

## Curriculum Vitae

### EDUCATION

- 11/12/2013 - Today     **PhD Candidate in Chemistry** «Novel porous and composite materials», School of Sciences and Engineering, Department of Chemistry, University of Crete, Heraklion, Greece
- 10/2011 - 05/2013     Master Thesis Diploma in Catalysis for Environmental Protection and Clean Energy Production, (Grade: 9.25 out of 10), Postgraduate Diploma Research Thesis: “Evaluation of Treated Food - Industry By-Products for the Removal of Mercury from Industrial Wastewater”, School of Environmental Sciences, Department of Chemistry, University of Patras, Patras, Greece
- 09/2005 - 09/2011     Bachelor of Chemistry, (Grade: 6.96 out of 10), Bachelor’s Thesis: “Study on the Use of Winery Waste for Uranium Removal from Aquatic Solutions”, School of Environmental Sciences, Department of Chemistry, University of Patras, Patras, Greece
- 2005                     Unified high school certificate (Overall average grade 18.0 out of 20), Athens, Greece

### PUBLICATIONS

1. Eleni Thomou, Evmorfia K. Diamanti, Apostolos Enotiadis, Konstantinos Spyrou, Efstratia Mitsari, **Lamprini G. Boutsika**, Andreas Sapalidis, Estela Moretón Alfonsín, Oreste De Luca, Dimitrios Gournis, Petra Rudolf: “New Porous Heterostructures Based on Organo-Modified Graphene Oxide for CO<sub>2</sub> Capture”, *Front Chem*, (2020), 8: 564838.  
<https://doi.org/10.3389/fchem.2020.564838>
2. Katerina N. Panagiotaki, Konstantinos Spyrou, Michael Zachariadis, Harris Pratsinis, Antonios Kouloumpis, **Lamprini G. Boutsika**, Apostolos Enotiadis, Demitrios Gournis, Emmanuel P. Giannelis, Zili Sideratou: “Non-porous phosphonated ionic silica nanospheres as nanocarriers for efficient intracellular delivery of doxorubicin”, *Materials Today Communications*, (2020), 23: 100787.  
<https://doi.org/10.1016/j.mtcomm.2019.100787>
3. **Lamprini G. Boutsika**, Apostolos Enotiadis, Konstantinos Spyrou, Cataldo Simari, Isabella Nicotera: “A facile approach to fabricating organosilica layered material with sulfonic groups as an efficient filler for polymer electrolyte nanocomposites”, *New Journal of Chemistry*, (2017), 41: 9489-9496.  
<https://doi.org/10.1039/C7NJ01416C>
4. Isabella Nicotera, Cataldo Simari, **Lamprini G. Boutsika**, Luigi Coppola, Konstantinos Spyrou, Apostolos Enotiadis: “NMR investigation on nanocomposite membranes based on organosilica layered materials bearing different functional groups for PEMFCs”, *International Journal of Hydrogen Energy*, (2017), 42: 27940-27949.  
<https://doi.org/10.1016/j.ijhydene.2017.05.014>
5. **Lamprini G. Boutsika**, Hrisi K. Karapanagioti, Ioannis D. Manariotis: “Effect of chloride and nitrate salts on Hg (II) sorption by raw and pyrolyzed biochar malt spent rootlets”, *Journal of Chemical Technology and Biotechnology*. (2017) 92: 1912-1918.  
<https://doi.org/10.1002/jctb.5215>
6. **Lamprini G. Boutsika**, Apostolos Enotiadis, Isabella Nicotera, Cataldo Simari, Georgia Charalambopoulou, Emmanuel P. Giannelis, Theodore Steriotis: “Nafion® nanocomposite membranes with enhanced properties at high temperature and low humidity environments”, *International Journal of Hydrogen Energy*. (2016) 41: 22406-22414.  
<https://doi.org/10.1016/j.ijhydene.2016.08.142>
7. D. Baciú, **L. Boutsika**, T. Steriotis, G. Charalambopoulou, A. Stubos: “Facile synthesis and characterization of Nanostructured carbonated Hydroxyapatite microspheres”, *Digest Journal of Nanomaterials and Biostructures*. (2016) 11(1): 173 – 176.  
[https://www.researchgate.net/publication/298714689\\_Facile\\_synthesis\\_and\\_characterization\\_of\\_nanostructured\\_carbonated\\_hydroxyapatite\\_microspheres](https://www.researchgate.net/publication/298714689_Facile_synthesis_and_characterization_of_nanostructured_carbonated_hydroxyapatite_microspheres)
8. **Lamprini G. Boutsika**, Hrisi K. Karapanagioti, Ioannis D. Manariotis: “Aqueous Mercury sorption by Biochar from Malt Spent Rootlets”, *Water Air Soil Pollution*. (2013) 224:1805.  
<https://doi.org/10.1007/s11270-013-1805-9>

### CONFERENCES

1. **Lamprini Boutsika**, Ioannis Bratsos, Georgia Charalambopoulou, Theodore Steriotis, **Poster**: “*CO<sub>2</sub> separation via Zr-MOFs/Pebax mixed matrix membranes*”, “Euromembrane 2021”, Copenhagen, Denmark, 28/11/2021-2/12/2021
2. Eleni Thomou, Evmorfia K. Diamanti, Apostolos Enotiadis, Konstantinos Spyrou, Efstratia Mitsari, **Lamprini G. Boutsika**, Andreas Sapalidis, Estela Moretón Alfonsín, Oreste De Luca, Dimitrios Gournis, Petra Rudolf, **Poster**: “*New Porous Heterostructures Based on Organo-Modified Graphene Oxide for CO<sub>2</sub> Capture*”, 15<sup>th</sup> International conference on materials chemistry (MC15), Royal Society of Chemistry, On-line, 12-15/07/2021
3. D. Koutsonikolas, G. Pantoleontos, **L. Boutsika**, G. Charalambopoulou, Th. Steriotis, G. Karagiannakis, **Poster**: “*Optimal design configuration of membrane cascade schemes for high purity H<sub>2</sub> production*”, World Online Conference on Sustainable Technologies (WOCMP), On-line, 17-19/03/2021
4. Eleni Thomou, Evmorfia K. Diamanti, Apostolos Enotiadis, Konstantinos Spyrou, Efstratia Mitsari, **Lamprini G. Boutsika**, Andreas Sapalidis, Estela Moretón Alfonsín, Oreste De Luca, Dimitrios Gournis, Petra Rudolf, **Poster**: “*Graphene Oxide-based porous heterostructures for CO<sub>2</sub> capture*”, Chains 2020 conference of the Dutch Research Council, On-line, 8-9/12/2020
5. Apostolos Enotiadis, **Lamprini Boutsika**, Andreas Sapalidis, **Oral presentation**: “*Multifunctional coatings fabricated by integrating surface modified silica nanostructures*”, “13<sup>th</sup> Paint Symposium”, Athens, Greece, 15-16/03/2018
6. D. Giasafaki, M. Gisbert-Garzarán, G. Charalambopoulou, **L. Boutsika**, K. Spyrou, M. Manzano, M. Vallet-Regí, Th. Steriotis, **Poster**: “*Synthesis and modification of carbon nanoparticles for therapeutic applications*”, “EUROMAT 2017”, Thessaloniki, Greece, 17-22/09/2017
7. Apostolos Enotiadis, **Lamprini Boutsika**, Christos Tampaxis, Kalliopi Krassa, Charalambos Varelas, Elisa Maisano, Theodore Steriotis, Georgia Charalambopoulou, **Poster**: “*Development of silica-based fillers and nanocomposites for powder coatings applications*”, “EUROMAT 2017”, Thessaloniki, Greece, 17-22/09/2017
8. A. Enotiadis, K. Kolovos, **L. Boutsika**, K. Krassa, Th. Doudali, M. Kainourgiakis, Ch. Varelas, Th. Steriotis, G. Charalambopoulou, **Poster**: “*The effect of nanofillers on the properties of polyester composites*”, “13<sup>th</sup> International Conference on Nanosciences & Nanotechnologies (NN16)”, Thessaloniki, Greece, 5-8/07/2016
9. A. Enotiadis, **L. Boutsika**, T. Steriotis, G. Charalambopoulou, **Poster**: “*High functional and multi-dimensional silica based nanofillers for versatile applications*”, “6<sup>th</sup> International Colloids Conference”, Berlin, Germany, 19-22/06/2016
10. **Lamprini Boutsika**, Apostolos Enotiadis, Isabella Nicotera, Cataldo Simari, Georgia Charalambopoulou, Emmanuel Giannelis, Theodore Steriotis, **Oral presentation**: “*Nafion<sup>®</sup> nanocomposite membranes with enhanced properties at high temperature and low humidity environments*”, (**1<sup>st</sup> Presentation Award**), “7<sup>th</sup> Panhellenic Symposium on Porous Materials”, Ioannina, Greece, 2-4/06/2016
11. **Lamprini Boutsika**, Apostolos Enotiadis, Isabella Nicotera, Cataldo Simari, Georgia Charalambopoulou, Theodore Steriotis, **Poster**: “*Evaluation of polymer electrolyte nanocomposites using a new sulfonated organosilica layered material*”, “7<sup>th</sup> Panhellenic Symposium on Porous Materials”, Ioannina, Greece, 2-4/06/2016
12. **Lamprini Boutsika**, Apostolos Enotiadis, Andreas Sapalidis, Georgia Charalambopoulou, Theodore Steriotis, **Poster**: “*Synthesis and characterization of clay-based fillers through the organic modification of Montmorillonite*”, “7<sup>th</sup> Panhellenic Symposium on Porous Materials”, Ioannina, Greece, 2-4/06/2016
13. Konstantinos Kolovos, **Lamprini Boutsika**, Apostolos Enotiadis, Kalliopi Krassa, Charalambos Varelas, Eyal Adler, Theodore Steriotis, Georgia Charalambopoulou, **Poster**: “*Effect of Montmorillonite clay fillers on polymer blends for coatings applications*”, “7<sup>th</sup> Panhellenic Symposium on Porous Materials”, Ioannina, Greece, 2-4/06/2016
14. Isabella Nicotera, Cataldo Simari, **Lamprini G. Boutsika**, Apostolos Enotiadis, Georgia Charalambopoulou, Theodore A. Steriotis, Cesare Oliviero Rossi, **Oral presentation**: “*Nanoscale Ionic Materials for advanced nanocomposites in high temperature proton exchange membrane fuel cells*”, “1<sup>st</sup> Energchem Congress”, Florence, Italy, 18-20/02/2016

15. **Lamprini G. Boutsika**, Apostolos Enotiadis, Isabella Nicotera, Cataldo Simari, Georgia Charalambopoulou, Theodore A. Steriotis, **Poster:** “*Development of nanocomposite polymer electrolyte membranes for fuel cell applications using novel nanofillers*”, Symposium A: Materials for energy storage and conversion, “European Materials Research Society (E-MRS)”, Warsaw, Poland, 15-18/09/2015
16. **Lamprini G. Boutsika**, Apostolos Enotiadis, Georgia Charalambopoulou, Theodore A. Steriotis, Ritu Sahore, Emmanuel P. Giannelis, **Poster:** “*Facile synthesis of Mesocellular Carbon Foams for Li-Sulfur battery applications*”, Symposium C: Hydrogen storage in solids: materials, systems and application trends, “European Materials Research Society (E-MRS)”, Warsaw, Poland, 15-18/09/2015
17. D. Baci, **L. Boutsika**, Th. Steriotis, G. Charalambopoulou and A. Stubos, **Poster:** “*Facile Synthesis and Characterization of Nanostructured Carbonated Hydroxyapatite Microspheres*”, “**Science in Technology (SCinTE)**”, Life and Health Sciences, Bioengineering, Athens, Greece, 5-7/11/2015
18. **Lamprini G. Boutsika**, Hrissi K. Karapanagioti, Ioannis D. Manariotis, **Oral Presentation and Poster:** “*Biochar from malt spent rootlets for the removal of mercury from aqueous solutions*”, “European Geosciences Union (EGU)”, SSS2.4 Novel sorbent materials for environmental remediation, Vienna, Austria, 7-12/04/2013
19. **Lamprini G. Boutsika**, Hrissi K. Karapanagioti, Ioannis D. Manariotis, **Oral presentation:** “*Biochar produced from Malt Spent Rootlets and its use for Mercury removal from aqueous solutions*”, “Third International Symposium on Green Chemistry for Environment and Health”, Skiathos, Greece, 3-5/10/2012
20. **Lamprini G. Boutsika**, Hrissi K. Karapanagioti, Ioannis D. Manariotis, **Oral presentation:** “*Use of biochar for Mercury removal from aqueous systems*”, 3<sup>rd</sup> ARYs conference, Development and Evaluation of Absorbent Materials for Environmental Applications, Patras, Greece, 22-23/06/2012
21. **Lamprini G. Boutsika**, Hrissi K. Karapanagioti, Ioannis D. Manariotis, **Poster:** “*Mercury sorption by biochar from Malt Spent Rootlets*”, “Eco STP”, Eco Technologies for Wastewater Treatment, Santiago de Compostela, Spain, 25-27/06/2012
22. V. Anagnostopoulos, **L. Boutsika**, A. Diakou, B. Symeopoulos, **Oral presentation:** “*Removal of Uranium (VI) from aqueous solutions using low-cost, green biosorbent-the case of grape stalks*”, “Second International Symposium on Green Chemistry for Environment and Health”, Mykonos, Greece, 26-29/09/2010

### PROFESSIONAL EXPERIENCE

- 8/02/2019-today **Collaborating researcher, chemist:**  
 Institute of Nanoscience and Nanotechnology (INN), NCSR "Demokritos"  
**Subject:** Development and evaluation of hybrid polymeric membranes for the selective separation of CO<sub>2</sub>/H<sub>2</sub> mixtures for the production and recovery of high purity hydrogen, in the framework of the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE “*PUREHY-Development of a biogas reformer using stand-alone membrane systems for the production and recovery of high purity hydrogen*” (Project No: T1EDK-02992)
- 1/06/2016-31/01/2019 **Collaborating researcher, chemist:**  
 Institute of Nuclear & Radiological Sciences & Technology (InRaSTES), NCSR "Demokritos"  
**Subject:** Development and study of controlled release systems of drugs from intermediate matrices based on silica and carbon, in the framework of the European project HORIZON 2020 “*MOZART-Mesoporous matrices for localized pH-triggered release of therapeutic ions and drugs*” (Project No: 685872).
- 8/12/2015-7/04/2016 **Visiting researcher, chemist:**  
 Megara Resins A. FANIS SA  
**Subject:** Development of new nanopadditives and nanocomposites for surface coatings, in the framework of the European project FP7 “*GLOW-New weather-stable low gloss powder coatings based on bifunctional acrylic solid resins and nanoadditives*” (Project No: 324410).

- 13/06/2014-31/102015 **Collaborating researcher, chemist:**  
Department of Chemistry, School of Sciences and Engineering, University of Crete, Department of Inorganic Chemistry - Laboratory of Chemistry and Materials Development  
**Subject:** Characterization and study of adsorbent properties of new porous joints, in the framework of the project "EXCELLENCE II" entitled "*Modified Metal-Organic Frameworks with Acid Groups: Advanced Materials with High Anhydrous Proton Conductivity and Imperfections*". (**Project No: 3955**).
- 2012-2013 **Laboratory Assistant at Analytical Chemistry I and II (Qualitative and Quantitative Analysis Laboratory)**, University of Patras, School of Environmental Sciences, Department of Chemistry, under the supervision of Mrs Efstathia Koulouri.
- 2012-2013 **Network Manager "ARYs"**. The main scope of the intra-university research network ARYs, is to promote interdisciplinary collaboration in order to develop new and effective sorbents and catalysts, as well as, their evaluation for the use in various environmental applications.

### OTHER SKILLS

#### LANGUAGES

- English, Certificate of Proficiency in English (University of Michigan)
- Française, Diplôme d'études en langue Française-1<sup>er</sup> degré (Institut Français Grèce)

#### CHARACTERIZATION TECHNIQUES

Evaluation of mechanical properties (Reverse impact, tensile strength)--Dynamic Light Scattering (DLS)--X-ray Photoelectron Spectroscopy (XPS)--Transmission Electron Microscopy (TEM)--Scanning Electron Microscopy (SEM)--Z-potential analysis--Single and Mixed gas permeation analysis--Thermogravimetric analysis (TGA)--Differential Scanning Calorimetry (DSC)--Viscosity measurements--Gas sorption measurements at high pressure using Intelligent Gravimetric Analyser (IGA)--Atomic Force Microscopy (AFM)--Optical measurements in polymer coatings (Gloss, UV-resistance)--X-Ray Diffraction in Powder samples (PXRD)--Adsorption Study techniques--Potentiometric Titrations--High-Performance Liquid Chromatography (HPLC)--Gas Chromatography (GC)--Spectroscopy UV-Vis--Spectroscopy FT-IR (solid state)--Fluorescence Spectroscopy

#### CHEMICAL SYNTHESIS EXPERIENCE/ DEVELOPMENT

-Synthesis of biochar by pyrolysis.  
-Composition and surface modification of nanoporous silicate and carbonate materials.  
-Development and modification of laminate materials (clays, supported clays, organomodified clays, organosilicas).  
-Synthesis of metal oxides by the sol-gel method, development of modified spherical colloidal silica nanoparticles with hydrophilic functional groups (eg -SO<sub>3</sub>H, -PO<sub>3</sub>H) - Nanoscale Ionic Materials (NIMs), synthesis of Polyhedral Oligomeric Silsesquioxanes (POSS).  
-Development and modification of hybrid nanocomposite materials (organic-inorganic nanocomposites) - dispersion of nanoparticles in polymeric matrices for the synthesis of nanocomposite membranes for surface coatings, fuel cell electrolytes and gas separation membranes.