

SERGIOS PAPAGEORGIU

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ACADEMIC TITLES

PhD Oceanography, Thesis “Study of heavy metal sorption from calcium alginate from the brown algae *Laminaria digitata*”.
University of Athens.

MSc Oceanography, Thesis: Metal Uptake and Metallothionein Induction in the Shore Crab *Carcinus Maenas* Following Simultaneous Exposure to Copper and Cadmium School of Ocean and Earth Sciences, Southampton Oceanography Center – University of Southampton.

BsC Chemistry. Thesis: Study of the membrane lipids from the foodborne bacteria *Listeria Monocytogenes* by Differential scanning Calorimetry (DSC).

WORK EXPERIENCE

February 2017-Today: **Institute of Nanoscience and Nanotechnology, NCSR Demokritos**. Senior Researcher

March 2007 – February 2017: **Institute of Nanoscience and Nanotechnology, NCSR Demokritos**. Research Officer

December 2002 – March 2007: **Institute of Physical Chemistry, NCSR Demokritos**. Research Associate

February 2002 - December 2002: *Chemical analyses Laboratory, Hellenic Air force support command*

February 2000 – May 2000: **Athens Water Supply and Sewerage Company**: *Study for the construction of the second phase of the Psittalia Wastewater Treatment Plant.*

October 1999 – February 2000: **Hellenic Organisation for Standardisation (ELOT S.A.)**

RESEARCH INTERESTS

Dr Sergios Papageorgiou is a Chemist Holding an MSc and a PhD degree in Oceanography, and has been a member of the Materials And Membranes for Environmental Separations Laboratory since 2002.

His research interests include the development and characterisation of nanomaterials and Lab scale evaluation of their properties, mainly in the liquid but also in the gas phase.

A. Materials Development

- Activated Carbon
- Organised mesoporous materials mainly silica based (SBA-15) and doped Silicas
- Porous Silicon Carbide (SiC)
- Functionalised Titanium oxide for photocatalytic applications
- Carbon Nanostructures (Nanotubes, Nanodisks, Graphene Oxide)
- Inorganic Layered materials
- Metallic nanoparticles prepared with the Pechini method (Polyol Process)
- Porous polymer materials by means of supercritical Carbon Dioxide
- Hybrid materials by modification of inorganic particles and carbon nanostructures, carbon nanotubes development on inorganic substrates etc.
- Nanocomposite materials. (polymer/clays composites, polymer/carbon-based fillers)
- Ceramic membranes
- Polymeric Hollow fiber membranes

B. Material Characterisation

Variety of characterisation methods such as SEM, TEM, AFM, spectroscopic techniques (FTIR), thermal methods (TGA, DSC), chromatography (Ionic, HPLC) Atomic adsorption (Flame, Furnace, ICP). Structural characterisation of advanced nanostructured materials by means of:

- a) static (batch) techniques (isothermal adsorption, biosorption etc) for the determination of their sorption properties.
- b) Dynamic techniques (breakthrough curves, selectivity experiments) for the determination of the dynamic behaviour of materials in various applications.

C. Evaluation of materials in various processes

Evaluation of the efficiency of nanomaterials in environmental applications such as:

- (i) adsorption, such as heavy metals and organic pollutants removal from wastewaters, carbon dioxide storage etc.
- (ii) Membrane separations for liquid (wastewater treatment) and gas (gas mixtures separations)
- (iii) Catalytic (deNO_x, CH₄ oxidation, HC reforming) and photocatalytic applications (organic pollutants elimination, water treatment, CO₂ conversion etc).

with the combination of experimental and theoretical tools, parameters such as temperature, mixture composition, pH, ionic strength can be studied, their role in a process can be determined and they can be optimised in order to achieve increased process efficiency and predict the materials behaviour in a given application under different conditions.

METRICS

- **46** research articles in peer reviewed journals
- **4** book chapters
- **4** patents
- **51** Presentations (Oral and Poster)
- **3** supervised PhD Candidates
- **5** supervised MsC students
- **2** funded national competitive projects as team leader/coordinator
- **16** funded national and European competitive projects as team member
- **h-index: 22; Citations: 2416 (self-citations of all authors excluded) (source: Scopus, January 2022,)**

PUBLICATIONS

Papageorgiou, S.K*, Katsaros, F.K., Kouvelos, E.P., Nolan, J.W., Le Deit, H., Kanellopoulos, N.K., Heavy metal sorption by calcium alginate beads from *Laminaria digitata*, *Journal of Hazardous Materials* 137(3), 2006, 1765-1772

Chatzidaki E.K., Favvas E.P*, **Papageorgiou S.K.**, Kanellopoulos N.K. and Theophilou N.V., New Polyimide – Polyaniline Hollow Fibers: Synthesis, Characterization and behavior in Gas Separation, *European Polymer Journal* 43(12), 2007, 5010-5016

Papageorgiou, S.K*, Kouvelos, E.P., Katsaros, F.K., Calcium alginate beads from *Laminaria digitata* for the removal of Cu⁺² and Cd⁺² from dilute aqueous metal solutions *Desalination*, 224(1-3), 2008, 293-306

Papageorgiou, S.K., Katsaros, F.K*, Kouvelos, E.P., Kanellopoulos, N.K., Prediction of binary adsorption isotherms of Cu²⁺, Cd²⁺ and Pb²⁺ on calcium alginate beads from single adsorption data., *Journal of Hazardous Materials*, 162(2-3), 2009, 1347-1354

Athanasekou, C.P*, **Papageorgiou, S.K.**, Kaselouri, V., Katsaros, F.K., Kakizis, N.K., Sapalidis, A.A., Kanellopoulos, N.K., Development of hybrid alginate/ceramic membranes for Cd²⁺ removal, *Microporous and Mesoporous Materials*, 120 (1-2), 2009, 154-164

Romanos G.E*, Vangeli O.C., Stefanopoulos K.L., Kouvelos E.P., **Papageorgiou S.K.**, Favvas E.P. and Kanellopoulos N.K., Methods of evaluating pore morphology in hybrid organic-inorganic porous materials *Microporous and Mesoporous Materials*, 120 (1-2), 2009, 53-61

Papageorgiou, S.K*, Kouvelos, E.P., Favvas, E.P., Sapalidis, A.A., Romanos, G.E., Katsaros, F.K., Metal-carboxylate interactions in metal-alginate complexes studied with FTIR spectroscopy., *Carbohydrate Research*, 345(4), 2010, 469-473

Vermisoglou, E.C*, Labropoulos, A., Romanos, G. E., Kouvelos, E., **Papageorgiou, S.**, Karanikolos, G. N., Katsaros, F., Kanellopoulos, N. K., Hydrogen Storage in Polymer-Functionalized Pd-Decorated Single Wall Carbon Nanotubes., *Journal of Nanoscience and Nanotechnology* 10(9), 2010, 5971-5980

Dural, M.U., Cavas, L., **Papageorgiou, S.K.**, Katsaros, F.K*. Methylene blue adsorption on activated carbon prepared from *Posidonia oceanica* (L.) dead leaves: Kinetics and equilibrium studies *Chemical Engineering Journal* 168 (1), 2011, pp. 77-85

Papageorgiou, S.K.*, Favvas, E.P., Sapalidis, A.A., Romanos, G.E., Katsaros, F.K., Facile synthesis of carbon supported copper nanoparticles from alginate precursor with controlled metal content and catalytic NO reduction properties., *Journal of Hazardous Materials* 189, 2011, pp. 384-390

Favvas, E.P.*, Romanos, G.E.*, **Papageorgiou, S.K.**, Katsaros, F.K., Mitropoulos A. Ch., Kanellopoulos, N.K., A Methodology for the morphological and physicochemical characterisation of asymmetric carbon hollow fiber membranes. *Journal of Membrane Science* 375 (1-2), 2011, pp 113-123

Romanos G.E., Likodimos V., Marques R.R.N., Steriotis T.A., **Papageorgiou S.K.**, Faria J.L., Figueiredo J.L., Silva A.M.T.*, Falaras P*. Controlling and Quantifying Oxygen Functionalities on Hydrothermally and Thermally Treated Single-Wall Carbon Nanotubes. *Journal of Physical Chemistry C*, 115 (17), 2011, pp 8534–8546

Papageorgiou S.K.*, Katsaros F.K., Favvas E.P., Romanos G. Em., Athanasekou C.P., Beltsios K.G., Tziaila O.I., Falaras P*. Alginate fibers as photocatalyst immobilizing agents applied in hybrid photocatalytic/ultrafiltration water treatment processes. *Water Research* 46(6), 2012, pp1858–1872

Deze, E.G., **Papageorgiou, S.K.***, Favvas, E.P., Katsaros, F.K. Porous alginate aerogel beads for effective and rapid heavy metal sorption from aqueous solutions: Effect of porosity in Cu²⁺ and Cd²⁺ ion sorption, *Chemical Engineering Journal* 209, 2012, 537–546.

Favvas E.P*. Stefanopoulos K.L.* **Papageorgiou S. K.**, Mitropoulos A. Ch. In situ small angle x-ray scattering and benzene adsorption in carbon hollow fiber membranes, *Adsorption* 19, 2013, 225–233.

Pastrana-Martinez L.M., Morales-Torres S., **Papageorgiou S.K.***, Katsaros F.K., Romanos G.E., Figueiredo J.L., Faria J.L., Falaras P., Silva A.M.T.* Photocatalytic behaviour of nanocarbon–TiO₂ composites and immobilization into hollow fibres, *Applied Catalysis B: Environmental* 142– 143, 2013, 101– 111

Heliopoulos, N.S., **Papageorgiou, S.K.***, Galeou, A., Favvas, E.P., Katsaros, F.K., Stamatakis, K. Effect of copper and copper alginate treatment on wool fabric. Study of textile and antibacterial properties, *Surface and Coatings Technology* 235 , 2013, 24-31

Favvas, E.P., **Papageorgiou, S.K.**, Nolan, J.W., Stefanopoulos, K.L., Mitropoulos, A.C. Effect of air gap on gas permeance/selectivity performance of BTDA-TDI/MDI copolyimide hollow fiber membranes, *Journal of Applied Polymer Science* 130 (6) , 2013, 4490-4499

Favvas, E.P., Nitodas, S.F., Stefanopoulos, A.A., **Papageorgiou, S.K.**, Stefanopoulos, K.L., Mitropoulos, A.C., High purity multi-walled carbon nanotubes: Preparation, characterization and performance as filler materials in co-polyimide hollow fiber membranes. *Separation and Purification Technology* 122 , 2014, pp. 262-269

Likodimos, V*, Steriotis, T.A., **Papageorgiou, S.K.**, Romanos, G.E., Marques, R.R.N., Rocha, R.P., Faria, J.L., Pereira, M.F.R., Figueiredo, J.L., Silva, A.M.T.* , Falaras, P.* Controlled surface functionalization of multiwall carbon nanotubes by HNO₃ hydrothermal oxidation. *Carbon*, 69, 2014, 311-326

Favvas, E.P.*, Stefanopoulos, K.L., Nolan, J.W., **Papageorgiou, S.K.**, Mitropoulos, A.C., Lairez, D*. Mixed matrix hollow fiber membranes with enhanced gas permeation properties. *Separation and Purification Technology*, 132, 2014, 336-345

Tsoufis, T.* , Katsaros, F.* , Sideratou, Z., Romanos, G., Ivashenko, O., Rudolf, P., Kooi, B.J., **Papageorgiou, S.**, Karakassides, M.A. Tailor-made graphite oxide-DAB poly(propylene imine) dendrimer intercalated hybrids and their potential for efficient CO₂ adsorption. *Chemical Communications*, 50 (75), 2014, 10967-10970

Favvas, E.P.*, Heliopoulos, N.S., **Papageorgiou, S.K.**, Mitropoulos, A.C., Kapantaidakis, G.C., Kanellopoulos, N.K. Helium and hydrogen selective carbon hollow fiber membranes: The effect of pyrolysis isothermal time. *Separation and Purification Technology*, 142, 2015, 176-181

Favvas, E.P., Kouvelos, E.P., **Papageorgiou, S.K.**, Tsanaktsidis, C.G., Mitropoulos, A.C. Characterization of natural resin materials using water adsorption and various advanced techniques. *Applied Physics A: Materials Science and Processing*, 119(2), 2015, 735-743

Heliopoulos, N.S., Galeou, A., **Papageorgiou, S.K.***, Favvas, E.P., Katsaros, F.K., Stamatakis, K. An in situ antimicrobial susceptibility testing method based on in vivo measurements of chlorophyll a fluorescence, *Journal of Microbiological Methods*, 112, 2015, 49-54

Christoforidis, K., Orfanidis, S., Lazaridou, A.N., **Papageorgiou, S.K.***, Favvas E.P., Mitropoulos A.Ch., Study of Cu(II) removal by *Cystoseira crinitophylla* biomass in batch and continuous flow biosorption, *Chemical Engineering Journal*, 277, 2015, 334-340.

Yakoumis, I., Theodorakopoulos, G., **Papageorgiou, S.K.***, Romanos, G., Veziri, C., Pnias, D. Tubular C/Cu decorated γ -alumina membranes for NO abatement, *Journal of Membrane Science*, 515, 2016, 134-143

Heliopoulos, N.S., Galeou, A., **Papageorgiou, S.K.***, Favvas, E.P., Katsaros, F.K., Stamatakis, K. Modified in situ antimicrobial susceptibility testing method based on cyanobacteria chlorophyll a fluorescence, *Journal of Microbiological Methods*, 121, 2016, 1-4

Favvas, E.P.*, Romanos, G., Katsaros, F.K., **Papageorgiou S.K.**, Mitropoulos A.Ch., Kanellopoulos, N.K. Gas permeance properties of asymmetric carbon hollow fiber membranes at high feed pressures, *Journal of Natural Gas Science and Engineering*, 31, 2016, 842-851.

Samouhos, M., Angelopoulos, P., Pilatos, G., Taxiarchou, M., **Papageorgiou, S.** Kinetic study of non-isothermal decomposition of a composite diasporic-boehmitic bauxite, *IOP Conference Series: Materials Science and Engineering*, 123(1), 2016,

Favvas, E.P., Tsanaktsidis, C.G., Sapalidis, A.A., Tzilantonis, G.T., **Papageorgiou, S.K.**, Mitropoulos, A.Ch. Clinoptilolite, a natural zeolite material: Structural characterization and performance evaluation on its dehydration properties of hydrocarbon-based fuels, *Microporous and Mesoporous Materials*, 225, 2016, 385-391

Papavasiliou, A., Tsiourvas, D., Deze, E.G., **Papageorgiou, S.K.**, Katsaros, F.K., Poulakis, E., Philippopoulos, C.J., Boukos, N., Xin, Q., Cool, P. Hyperbranched polyethyleneimine towards the development of homogeneous and highly porous CuO-CeO₂-SiO₂ catalytic materials, *Chemical Engineering Journal*, 300, 2016, 343-357

Deze, E.G., Papavasiliou, A., **Papageorgiou, S.K.**, Katsaros, F.K., Kouvelos, E.P., Romanos, G.E., Boukos, N., Xin, Q., Nyalosaso, J.L., Cool, P. Metal loaded nanoporous silicas with tailor-made properties through hyperbranched polymer assisted templating approaches, *Microporous and Mesoporous Materials*, 235, 2016, 107-119

Athanasekou, C., Romanos, G.Em., **Papageorgiou, S.K.**, Manolis, G.K., Katsaros, F., Falaras, P. Photocatalytic degradation of hexavalent chromium emerging contaminant via advanced titanium dioxide nanostructures, *Chemical Engineering Journal*, 2017, 318, 171-180

Tsoufis, T., Katsaros, F., Kooi, B.J., Bletsas, E., **Papageorgiou, S.**, Deligiannakis, Y., Panagiotopoulos, I. Halloysite nanotube-magnetic iron oxide nanoparticle hybrids for the rapid catalytic decomposition of pentachlorophenol. *Chemical Engineering Journal* 313, 2017, 466-474

Favvas, E.P., Katsaros, F.K., **Papageorgiou, S.K.**, Sapalidis, A.A., Mitropoulos, A.C. A review of the latest development of polyimide based membranes for CO₂ separations, *Reactive and Functional Polymers* 120, 2017, 104-130

Tsiourvas, D., Papavasiliou, A., Deze, E.G., **Papageorgiou S.K.**, Katsaros F.K., Romanos G.E., Poulakis E., Philippopoulos C.J., Xin Q., Cool P. A Green Route to Copper Loaded Silica Nanoparticles Using Hyperbranched Poly(Ethylene Imine) as a Biomimetic Template: Application in Heterogeneous Catalysis. *Catalysts* 7(12), 2017, 390

Sapalidis, A., Sideratou, Z., Panagiotaki, K.N., Sakellis, E., Kouvelos, E.P., **Papageorgiou, S.**, Katsaros, F. Fabrication of antibacterial poly(vinyl alcohol) nanocomposite films containing dendritic polymer functionalized multi-walled carbon nanotubes. *Frontiers in Materials* 5, 11, 2018

Favvas, E.P., Heliopoulos, N.S., Karousos, D.S., Devlin, E., **Papageorgiou, S.K.**, Petridis, D., Karanikolos, G.N. Mixed matrix polymeric and carbon hollow fiber membranes with magnetic iron-based nanoparticles and their application in gas mixture separation. *Materials Chemistry and Physics*, 223, 2019, 220-229

Heliopoulos, N.S., Kouzilos, G.N., Giarmenitis, A.I., **Papageorgiou, S.K.**, Stamatakis, K., Katsaros, F.K., Viscose Fabric Functionalized with Copper and Copper Alginate Treatment Toward Antibacterial and UV Blocking Properties. *Fibers and Polymers* 21, 1238–1250 (2020). DOI: <https://doi.org/10.1007/s12221-020-9578-4>

Heliopoulos, N.S., Kythreoti, G., Lyra, K-M., Panagiotaki, K.N., Papavasiliou, A., Sakellis, E., **Papageorgiou, S.**, Kouloumpis, A., Gournis, D., Katsaros, F.K., Stamatakis, K., Sideratou, Z. Cytotoxicity Effects of Water-Soluble Multi-Walled Carbon Nanotubes Decorated with Quaternized Hyperbranched Poly(ethyleneimine) Derivatives on Autotrophic and Heterotrophic Gram-Negative Bacteria. *Pharmaceutics* 13, 293 (2020). DOI: <https://doi.org/10.3390/ph13100293>.

Lyra, K-M., Kaminari, A., Panagiotaki, K.N., Spyrou, K., **Papageorgiou, S.**, Sakellis, E., Katsaros, F.K., Sideratou, Z. Multi-walled carbon nanotubes decorated with guanidinylated dendritic molecular transporters: An efficient platform for the selective anticancer activity of doxorubicin *Pharmaceutics* 13 (6) (2021), DOI: 10.3390/pharmaceutics13060858

Theodorakopoulos, G.V., Romanos, G.E., Katsaros, F.K., **Papageorgiou, S.K.**, Kontos, A.G., Spyrou, K., Beazi-Katsioti, M., Falaras, P. Structuring efficient photocatalysts into bespoke fiber shaped systems for applied water treatment *Chemosphere*, 277 (2021), DOI: 10.1016/j.chemosphere.2021.130253

Papavasiliou, A., Deze, E.G., **Papageorgiou, S.K.**, Sideratou, Z., Boukos, N., Poulakis, E., Philippopoulos, C.J., Glisenti, A., Van Everbroeck, T., Cool, P., Katsaros, F.K. A hyperbranched polymer synthetic strategy for the efficient fixation of metal species within nanoporous structures: Application in automotive catalysis *Chemical Engineering Journal*, 421, (2021) DOI: 10.1016/j.cej.2021.129496

PATENTS

N. Heliopoulos, Z. Sideratou, F. Katsaros, K. Stamatakis, **S. Papageorgiou**, Th. Tsoufis, "Novel Dendritic polymer-functionalized nanostructured carbon-based materials with antibacterial properties and their effect in the photosynthetic process", Filed in Greek Patent Office, Application Number 20140100263/2-5-2014.

N. Heliopoulos, Z. Sideratou, F. Katsaros, K. Stamatakis, **S. Papageorgiou**, Th. Tsoufis, "Novel Dendritic polymer-functionalized nanostructured carbon-based materials with antibacterial properties and their effect in the photosynthetic process", European Patent Office, Application Number EP15001320/4-5-2015.

Z. Sideratou, F. Katsaros, A. Sapalidis, **S. Papageorgiou**, B. Baybogan-Isilak, A.Akali, "Novel nanocomposites with micro slime layer control properties for fouling release paint applications", Greek Application Number 20150100507 (2015).

George Karanikolos, Evangelos P. Favvas, Nikolaos S. Heliopoulos, **Sergios K. Papageorgiou**, "Gas Separation Membranes under Magnetic Field" United Arab Emirates, ADNOC E&P/R&D/PVC, Patent No ADNOC-0004-16 (2017),

BOOK CHAPTERS

Papageorgiou, S.K.*, Romanos, G.E., Katsaros, F.K. Alginate Based Materials in Environmental Applications: From Metal Sorption to Advanced Catalytic and Membrane Processes, *In: Alginates: Production, Types and Applications*, Eds: M.E. Molina, A.J. Quiroga, Nova Science Publishers- Hauppauge, New York, 2012.

Favvas E.P* and **Papageorgiou S.K.**, Polyaniline: A Promising Precursor Material for Membrane Technology Applications" *In: Trends in Polyaniline Research*, Eds A. Chowdhury, T. Ohsaka, A. Rahman and M. Islam, Nova Science Publishers, Inc., 2013, New York, USA. ISBN: 978-1-62808-424-5,

Theodorakopoulos G., Athanasekou C., Romanos G.E.M., **Papageorgiou S.K.**, Current photocatalytic systems for intensified water purification applications, *Handbook of smart photocatalytic materials, Fundamentals, Fabrications and Water Resources Applications*, Elsevier 2020, p 231

PARTICIPATION IN CONFERENCES

S. Papageorgiou, E. Kouvelos, F.Katsaros, N. Kanellopoulos, Alginate Beads as Heavy Metal Sorbents for Water Purification Applications, Poster, *Proceedings, 1st International Workshop on in situ characterization of porous solids, 2006, Montpellier-FRANCE*,

E. P. Favvas, **S. K. Papageorgiou**, A. A. Sapalidis, E. P. Kouvelos, N. K. Kanellopoulos and A. Ch. Mitropoulos, Preparation and Characterization of hydrogen selective microporous carbon hollow fiber membranes prepared from a commercial BTDA-TDI/MDI co-polyimide, Poster, *6th National Chemical Engineering Conference, 2007, Athens, Greece*

F.K. Katsaros, **S. Papageorgiou**, T.A. Steriotis, E. Kouvelos and N.K. Kanellopoulos., Preparation and Characterisation of carbon powders by pyrolysis of Metal cross-linked Alginate Acid., *2nd International Workshop on IN-Situ Study and DEvelopment of Processes Involving PORous Solids (INSIDE-POReS)*, 2007, Thessaloniki, Greece

E. P. Favvas, **S.K. Papageorgiou**, A. A. Sapalidis, G. I. Pilatos, G. E. Romanos, E. P. Kouvelos, A. Ch. Mitropoulos and N. K. Kanellopoulos, SiC Hollow Fiber Membranes for Gas Separation Applications, Poster, *3rd International Workshop on IN-Situ Study and DEvelopment of Processes Involving PORous Solids (INSIDE-POReS)*, 2007, ALICANTE, SPAIN

S. Papageorgiou, F. Katsaros, E. Kouvelos, N. Kanellopoulos, "Alginate Beads From Laminaria Digitata For Single And Binary Metal Sorption", *Fundamentals of Adsorption (FOA) 09*, May 20-25, 2007, Giardini Naxos, Sicily, Italy

F.K. Katsaros, T.A. Steriotis, **S. Papageorgiou**, A.K. Stubos and N.K. Kanellopoulos, "Use of Alginate Acid for the preparation of activated carbon with controllable pore size", *3rd Panhellenic Symposium on Porous Materials, CERTH, Thessaloniki, 1-2 November 2007*.

E. P. Favvas, G. E. Romanos, **S. K. Papageorgiou**, A. A. Sapalidis, F. K. Katsaros, A. Ch. Mitropoulos, N. K. Kanellopoulos, High pressure gas permeability of carbon hollow fiber membranes, Poster, *1st International Workshop NAPEN 2008 "NANOPorous materials in ENergy and ENvironment", 2008, Chania – Crete, Greece*.

N. Heliopoulos, E. Favvas, **S. Papageorgiou**, D. Petridis and N. Kanellopoulos, Study of the effect of magnetic field on gas separation performance of magnetic nanocomposite polymeric and carbon hollow fiber membranes, Poster, *8th Hellenic Polymer Society Symposium, 24 – 29 October, 2010, Hersonissos, Crete*.

E. P. Favvas, N. S. Heliopoulos, **S. K. Papageorgiou**, F. K. Katsaros, A. Ch. Mitropoulos and N. K. Kanellopoulos, "The pyrolysis conditions effect on structure and properties of P84 based carbon hollow fiber membranes", *9th International Symposium on the Characterisation of Porous Solids - COPS IX, 5 – 9 June, 2011, Dresden, Germany*.

S. K. Papageorgiou, E. P. Favvas, P. G. Tatsiou, F. K. Katsaros and N. K. Kanellopoulos, "Preparation and characterization of alginate based porous hollow fiber membranes", *9th International Symposium on the Characterisation of Porous Solids - COPS IX, 5 – 9 June, 2011, Dresden, Germany*.

S. K. Papageorgiou, E. P. Favvas, A. A. Sapalidis, G. E. Romanos, F. K. Katsaros, "Synthesis of alginate based carbon/metal nanoparticles composite with controlled metal content and catalytic properties", *9th International Symposium on the Characterisation of Porous Solids - COPS IX, 5 – 9 June, 2011, Dresden, Germany*.

S.K. Papageorgiou, E.P. Favvas, A.A. Sapalidis, G.E. Romanos, F.K. Katsaros, "Synthesis and properties of carbon supported copper nanoparticles from alginate precursor", *NAPEN 2011, June 9-13, 2011, Rhodes, Greece*.

M.U. Dural, L. Cavas, **S.K. Papageorgiou**, F.K. Katsaros, "Preparation of activated carbon from Posidonia oceanica (L.) dead leaves", *9th International Symposium on the Characterisation of Porous Solids - COPS 9, June 5-8, 2011, Dresden, Germany*.

E. P. Favvas, K. L. Stefanopoulos, **S. K. Papageorgiou**, J. W. Nolan and A. Ch. Mitropoulos, "In situ small angle x-ray scattering and benzene adsorption in carbon hollow fiber membranes", *Eighth International Symposium Effects of Surface Heterogeneity in Adsorption and Catalysis on Solids, 27th – 31st August, 2012, Krakow, Poland*.

S.K. Papageorgiou, F.K. Katsaros, E.P. Favvas, G.Em. Romanos, N.K. Kanellopoulos, P.Falaras, "Alginate/TiO₂ Photocatalytic Hollow Fiber Membranes for NO Decomposition in Flow Through Membrane Reaction Applications", *7th European Meeting on Solar Chemistry and Photocatalysis: Environmental Applications - SPEA7, 17th–20th June, 2012, Porto, Portugal, Proceedings pp 454-455*.

E. P. Favvas, S. F. Nitodas, K. L. Stefanopoulos, **S. K. Papageorgiou** and A. C. Mitropoulos, "High Purity Multi-Walled Carbon Nanotubes: Preparation, Characterization and Performance as Filler Materials in co-polyimide Hollow Fiber Membranes", *11th International Conference on the Fundamentals of Adsorption (FOA), 19th–24th May, 2013, Baltimore, USA*.

E. P. Favvas, K. Stamatakis, N. Heliopoulos, **S. K. Papageorgiou** and N. K. Kanellopoulos, "Enhance of hydrogen production from Chlamydomonas reinhardtii algae using membrane technology", *International Conference of Photosynthesis, 5th – 9th June, 2013, Baku Azerbaijan*.

E. G. Deze, **S. K. Papageorgiou**, E. P. Favvas, F. K. Katsaros, "Porous alginate aerogel beads for effective and rapid heavy metal sorption from aqueous solutions", *6th Panhellenic Conference of Porous Materials, 9th – 10th September, 2013, Kavala, Greece*.

F. K. Katsaros, **S. K. Papageorgiou**, E. G. Deze, A. Papavasiliou, "Development of next generation cost efficient automotive catalysts", *6th Hellenic Symposium on Porous Material, 9-10 September, 2013, Kavala, Greece*

Z. Sideratou, A. Sapalidis, **S. Papageorgiou**, F. Katsaros, "High-throughput Development of Carbon Polymer Nanocomposites for Marine Applications", *Eurononoforum 2013, 18-20 June 2013, Dublin, Ireland*

Z. Sideratou, A. Sapalidis, **S. Papageorgiou**, F. Katsaros, "High-throughput development of carbon-polymer nanocomposites for marine applications", *6th Hellenic Symposium on Porous Material, 9-10 September, 2013, Kavala, Greece*

Z. Sideratou, A. Sapalidis, **S. Papageorgiou**, F. Katsaros, A. Akcali, B. Baybogan, "Novel nanocomposites as fouling

release paints”, 6th Hellenic Symposium on Porous Material, 9-10 September, 2013, Kavala, Greece

Z. Sideratou, A. Sapalidis, **S. Papageorgiou**, F. Katsaros, “High-throughput Development of Carbon Polymer Nanocomposites for Marine Applications”, presented at the Researcher Night 2013-Greece, Athens, 27th September, 2013.

F.K. Katsaros, **S.K. Papageorgiou**, E. Deze, A. Papavasiliou, “Development of next generation cost efficient automotive catalysts”, presented at the Researcher Night 2013-Greece, Athens, 27th September, 2013.

Z. Sideratou, A. Sapalidis, **S. Papageorgiou**, F. Katsaros, A. Akcali, B. Baybogan, “Novel nanocomposites for marine applications”, presented at the Researcher Night 2013-Greece, Athens, 27th September, 2013.

L.P. Pastrana- Martínez, S. Morales-Torres, **S.K. Papageorgiou**, F.K. Katsaros, G.E. Romanos, J.L. Faria, J.L. Figueiredo, P. Falaras, A.M.T. Silva, “Graphene Oxide-TiO₂ into Hollow Fibres, for Heterogeneous Photocatalysis”, no 9^o Encontro Nacional de Catalise e Materiais Porosos (IX ENCMP). 6-7 May 2013 Porto.

E.G. Deze, **S.K. Papageorgiou**, A. Papavasiliou, F.K. Katsaros, “Development of next generation cost efficient automotive catalysts based on TMN”, Industrial Technologies 2014, 9-11 April 2014, Athens, Greece.

T. Tsoufis, F. Katsaros, Z. Sideratou, A. Sapalidis, **S. Papageorgiou**, “High-throughput development of carbon-polymer nanocomposites for marine applications”, Industrial Technologies 2014, 9-11 April 2014, Athens, Greece

Z. Sideratou, F. Katsaros, D. Tsiourvas, A. Sapalidis, **S. Papageorgiou**, “Synthesis of Advanced top Nanocoatings with improved Aerodynamic and De-icing behavior” Industrial Technologies 2014, 9-11 April 2014, Athens, Greece

F. Katsaros, **S. Papageorgiou**, E. Deze, A. Papavasiliou, P. Cool, Jeff L. Nyalosaso, “Co-assembly and one-pot synthesis of functionalized mesoporous silicas with the use of polyethyleneimines”, CIMTEC 2014, 13th Ceramics Congress, 8-13 June 2014, Montecatini, Italy

S. K. Papageorgiou, “An in situ antimicrobial susceptibility testing method based on cyanobacterial chlorophyll a fluorescence”, International Workshop on Marine Nanocoatings, 2 April 2015, Dokuz Eylül University, İzmir, Turkey - invited lecture.

A. Papavasiliou, D. Tsiourvas, E. G. Deze, **S. K. Papageorgiou**, F. K. Katsaros, E. Poulakis, C. J. Philippopoulos, N. Boukos, “Facile synthesis of nanoporous mixed oxides with the aid of Hyperbranched polyethyleneimine”, 1st Workshop on Critical materials in Catalysis: the case of automotive catalysis, 29th January 2016 – Lille, France (Invited)

E. G. Deze, **S. K. Papageorgiou**, A. Papavasiliou, F. K. Katsaros, “Novel Synthesis of porous SiC/TMN composite utilized for automotive catalytic application”, 1st Workshop on Critical materials in Catalysis: the case of automotive catalysis, 29th January 2016 – Lille, France (Invited).

N. S. Heliopoulos, A. Galeou, **S. K. Papageorgiou**, E. P. Favvas, F. K. Katsaros, E. Gogolides, A. Tserepi, K. Ellinas, D. Kefallinou, K. Stamatakis, “An in situ antimicrobial susceptibility testing method based on cyanobacterial chlorophyll a fluorescence”, 12th Workshop on Cyanobacteria, Arizona State University Campus, May 19th – 22th, 2016 Tempe, Arizona, USA.

E.G. Deze, A. Papavasiliou, **S.K. Papageorgiou**, F.K. Katsaros, Q. Xin, J.L. Nyalosaso, P. Cool Metal loaded nanoporous silicas with tailor-made properties through hyperbranched polymer assisted templating approaches. 7th Panhellenic Symposium on Porous Materials June 2nd — 4th 2016. University of Ioannina, Ioannina.

A. Papavasiliou, D. Tsiourvas, E. G. Deze, **S. K. Papageorgiou**, F. K. Katsaros, E. Poulakis, C. J. Philippopoulos, N. Boukos, Q. Xin, P. Cool. Hyperbranched polyethyleneimine towards the development of homogeneous and highly porous CuO-CeO₂-SiO₂ catalytic materials. 7th Panhellenic Symposium on Porous Materials June 2nd — 4th 2016. University of Ioannina, Ioannina

Zili Sideratou, Fotios Katsaros, Dimitris Tsiourvas, Andreas Sapalidis, **Sergios Papageorgiou**, “Synthesis of Advanced top Nanocoatings with improved Aerodynamic and De-icing behavior”, Industrial Technologies 2016, Amsterdam, 22-24 June 2016.

Heliopoulos, N.S., Galeou, **A., Papageorgiou**, S.K., Favvas, E.P., Katsaros, F.K., Gogolides, E., Tserepi, A., Ellinas, K., Kefallinou, D., Stamatakis, K. An in situ antimicrobial susceptibility testing method based on cyanobacterial chlorophyll a fluorescence, 12th Workshop on Cyanobacteria, Arizona State University Campus, May 19th – 22th (2016) Tempe, Arizona, USA (Poster).

D. Tsiourvas, A. Papavasiliou, E.G. Deze, **S.K. Papageorgiou**, F.K. Katsaros, E. Poulakis, C.J. Philippopoulos, Q. Xin, P. Cool, “Novel catalytic formulations through biomimetic approach: Application in heterogeneous catalysis”, American

advanced Materials Conference, 4-9 December 2016, Miami, USA.

Z. Sideratou, F. Katsaros, N. Heliopoulos, K. Stamatakis, **S. Papageorgiou**, Th. Tsoufis, "Novel dendritic polymer-functionalized nanostructured carbon-based materials with antibacterial properties", American advanced Materials Conference, 4-9 December 2016, Miami, USA.

Z. Sideratou, D. Tsiourvas, F. Katsaros, K. Spyrou, A. Sapalidis, **S. Papageorgiou**, P. Booker, P. Wagstaff, "Design and synthesis of advanced nanostructured coatings with hydrophobic/icephobic properties", American advanced Materials Conference, 4-9 December 2016, Miami, USA.

A. Sapalidis, Z. Sideratou, E. Kouvelos, **S. Papageorgiou**, F. Katsaros, "Dentritic polymer functionalised CNTs as highly dispersed fillers for Poly (vinyl alcohol) nanocomposites", American advanced Materials Conference, 4-9 December 2016, Miami, USA.

Z. Sideratou, D. Tsiourvas, F. Katsaros, K. Spyrou, A. Sapalidis, **S. Papageorgiou**, P. Booker, P. Wagstaff, Advanced nanostructured top-coatings with hydrophobic/icephobic properties, EuroNanoForum 2017, 20-24 June 2017, Valetta, Malta.

Z. Sideratou, F. Katsaros, A. Sapalidis, **S. Papageorgiou**, B. Baybogan-Isilak, A. Akcali, Novel nanocomposites with micro slime layer control properties for fouling release paint applications, EuroNanoForum 2017, 20-24 June 2017, Valetta, Malta.

A. Sapalidis, Z. Sideratou, K. Panagiotaki, E. Kouvelos, **S. Papageorgiou**, F. Katsaros, "CNTs decorated with quaternised hyperbranched PEI as highly dispersed fillers for poly (vinyl alcohol) nanocomposites" ICCE25, 16-22 July, Rome, Italy

E. G. Deze, A. Papavasiliou, **S. K. Papageorgiou**, F. K. Katsaros, Z. Sideratou, E. Poulakis, C.J. Philippopoulos, "Highly active Pd-based Three-Way Catalysts through assisted impregnation technique", EUROPACAT2017, 27-30 August 2017, Florence, Italy.

A. Papavasiliou, E. G. Deze, **S. K. Papageorgiou**, F. K. Katsaros, Z. Sideratou, N. Boukos, E. Poulakis, C.J. Philippopoulos, "Facile and controlled synthesis of PdO @ SBA-15 porous host with excellent TWC behavior", 27th ATC 2018: Industrial Inorganic Chemistry -Materials and Processes, 21-23 February 2018, Frankfurt, Germany.

A. Papavasiliou, E. G. Deze, **S. K. Papageorgiou**, F.K. Katsaros, "Novel automotive catalysts: PARTIAL-PGMs approach", INDTECH 2018, 29-31 October 2018, Vienna, Austria

G. Theodorakopoulos, G. Romanos, F. Katsaros, **S. Papageorgiou**, P. Falaras, A. Kontos, M. Beazi-Katsioti, " Novel immobilized photocatalysts for water treatment", 12o Panhellenic Conference of Chemical Engineering, Athens 29-31 May 2019.

G. Theodorakopoulos, G. Romanos, F. Katsaros, **S. Papageorgiou**, P. Falaras, A. Kontos, M. Beazi-Katsioti, "Structuring efficient photocatalysts into bespoke fiber shaped systems for applied water treatment", 16th International Conference on Environmental Science and Technology, 4-7 September 2019, Rhodes, Greece (Short Oral presentation)

G. Theodorakopoulos, F. Katsaros, **S. Papageorgiou**, G. Romanos, "Kinetics study of the MO adsorption and photocatalytic degradation using an engineering efficient HF photocatalyst", 17th International Conference on Environmental Science and Technology, 1-4 September 2021, Athens, Greece

FUNDING

TEAM LEADER

Development of innovative non biocidal antifouling paints for aquaculture applications, National project, MIS 5030665, Partnership Agreement for the Development Framework 2014-2020

Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE. Project code: T1EΔK-00235 TasteSTEVIA - Holistic Approach along the production cycle of Stevia Rebaudiana plant cultivated in Greece, via combined application of innovative methods of Precision Agriculture and bitter aftertaste removal techniques, 31/7/2018- 30/3/2022. NCSR sub-contractor: 93,000€.

PARTICIPANT

Development of novel, high Performance hybrid TWC/GPF Automotive after treatment systems by rational design: substitution of PGMs and Rare earth materials - PARTIAL-PGMs (H2020-NMP-2014-2015/NMP 23 – 2015 Grant agreement

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Synthesis of Advanced top Nanocoatings with improved Aerodynamic and De-icing behaviour – SANAD (FP7-PEOPLE-2012-IAPP)

«*Innovative Catalytic Technologies & Materials for Next Gas to Liquid Processes, NEXT-GTL/1580 (FP7-NMP-2008-LARGE-2/NMP-2008-4.0-2)*»

«*High-throughput development of carbon-polymer nanocomposites for marine applications*»-CARBONCOMP (FP7-PEOPLE-2012-IAPP)

«Helium recycling, towards the creation of national Helium Supply, 11ΣΥΝ_4_1912»,National Project, General Secretariat for Research and Technology (GSRT), Greece

«*Innovative Catalytic Technologies & Materials for Next Gas to Liquid Processes, NEXTGENCAT/Project N° 280890 ((FP7-NMP-2011-SMALL-5/ NMP.2011.2.2-4)*»

«Development of novel desalination and water treatment systems using double layer hollow fiber membranes, ΑΦΕΠ ATT_68» National Project, General Secretariat for Research and Technology (GSRT), Greece

«*Biodegradable nanocomposite food packaging-E.E 625*»

«*Exploitation of marine algal biomass and algal metabolites in wastewater treatment and gas separation environmental processes*»- 20NEWE2009- National Project, General Secretariat for Research and Technology (GSRT), Greece

«*Development of ceramic membranes for olefin recovery from liquefied petroleum gases-E.E 898*»

«Valorisation of biofunctional metabolites from marine algae - 1127» National Project, General Secretariat for Research and Technology (GSRT), Greece

«*Angle as raw material for production of bioplastics and biocomposites contributing to sustainable development of European Coastal – BIOPAL E.E 1032*»

«*Low energy consumptive liquid and supercritical recycling alternative (COBRA) - E.E 978*»

«*Network of Excellence in nanotechnology, "In-Situ Study and Development of Processes Involving Nano-Porous Solids"* (INSIDE-PORES.gr) FP6, Priority 3 – NMP, Thematic priority 3.4.1.1

«Ceramic membranes development for application in the food processing industry – NANOFOOD, E.E 1242»

«Hydrogen production technologies development for use in fuel cells – HYDROCELL»

PROJECT EVALUATOR

Romanian National Council for Research and Development.,
Greece, General Secretariat for Research and Technology (GSRT)