
Nikolaos Xekoukoulotakis

Assistant Professor

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Higher Education and Academic Career

- 1990-1995: Bachelor Degree in Chemistry, Aristotle University of Thessaloniki, Department of Chemistry, Thessaloniki, Greece.
- 1995-2001: PhD in Organic Chemistry, Aristotle University of Thessaloniki, Department of Chemistry, Thessaloniki, Greece.
- 9/2002-6/2009: Teaching Assistant, Technological Educational Institute of Crete (TEI Crete), Branch of Chania, Department of Natural Resources and Environment, Chania, Greece.
- 11/2002-2/2004: Postdoctoral Researcher, Technical University of Crete (TUC), Department of Mineral Resources Engineering, Chania, Greece.
- 2/2005-8/2010: Postdoctoral Researcher, TUC, Department of Environmental Engineering, Chania, Greece.
- 9/2010-3/2011: Visiting Assistant Professor, University of Cyprus, Department of Civil and Environmental Engineering, Nicosia, Cyprus.
- Since April 2011: Assistant Professor, TUC, Department of Environmental Engineering, Chania, Greece.

Summary of Academic Achievements

Number of PhD under supervision:	1
Number of MSc students supervised:	10
Number of BSc students supervised:	25
Number of papers published in refereed journals:	50
Number of citations (excluding self-citations):	over 3400
Scopus <i>h</i> -index:	32
Number of conference publications:	48
Number of papers reviewed for journals:	82
Number of journals involved as reviewer:	25

Research Experience

1. Research experience as scientific responsible at TUC

- I. Dates: May 2012-September 2014
- Title (acronym): Photocatalytic removal of organic micro-pollutants from the aqueous phase using TiO₂ coupled with graphene as a photocatalyst (PhotoGraph)
- Role in the project: Scientific responsible on behalf of TUC
- Funding: Research Promotion Foundation of Cyprus
- Project type: Joint project in collaboration with the University of Cyprus (UCY), Department of Civil and Environmental Engineering
- Coordinator: Assistant Professor Despo Fatta-Kassinou (UCY)
- Budget: Total budget: 159.964 €, TUC Budget: 47.926 €
- url: <http://www.photographproject.com/>

2. Research experience as member of the scientific group at TUC

II. Dates: December 2010-December 2012
Title (acronym): Photocatalytic and membrane technology process for olive oil mill waste water treatment (PHOTOMEM)
Role in the project: Member of the scientific committee of TUC
Scientific responsible: Professor Dionissios Mantzavinos (TUC)
Funding: European Union, 7th Framework Programme
Project type: Research for SMEs, contract number: FP7-SME-2010-1.
Coordinator: Luca Matteoni, Ecosystems Srl, Via Udine, 14 - 00040 Pomezia, Rome, Italy
Budget: Total budget: 831.539 €, TUC Budget: 69.600 €

III. Dates: November 2006-October 2010
Title (acronym): Innovative Solutions for Extracting High Value Natural Compounds (InSolEx)
Role in the project: Member of the scientific committee of TUC
Scientific responsible: Professor Dionissios Mantzavinos (TUC)
Funding: European Union, 6th Framework Programme
Project type: Marie Curie Research Training Networks, InSolEx Project, contract number: MRTN-CT-2006-036053
Coordinator: Professor Andrew G. Livingston, Imperial College, Department of Chemical Engineering, London, UK
Budget: Total budget: 2.796.270 €, TUC Budget: 82.215,60 €

3. Research experience as principal investigator/postdoctoral researcher at TUC

IV. Dates: December 2008-April 2010
Title (acronym): Degradation of estrogens in water as well as in treated municipal and hospital wastewaters by heterogeneous photocatalytic chemical oxidation (Estrogens)
Role in the project: Principal investigator
Funding: Research Promotion Foundation of Cyprus
Project type: Joint project in collaboration with the University of Cyprus (UCY), Department of Civil and Environmental Engineering
Coordinator: Assistant Professor Despo Fatta-Kassinou (UCY)
Budget: 49.920 €

V. Dates: June 2006-July 2007
Title (acronym): Degradation of organic micro-pollutants in biologically treated effluents using innovative oxidation technologies
Role in the project: Postdoctoral researcher
Funding: Ministry of Education, Greece.
Project type: EPEAEK, Pythagoras II Project - reinforcement of research groups at the Technical University of Crete
Coordinator: Professor Nicolas Kalogerakis
Budget: 109.800 €

VI. Dates: February 2005-August 2006
Title (acronym): Treatment of dyes in industrial effluents using a combination of chemical oxidation (photocatalysis, sonolysis and sono-photocatalysis) and biological processes
Role in the project: Postdoctoral researcher
Funding: Ministry of Education, Greece.
Project type: EPEAEK, Pythagoras Project
Coordinator: Professor Dionissios Mantzavinos

List of publications in refereed journals

1. **N.P. Xekoukoulotakis**, C.P. Hadjiantoniou-Maroulis, A.J. Maroulis, Synthesis of quinoxalines by cyclization of α -arylimino oximes of α -dicarbonyl compounds, *Tetrahedron Letters*, 41 (2000) 10299-10302. [http://dx.doi.org/10.1016/S0040-4039\(00\)01847-5](http://dx.doi.org/10.1016/S0040-4039(00)01847-5)
2. **N.P. Xekoukoulotakis**, C.P. Hadjiantoniou-Maroulis, A.J. Maroulis, 1,2,3-Triazol-1-imines. Part 3: Tandem 1,3 cycloaddition-rearrangement and open chain reactions of 2-aryl-N-aroyle-4,5-dimethyl-1,2,3-triazol-1-imines with dimethyl acetylenedicarboxylate, *Tetrahedron Letters*, 41 (2000) 10337-10340. [http://dx.doi.org/10.1016/S0040-4039\(00\)01858-X](http://dx.doi.org/10.1016/S0040-4039(00)01858-X)
3. P.A. Pekakis, **N.P. Xekoukoulotakis**, D. Mantzavinos, Treatment of textile dyehouse wastewater by TiO₂ photocatalysis, *Water Research*, 40 (2006) 1276-1286. <http://dx.doi.org/10.1016/j.watres.2006.01.019>
4. P. Karageorgos, A. Coz, M. Charalabaki, N. Kalogerakis, **N.P. Xekoukoulotakis**, D. Mantzavinos, Ozonation of weathered olive mill wastewaters, *Journal of Chemical Technology and Biotechnology*, 81 (2006) 1570-1576. <http://dx.doi.org/10.1002/jctb.1490>
5. E. Chatzisyneon, **N.P. Xekoukoulotakis**, A. Coz, N. Kalogerakis, D. Mantzavinos, Electrochemical treatment of textile dyes and dyehouse effluents, *Journal of Hazardous Materials*, 137 (2006) 998-1007. <http://dx.doi.org/10.1016/j.jhazmat.2006.03.032>
6. T. Papadam, **N.P. Xekoukoulotakis**, I. Poulis, D. Mantzavinos, Photocatalytic transformation of acid orange 20 and Cr(VI) in aqueous TiO₂ suspensions, *Journal of Photochemistry and Photobiology A-Chemistry*, 186 (2007) 308-315. <http://dx.doi.org/10.1016/j.jphotochem.2006.08.023>
7. A.M.T. Silva, E. Nouli, **N.P. Xekoukoulotakis**, D. Mantzavinos, Effect of key operating parameters on phenols degradation during H₂O₂-assisted TiO₂ photocatalytic treatment of simulated and actual olive mill wastewaters, *Applied Catalysis B-Environmental*, 73 (2007) 11-22. <http://dx.doi.org/10.1016/j.apcatb.2006.12.007>
8. D.E. Kritikos, **N.P. Xekoukoulotakis**, E. Psillakis, D. Mantzavinos, Photocatalytic degradation of reactive black 5 in aqueous solutions: Effect of operating conditions and coupling with ultrasound irradiation, *Water Research*, 41 (2007) 2236-2246. <http://dx.doi.org/10.1016/j.watres.2007.01.048>
9. C. Berberidou, I. Poulis, **N.P. Xekoukoulotakis**, D. Mantzavinos, Sonolytic, photocatalytic and sonophotocatalytic degradation of malachite green in aqueous solutions, *Applied Catalysis B-Environmental*, 74 (2007) 63-72. <http://dx.doi.org/10.1016/j.apcatb.2007.01.013>
10. A.M.T. Silva, E. Nouli, A.C. Carmo-Apolinario, **N.P. Xekoukoulotakis**, D. Mantzavinos, Sonophotocatalytic/H₂O₂ degradation of phenolic compounds typically found in agro-industrial effluents, *Catalysis Today*, 124 (2007) 232-239. <http://dx.doi.org/10.1016/j.cattod.2007.03.057>
11. C. Fotiadis, **N.P. Xekoukoulotakis**, D. Mantzavinos, Photocatalytic treatment of wastewater from cottonseed processing: Effect of operating conditions, aerobic biodegradability and ecotoxicity, *Catalysis Today*, 124 (2007) 247-253. <http://dx.doi.org/10.1016/j.cattod.2007.03.042>
12. A. Paleologou, H. Marakas, **N.P. Xekoukoulotakis**, A. Moya, Y. Vergara, N. Kalogerakis, P. Gikas, D. Mantzavinos, Disinfection of water and wastewater by TiO₂ photocatalysis, sonolysis and UV-C irradiation, *Catalysis Today*, 129 (2007) 136-142. <http://dx.doi.org/10.1016/j.cattod.2007.06.059>
13. N. Pasadakis, **N. Xekoukoulotakis**, Gas Chromatographic Analysis of Crude Oils with Thermal Extraction Sampling, *Petroleum Science and Technology*, 25 (2007) 1135-1142. <http://dx.doi.org/10.1080/10916460500423361>
14. A. Deligiorgis, **N.P. Xekoukoulotakis**, E. Diamadopoulou, D. Mantzavinos, Electrochemical oxidation of table olive processing wastewater over boron-doped diamond electrodes: Treatment optimization by factorial design, *Water Research*, 42 (2008) 1229-1237. <http://dx.doi.org/10.1016/j.watres.2007.09.014>

15. M. Mavros, **N.P. Xekoukoulotakis**, D. Mantzavinos, E. Diamadopoulos, Complete treatment of olive pomace leachate by coagulation, activated carbon adsorption and electrochemical oxidation, *Water Research*, 42 (2008) 2883-2888. <http://dx.doi.org/10.1016/j.watres.2008.02.026>
16. E. Chatzisymeon, E. Stypas, S. Bousios, **N.P. Xekoukoulotakis**, D. Mantzavinos, Photocatalytic treatment of black table olive-processing wastewater, *Journal of Hazardous Materials*, 154 (2008) 1090-1097. <http://dx.doi.org/10.1016/j.jhazmat.2007.11.014>
17. Z. Frontistis, **N.P. Xekoukoulotakis**, E. Diamadopoulos, D. Mantzavinos, Ozonation of stabilized leachates: Treatment optimization by factorial design, *Journal of Advanced Oxidation Technologies*, 11 (2008) 370-376. <https://doi.org/10.1515/jaots-2008-0223>
18. A. Katsoni, Z. Frontistis, **N.P. Xekoukoulotakis**, E. Diamadopoulos, D. Mantzavinos, Wet air oxidation of table olive processing wastewater: Determination of key operating parameters by factorial design, *Water Research*, 42 (2008) 3591-3600. <http://dx.doi.org/10.1016/j.watres.2008.05.007>
19. M. Isabel Pariente, F. Martínez, J.A. Melero, J.Á. Botas, T. Velegraki, **N.P. Xekoukoulotakis**, D. Mantzavinos, Heterogeneous photo-Fenton oxidation of benzoic acid in water: Effect of operating conditions, reaction by products and coupling with biological treatment, *Applied Catalysis B-Environmental*, 85 (2008) 24-32. <http://dx.doi.org/10.1016/j.apcatb.2008.06.019>
20. E. Chatzisymeon, **N.P. Xekoukoulotakis**, D. Mantzavinos, Determination of key operating conditions for the photocatalytic treatment of olive mill wastewaters, *Catalysis Today*, 144 (2009) 143-148. <http://dx.doi.org/10.1016/j.cattod.2009.01.037>
21. E. Chatzisymeon, **N.P. Xekoukoulotakis**, E. Diamadopoulos, A. Katsaounis, D. Mantzavinos, Boron-doped diamond anodic treatment of olive mill wastewaters: statistical analysis, kinetic modelling and biodegradability, *Water Research*, 43 (2009) 3999-4009. <http://dx.doi.org/10.1016/j.watres.2009.04.007>
22. E. Tsimas, K. Tyrovolas, **N.P. Xekoukoulotakis**, N.P. Nikolaidis, E. Diamadopoulos, D. Mantzavinos, Simultaneous photocatalytic oxidation of As(III) and humic acid in aqueous TiO₂ suspensions, *Journal of Hazardous Materials*, 169 (2009) 376-385. <http://dx.doi.org/10.1016/j.jhazmat.2009.03.107>
23. M. Melemini, D. Stamatakis, **N.P. Xekoukoulotakis**, D. Mantzavinos, N. Kalogerakis, Disinfection of municipal wastewater by TiO₂ photocatalysis with UV-A, visible and solar irradiation and BDD electrolysis, *Global NEST Journal*, 11 (2009) 357-363. <http://dx.doi.org/10.1016/j.gnest.2009.04.007>
24. E. Diamadopoulos, H. Barndök, **N.P. Xekoukoulotakis**, D. Mantzavinos, Treatment of ink effluents from flexographic printing by lime precipitation and BDD electrochemical oxidation, *Water Science and Technology*, 60 (2009) 2477-2483. <http://dx.doi.org/10.2166/wst.2009.682>
25. A. Achilleos, E. Hapeshi, **N.P. Xekoukoulotakis**, D. Mantzavinos, D. Kassinos, UV-A and solar photodegradation of ibuprofen and carbamazepine catalyzed by TiO₂, *Separation Science and Technology*, 45 (2010) 1564-1570. <http://dx.doi.org/10.1080/01496395.2010.487463>
26. N. Lydakis-Simantiris, D. Riga, E. Katsivela, D. Mantzavinos, **N.P. Xekoukoulotakis**, Disinfection of spring water and secondary treated municipal wastewater by TiO₂ photocatalysis, *Desalination*, 250 (2010) 351-355. <http://dx.doi.org/10.1016/j.desal.2009.09.055>
27. E. Hapeshi, A. Achilleos, M.I. Vasquez, C. Michael, **N.P. Xekoukoulotakis**, D. Mantzavinos, D. Kassinos, Drugs degrading photocatalytically: kinetics and mechanisms of ofloxacin and atenolol removal on titania suspensions, *Water Research*, 44 (2010) 1737-1746. <http://dx.doi.org/10.1016/j.watres.2009.11.044>
28. **N.P. Xekoukoulotakis**, N. Xinidis, M. Chroni, D. Mantzavinos, D. Venieri, E. Hapeshi, D. Kassinos, UV-A/TiO₂ photocatalytic decomposition of erythromycin in water: Factors affecting mineralization and antibiotic activity, *Catalysis Today*, 151 (2010) 29-33. <http://doi.org/10.1016/j.cattod.2010.01.040>
29. P. Grafias, **N.P. Xekoukoulotakis**, D. Mantzavinos, E. Diamadopoulos, Pilot treatment of olive pomace leachate by vertical-flow constructed wetland and electrochemical oxidation: An efficient hybrid process, *Water Research*, 44 (2010) 2773-2780. <http://doi.org/10.1016/j.watres.2010.02.015>

30. A. Achilleos, E. Hapeshi, **N.P. Xekoukoulotakis**, D. Mantzavinos, D. Kassinos, Factors affecting diclofenac decomposition in water by UV-A/TiO₂ photocatalysis, *Chemical Engineering Journal*, 161 (2010) 53-59. <http://doi.org/10.1016/j.cej.2010.04.020>
31. **N.P. Xekoukoulotakis**, D. Mantzavinos, R. Dillert, D. Bahnemann, Synthesis and photocatalytic activity of boron-doped TiO₂ in aqueous suspensions under UV-A irradiation, *Water Science and Technology*, 61 (2010) 2501-2506. <http://doi.org/10.2166/wst.2010.150>
32. C. Drosou, A. Coz, **N.P. Xekoukoulotakis**, A. Moya, Y. Vergara, D. Mantzavinos, Peracetic acid-enhanced photocatalytic and sonophotocatalytic inactivation of *E. coli* in aqueous suspensions, *Journal of Chemical Technology and Biotechnology*, 85 (2010) 1049-1053. <http://doi.org/10.1002/jctb.2396>
33. E. Hapeshi, A. Achilleos, A. Papaioannou, L. Valanidou, **N.P. Xekoukoulotakis**, D. Mantzavinos, D. Kassinos, Sonochemical degradation of ofloxacin in aqueous solutions, *Water Science and Technology*, 61 (2010) 3141-3146. <http://doi.org/10.2166/wst.2010.921>
34. **N.P. Xekoukoulotakis**, C. Drosou, C. Brebou, E. Chatzisyneon, E. Hapeshi, D. Fatta-Kassinos, D. Mantzavinos, Kinetics of UV-A/TiO₂ photocatalytic degradation and mineralization of the antibiotic sulfamethoxazole in aqueous matrices, *Catalysis Today*, 161 (2011) 163-168. <http://doi.org/10.1016/j.cattod.2010.09.027>
35. A. Coz, M. Villegas, A. Andrés, J.R. Viguri, D. Mantzavinos, **N.P. Xekoukoulotakis**, Management scenarios for olive oil mill waste based on characterization and leaching tests, *Journal of Chemical Technology and Biotechnology*, 86 (2011) 1542-1547. <http://doi.org/10.1002/jctb.2677>
36. Z. Frontistis, **N.P. Xekoukoulotakis**, E. Hapeshi, D. Venieri, D. Fatta-Kassinos, D. Mantzavinos, Fast degradation of estrogen hormones in environmental matrices by photo-Fenton oxidation under simulated solar radiation, *Chemical Engineering Journal*, 178 (2011) 175-182. <http://doi.org/10.1016/j.cej.2011.10.041>
37. D. Dimitrakopoulou, I. Rethemiotaki, Z. Frontistis, **N.P. Xekoukoulotakis**, D. Venieri, D. Mantzavinos, Degradation, mineralization and antibiotic inactivation of amoxicillin by UV-A/TiO₂ photocatalysis, *Journal of Environmental Management*, 98 (2012) 168-174. <http://doi.org/10.1016/j.jenvman.2012.01.010>
38. H. Dimitroula, V.M. Daskalaki, Z. Frontistis, D.I. Kondarides, P. Panagiotopoulou, **N.P. Xekoukoulotakis**, D. Mantzavinos, Solar photocatalysis for the abatement of emerging micro-contaminants in wastewater: Synthesis, characterization and testing of various TiO₂ samples, *Applied Catalysis B: Environmental*, 117-118 (2012) 283-291. <http://doi.org/10.1016/j.apcatb.2012.01.024>
39. Z. Frontistis, V.M. Daskalaki, E. Hapeshi, C. Drosou, D. Fatta-Kassinos, **N.P. Xekoukoulotakis**, D. Mantzavinos, Photocatalytic (UV-A/TiO₂) degradation of 17 α -ethynylestradiol in environmental matrices: Experimental studies and artificial neural network modelling, *Journal of Photochemistry and Photobiology A: Chemistry*, 240 (2012) 33-41. <http://doi.org/10.1016/j.jphotochem.2012.05.007>
40. Z. Frontistis, D. Fatta-Kassinos, D. Mantzavinos, **N.P. Xekoukoulotakis**, Photocatalytic degradation of 17 α -ethynylestradiol in environmental samples by ZnO under simulated solar radiation, *Journal of Chemical Technology and Biotechnology*, 87 (2012) 1051-1058. <http://doi.org/10.1002/jctb.3751>
41. D. Venieri, E. Chatzisyneon, S.S. Sofianos, E. Politi, **N.P. Xekoukoulotakis**, A. Katsaounis, D. Mantzavinos, Removal of faecal indicator pathogens from waters and wastewaters by photoelectrocatalytic oxidation on TiO₂/Ti films under simulated solar radiation, *Environmental Science and Pollution Research*, 19 (2012) 3782-3790. <http://doi.org/10.1007/s11356-012-0768-5>
42. Z. Frontistis, C. Drosou, K. Tyrovola, D. Mantzavinos, D. Fatta-Kassinos, D. Venieri, **N.P. Xekoukoulotakis**, Experimental and modeling studies of the degradation of estrogen hormones in aqueous TiO₂ suspensions under simulated solar radiation, *Industrial and Engineering Chemistry Research*, 51 (2012) 16552-16563. <http://doi.org/10.1021/ie300561b>

43. L.A. Ioannou, C. Michael, N. Vakondios, K. Drosou, **N.P. Xekoukoulotakis**, E. Diamadopoulos, D. Fatta-Kassinou, Winery wastewater purification by reverse osmosis and oxidation of the concentrate by solar photo-Fenton, *Separation and Purification Technology*, 118 (2013) 659-669. <http://doi.org/10.1016/j.seppur.2013.07.049>
44. G. Pliego, **N. Xekoukoulotakis**, D. Venieri, J.A. Zazo, J.A. Casas, J.J. Rodriguez, D. Mantzavinos, Complete degradation of the persistent anti-depressant sertraline in aqueous solution by solar photo-Fenton oxidation, *Journal of Chemical Technology and Biotechnology*, 89 (2014) 814-818. <http://doi.org/10.1002/jctb.4314>
45. R. Vicente, J. Soler, A. Arques, A.M. Amat, Z. Frontistis, **N. Xekoukoulotakis**, D. Mantzavinos, Comparison of different TiO₂ samples as photocatalyst for the degradation of a mixture of four commercial pesticides, *Journal of Chemical Technology and Biotechnology*, 89 (2014) 1259-1264. <http://doi.org/10.1002/jctb.4382>
46. Z. Frontistis, M. Kouramanos, S. Moraitis, E. Chatzisyneon, E. Hapeshi, D. Fatta-Kassinou, **N.P. Xekoukoulotakis**, D. Mantzavinos. UV and simulated solar photodegradation of 17 α -ethynylestradiol in secondary-treated wastewater by hydrogen peroxide or iron addition, *Catalysis Today* 252 (2015) 84–92. <http://doi.org/10.1016/j.cattod.2014.10.012>
47. P. Karaolia, I. Michael-Kordatou, E. Hapeshi, C. Drosou, Y. Bertakis, D. Christofilos, G.S. Armatas, L. Sygellou, T. Schwartz, **N.P. Xekoukoulotakis**, D. Fatta-Kassinou. Removal of antibiotics, antibiotic-resistant bacteria and their associated genes by graphene-based TiO₂ composite photocatalysts under solar radiation in urban wastewaters. *Applied Catalysis B: Environmental* 224 (2018) 810-824. <https://doi.org/10.1016/j.apcatb.2017.11.020>
48. A. Cabrera Reina, A.B. Martínez-Piernas, Y. Bertakis, C. Brebou, **N.P. Xekoukoulotakis**, A. Agüera, J.A. Sanchez Perez. Photochemical degradation of the carbapenem antibiotics imipenem and meropenem in aqueous solutions under solar radiation. *Water Research* 128 (2018) 61-70. <https://doi.org/10.1016/j.watres.2017.10.047>
49. A. Cabrera-Reina, A.B. Martínez-Pierna, Y. Bertakis, **N.P. Xekoukoulotakis**, A. Agüera, J.A. Sánchez Pérez. TiO₂ photocatalysis under natural solar radiation for the degradation of the carbapenem antibiotics imipenem and meropenem in aqueous solutions at pilot plant scale. *Water Research* 166 (2019) 115037. <https://doi.org/10.1016/j.watres.2019.115037>
50. A. Kousaiti, J.N. Hahladakis, V. Savvilotidou, K. Pivnenko, K. Tyrovola, N. Xekoukoulotakis, T.F. Astrup, E. Gidaracos, Assessment of tetrabromobisphenol-A (TBBPA) content in plastic waste recovered from WEEE. *Journal of Hazardous Materials* 390 (2020) 121641. <https://doi.org/10.1016/j.jhazmat.2019.121641>