

GEORGIOS KARANIKOLOS*Associate Professor*

Department of Chemical Engineering

University of Patras

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E-mail: karanikolos@chemeng.upatras.gr**EDUCATION**

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

PROFESSIONAL EXPERIENCE

- **Associate Professor**, Department of Chemical Engineering, University of Patras (2022 – present)
- **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

- **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).
- **Faculty Research Excellence Award**, Khalifa University, **Awarded to one faculty per rank for the whole College of Engineering** (2019).
- **ADEK Award for Research Excellence 2018**, Abu Dhabi Department of Education and Knowledge.
- **Best Instructor Award**, Imtinan 2017, Chemical Engineering department, PI/KU.
- **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 CO₂ capture”, 2017 PI R&D Conference and Exhibition, Abu Dhabi, March 19-20, 2017
- **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.

TEACHING ACTIVITIES

2022 - present	Associate Professor, Department of Chemical Engineering, University of Patras, Greece Courses: Advanced Chemical Engineering Thermodynamics (PhD program), Introduction to Chemical Engineering, Analysis and Design of Chemical Reactors, Lab of Physical Chemistry
2013-2022	Associate and Assistant Professor, Department of Chemical Engineering, Khalifa University (KU), and Petroleum Institute, UAE Courses: Industrial Catalysis, Applied Nanotechnology (PhD), Fundamentals of Nanotechnology, Heat transfer, Colloids and Interface Science (MSc and PhD level), Principles of Chemical Engineering, PhD Research Methods, Chemical Engineering Thermodynamics
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

- Separation and Purification Processes
- Heterogeneous Catalysis
- CO₂ capture
- Hydrogen storage
- Water treatment
- Porous materials and membranes including zeolites, metal-organic frameworks (MOFs), and carbon/graphitic nanostructures.

PARTICIPATION IN RESEARCH PROJECTS

6 projects as coordinator, 5 projects as co-I, 2 projects as principal investigator. Total funding: 8 million USD.

SUPERVISION OF GRADUATE STUDENTS & RESEARCH FELLOWS

5 post-docs, 5 PhD students (main advisor), 6 MSc students (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.

PUBLICATIONS**Journal Publications**

1. 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)
2. 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)
3. 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)
4. 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)
5. 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)
6. Azhagapillai, P., Gopalsamy, K., Kumar Reddy, K.S., Othman, I., Banat, F., Karanikolos, G.N., Abu Haija, M., "[Tailoring the pore structure of amine-functionalized KCC fibrous nanosilica for efficient CO₂ adsorption](#)", **Journal of Environmental Chemical Engineering**, 11(5), 110350 (2023)

7. Khamis, F., Kumar, M., Koutsoukos, P.G., Banat, F., Arafat, H.A., Karanikolos, G.N., [“Highly-selective hybrid ultrafiltration membranes with \$\text{AlPO}_4\cdot 5\$ zeotype fillers: Effect of filler loading, morphology, and metal substitution on performance and fouling resistance”](#), **Journal of Water Process Engineering**, 54, 104038 (2023)
8. 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)
9. 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 \$\text{CO}_2\$ Capture”](#), **ACS Omega**, 8(24), 21664 (2023)
10. K.S.K. Reddy, A.M. Varghese, A.E. Ogungbenro, G.N. Karanikolos, [“Aminosilane-Modified Ordered Hierarchical Nanostructured Silica for Highly-Selective Carbon Dioxide Capture at Low Pressure”](#), **ACS Applied Engineering Materials**, 1, 2, 720 (2023)
11. SN Abd Elwaddood, KSK Reddy, Y Al Wahedi, A Al Alili, ASF Farinha, G-J Witkamp, LF Dumée, GN Karanikolos, [“Hybrid salt-enriched micro-sorbents for atmospheric water sorption”](#), **Journal of Water Process Engineering** 52, 103560 (2023)
12. Gabriele Scandura, Sana Eid, Ali A Alnajjar, Twinkle Paul, Georgios N Karanikolos, Dinesh Shetty, Khalid Omer, Rami Alqerem, Alaa Juma, Huaning Wang, Hassan A Arafat, Ludovic F Dumée, [“Photo-responsive metal-organic frameworks—design strategies and emerging applications in photocatalysis and adsorption”](#), **Mater. Adv.**, 4, 1258 (2023)
13. Ouda, M., Banat, F., Hasan, S.W., Karanikolos, G.N., [“Recent advances on nanotechnology-driven strategies for remediation of microplastics and nanoplastics from aqueous environments”](#), **Journal of Water Process Engineering**, 52, 103543 (2023)
14. Scandura, Gabrielea, Kumari, Priyanka, Palmisano, Giovanni, Karanikolos, Georgios N., Orwa, Juliese, Dumée, Ludovic F., [“Nanoporous Dealloyed Metal Materials Processing and Applications -A Review”](#), **Industrial and Engineering Chemistry Research**, 62(4), 1736–1763 (2023)
15. Aibobek Seitak, Aya Shanti, Kenana Al Adem, Nouran Farid, Shaohong Luo, Javad Iskandarov, Georgios N. Karanikolos, Kin Liao, Vincent Chan, Sungmun Lee, [“2D MXenes for controlled releases of therapeutic proteins”](#), **Journal of Biomedical Materials Research Part A**, 111(4), 514–52 (2023)
16. G.D.J. Guerrero Peña, K.S.K. Reddy, A.M. Varghese, Azhagapillai Prabhu, Aasif A. Dabbawala, Kyriaki Polychronopoulou, Mark A. Baker, Dalaver Anjum, Gobind Das, Cyril Aubry, Mohamed I. Hassan Ali, G. N. Karanikolos, A. Raj, M. Elkadi, [“Carbon dioxide adsorbents from flame-made diesel soot nanoparticles”](#), **Science of the Total Environment**, 859, 160140 (2023).
17. Jena, K.K., Suresh Kumar Reddy, K., Karanikolos, G.N., Choi, D.S., [“L-Cysteine and silver nitrate based metal sulfide and Zeolite-Y nano adsorbent for efficient removal of mercury \(II\) ion from wastewater”](#), **Applied Surface Science**, 611, 155777 (2023).
18. Javad Iskandarov, George S. Fanourgakis, Shehzad Ahmed, Waleed Alameri, George E. Froudakis, Georgios N. Karanikolos, [“Data-driven prediction of in situ \$\text{CO}_2\$ foam strength for enhanced oil recovery and carbon sequestration”](#), **RSC Advances**, 12, 35703 (2022).
19. Khaleel, M., He, Z., Karanikolos, G.N., Feng, X., Wang, K., [“The concentration dependent permeation properties of binary \$\text{CO}_2\$ gas mixtures through carbon molecular sieve membrane”](#), **International Journal of Greenhouse Gas Control**, 121, 103778 (2022)
20. Essa Ansari, Nicolas Lopez Ferber, Tamara Milošević, Jose Barron, Georgios N Karanikolos, Faisal AlMarzooqi, Ludovic F Dumée, Nicolas Calvet, [“Atmospheric water generation in arid regions—A perspective on deployment challenges for the Middle East”](#), **Journal of Water Process Engineering** 49, 103163 (2022)
21. Anwar, F., Khaleel, M., Wang, K., Karanikolos, G.N., [“Selectivity Tuning of Adsorbents for Ethane/Ethylene Separation: A Review”](#), **Industrial and Engineering Chemistry Research**, 61 (34), 12269 (2022)
22. SN Abd Elwaddood, LF Dumée, Y Al Wahedi, A Al Alili, GN Karanikolos, [“Aluminophosphate-Based adsorbents for atmospheric water generation”](#), **Journal of Water Process Engineering** 49, 103099 (2022)
23. Maria Kapsi, Charitomeni M. Veziri, George Pilatos, Georgios N. Karanikolos, George E. Romanos, [“Zeolite-templated sub-nanometer carbon nanotube arrays and membranes for hydrogen storage and separation”](#), **International Journal of Hydrogen Energy**, 47(87), 36850–36872 (2022).
24. Anish Mathai Varghese, K. Suresh Kumar Reddy, and Georgios N. Karanikolos, [“An In-Situ-Grown Cu-BTC Metal-Organic Framework / Graphene Oxide Hybrid Adsorbent for Selective Hydrogen Storage at Ambient Temperature”](#), **Industrial and Engineering Chemistry Research** ,61, 18, 6200 (2022).

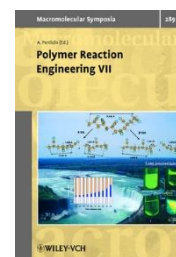
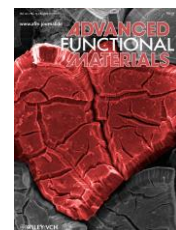
25. Rangaraj, V.M., Reddy, K.S.K., Karanikolos, G.N., [“Ionothermal synthesis of phosphonitrilic-core covalent triazine frameworks for carbon dioxide capture”](#) **Chemical Engineering Journal**, 429, 132160 (2022).
26. Dawaymeh, F., Gaber, D.A., Gaber, K. Suresh Kumar Reddy, Basina, Georgia, Ismail, Issam, Subrati, Ahmed, Ismail, Ola, Karanikolos, G.N., Al Wahedi, Y.F., [Water adsorption behavior of Mg and Fe substituted microporous AlPO₄₋₅](#), **Journal of Water Process Engineering**, 49, 103079 (2022).
27. K.L. Stefanopoulos, E.P. Favvas, G.N. Karanikolos, W. Alameri, V.C. Kelessidis, T.G.A. Youngs, D.T. Bowron. [“Monitoring the CO₂ Enhanced Oil Recovery Process at the Nanoscale: An In Situ Neutron Scattering Study”](#), **Energy Advances**, 1, 67 (2022).
28. Mavukkandy, M.O., Ibrahim, Y., Almarzooqi, F., Naddeo, V., Karanikolos, G.N., Alhseinat, E., Banat, F., Hasan, S.W. [“Synthesis of polydopamine coated tungsten oxide@poly\(vinylidene fluoride-co-hexafluoropropylene\) electrospun nanofibers as multifunctional membranes for water applications”](#), **Chemical Engineering Journal**, 427, 131021 (2022).
29. Agbaje, T.A., Vega, L.F., Khaleel, M., Wang, K., Karanikolos, G.N., [“Membranes and adsorbents in separation of C₄ hydrocarbons: A review and the definition of the current upper bounds”](#), **Separation and Purification Technology**, 278, 119530 (2021).
30. Agbaje, T.A., Singh, S., Reddy, K.S.K., Polychronopoulou, K., Vega, L.F., Khaleel, M., Wang, K., Karanikolos, G.N., [“Salt-free synthesis of Cu-BTC metal-organic framework exhibiting mesoporosity and enhanced carbon dioxide adsorption”](#), **Microporous and Mesoporous Materials**, 324, 111265 (2021)
31. Aasif A. Dabbawala, K. Suresh Kumar Reddy, Hemant Mittal, Yasser Al Wahedi, Balasubramanian V. Vaithilingam, Georgios N. Karanikolos, Gnana Singaravel, Stephane Morin, Mikael Berthod, Saeed M. Alhassan, [“Water vapor adsorption on metal-exchanged hierarchical porous zeolite-Y”](#), **Microporous and Mesoporous Materials**, 326, 111380 (2021).
32. Singh, S., Varghese, A.M., Reinalda, D., Karanikolos, G.N., [“Graphene - Based membranes for carbon dioxide separation”](#), **Journal of CO₂ Utilization**, 49, 101544 (2021).
33. Salih, H.A., Pokhrel, J., Reinalda, D., AlNashf, I., Khaleel, M., Vega, L.F., Karanikolos, G.N., Abu Zahra, M., [“Hybrid – Slurry/Nanofluid systems as alternative to conventional chemical absorption for carbon dioxide capture: A review”](#), **International Journal of Greenhouse Gas Control**, 110, 103415 (2021)
34. Singh, S., Varghese, A.M., Reddy, K.S.K., Romanos, G.E., Karanikolos, G.N., [“Polysulfone Mixed-Matrix Membranes Comprising Poly\(ethylene glycol\)-Grafted Carbon Nanotubes: Mechanical Properties and CO₂ Separation Performance”](#), **Industrial and Engineering Chemistry Research**, 60(30), 11289 (2021).
35. Thomou, E., Sakavitsi, V., Angeli, G.K., Spyrou, K., Froudas, K.G., Diamanti, E.K., Romanos, G.E., Karanikolos, G.N., Trikalitis, P. N., Gournis, D., Rudolf, P., [“A diamino-functionalized silsesquioxane pillared graphene oxide for CO₂ capture”](#), **RSC Advances**, 11(23), 13743 (2021).
36. Karanikolos, G.N., Romanos, G.E., Vega, L.F., [“Editorial: Chemical Modification of Adsorbents for Enhanced Carbon Capture Performance”](#), **Frontiers in Chemistry**, 9, 657669 (2021).
37. Varghese, A.M., Reddy, K.S.K., Bhorla, N., Singh, S., Pokhrel, J., Karanikolos, G.N., [“Enhancing Effect of UV Activation of Graphene Oxide on Carbon Capture Performance of Metal-Organic Framework/Graphene Oxide Hybrid Adsorbents”](#) **Chemical Engineering Journal**, 420, 12967, (2021).
38. Fadi Dawaymeh, Omer Elmutasim, Dina Gaber, Safa Gaber, K. Suresh Kumar Reddy, Georgia Basina, Kyriaki Polychronopoulou, Yasser Al Wahedi, Georgios N. Karanikolos, [“Metal substitution effects of aluminophosphate AlPO₄₋₅ as solid acid catalyst for esterification of acetic acid with ethanol”](#), **Molecular Catalysis**, 501, 111371 (2021).
39. Anish Varghese, K. Suresh Kumar Reddy, Swati Singh, Georgios N. Karanikolos, [“Performance enhancement of CO₂ capture adsorbents by UV treatment: The case of self-supported graphene oxide foam”](#), **Chemical Engineering Journal**, 386, 124022 (2020).
40. A. Tabish, A., Varghese, M.A. Wahab, G. N. Karanikolos, [“Perovskites in the energy grid and CO₂ conversion: Current context and future directions”](#), **Catalysts** 10(1), 95 (2020).
41. A.M. Varghese, G.N. Karanikolos, [“CO₂ capture adsorbents functionalized by amine-bearing polymers: A review”](#), **International Journal of Greenhouse Gas Control** 96, 103005 (2020).
42. S.A. Gaber, F. Dawaymeh, D.A. Gaber, G. Basina, I. Ismail, A. Tharakshmy, A. AlYafeai, A. Subrati, G.N. Karanikolos, S. Al Hashimi, Y.F. Al Wahedi, [“Combined DFT and experimental investigation on ion isomorphic substitution of aluminophosphate microporous crystals”](#), **Microporous & Mesoporous Materials**, 294,109859 (2020).
43. Ahmad Soliman, Nahla AlAmoodi, Georgios N. Karanikolos, Charalabos C. Doumanidis, K. Polychronopoulou, [“A Review on New 3-D Printed Materials’ Geometries for Catalysis and Adsorption: Paradigms from Reforming Reactions and CO₂ Capture”](#), **Nanomaterials**, 10, (2020).

44. N. Bhorla, G. Basina, J. Pokhrel, K.S.K. Reddy, S. Anastasiou, V. Balasubramanian, Y.F. AlWahedi, G.N. Karanikolos, "[Functionalization effects on HKUST-1 and HKUST-1/graphene oxide hybrid adsorbents for hydrogen sulfide removal](#)", **Journal of Hazardous Materials**, 122565 (2020).
45. V.M. Rangaraj, M.A. Wahab, K.S.K. Reddy, G. Kakosimos, O. Abdalla, E.P. Favvas, D. Reinalda, F. Geuzebroek, A. Abdala, G.N. Karanikolos. "[Metal Organic Framework—Based Mixed Matrix Membranes for Carbon Dioxide Separation: Recent Advances and Future Directions](#)", **Frontiers in Chemistry**, 8, 534 (2020).
46. Moritz C. Schlegel, Veronika Grzimek, Gerrit Günther, Roman Svetogorov, Charitomeni M. Veziri, Maria Kapsi, Georgios N. Karanikolos, Oleksandr Prokhnenko, Robert Bewley, Margarita Russina, "[Explaining water adsorption in one-dimensional channels in \$AlPO_4-5\$ on molecular scale](#)", **Microporous & Mesoporous Materials**, 304, 109201 (2020).
47. A.G. Kontos, G.E. Romanos, C.M. Veziri, A. Gotzias, M.K. Arfanis, E. Kouvelos, V. Likodimos, G.N. Karanikolos, P. Falaras, "[Correlating vibrational properties with temperature and pressure dependent \$CO_2\$ adsorption in zeolitic imidazolate frameworks](#)", **Applied Surface Science** 529, 147058 (2020).
48. A. Papageorgiou, K. Reddy, D. Karonis, D. Reinalda, Y. Al Wahedi, G.N. Karanikolos, "[Morphology, Activation, and Metal Substitution Effects of \$AlPO_4-5\$ for \$CO_2\$ Pressure Swing Adsorption](#)", **Frontiers in Chemistry** 8, 875 (2020).
49. O. Elmutasim, G. Basina, D. Al Shami, D. Gaber, S. Gaber, G.N. Karanikolos, Y. Al Wahedi, "[On the impact of copper local environment on hydrogen sulfide adsorption within microporous \$AlPO_4-5\$](#) ", **Journal of Environmental Chemical Engineering** 8, 104245 (2020).
50. N. Arora, K. Thangavelu, G.N. Karanikolos, "[Bimetallic Nanoparticles for Antimicrobial Applications](#)" **Frontiers in Chemistry** 8, 412 (2020).
51. Margarita Russina, Gerrit Günther, Veronika Grzimek, Moritz C. Schlegel, Charitomeni M. Veziri, Georgios N. Karanikolos, Takeshi Yamada, Ferenc Mezei, "[Nanoscale Dynamics and Transport in Highly Ordered Low-Dimensional Water](#)", **Journal of Physical Chemistry Letters**, 10(20), 6339 (2019).
52. Evangelos P. Favvas, Nikolaos S. Heliopoulos, Dionysios S. Karousos, Eamonn Devlin, Sergios K. Papageorgiou, Dimitrios Petridis, Georgios N. Karanikolos, "[Mixed matrix polymeric and carbon hollow fiber membranes with magnetic iron-based nanoparticles and their application in gas mixture separation](#)", **Materials Chemistry & Physics**, 223, 220-229 (2019).
53. Benjamin Kueh, Maria Kapsi, Charitomeni Veziri, Chrysoula Athanasekou, George Pilatos, K. Suresh Kumar Reddy, Abhijeet Raj, Georgios N. Karanikolos, "[Asphaltene-Derived Activated Carbon and Carbon Nanotube Membranes for \$CO_2\$ Separation](#)", **Energy & Fuels**, 32 (11), 11718–11730, (2018).
54. J. Pokhrel, N. Bhorla, S. Anastasiou, T. Tsoufis, D. Gournis, G. Romanos, G. N. Karanikolos, " [\$CO_2\$ Adsorption Behavior of Amine-Functionalized ZIF-8, Graphene Oxide, and ZIF-8/Graphene Oxide Composites under Dry and Wet Conditions](#)", **Microporous & Mesoporous Materials**, 267, 53-67 (2018).
55. G. Basina, D. AlShami, K. Polychronopoulou, V. Tzitzios, V. Balasubramanian, F. Dawaymeh, G.N. Karanikolos, Y. Al Wahedi, "[Hierarchical \$AlPO_4-5\$ and \$SAPO-5\$ microporous molecular sieves with mesoporous connectivity for water sorption applications](#)", **Surface and Coatings Technology**, 353, 378-386 (2018).
56. Anna Perdikaki, Angeliki Galeou, George Pilatos, Anastasia Prombona, and Georgios N. Karanikolos, "[Ion-based Metal/Graphene Antibacterial Agents Comprising of mono-Ionic and bi-Ionic Silver and Copper Species](#)", **Langmuir**, 34, 11156–11166 (2018).
57. S. Anastasiou, N. Bhorla J. Pokhrel K. Suresh Kumar Reddy, C. Srinivasakannan, K. Wang, G. N. Karanikolos, "[Metal-organic framework/graphene oxide composite fillers in mixed-matrix membranes for \$CO_2\$ separation](#)", **Materials Chemistry & Physics**, 212, 513-522 (2018).
58. J. Pokhrel, N. Bhorla, Chao Wu, K. Suresh Kumar Reddy, Haris Margetis, Stavroula Anastasiou, Gigi George, Vikas Mittal, George Romanos, Dimitrios Karonis, Georgios N. Karanikolos, "[Cu- and Zr-based Metal Organic Frameworks and their Composites with Graphene Oxide for Capture of Acid Gases at Ambient Temperature](#)", **J. Solid State Chem.**, 266, 233-243, (2018).
59. Anna Perdikaki, Angeliki Galeou, George Pilatos, Ioannis Karatasios, Nick K. Kanellopoulos, Anastasia Prombona, Georgios N. Karanikolos, "[Ag and Cu Monometallic and Ag/Cu Bimetallic Nanoparticle–Graphene Composites with Enhanced Antibacterial Performance](#)", **ACS Appl. Mater. Interfaces**, 8, 27498–27510, (2016).
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60. A. V. Perdikaki, A. I. Labropoulos, E. Siranidi, I. Karatasios, N.K. Kanellopoulos, N. Boukos, P. Falaras, G. N. Karanikolos, G. E. Romanos, "[Efficient \$CO\$ oxidation in an ionic liquid-modified, Au nanoparticle-loaded membrane contactor](#)", **Chemical Engineering Journal**, 305, 79–91 (2016).

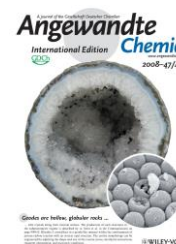
61. G. Pilatos, A. Perdikaki, A. Sapalidis, G. S. Pappas, T. Giannakopoulou, D. Tsoutsou, E. Xenogiannopoulou, N. Boukos, A. Dimoulas, C. Trapalis, N. K. Kanellopoulos, G. N. Karanikolos, "[Graphene by one-step CVD from ferrocene vapors: Properties and electrochemical evaluation](#)", **J. Applied Physics**, 119, 064303 (2016).
62. A. Labropoulos, C. Veziri, M. Kapsi, G. Pilatos, V. Likodimos, M. Tsapatsis, Nick K. Kanellopoulos, G. E. Romanos, and G. N. Karanikolos, "[Carbon Nanotube Selective Membranes with Subnanometer, Vertically Aligned Pores, and Enhanced Gas Transport Properties](#)", **Chem. Mater.**, 27, 8198 (2015).
63. G. Pilatos, E. C. Vermisoglou, A. Perdikaki, E. Devlin, G. S. Pappas, G. E. Romanos, N. Boukos, T. Giannakopoulou, C. Trapalis, N. K. Kanellopoulos, and G. N. Karanikolos, "[One-step, in situ growth of unmodified graphene - magnetic nanostructured composites](#)", **Carbon**, 66, 467 (2014).
64. A. G. Kontos, V. Likodimos, C. M. Veziri, E. Kouvelos, N. Moustakas, G. N. Karanikolos, G. E. Romanos, and P. Falaras, "[CO₂ Captured in Zeolitic Imidazolate Frameworks: Raman Spectroscopic Analysis of Uptake and Host-Guest Interactions](#)" **ChemSusChem**, 7, 1696 (2014).
65. O. Tzialla, Ch. Veziri, X. Papatryfon, K.G. Beltsios, A. Labropoulos, B. Iliev, G. Adamova, T.J.S. Schubert, M.C. Kroon, M. Francisco, L.F. Zubeir, G.E. Romanos, G. N. Karanikolos, "[Zeolite Imidazolate Framework - Ionic Liquid Hybrid Membranes for Highly Selective CO₂ Separation](#)", **J. Phys. Chem. C**, 117, 18434 (2013).
66. A. V. Perdikaki, P. Tsitoura, E. C. Vermisoglou, N. K. Kanellopoulos, and G. N. Karanikolos, "[Poly\(ethylene oxide\)-b-Poly\(propylene oxide\) Amphiphilic Block Copolymer-Mediated Growth of Silver Nanoparticles and Their Antibacterial Behavior](#)", **Langmuir**, 29, 11479 (2013).
67. J.A. Stoeger, C.M. Veziri, M. Palomino, A. Corma, N.K. Kanellopoulos, M. Tsapatsis, G.N. Karanikolos, "[On Stability and Performance of Highly c-Oriented Columnar AlPO₄-5 and CoAPO-5 Membranes](#)", **Microporous Mesoporous Mater.**, 147(1), 286 (2012).
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72. G. Pilatos, E.C. Vermisoglou, G.E. Romanos, G.N. Karanikolos, N. Boukos, V. Likodimos, N.K. Kanellopoulos, "[A Closer Look Inside Nanotubes: Pore Structure Evaluation of Anodized Alumina-Templated Carbon Nanotube Membranes through Adsorption and Permeability Studies](#)", **Advanced Functional Materials**, 20(15), 2500 (2010). **On the journal cover.**
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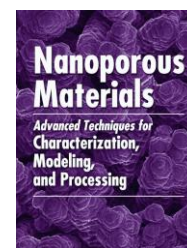
Patents

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- 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
- 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.
- 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.**].
- 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
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Book Chapters

- 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)
- 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)
 - Zhou He, K. Suresh Kumar Reddy, Georgios N. Karanikolos*, Kean Wang*, [*“CO₂/CH₄ 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
 - C. Veziri, A. Labropoulos, G. N. Karanikolos, N. K. Kanellopoulos, [*“Recent Developments in Membrane Technologies for CO₂ Separation”*](#), in **Small-Scale Gas to Liquid Fuel Synthesis**, Edited by N.K. Kanellopoulos, CRC Press, New York, 2015.
 - 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
 - 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
 - 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.



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- J. Iskandarov, G. Fanourgakis, W. Alameri, G. Froudakis, G. Karanikolos, [*“Machine Learning Application to CO₂ Foam Rheology”*](#), **Society of Petroleum Engineers (SPE) Proc.**, SPE-208016-MS (2021).
- 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).
- 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**
- S. Singh, A. Varghese, G.N. Karanikolos, [*“Mixed Matrix CO₂ 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).
- Maryam Khaleel, Anna Tuneu-Pujolras, Issam Ismail, Georgios N. Karanikolos, Fèlix Llovel, Lourdes F. Vega, [*“Amine-Functionalized Hierarchical Zeolites for Carbon Dioxide Capture”*](#), **AICHe Annual Meeting Proceedings**, ISBN: 978-0-8169-1108-0 (2018).
- 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).
- Jeewan Pokhrel, Nidhika Bhoria, Theodore Tsoufis, George Romanos, and Georgios N. Karanikolos*, [*“CO₂ 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)
- 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)
- 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 CO₂ Separation”*](#), **AICHe Annual Meeting Proceedings**, ISBN: 978-0-8169-1102-8 (2017)
- 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)

Invited Seminars

1. **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
2. **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
3. **Masdar Institute PhD seminar**, "Adsorption and membrane-based CO₂ capture and separation", Masdar City, Abu Dhabi, April 3, 2018
4. **Water, Energy Technology and Environment Exhibition (WETEX-2017, <https://www.wetex.ae/>)**, "Novel, Highly Selective Nanocomposite Adsorbents for High Capacity CO₂ Capture from Tail Gas and Cost-Effective Regeneration for EOR Use", Dubai, October 23-25, 2017
5. **CO₂ Workshop: CO₂ capture, utilization and storage – where are we?**, "Adsorption and membrane based CO₂ capture and separation", Abu Dhabi, April 19-20, 2017
6. **Materials Science-2016**, "Zeolite and Metalorganic Framework Materials and Membranes for Gas Separation", Abu Dhabi, November 28-30, 2016 *Keynote*
7. **3rd Hellenic Forum for Science, Technology & Innovation**, "Zeolite and Metalorganic Framework Materials and Membranes for Gas Separation", Athens, July 1, 2015
8. **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
9. **Demokritos National Research Center Summer School**, "Graphitic nanostructures: Synthesis, properties, and applications", Athens, July 2013
10. **Imperial College, Department of Chemical Engineering**, London, UK, Dec. 7, 2012
11. **University of Cambridge, Department of Chemical Engineering**, Cambridge, UK, Nov. 28, 2012
12. **NANO2012 – XI International Conference on Nanostructured Materials**, Rhodes, Greece, Aug 30, 2012
13. **University of Crete, Department of Materials Science & Technology**, Heraklion, Greece, May 18, 2012
14. **SUNY at Buffalo, Department of Chemical & Biological Engineering**, Buffalo, NY, March 22, 2012
15. **EPFL - Swiss Federal Institute of Technology, School of Basic Sciences**, Lausanne, Switzerland, May 15, 2012
16. **Worcester Polytechnic Institute (WPI), Chemical Engineering Dep.**, Worcester, MA, March 26, 2012
17. **University College London (UCL), Department of Chemical Engineering**, London, Feb. 13, 2012
18. **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>)
19. **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).**
20. **University of Patras, Department of Chemical Engineering**, Patras, Greece, March 27, 2009.

21. **The Nano-multidisciplinary Symposium, 1st International Conference from Nanoparticles and Nanomaterials to Nanodevices and Nanosystems**, Halkidiki, Greece, June 18, 2008.
22. **University of Patras, Department of Materials Science**, Patras, Greece, June 8, 2008.
23. **Joint Seminar: Departments of Materials Science & Technology, and Physics, University of Crete**, Heraklion, Greece, Nov. 8, 2007
24. **NCSR Demokritos, also broadcasted in real time by teleconference to the members of the INSIDE PORES EU Network of Excellence**, Athens, Oct 16, 2006.
25. **Institute of Chemical Engineering & High-Temperature Chemical Processes**, Patras, May 15, 2006.
26. **University of Minnesota, Chemical Engineering & Materials Science**, Minneapolis, Aug 4, 2005.

PROFESSIONAL ACADEMIC SERVICE

Journal Editorship

- Guest Associate Editor, [Frontiers in Chemistry](#)
- Review Editor in Frontiers in Chemical Engineering - Materials Process Engineering

Conference Committees:

- 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 CO₂ 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 Nanotechnology", 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:

Angewandte Chemie, Journal of the American Chemical Society, SMALL, ACS Applied Nano Materials, ACS Applied Bio Materials, Journal of Physical Chemistry, Carbon, ACS Applied Materials & Interfaces, 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. 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
2. 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
3. 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.
4. K. Suresh Kumar Reddy, Anish Mathai Varghese, G.N. Karanikolos. Aminosilane-Functionalized Ordered Hierarchical Nanostructured Silica and KIT-6 Adsorbents for low-Pressure CO₂ Capture, **14th International Conference on Fundamentals of Adsorption (FOA 2022)**, ID: 1842, May 22-27, Broomfield, Colorado, USA.
5. Anish Mathai Varghese, K. Suresh Kumar Reddy, G. N. Karanikolos. CO₂ 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.
6. Vengatesan M Rangaraj, K. Suresh Kumar Reddy, G. N. Karanikolos. Synthesis and CO₂ Adsorption of Phosphonitric-core Covalent Triazine Frameworks, **14th International Conference on Fundamentals of Adsorption (FOA 2022)**, ID: 1836, May 22-27, Broomfield, Colorado, USA.

7. 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.
8. 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.
9. 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.
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11. 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
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