Curriculum Vitae

Personal Information

Last Name	:	**Penloglou**
First Name	:	**Giannis**
Position	:	Assistant Professor
Academic Field	:	Processes and Control of Physicochemical Systems
Work Address	:	International Hellenic University (IHU), School of Engineering, Department of Environmental Engineering Alexandria University Campus, 57400, Sindos, Thessaloniki, Greece
Research Interests	:	**Application of circular bioeconomy in advanced and sustainable zero-waste bioprocesses:** ▪ Design and analysis of (photo)bioreactors, and intensification of chemical, biochemical, physical and fermentation processes. ▪ Development of microbial processes for CO_2 emissions conversion, wastewater treatment and bioconversion of 2nd and 3rd generation biomass (lignocellulosic and microalgal). ▪ Sustainable production of biobased polymers, fuels, and high value-added biochemicals through cell cultures and enzymatic processes. ▪ Development and application of advanced multiscale mathematical models for the simulation, analysis and optimization of *in-vivo* and *in-vitro* systems. ▪ Conceptual design and techno-economic assessment of biorefineries and integrated pilot- and demo-scale units.
Contact Details:	:	**tel.:** (+30)6944054730 **e-mails:** penloglou@ihu.gr penloglou@certh.gr

Education

Sep2001-Oct2006	Diploma from the Department of **Chemical Engineering**, School of Engineering, Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece ▪ Degree Grade: **Excellent (8.57/10)** – Top graduate among the 140 enrolled students of and 61 graduates of 2006 ▪ **Department Oath** as 'Valedictorian' – Top class GPA ▪ Laboratory: Process Control, Sector of Analysis, Design and Control of Chemical Processes (SADCCP)

	▪ Diploma Thesis: "Dynamic Analysis of an Autothermal Reactor for Hydrogen Production" | Grade: **Excellent (10/10)** ▪ Internship: "Mathematical Simulation of a Fuel Cell System for the Production of Hydrogen in Matlab Software" in collaboration with CERTH/CPERI/LEFH (Laboratory of Environmental Fuels and Hydrocarbons) | Grade: **Excellent (10/10)**
Sep2001-Oct2006	Postgraduate: **MASTER (MSc) Equivalence** *(300 credits/ECTS)* from the Department of **Chemical Engineering**, School of Engineering, Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece
Oct2006-Nov2010	Completion of a Doctoral Dissertation and Award of a **Doctoral Degree** from the Department of **Chemical Engineering**, School of Engineering, Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece ▪ Degree Grade: **Excellent (10/10)** ▪ Laboratory: Chemical Engineering B' – Sector of Analysis, Design and Control of Chemical Processes (SADCCP), in collaboration with CERTH/CPERI/LPRE ▪ Dissertation Title: "Microbial Production of the Biodegradable Poly(3-hydroxybutyrate) (PHB) with Tailor-made Molecular Properties: Experimental Optimization and Mathematical Simulation"

Professional Experience

Jul2005-Aug2005	Centre for Research and Technology Hellas (CERTH)/Chemical Process and Energy Resources Institute (CPERI)/Laboratory of Environmental Fuels and Hydrocarbons (LEFH), Thermi, Thessaloniki, Greece **Undergraduate Research Internship** ▪ Development of a macroscopic dynamic simulation model for H_2 production process, using Matlab/Simulink software
Sep2006-Nov2010	CERTH/CPERI/Laboratory of Polymer Reaction Engineering (LPRE), Thermi, Thessaloniki, Greece **PhD Candidate – Postgraduate Researcher** ▪ Research Team Member in the research Project: *BioProduction*
Sep2013-Jun2015, Nov2015-Mar2016, Oct2017-Dec2017	Research Committee (RC), Aristotle University of Thessaloniki (AUTH), Faculty of Engineering, Department of Chemical Engineering, Chemical Engineering B' Laboratory, Thessaloniki, Greece **Researcher – Postdoctoral Associate** ▪ Research Team Member in the research Projects: *MicroAlgae-BioProducts* and *Alexander*
Nov2011-Aug2013, Aug2015-Oct2015,	CERTH/CPERI/LPRE, Thermi, Thessaloniki, Greece **Associate Post-doctoral Researcher** ▪ **Principal Investigator** – Leader of the Division of Bioprocesses, Biotechnology and Biochemical Engineering

Jul2016-Sep2017, Jan2018-Dec2025	▪ Technical Manager, Scientific/Research Leader and Principal Investigator of CERTH in the Horizon Europe research Projects *FUELGAE*, *NAMOR* and *SUSPENSE* ▪ Coordinating Manager and Scientific/Research Responsible in the research Projects: *HIPERION*, *CO_2-BioProducts* and *Wastes-to-Biopolymers* ▪ Research Team Leader in the research Projects: *SPLASH*, *KRIPIS*, *Ligno-Fos* and *NEXUS* ▪ Research Team Member in the research Projects: *N2B-patch* and *Core-Shell*
Jan2026-today	International Hellenic University (IHU), School of Engineering, Department of Environmental Engineering, Sindos, Thessaloniki, Greece **Assistant Professor – Faculty Member** at the Laboratory of Environmental Chemistry, with specialization in: *Processes and Control of Physicochemical Systems and* Centre for Research and Technology Hellas (CERTH), Chemical Process and Energy Resources Institute (CPERI), Laboratory of Polymer Reaction Engineering (LPRE), Thermi, Thessaloniki, Greece **Affiliated Researcher – Principal Investigator** – Leader of the Division of Bioprocesses, Biotechnology and Biochemical Engineering ▪ **Technical Manager** of the Consortium and **Scientific/Research Leader and Principal Investigator** of CERTH in the Horizon EU Project: "Innovative Sustainable On-site Technologies for Using Microalgae to Capture CO_2 and Produce Advanced Biofuels" – *FUELGAE* ▪ Scientific/Research Leader and **Principal Investigator** of CERTH in the Horizon Europe research Project: "Advanced Digital Tools for Solar to Butanol Production – Hop-On | Solar to Butanol – Solar Butanol Production by Solid-state Photosynthetic Cell Factories" – *S2B (S2B-HopOn)* ▪ Scientific/Research Leader and **Principal Investigator** of CERTH in the Horizon Europe research Project: "A Novel Compact and Advanced Hybrid Microalgae-Membrane Photobioreactor Optimized for Retrofitting Decentralized Water and Wastewater Management Systems" – *NAMOR* ▪ **Principal Investigator** and Technical Manager of CERTH in the Horizon Europe/CBE JU research Project: "Sustainable, Safe, and High-performance Bio-based Adhesives for Wood-based Composites" – *SUSPENSE* ▪ **Principal Investigator** of CERTH for Industrial Biotechnology in the Programme Central Macedonia 2021-2027 research Project: "State-of-the-art Research Infrastructure for the Development of Advanced Materials and Bioprocesses in the Fields of Health and Environment" – *HEALEN*

Teaching Experience

A. Undergraduate Level at the Department of Chemical Engineering of the Aristotle University of Thessaloniki (AUTH), Greece

Oct2016-Sep2017	Independent instructor of the undergraduate course **Renewable Energy Sources** within the Project for **Acquisition of Academic Teaching Experience**

B. Undergraduate Level at the Departments of Chemical Engineering, Environmental Engineering and Mechanical Engineering of the University of Western Macedonia (UOWM), Kozani, Greece

Independent instructor of undergraduate courses as **Academic Scholar** and within the Project for **Acquisition of Academic Teaching Experience**:

Oct2017-Sep2018	▪ Chemical and Biochemical Process Engineering ▪ Special Issues in Energy Production
Oct2019-Sep2020	▪ Unit Operations I ▪ Thermodynamics I ▪ Management of Agricultural and Industrial Wastes
Oct2020-Sep2021	▪ Unit Operations II ▪ Soil and Groundwater Remediation Technologies ▪ Management of Special Wastes
Oct2021-Sep2022	▪ Chemical Processes I ▪ Chemical Processes II

C. Undergraduate Level at the Department of Environmental Engineering of the International Hellenic University (IHU), Sindos, Thessaloniki, Greece

Jan2026-today	▪ **Thermodynamics** *(2nd semester)* – General background/foundational – Compulsory – 2 hours of theory/lectures and 2 hours of problem-solving sessions ▪ **Research Methods** *(5th semester)* – General background/foundational – Compulsory – 2 hours of theory/lectures and 2 hours of problem-solving sessions ▪ **Chemical and Biochemical Process Engineering** *(5th semester)* – Core/specialized background – Compulsory – 2 hours of theory/lectures and 2 hours of laboratory sessions ▪ **Unit Operations** *(6th semester)* – Core/specialized background – Compulsory – 2 hours of theory/lectures and 2 hours of laboratory sessions

D. Postgraduate at the Department of Chemical Engineering of the University of Western Macedonia (UOWM), Kozani, Greece

Oct2022-Sep2023	International Master of Science (MSc) programme **Analysis and Control of Food Products** | Independent instructor of the postgraduate course as **Academic Scholar** ▪ Molecular and Biological Methods of Food Analysis

E. Supervision of Undergraduate Diploma Theses

University of Western Macedonia (UOWM), Department of Chemical Engineering – **Main Supervisor**

1. Charalampou Achilleas: Optimization of Industrial Microalgal Species for the Production of Biofuels from CO_2 in Advanced Photobioreactors under Scale (**2024-2025**)
2. Tzika Alexia: Optimization of the Cultivation of Industrial Microalgal Species in Advanced Photobioreactors using Statistical Design of Experiments (**2023-2024**)
3. Basna Aikaterini: Evaluating the Technical Efficacy and Economic and Environmental Sustainability of Modern Technologies for the Production of Nanocellulose of Different Grades for Various Applications (**2022-2023**)
4. Tissink Achilleas-Georgios: Production of Nanocellulose from Lignocellulosic Biomass via the Development of a Mild Chemical and Alternative Mechanical Treatment Process (**2021-2022**)
5. Drenos Dimitrios: Technical and Economic Analysis of a 3rd Generation Biorefinery for the Conversion of CO_2 into Microalgal Biomass and the Recovery of Multiple Bioproducts of High-added Value (**2020-2021**)

F. Supervision of Postgraduate/Master (MSc) Theses

Hellenic Open University (HOU), School of Science and Technology, Patras, Greece – Collaborating Academic Staff at the Postgraduate Course: **Catalysis and Environmental Protection**, MSc – **Main Supervisor**

1. Konstantinou Aristea: Microbial Production of Biodegradable Poly(3-hudroxybutyrate) (PHB) from Renewable Raw Materials: from the Production Mechanism to the Biopolymer Contemporary Applications (**2014-2015**)
2. Mavrofidis Alexandros: Sustainable Production of Biofuels and High-added Value Biochemicals from Lignocellulosic Biomass, in a Second Generation Biorefinery Concept (**2014-2015**)
3. Kalogianni Aggeliki: Catalytic Pretreatment of Lignocellulosic Biomass for the Production of 2nd Generation Bioethanol *(co-supervision)* (**2014-2015**)

G. Co-supervision of Doctoral (PhD) Dissertations, and Master (MSc) and Diploma Theses

Aristotle University of Thessaloniki (AUTH), Department of Chemical Engineering, Thessaloniki, Greece

1. Tarelli Eirini-Eleftheria: Development and Characterization of Cultivation Methods for *Stichococcus* sp. Cells Entrapped in Polymeric Microstructures of Alginic Acid – *Diploma Thesis* (**2022**)

2. Rantzou Chloe-Aspasia: Experimental Study of the Effect of Process Conditions during the Hydrothermal Liquefaction of the Yeast *Pichia pastoris* – *Diploma Thesis* (**2022**)
3. Petridou Petrina-Vassiliki: Influence of Environmental Parameters on Composition and Growth Rate of *Stichococcus*' sp. Biomass – *Diploma Thesis* (**2022**)
4. Moridou Maria: Experimental Study of the Microbial Production of Bioplastics from Food Industry Wastes – *Diploma Thesis* (**2022**)
5. Kyriakou Stavroula: Enzymatic and Microbial Degradation of Synthetic Polymers – *Master (MSc) Thesis* (**2017**)
6. Geladari Stefania-Christina: Mapping of the Operation Profile of a Bacterial Cultivation Process for the Production of the Biodegradable Poly(3-hydroxy butyric) Acid (PHB) Using Experiment Design to Optimize it – *Diploma Thesis* (**2016**)
7. Karapatsia Anna: Experimental Study of the Production of Biofuels and High-added Value Biochemicals from Lignocellulosic Biomass – Doctoral (PhD) Dissertation and Thesis (**2011-2015**)
8. Zacharos Stefanos: Techno-economic Analysis and Viability Study of an Industrial Microalgae Cultivation Plant for the Production of Biochemical Products – *Diploma Thesis* (**2015**)
9. Davari Aikaterini: Experimental Study of the Cultivation of *Stichococcus* Species in Lab-scale Photo-bioreactors for the Production of Biochemical Products – *Diploma Thesis* (**2014**)
10. Panteli Elina: Mathematical Simulation of Bioethanol Production Processes – *Diploma Thesis* (**2014**)
11. Papapostolou Apostolos-Ioannis: Experimental Study and Mathematical Simulation of Oxygen Transport Phenomena in a Microbial Cultivation Bioreactor – *Diploma Thesis* (**2013**)
12. Didaskalou Christos: Production of Nanocrystal Cellulose from Lignocellulosic Biomass – *Diploma Thesis* (**2013**)
13. Grigoriadis Theodoros: Biochemicals Production from Lignocellulosic Biomass – *Diploma Thesis* (**2013**)
14. Stamatis Christos: Biochemical Process for the Production of 2nd Generation Bioethanol – *Diploma Thesis* (**2012**)

H. Supervision of Doctoral (PhD) Dissertations

Member in Three-member Committees of PhD Students

1. Athanasiadi Aggeliki: Systematic Study of Mixed Microalgae-Bacteria Cultures for Liquid Wastewater Treatment (**2025–**) | Aristotle University of Thessaloniki (AUTH), Department of Chemical Engineering, in collaboration with CERTH/CPERI

Member in Seven-member PhD Theses Examination Committees

1. Francesco Passaro: Biological Membrane Processes and Technologies for the Treatment and Valorisation of Wastewater (**2026–**) | University of Genoa (UniGe), Doctorate in Sciences and

Technologies of Chemistry and Materials, Chemical Sciences and Technologies (STC), in collaboration with CERTH/CPERI

Member in Three-member Diploma Theses Examination Committees

Departmental Administrative Work – Committees

2009-today	**Organization** of scientific **conferences/symposia** and technical **meetings** of research Projects: ▪ Annual and/or six-month meetings for the international research Projects *FUELGAE*, *NAMOR*, *S2B*, and all national research Projects (**2018**-today) ▪ Workshop 2: Synthesis, BIOGEL Project: Engineering Responsive & Biomimetic Hydrogels for Biomedical Therapeutic and Diagnostic Applications, 15-16 September **2016**, Thessaloniki, Greece ▪ 21st European Symposium on Computer-Aided Process Engineering (ESCAPE21), 29 May-1 June **2011**, Porto Carras Resort, Chalkidiki, Greece ▪ Algae: The Energy Supplier of the Future, 19 October **2009**, Thessaloniki, Greece
2017-today	Management of **calls and tenders** for purchasing new research equipment, consumables and hiring scientific/research personnel
2018-today	Member of the Institutional **Safety Committee** of CERTH/CEPRI, Responsible for Bioprocesses
2022-today	Representative of CERTH/CPERI at the **Association of Hellenic Plastic Industries** (AHPI)
2023-today	**National Expert and Review Panel Member** of COST Association, specialized in Industrial Biotechnology

Research Programs/Projects

Principal Investigator

A. International

1. Horizon Europe Framework Programme, (WIDERA-2025-03: Hop-on facility | CL5-2024-D3-01-04: Improvement of light harvesting and carbon fixation with synthetic biology and/or bio-inspired//biomimetic pathways for renewable direct solar fuels production): **S2B (S2B-HopOn)** – *Advanced Digital Tools for Solar to Butanol Production – Hop-On* | *Solar to Butanol – Solar Butanol Production by Solid-state Photosynthetic Cell Factories* (G.A. no 101270203 | 101172911) [Consortium of 1 SME and 8 Research Organizations, 9 in total EU and other European Partners] Starting Date: 1/10/2024 – Duration: 48 Months | Total Project Budget: €4,615,911.50 – Partner Budget: €540,000.00

2. Horizon Europe Framework Programme (CL6-2024-CIRCBIO-02: New circular solutions and decentralised approaches for water and wastewater management): **NAMOR** – *A Novel Compact and Advanced Hybrid Microalgae-Membrane Photobioreactor Optimized for Retrofitting Decentralized Water and Wastewater Management Systems* (G.A. no 101182365) [Consortium of 5 Industries/SMEs and 7 Research Organizations, 14 in total EU and World Partners] Starting Date: 1/5/2025 – Duration: 48 Months | Total Project Budget: €5,329,100.00 – Partner Budget: €916,250.00

3. Horizon Europe Framework Programme (CL5-2022-D3-03-07: Development of algal and renewable fuels of non-biological origin): **FUELGAE** – *Sustainable On-site and Innovative Technologies for Advanced Transport BioFuels from MicroalGae* (G.A. no 101122151) [Consortium of 7 Industries/SMEs and 6 Research Organizations, 13 in total EU Partners] Starting Date: 1/10/2023 – Duration: 48 Months| Total Project Budget: €4,990,123.81 – Partner Budget: €650,000.00

B. National

1. National Strategic Reference Framework (NSRF) 2014-2020, Operational Programme Competitiveness, Entrepreneurship and Innovation (EPAnEK), "Research-Create-Innovate": **HIPERION** – *High Performance Industrial Materials based on Nanocellulose* (T2EDK-01394) [Cooperation Project of 2 Industries/SMEs with 4 Research Organizations, 6 in total Partners] Starting Date: 29/7/2021 – Duration: 28 Months | Total Project Budget: €997,524.67 – Partner Budget: €229,775.00

2. National Strategic Reference Framework (NSRF) 2014-2020, Operational Programme Competitiveness, Entrepreneurship and Innovation (EPAnEK), "Research-Create-Innovate": **CO_2-BioProducts** – *Bioconversion of CO_2 into High-added Value Bioproducts through Sustainable Microalgae Cultivation Processes* (T1EDK-02681) [Cooperation Project of 2 Industries/SMEs with 6 Research Organizations, 8 in total Partners] Starting Date: 25/7/2018 – Duration: 36 Months | Total Project Budget: €980,027.16 – Partner Budget: €155,790.32

3. National Strategic Reference Framework (NSRF) 2014-2020, Operational Programme Competitiveness, Entrepreneurship and Innovation (EPAnEK), "Research-Create-Innovate": **Wastes-to-Biopolymers** – Bioconversion of Food Industry Wastes to Biopolymers for Packaging Applications in a Biorefinery Concept (T1EDK-02822) [Cooperation Project of 2 Industries/SMEs with 4 Research Organizations, 6 in total Partners] Starting Date: 9/7/2018 – Duration: 36 Months | Total Project Budget: **€919,186.68** – Partner Budget: **€189,967.74**

Research Team Member

A. International

1. Horizon Europe Framework Programme, Circular Bio-based Europe Joint Undertaking (JU-CBE-2024-IA-06: Innovative bio-based adhesives for circular products meeting market requirements): **SUSPENSE** – *Sustainable, Safe, and High-performance Bio-based Adhesives for Wood-based Composites* (G.A. no 101214307) [Consortium of 6 Industries/SMEs and 9

Research Organizations, 15 in total EU and other European Partners] Starting Date: 1/10/2025 – Duration: 48 Months | Total Project Budget: €9,304,007.50 – Partner Budget: €490,562.00

2. Horizon 2020 (H2020-NMBP), **N2B-patch** – *Nose to Brain Delivery of NG-101 via the Olfactory Region for the Regenerative Treatment of Multiple Sclerosis Using Novel Multifunctional Biomaterials Combined with a Medical Device*
3. FP7 (FP7-NMP), **Alexander** – *Mucus Permeating Nanoparticulate Drug Delivery Systems*
4. FP7 (FP7-KBBE), **SPLASH** – *Sustainable PoLymers from Algae Sugars and Hydrocarbons*
5. FP6 (FP6-NMP), **BioProduction** – *Sustainable Microbial and Biocatalytic Production of Advanced Functional Materials*

B. National

1. Programme Central Macedonia 2021-2027 (Investments for the creation, expansion or upgrading of RTDI infrastructure in public academic or research institutions in the Region of Central Macedonia): **HEALEN** – *State-of-the-art Research Infrastructure for the Development of Advanced Materials and Bioprocesses in the Fields of Health and Environment* (OPS6020853) Starting Date: 30/04/2024 – Duration: 21 Months | Total Project/Partner Budget: €977.312,20
2. NSRF 2014-2020, Competitiveness, Entrepreneurship and Innovation, **NEXUS** – *Research Synergy to Major Challenges in the Nexus: Energy-Environment-Agriculture Production (Food, Water, Materials)*
3. NSRF 2007-2013, Development Proposals of Research Organizations – **KRIPIS**, CERTH Synergy – *Interdisciplinary Cooperation in 'Energy and Environment' for the Strategic Development, Maintenance of Excellence and Improving the Competitiveness of C.E.R.T.H. through the Development of Research Results*
4. NSRF 2007-2013, Cooperation, **MicroAlgae-BioProducts** – *Sustainable Use of Marine Microalgae for the Production of Biofuels and High-added Value Biochemicals*
5. NSRF 2007-2013, Cooperation, **Ligno-Fos** – *Sustainable Production of Biofuels and High Value-added Biochemicals from Lignocellulosic Biomass*
6. NSRF 2007-2013, Cooperation, **Core-Shell** – *Development of Environmental Friendly Core-Shell Nano-dispersions for Industrial Coatings*

Principal Investigator and Research Team Member in Small Industrial and Personal Projects

1. Copper-free antifouling: model biocide encapsulated in polymeric microparticles as an *«Eco-Material for aquaculture net impregnation, replacing antifouling»*: funded within the "Innovation for Society Awards" Program by the **One Stop Liaison Office** of the Region of Central Macedonia for the proposed technology to improve the eco-friendliness of the materials used by DIOPAS S.A. (2024)

2. Application of nanocellulose as an additive for *«Improved methods for painting composite materials»*: funded by the Open Innovation **Confluence Challenge Program** for the proposed technology to intensify the industrial production practises of ALUMIL S.A. (2023)
3. *Concomitant Production of High-added Value Biochemicals from Microalgae Biomass*: from the Experimental Optimization and Scale-up to the Feasibility and Sustainability Analysis: funded by the Research Committee (RC) of Aristotle University of Thessaloniki (AUTH) (2014)
4. *Production of Biofuels and Bioplastics from Renewable Resources in the Framework of a Second Generation Biorefinery*: funded by the State Scholarships Foundation (IKY) – **Siemens Programme** (2014)
5. *Sustainable Production of Biodegradable Polymers via the Biochemical Conversion of Lignocellulosic Biomass*: funded by the RC of AUTH (2013)

Publications in Scientific Journals and Books (peer reviewed)

A. International

1. Pavlou A, Tzika A, Charalampous A, Barth D, Kotrotsiou O, Kalogiannis K, Penloglou G. **2026**. Optimizing microalgae-based production of polysaccharides and lipids under CO_2-enriched industrial conditions. *Biomass and Bioenergy*, under press
2. Papapetros K, Mathioudakis GN, Vroulias D, Koutroumanis N, Beobide AS, Kotrotsiou O, Penloglou G, Andrikopoulos KS, Voyiatzis GA. **2025**. Nanocellulose filled bio-based PVA/chitosan nanocomposites: structure-property relationships toward advanced food packaging films. *Polymers*, 17(23):3122
   https://doi.org/10.3390/polym17233122
3. Penloglou G, Pavlou A, Kiparissides C. **2025**. Harnessing microalgae for on-site industrial CO_2 capture and biofuel production: a novel path to sustainable transportation fuels. *European Biomass Conference and Exhibition Proceedings*, 33:849-853
   https://doi.org/10.5071/33rdEUBCE2025-5BO.2.3
4. Penloglou G, Pavlou A, Kiparissides C. **2025**. Screening microalgae for producing biofuel precursors from industrial off-Gases. *Sustainability*, 17(7):2964
   https://doi.org/10.3390/su17072964
5. Penloglou G, Pavlou A, Kiparissides C. **2024**. Recent advancements in photo-bioreactors for microalgae cultivation: a brief overview. *Processes*, 12(6):1104
   https://doi.org/10.3390/pr12061104
6. Penloglou G, Tissink A, Bakola V, Kotrotsiou O, Pavlou A, Kiparrisides C. **2024**. Efficient conversion of an underutilized low-lignin lignocellulosic biomass to cellulose nanocrystals and nanofibers via mild chemical-mechanical protocols. *Bioresource Technology Reports*, 25:101799
   https://doi.org/10.1016/j.biteb.2024.101799

7. Penloglou G, Kiparissides A. **2024**. Advanced modeling of biomanufacturing processes – Editorial. *Processes*, 12(2):387
https://doi.org/10.3390/pr12020387

8. Penloglou G, Basna A, Pavlou A, Kiparissides C. **2023**. Techno-economic considerations on nanocellulose's future progress: a short review. *Processes*, 11(8):2312 – **Featured Publication on the Journal's Cover/Editor's Choice**
https://doi.org/10.3390/pr11082312

9. Penloglou G, Pavlou A, Kiparissides C. **2023**. Microbial conversion of cheese whey to polyhydroxybutyrate (PHB) via statistically optimized cultures. *Fermentation*, 9(7):624
https://doi.org/10.3390/fermentation9070624

10. Pavlou A, Penloglou G, Kiparissides C. **2023**. Evaluation of tolerant to CO_2 excess microalgae for the production of multiple biochemicals in a 3G biorefinery. *Sustainability*, 15(5):3889
https://doi.org/10.3390/su15053889

11. Penloglou G, Kiparissides C. **2019**. Techno-economic analysis of multiple scenarios for the production of microalgal chemicals and polymers. In: *Handbook of Algal Technologies and Phytochemicals: Nutritional, Nutraceutical, Pharmaceutical and Multifarious Applications* (Eds: Gokare R, Ambati R), *Chapter 12*, 127-137, CRC Press, USA
https://doi.org/10.1201/9780429057892-12

12. Penloglou G, Chatzidoukas C, Kiparissides C. **2018**. Scale-up and intensification of a microalgae cultivation process for the production of high-added value biochemicals. *Materials Today: Proceedings*, 5(14:1): 27463-27471
https://doi.org/10.1016/j.matpr.2018.09.065

13. Penloglou G, Vasileiadou A, Chatzidoukas C, Kiparissides C. **2017**. Model-based intensification of the fed-batch microbial process for the production of polyhydroxybutyrate (PHB) with maximum rate. *Bioprocess and Biosystems Engineering*, 40(8):1247-1260
https://doi.org/10.1007/s00449-017-1784-0

14. Karapatsia A, Pappas I, Penloglou G, Kotrotsiou O, Kiparissides C. **2017**. Optimization of dilute acid pretreatment and enzymatic hydrolysis of *Phalaris aquatica* L. lignocellulosic biomass in batch and fed-batch processes. *BioEnergy Research*, 10(1):225-236
https://doi.org/10.1007/s12155-016-9793-4

15. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. **2016**. Fed-batch *Saccharomyces cerevisiae* fermentation of hydrolysate sugars: a dynamic model-based approach for high yield ethanol production. *Biomass and Bioenergy*, 90:32-41
https://doi.org/10.1016/j.biombioe.2016.03.021

16. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. **2016**. An experimental investigation of *Stichococcus* sp. cultivation conditions for optimal co-production of carbohydrates, proteins and lipids following a biorefinery concept. *Biomass and Bioenergy*, 89:123-132
https://doi.org/10.1016/j.biombioe.2016.01.009

17. Penloglou G, Chatzidoukas C, Kiparissides C. **2016**. A microalgae-based biorefinery plant for the production of valuable biochemicals: design and economics. *Computer Aided Chemical Engineering*, 38:1731-1736
https://doi.org/10.1016/B978-0-444-63428-3.50293-9

18. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. **2015**. Development of a macroscopic model for the production of bioethanol with high yield and productivity via the fermentation of *Phalaris aquatica* L. hydrolysate. *Computer Aided Chemical Engineering*, 37:2129-2134
https://doi.org/10.1016/B978-0-444-63576-1.50049-2

19. Karapatsia A, Penloglou G, Pappas I, Kiparissides C. **2014**. Bioethanol production via the fermentation of *Phalaris aquatica* L. hydrolysate. *Chemical Engineering Transactions*, 37:289-294
https://doi.org/10.3303/CET1437049

20. Chatzidoukas C, Penloglou G, Kiparissides C. **2013**. Development of a structured dynamic model for the production of polyhydroxybutyrate (PHB) in *Azohydromonas lata* cultures. *Biochemical Engineering Journal*, 71:72-80
https://doi.org/10.1016/j.bej.2012.11.015

21. Penloglou G, Kretza E, Chatzidoukas C, Parouti S, Kiparissides C. **2012**. On the control of the molecular weight distribution of polyhydroxybutyrate in *Azohydromonas lata* cultures. *Biochemical Engineering Journal*, 62:39-47
https://doi.org/10.1016/j.bej.2011.12.013

22. Penloglou G, Chatzidoukas C, Kiparissides C. **2012**. Microbial production of polyhydroxybutyrate with tailor-made properties: an integrated modelling approach and experimental validation. *Biotechnology Advances*, 30(1):329-339
https://doi.org/10.1016/j.biotechadv.2011.06.021

23. Penloglou G, Chatzidoukas C, Roussos A, Kiparissides C. **2011**. Model-based dynamic optimisation of microbial processes for the high-yield production of biopolymers with tailor-made molecular properties. *Computer Aided Chemical Engineering*, 29:1401-1405
https://doi.org/10.1016/B978-0-444-54298-4.50059-3

24. Penloglou G, Chatzidoukas C, Parouti S, Kiparissides C. **2010**. Development of a comprehensive dynamic model for the fermentative production of poly(3-hydroxybutyrate) with tailor-made properties. *Journal of Biotechnology*, 150S(S1):S576
https://doi.org/10.1016/j.jbiotec.2010.09.910

25. Penloglou G, Roussos A, Chatzidoukas C, Kiparissides C. **2010**. A combined metabolic/polymerization kinetic model on the microbial production of poly(3-hydroxybutyrate). *New Biotechnology*, 27(4):358-367
https://doi.org/10.1016/j.nbt.2010.02.001

26. Penloglou G, Parouti S, Chatzidoukas C, Kiparissides C. **2009**. Sensitivity of the fermentative poly-β-hydroxybutyrate (PHB) production by *Alcaligenes latus* against operating and environmental conditions. *New Biotechnology*, 25S:S245

https://doi.org/10.1016/j.nbt.2009.06.987

B. National

Editing of Scientific Publications in International Scientific Journals

1. Topic Advisory Panel Member for Processes Journal – Specialization: **Biological Processes and Systems** (2023-today)
2. **Guest Editor** of the Special Issue *Innovative Bioreactor Design and Advanced Optimization Strategies for Biorefineries and Bioprocessing*, *Processes*, MDPI (>15 expected publications) | Printing and recognition of the Special Issue (2026)
3. **Guest Editor** of the Special Issue *Advanced Modeling of Biomanufacturing Processes*, *Processes*, MDPI (10 publications) (2023)

Publications in Scientific Conference Proceedings (peer reviewed)

A. International

1. Penloglou G, Pavlou A, Kiparissides C. Optimization and scale up of microalgae photobioreactors for industrial CO_2 utilization in advanced biofuel production. *AlgaEurope 2025*, 9-12 December **2025**, Riga, Latvia
2. Pavlou A, Penloglou G, Kiparissides C. From lab to pilot scale microalgae-based photobioreactors: statistical optimization of 3rd generation biofuel production. *4th International Conference on Sustainable Chemical and Environmental Engineering* (SUSTENG25), 1-4 September **2025**, Thessaloniki, Greece
3. Penloglou G, Patsios S, Theodosiou E. Services and competences of CERTH in industrial biotechnology. *Industrial Biotechnology Accelerator Info Day – The road to IBISBA-GR*, 8 July **2025**, Athens, Greece
4. Bartolomé C, Rodenas A, Pavlou A, Penloglou G. Zero-carbon footprint of advanced biofuels production from microalgae-based CO_2 conversion (poster). *33rd European Biomass Conference and Exhibition* (EUBCE2025), 9-12 June **2025**, Valencia, Spain
5. Penloglou G, Pavlou A, Kiparissides C. Harnessing microalgae for on-site industrial CO_2 capture and biofuel production: a novel path to sustainable transportation fuels. *33rd European Biomass Conference and Exhibition* (EUBCE2025), 9-12 June **2025**, Valencia, Spain
6. Mäyrä A, Sumen J, Spegazzini N, Maronen S, Sarlin T, Barth D, Haajanen E, Laine J, Pavlou A, Penloglou G. Multi-resolution microscope system for on-line measurements of microalgae (poster). *Optics and Photonics Days 2025* (OPD2025), 3-5 June **2025**, Oulu, Finland

7. Penloglou G, Kotrotsiou O, Bakola V, Pavlou A, Kiparissides C. Advancing sustainable industrial materials: high-performance nanocellulose from renewable biomass. *CPERI's ERA*, 24-25 February **2025**, Thessaloniki, Greece

8. Pavlou A, Penloglou G, Kiparissides C. Production of advanced transportation fuels using improved microalgal species and high-performance cultivation systems in retrofitted industrial plants. *CPERI's ERA*, 24-25 February **2025**, Thessaloniki, Greece

9. Penloglou G, Pavlou A, Kiparissides C. A new industrial retrofitting model for producing advanced biofuels from CO_2 emissions using microalgae: The case of FUELGAE project (poster). *AlgaEurope 2024*, 10-13 December, **2024**, Athens, Greece

10. Papapetros K, Tsaousis PC, Andrikopoulos KS, Mathioudakis G, Soto Beobide A, Deze E, Sideri S, Sarafidou M, Koutinas A, Penloglou G, Kotrotsiou O, Kiparissides C, Voyiatzis GA. Nanocellulosic materials as bioadditives in green food packaging applications. *14th Hellenic Polymer Society International Conference* (POLYCONF14), 22-25 November, **2023**, Thessaloniki, Greece

11. Bakola V, Pavlou A, Kotrotsiou O, Penloglou G, Giannoulis K, Deze E, Voyiatzis G, Kiparissides C. Nanocellulose-based composite membranes for food packaging. *14th Hellenic Polymer Society International Conference* (POLYCONF14), 22-25 November, **2023**, Thessaloniki, Greece

12. Pavlou A, Bakola V, Penloglou G, Kotrotsiou O, Karagiannidis E, Sideri S, Koutinas A, Kiparissides C. Conceptual design and economic evaluation of different technologies for the production of nanocellulose from lignocellulosic biomass (poster). *14th Hellenic Polymer Society International Conference* (POLYCONF14), 22-25 November, **2023**, Thessaloniki, Greece

13. Karagiannidis E, Athanassiadou E, Penloglou G, Sarafidou M, Nteze EG, Psochia E. Renewable cellulose as a component in polymer adhesives for wood-based products. *20th International Conference on Nanosciences & Nanotechnologies* (NN23), 4-7 July **2023**, Thessaloniki, Greece

14. Penloglou G, Kotrotsiou O, Bakola V, Pavlou A, Sarafidou M, Ladakis D, Tsouko E, Koutinas A, Papapetros KT, Andrikopoulos KS, Voyiatzis GA, Bartzialis D, Danalatos NG, Giannoulis KD, Karagiannidis E, Iakovlev M, Deze E, Papaioannou M, Sideri S, Kiparissides C. Production and application of high-performance industrial materials based on nanocellulose. *1st International Conference on Sustainable Chemical and Environmental Engineering* (SUSTENG22), 31 August-2 September **2022**, Rethymno, Greece

15. Tsaousis P, Kora E, Penloglou G, Andrikopoulos KS, Ntaikou I, Chasapis CT, Voyiatzis G, Lyberatos G, Kiparissides C. Application of alternative and eco-friendly methods to estimate copolymer composition in lab scale microbially produced PHBVs by Raman Spectroscopy and Differential Scanning Calorimetry. *13th Hellenic Polymer Society International Conference* (POLYCONF13), 12-16 December **2021**, Virtual e-Conference

16. Makaroglou G, Pavlou A, Kompogennitaki R, Penloglou G, Gikas P, Kalogerakis N, Kiparissides C. Optimization of *Stichococcus* sp. cultivation in lab and pilot scale photo-bioreactors for efficient CO_2 fixation and bio-products production. *3rd Online International Conference on Environmental Sustainability and Climate Change*, 15-16 November **2021**, Webinar

17. Penloglou G, Pavlou A, Kiparissides C. Evaluation of the microalgae capacity to utilize CO_2-rich effluents, following the blue biorefinery concept. *29th European Biomass Conference and Exhibition* (EUBCE2021), 26-19 April **2021**, Virtual e-Conference

18. Penloglou G, Pavlou A, Kiparissides C. Biodegradable plastics from food industry wastes (poster). *28th European Biomass Conference and Exhibition* (EUBCE2020), 6-9 July **2020**, Virtual e-Conference

19. Pavlou A, Penloglou G, Kiparissides C. Chemicals and polymers from microalgae: an economic assessment (poster). *28th European Biomass Conference and Exhibition* (EUBCE2020), 6-9 July **2020**, Virtual e-Conference

20. Penloglou G, Kiparissides C. Biochemical production of biopolymers: control of the bacterial metabolic pathway and the macromolecular polymer chains. *12th Hellenic Polymer Society International Conference* (POLYCONF12), 30 September-3 October **2018**, Ioannina, Greece – **Keynote Lecture**

21. Penloglou G, Kiparissides C. An advanced model-based strategy to optimize the microbial production of biodegradable polymers under fed-batch conditions (poster). *Polymer Reaction Engineering X* (PRE10), 20-25 May **2018**, Punta Cana, Dominican Republic

22. Penloglou G, Kiparissides C. Design of bioreactor operating profiles for the optimal production of polyhydroxybutyrate (PHB) via model-based fed-batch strategies. *67th Canadian Chemical Engineering Conference* (CSChE2017), 22-25 October **2017**, Edmonton, AB, Canada

23. Penloglou G, Chatzidoukas C, Kiparissides C. A continuous microalgae cultivation strategy for increased biomass productivity promises economic sustainability for a biorefinery plant (poster). *10th World Congress of Chemical Engineering* & *11th European Congress of Chemical Engineering* & *4th European Congress of Applied Biotechnology* (WCCE10+ECCE11+ECAB4), 1-5 October **2017**, Barcelona, Spain

24. Penloglou G, Chatzidoukas C, Kiparissides C. A statistical investigation of *Azohydromonas lata* cultivation conditions for the optimal production of polyhydroxybutyrate (PHB). *11th Hellenic Polymer Society International Conference* (POLYCONF11), 3-5 November **2016**, Heraklion, Greece

25. Chatzidoukas C, Penloglou G, Kiparissides C. A segregated mathematical model for the dynamic simulation of microalgae cultures in closed-photobioreactor systems (poster*). XXXII International Conference on Chemical Reactors* (CHEMREACTOR22), 19-23 September **2016**, London, UK

26. Chatzidoukas C, Penloglou G, Kiparissides C. A microalgae cultivation process for the targeted production of desired bioproducts: scale-up and optimization experimental studies (poster). *European Symposium on Biochemical Engineering Sciences* (ESBES2016), 11-14 September **2016**, Dublin, Ireland

27. Penloglou G, Chatzidoukas C, Kiparissides C. A microalgae-based biorefinery plant for the production of valuable biochemicals: design and economics (poster). *26th European Symposium on Computer-Aided Process Engineering* (ESCAPE26), 12-15 June **2016**, Portorož, Slovenia

28. Penloglou G, Chatzidoukas C, Kiparissides C. Techno-economic analysis of a microalgae-based plant for the cultivation of *Botryococcus braunii*: investigation of several scenarios towards economic feasibility (poster). *European Roadmap for an Algae-Based Industry* (EUREC), 6-8 April **2016**, Olhão, Portugal

29. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. The route to the CO_2 valorisation for the synthesis of high-added value biochemicals via the cultivation of microalgae (poster). *European Symposium on Chemical Reaction Engineering* (ESCRE2015), 27-30 October **2015**, Fürstenfeldbruck, Germany

30. Karapatsia A, Penloglou G, Pappas IA, Kiparissides C. Lignocellulosic biomass conversion to high value bioproducts. *European Symposium on Chemical Reaction Engineering* (ESCRE2015), 27-30 October **2015**, Fürstenfeldbruck, Germany

31. Chatzidoukas C, Penloglou G, Kiparissides C. Oxygen mass transfer model for the efficient operation and scale-up of microbial biopolymer production processes (poster). *10th European Congress of Chemical Engineering* & *3rd European Congress of Applied Biotechnology* & *5th European Process Intensification Conference* (ECCE10+ECAB3+EPIC5), 27 September-1 October **2015**, Nice, France

32. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. Conceptual process design and techno-economic analysis of microalgae-based bioproducts synthesis: feasibility and optimization. *10th European Congress of Chemical Engineering* & *3rd European Congress of Applied Biotechnology* & *5th European Process Intensification Conference* (ECCE10+ECAB3+EPIC5), 27 September-1 October **2015**, Nice, France

33. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. Development of a macroscopic model for the production of bioethanol with high yield and productivity via the fermentation of *Phalaris aquatica* L. hydrolysate. *12th Process System Enterprise* and *25th European Symposium on Computer-Aided Process Engineering* (PSE2015/ESCAPE25), 31 May-4 June **2015**, Copenhagen, Denmark

34. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. Microalgae-based sustainable production of high value bioproducts. *10th European Symposium on Biochemical Engineering Sciences* & *6th International Forum on Industrial Bioprocesses* (ESBES-IFIBiop2014), 7-10 September **2014**, Lille, France

35. Karapatsia A, Penloglou G, Pappas IA, Kiparissides C. Bioethanol production via the fermentation of *Phalaris aquatica* L. hydrolysate. *International Conference on BioMass* (iconBM), 4-7 May **2014**, Florence, Italy

36. Karapatsia A, Penloglou G, Pappas IA, Kiparissides C. An integrated approach for the production of bioethanol and high value bio-products from lignocellulosic biomass. *2013 AIChE Annual Meeting*, 3-8 November **2013**, San Francisco, CA, USA

37. Karapatsia A, Penloglou G, Pappas IA, Kiparissides C. Fermentation of sugars from *Phalaris aquatica* L. hydrolysate for bioethanol production (poster). *21st European Biomass Conference and Exhibition* (EUBCE2013), 3-7 June **2013**, Copenhagen, Denmark

38. Pappas IA, Karapatsia A, Penloglou G, Kiparissides C. Enzymatic conversion of *Phalaris aquatica* L. lignocellulosic biomass into fermentable sugars for bioethanol production. *21st European Biomass Conference and Exhibition* (EUBCE2013), 3-7 June **2013**, Copenhagen, Denmark

39. Karapatsia A, Pappas IA, Penloglou G, Kiparissides C. On the bioconversion of *Phalaris aquatica* L. lignocellulosic biomass into biofuels and high added-value chemicals (poster). *Biofuels for Sustainable Development of Southern Europe* (Bio4SuD), 19-20 November **2012**, Thessaloniki, Greece

40. Pappas IA, Penloglou G, Pladis P, Kiparissides C. An integrated process for the sustainable production of biofuels, biopolymers and high added-value products from lignocellulosic biomass. *3rd International Workshop of COST Action CM0903: Sustainable production of fuels/energy, materials & chemicals from biomass* (UBIOCHEM-III), 1-3 November **2012**, Thessaloniki, Greece

41. Chatzidoukas C, Penloglou G, Roussos A, Kiparissides C. Dynamic multiscale-modelling of microbial biopolymer production processes (poster). *22nd European Symposium on Computer-Aided Process Engineering* (ESCAPE22), 17-20 June **2012**, University College London, UK

42. Kiparissides C, Penloglou G, Chatzidoukas C. Microbial production of biopolymers with tailor-made molecular properties: a multi-scale modeling approach and experimental validation. *61st Canadian Chemical Engineering Conference* (CSChE2011), 23-26 October **2011**, London, Ontario, Canada – **Keynote Lecture**

43. Penloglou G, Chatzidoukas C, Roussos A, Kiparissides C. Model-based dynamic optimisation of microbial processes for the high-yield production of biopolymers with tailor-made molecular properties (poster). *21st European Symposium on Computer-Aided Process Engineering* (ESCAPE21), 29 May-1 June **2011**, Porto Carras Resort, Chalkidiki, Greece

44. Penloglou G, Chatzidoukas C, Kiparissides C. Sustainable production of polyhydroxybutyrate. From flask scale bacterial cultures to optimal bioreactor operation. *2010 AIChE Annual Meeting*, 7-12 November **2010**, Salt Lake City, UT, USA

45. Penloglou G, Chatzidoukas C, Roussos A, Kiparissides C. Dynamic simulation of the microbial PHB production in *Alcaligenes latus* cultures (poster). *10th International Workshop on Polymer Reaction Engineering* (PRE10), 10-13 October **2010**, Hamburg, Germany

46. Penloglou G, Chatzidoukas C, Parouti S, Roussos A, Kiparissides C. Bio-production of poly(3-hydroxybutyrate) with tailor-made molecular properties: from flask-scale cultures to model-based bioreactor optimization. *International Symposium on BioPolymers 2010* (ISBP2010), 3-10 October **2010**, Stuttgart, Germany

47. Penloglou G, Chatzidoukas C, Parouti S, Kiparissides C. Development of a comprehensive dynamic model for the fermentative production of poly(3-hydroxybutyrate) with tailor-made properties. *14th International Biotechnology Symposium and Exhibition* (IBS2010) – Biotechnology for the Sustainability of Human Society, 14-18 September **2010**, Rimini, Italy

48. Penloglou G, Kretza E, Chatzidoukas C, Parouti S, Kiparissides C. Production of short- and medium- chain-length polyhydroxyalkanoates by bacterial cultures: experimental investigation

and process optimization. *6th International Conference on Modification, Degradation and Stabilization of Polymers* (MoDeSt2010), 5-9 September **2010**, Athens, Greece

49. Penloglou G, Kretza E, Chatzidoukas C, Parouti S, Kiparissides C. Microbial production of PHB with high polymer content: the key roles of oxygen and nitrogen (poster). *First International Meeting on Material/Bioproduct Interactions* (MATBIM2010), 3-5 March **2010**, AgroParis Tech, Paris, France

50. Chatzidoukas C, Karidi K, Kretza E, Mantourlias T, Parouti S, Penloglou G, Roussos A, Seretis A, Kiparissides C. Sustainable microbial and biocatalytic production of advanced functional materials (poster). *Symposium on New Frontiers in Chemical & Biochemical Engineering*, 26-27 November **2009**, Thessaloniki, Greece

51. Penloglou G, Roussos A, Parouti S, Chatzidoukas C, Kiparissides C. Experimental and model-based design of the microbial high-yield production of PHB in *Alcaligenes latus*. *2009 AIChE Annual Meeting*, 8-13 November **2009**, Nashville, TN, USA

52. Penloglou G, Parouti S, Chatzidoukas C, Kiparissides C. Sensitivity of the fermentative poly-β-hydroxybutyrate (PHB) production by *Alcaligenes latus* against operating and environmental conditions (poster). *14th European Congress on Biotechnology (ECB14) – Symbiosis: Science, Industry & Society,* 13-16 September **2009**, Barcelona, Spain

53. Penloglou G, Roussos A, Chatzidoukas C, Kiparissides C. A combined metabolic/polymerization modeling approach on the poly(3-hydroxybutyrate) production. *8th World Congress of Chemical Engineering* (WCCE8), 23-27 August **2009**, Montreal, Quebec, Canada – **Keynote Lecture**

54. Penloglou G, Parouti S, Chatzidoukas C, Kiparissides C. Experimental and theoretical investigation of the fermentative poly-β-hydroxybutyrate (PHB) production by *Alcaligenes latus*. *European Polymer Congress 2009 – European Polymer Federation* (EPF2009), 12-17 July **2009**, Graz, Austria

55. Penloglou G, Roussos A, Chatzidoukas C, Kiparissides C. Mathematical modeling of the aerobic carbon metabolism and the polymerization mechanism in *Alcaligenes eutrophus* for the synthesis of P(3HB) (poster). *Polymer Reaction Engineering* 7 (PRE7), 3-8 May **2009**, Niagara Falls, Ontario, Canada

56. Penloglou G, Roussos A, Chatzidoukas C, Kiparissides C. Fermentative poly(3-hydroxybutyrate) production in *Alcaligenes latus*: A combined metabolic/kinetic modelling approach. *2008 AIChE. Annual Meeting*, 16-21 November **2008**, Philadelphia, PA, USA

57. Penloglou G, Roussos A, Chatzidoukas C, Kiparissides C. Model-based investigation of the microbial production of polyhydroxyalkanoates (PHAs) (poster). *Computer Aided Process Engineering*, CAPE FORUM-2008, 7-8 February **2008**, Thessaloniki, Greece.

58. Penloglou G, Roussos A, Karidi K, Chatzidoukas C, Kiparissides C. Optimal production of polyhydroxybutyrate (PHB) in *Alcaligenes latus* through metabolic engineering analysis (poster). *European Polymer Congress 2007 – European Polymer Federation* (EPF2007), 2-6 July **2007**, Portorož, Slovenia

B. National

1. Pavlou A, Penloglou G, Kiparissides C. Production of advanced transportation biofuels via optimized microalgae and intensified cultivation systems adapted to industrial plant. *3rd Panhellenic Conference of Biofuels and Alternative Fuels* (GreekBioFuels3), 15-16 May **2025**, Plastira Lake, Greece

2. Pavlou A, Penloglou G, Kiparissides C. Advanced microalgae-based technologies for the production of liquid transportation biofuels: the case of the FUELGAE research project. *14th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE14), 29-31 May **2024**, Thessaloniki, Greece

3. Pavlou A, Tzika A, Penloglou G, Kalogiannis K, Kiparissides C. Optimization of microalgal species for the sustainable production of 3G biofuels in retrofitted industrial plants (poster). *14th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE14), 29-31 May **2024**, Thessaloniki, Greece

4. Pavlou A, Penloglou G, Kiparissides C. Development of scalable microalgal biorefineries for the bioconversion of excess CO_2 into multiple biochemical products of high added value. *13th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE13), 2-4 June **2022**, Patra, Greece

5. Pavlou A, Penloglou G, Kiparissides C. Biofuels and bioproducts from microalgae: the present and future. *Energy and Water in Greece – Academy of Athens, Energy Committee*, 29 November **2019**, Athens, Greece

6. Penloglou G, Giannopoulos G, Pavlou A, Kiparissides C. Bioconversion of food industry wastes to bioplastic products. *12th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE12), 29-31 May **2019**, Athens, Greece

7. Bioconversion of CO_2 from power plant flue gases to high value products via microalgae cultures (poster). *12th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE12), 29-31 May **2019**, Athens, Greece

8. Penloglou G, Chatzidoukas C, Kiparissides C. Efficient scale-up and optimization of microalgae cultivation for the targeted production of high-added value biochemicals. *11th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE11), 25-27 May **2017**, Thessaloniki, Greece

9. Karapatsia A, Penloglou G, Chatzidoukas C, Kiparissides C. Sensitivity analysis of the production of biochemicals with high-added value from microalgae. *10th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE10), 4-6 June **2015**, Patra, Greece

10. Karapatsia A, Penloglou G, Pappas IA, Kiparissides C. Study and optimization of the production of 2nd generation bioethanol via the integrated treatment of the lignocellulosic biomass of *Phalaris aquatica* L. *9th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE9), 23-25 May **2013**, Athens, Greece

11. Kretza E, Penloglou G, Chatzidoukas C, Kiparissides C. Microbial production of short- and middle-chain length polyhydroxyalkanoates via *Alcaligenes latus* and *Pseudomonas putida* bacteria. *8th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE8), 26-28 May **2011**, Thessaloniki, Greece

12. Penloglou G, Chatzidoukas C, Parouti S, Kiparissides C. Study of the microbial production of poly(3-hydroxybutyrate) in *Alcaligenes latus* bacteria. *7th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE7), 3-5 June **2009**, Patra, Greece

13. Penloglou G, Chatzidoukas C, Roussos A, Kiparissides C. Metabolic analysis and optimization of poly(3-hydroxybutyrate biosynthesis in *Alcaligenes latus* bacteria. *6th Panhellenic Scientific Conference in Chemical Engineering* (PSCCE6), 31 May-2 June **2007**, Athens, Greece, pp. 1113-1116

Course Books/Scientific Books

- **Renewable Energy Sources (RES)** – Lecture Notes and Presentations for the relevant course of the Department of Chemical Engineering, Aristotle University of Thessaloniki (AUTH) (2016)
- Preparation and editing of new original teaching material (lecture notes, presentations, individual and group assignments) for all independently taught courses

Technical Reports of Research Projects and Studies

- **Design of a Terepthalic Acid Production Unit** – Feasibility and Techno-Economic Analysis Report

Acknowledgement of Scientific Expertise

A. Awards - Distinctions – Scholarships

- **FUELGAE** was selected as one of the four projects to be featured by **CINEA** in the publication "Factsheet – 10 years of EU Funding for the Algae Sector (2014-2023)" in recognition of its innovative contribution to the development of biofuels from microalgae, as well as from the **Joint Research Centre (JRC)** of the EU in the report "Advanced Biofuels in the European Union – Status Report on technology Developments, Trends, Value Chains & Markets" as a case study of validation of the progress of the Technology Readiness Level (TRL) of the relevant technology (2025)
- **Travel Grant** awarded by *Processes* (MDPI) for promoting the journal at relevant scientific conferences in the role of Topic Advisor for Biological Processes and Systems (2025 & 2026)
- Innovation for Society Awards: **IFS Innovation Achievement Award and Prize** awarded to the FOULSTOP Team of the LPRE Lab (CERTH/CPERI) by the One Stop Liaison Office of the Region of Central Macedonia for the commendable innovation and impact of the developed technological solution (2024)
- Confluence Challenge: **Innovation for Society Award and Prize** awarded to the LPRE Lab (CERTH/CPERI) by the One Stop Liaison Office of the Region of Central Macedonia for the

outsized positive impact of the proposed business innovation to technology, science and society (2023)

- The publication "Techno-Economic Considerations on Nanocellulose's Future Progress: A Short Review" has been selected as a **Featured Paper** and Editor's Choice in Processes and was highlighted in the **front page/cover** of the Journal (2023)
- **Excellent Evaluation** of Teaching Work by the students of the Departments of Chemical, Environmental and Mechanical Engineering of the University of Western Macedonia (UOWM): **Honorable Distinction/Mention** by UOWM (2022)
- Four (4) Invited and **Keynote Lectures** in international conferences and congresses (2011-2018)
- **Outstanding Reviewer** of the Biochemical Engineering Journal and **Recognised Reviewer** of the International Journal of Biological Macromolecules (2015 & 2017)
- **Scholarship of Excellence** for Postdoctoral Researchers awarded by the Research Committee (RC) of Aristotle University of Thessaloniki (AUTH) (2013 & 2015)
- **Scholarship of Excellence** for Postdoctoral Researchers awarded by the State Scholarships Foundation (IKY) – **Siemens Programme** (2014)
- **Postgraduate Scholarship** for further education, specialization and training in research and innovation awarded by CERTH/CPERI/LPRE (2006-2010)
- Scholarship and Award for the distinction in studies and moral from IKY, for the 3rd, 4th and 5th year of studies, as **Top Student** and **Graduate with Excellence** from the Department of Chemical Engineering, AUTH (2003-2006)
- Financial Award and Honour Distinction by the Technical Chamber of Greece (TEE-TCG), as **Top Graduate** student from the Department of Chemical Engineering, AUTH (2006)
- Distinction from the Panhellenic Association of Chemical Engineers (PACE-PSXM) as **Top Student** and **Graduate with Excellence** from the Department of Chemical Engineering, AUTH (2006)
- Award from the Dean of Faculty of Engineering, AUTH for graduating **Top of Class** of the Department of Chemical Engineering (2006)
- Distinction from the Department of Chemical Engineering**,** AUTH for the **Academic Performance** in the 1st to 4th year of studies (2006)
- Financial Award and Performance Distinction from the TEE-TCG as an **Excellent Student** during the 3rd and 4th year of studies (2003-2005)
- Scholarship and Award from the IKY for the success in Panhellenic National Examinations and admission in the Department of Chemical Engineering, AUTH as the **Top-Ranked** student (**2001**)

B. Citations/ h-Index

- Non-self-citations: >420 (Scopus) and >560 (Google Scholar)
- H-index = 12 (Scopus) and = 12 (Google Scholar)

C. Reviewer for Scientific Journals and Books

Continuous reviewing of scientific papers for international peer-reviewed journals

1. *Applied Sciences*, MDPI – from 2013
2. *Aquaculture*, MDPI – from 2025
3. *Biochemical Engineering Journal*, Elsevier – from 2013
4. *Bioengineering*, MPDI – from 2024
5. *Biomass and Bioenergy*, Elsevier – from 2025
6. *Biomass Conversion and Biorefinery*, Springer Nature – from 2024
7. *Bioresource Technology*, Elsevier – from 2025
8. *Chemical Engineering Communications*, Taylor & Francis – from 2013
9. *Energy Nexus*, Elsevier – from 2024
10. *Fermentation*, MDPI – from 2024
11. *International Journal of Biological Macromolecules*, Elsevier – from 2017
12. *Journal of Environmental Chemical Engineering*, Elsevier – from 2025
13. *Marine Drugs*, MDPI – from 2024
14. *Materials Today: Proceedings*, Elsevier – from 2020
15. *New Biotechnology*, Elsevier – from 2025
16. *Processes*, MPDI – from 2022
17. *Sustainability*, MDPI – from 2023
18. *Water*, MPDI – from 2024

- Reviewer of the scientific book **Biofuels – Sustainable Energy**, Regional Department of Central and Western Macedonia of the Panhellenic Association of Chemical Engineers, Tziola Publications, Thessaloniki (2014)

D. Reviewer for Abstracts and Papers for International and National Scientific Conferences

1. Reviewer of scientific abstracts and full papers for the international conference *iconBM: International Conference on BioMass*, 4-7 May **2014**, Florence, Italy
2. Reviewer of scientific abstracts and full papers for the international conference *34th European Biomass Conference & Exhibition (EUBCE2026)*, 19-22 May **2026**, The Hague, The Netherlands

E. Member of Conference Scientific and Organizing Committees

1. Introduction to Biopolymer Synthesis, Kinetics, Properties and Simulation: The Case of Poly(3-hydroxybutyrate), in *Workshop 2: Synthesis, BIOGEL Project: Engineering Responsive & Biomimetic Hydrogels for Biomedical Therapeutic and Diagnostic Applications*, 15-16 September **2016**, CERTH, Thessaloniki, Greece

2. Microalgae Cultivation for the Production of Renewable Fuels and High-Added Value Chemicals, in *Algae: The Energy Supplier of the Future Workshop*, 19 October **2009**, CERTH, Thessaloniki, Greece
3. CPERI's ERA_2024, 30-31 January **2024**, Thessaloniki, Greece: «*Biotechnology – Bioengineering*»
4. 14th Panhellenic Scientific Chemical Engineering Congress (PSCEC14), 29-31 May **2024**, Thessaloniki, Greece: *«Biochemical Engineering and Biotechnology»* Session

F. Reviewer of Research and Innovation Proposals for Competitive Grants

1. **Region of Western Greece**, Programme: *«Western Greece 2021-2027»*, Action: Research and Innovation in Western Greece 2024, Priority: Materials-Microelectronics-Industry (2025)
2. **Horizon Europe/CINEA Innovation Fund** call 2024 Net Zero Technologies (INNOVFUND-2024-NZT) (2025)
3. National (EL) Expert and **Review Panel Member of COST Association** – Engineering and Technology: Industrial Biotechnology (2023-today)
4. European Cooperation in Science and Technology (**COST Association**), EU
5. Research and Innovation Foundation (**RIF**), Cyprus
6. Hellenic Foundation for Research and Innovation (**HFRI**), Greece
7. General Secretariat for Research and Innovation (**GSRI**), Greece

G. Communication and Dissemination of Research and Innovation

1. Member of the **Round Table Discussion Panel** at Plastainability 2025 – *"The Plastics Industry Between Circularity & Uncertainty"*, 3 November **2025**, Athens, Greece, and specifically to the panel "Amid Challenges and Risks: Policy Agenda for a 'Made in Europe' Strategy"
2. Interviews on microalgae potential for advanced biofuel production as addressed in FUELGAE EC-funded research Project, given to Nick Nuttall for **Table.Briefings** (Climate): https://table.media/en/climate/feature/ideas-for-the-climate-how-algae-can-power-airplanes; and **We Don't Have Time**: https://app.wedonthavetime.org/posts/3874c454-a3fc-46f9-aaa1-b262395626c5?utm_source=social&utm_medium=twitter&utm_campaign=wedonthavetime
3. **Personal Interview** as the Technical Manager of the FUELGAE Horizon Europe research Project: https://youtu.be/qwTYMici5qs?si=By5m-zTLR7vlvcUW
4. Member of the **Round Table Discussion Panel** at CPERI's ERA_2024, 20-21 June **2024**, Thessaloniki, Greece, as a leading expert of CERTH/CPERI in Biotechnology and Bioengineering
5. Hosting of **Open Lab days** for students of all grades, as well as for the general public and other stakeholders

H. Member of Scientific Committees or Professional Associations

- **Technical Chamber of Greece** (TCG) (2006-today)
- **Panhellenic Association of Chemical Engineers** (PACE) (2007-today)
- **Aristotle University Chemical Engineering Graduates Society** (ACES) (2015-today)
- **Hellenic Society for Circular Economy** (2024-today)

I. Participation in Scientific Conferences and Symposia

1. 34th European Biomass Conference and Exhibition (EUBCE2026), 19-22 May **2026**, The Hague, The Netherlands
2. AlgaEurope 2025, 9-12 December **2025**, Riga, Latvia
3. Industrial Biotechnology Accelerator Info Day – The road to IBISBA-GR, 8 July **2025**, Athens, Greece
4. 33rd European Biomass Conference and Exhibition (EUBCE2025), 9-12 June **2025**, Valencia, Spain
5. Innovent Forum 2024, JOIST Innovation Park, 14-15 February **2025**, Larissa, Greece
6. CPERI's ERA_2024, 30-31 January **2025**, Thessaloniki, Greece
7. AlgaEurope 2024, 10-13 December **2024**, Athens, Greece
8. 14th Hellenic Polymer Society International Conference (POLYCONF11), 22-55 November **2023**, Thessaloniki, Greece
9. Cell4Glue project Conference: "Development of innovative composite wood products with advanced hydrophobic and antimicrobial properties reinforced with nano-cellulose", 27 November, **2023**, Thessaloniki, Greece
10. 14th Hellenic Polymer Society International Conference (POLYCONF11), 22-55 November **2023**, Thessaloniki, Greece
11. SunFeeding project Conference: "Photosynthetic microalgae cultures for the sustainable production of high nutritional value products for humans, fish and animals", 25 September, **2023**, Thessaloniki, Greece
12. AlgaFuels project Conference: "Production of «green» transportation fuels and energy from microalgae cultivated in greenhouse drainage waters", 18 September, **2023**, Thessaloniki, Greece
13. 29th European Biomass Conference and Exhibition (EUBCE2021), 26-29 April **2021**, Virtual e-Conference
14. 28th European Biomass Conference and Exhibition (EUBCE2020), 6-9 July **2020**, Virtual e-Conference

15. 12th Panhellenic Scientific Chemical Engineering Congress (PSCEC12), 29-31 May **2019**, Athens, Greece
16. 11th Panhellenic Scientific Chemical Engineering Congress (PSCEC11), 25-27 May **2017**, Thessaloniki, Greece
17. 11th Hellenic Polymer Society International Conference (POLYCONF11), 3-5 November **2016**, Heraklion, Greece
18. European Roadmap for an Algae-Based Industry (EUREC), 6- 8 April **2016**, Olhão, Portugal
19. Novel Methods for Integrated Exploitation of Agricultural by-Products, 15-16 November **2015**, Thessaloniki, Greece
20. European Symposium on Chemical Reaction Engineering (ESCRE2015), 27-30 October **2015**, Fürstenfeldbruck, Germany
21. 12th Symposium on Process System Engineering & 25th European Symposium on Computer Aided Process Engineering (PSE2015/ESCAPE25), 31 May-4 June **2015**, Copenhagen, Denmark
22. International Conference on BioMass (iconBM), 4-7 May **2014**, Florence, Italy
23. Biofuels for Sustainable Development of Southern Europe (Bio4SuD), 19-20 November **2012**, Thessaloniki, Greece
24. International Symposium on BioPolymers 2010 (ISBP2010), 3-7 October **2010**, Stuttgart, Germany
25. 14th International Biotechnology Symposium and Exhibition (IBS2010) – Biotechnology for the Sustainability of Human Society, 14-18 September **2010**, Rimini, Italy
26. New Frontiers in Chemical & Biochemical Engineering, 26-27 November **2009**, Thessaloniki, Greece
27. 2009 AIChE Meeting, 8-13 November **2009**, Nashville, Tennessee (TN), USA
28. 7th Panhellenic Scientific Chemical Engineering Congress (PSCEC7), 3-5 June **2009**, Patra, Greece
29. From Molecular to Systems Biology and Biocomputing, March **2008**, Erasmus-Mundus Program, Thessaloniki, Greece
30. CAPE FORUM-2008: Computer Aided Process Engineering - Forum, 7-8 February **2008**, Thessaloniki, Greece
31. 3rd Panhellenic Symposium of Porous Materials (PSPM3), 1-2 November **2007**, Thessaloniki, Greece
32. 6th Panhellenic Scientific Chemical Engineering Congress (PSCEC6), 31 May-2 June **2007**, Athens, Greece
33. Renewable Energy Resources for the Benefit of Human's Daily Life, 9 May **2004**, Thessaloniki, Greece
34. Utilization of Wastes for Human's Benefit, 8 May **2004**, Thessaloniki, Greece

J. Participation in Educational Seminars and Courses

1. Plastainability 2025 – "The Plastics Industry Between Circularity & Uncertainty". Organized by the Association of Hellenic Plastic Industries (AHPI), 3 November **2025**, Athens, Greece
2. Plastainability 2024 – "Transition in Progress". Organized by the Association of Hellenic Plastic Industries (AHPI), 12 November **2024**, Athens, Greece
3. REALM Project webinar: An Online Virtual Tool to Simulate Microalgae Cultivation in Raceway Reactors, 27 November **2023**, Virtual
4. 2nd BioCatPolymers Workshop & Stakeholders' Event: Renewable Chemicals via Biotechnological and Chemo-catalytic Routes, 4 June **2021**, Virtual
5. Workshop 2: "Synthesis" of the BIOGEL Project: Engineering Responsive & Biomimetic Hydrogels for Biomedical Therapeutic and Diagnostic Applications, 15-16 September **2016**, Thessaloniki, Greece
6. Liquid Handling Seminar, 6 October **2015**, Thessaloniki, Greece
7. MULTIMOD 3rd Workshop & Retreat Meeting, Multi-scale Computational Modeling of Chemical & Biochemical Systems: Biochemical Engineering: Fundamentals and Innovations, 9-10 May **2013**, Chalkidiki, Greece
8. 3rd International Workshop of COST Action M0903: Sustainable Production of Fuels/Energy, Materials & Chemicals from Biomass, 1-3 November **2012**, Thessaloniki, Greece
9. 7th Training Workshop: Computational Genomics Tools for Exploring -omics Data Resources, 11-12 March **2010**, Thessaloniki, Greece
10. Algae: the Energy Supplier of the Future, 19 October **2009**, Thessaloniki, Greece
11. Course on Enzyme Immobilization, 7 October **2009**, Thessaloniki, Greece
12. EcoAnalytix-Training Seminar: Food Quality, Safety, Environmental and Biofuel Manufacturing Control, 6 November **2008**, Thessaloniki, Greece
13. Protein Purification Course, 1 October **2008**, Thessaloniki, Greece
14. Course on Industrial Fermentation, 13-14 March **2008**, Wilton, Redcar, UK
15. 2nd International School & Workshop: In-situ Study and Development of Processes Involving Porous Solids, 24-28 February **2007**, Thessaloniki, Greece

Thessaloniki, January 2026