GEORGIOS KARANIKOLOS

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EDUCATION

- **Ph.D:** Department of Chemical & Biological Engineering, State University of New York at Buffalo (UB), USA (2000-2005).
- **Diploma in Engineering:** Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece (1994-2000).

PROFESSIONAL EXPERIENCE

- **Professor,** Department of Chemical Engineering, University of Patras (2025-present)
- **Associate Professor,** Department of Chemical Engineering, University of Patras (2022-2025)
- **Collaborating Faculty,** Foundation for Research and Technology Hellas / Institute of Chemical Engineering Sciences (FORTH/ICE-HT), Patras, Greece (2024-present)
- **Visiting Faculty,** Foundation for Research and Technology Hellas / Institute of Chemical Engineering Sciences (FORTH/ICE-HT), Patras, Greece (2023-2024)
- **Associate Professor,** Department of Chemical Engineering, Khalifa University (KU), (2019 – 2022)
- **Assistant Professor,** Department of Chemical Engineering, Khalifa University, (2017 – 2019)
- **Assistant Professor,** Department of Chemical Engineering, The Petroleum Institute (PI), (2013 – 2017)
- **Adjunct Instructor,** Department of Physics, Chemistry, and Materials Technology, Piraeus Institute of Technology, Greece (2008-2013)
- **Marie Curie Fellow,** Institute of Nanoscience & Nanotechnology (previously Institute of Physical Chemistry), Demokritos National Research Center (2007-2012)
- **Post-Doctoral Research Associate,** Department of Chemical Engineering & Materials Science, University of Minnesota (2005-2006). Group of Prof. Michael Tsapatsis.

PRIZES AND AWARDS

- **Faculty Research Excellence Award,** Khalifa University**, Awarded to one faculty per rank for the whole College of Engineering** (2019).
- **Research publication awards,** Khalifa University**,** 2019 and 2022
- **ADEK Award for Research Excellence 2018**, Abu Dhabi Department of Education and Knowledge.
- **Best Instructor Award**, Imtinan 2017, Chemical Engineering department, PI/KU.
- **Materials Research Society (MRS) award,** "Surface Assembly of Ionic Liquid Functionalities on Mesoporous Silica to Enhance Paraffin Affinity and Induce Reverse Selectivity for Ethane/Ethylene Separation", Fahmi Anwar, K Suresh Kumar Reddy, Anish Mathai Varghese, Maryam Khaleel, Kean Wang, Georgios N. Karanikolos, MRS Spring 2023 conference, San Francisco, USA.
- **Best oral presentation,** Jeewan Pokhrel, Nidhika Bhoria, Stavroula Anastasiou, Suresh Kuppireddy, C. S. Kannan, George Romanos, Georgios N. Karanikolos, "Growth and functionalization of metal organic frameworks (MOFs) and MOF composites for CO_2 capture", 2017 PI R&D Conference and Exhibition, Abu Dhabi, March 19-20, 2017
- **9th UAE Undergraduate Research Competition Award (Chemical Engineering Category).** "Design of Membrane-based process for Energy-Efficient Ethane/Ethylene Separation", Abu Dhabi University, May 26th, 2022. Supervised team of five KU undergraduate students (senior design project).
- **5th Engineering Students Renewable Energy Competition 2014 (ESREC'2014) Award**. "Conversion of Waste Cooking Oil into Biodiesel using Heterogeneous Catalysts", UAE University, Award Date: May 3rd, 2014. Supervised team of three PI undergraduate students (senior design project).
- **Marie Curie European Reintegration Fellowship,** 2007-2012
- **Best Poster Awards**:

- Materials Research Society (MRS) Spring Meeting, San Francisco, CA, March 31, 2005,
- 5th International Zeolite Membrane Meeting (IZMM-5), Loutraki, Greece, May 23-26, 2010,
- 1st International Congress on Materials and Renewable Energy (MRE2013), Athens, July 1-3 2013

- **First (2004) and Third (2002) Place UB Award for Excellence in Graduate Student Research**
- **Graduate Tuition Scholarship,** Department of Chemical Engineering, UB, Sep. 2000 – Sep. 2005.
- **Excellent Undergraduate Performance Award**, (3rd among 120 students), National Scholarships Institution, Greece, 1995-96.

INVITED SEMINARS

1. **14th Panhellenic Conference of Chemical Engineering, Invited keynote,** "3D-printed zeolite-x gyroid monolith adsorbents for CO_2 capture" Thessaloniki, Greece, May 30th, 2024
2. **ADNOC Refining Knowledge Sharing Program on Carbon capture technology,** "Energy efficient processes for carbon capture: Research advances in adsorption and membrane technologies", 29th March 2021
3. **Hydrogen Utilization and Green Energy Workshop (HUGE), Khalifa University,** "Energy Efficient Processes for Carbon Removal Towards Blue Fuels: Research Advances in Adsorption and Membrane Technologies", 31st May 2021
4. **Masdar Institute PhD seminar,** "Adsorption and membrane-based CO_2 capture and separation", Masdar City, Abu Dhabi, April 3, 2018
5. **Water, Energy Technology and Environment Exhibition (WETEX-2017,** https://www.wetex.ae/**),** "Novel, Highly Selective Nanocomposite Adsorbents for High Capacity CO_2 Capture from Tail Gas and Cost-Effective Regeneration for EOR Use", Dubai, October 23-25, 2017
6. **CO_2 Workshop: CO_2 capture, utilization and storage – where are we?,** "Adsorption and membrane based CO_2 capture and separation", Abu Dhabi, April 19-20, 2017
7. **Materials Science-2016,** "Zeolite and Metalorganic Framework Materials and Membranes for Gas Separation", Abu Dhabi, November 28-30, 2016 ***Keynote***
8. **3rd Hellenic Forum for Science, Technology & Innovation,** "Zeolite and Metalorganic Framework Materials and Membranes for Gas Separation", Athens, July 1, 2015
9. **Materials, Innovation and Solutions for the Oil & Gas Industry International Workshop**, "Hierarchical Fabrication of Nanostructured Materials for Separation and Catalysis", Abu Dhabi, November 26, 2013
10. **Demokritos National Research Center Summer School,** "Graphitic nanostructures: Synthesis, properties, and applications", Athens, July 2013
11. **Imperial College**, **Department of Chemical Engineering,** London, UK, Dec. 7, 2012
12. **University of Cambridge, Department of Chemical Engineering,** Cambridge, UK, Nov. 28, 2012
13. **NANO2012** – XI International Conference on Nanostructured Materials, Rhodes, Greece, Aug 30, 2012
14. **University of Crete, Department of Materials Science & Technology,** Heraklion, Greece, May 18, 2012
15. **SUNY at Buffalo, Department of Chemical & Biological Engineering**, Buffalo, NY, March 22, 2012
16. **EPFL - Swiss Federal Institute of Technology, School of Basic Sciences,** Lausanne, Switzerland, May 15, 2012
17. **Worcester Polytechnic Institute (WPI), Chemical Engineering Dep.,** Worcester, MA, March 26, 2012
18. **University College London (UCL), Department of Chemical Engineering,** London, Feb. 13, 2012
19. **German-Greek Forum, "Capital & Vision",** "Nanotechnology for Targeted Cancer Therapy: The Case of Multifunctional Carbon Nanotubes", Athens, Sept. 2011, (http://www.capitalvision.gr/e/home.asp)
20. **NCSR Demokritos Summer School Lecture**, «Multifunctional Carbon Nanotube Systems", July 2010 and 2011. **In the top-5 list of lectures with the greatest acceptance by the audience in the areas of Advanced Materials & Nanotechnology, and Informatics, Telecommunications & Safety (2010).**
21. **University of Patras, Department of Chemical Engineering,** Patras, Greece, March 27, 2009.
22. **The Nano-multidisciplinary Symposium, 1st International Conference from Nanoparticles and Nanomaterials to Nanodevices and Nanosystems**, Halkidiki, Greece, June 18, 2008.
23. **University of Patras, Department of Materials Science,** Patras, Greece, June 8, 2008.
24. **Joint Seminar: Departments of Materials Science & Technology, and Physics, University of Crete,** Heraklion, Greece, Nov. 8, 2007
25. **NCSR Demokritos, also broadcasted in real time by teleconference to the members of the INSIDE PORES EU Network of Excellence,** Athens, Oct 16, 2006.
26. **Institute of Chemical Engineering & High-Temperature Chemical Processes,** Patras, May 15, 2006.
27. **University of Minnesota, Chemical Engineering & Materials Science,** Minneapolis, Aug 4, 2005.

TEACHING

2022 - present	Associate and Full Professor, Department of Chemical Engineering, University of Patras **Courses:** Advanced Chemical Engineering Thermodynamics (PhD program), Reaction Engineering, Introduction to Chemical Engineering, Analysis and Design of Chemical Reactors, Lab of Physical Chemistry, Design project, PhD Research Methodology
2013-2022	Associate and Assistant Professor, Department of Chemical Engineering, Khalifa University (KU), and Petroleum Institute, UAE **Courses:** Chemical Engineering Thermodynamics, Heat transfer, Principles of Chemical Engineering, Industrial Catalysis, Colloids and Interface Science (MSc and PhD level), PhD Research Methods, Applied Nanotechnology (PhD), Fundamentals of Nanotechnology
2008 – 2013	Adjunct Instructor, Department of Physics, Chemistry, and Materials Technology, University of West Attica, Greece **Courses:** Chemical Technology, Environmental Chemistry, Physical Chemistry

RESEARCH EXPERTISE

- Adsorption and membrane processes
- Heterogeneous catalysis
- CO_2 capture
- Hydrogen storage
- Atmospheric water harvesting (AWH)
- Water treatment
- Porous materials and membranes including zeolites, metal-organic frameworks (MOFs), and carbon/graphitic nanostructures.

FUNDED PROJECTS

Project Title	Funding Scheme	Duration	Budget (US dollars)
AT UNIVERSITY OF PATRAS and FORTH/ICE-HT			
Integrated Adsorption Facility for High-Impact Research on Net-Zero and Sustainability *(SorbHigh)*	Sponsor: Hellenic Foundation for Research and Innovation (H.F.R.I)	2025-2027	Funding to UPatras: 0.5 million
Production of high-quality activated carbon from Agthia's solid waste	Sponsor: Agthia	2024-2027	Funding to UPatras: 1.2 million
KU-VOC Multifunctional composites for capture and destruction of volatile organic compounds to improve Indoor Air Quality (IAQ)	Sponsor: Khalifa University	2024-2027	Funding to FORTH/ICE-HT: 150,000
2D-ENHANCED Lightweight composites with 2D-material enhancement for plastic, construction and aerospace industries (Project co-I). Coordinator: Prof. C. Galiotis	Sponsor: Khalifa University	2024-2027	3,900,000 Funding to UPatras: 1 million
MEDICUS	University of Patras	Start-up	5,000 euros
BEFORE UNIVERSITY OF PATRAS (Khalifa University) **AS PROJECT COORDINATOR:**			
Highly Sensitive Nanostructured Adsorbents for Capture of CO_2 from Low Concentration Sources – Toward Zero-Carbon Oil & Gas Processing (*CAPCO2*)	Khalifa University - CIRA program (Competitive Internal Research Awards)	2020-2023	750,000

Hybrid CO_2 capture	Gas Research Center (ADNOC – SHELL – TOTAL – PARTEX)	2016-2020	813,000
Highly Efficient Nanoporous Antibacterial Hybrids	ADEK (Abu Dhabi Department of Education and Knowledge)	2019-2021	81,000
Novel, Highly Selective Nanocomposite Adsorbents for High Capacity CO_2 Capture from Tail Gas and Cost-Effective Regeneration for EOR Use	ADNOC (Abu Dhabi National Oil Company)	2016-2019	1,200,000
Membrane and Adsorption-Based Gas Separation under Magnetic Field	Gas Research Center (ADNOC – SHELL – TOTAL – PARTEX)	2016-2019	465,000
Growth and Microstructural optimization of aluminophosphate zeolites for separation and catalysis	Petroleum Institute Research Initiation Funding (RIF) grant	2015	40,000
ADDITIONAL PROJECTS:			
Center of Catalysis and Separation (CeCaS) • **Deputy director and Theme Leader** in Theme 2 (Separations) • **PI** on olefin/paraffin separation project using membranes and adsorption. https://www.ku.ac.ae/research-centers/center-for-catalysis-and-separation-cecas	Khalifa University - RCII (Research Center Type II)	2018-2021	900,000
Center for Membranes and Advanced Water Technology (CMAT). • **PI** on the project on mixed matrix membranes for water treatment. https://www.ku.ac.ae/research-centers/center-for-membranes-and-advanced-water-technology-cmat	Khalifa University - RCII (Research Center Type II)	2018-2021	900,000
Research and Innovation Center on CO_2 and H_2 (RICH) • **PI** on the Hydrogen Storage project https://www.ku.ac.ae/research-centers/research-and-innovation-center-on-co2-and-hydrogen-rich	Khalifa University - RCII (Research Center Type II)	2019-2022	1,500,000
Maximizing Recovery in CO_2-EOR by a Holistic, Bottom-Up, and Multi-Scale Experimental and Simulation Approach involving Machine Learning Optimization. • **Project Co-I**	Khalifa University - CIRA program (Competitive Internal Research Awards)	2019-2022	500,000
Development and Optimization of Novel Battery System: Na Ion • **Project Co-I**	Khalifa University - CIRA program (Competitive Internal Research Awards)	2022-2025	570,000
BEFORE KHALIFA UNIVERSITY (Demokritos National Research Center)			
Carbon Nanotube Membranes by Templated Growth in Oriented Molecular Sieve Films (NANOTUBEMEM)	FP7 Marie Curie Fellowship	2008-2012	118,000
Growth of Molecular Sieve Membranes through Microstructural Optimization	ENTER program (Integration into the Greek	2007-2008	91,000

	R&D system of scientists from abroad).		
TOTAL FUNDING			**~12 million US dollars**

SUPERVISION OF GRADUATE STUDENTS & RESEARCH FELLOWS

5 post-docs, 5 completed PhDs (main advisor), 6 completed MSc (main advisor), 6 Research Associates (MSc holders), 7 Research Assistants (BSc holders). Supervised 10 senior design projects. Committee member/examiner of >40 PhD and MSc student theses.

Name	Position	Research project
CURRENT GRADUATE STUDENTS (main advisor – University of Patras):		
Konstantinos Papadopoulos	PhD	Metal-organic framework – based sorbents for atmospheric water harvesting
Georgia Tsouvaltzi	PhD	Graphene-based composite membranes and coatings with hydrogen barrier characteristics for hydrogen storage and transportation
Robin Raju	PhD	Direct air capture of CO_2 using biomass waste – derived adsorbents
CURRENT PhD ADVISORY COMMITTEE		
Andriana Lymperi	PhD	Electrochemical Promotion of Environmentally interesting Catalytic Reactions
Kavyashree Kalkura	PhD	Development of age clock for secondary organic aerosols derived from precursor gases using mass spectrometric techniques
COMPLETED GRADUATE STUDENT THESES (main advisor):		
Fahmi Anwar	PhD	Functionalized Adsorbents Exhibiting Reverse Selectivity for Ethane-Ethylene Separation
Samar Abdelwadood	PhD	Highly Efficient Porous Composites for Atmospheric Water Harvesting
Javad Iskandarov	PhD	Machine Learning Methodologies for Enhancing the Performance of CO_2 Foam EOR
Solomon Gebremariam	PhD	Metal-organic Framework Hybrid and Structured Adsorbents for Carbon Capture
Kedar Jivrakh	PhD	3D-Printed Adsorbents and Catalysts for Carbon Dioxide Capture and Conversion
Nadin Elashwah	MSc	Metal-Organic Framework – Based Mixed Matrix Membranes For Highly-Efficient Wastewater Treatment
Joel Koshy Edison	MSc	Highly Efficient Nanostructured Frameworks for H_2 Storage
Fatema Khamees	MSc	The potential of pristine and silver-incorporated $AlPO_4$-5 zeotype fillers in the separation enhancement and biofouling mitigation of polyethersulfone ultrafiltration membranes
Stavroula Anastasiou	MSc	Metal-Organic Framework (MOF)-based Matrix Membranes for CO_2 Separation
Jeewan Pokhrel	MSc	Functionalized metal-organic frameworks (MOF) and graphene oxide (GO) composites for natural gas sweetening

Fadi Dawaymeh	MSc	Metal Substitution Effects of $AlPO_4$-5 as Solid Acid Catalyst for Esterification of Acetic Acid with Ethanol
COMPLETED GRADUATE STUDENT THESES (co-advisor):		
Ayesha Alkhoori	PhD	CO_2 Conversion Technologies: Spanning from Capture to Catalytic Reduction
Ahmed Gulzar	MSc	Core-Shell Porous Framework Contactors for Efficient CO_2 Capture from Low Concentration Flue Gas
Khawla Ahmed Alhebsi	MSc	Designing of highly stable alloy anodes by surface and interface engineering for sodium-ion batteries
Marcellin Jerome	MSc	Cellulose-based composites for carbon capture
Waad Alshehhi	MSc	Molecular dynamics and density functional theory of sodium ion batteries
Omnya Nasser	MSc	Atmospheric water generation to CO_2 mitigation strategies
Shaima Albedwawi	MSc	Investigating High Entropy Oxides for Carbon Dioxide Hydrogenation towards Methane
Ahmad Soliman	MSc	3D-Printed Adsorbents for CO_2 Capture
Haya Nassrullah	MSc	Development of Electrospun Membranes Based on PVDF-HFP Modified by Nanosized Zeolites
Dana Alshami	MSc	H_2S adsorption by metal-substituted aluminophosphates
Olamide Animasahun	MSc	Hydrate Based CO_2 Capture (HBCC) from Flue gas: A process Design
Ismaila Shittu	MSc	Separation of Aromatic and Aliphatic Hydrocarbons using Ionic Liquids

PUBLICATIONS

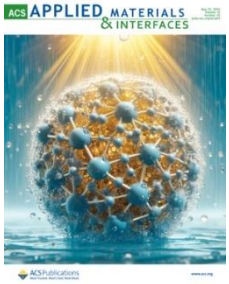
h-index: 40, Citations: 5080 (Google scholar, 10-1-2026)

Journal Publications (for a more updated list: https://scholar.google.com/citations?user=Ichc-cYAAAAJ&hl=en)

AT UNIVERSITY OF PATRAS

1. SK Gebremariam, Y Al Wahedi, A AlHajaj, LF Dumée, GN Karanikolos, "*System-level comparison and techno-economic evaluation of structured metal–organic framework adsorbents for post-combustion CO2 capture by vacuum/pressure swing adsorption*", **Chemical Engineering Journal**, 159384 (2025)
2. Solomon K Gebremariam, Anish Mathai Varghese, Suresh Kuppireddy, Yasser Al Wahedi, Ahmed AlHajaj, Georgios N Karanikolos, Ludovic F Dumée, "*MOF@ MOF core-shell hybrid adsorbents with controlled water vapor affinity towards enhanced and steady CO_2 capture in moist conditions*", **Carbon Capture Science & Technology**, 100356 (2025)
3. Krishna Bharat Lankamsetty, Ganesh Kumar Veerasubramani, Goli Nagaraju, Sivaprakash Sengodan, Ali AbdulKareem AlHammadi, Vishwanath Hiremath, Georgios N Karanikolos, Hyun Kyoung Yang, "*High-performance aqueous sodium-ion storage using scalable and surfactant-free flower-like manganese oxide/reduced graphene oxide electrodes*", **Journal of Power Sources,** 631, 236221 (2025).
4. Fahmi Anwar, Anish Mathai Varghese, Suresh Kuppireddy, Anastasios Gotzias, Maryam Khaleel, Kean Wang, Georgios N. Karanikolos, *"High-purity ethylene production from ethane/ethylene mixtures at ambient conditions by ethane-selective fluorine-doped activated carbon adsorbents"*, **ACS Applied Materials & Interfaces**, article ASAP (2025)
5. MP Jerome, AM Varghese, S Kuppireddy, GN Karanikolos, N Alamoodi, *"Upcycling paper waste into aminosilane-functionalized cellulose-graphene oxide composite aerogel adsorbents for low-pressure CO2 capture"*, **Separation and Purification Technology**, 360, 131089 (2025).
6. K Karuppasamy, Ganesh Kumar Veerasubramani, Vishwanath Hiremath, Dhanasekaran Vikraman, Palanisamy Santhoshkumar, Georgios N Karanikolos, Ali Abdulkareem Alhammadi, Hyun-Seok Kim, Akram

Alfantazi, "*Unlocking recent progress in niobium and vanadium carbide-based MXenes for sodium-ion batteries*", **Journal of Materials Chemistry A**, 13, 1590-1611 (2025).



7. Samar N Abd Elwadood, Andreia SF Farinha, Yasser Al Wahedi, Ali Al Alili, Geert-Jan Witkamp, Ludovic F Dumée, Georgios N Karanikolos, *"A Semi-Interpenetrating Network Sorbent of Superior Efficiency for Atmospheric Water Harvesting and Solar-Regenerated Release"*, **ACS Applied Materials & Interfaces**, 16, 20, 26142 (2024). ***On the journal cover.***
8. Anwar, F., Varghese, A.M., Kuppireddy, S., Khaleel, M, Wang, K., Karanikolos, G.N., *"Functionalized and Hybridized ZIF-7 Adsorbents for Ethane-Ethylene Separation"*, **Industrial and Engineering Chemistry Research**, 63(45), pp. 19744–19755 (2024).
9. Jivrakh, K. B.; Varghese, A. M.; Ehrling, S.; Kuppireddy, S.; Polychronopoulou, K.; Abu Al-Rub, R. K.; Alamoodi, N.; Karanikolos, G. N., "*3D-printed zeolite 13X gyroid monolith adsorbents for CO_2 capture*", **Chemical Engineering Journal**, 497 (2024).
10. Ansari, E.; Elwadood, S.; Balakrishnan, H.; Sapkaite, I.; Munro, C.; Karanikolos, G. N.; Askar, K.; Arafat, H.; Mao, S. S.; Dumée, L. F., *"Sorption-based atmospheric water harvesters - perspectives on materials design and innovation"*, **Journal of Environmental Chemical Engineering**, 12 (5) (2024).
11. Gebremariam, S. K.; Varghese, A. M.; Ehrling, S.; Al Wahedi, Y.; AlHajaj, A.; Dumée, L. F.; Karanikolos, G. N., *"Hierarchically Porous Structured Adsorbents with Ultrahigh Metal-Organic Framework Loading for CO_2 Capture"*, **ACS Applied Materials and Interfaces**, 16, 38, 50785–50799 (2024).
12. Iskandarov, J.; Fanourgakis, G. S.; Ahmed, S.; Alameri, W.; Froudakis, G. E.; Karanikolos, G. N., "*Machine learning prediction and optimization of CO2 foam performance for enhanced oil recovery and carbon sequestration: Effect of surfactant type and operating conditions*", **Geoenergy Science and Engineering**, 213064, 240 (2024).
13. Jivrakh, K. B.; Kuppireddy, S.; Dumée, L. F.; Polychronopoulou, K.; Abu Al-Rub, R. K.; Alamoodi, N.; Karanikolos, G. N., *"A critical review on 3D-printed adsorbents, membranes, and catalysts for carbon dioxide capture, separation, and conversion"*, **Journal of Cleaner Production** 472 (2024).
14. Yasmitha A Alahakoon, Shine C Wilson, Chathuri Peiris, Yohara K Ranasinghe, Sameera R Gunatilake, Xuefeng Zhang, Todd E Mlsna, Upul Kumarasinghe, M Infas H Mohideen, Upendar Reddy Gandra, Anish Mathai Varghese, Georgios N Karanikolos, Dinesh Mohan, *"Carbothermally synthesized, lignin biochar-based, embedded and surface deposited nano zero-valent iron composites: Comparative material characterization, selective gas adsorption and nitroaromatics remediation"*, **Colloids and Surfaces C: Environmental Aspects**, 2, 100048 (2024)
15. Wadi, V. S.; Varghese, A. M.; Kuppireddy, S.; Shimoga, G.; Karanikolos, G. N.; Alhassan, S. M., *"Three-dimensional graphene with the decoration of elemental sulfur-based sulfur-nitrogen dots for CO_2 capture"*, **Journal of Environmental Chemical Engineering** 12 (4) (2024).
16. Kedar Bharat Jivrakh, Suresh Kuppireddy, Somayya E Taher, Kyriaki Polychronopoulou, Rashid Abu Al-Rub, Nahla Alamoodi, Georgios N Karanikolos, *"Zeolite-coated 3D-printed gyroid scaffolds for carbon dioxide adsorption"*, **Separation and Purification Technology**, 346, 127523 (2024)
17. Wong, K. H.; Zhang, M.; Yang, T.; Ma, Q.; Dai, S.; Wei, J.; Kuma, G.; AlHammadi, A. A.; Karanikolos, G.; Bekyarova, E.; Elkamel, A.; Yu, A., *"Modification strategy for advanced Mn-based layered transition metal oxide cathode for sodium-ion batteries"* **Energy Storage Materials** 71 (2024).
18. Kuppireddy, S.; Varghese, A. M.; Araj, H. A.; Hart, P.; Ramantani, T.; Bampos, G.; Karanikolos, G. N., *"A combined experimental and simulations assessment of CO2 capture and CO2/H2 separation performance of aminosilane-grafted MCM-41 and pore-expanded MCM-41"*, **Microporous and Mesoporous Materials** 377 (2024).
19. Iskandarov, J.; Ahmed, S.; Fanourgakis, G. S.; Alameri, W.; Froudakis, G. E.; Karanikolos, G. N., *"Predicting and optimizing CO2 foam performance for enhanced oil recovery: A machine learning approach to foam formulation focusing on apparent viscosity and interfacial tension"*, **Marine and Petroleum Geology** 170 (2024).
20. Ganesh Kumar Veerasubramani, Myungsoo Park, Umesh Tukaram Nakate, Georgios N Karanikolos, Goli Nagaraju, Ali AbdulKareem AlHammadi, Dong-Won Kim, *"Intrinsically Nitrogen-Enriched Biomass-Derived Hard Carbon with Enhanced Performance as a Sodium-Ion Battery Anode"*, **Energy & Fuels** 38 (8), 7368-7378 (2024)
21. Samar N Abd Elwadood, Andreia SF Farinha, Yasser Al Wahedi, Ali Al Alili, Geert-Jan Witkamp, Ludovic F Dumée, Georgios N Karanikolos, *A Super-Hygroscopic Solar-Regenerated Alginate-Based Composite for Atmospheric Water Harvesting*, **Small**, 2400420 (2024)

22. Ourania Tzialla, George V Theodorakopoulos, Konstantinos G Beltsios, George Pilatos, K Suresh Kumar Reddy, Chandrasekar Srinivasakannan, Giulia Tuci, Giuliano Giambastiani, Georgios N Karanikolos, Fotios K Katsaros, Evangelos Kouvelos, George Em Romanos, *"Utilizing Carbonaceous Materials Derived from [BMIM][TCM] Ionic Liquid Precursor: Dual Role as Catalysts for Oxygen Reduction Reaction and Adsorbents for Aromatics and CO2",* **ChemPlusChem**, e202300785 (2024)
23. Yafiee, O. A.; Mumtaz, F.; Kumari, P.; Karanikolos, G. N.; Decarlis, A.; Dumée, L. F., *"Direct air capture (DAC) vs. Direct ocean capture (DOC)–A perspective on scale-up demonstrations and environmental relevance to sustain decarbonization",* **Chemical Engineering Journal** 497 (2024).
24. Gebremariam, S.K., Dumée, L.F., Llewellyn, P.L, Alwahedi, Y.F., Karanikolos, G.N., *"Metal-organic framework hybrid adsorbents for carbon capture - A review"*, **Journal of Environmental Chemical Engineering**, 11(2), 109291 (2023)
25. Anwar, F., Suresh Kumar Reddy, K., Mathai Varghese, A. Khaleel, M., Wang, K., Karanikolos, G.N., *"Ionic liquid – grafted mesoporous silica exhibiting reverse selectivity for ethane/ethylene separation"*, **Separation and Purification Technology**, 323, 124324 (2023)
26. Paul, T., Juma, A., Alqerem, R., Karanikolos, G.N., Arafat, H.A., Dumée, L.F., *"Scale-up of metal-organic frameworks production: Engineering strategies and prospects towards sustainable manufacturing",* **Journal of Environmental Chemical Engineering**, 11(5), 111112 (2023)
27. Gebremariam, S.K., Mathai Varghese, A., Reddy, K.S.K., AlWahedi, Y., Dumée, L.F., Karanikolos, G.N., *"Polymer-aided microstructuring of moisture-stable GO-hybridized MOFs for carbon dioxide capture"*, **Chemical Engineering Journal**, 473, 145286 (2023)
28. H. Al Araj, D. Bahamon, K.S.K. Reddy, L.F. Vega, G.N. Karanikolos, *"A Systematic Approach to Understanding and Optimizing the CO2 Capture Performance of Triamine-Functionalized Mesoporous Silica with Amine Blends Using Molecular Simulations"*, **J. Phys. Chem. C**, 127, 15, 7410 (2023)
29. Khamis, F., Kumar, M., Koutsoukos, P.G., Banat, F., Arafat, H.A., Karanikolos, G.N., "Highly-selective hybrid ultrafiltration membranes with $AlPO_4$-5 zeotype fillers: Effect of filler loading, morphology, and metal substitution on performance and fouling resistance", **Journal of Water Process Engineering**, 54, 104038 (2023)
30. Jena, K.K., Suresh Kumar Reddy, K., Karanikolos, G.N., Alhassan, S.M., *"Structure-property relationship of zeolite-Y/cubic ZnS nanohybrid material and its utilization for gaseous phase mercury removal"*, **Chemical Engineering Journal**, 469, 143771 (2023)
31. Azhagapillai, P., Reddy, K.S.K., Guerrero Pena, G.D.J., Bojesomo, Rukayat S., Raj, Abhijeet, Anjum, Dalaver H., Elkadi, Mirella, Karanikolos, G.N., Ali, M.I. *"Synthesis of Mesoporous Carbon Adsorbents Using Biowaste Crude Glycerol as a Carbon Source via a Hard Template Method for Efficient CO_2 Capture"*, **ACS Omega**, 8(24), 21664 (2023)
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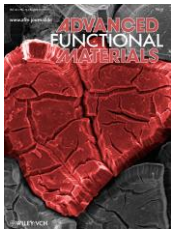

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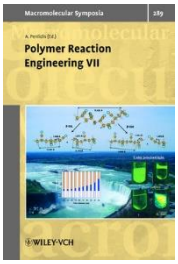

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Patents

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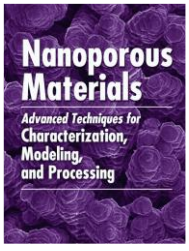
2. Fahmi Anwar, Georgios N. Karanikolos, Maryam Khaleel, Kean Wang, Anish Mathai Varghese, K Suresh Kumar Reddy, *"Tailored carbon-based adsorbents for selective removal of paraffins from light olefin/paraffin mixtures"*, **USPTO application number 18/736,636**, **Greek patent e-filing No** 116-0004861045 (2024)
3. Dionysios Karousos, Andreas Sapalidis, Georgios Karanikolos, Evangelos Favvas, "*Magnetic Swing Absorption"*, **USPTO No. 63/078,433,** Filed on September 15, 2020. **WIPO Publication Number WO/2022/058832**, Publication Date 24.03.2022
4. Dionysios Karousos, Andreas Sapalidis, Georgios Karanikolos, Evangelos Favvas, "*Magnetic-Based Determination of Sorption Separation Factor for Binary Gas Mixtures"*, **USPTO No. 63/078,364,** Filed on September 15, 2020. WIPO Publication Number **WO/2022/058831**, Publication date: 24.03.2022
5. Georgios N. Karanikolos, Evangelos Favvas, Nikolaos Heliopoulos, Sergios K. Papageorgiou, *"Membrane Gas Separation under Magnetic Field"* **WO/2019/012317**, published on 17-1-2019. **USPTO US2020/0338496A1**, 29-10-2020, Gulf Cooperation Council (GCC), **GC 2018-35657**, 12-Jul-2018. European Patent Office **EP3651877A1,** 20-5-2020.
6. Alexandridis, G.N. Karanikolos, T.J. Mountziaris, *"Synthesis of Nanostructured Materials using Liquid Crystalline Templates"*, **United States Patent No. 7,608,237**; Issued Oct. 27th, 2009. [**Licensed to Quantum Technology Inc.,** and **Global IES Inc.**].
7. Alexandridis, G.N. Karanikolos, T.J. Mountziaris, *"Controlled synthesis of nanowires, nanodiscs, and nanostructured materials using liquid crystalline templates"*, US 20060240590 A1, Pub. Date: Oct, 26, 2006
8. P. Alexandridis, G.N. Karanikolos, T.J. Mountziaris, International Patent Number WO/2006/105102; publication date: October 5th, 2006.

Book Chapters

1. Sana Eid, Ahmed Gulzar, Ali Al Najjar, Gabriele Scandura, Twinkle Paul, Dinesh Shetty, Hassan Arafat, Georgios N Karanikolos, Ludovic F Dumée, "*Covalent Organic Frameworks-Based Membranes and Adsorbents for Water Treatment and Gas Separation"*, In **Covalent Organic Frameworks**, CRC Press, 397-410 (2022)
2. MO Mavukkandy, F Al-Marzooqi, E Alhseinat, G Karanikolos, SW Hasan, "*Tungsten Oxide-Blended PVDF-HFP Electrospun Nanofiber Membranes for Solar-Driven Interfacial Water Evaporation*", In **Water-Energy-Nexus in the Ecological Transition: Natural-Based Solutions**, Springer International Publishing (2022)
3. Zhou He, K. Suresh Kumar Reddy, Georgios N. Karanikolos*, Kean Wang*, *"CO_2/CH_4 Separation (Natural Gas Purification) by Using Mixed Matrix Membranes"*, in **Current Trends and Future Developments on (Bio-) Membranes**, Edited by Angelo Basile, Evangelos Favvas, Elsevier, 2018
4. C. Veziri, A. Labropoulos, G. N. Karanikolos, N. K. Kanellopoulos, *"Recent Developments in Membrane Technologies for CO_2 Separation"*, in Small-Scale Gas to Liquid Fuel Synthesis, Edited by N.K. Kanellopoulos, CRC Press, New York, 2015.
5. G.N. Karanikolos, *"Activated Carbon as Support for Controlled Growth of Carbon Nanotubes and Nanostructures"*, in Advances in Chemistry Research, Vol. 12, Edited by James C. Taylor, Nova Science Publishers, NY, 2011
6. G.N. Karanikolos, F.K. Katsaros, G.E. Romanos, K.L. Stefanopoulos, N.K. Kanellopoulos, *"The Combination of In Situ and Ex Situ Techniques for Monitoring and Controlling the Evolution of Nanostructure of Nanoporous Materials"*, in **Nanoporous Materials: Advanced Techniques for Characterization, Modelling, and Processing**, Edited by N.K. Kanellopoulos, CRC Press, New York, 2010



7. G.N. Karanikolos, N.K. Kanellopoulos, In *"*Verified Synthesis of Mesoporous Materials*"*, Edited by V. Meynen, P. Cool and E.F. Vansant, Microporous Mesoporous Mater., 125(3), Pages 169-224, Oct. 2009.

Conference Proceedings

1. J. Iskandarov, G. Fanourgakis, W. Alameri, G. Froudakis, G. Karanikolos, *"Machine Learning Application to CO_2 Foam Rheology"*, **Society of Petroleum Engineers (SPE) Proc.,** SPE-208016-MS (2021).
2. N. Bhoria, J. Pokhrel, S. Anastasiou, K.S.K. Reddy, G. Romanos, G.N. Karanikolos, *"Composite porous nanostructures as multi-action adsorbents and membrane fillers for carbon dioxide separation: Comparative performance of metal organic framework–graphene oxide hybrids"*. **Materials Today: Proceedings,** 37, 4044 (2021).
3. Varghese, K. Suresh Kumar Reddy, S. Singh, G.N. Karanikolos, "*UV-Activated Graphene Oxide for Carbon Capture: Application as Self-Supported Foam Adsorbent and Counterpart in Metal-Organic Framework/Graphene Oxide Hybrid Adsorbents",* **Proceedings of the 15th Greenhouse Gas Control Technologies Conference,** SSRN: 10.2139/ssrn.3821344 (2021). ***SSRN's Top Ten download list***
4. S. Singh, A. Varghese, G.N. Karanikolos, "*Mixed Matrix CO_2 Separation Membranes based on Polysulfone with Cu-BTC Metal-Organic Framework and Poly(ethylene glycol)-grafted-Carbon Nanotubes*", **Proceedings of the 15th Greenhouse Gas Control Technologies Conference,** SSRN: 10.2139/ssrn.3821350 (2021).
5. Maryam Khaleel, Anna Tuneu-Pujolras, Issam Ismail, Georgios N. Karanikolos, Fèlix Llovell, Lourdes F. Vega, *"Amine-Functionalized Hierarchical Zeolites for Carbon Dioxide Capture"*, **AIChE Annual Meeting Proceedings**, ISBN: 978-0-8169-1108-0 (2018).
6. Stavroula Anastasiou, Nidhika Bhoria, Jeewan Pokhrel, Georgios N. Karanikolos*, *"Metal Organic Framework Mixed Matrix Membranes for CO2 Separation"*, **Society of Petroleum Engineers (SPE) Proc.,** SPE-183264-MS, http://dx.doi.org/10.2118/183264-MS, 2, 1276 (2017).
7. Jeewan Pokhrel, Nidhika Bhoria, Theodore Tsoufis, George Romanos, and Georgios N. Karanikolos*, *"CO_2 capture By Amine-Functionalized Metal Organic Frameworks (MOFs), Graphene Oxide (GO), and MOF/GO Composites"*, **AIChE Annual Meeting Proceedings**, ISBN: 978-0-8169-1102-8 (2017)
8. Anna Perdikaki, Angeliki Galeou, Georgios N. Karanikolos*, *"Ag/Cu Bimetallic Nanoparticle and Ion - Graphene Composites with Enhanced Antibacterial Performance"*, **AIChE Annual Meeting Proceedings**, ISBN: 978-0-8169-1102-8 (2017)
9. Stavroula Anastasiou, Jeewan Pokhrel, Nidhika Bhoria, K. Suresh Kumar Reddy and Georgios N. Karanikolos*, *"Metal-Organic Framework/Graphene Oxide Composite Fillers in Mixed-Matrix Membranes for CO_2 Separation"*, **AIChE Annual Meeting Proceedings**, ISBN: 978-0-8169-1102-8 (2017)
10. Jeewan Pokhrel, Nidhika Bhoria, Stavroula Anastasiou, Georgios N. Karanikolos*, "*Metal Organic Frameworks (MOFs) and MOF/Graphene Oxide (GO) composites for Natural Gas Sweetening*", **UAE Graduate Students Research Conference Proceedings** (2016)
11. A.I. Labropoulos, E.C. Vermisoglou, N.K. Kakizis, G.E. Romanos, G.I. Pilatos, G.N. Karanikolos, N.K. Kanellopoulos, *"Advanced Techniques for Monitoring and Optimizing Processes Involving Nanoporous Materials"*, **17th Int. Offshore Polar Eng. Conf. Proc.**, 4, 2819 (2007).
12. G.N. Karanikolos, P. Alexandridis, T.J. Mountziaris, *"Controlled Synthesis of Zinc Selenide Nanostructures using Oil-Water-Amphiphilic Block Copolymer Liquid Crystals"*, **MRS Proc.**, 942, 8 (2006).
13. B. Kostova, G.N. Karanikolos, Y.G. Kevrekidis, T.J. Mountziaris, *"Multiscale modeling of the synthesis of quantum semiconductor nanostructures in templated media"*, **AIChE Annual Meeting Conf. Proc.**, 11652 (2005)
14. G.N Karanikolos, P. Alexandridis, N-L. Law, A. Petrou, T.J. Mountziaris, *"Templated synthesis of compound semiconductor nanostructures using lyotropic liquid crystals"*, **AIChE Annual Meeting Conf. Proc.,** 928 (2005)
15. G.N. Karanikolos, P. Alexandridis, A. Petrou, and T.J. Mountziaris, *"Synthesis and Size Control of Luminescent II-VI Semiconductor Nanocrystals by a Novel Microemulsion-Gas Contacting Technique"*, **MRS Proc.**, 789, 389 (2004).
16. G.N. Karanikolos, J. Wang, C. Sarigiannidis, P. Alexandridis and T.J. Mountziaris, *"A novel gas-emulsion synthesis route for ZnSe nanocrystals"*, 4th Panhellenic Chemical Eng. Conf. Proc., 269 (2003)
17. M. Koutsona, C. Sarigiannidis, G.N. Karanikolos, and T.J. Mountziaris, *"Vapor-phase synthesis of ZnSe nanoparticles in a counterflow jet reactor"*, 4th Panhellenic Chemical Eng. Conf. Proc., 273 (2003)

DIPLOMA THESES AT UNIVERSITY OF PATRAS:

Team	Academic Year	Project

ΤΑΞΙΑΡΧΗΣ ΔΙΑΜΑΝΤΗΣ	To be completed in 2024-25	Ηλεκτροκαταλύτες με βάση περοβσκιτικά οξείδια ή/και μεταλλο-οργανικά πλέγματα (MOFs) για στοιχεία καυσίμου χαμηλής θερμοκρασίας
ΣΙΣΣΥ ΡΕΚΛΕΙΤΗ	To be completed in 2024-25	Polymeric membranes for CO_2 separation on flat and hollow fiber supports
ΛΙΟΝΤΑΚΗΣ ΓΡΗΓΟΡΙΟΣ ΒΙΚΤΩΡΑΣ	To be completed in 2024-25	Εκλεκτική απομάκρυνση διοξειδίου του άνθρακα από ρεύμα υδρογόνου με προηγμένα υλικά και διεργασίες προσρόφησης
ΚΑΤΕΡΙΝΑ ΠΟΥΡΛΙΑΚΑ	To be completed in 2024-25	Μελέτη εκτόπισης υδρογονανθράκων από πορώδη μέσα με συστήματα πολυμερών, επιφανειδραστικών και γαλακτωμάτων Pickering
ΔΙΟΝΥΣΙΟΣ ΒΡΟΥΛΙΑΣ	To be completed in 2024-25	Μελέτη μεμβρανών πολυμερικής μήτρας για διαχωρισμό διοξειδίου του άνθρακα από πηγές χαμηλής συγκέντρωσης
ΛΙΑΔΗΣ ΓΕΩΡΓΙΟΣ	To be completed in 2024-25	Αντιβακτηριακή δράση μεταλλο-οργανικών πλεγμάτων (MOFs)
ΜΑΡΙΟΣ ΧΑΡΑΛΑΜΠΟΥΣ	To be completed in 2024-25	Ετερογενής ενεργοποίηση του υπερθειικού νατρίου με την χρήση μεταλλο-οργανικών πλεγμάτων (metal-organic frameworks - MOFs) για αποδόμηση υδάτινων ρύπων

SENIOR DESIGN PROJECT TEAMS SUPERVISION BEFORE UNIVERSITY OF PATRAS (AT KHALIFA UNIVERSITY):

Team	Academic Year	Project
As main advisor:		
Maria Kamran Mezna Alblooshi Asma Alzarooni Fatima Alharam Hessa Alloghani	2021-2022	Design of a membrane-based process for energy-efficient ethane/ethylene separation Awarded in the 9th UAE Undergraduate Research Competition under Chemical Engineering Category, May 26th, 2022
Asmaa Alameri Salma Almenhali Fatima Alkirbi Amal Alhashmi Reem Aldahmani	2020-2021	Design of an Adsorption Process for Energy-efficient Olefin/Paraffin (C_2H_4/C_2H_6)-separation
Hanan Al Hadad Reem Alharthi Meera Alblooshi Asmaa Alobeidli Sara Binhareez	2019-2020	Process Plant for Production of Graphene-based bi-Metallic Antimicrobial Agents
Mariam AlHammadi Alanood Al Harbi Alanood Al Memari Alawia Alaydaroos Amna Almeraikhi	2018-2019	Photocatalytic Production of Fuel from CO_2 Emissions Using Perovskite Catalysts
Fatema Al Teneiji Hind Al-Ali Aaesha Al Blooshi Alreem Al Hammadi Mariam Al Hammadi	2018-2019	Design of an Adsorption-Based Process for Capture of Carbon Dioxide from the Tail Gas
Arwa AlHammadi Ayesha AlSaeedi Seba AlAreeqi Maryam AlShehhi	2016-2017	MemBrains Energy-Efficient NGL Fractionation using Zeolite Membranes
Khalid Al Ali Nawwaf Al Shehhi Omar Al Reyami Sultan Al Shehhi	2015-2016	Gas Sweetening Unit using Metal Organic Framework Adsorbents

Hasan Al Ali Mubarak Hameli, Yahya Al Muharram, Raed Bamardoof	2014-2015	Safe and Economic Production of Heterogeneous Catalysts for the Oil and Gas Industry
Mohamed Al Ghailani Fouad Zoghieb Mohamed Elhassan	2013-2014	Conversion of Waste Cooking Oil into Biodiesel Using Heterogeneous Catalysts Awarded in the 5th Engineering Students Renewable Energy Competition 2014 (ESREC 2014) May 3rd, 2014
As Co-advisor:		
Alreem Al-Ali Dheyab Albreiki Iman Alkindi Mohammad Alhammadi Shaikhah Alsalami	2022-2023	Graphene-Based Electrodes for Sodium-Ion Batteries
Sara Alameri Deimah Aldhanhani Hamda Almansoori Asma Almemari	2017-2018	Coated Ni_2P nano-catalyst for Claus Tail Gas Treatment
Khulood Al Marzooqi Shaima Al Yafei Fatema Bin Braik Dana Al Shaima	2014-2015	Developing Diamond Structures Using Hollow Cathode Plasma Micro-Jets

ADMINISTRATIVE AND ACADEMIC SERVICE

DEPARTMENT SERVICE AT THE UNIVERSITY OF PATRAS

Committee	Period	Role
Establishment of the new MSc program in the department on SUSTAINABLE ENERGY TECHNOLOGIES	2023-	Director
Accreditation committee	2022-2023 2023-2024 2024-2025	Member
Outreach committee	2022-2023 2023-2024 2024-2025	Member
Undergraduate labs committee	2022-2023 2023-2024 2024-2025	Member
Graduate committee	2023-2024 2024-2025	Member
Student affairs committee	2024-2025	Member
Diploma thesis examination committee	2023-2024	Member

DEPARTMENT AND UNIVERSITY SERVICE BEFORE UNIVERSITY OF PATRAS (AT KHALIFA UNIVERSITY)

Department/University Committees:

Committee	Period	Role	Duties
Department:			

Research Committee	2020-2021	Chair	Responsible for research –related matters/priorities/reports. Engagement with industry and public sector. Exploring sustainable funding and IP development routes. Proposing amendments on research-related policies.
	2017-2020 2021-2022	Member	
Graduate Committee	2014-2022	Member	Shortlisting and interviewing candidates for Graduate admission – 2 cycles for admission (Fall and Spring). Responsible for the graduate curriculum
Recruitment Committee	2015-2017	Member	Interviewed more than 60 candidates for Faculty, Research Associate, Lab Engineer, and Lab Technician positions for the Department and the ADNOC Research & Innovation Center (ADRIC)
PhD Program Establishment Committee	2015-16	Member	Establish course and research curriculum for the PhD problem at PI and prepare requirements for accreditation
KU Chemical Engineering undergraduate programs consolidation committee	2017	Member	Consolidate Chemical Engineering programs within KU
Accreditation Committee	2014-2015	Member	Responsible for all requirements of National (CAA) and International (ABET) accreditation of the department
Outreach/Reports Committee	2013-14	Member	Responsible of maintaining and updating the outreach profile of the department and assembling related reports
University:			
Learning Enhancement Committee (LEC)	2021 - 2022	Member	Faculty representative from the College of Engineering
Faculty Affairs Committee	2016-2017	Chair	The University Faculty Affairs Committee advises on policies and issues concerning faculty such as cultural, social, and material welfare of the faculty, and on matters affecting the educational environment in which the faculty work. Issues of concern to the committee included, but were not limited to, the following: • Periodically reviewing and recommending updates for the faculty handbook; • Faculty benefits; • Academic freedom; • Rights and responsibilities; • Matters of faculty confidentiality; • Diversity, Emiritization and equal opportunity; and • Faculty development and retention. The committee also: • Solicits input from represented departments and programs; and • Reviews annual satisfaction/climate surveys and makes recommendations for addressing identified issues and concerns.
	2015-2016	Member	

Additional Department/University Service:
Member of the department committee for the development of the Hydrogen concentration in the undergraduate curriculum.
Invitation of Distinguished Speakers to KU and related arrangements
Participation in University Open days as representative from the Department
Participation in the Commencement ceremonies
Textbook review committee
Graduate theses defence coordinator
Chair and member of ABET focus groups for ABET and CAA evaluation of courses taught
Service at National level:
Task force for setting the first-ever UAE R&D Priorities and Policies by the Ministry of Industry and Advanced Technology (MoIAT).

Graduate Examination Committee Member

At University of Patras:

No	Student Name	Graduate level	Department	Graduation	Project
1	Αναστασία Σταυρινού	PhD	ITE/IEXMH (Physics Department)	Summer 2024	Τροποποιημένα προσροφητικά υλικά χαμηλού κόστους για την απομάκρυνση διαφόρων ειδών ρύπων από υδατικά ρεύματα

Before University of Patras (at Khalifa University):

No	Student Name	Graduate level	Department	Graduation	Project
1	Hongyu Zhao	PhD	Chemical Engineering	Summer 2023	Development of novel hybrid adsorbent materials for CO_2 capture by integrating advanced experimental techniques with molecular simulations
2	Muhammad Wazir	MSc	Chemical Engineering	Spring 2023	The physicochemical properties of natural sand-derived mesoporous silica
3	Essa Ansari	MSc	Mechanical Engineering	Spring 2022	Testing and evaluating performance of an atmospheric water generation (AWG) system
4	Alanood Almemari	MSc	Chemical Engineering	Spring 2022	Microchannel Surface Modification for Wastewater Oil Emulsion Separation
5	Mubinul Islam	MSc	Mechanical Engineering	Spring 2022	Innovative Materials for Atmospheric Water Collection
6	Muna AlQaydi	PhD	Mechanical Engineering	Fall 2022	Solar Activated Thermo-responsive Polymer for

					Atmospheric Water Collection
7	Noura Aldarmaki	MSc	Chemical Engineering	Fall 2021	MOF-derived hierarchical carbons for Li-Air battery applications
8	Fadi Dawaymeh	PhD	Chemical Engineering	Fall 2023	Selective surface chemistry patterning of microfluidic devices using nanomaterials for separation processes
9	Ali AlNajjar	MSc	Chemical Engineering	Fall 2020	Understanding the adsorption of refrigerants in metal-organic frameworks for cold thermal energy storage applications
10	Husam Al Araj	MSc	Chemical Engineering	Fall 2020	Understanding the Adsorption of 4th Generation Refrigerants on Metal-Organic Frameworks by Molecular Simulations
11	Moataz Abdrabou	MSc	Chemical Engineering	June 2020	Physicochemical properties and oxidative reactivity of combustion-generated soot from diesel blended with bicyclic hydrocarbon additives
12	Seba Al-Areeqi	MSc	Chemical Engineering	October 2019	New Insights into the Effect of CO_2 and NaCl Aqueous Solution on the Adsorption Behavior of Corrosion Inhibitors through Molecular Simulations
13	Fouad Zoghieb	MSc	Chemical Engineering	July 2018	Atmospheric-Pressure Microplasma Synthesis of Metal Sulfides from Elemental Sulfur
14	Hanin Radman	MSc	Chemical Engineering	April 2018	Synthesis of nanozeolite Y for hydrocarbons processing
15	Hashir Nasim	MSc	Chemical Engineering	Nov. 2018	Understanding the corrosion inhibitor film on metal surfaces by experiments and molecular simulations
16	Mostafa Elabyouki	MSc	Chemical Engineering	May 2018	Molecular simulations of nature-inspired hierarchical porous materials for energy storage
17	Zhou He	MSc	Chemical Engineering	May 2018	Investigation of permeation of binary gas mixtures in nanoporous membranes
18	Israa Othman	MSc	Chemical Engineering	Nov. 2017	Comparative Catalytic Activity of Some Ferrites for Phenol Degradation

19	Madeeha Durrani	MSc	Chemical Engineering	Nov. 2017	Removal of Heat Stable Salts from Lean Amine via Electrosorption using Carbon-Based Electrodes
20	Gayathri Lakshmanan	MSc	Chemical Engineering	July 2017	Waste plastics recycling through selective dissolution and re-precipitation
21	Shabin Mohammed	MSc	Chemical Engineering	July 2017	Mesoporous silica coated iron oxide Nanoparticles for H_2S removal from Claus tail gas
22	Shaima Alyafei	MSc	Chemical Engineering	May 2017	H_2S removal by silica coated nanoparticles of copper oxide
23	Mohamed Elhassan	MSc	Chemical Engineering	Dec. 2016	Development of Hierarchical Zeolites for Hydrocracking
24	Akhil M. Abraham	MSc	Chemical Engineering	April 2016	Synthesis of sulfur rich porous material for mercury adsorption and thermal insulation
25	Ghada Alsaidi	MSc	Chemical Engineering	May 2016	Reduced Graphene Oxide/Polyolefin Nanocomposites as Oil Absorbents
26	Baron Rubahamya	MSc	Chemical Engineering	Sep. 2016	Adsorption of BTX using carbon based adsorbents
27	Haleema Saleem	MSc	Chemical Engineering	Oct.2016	Improving toughness of polypropylene
28	Jimoh Haolat	MSc	Chemical Engineering	June 2016	Treatment of Cooling Water of Takreer Refinery with UV and a Photocatalyst
29	Kareem Oladipupo	MSc	Chemical Engineering	Sep. 2016	Analysis of Soot Emissions Produced during the Combustion of Diesel Blended with Biodiesel
30	Mohamed Sharif	MSc	Chemical Engineering	April 2016	Controlled exfoliation of graphite flakes from determination of the resonance frequencies
31	Thamsanqa Ncube	MSc	Chemical Engineering	June 2016	Adsorption of BTX using silica based adsorbents
32	Shaihroz Khan	MSc	Chemical Engineering	May 2016	Carbon Molecular Sieve Membrane for Nitrogen Separation from Natural Gas
33	Hadel Al Asafen	MSc	Chemical Engineering	July 2015	Polyethylene / Graphene Nanocomposites
34	Ismail Alkhatib	MSc	Chemical Engineering	Dec. 2015	Design of a predictive emission monitoring system for a natural gas plant using artificial neural network
35	Chaparala Sree Vidya	MSc	Chemical Engineering	May 2015	Kinetics of Nitrogen oxide formation during catalyst

					regeneration in Fluidised Catalytic Cracking (FCC) units
36	Tehsin Akhtar	MSc	Chemical Engineering	June 2015	Polyetherimide coatings for corrosion protection
37	Mohammed Yadulla	MSc	Chemical Engineering	Dec. 2014	Amine-Functionalized Graphene for Natural Gas Sweetening
38	Salama Al Marzooqi	MSc	Chemical Engineering	Nov. 2014	Synthesis of hybrid porous molybdenum sulfide monolith

PROFESSIONAL SERVICE

Journal Editorship

- Guest Associate Editor, Special Issue on "CO_2 Capture and Conversion Processes: Recent Trends and Future Perspectives", Processes, 2024
- Guest Associate Editor, Special Issue on "Chemical Modification of Adsorbents for Enhanced Carbon Capture Performance", Frontiers in Chemistry, 2020
- Review Editor in Frontiers in Chemical Engineering - Materials Process Engineering

Conference Committees:

- International Organizing Committee, 2nd Mediterranean Conference on Porous Materials (MEDPore25), 28 - 30 April, 2025, Marrakech, Morocco (https://acercoe.um6p.ma/custom/event/medapor2_marrakech)
- Session Chair, 1st Mediterranean Conference on Porous Materials (MEDPore23), May 17-19, 2023, Crete, Greece
- Review committee, 14th International Conference on Fundamentals of Adsorption, Broomfield, CO (USA), May 22 - 27, 2022
- Review committee, Greenhouse Gas Control Technologies 2020 (GHGT-15, https://ghgt.info/)
- Technical program committee, and Chair of Session "Engineering and Physical Sciences", UAE Graduate Students Research Conference 2019 (UAEGSRC2019), Abu Dhabi, April 16, 2019
- Organizing Committee, Catalysis and Separation: Shaping the Future Energy Conference, Abu Dhabi, December 9-10, 2018.
- Organizing Committee, Materials Science 2018 Conference, Dubai, December 3-5, 2018.
- Technical Program Committee Member, Environmental and Materials Science Symposium 2017 (EMSS'17), In Association with the American Chemical Society (ACS) UAE Chapter, Abu Dhabi, Dec 6, 2017.
- Reviewer Committee, 1st International Conference on Energy, Power, Petroleum and Petrochemical Engineering (E3PE 2017), Beirut, April 26-28, 2017.
- Technical program committee, and Chair of Session "Chemistry and Chemical Engineering", UAE Graduate Students Research Conference 2017 (UAEGSRC2017), Abu Dhabi, March 20-21, 2017
- Workshop Organizer, "Adsorption Processes for CO_2 Capture", Sponsored by ADNOC R&D, Abu Dhabi, June 30, 2016
- Organization Committee: "The impact of Greece to Chemical Engineering Science" workshop, 4th Hellenic Forum for Science, Technology and Innovation, Athens, July 11-15, 2016
- Conference program committee, 2016 R&D Conference and Exhibition, Abu Dhabi Research & Innovation Center (ADRIC), November 21, 2016
- Technical Committee for Gas Technology, ADIPEC 2015 (Abu Dhabi International Petroleum Exhibition & Conference), Abu Dhabi, November 9-12, 2015
- Session Chair: "Nanotechnology: Workshop 12 - Nanoporous Materials for Energy & Environmental Applications", 3rd Forum for Science, Technology & Innovation, Athens, July 1, 2015
- Round table panelist: "Nanotechnology in Sour Gas Processing", 3rd Abu Dhabi International Research and Development Conference & Exhibition (ADRAC 2014), Abu Dhabi, February 25th, 2014

- Conference organizing committee: IZMM 2010, "5th International Zeolite Membrane Meeting", Loutraki, Greece, May 23-26, 2010 (http://izmm5.iceht.forth.gr/)
- Conference organizing committee: NAPEN-2008, "1st International Workshop of Nanoporous Materials in Energy and Environment", Chania, Greece, Oct. 11-15, 2008 (http://www.napen2011.com/index.php?lang=en&rm=23&mn=23),
- Session Chair: "Advanced Materials and Nanotehnology", NCSR Demokritos Summer School, July 2010,
- Conference Scientific Committee: CCS 2013, European Carbon Capture & Storage Conference, May 28 - 29, 2013, Antwerp, Belgium.

Reviewer for Proposals:

- National Science Center of Poland
- Austrian Science Fund
- Oman Research Council
- Chilean National Science and Technology Commission
- Hellenic Foundation for Research and Innovation
- Hellenic Foundation of National Scholarships (IKY)

Reviewer for Journals:

Nature Communications, Advanced Materials, The Innovation, Angewandte Chemie, Journal of the American Chemical Society, SMALL, ACS Applied Materials & Interfaces, ACS Applied Nano Materials, ACS Applied Bio Materials, Journal of Physical Chemistry, Carbon, Journal of Membrane Science, Journal of Colloid & Interface Science, Journal of Chemical & Engineering Data, RSC Advances, Accounts in Chemical Research, Chemical Engineering Journal, Journal of Materials Science, Microporous and mesoporous Materials, Journal of Industrial and Engineering Chemistry, Separation Science and Technology, Applied Surface Science, Physica E, Advances in Colloid and Interface Science, Critical Reviews in Solid State and Materials Sciences, Microelectronics Journal, Journal of Hazardous Materials, Journal of Alloys and Compounds, Nanomedicine: Nanotechnology, Biology, and Medicine, Advanced Healthcare Materials, Surface and Coatings Technology, European Polymer Journal, Polymer, Polymer Testing, Chemistry Select, Applied Physics A, Journal of Nanostructured Polymers and Nanocomposites, Materials Chemistry and Physics, Physica Status Solidi A, New Journal of Chemistry, Biomedical and Environmental Sciences, Journal of Environmental Engineering, Materials Today Communications, Colloid and Interface Science Communications, Journal of Cleaner Production, International Journal of Energy Research, Journal of Molecular Liquids, Separation and Purification Technology, and more.

Member of Scientific Societies:

- International Adsorption Society (IAS)
- International Society for Porous Media (InterPore)
- AIChE (American Institute of Chemical Engineers)
- MRS (Materials Research Society)
- IAEE (International Association for Energy Economics)

CONFERENCE PRESENTATIONS

1. Solomon Kahsay Gebremariam, Anish Mathai Varghese, Yasser Fowad AlWahedi, Ahmed Al Hajaj, Ludovic F. Dumee, Georgios N. Karanikolos, "Techno-Economic Optimization of CO2 Capture By Vacuum/Pressure Swing Adsorption Using Hierarchically Porous Structured Composites with Ultrahigh MOF Loading", **2024 AIChE Annual Meeting,** October 27-31, 2024, San Diego, USA.
2. Kedar Jivrakh, Anish Mathai Varghese, Solomon Kahsay Gebremariam, Sebastian Ehrling, Suresh Kumar Reddy Kuppireddy, Kyriaki Polychronopoulou, Rashid Abu Al-Rub, Nahla Alamoodi, Georgios N. Karanikolos, "3D-Printed Zeolite X Gyroid Monolith Adsorbents for CO2 Capture", **2024 AIChE Annual Meeting,** October 27-31, 2024, San Diego, USA.

3. Sotiria Rekleiti, George V. Theodorakopoulos, Dionysios S. Karousos, Evangelos P. Favvas, Georgios N. Karanikolos, "Polyetherimide/Pebax Composite Membranes for CO2 Separation: Optimization of the Substrate Formation", **23rd Panhellenic Chemistry Conference**, Athens, Greece 25-28 September 2024
1. K. Jivrakh, A. Varghese, S. Ehrling, S. Kuppireddy, K. Polychronopoulou, R. Al-Rub, N. Alamoodi, G. Karanikolos, "3D-printed zeolite-x gyroid monolith adsorbents for CO2 capture", **14th Panhellenic Conference of Chemical Engineering**, Thessaloniki, Greece, May 30th, 2024 (**Keynote).**
2. K Jivrakh, KSK Reddy, K Polychronopoulou, RA Al-Rub, GN Karanikolos, 3D-Printed Zeolite X Based Gyroid Scaffolds for CO2 Capture, **2023 AIChE Annual Meeting**, November 5-10, 2023, Orlando, FL, USA
3. AM Varghese, SKR Kuppireddy, GN Karanikolos, Metal-and MOF-Doped Carbonaceous Adsorbents for Selective Hydrogen Storage at Ambient Temperature, **2023 AIChE Annual Meeting**, November 5-10, 2023, Orlando, FL, USA
4. F Anwar, SKR Kuppireddy, AM Varghese, M Khaleel, K Wang, GN Karanikolos, On-Surface Synthesis and Grafting of Ionic Liquid Functionalities on Mesoporous Silica Adsorbents to Induce Reverse Selectivity for Removal of Ethane from Ethylene, **2023 AIChE Annual Meeting**, November 5-10, 2023, Orlando, FL, USA
5. M Jerome, KSK Reddy, GN Karanikolos, N Alamoodi, Development of Cellulose-Based Composite Adsorbents for CO2 Capture, 2023 AIChE Annual Meeting, November 5-10, 2023, Orlando, FL, USA
6. SK Gebremariam, AM Varghese, SKR Kuppireddy, YF AlWahedi, Ludovic F. Dumée, GN Karanikolos, Polymer-Based Structuring of Metal-Organic Framework Adsorbents for CO2 Capture at Industrial Scale, **2023 AIChE Annual Meeting**, November 5-10, 2023, Orlando, FL, USA
7. Kedar Jivrakh, Ayesha Alkhoori, Kyriaki Polychronopoulou, Rashid Abu Al-Rub, Georgios N. Karanikolos, A 3D printed gyroid Ni/Al2O3 catalyst for CO2 methanation, **EuropaCat2023 - 15th European Congress on Catalysis,** August 27 – September 1st 2023, Prague, Czech Republic
8. F Anwar, SKR Kuppireddy, AM Varghese, M Khaleel, K Wang, GN Karanikolos, Surface Assembly of Ionic Liquid Functionalities on Mesoporous Silica to Enhance Paraffin Affinity and Induce Reverse Selectivity for Ethane/Ethylene Separation, **MRS Spring meeting 2023**, April 10-14, 2023, San Francisco, California, USA
9. A. M. Varghese, K. S. K. Reddy, G. N. Karanikolos, Unraveling the Potential of Metal- and MOF-doped Carbonaceous Adsorbents for Selective Hydrogen Storage at Ambient Temperature, **1st Mediterranean Conference on Porous Materials (MEDPore 23),** Crete, Greece, May 17-19 2023
10. S.K. Gebremariam, A.M. Varghese, K.S.K. Reddy, Y.F. AlWahedi, L.F. Dumée, G.N. Karanikolos, Polymer-based shaping of an in-situ grown metal-organic framework/graphene oxide hybrid adsorbent for CO2 capture, **1st Mediterranean Conference on Porous Materials (MEDPore 23),** Crete, Greece, May 17-19 2023
11. Samar N. Abd Elwadood, Andreia S. F. Farinha, Yasser Al Wahedi, Ali Al Alili, Geert-Jan Witkamp, Ludovic F. Dumée, Georgios N. Karanikolos, A super-hygroscopic alginate-based composite for atmospheric water harvesting, **1st Mediterranean Conference on Porous Materials (MEDPore 23),** Crete, Greece, May 17-19 2023
12. F. Anwar, K.S.K. Reddy, A.M. Varghese, M. Khaleel, K. Wang, G.N. Karanikolos, Inducing reverse selectivity on mesoporous silica adsorbents by ionic liquid grafting for removal of ethane from ethylene, **1st Mediterranean Conference on Porous Materials (MEDPore 23),** Crete, Greece, May 17-19 2023
13. Husam Al Araj, Daniel Bahamon, Suresh Kuppireddy, Lourdes F. Vega, Georgios Karanikolos, A Screening Approach to Investigate Amine-Functionalized Silica for CO2 Capture Using Non-reactive Molecular Simulations, **1st Mediterranean Conference on Porous Materials (MEDPore 23),** Crete, Greece, May 17-19 2023
14. K.B. Jivrakh, K.S.K. Reddy, K. Polychronopoulou, R.A. Al-Rub, G.N. Karanikolos, 3D-printed, zeolite X coated gyroid polymer scaffolds for CO2 capture, **1st Mediterranean Conference on Porous Materials (MEDPore 23)**, Crete, Greece, May 17-19 2023
15. Nadin Elashwah, Fawzi Banat, Hassan Arafat, Georgios N. Karanikolos, Metal-Organic Framework - Graphene Oxide Mixed Matrix Ultrafiltration Membranes, **1st Mediterranean Conference on Porous Materials (MEDPore 23),** Crete, Greece, May 17-19 2023
16. Fatema Khamis, Mahendra Kumar, Petros G. Koutsoukos, Fawzi Banat, Hassan A. Arafat, Georgios N. Karanikolos, Hybrid ultrafiltration membranes with AlPO4-5 zeotype fillers: Effect of filler loading, morphology, and metal substitution on performance and fouling resistance, **1st Mediterranean Conference on Porous Materials (MEDPore 23)**, Crete, Greece, May 17-19 2023
17. T. Agbaje, G.N. Karanikolos, M. Khaleel, Vapor Synthesis of ZIF-8 Membranes for Propylene/Propane Separation, **1st Mediterranean Conference on Porous Materials (MEDPore 23)**, Crete, Greece, May 17-19 2023

18. Marcellin Premila Jerome, Suresh Kumar Reddy, Georgios Karanikolos, Nahla Alamoodi, Development of Cellulose-based Composite Adsorbents for CO2 capture, **1st Mediterranean Conference on Porous Materials (MEDPore 23)**, Crete, Greece, May 17-19 2023
19. Margarita Russina, Gerrit Günther, Veronika Grzimek, Charitomeni Veziri, Georgios N Karanikolos, "Cooperativity in confined water behavior", **American Physical Society Meeting,** March 14–18, 2022; Chicago, USA
20. Daniel Bahamon, Hongyu Zhao, Husam AlAraj, K. Suresh Kumar Reddy, Georgios N. Karanikolos, Maryam Khaleel, Lourdes F. Vega. Design and implementation of novel hybrid/functionalized adsorbent materials for efficient CO2 capture by a combined experimental-molecular simulation approach. **16th International Conference on Greenhouse Gas Control Technologies (GHGT-16)**, 2022, France
21. Fahmi Anwar, K Suresh Kumar Reddy, Anish Mathai Varghese, Maryam Khaleel, Kean Wang, G. N. Karanikolos. Paraffin Affinity Modulation of Mesoporous Silica Adsorbents for Ethane/Ethylene Separation, **14th International Conference on Fundamentals of Adsorption (FOA 2022),** ID: 1840, May 22-27, Broomfield, Colorado, USA.
22. K. Suresh Kumar Reddy, Anish Mathai Varghese, G.N. Karanikolos. Aminosilane-Functionalized Ordered Hierarchical Nanostructured Silica and KIT-6 Adsorbents for low-Pressure CO_2 Capture, **14th International Conference on Fundamentals of Adsorption (FOA 2022),** ID: 1842, May 22-27, Broomfield, Colorado, USA.
23. Anish Mathai Varghese, K. Suresh Kumar Reddy, G. N. Karanikolos. CO_2 Capture by UV-Activated GO and GO/MOF Hybrid Adsorbents**, 14th International Conference on Fundamentals of Adsorption (FOA 2022)**, ID: 1845, May 22-27, Broomfield, Colorado, USA.
24. Vengatesan M Rangaraj, K. Suresh Kumar Reddy, G. N. Karanikolos. Synthesis and CO_2 Adsorption of Phosphonitrilic-core Covalent Triazine Frameworks, **14th International Conference on Fundamentals of Adsorption (FOA 2022),** ID: 1836, May 22-27, Broomfield, Colorado, USA.
25. Anish Mathai Varghese, K. Suresh Kumar Reddy, G. N. Karanikolos. Metal-Organic Framework/Graphene Oxide Hybrid Adsorbents for Hydrogen Separation and Storage at Ambient Temperature, **European Hydrogen Energy Conference (EHEC 2022),** ID: 181, 77, May 18-20, Madrid, Spain.
26. Anish Mathai Varghese, K. Suresh Kumar Reddy, G. N. Karanikolos. Metal - decorated activated carbon - based adsorbents for hydrogen storage at ambient temperature: A comparative study using Pt, Pd, and Li, **European Hydrogen Energy Conference (EHEC 2022),** ID: 180, May 18-20, Madrid, Spain.
27. T. Kentri, K. S. K. Reddy, A. Christofidi, G. N. Karanikolos, and S. Boghosian, An in Situ Spectroscopic Study of Nanostructured Aminosilane-Grafted Silica Adsorbents for CO2 Capture. (paper P-325) Proc. **13th Panhellenic Symp. Chemical Engineering**, Patras, 2-4 June 2022.
28. J. Iskandarov, G. Fanourgakis, W. AlAmeri, G. Frudakis, G. Karanikolos, "Machine Learning Application to CO_2 Foam Rheology", **ADIPEC**, 15-18 November, 2021, Abu Dhabi, UAE.
29. Musthafa Mavukkandy Odayooth, Yazan Ibrahim, Faisal Almarzooqi, Vincenzo Naddeo, Emad Alhseinat, Georgios Karanikolos N, Fawzi Banat, Shadi Hasan Wajih, "Gravity-driven oil/water separation using PVDF-HFP electrospun nanofiber membranes", **17th International Conference on Environmental Science and Technology (CEST2021)**, September 1-4, 2021, Athens, Greece
30. E. Thomou, V. Sakavitsi, G. K. Angeli, K. Spyrou, K. G. Froudas, E. K. Diamanti, G. E. Romanos, G. N. Karanikolos, P. N. Trikalitis, D. Gournis and P. Rudolf, "A diamino-functionalized silsesquioxane pillared graphene oxide for CO_2 capture", **5th EuChemS Conference on Green and Sustainable Chemistry (5th EuGSC)**, 26 – 29 September 2021.
31. Anish Mathai Varghese, K. Suresh Kumar Reddy, Swati Singh, Nidhika Bhoria, Jeewan Pokhrel, Georgios N. Karanikolos, "Performance Enhancement of Graphene-based CO_2 Adsorbents by UV Treatment", **15th International Conference on Greenhouse Gas Control Technologies (GHGT-15)**, 15-18 March 2021, Abu Dhabi, UAE
32. S. Singh, A. Varghese, G. Karanikolos, "Mixed Matrix CO_2 Separation Membranes based on Polysulfone and Poly(ethylene glycol)-grafted-Carbon Nanotubes", **15th International Conference on Greenhouse Gas Control Technologies (GHGT-15),** 15-18 March 2021, Abu Dhabi, UAE
33. Fatema Khamis, Fawzi Banat, Hassan Arafat, Georgios Karanikolos, "Polyethersulfone ultrafiltration membranes doped with plate-like CoAPO-5 crystal assemblies for organic fouling mitigation", **UAE Graduate Students Research Conference (UAEGSRC2021)**, June 28th, 2021.
34. Samar Abd Elwadood, Yasser Al Wahedi, Ali Al Alili, Georgios N. Karanikolos, "Aluminophosphate-Based Materials for Water Sorption Applications", **UAE Graduate Students Research Conference (UAEGSRC2021)**, June 28th, 2021.

35. Fahmi Anwar, Maryam Khaleel, Kean Wang, Georgios N. Karanikolos, "Paraffin Affinity Modulation of SBA-15 and its Application in Ethane/Ethylene Separation", **UAE Graduate Students Research Conference (UAEGSRC2021)**, June 28th, 2021.
36. M.O. Mavukkandy, F. Al-Marzooqi, E. Alhseinat, G. Karanikolos, V. Naddeo, S.W. Hasan, "Tungsten Oxide Blended PVDF-HFP Electrospun Nanofiber Membranes for Solar-Driven Interfacial Water Evaporation", **3rd WaterEnergyNEXUS**, December 2-4 (2020).
37. Suresh Kuppireddy, Anish Varghese, Georgios Karanikolos, "Graphene- and CNT- Hybrids with Metallic and Metalorganic Framework Nanostructures as Reversible and Sustainable H_2 Storage Media", **MRS Spring/Fall Meeting,** November 27 - December 4, 2020
38. Adetola Ogungbenro, Suresh Kuppireddy, Maryam Khaleel, Georgios Karanikolos, 'Site-Specific Surface Modification and Functionalization of Porous Nanostructured Scaffolds for Tunable Adsorption Applications", **MRS Spring/Fall Meeting,** November 27 - December 4, 2020
39. Anish Varghese, Swati Singh, Suresh Kuppireddy, Georgios Karanikolos, "Porous Materials – Graphene Hybrid Nanostructures with Tailored Interfaces as Membrane and Adsorbent Components in Gas Separation", **MRS Spring/Fall Meeting,** November 27 - December 4, 2020
40. Naman Arora, Anna Perdikaki, Paschalis Alexandridis, T. J. (Lakis) Mountziaris, Georgios Karanikolos, "Nano-Engineering in Confined Spaces: Size- and Shape-Controlled Growth of Functional Nanostructures in Self-Assembled Block Copolymer Nanoreactors", **MRS Spring/Fall Meeting,** November 27 - December 4, 2020
41. G. Günther, V. Grzimek, Charitomeni M. Veziri, Georgios N. Karanikolos, M. Russina, "Water filling of hydrophobic cylindrical subnanopores", **12th International Symposium on the Characterization of Porous Solids (COPS-XII),** Bath (UK), 7 -10 June, 2020
42. Anish Varghese, Swati Singh, Georgios Kakosimos, Adetola Ogungbenro, Suresh Kuppireddy, Georgios Karanikolos, "Nanostructured Adsorbents and Membranes for Carbon Capture", **16th International Conference on Nanosciences & Nanotechnologies (NN19),** Thessaloniki, Greece, 2-5 July 2019.
43. O. Tzialla, D. Karouzos, A. Labropoulos, G. Karanikolos, G. Pilatos, K. Beltsios, G. Romanos, "Porous adsorbents and gas separation membranes by incorporation of ionic liquid precursor phases", **12th Panhellenic Chemical Engineering Conference,** Athens, Greece, May 29-31, 2019
44. Maryam Khaleel, Anna Tuneu-Pujolras, Issam Ismail, Georgios N. Karanikolos, Lourdes F. Vega and Fèlix Llovell, "Amine-Functionalized Hierarchical Zeolites for Carbon Dioxide Capture", **2018 American Institute of Chemical Engineers (AIChE) Annual Meeting**, Pittsburgh, USA, October 28 - November 2, 2018.
45. Anna Tuneu Pujolras, Issam Ismail, K. Suresh Kumar Reddy, Fqlix Llovell, Georgios N. Karanikolos, Lourdes F. Vega, Maryam Khaleel, "Amine-Functionalized Hierarchical Zeolites for Carbon Dioxide Capture", **2nd International Conference on Functional Materials and Chemical Engineering (ICFMCE 2018)**, Abu Dhabi, 20-22 November, 2018
46. N. Karouta, E. Thomou, K. Spyrou, Ch. Tampaxis, G. Charalambopoulou, Th. A. Steriotis, K. S. Triantafyllidis, G. E. Romanos, G. N. Karanikolos, P. N. Trikalitis, P. Rudolf and D. Gournis, "Amino-functionalized silsesquioxane pillared graphene oxide for CO_2 capture", **European Graphene Forum 2018**, Venice, Italy, October 23-25 2018.
47. K. Suresh Kumar Reddy, Georgios N. Karanikolos, "Low-Pressure Carbon Capture by Amine-Grafted, Pore-Expanded Mesoporous Silica Adsorbents", **Catalysis and Separation: Shaping the Future Energy**, Abu Dhabi, December 9-10, 2018.
48. George Kakosimos, Georgios N. Karanikolos, "MOF-DOBDC Based Adsorbents for CO2 Separation", **Catalysis and Separation: Shaping the Future Energy**, Abu Dhabi, December 9-10, 2018.
49. Anish Mathai Varghese, Georgios N. Karanikolos, "CO2 adsorption using UV-irradiated self-supported graphene oxide foam", **Catalysis and Separation: Shaping the Future Energy**, Abu Dhabi, December 9-10, 2018.
50. Swati Singh, Georgios N. Karanikolos, "PSF/CNT mixed matrix membranes for CO2 separation: Effect of PEG-g-CNTs on membrane performance", **Catalysis and Separation: Shaping the Future Energy**, Abu Dhabi, December 9-10, 2018.
51. Nidhika Bhoria, Stavroula Anastasiou, Jeewan Pokhrel, K. Suresh Kumar Reddy, and G. N. Karanikolos*, "CO_2 Separation by Metal-Organic Framework and Graphene Oxide Mixed-Matrix Membranes", **Greenhouse Gas Control Technologies (GHGT-14),** Melbourne, Australia, October 21 - October 26, 2018.
52. Jeewan Pokhrel, Nidhika Bhoria, Theodoros Tsoufis, George Romanos, Georgios N. Karanikolos*, "CO_2 Adsorption Behavior of Amine-Functionalized MOFs, Graphene Oxide, and MOF/Graphene Oxide

Composite Adsorbents under Dry and Wet Conditions", **Greenhouse Gas Control Technologies (GHGT-14),** Melbourne, Australia, October 21 - October 26, 2018

53. Maryam Khaleel, Anna Tuneu-Pujolras, Issam Ismail, Georgios N. Karanikolos, Lourdes F. Vega and Fèlix Llovell, "Amine-Functionalized Hierarchical Zeolites for Carbon Dioxide Capture", **Greenhouse Gas Control Technologies (GHGT-14),** Melbourne, Australia, October 21 - October 26, 2018

54. Jeewan Pokhrel, Nidhika Bhoria, Theodore Tsoufis, George Romanos, Georgios N. Karanikolos*, "Carbon Dioxide Capture by Amine-Grafted Nanoporous Adsorbents", **2018 Research & Development Petroleum Conference and Exhibition (RDPETRO)**, Abu Dhabi, May 9 -10 2018.

55. Stavroula Anastasiou, Nidhika Bhoria, Jeewan Pokhrel, K. Suresh Kumar Reddy, Georgios N. Karanikolos*, "Metal-Organic Framework/Graphene Oxide Polymer Nanocomposite Membranes for Carbon Dioxide Separation", **12th International Summer Schools on Nanoscience & Nanotechnology (ISSON-18)**, Thessaloniki, Greece, 30 June-7 July 2018.

56. Jeewan Pokhrel, Nidhika Bhoria, Theodore Tsoufis, George Romanos, Georgios N. Karanikolos, "Carbon Dioxide Capture by Amine-Functionalized Zeolitic Imidazolate Frameworks (ZIFs), Graphene Oxide, and ZIF/Graphene Oxide Nanocomposites under Dry and Wet Conditions", **15th International Conference on Nanosciences & Nanotechnologies (NN18),** Thessaloniki, Greece, 3-6 July 2018.

57. Stavroula Anastasiou, Jeewan Pokhrel, Nidhika Bhoria, K. Suresh Kumar Reddy and Georgios N. Karanikolos, "Metal-Organic Framework/Graphene Oxide Composite Fillers in Mixed-Matrix Membranes for CO_2 Separation", **2017 American Institute of Chemical Engineers (AIChE) Annual Meeting**, Minneapolis, USA, October 29 - November 3, 2017.

58. Jeewan Pokhrel, Nidhika Bhoria, Theodore Tsoufis, George Romanos, and Georgios N. Karanikolos, "CO_2 capture By Amine-Functionalized Metal Organic Frameworks (MOFs), Graphene Oxide (GO), and MOF/GO Composites", **2017 American Institute of Chemical Engineers (AIChE) Annual Meeting**, Minneapolis, USA, October 29 - November 3, 2017.

59. Anna Perdikaki, Angeliki Galeou, Georgios N. Karanikolos, "Ag/Cu Bimetallic Nanoparticle and Ion - Graphene Composites with Enhanced Antibacterial Performance", **2017 American Institute of Chemical Engineers (AIChE) Annual Meeting**, Minneapolis, USA, October 29 - November 3, 2017.

60. Nidhika Bhoria, He Zhou, Jeewan Pokhrel, Suresh Kuppireddy, Kean Wang, Georgios Karanikolos, "Mixed Matrix Membranes for Enhanced Gas Separations", **Environmental & Materials Science Symposium (EMSS17),** Abu Dhabi, Dec. 6, 2017

61. Jeewan Pokhrel, Nidhika Bhoria, Suresh Kuppireddy, Georgios Karanikolos, "CO_2 Sorption Studies in Cu-Based Metal Organic Framework for PSA applications", **Environmental & Materials Science Symposium (EMSS17)**, Abu Dhabi, Dec. 6, 2017

62. Dana AlShami, Georgia Basina, Fadi Dawaymeh, Vaithilingam Balasubramanian, Abeer AlYafeai, Anjana Tharakshmy, Georgios N. Karanikolos, Yasser Al Wahedi, "Synthesis, characterization and metal substitution in aluminophosphate materials", **EUROMAT 2017**, Thessaloniki, Greece, 17-22 September

63. S. Anastasiou, N. Bhoria, J. Pokhrel, C. Veziri, G. Romanos, G. N. Karanikolos, "Metal Organic Framework Mixed Matrix Membranes for CO2 Separation", **14th International Conference on Nanosciences & Nanotechnologies (NN17),** Thessaloniki, Greece, 4-7 July 2017

64. A. Perdikaki, A. Galeou, G. Pilatos A. Prombona, and G. N. Karanikolos, "Ag/Cu Bimetallic Nanoparticle - Graphene Composites with Enhanced Antibacterial Performance", **14th International Conference on Nanosciences & Nanotechnologies (NN17),** Thessaloniki, Greece, 4-7 July 2017

65. Jeewan Pokhrel, Nidhika Bhoria, Stavroula Anastasiou, Suresh Kuppireddy, C. S. Kannan, George Romanos, Georgios N. Karanikolos, "Growth and functionalization of metal organic frameworks (MOFs) and MOF composites for CO2 capture", **2017 PI R&D Conference and Exhibition**, Abu Dhabi, March 19-20, 2017

66. Nidhika Bhoria, Jeewan Pokhrel, Stavroula Anastasiou, George Romanos, Georgios N. Karanikolos, "CO2 capture by amine-functionalized graphene oxide", **2017 PI R&D Conference and Exhibition**, Abu Dhabi, March 19-20, 2017

67. Stavroula Anastasiou, Nidhika Bhoria, Jeewan Pokhrel, Georgios N. Karanikolos "Metal Organic Framework Mixed Matrix Membranes for CO2 Separation", **ADIPEC 2016**, Paper No: 183264, Abu Dhabi, 7-10 November, 2016

68. Jeewan Pokhrel, Nidhika Bhoria, Stavroula Anastasiou, Georgios N. Karanikolos, "Metal Organic Frameworks (MOFs) and MOF/Graphene Oxide (GO) composites for Natural Gas Sweetening", **UAE Graduate Students Research Conference 2016 (UAEGSRC'16)**, Al-Ain, UAE, April 17-19

69. Stavroula Anastasiou, Nidhika Bhoria, Jeewan Pokhrel, Kean Wang, and Georgios Karanikolos, "Metal Organic Framework Mixed Matrix Membranes for CO2 Separation", **the 2016 Petroleum Institute R&D Conference and Exhibition**, Abu Dhabi, November 21

70. Jeewan Pokhrel, Nidhika Bhoria, Stavroula Anastasiou, and Georgios N. Karanikolos, "Metal Organic Frameworks (MOFs) and MOF/Graphene Oxide Composites for Acid Gas Removal", **the 2016 Petroleum Institute R&D Conference and Exhibition**, Abu Dhabi, November 21
71. Fadi Dawaymeh, Yasser Fowad AlWahedi and Georgios N. Karanikolos, "Metal-Substituted Porous Aluminophosphate Catalysts", **the 2016 Petroleum Institute R&D Conference and Exhibition**, Abu Dhabi, November 21.
72. Jeewan Pokhrel, Nour Owina, Haris Margetis, Stavroula Anastasiou, Marios S. Katsiotis, Gigi George, Vikas Mittal, Georgios N. Karanikolos, "Metal Organic Framework nanocomposites for natural gas sweetening", **4th Nano Today Conference (Elsevier)**, Dubai, Dec 6-10, 2015
73. Anna Perdikaki, Anastasios Labropoulos, Giorgos Karanikolos, Polycarpos Falaras, George Romanos, "Catalytic nanoporous membrane reactor for CO oxidation" **12th International Conference on Catalysis in Membrane Reactors (ICCMR12)**, 22 -25 June, 2015, Szczecin, Poland
74. Raed Bamardoof, Yahya Almuharram, Hasan Al-Ali, Mubarak Alhameli, Georgios Karanikolos, "Safe and Economic Production of Heterogeneous Catalysts for the Oil and Gas Industry", **Think Science**, Dubai, May 4-7, 2015.
75. Anastasios Labropoulos, Charitomeni Veziri, Maria Kapsi, George Pilatos, Michael Tsapatsis, Nick K. Kanellopoulos, George E. Romanos, Georgios N. Karanikolos, "A carbon nanotube microporous membrane for gas separation", **4th Nano Today Conference (Elsevier)**, Dubai, Dec 6-10, 2015
76. Anna Perdikaki, Anastasios Labropoulos, Georgios Karanikolos, George Romanos, "An ionic liquid-modified, Au nanoparticle-loaded, ZrO2 nanoporous catalytic membrane", **4th Nano Today Conference (Elsevier)**, Dubai, Dec 6-10, 2015
77. A. Perdikaki, A. Labropoulos, G. N. Karanikolos, P Falaras, G. Romanos, "Catalytic nanoporous membrane reactor for CO oxidation", **12th International Conference on Catalysis in Membrane Reactors (ICCMR12)**, Szczecin, Poland, June 2015
78. G. N. Karanikolos, P. Alexandridis, "Phase Behavior, Structure, and Dynamics of Amphiphiles for Asphaltene Inhibition", **3rd Abu Dhabi International Research and Development Conference & Exhibition (ADRAC 2014),** Abu Dhabi, February 2014
79. G. N. Karanikolos, C. Vezyri, A. Labropoulos, A. G. Kontos, V. Likodimos, P. Falaras, G. Romanos, "Metal Organic Framework Materials and Membranes for CO2 and H2S Removal" **3rd Abu Dhabi International Research and Development Conference & Exhibition (ADRAC 2014),** Abu Dhabi, February 2014
80. G. N. Karanikolos, G. Pilatos, C. Vezyri, E. Vermisoglou, G. Romanos, N. Kanellopoulos, M. Tsapatsis, "Hierarchical Zeolites and Nanostructured Materials for Gas Separation and Heterogeneous Catalysis", **3rd Abu Dhabi International Research and Development Conference & Exhibition (ADRAC 2014),** Abu Dhabi, February 2014
81. C. Veziri, A. Labropoulos, N. K. Kanellopoulos, M. Tsapatsis, G. Em. Romanos, G. N. Karanikolos, "Carbon Nanotube Microporous Membranes for Gas Separation", **11th International Conference on Nanosciences & Nanotechnologies (NN14),** Thessaloniki, Greece, July 2014,
82. A. Perdikaki, G. Pilatos, E. C. Vermisoglou, G.E. Romanos, N.K. Kanellopoulos, and G. N. Karanikolos, "One-Step, In-Situ Growth of Unmodified Graphene Multifunctional Composites and their Applications", **11th International Conference on Nanosciences & Nanotechnologies (NN14),** Thessaloniki, Greece, July 2014
83. M. Russina, M. C. Schegel, F. Mezei, G. N. Karanikolos, W. Stein, R. Bewley, M. Zamponi, "Anisotropic water dynamics confined into oriented sub-nanometer pores", **German Conference for Research with Synchrotron Radiation, Neutrons and Ion Beams at Large Facilities 2014,** Bonn, Germany, September 2014
84. A. V. Perdikaki, O. C. Vangeli, G. N. Karanikolos, N. K. Kanellopoulos, G. E. Romanos, "Ionic Liquid-Porous Hybrid Nanocatalysts", **Hybrid Materials**, Sorrento, Italy, March 2013
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