Dr. Dionisios Panagiotaras
Adjunct Assistant Professor

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Expertise

Dr. Dionisios Panagiotaras holding a BSc in Chemistry and a Ph.D. in Geochemistry. At the present time he is teaching Chemistry, Geochemistry and Environmental Technology at the Department of Mechanical Engineering, Technological Educational Institute (TEI) of Western Greece, Patras.

His research interest focused in the field of Low temperature/Environmental Geochemistry. In particular, on the physical, chemical and biological processes that governs interactions in environmental systems. Specific research interests are clay mineralogy, soil and sediment geochemistry, chemistry of water-sediment and water-rock interactions, chemical weathering, and environmental uses of nano scale geomaterials such as modified clay minerals-TiO_2 nanocomposites for the decomposition of organic and inorganic pollutants by photocatalytic degradation.

He is using many analytical methods for the determination of: Nutrients and other ions such as, F^-, Cl^-, Br^-, I^-, NO_2^-, NO_3^-, PO_4^{3-}, SO_4^{2-} in sea water and fresh water samples. Major and trace elements such as Ca, Mg, K, Na, Fe, Ba, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Zn, et al., in geo-materials (e.g. rock samples, sediments, suspended particulates) and water samples (sea and fresh water samples), using Atomic Absorption Spectroscopy (AAS), High Performance Liquid Chromatography (HPLC) and other spectrophotometric techniques.

He is using high performance analytical instruments such as: Spectrophotometer, (AAS) Perkin-Elmer model 2100. Spectrophotometer, UV-Vis, Hitach model U2900. Spectrophotometer, Fluorence meter, Hitach model F2500. High Performance Liquid Chromatography (HPLC) system Simadzu, Prominence. Instrumentation for the investigation of Total Organic Carbon (TOC) in liquid and solid samples, Simadzu TOC-V_{CSH}.

He has been working as a team member with research groups from academic institutes all over Europe in research projects funded by the European Union:

- High resolution temporal and spatial study of the Benthic biology and geochemistry of a north-eastern Atlantic Abyssal Locality. European Union- MAS3-CT95-0018.
- Geochemical investigations of hydrothermal processes in the Hellenic volcanic island arc. European Union-MAS2-CT94-0101.
- Hydrothermal fluxes and biological production in the Aegean. European Union- MAS3-CT95-0021.
- Hydrodynamics and biogeochemical fluxes in the straits of the Cretan Arc. European Union- MAS2-CT93-0059.
- Biotechnologies for the Deep. European Union- EVK3-CT2000-00042-BIODEEP.

Key papers related to the COST action

1. Dimitrios Papoulis, Sridhar Komarneni, Dionisios Panagiotaras, Elias Stathatos, Konstantinos C. Christoforidis, Marcos Fernández-García, Huihui Li, Yin Shu, Tsugio Sato, Hiroaki Katsuki (2014). Three-phase nanocomposites of two nanoclays and TiO_2: Synthesis, characterization and photacatalytic activities. *Applied Catalysis B: Environmental, 147, 526-533.* http://www.sciencedirect.com/science/article/pii/S0926337313005900
2. Avramidis, P., Iliopoulos, G., Panagiotaras, D., Papoulis, D., Lambropoulou, P., Kontopoulos, N., Siavalas, G., Christanis, K. (2013). Tracking Mid-to Late Holocene depositional environments applying sedimentological, palaeontological and geochemical proxies of the Amvrakikos coastal lagoon sediments, Western Greece Mediterranean Sea. In press, *Quaternary International*. http://dx.doi.org/10.1016/j.quaint.2013.09.006
3. G. Panagopoulos, D. Panagiotaras, P. Giannoulopoulos (2013**).** Groundwater Quality Assessment of the Limnos Island Volcanic Aquifers, Greece. Water Environment Research, Volume 85, Number 5, pp. 422-433(12). doi:10.2175/106143012X13373575831439. http://www.ingentaconnect.com/content/wef/wer/2013/00000085/00000005/art00006
4. E. Stathatos, D. Papoulis, C.A. Aggelopoulos, D. Panagiotaras and A. Nikolopoulou (2012). TiO_2 palygorskite composite nanocrystalline films prepared by surfactant templating route: Synergistic effect to the photocatalytic degradation of an azo-dye in water. *Journal of Hazardous Materials.* Vol. 211–212, 68-76. doi:10.1016/j.jhazmat.2011.11.055 http://www.sciencedirect.com/science/article/pii/S030438941101435X
5. Panagiotaras, D., Papoulis, D., Kontopoulos N., Avramidis, P. (2012). Geochemical processes and sedimentological characteristics of Holocene lagoon deposits, Alikes Lagoon Zakynthos island, Western Greece. *Geological Journal*, Issue 4, Volume 47. 372–387. doi: 10.1002/gj.1339. http://onlinelibrary.wiley.com/doi/10.1002/gj.1339/pdf
6. G. Panagopoulos and D. Panagiotaras (2011). Understanding the extent of geochemical and hydrochemical processes in coastal karst aquifers through ion chemistry and multivariate statistical analysis. *Fresenius Environmental Bulletin (FEB),* volume 20, No 12a, 3270-3285. http://www.psp-parlar.de/details_artikel.asp?tabelle=FEBArtikel&artikel_id=3838&jahr=2011
7. Ioanna A. Vasiliadou, Dimitris Papoulis, Constantinos V. Chrysikopoulos, Dionisios Panagiotaras, Eleni Karakosta, Michael Fardis, and Georgios Papavassiliou (2011). Attachment of *Pseudomonas putida* on different structured kaolinite minerals: A combined ATR-FTIR and ^{1}H NMR study. Colloids and Surfaces B: Biointerfaces, 84, 354–359. doi:10.1016/j.colsurfb.2011.01.026. http://www.sciencedirect.com/science/article/pii/S0927776511000464
8. Papoulis D., Komarneni, S., Nikolopoulou A., Tsolis-Katagas P., Panagiotaras D., Kacandes H.G., Peilin Zhang, Shu Yin and Tsugio Sato (2010). *Palygorskite- and Halloysite-TiO_2 nanocomposites: Synthesis and photocatalytic activity.* Applied Clay Science 50 (1), 118–124. DOI: 10.1016/j.clay.2010.07.013. http://www.sciencedirect.com/science/article/pii/S0169131710002176
9. S.P. Varnavas, D. Panagiotaras, and G.A. Wolf, (2001). *Biogeochemical processes at the sediment-water interface in a North Eastern Atlantic abyssal locality [Porcupine Abyssal Plain].* Progress in Oceanography, vol. 50/1-4, pp. 223-243. http://www.sciencedirect.com/science/article/pii/S0079661101000556
10. Varnavas, S. P., Panagiotaras, D., Megalovasilis, P., Dando, P., Alliani, S., and Meloni, R. (2000). *Compositional Characterization of Suspended Particulate Matter in Hellenic Volcanic Arc Hydrothermal Centres*. Phys. Chem. Earth (B), Vol. 25, No. 1, pp, 9-18. http://www.sciencedirect.com/science/article/pii/S1464190999001136

Books

Geochemistry-Earth's System Processes. INTECH Publishers. Pages 500. ISBN: 978-953-51-0586-2. Available from: http://www.intechopen.com/books/geochemistry-earth-s-system-processes

Book chapters

1. Elias Stathatos, Dimitrios Papoulis, Dionisios Panagiotaras (2013). Stabilized TiO_2 nanoparticles on clay minerals for air and water treatment. In *Advanced Oxidation Technologies – Sustainable solutions for environmental treatments*. Editors: Marta I. Litter, Roberto Candal & J. Martín Meichtry. CRC publications. Accepted for publication.

2. Dionisios Panagiotaras, George Panagopoulos, Dimitrios Papoulis, Pavlos Avramidis (2012). *Arsenic Geochemistry in Groundwater System.* Pages 27-38. In *Geochemistry-Earth's System Processes.* INTECH Publishers. Pages 500. ISBN: 978-953-51-0586-2. Available from: http://www.intechopen.com/books/geochemistry-earth-s-system-processes/arsenic-geochemistry-in-groundwater-system
3. Dimitris Papoulis, Dionisios Panagiotaras, Georgios Panagopoulos (2012). *Arsenic: Environmental Impact Reduction Using Natural and Modified Adsorbents.* In *Arsenic: Sources, Environmental Impact, Toxicity and Human Health - A Medical Geology Perspective.* NOVA Publishers. ISBN: 978-1-62081-320-1. Pages 289-304. Available from: https://www.novapublishers.com/catalog/product_info.php?products_id=32809
4. G. Panagopoulos P. Giannoulopoulos and D. Panagiotaras (2011). *Groundwater hydrochemistry of the volcanic aquifers of Limnos Island, Greece.* In *Advances in the Research of Aquatic Environment, Vol. 2.* Springer-Verlag Berlin Heidelberg Publishers. ISBN: 978-3-642-24075-1. Pages 512. doi: 10.1007/978-3-642-24076-8. Available from: http://www.springerlink.com/content/j363527728x2x141