesy of the Stavros Niarchos Foundation (ISN). National Center for Scientific Research Demokritos, Institute of Nanoscience and Nanotechnology Athens, Aghia Paraskevi, Greece in cooperation with BicViolex SA. Grant requested: 84K €, status: Approved

(2016) Scientific coordinator of the Nanoplasmas Private Company, subcontractor in H2020, LoveFood2Market (Grant Agreement-687681). Grant requested: 20 K€, status: Approved

Journal publications

1. Tailoring Wetting Properties at Extremes States to Obtain Antifogging Functionality, M Tzianou, G Thomopoulos, N Vourdas, K Ellinas, E Gogolides, *Advanced Functional Materials*, 2006687, <https://doi.org/10.1002/adfm.202006687>
2. Kefallinou, D., Ellinas, K., Speliotis, T., Stamatakis, K., Gogolides, E., Tserepi, A. Optimization of antibacterial properties of "hybrid" metal-sputtered superhydrophobic surfaces (2020) *Coatings*, 10 (1), art. no. 25.
3. Kourmpetis, I., Kastania, A.S., Ellinas, K., Tsougeni, K., Baca, M., De Malsche, W., Gogolides, E. Gradient-temperature hot-embossing for dense micropillar array fabrication on thick cyclo-olefin polymeric plates: An example of a microfluidic chromatography column fabrication (2019) *Micro and Nano Engineering*, 5, art. no. 100042, .
4. Sarkiris, P., Ellinas, K., Gkiolas, D., Mathioulakis, D., Gogolides, E. Motion of Drops with Different Viscosities on Micro-Nanotextured Surfaces of Varying Topography and Wetting Properties (2019) *Advanced Functional Materials*, 29 (35), art. no. 1902905, .
5. Tsougeni, K., Ellinas, K., Koukouvinos, G., Petrou, P.S., Tserepi, A., Kakabakos, S.E., Gogolides, E. Three-dimensional (3D) plasma micro-nanotextured slides for high performance biomolecule microarrays: Comparison with epoxy-silane coated glass slides (2018) *Colloids and Surfaces B: Biointerfaces*, 165, pp. 270-277.
6. Kavousanakis, M.E., Chamakos, N.T., Ellinas, K., Tserepi, A., Gogolides, E., Papathanasiou, A.G. How to Achieve Reversible Electrowetting on Superhydrophobic Surfaces (2018) *Langmuir*, 34 (14), pp. 4173-4179.
7. Ellinas, K., Tserepi, A., Gogolides, E. Superhydrophobic fabrics with mechanical durability prepared by a two-step plasma processing method

(2018) *Coatings*, 8 (10), art. no. 351, .

8. Tsougeni, K., Ellinas, K., Koukouvinos, G., Petrou, P.S., Tserepi, A., Kakabakos, S.E., Gogolides, E. 3D plasma nanotextured® polymeric surfaces for protein or antibody arrays, and biomolecule and cell patterning (2018) *Methods in Molecular Biology*, 1771, pp. 27-40.
9. Ellinas, K., Tserepi, A., Gogolides, E. Durable superhydrophobic and superamphiphobic polymeric surfaces and their applications: A review (2017) *Advances in Colloid and Interface Science*, 250, pp. 132-157.
10. Ellinas, K., Kefallinou, D., Stamatakis, K., Gogolides, E., Tserepi, A. Is There a Threshold in the Antibacterial Action of Superhydrophobic Surfaces? (2017) *ACS Applied Materials and Interfaces*, 9 (45), pp. 39781-39789.
11. Ellinas, K., Pliaka, V., Kanakaris, G., Tserepi, A., Alexopoulos, L.G., Gogolides, E. Micro-bead immunoassays for the detection of IL6 and PDGF-2 proteins on a microfluidic platform, incorporating superhydrophobic passive valves (2017) *Microelectronic Engineering*, 175, pp. 73-80.
12. Ellinas, K., Tsougeni, K., Petrou, P.S., Boulousis, G., Tsoukleris, D., Pavlatou, E., Tserepi, A., Kakabakos, S.E., Gogolides, E. Three-dimensional plasma micro-nanotextured cyclo-olefin-polymer surfaces for biomolecule immobilization and environmentally stable superhydrophobic and superoleophobic behavior (2016) *Chemical Engineering Journal*, 300, pp. 394-403.
13. Dragatogiannis, D.A., Koumoulos, E., Ellinas, K., Tserepi, A., Gogolides, E., Charitidis, C.A. Nanoscale Mechanical and Tribological Properties of Plasma Nanotextured COP Surfaces with Hydrophobic Coatings (2015) *Plasma Processes and Polymers*, 12 (11), pp. 1271-1283.
14. Ellinas, K., Chatzipetrou, M., Zergioti, I., Tserepi, A., Gogolides, E. Superamphiphobic Polymeric Surfaces Sustaining Ultrahigh Impact Pressures of Aqueous High- and Low-Surface-Tension Mixtures, Tested with Laser-Induced Forward Transfer of Drops (2015) *Advanced Materials*, 27 (13), pp. 2231-2235.
15. Gogolides, E., Ellinas, K., Tserepi, A. Hierarchical micro and nano structured, hydrophilic, superhydrophobic and superoleophobic surfaces incorporated in microfluidics, microarrays and lab on chip microsystems (2015) *Microelectronic Engineering*, 132, pp. 135-155.
16. Tsougeni, K., Ellinas, K., Archontaki, H., Gogolides, E. A microfabricated cyclo-olefin polymer microcolumn used for reversed-phase chromatography (2015) *Journal of Micromechanics and Microengineering*, 25 (1), art. no. 015005, .
17. Kontziampasis, D., Boulousis, G., Smyrnakis, A., Ellinas, K., Tserepi, A., Gogolides, E. Biomimetic, antireflective, superhydrophobic and oleophobic PMMA and PMMA-coated glass surfaces fabricated by plasma processing (2014) *Microelectronic Engineering*, 121, pp. 33-38.
18. Ellinas, K., Pujari, S.P., Dragatogiannis, D.A., Charitidis, C.A., Tserepi, A., Zuilhof, H., Gogolides, E. Plasma micro-nanotextured, scratch, water and hexadecane resistant, superhydrophobic, and superamphiphobic polymeric surfaces with perfluorinated monolayers (2014) *ACS Applied Materials and Interfaces*, 6 (9), pp. 6510-6524.
19. Zeniou, A., Ellinas, K., Olziersky, A., Gogolides, E. Ultra-high aspect ratio Si nanowires fabricated with plasma etching: Plasma processing, mechanical stability analysis against adhesion and capillary forces and oleophobicity (2014) *Nanotechnology*, 25 (3), art. no. 035302, .
20. Ellinas, K., Tserepi, A., Gogolides, E. Superhydrophobic, passive microvalves with controllable opening threshold: Exploiting plasma nanotextured microfluidics for a programmable flow switchboard (2014) *Microfluidics and Nanofluidics*, 17 (3), pp. 489-498.
21. Malainou, A., Tsougeni, K., Ellinas, K., Petrou, P.S., Constantoudis, V., Sarantopoulou, E., Awsiuk, K., Bernasik, A., Budkowski, A., Markou, A., Panagiotopoulos, I., Kakabakos, S.E., Gogolides, E., Tserepi, A. Plasma-assisted nanoscale protein patterning on si substrates via colloidal lithography (2013) *Journal of Physical Chemistry A*, 117 (50), pp. 13743-13751.
22. Ellinas, K., Tsougeni, K., Boulousis, G., Speliotis, T., Tserepi, A., Gogolides, E. Phosphopeptide enrichment and separation in an affinity microcolumn on a silicon microchip: Comparison of sputtered and wet-deposited TiO₂ stationary-phase (2013) *Sensors and Actuators, B: Chemical*, 188, pp. 1073-1079.
23. Markou, A., Beltsios, K.G., Gergidis, L.N., Panagiotopoulos, I., Bakas, T., Ellinas, K., Tserepi, A., Stoleriu, L., Tanasa, R., Stancu, A. Magnetization reversal in triangular L10-FePt nanoislands (2013) *Journal of Magnetism and Magnetic Materials*, 344, pp. 224-229.

24. Ellinas, K., Smyrnakis, A., Malainou, A., Tserepi, A., Gogolides, E. "Mesh-assisted" colloidal lithography and plasma etching: A route to large-area, uniform, ordered nano-pillar and nanopost fabrication on versatile substrates (2011) *Microelectronic Engineering*, 88 (8), pp. 2547-2551.
25. Ellinas, K., Tserepi, A., Gogolides, E. From superamphiphobic to amphiphilic polymeric surfaces with ordered hierarchical roughness fabricated with colloidal lithography and plasma nanotexturing (2011) *Langmuir*, 27 (7), pp. 3960-3969.

Book Chapters

1. Katerina Tsougeni, Kosmas Ellinas, George Koukouvinos, Panagiota S. Petrou, Angeliki Tserepi, Sotirios E. Kakabakos, and Evangelos Gogolides, 3D Plasma Nanotextured® Polymeric Surfaces for Protein or Antibody Arrays, biomolecule and Cell Patterning, *Methods in Molecular Biology*, 1771, pp. 27-40 Springer. (invited contribution).
2. Ellinas Kosmas, *Advances In Smart Coatings And Thin Films For Future Industrial Applications*, Chapter 18: Superhydrophobic and Superamphiphobic Smart Surfaces, Elsevier (invited contribution).

Patents

1. "MICROFLUIDIC REACTORS AND PROCESS FOR THEIR PRODUCTION", A. Tserepi, S. Chantzandroulis, G. Kaprou, G. Kokkoris, K. Ellinas, D.P. Papageorgiou, Greek Patent Application No 20170100305 - 30.06.2017.
2. "DIAGNOSTIC CHIP FOR ANALYZING THE PRESENCE OF BACTERIA IN A SAMPLE", A. Tserepi, E. Gogolides, A. Tsougeni, K. Ellinas, A. Kastania Greek Patent Application No: 20190100415 -23.01.2020
3. "METHODS FOR ULTRASONIC FABRICATION AND SEALING OF MICROFLUIDIC OR OTHER MICRODEVICES", Kosmas Ellinas, Georgios Boulousis, Evangelos Gogolides (Final draft), to be submitted in EPO.
4. "METHODS AND SYSTEMS FOR FORMING A BLADE OF A SHAVING DEVICE", Christos Pandis, Konstantinos Mavroeidis, Evangelos Gogolides, Kosmas Ellinas, Dimitrios Davazoglou, United States provisional patent application.

Indexed conference proceedings

1. Boulousis, G., K. Tsougeni, K. Ellinas, A. Speliotis, A. Tserepi and E. Gogolides (2011). TiO₂ affinity chromatography microcolumn on Si substrates for phosphopeptide analysis. *Procedia Engineering*.
2. V. Constantoudis, G. Boulousis, K. Ellinas, E. Gogolides, Model-aided hybrid metrology for surface roughness measurement fusing AFM and SEM data, 17th International Congress of Metrology, CIM 2015, 2015.
3. K. Ellinas, A. Tserepi, E. Gogolides, Superhydrophobic, passive microvalves with controllable opening pressure, and applications in flow control, 17th International Conference on Miniaturized Systems for Chemistry and Life Sciences, MicroTAS 2013, 2013, pp. 344-346.
4. Malainou, A., K. Ellinas, P. S. Petrou, S. E. Kakabakos, V. Constantoudis, E. Gogolides and A. Tserepi (2011). Nanoscale protein patterning on Si substrates using colloidal lithography and plasma processing. *Procedia Engineering*.

Book/journal editing/conferences organization

1. Guest Editor for the special issue: "Plasma-Based Surface Engineering" in *Micromachines* (MDPI).
2. Guest Editor for the special issue: "Micro and Nanotechnology: Application in Surface Modification" in *Processes* (MDPI).
3. Reviewer in several journals for the following publishing organizations: Royal Society of Chemistry (RSC), Scientific reports (Nature), American Chemical Society (ACS), Elsevier, Multidisciplinary Digital Publishing Institute (MDPI), Science advances (Science org).
4. Conference Co-chair and Exhibition co-chair in the 45th International Conference on Micro & Nano Engineering (MNE 2019)
5. Journal Topic Board member in *Coatings Journal* (MDPI).