

CURRICULUM VITAE - Dr. Angeliki C. Polydera

Department of Biological Applications and Technologies
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Personal data

Date of birth: July 13, 1973, *Place of birth:* Athens, Greece, *Marital status:* Married, with one child

Education

-*PhD in Chemical Engineering at the National Technical University of Athens (NTUA), Greece, January of 2004. Topic: «Kinetic studies of nutritional and qualitative parameters of juices processed with high pressure», Department of Synthesis and Development of Industrial Processes (IV), School of Chemical Engineering, NTUA.*

-*Chemical Engineering Degree, NTUA, Greece, November 1997.*

Foreign languages

English (Certificate of Proficiency, Cambridge), Spanish (Básico Diploma de Español, Salamanca)

Honors - Fellowships

-Fellowship of the State Scholarship Foundation for postdoctoral research (2005- 2006).

-Fellowship of the State Scholarship Foundation for the elaboration of doctoral thesis (1998– 2002).

Research – Working Experience

-Laboratory Teaching Staff, Department of Biological Applications and Technologies, University of Ioannina (July 2014- today) (*Teaching:* Laboratories of Biotechnology, Biochemical & Bioprocess Engineering, Enzyme Biotechnology and Nanobiotechnology)

-Research assistant, Biotechnology laboratory, BAT, UOI (September 2008- June 2014)

-Technical, administrative and scientific support for the operation of the Bioreactor System in Atherothrombosis Research Centre, University of Ioannina (2012- today)

-Administrative employee, NTUA, Athens (September 2007- August 2008)

-Post-doctoral research in the Biotechnology laboratory, BAT, UOI. *Topic:* Development of novel biocatalytic processes for the improvement of the properties of antioxidant compounds with application to food industry (January 2005-June 2006)

-Post-doctoral research in the research program ‘Modification of natural products with antioxidant and anti-inflammatory properties with the use of new biocatalytic processes: Study of their activity in the atherogenesis mechanisms’ (Pythagoras I), University of Ioannina, April 2004-January 2005.

Research interests

Development and modelling of bioprocesses, Biochemical Engineering, Food Engineering

Participation in scientific research programs

- Operational Program Competitiveness, Entrepreneurship and Innovation, under the call "Aquaculture" - "Industrial Materials" - "Open Innovation In Culture" Development of Green Processes For The Recovery Of Bioactive Products With Anti-Ageing & Antioxidant Activity From Marine Algae 2019-2022 UoI Coordinator H. Stamatis (<http://bat.uoi.gr/research/biomalga>)

- Development of Innovative Cosmetic Products and Food Supplements Based on Nanoencapsulation of Natural Bioactive Compounds Competitiveness, Entrepreneurship and Innovation (EU-Greece NSRF 2014-2020), 2018-2021 Coordinator H. Stamatis

- Synthetic Biology from omic technologies to genomic engineering “Reinforcement of the Research and Innovation Infrastructure” -Competitiveness, Entrepreneurship and Innovation (EU-Greece NSRF 2014-2020), 2018-2021 Uoi Coordinator H. Stamatis <https://www.omic-engine.com/about>

- Production of oxidoreductases for the biocatalysis selective oxidations pf pharmaceutical interest 2018 (Pharmathen SA) Coordinator H. Stamatis

- Programme for the Promotion of the Exchange and Scientific Cooperation between Greece and Germany 2015-2016 Development of novel biotechnological tools for the efficient treatment of agroindustrial lignocellulosic wastes (DAAD) Coordinator H. Stamatis

- Research program “Wastewater treatment with microalgae and use of the biomass for the production of third generation biofuels and high value biochemical products” (co-financed by ERDF and NSRF 2007-2013), University of Ioannina, 2012- 2015.
- Program for the promotion of the exchange and scientific cooperation between Greece and Germany, Title: Development of efficient biocatalysts based on enzymes immobilization onto nanomaterials, University of Ioannina, 2010-2011.
- Common Scientific programs of Greece-Czech Republic, 2006-2008. Title: Enzymatic modification of flavonoids–preparation of novel hybrid antioxidants with improved antiradical and anti-inflammatory properties, University of Ioannina, 2006-2008.
- Research program «Modification of natural products with antioxidant and anti-inflammatory properties by using new biocatalytic processes: Study of their action on atherogenesis mechanisms» (PITHAGORAS I), University of Ioannina, April 2004 - January 2005.
- Research program “Systematic study of the application of the novel non-thermal technology of High Hydrostatic Pressure for processing high quality and nutritionally improved Greek Products” (EPAN TP24), NTUA, November 2003-2004.
- Research program “High Pressure Processing for the Production of high quality meat products with long shelf-life” (PAVET 2000), NTUA, 2001-2003.
- Program of research and technology (EPET II): “Application of the High Pressure technology for the production of Greek products of high nutritional value and quality”, NTUA, 1999-2001.
- European research program: “Development, modelling and application of time temperature integrator systems to monitor chilled fish quality” (FAIR-CT95-1090), NTUA, 1997-1999.

Bibliometrics

- 14 publications in international journals with peer review (730 citations, h-index 12-scopus)
- 3 book chapters (International Editions)
- 14 publications of works in conference proceedings
- 30 participations in international and national conferences without full proceedings (only abstract)

Publications in international peer reviewed journals

- A1. Polydera, A.C., Stoforos, N.G. & Taoukis, P.S. (2003). Comparative shelf life study and vitamin C loss kinetics in pasteurised and high pressure processed reconstituted orange juice, *Journal of Food Engineering*, 60(1), 21-29. IF5 YEAR = 2.927
- A2. Polydera, A.C., Galanou, E., Stoforos, N.G. & Taoukis, P.S. (2004). Inactivation kinetics of pectin methylesterase of greek Navel orange juice as a function of high hydrostatic pressure and temperature process conditions, *Journal of Food Engineering*, 62(3), 291-298. IF5 YEAR = 2.927
- A3. Polydera, A.C., Stoforos, N.G. & Taoukis, P.S. (2004). The effect of storage on the antioxidant activity of reconstituted orange juice which had been pasteurized by high pressure or heat, *International Journal of Food Science & Technology*, 39(7), 783-791. IF=1.24
- A4. Polydera, A.C., Stoforos, N.G. & Taoukis, P.S. (2005). Effect of high hydrostatic pressure treatment on post processing antioxidant activity of fresh Navel orange juice, *Food Chemistry*, 91(3), 495-503. IF5 YEAR = 4.072
- A5. Polydera, A.C., Stoforos, N.G. & Taoukis, P.S. (2005). Quality degradation kinetics of pasteurised and high pressure processed fresh Navel orange juice: Nutritional parameters and shelf life, *Innovative Food Science and Emerging Technologies*, 6(1), 1-9. IF5 YEAR =3.590
- A6. M.H. Katsoura, A.C. Polydera, L. Tsironis, A.D. Tselepis, H. Stamatis (2006). Use of ionic liquids as media for the biocatalytic preparation of flavonoid derivatives with antioxidant potency, *Journal of Biotechnology* 123, 491-503. IF5 YEAR = 3.340

- A7. M.H. Katsoura, A.C. Polydera, P. Katapodis, F.N. Kolisis, H. Stamatis (2007). Effect of different reaction parameters on the lipase-catalyzed selective acylation of polyhydroxylated natural compounds in ionic liquids. *Process Biochemistry* 42, 1326-1334. IF_{5 YEAR}= 2.983
- A8. M. H. Katsoura, A. C. Polydera, L. D. Tsironis, M.P. Petraki, S. Kostić Rajačić, A. D. Tselepis, H. Stamatis. (2009). Efficient enzymatic preparation of hydroxycinnamates in ionic liquids enhances their antioxidant effect on lipoproteins oxidative modification, *New Biotechnology* 26, 83-91. IF5 YEAR=2.338
- A9. A.A. Papadopoulou, M.H. Katsoura, A.Chatzikonstantinou, E. Kyriakou, A.C. Polydera, A.G. Tzakos, H. Stamatis (2013). Enzymatic hybridization of α -lipoic acid with bioactive compounds in ionic solvents, *Bioresource Technology* 136, 41–48, 2013. IF5 YEAR = 5.172
- A10. Papadopoulou, A.A., Tzani, A., Alivertis, D., Katsoura, M.H., Polydera, A.C., Detsi, A., Stamatis, H. (2016). Hydroxyl ammonium ionic liquids as media for biocatalytic oxidations. *Green Chemistry* 18(4), pp.1147 – 1158, 2016 DOI: 10.1039/C5GC02381E
- A11. Papadopoulou, A.A., Efstathiadou, E., Patila, M., Polydera, A.C., Stamatis, H. (2016). Deep Eutectic Solvents as Media for Peroxidation Reactions Catalyzed by Heme-Dependent Biocatalysts. *Industrial & Engineering Chemistry Research* 55(18), pp. 5145-5151, 2016, <https://doi.org/10.1021/acs.iecr.5b04867>.
- A12. Papadopoulou, A.A., Tzani, A., Polydera, A.C., Katapodis, P., Voutsas, E., Detsi, A., Stamatis, H. (2017). Green biotransformations catalysed by enzyme-inorganic hybrid nanoflowers in environmentally friendly ionic solvents. *Environmental Science and Pollution Research International* 1-8, 2017 DOI:10.1007/s11356-017-9271-3.
- A13. A. Giannakopoulou, E. Gkantzou, A. Polydera and H. Stamatis Multienzymatic Nanoassemblies: Recent Progress and Applications *Trends in Biotechnology* <https://doi.org/10.1016/j.tibtech.2019.07.010> (Invited paper)
- A14. A.V Chatzikonstantinou, A.C. Polydera, E.Thomou, N. Chalmpes, T. N Baroud, A. Enotiadis, L. Estevez, M. Patila, M. A. Hammami, K. Spyrou, E. P. Giannelis, A. G. Tzakos, D. Gournis, H. Stamatis *Bioresource Technology Reports* 9, 100372 <https://doi.org/10.1016/j.biteb.2019.100372>

Book Chapters (International Editions)

- B1. I.V. Pavlidis, M. Patila, A. Polydera, D. Gournis, H. Stamatis Immobilisation of enzymes and other biomolecules In *Functionalization of Graphene* Editor: Vasilios Georgakilas, Wiley-VCH Verlag & Co, 2014, 35 pages DOI:10.1002/9783527672790 (Invited book chapter)
- B2. M. Katsoura, A. Papadopoulou A. Polydera, H. Stamatis Effect of ionic liquids on catalytic properties and structure of biocatalysts In *Ionic Liquid-Based Surfactant Science: Formulation, Characterization, and Applications* edited by Bidyut K. Paul and Satya P. Mouli Wiley-VCH Verlag & Co, 2015 ISBN: 978-1-118-83419-0 (Invited book chapter)
- B3. M. Patila, G. Orfanakis, A.C. Polydera, I.V. Pavlidis and H. Stamatis “Graphene-based Nanobiocatalytic Systems” *Biocatalysis and Nanotechnology* PanStanford Publishing, Singapore 2017 DOI: 10.4032/9781315196602 (Invited book chapter)

Publications in Conference Proceedings

- M.H. Katsoura, A. Papadopoulou, M. Patila, A.C. Polydera, E. Voutsas and H. Stamatis (2009). “Ionic liquids as media for the biocatalytic modification of natural antioxidants” 3rd Greek Congress of Green Chemistry, Thessaloniki, September 2009, In *Abstracts Book*.
- M.H. Katsoura, A.C. Polydera, L. Tsironis, A.D. Tselepis, H. Stamatis (2006). Biocatalytic preparation of lipophilic derivatives of natural antioxidants in ionic liquids-based media. *Hellenic Society of Biochemistry & Molecular Biology, Patra, Proceedings of the 58th Meeting, Volume 53, 2006.*

- M.H. Katsoura, Klapsa, D., Polydera, A.C., Stamatis, H. (2005). "Enzymatic modification of flavonoids and vitamins in ionic liquids". 5th Greek Scientific Congress of Chemical Engineering, May 26-28, 2005, Thessaloniki, In Proceedings p. 685-688.
- M.H. Katsoura, Polydera, A.C., S. Kostić-Rajačić, Stamatis, H. (2005). "Biocatalytic processing in ionic liquids: Εφαρμογή στην παρασκευή λιπόφιλων παραγώγων φυσικών αντιοξειδωτικών», 1st Greek Congress of Biotechnology and Food Technology, April 2005, In Proceedings p. 183-186.
- Katsaros, G., Boulekou, S., Nasopoulos, K., Katapodis, P., Polydera A.C., Kekos, D., Galiatsatou, P., Stoforos, N., Taoukis, P. (2005). "Effect of High Hydrostatic Pressure on pectinases and cysteinic proteases of fruits and vegetables". 5th Greek Scientific Congress of Chemical Engineering, May 26-28, 2005, Thessaloniki, In Proceedings p. 1173-1176.
- Taoukis, P.S., Katsaros, G.I., Polydera, A.C., Gogou, E., Katapodis, P., Bakalis, S., and Kekos, D. (2005). "Kinetic study of the effect of High Hydrostatic Pressure on the activity of enzymes with potential application in food industry". 1st Greek Congress of Biotechnology and Food Technology, 31 March, 1& 2 April, 2005, Athens, In Proceedings p. 108-112.
- Polydera, A.C., Stoforos N.G. and Taoukis, P.S. (2004). "Kinetics of pasteurized and high pressure processed Navel orange juice: nutritional parameters and shelf life". In: Proceedings of the Ninth International Congress on Engineering and Food (ICEF9), March 7-11, 2004, Montpellier, France.
- Polydera, A.C., Galanou E., Stoforos N.G., Taoukis, P.S. (2003). "Kinetic study of the effect of High Hydrostatic Pressure and Temperature on pectinmethylesterase of orange juice". 4th Greek Scientific Congress of Chemical Engineering, May 29-31, 2003, Patra, In Proceedings p.949-952.
- Polydera, A.C., Stoforos N.G., Taoukis, P.S. (2001). "Effect of thermal processing on nutritional parameters of fruit juices". 3rd Greek Scientific Congress of Chemical Engineering, May 31 – June 2, 2001, Athens, In Proceedings p. 1197-1200.
- Polydera, A.C., Bourounis, P., Taoukis, P.S. (2001). "Shelf-life of fruit juices as a function of chill-chain conditions». 3rd Greek Scientific Congress of Chemical Engineering, May 31 –June 2, 2001, Athens, In Proceedings p. 1217-1220.
- Polydera, A.C., Papageorgiou, P.K., Giannakourou, M.C, and Taoukis, P.S. (2000). "Evaluation of non-conventional osmotic agents for pretreatment of fruit tissues before drying". In: Proceedings of the Eighth International Congress on Engineering and Food (ICEF8), April 9-13, 2000, Puebla, Mexico, Vol.II, p 1356-1360.
- Giannakourou, M.C, Skiadopoulos, A., Polydera, A.C. and Taoukis, P.S. (2000). "Shelf-life modeling of frozen vegetables for quality optimization with Time Temperature Indicators (TTI)". In: Proceedings of the Eighth International Congress on Engineering and Food (ICEF8), April 9-13, 2000, Puebla, Mexico, Vol.I, p 824-828.
- Polydera, A., Skandamis, P., Nychas, G.J. E., Taoukis, P.S. (1999). "Mathematical modelling of the combined effect of temperature and specific humectants on growth of Escherichia coli O157:H7". In: Food microbiology and food safety into the next millennium, Proceedings of the Food Micro '99, Ecology and physiology of food related micro-organisms, 17th International Conference of the International Committee on Food Microbiology and Hygiene (ICFMH), Veldhoven, The Netherlands, 13-17 September, 1999, p 95-98.
- Polydera, A., Skandamis, P., Nychas, G.J. E., Taoukis, P.S. (1999). "Mathematical prediction of the effect of water activity and temperature on microbiological growth in food". 2nd Greek Scientific Congress of Chemical Engineering, Thessaloniki, May 27-29, 1999, In Proceedings p. 911-914.

