

PERSONAL INFORMATION	
SURNAME	CHATZIDOUKAS
NAME	CHRISTOS
DATE OF BIRTH	01.05.1976
PLACE OF RESIDENCE	THESSALONIKI, GREECE
e-mail	chatzido@auth.gr
TEL.	+30 2310996167

CURRENT POSITION(S)

05.2016 – to date	Assistant Professor Faculty of Engineering/Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece
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PREVIOUS POSITION(S)

06.2010 - 04.2016	Lecturer Faculty of Engineering/Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece
04.2006 - 06.2010	Research Associate Chemical Process Engineering Research Institute (C.P.E.R.I.) Centre for Research & Technology Hellas (CERTH), Thessaloniki, Greece
06.2003 - 02.2005	Postdoctoral Researcher, (Member of the research group of Prof. C. Kiparissides) Chemical Process Engineering Research Institute (C.P.E.R.I.) Centre for Research & Technology Hellas (CERTH), Thessaloniki, Greece
09.2005 - 03.2006	Postdoctoral Researcher, (Member of the research group of Prof. C. Kiparissides) Chemical Process Engineering Research Institute (C.P.E.R.I.) Centre for Research & Technology Hellas (CERTH), Thessaloniki, Greece
02.2004 - 05.2004	Visiting Researcher (Collaboration with Prof. Dominique Bonvin & Prof. Bala Srinivasan) Ecole Polytechnique Fédérale De Lausanne (EPFL), Laboratoire D' Automatique, Switzerland
10.1999 - 03.2003	Research Assistant (Member of the research group of Prof. E.N. Pistikopoulos) IMPERIAL College London, Department of Chemical Engineering, Centre for Process Systems Engineering (CPSE), UK
09.1998 - 09.1999	Postgraduate Researcher (Member of the research group of Prof. C. Kiparissides) Chemical Process Engineering Research Institute (C.P.E.R.I.) Centre for Research & Technology Hellas (CERTH), Laboratory of Polymer Reaction Engineering (LPRE) Thessaloniki, Greece

EDUCATION

10.1999 - 10.2003	Postgraduate studies, Ph.D, IMPERIAL College London, Department of Chemical Engineering, Centre for Process Systems Engineering (CPSE), UK, Thesis Title: “Control and Dynamic Optimisation of Polymerization Reaction Processes”
10.1993 - 10.1998	Undergraduate studies, Aristotle University of Thessaloniki, Faculty of Engineering, School of Chemical Engineering, “Kinetics and Thermodynamic Investigation of Polymerization Reactions in Supercritical Fluids” , 9/10

PUBLICATIONS

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- “Model-based dynamic optimization of the fermentative production of polyhydroxyalkanoates (PHAs) in fed-batch and sequence of continuously operating bioreactors”, Karasavvas E., Chatzidoukas C.,* *Biochemical Engineering Journal*, Accepted manuscript, 2020.
 - “Oxygen mass transfer limitations set the performance boundaries of microbial PHA production processes - A model-based problem investigation, a provision for scale-up studies”, Papapostolou A., Karasavvas E., Chatzidoukas C.* *Biochemical Engineering Journal*, 124, 224-238, 2019 (<https://doi.org/10.1016/j.bej.2019.04.024>)
 - “Scale-up and intensification of a microalgae cultivation process for the production of high-added value biochemicals”, Penloglou G., Chatzidoukas C., Kiparissides C., *Materials Today: Proceedings* 5(14), 27463-27471, 2018 (<https://doi.org/10.1016/j.matpr.2018.09.065>)
 - “Model-based intensification of a fed-batch microbial process for the maximization of polyhydroxybutyrate (PHB) production rate”, Penloglou G., Vasileiadou, A. Chatzidoukas C., Kiparissides C., *Bioprocess and Biosystems Engineering*, 40(8), 1247-1260, 2017 (<https://doi.org/10.1007/s00449-017-1784-0>)
 - “Model-assisted operational design of bacterial PHA-production processes: the obstacle of heterogeneity inducing modules”, Chatzidoukas C.*, Kondylidis A., Meimaroglou D., *Computer Aided Chemical Engineering*, 40, 2887-2892, 2017 (<https://doi.org/10.1016/B978-0-444-63965-3.50483-9>)
 - “Fed-batch *Saccharomyces cerevisiae* fermentation of hydrolysate sugars: A dynamic model-based approach for high yield ethanol production”, Karapatsia A., Penloglou G., Chatzidoukas C.*, Kiparissides C., *Biomass & Bioenergy Journal*, 90, 32-41, 2016 (<https://doi.org/10.1016/j.biombioe.2016.03.021>)
 - “A microalgae-based biorefinery plant for the production of high-added value biochemicals: Design and economics”, Penloglou G., Chatzidoukas C., Kiparissides C., *Computer Aided Chemical Engineering*, 38, 1731-1736, 2016. (<https://doi.org/10.1016/B978-0-444-63428-3.50293-9>).
 - “An experimental investigation of *Stichococcus* sp. cultivation conditions for optimal co-production of carbohydrates, proteins and lipids following a biorefinery concept”, Karapatsia A., Penloglou G., Chatzidoukas C.*, Kiparissides C., *Biomass & Bioenergy Journal*, 89, 123-132, 2016 (<https://doi.org/10.1016/j.biombioe.2016.01.009>)
 - “Development of a Macroscopic Model for the Production of Bioethanol with High Yield and Productivity via the fermentation of *Phalaris aquatica* L. hydrolysate”, Karapatsia A., Penloglou G., Chatzidoukas C., Kiparissides C. *Computer Aided Chemical Engineering*, 37, 2129-2134, 2015 (<https://doi.org/10.1016/B978-0-444-63576-1.50049-2>)
 - “Development of a structured dynamic model for the production of polyhydroxybutyrate (PHB) in *Azohydromonas lata* cultures”, Chatzidoukas C., Penloglou G., Kiparissides, C. *Biochemical Engineering Journal* 71, 72-80, 2013 (<https://doi.org/10.1016/j.bej.2012.11.015>)
 - “On the control of molecular weight distribution of polyhydroxybutyrate in *Azohydromonas lata* cultures”, Penloglou G., Kretza E., Chatzidoukas C., Parouti S., Kiparissides C., *Biochemical Engineering Journal* 62, 39-47, 2012 (<https://doi.org/10.1016/j.bej.2011.12.013>)
 - “Microbial production of polyhydroxybutyrate with tailor-made properties: An integrated modelling approach and experimental validation”, Penloglou G., Chatzidoukas C., Kiparissides C., *Biotechnology Advances* 30 (1), 329-339, 2012 (<https://doi.org/10.1016/j.biotechadv.2011.06.021>)
 - “Model-based dynamic optimisation of microbial processes for the high-yield production of biopolymers with tailor-made molecular properties”, Penloglou G., Chatzidoukas C., Roussos A. and Kiparissides C., *Computer Aided Chemical Engineering*, 29, 1401-1405, 2011 (<https://doi.org/10.1016/B978-0-444-54298-4.50059-3>)
 - “Optimal grade transitions in an industrial slurry phase catalytic olefin polymerization loop reactor series” Touloupides V., Kanellopoulos V., Chatzidoukas C., Kiparissides C., *Computer Aided Chemical Engineering*, 29, 587-591, 2011 ([https://doi.org/10.1016/S1570-7946\(03\)80395-4](https://doi.org/10.1016/S1570-7946(03)80395-4))
 - “A combined metabolic/ polymerization kinetic model for the microbial production of poly(3-hydroxy butyrate).” Penloglou G., Chatzidoukas C., Roussos A.I. and Kiparissides C., *New Biotechnology*, 27(4) 358-367, 2010 (<https://doi.org/10.1016/j.nbt.2010.02.001>)

- “A hierarchical optimization approach to optimal production scheduling in an industrial continuous olefin polymerization reactor.” Chatzidoukas C., Pistikopoulos E.N., Kiparissides C., *Macromolecular Reaction Engineering*, 3(1), 36-46, 2009 (<https://doi.org/10.1002/mren.200800030>)
- “Effect of reaction conditions and catalyst design on the rheological properties of polyolefins produced in gas-phase olefin polymerization reactors.”, Pladis P., Kanellopoulos V., Chatzidoukas C., Kiparissides C., *Macromolecular Theory and Simulations*, 17(9), 478-487, 2008 (<https://doi.org/10.1002/mats.200800047>)
- “On the production of polyolefins with bimodal molecular weight and copolymer composition distributions in catalytic gas-phase fluidized-bed reactors.” Chatzidoukas C., Kanellopoulos V., Kiparissides C., *Macromolecular Theory and Simulations*, 16(8), 755-769, 2007 (<https://doi.org/10.1002/mats.200700033>)
- “Dynamic optimization of molecular weight distribution using orthogonal collocation on finite elements and fixed pivot methods: An experimental and theoretical investigation”, Saliakas V., Chatzidoukas C., Krallis A., Meimaroglou D., Kiparissides C., *Macromolecular Reaction Engineering*, 1, 119-136., 2007 (<https://doi.org/10.1002/mren.200600015>)
- “Dynamic optimization of molecular weight distribution using orthogonal collocation on finite elements and fixed pivot methods: An experimental and theoretical investigation.”, Krallis A., Meimaroglou D., Saliakas V., Chatzidoukas C., Kiparissides C. *Computer Aided Chemical Engineering*, 21(2), 1335-1340, 2006 ([https://doi.org/10.1016/S1570-7946\(06\)80232-4](https://doi.org/10.1016/S1570-7946(06)80232-4))
- “Mathematical modeling of dispersion polymerization of methyl methacrylate in supercritical carbon dioxide”, Chatzidoukas C., Pladis P., Kiparissides C. *Industrial & Engineering Chemistry Research*, 42, p. 743-751, 2003 (<https://doi.org/10.1021/ie020397a>)
- “Optimal grade transition and selection of closed-loop controllers in a gas-phase olefin polymerization fluidization bed reactor”, Chatzidoukas C., Perkins J.D., Pistikopoulos E.N., Kiparissides C. *Chemical Engineering Science*, 40, 3643-3658, 2003 ([https://doi.org/10.1016/S0009-2509\(03\)00223-9](https://doi.org/10.1016/S0009-2509(03)00223-9))
- “Optimal grade transition campaign scheduling in a gas-phase polyolefin FBR using mixed integer dynamic optimization.”, Chatzidoukas C., Kiparissides C., Perkins J.D., Pistikopoulos E.N. *Computer Aided Chemical Engineering*, 14, 71-76, 2003 ([https://doi.org/10.1016/S1570-7946\(03\)80395-4](https://doi.org/10.1016/S1570-7946(03)80395-4))
- “Dynamic simulation of the Borstar® multistage olefin polymerization process.”, Chatzidoukas C., Perkins J.D., Pistikopoulos E.N., Kiparissides C. *Computer Aided Chemical Engineering*, 14, 593-598, 2003 ([https://doi.org/10.1016/S1570-7946\(03\)80180-3](https://doi.org/10.1016/S1570-7946(03)80180-3))
- “Development of a comprehensive dynamic model for the fermentative production of poly(3-hydroxybutyrate) with tailor-made properties”, Penloglou G., Chatzidoukas C., Parouti S., Kiparissides C., *Journal of Biotechnology*, 150S, S548, 2010. (<https://doi.org/10.1016/j.jbiotec.2010.09.910>)
- “Sensitivity of the fermentative poly- β -hydroxybutyrate (PHB) production by *Alcaligenes latus* against operating and environmental conditions”. Penloglou G., Parouti S., Chatzidoukas C., Kiparissides C., *New Biotechnology*, 25S, S245, 2009. (<https://doi.org/10.1016/j.nbt.2009.06.987>)

CONFERENCES/WORKSHOPS/etc.

Oral and poster presentations in 73 national & international conferences

Invited Speaker

- Workshop of Micrometabolite EU Project: Natural Products: Chemistry, Biological Activities & Technological Applications’, April 27-29, 2018, Thessaloniki, Greece.
- Congress of the Hellenic Ecological Society (HELECOS), October 20-23, 2016, Thessaloniki, Greece.
- 6th International Conference on Modification, Degradation and Stabilization of Polymers (MODEST), September 5-9, 2010, Athens, Greece.
- 4th International Greek Biotechnology Forum, 2-3 February 2008, Zappeio Megaron, Athens, Greece.

Conference Organizer

- 11th Panhellenic Scientific Conference of Chemical Engineering-11PESXM, 25-27th of May,

2017, Thessaloniki, Greece

- 21st European Symposium on Computer Aided Process Engineering-ESCAPE 21, 29th of May-1st of June, 2011, Chalkidiki, Greece

MEMBERSHIPS & REVIEWING ACTIVITIES *(if applicable)*

2011- today Certified evaluator of GSRT funding proposals.

Member of the evaluating team of 8 proposals: 1) "Production, evaluation and optimization of recovery of bio-waste for the production of bio-plastics." Competitiveness and Entrepreneurship-T1EΔK-02746, 2) "Upgrade of animal fat for the production of high quality biofuels- FatFuel." Competitiveness and Entrepreneurship T1EΔK-02346, 2) "Chemical interactions in a drop of water: defining the importance of allelopathy in microalgae – AIMa"-ELIDEK-0698, 3) "Bioremediation of hydrocarbon releases in Deep Sea – DEEPSEA"-ELIDEK-1510,

2018, 2020 Guest Editor in Special Issues

1. Processes, Special Issue "Dynamic Modeling and Control in Chemical and Energy Processes", (2020),

2. Materials Today: Proceedings "Special Issue of the 11th Panhellenic Scientific Conference on Chemical Engineering", (2018)

-today Reviewer in international scientific journals: AIChE Journal, Algal Research Journal, Biochemical Engineering Journal, Biomass & Bioenergy Journal, BioMed Research International Journal, Bioprocess and Biosystems Engineering Journal, Bioresource Technology Journal, Biotechnology Journal, Chemical Engineering Research & Design Journal, Computers & Chemical Engineering Journal, Industrial & Engineering Chemistry Research, Journal of Applied Polymer Science, Journal of Biotechnology Advances, Journal of Bioscience & Bioengineering, Journal of Chemical Technology & Biotechnology, Journal of Cleaner Production, Macromolecular Reaction Engineering, New Biotechnology Journal

TEACHING ACTIVITIES *(if applicable)*

2010 - today Lecturer/ Assistant Professor – Process control, Computer Applications in Chemical Engineering, Chemical Engineering Laboratory II, Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

2012 - today Lecturer/ Assistant Professor - Dynamic Process Simulation, Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

2018 - today Lecturer/ Assistant Professor - Design and Operation of Bioreactors- Graduate course- Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

2011- today Lecturer/ Assistant Professor -Training on the use of MATLAB as a tool for Process Control and Dynamic Process Simulation- Seminar- Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS *(if applicable)*

2018- today Supervision of 3 postdoctoral fellows (Olga Tsave, Aznaourova Marina, Anna Karapatsia) of the Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

- 2018 - today** Supervision of 2 PhD candidates of the Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece
1. Paraskevi Psahoulia, Thesis title: "Photosynthetic valorization of anaerobic digestion residue for bioenergy production"
 2. Andreas Ouranidis, Thesis title: "The 4th industrial age biopharmaceutical development of synthetic, messenger RNA nano systems, and clinical validation thereof to breast cancer xenograph models".
- 2013-today** Supervision of 17 diploma thesis of the Department of Chemical Engineering, Aristotle University of Thessaloniki, Greece

FELLOWSHIPS and AWARDS *(if applicable)*

- 2004** Recipient of the 2004-Technical Chamber of Greece Award as best performing newly registered engineer
- 1993-1998** Holder of Scholarships awarded by the Greek State Scholarship Foundation.
- 1993-1994** Economic award by the Greek State Scholarship Foundation, as best newly introduced student in the School of Chemical Engineering.

RESEARCH GRANTS *(if applicable)*

Project Title	Funding source	Period	Role of the PI
Human nutrition, animal and fish feeding on microalgae derived products through sustainable photosynthetic autotrophic cultures-ΗΛΙΟ-ΔΙΑΤΡΟΦΗ	Competitiveness and Entrepreneurship NSRF-2014-2020-T2ΕΔΚ-02279	Starting date: to be announced, duration 30 months	Proposal writing, Coordinator, Principal Investigator
Production of sustainable biofuels and value-added products from municipal organic solid wastes of catering services-Brew2Bio	Competitiveness and Entrepreneurship» NSRF-2014-2020-T2ΕΔΚ-00189	Starting date: to be announced, duration 30 months	Support on the proposal writing, Partner
Collaborative Research in Algae for Production of Biofuels and Bioproducts	Greek Diaspora Fellowship Program (GDFFP)-Cycle 3	07/2020-09/2020	Proposal writing, Coordinator, Principal Investigator
Innovative Nanomedicine for Personalized Breast Cancer Therapy Utilizing Superparamagnetically Guided (NY2Ps) Ribonucleoproteins	«Competitiveness and Entrepreneurship» NSRF-2014-2020-T1ΕΔΚ-02775	08/2018-07/2021	Support on the proposal writing, Coordinator, Principal Investigator
NH3END: Innovative Technologies to Eliminate Ammonia Inhibition in Anaerobic Digestion in Order to Enhance Methane Production	«Competitiveness and Entrepreneurship» NSRF-2014-2020-T1ΕΔΚ-00406	08/2018-07/2021	Support on the proposal writing, Partner
Low-cost carbon positive bioethanol production with innovative Green Floating Filters in multiple water bodies	LIFE16 CCM/GR/000044	09/2017-02/2021	Support on the proposal writing, Partner
Optimisation and scaling-up of microbial processes for the production	Support of Research Activity in	07/2014-10/2015	Proposal writing, Principal Investigator

of polyhydroxyalkanoates	A.U.Th. A-2014-91433		
Microalgae-Bio-Products- Sustainable Use of Marine Microalgae for the Production of Biofuels and High-Added Value Biochemicals	National Strategic Reference Framework «Collaboration 2011» NSRF-2013-1590	04/2013-10/2015	Proposal writing, Coordinator, Principal Investigator
Sustainable PoLymers from Algae Sugars and Hydrocarbons	Seventh Framework Programme KBBE-2012-6-311956 SPLASH	09/2012-08/2016	Support on the proposal writing, Partner
Sustainable Microbial and Biocatalytic Production of Advanced Functional Materials	Sixth Framework Programme NMP2-CT-2007-026515 BIOPRODUCTION	09/2006-08/2010	Member of the Coordination Team and Scientific Committee, Partner
