

# Dr Christina N. Economou

## PERSONAL INFORMATION

**E-mail:** [economch@gmail.com](mailto:economch@gmail.com)

**Nationality:** Greek

**Date of birth:** 21 April 1983

**Gender:** Female

## PROFESSIONAL EXPERIENCE

- **03/2018 - Today:** Postdoctoral researcher at Environmental Systems Laboratory of the Department of Chemical Engineering, University of Patras, Patras, Greece

*Main activities and responsibilities:* Design and performance of experiments for nutrients recovery from wastewater streams by microalgae and wastewater treatment by electrochemical methods - Data integration into scientific publications - Co-supervision of undergraduate and postgraduate students.

- **09/2016 - 02/2018:** Postdoctoral researcher at Laboratory of Biochemical Engineering & Environmental Technology (LBEET) of the Department of Chemical Engineering, University of Patras, Patras, Greece

*Main activities and responsibilities:* Preparation/Writing of future proposals (Greek and European Calls) - Co-supervision of 1 undergraduate student on "Biotechnological production of surfactin".

- **10/2014 - 11/2015:** Postdoctoral researcher at Laboratory of Edible Fungi of the Institute of Technology of Agricultural Products (ITAP), Hellenic Agricultural Organisation "DEMETER", Athens, Greece

*Main activities and responsibilities:* Design and performance of experiments for valorization of spent mushroom substrate through recovery of valuable oxidative enzymes and additional mushroom production - Data integration into scientific publications.

- **07/2012 - 09/2014:** Postdoctoral researcher at Environmental Systems Laboratory of the Department of Environmental and Natural Resource Management, University of Patras, Agrinio, Greece

*Main activities and responsibilities:* Design and performance of kinetic experiments for wastewater treatment by autotrophic cyanobacteria species - Data integration into scientific publications - Co-supervision of 1 postgraduate and 5 undergraduate students.

## EDUCATION

- **16/01/2007 - 23/07/2012:** Doctor in biofuel production from microorganisms (PhD Thesis Theme: "Biomass Utilization for Biofuel Production"), Department of Environmental and Natural Resource Management, University of Ioannina and University of Western Greece, Agrinio, Greece.
- **2001 - 2006:** Bachelor's Degree in Environmental and Natural Resource Management (Diploma Thesis Theme: "Aerobic Biological Treatment of Olive Mill Wastewater"), Department of Environmental and Natural Resource Management, University of Ioannina, Agrinio, Greece.

## PUBLICATIONS IN ISI JOURNALS (\*CORRESPONDING AUTHOR)

1. Benekos A, Zampeta C, Argiriou R, **Economou Ch.N**, Triantaphyllidou I-E, Tatoulis T.I, Tekerlekopoulou A.G, Vayenas D.V. 2019. Treatment of table olive processing wastewaters using electrocoagulation in laboratory and pilot-scale reactors. *Process Safety and Environmental Protection*, 131, 38-47 (IF=4.384).
2. Papadopoulos C, Argiriou R, **Economou Ch.N**, Charalampous N, Dailianis S, Tatoulis T.I, Tekerlekopoulou A.G, Vayenas D.V. 2019. Treatment of printing ink wastewater using electrocoagulation. *Journal of Environmental Management*, 237, 442-448 (IF=4.865, Cit: 3).
3. Koutra E, **Economou Ch.N**, Tsafrakidou P, Kornaros M. 2018. Bio-based products from microalgae cultivated in digestates. *Trends in Biotechnology*, 36, 819-833. (IF=13.578, Cit: 13).
4. Kourmentza C, **Economou Ch.N**, Tsafrakidou P, Kornaros M. 2018. Spent coffee grounds make much more than waste: Exploring recent advances and future exploitation strategies for the valorization of an emerging food waste stream. *Journal of Cleaner Production*, 172, 980-992. (IF=5.651, Cit: 12).
5. **Economou Ch.N**, Diamantopoulou P, Philippoussis A. 2017. Valorization of spent oyster mushroom substrate and laccase recovery through successive solid-state cultivation of *Pleurotus*, *Ganoderma* and *Lentinula* strains. *Applied Microbiology and Biotechnology*, 101, 5213-5222. (IF=3.340, Cit: 5).
6. **\*Economou Ch.N**, Marinakis N, Moustaka-Gouni M, Kehayias G, Aggelis G, Vayenas D.V. 2015. Lipid production by the filamentous cyanobacterium *Limnothrix* sp. growing on a synthetic wastewater in suspended and attached growth photobioreactor systems. *Annals of Microbiology*, 65, 1941-1948. (IF=1.407, Cit: 14).
7. **Economou Ch.N**, Aggelis G, Pavlou S, Vayenas D.V. 2011. Single cell oil production from rice hulls hydrolysate. *Bioresource Technology*, 102, 9737-9742. (IF=5.807, Cit: 118).

**8. Economou Ch.N**, Vasiliadou I.A, Aggelis G, Pavlou S, Vayenas D.V. 2011. Modeling of oleaginous fungal biofilm developed on semi-solid media. *Bioresource Technology*, 102 (20), 9697-9704. (IF=5.807, Cit: 10).

**9. Economou Ch.N**, Aggelis G, Pavlou S, Vayenas D.V. 2011. Modelling of single-cell oil production under nitrogen-limited and substrate inhibition conditions. *Biotechnology & Bioengineering* 108, 1049-1055. (IF=4.55, Cit: 70).

**10. Economou Ch.N**, Makri A, Aggelis G, Pavlou S, Vayenas D.V. 2010. Semi-solid state fermentation of sweet sorghum for the biotechnological production of single cell oil. *Bioresource Technology*, 101, 1385-1388. (IF= 5.807, Cit: 93).

**11. Tziotzios G, Economou Ch.N**, Lyberatos G, Vayenas D.V. 2007. Effect of the specific surface area and operating mode on biological phenol removal using packed bed reactors. *Desalination*, 211, 128-137. (IF=6.603, Cit: 11).

*Published documents 11, Citations (excluding self-citations) 349, ISI*

#### BOOK CHAPTERS

**1. Markou G, Economou Ch.N**, Chentir I. 2019. Cultivation of microalgae under stress conditions: a strategy for the accumulation of high value compounds in the book project entitled: "Handbook of Algal Technologies and Phytochemicals: Nutritional, Nutraceutical, Pharmaceutical and Multifarious Applications", CRC Press, USA. *In press*.

**2. Tekerlekopoulou A, Economou Ch.N**, Tatoulis T, Akratos C, Vayenas D.V. 2019. Wastewater treatment and water reuse in the food industry" in the book project entitled: "Food Industry and the Environment" (Elsevier-Academic Press). *In press*.

**3. Sarris D, Economou Ch.N**, Papanikolaou S. 2018. Food waste management: The role of biotechnology in the book project entitled: "Recent Advances in Biotechnology Vol. 4 - Progress in Food Biotechnology", Edited by Ali Osman, Bentham eBooks, Bentham Science Publishers. pp. 383-430.

#### CONFERENCES

**1. Papadopoulos K.P, Economou Ch.N**, Moustaka-Gouni M, Tekerlekopoulou A.G, Aggelis G, Vayenas D.V. "Biotreatment of brewery wastewater using the filamentous cyanobacterium *Leptolyngbya* sp.", 16<sup>th</sup> International Conference on Environmental Science and Technology CEST2019, Rhodes, 4 -7 September 2019, Greece (*poster presentation*).

**2. Papadopoulos C, Argiriou R, Economou Ch.N**, Charalampous N, Dailianis S, Tatoulis T.I, Tekerlekopoulou A.G, Vayenas D.V. Treatment of printing ink wastewater using electrocoagulation in lab- and pilot-scale. 16<sup>th</sup> International Conference on Environmental Science and Technology CEST2019, Rhodes, 4 -7 September 2019, Greece (*oral presentation*).

3. Papadopoulos K.P, **Economou Ch.N**, Moustaka-Gouni M, Tekerlekopoulou A.G, Vayenas D.V. "Cultivation of a natural bacteria-cyanobacteria consortium for brewery wastewater treatment", International Symposium on Constructed Wetlands & Small Decentralized Wastewater Treatment Plants, ISCW2019, Patras, 29-31 August 2019, Greece (*oral presentation*).
4. Papadopoulos K.P, **Economou Ch.N**, Moustaka-Gouni M, Tekerlekopoulou A.G, Aggelis G, Vayenas D.V. "Brewery Wastewater Treatment using the filamentous cyanobacterium *Leptolyngbya* sp.", IWA Conference on Algal Technologies and Stabilization Ponds for Wastewater Treatment and Resource Recovery, Valladolid, 1-2 July 2019, Spain (*poster presentation*).
5. Papadopoulos K.P, **Economou Ch.N**, Moustaka-Gouni M, Tekerlekopoulou A.G, Aggelis G, Vayenas D.V. "Effect of operating parameters on cyanobacterial biotreatment of brewery wastewaters", 8th Congress of the Scientific Society "MikroBioKosmos", Patras, 18-20 April, 2019, Greece (*poster presentation*).
6. **Economou Ch.N**, Vasiliadou I.A, Aggelis G, Pavlou S, Vayenas D.V. Experimental and theoretical study of oil production from sweet sorghum using the oleaginous fungus *Mortierella isabellina* in semi-solid state fermentation. 8<sup>th</sup> Panhellenic Scientific Chemical Engineering Congress, Thessalonici 26-28 May 2011, Greece (*oral presentation*).
7. **Economou Ch.N**, Aggelis G, Pavlou S, Vayenas D.V. Biotechnological production of oil from sweet sorghum extract. 4<sup>th</sup> Environmental Conference of Macedonia, Thessalonici 18-20 March 2011, Greece (*oral presentation*).
8. **Economou Ch.N**, Aggelis G, Pavlou S, Vayenas D.V. Biotechnological production of oil from sweet sorghum using the oleaginous fungus *Mortierella isabellina* ATHUM 2935. 3<sup>rd</sup> National MikroBioKosmos conference, Thessalonici 16-18 December 2010, Greece (*poster presentation*).
9. **Economou Ch.N**, Makri A, Aggelis G, Pavlou S, Vayenas D.V. Biotechnological production of oil from sweet sorghum in semi-solid state fermentation. 7<sup>th</sup> Panhellenic Scientific Chemical Engineering Congress, Patras 4-6 June 2009, Greece (*oral presentation*).
10. Vasiliadou I.A, Dermou E, Karanasios K.A, **Economou Ch.N**, Tekerlekopoulou A, Tziotzios G, Vayenas D.V. Water and wastewater biological treatment. 1<sup>st</sup> National MikroBioKosmos conference, Athens 12-14 December 2008, Greece (*poster presentation*).

#### PARTICIPATION IN SEMINARS

- **15 - 17 October 2009:** A MicrobeGR Workshop: Molecular Approaches to Unravel the Hidden Microbial World. In the frame of the EU project CSA-REGPROT-203590 "MicrobeGR: Supporting Environmental Microbiology and Biotechnology Research Potential in Western Greece". Department of

Environmental and Natural Resource Management, Laboratory of Molecular Biology and Biochemistry, University of Ioannina, Greece.

- **24 - 26 March 2010:** B MicrobeGR Workshop: Microbial World and DNA microarrays: from principles to practice. In the frame of the EU project CSA-REGPROT-203590 "MicrobeGR: Supporting Environmental Microbiology and Biotechnology Research Potential in Western Greece". Department of Environmental and Natural Resource Management, Laboratory of Molecular Biology and Biochemistry, University of Ioannina, Greece.

#### PARTICIPATION IN WORKSHOPS

- **Economou Ch.N,** Aggelis G., Pavlou S, Vayenas D.V. 2008. Solid and semi-solid state fermentation of sweet sorghum for the biotechnological production of oil. Oral presentations under the framework of INTERREG IIIA GREECE-ITALY 2007-2009.  
**19-09-08:** Polyhoros Politeia Patras, Greece; **22-09-08:** University of Ioannina, Greece; **25-09-08:** University of Lecce, Italy.

#### REVIEWER IN INTERNATIONAL JOURNALS

1. Algal Research
2. Annals of Microbiology
3. Bioresource Technology
4. Energies
5. Fuel
6. Global NEST Journal
7. Journal of Chemical Technology & Biotechnology
8. Preparative Biochemistry and Biotechnology
9. Scientific Reports - Nature
10. The Open Biotechnology Journal

#### FUNDING RECEIVED

1. **03/2018 - Today:** Research Infrastructure for Waste Valorization and Sustainable Management (INVALOR), MIS 5002495, which is implemented under the Action "Reinforcement of the Research and Innovation Infrastructure": €1,735,000, University of Patras.
2. **10/2014 - 11/2015:** Research & Technology Development Innovation projects (AgroETAK), MIS 453350, which is implemented under the framework of the Operational Program "Human Resources Development": €9,000,000, Hellenic Agricultural Organisation "DEMETER".
3. **04/2008 - 12/2008:** Spin-off preparation for the commercial exploitation of a biological filter for potable water treatment, 2006-2008, General Secretariat of Research and Technology, Greece: €60,000, University of Ioannina.

**4. 12/2006 - 09/2008:** Development of a sustainable and integrated system for bio-diesel production from energy crops, INTERREG IIIA GREECE-ITALY 2007-2009: €40,750, University of Ioannina.

## TEACHING EXPERIENCE

Involved in teaching activities for undergraduate students of Department of Environmental and Natural Resources Management, Ioannina University.

- **2007 - 2008, 2009 - 2010, 2010 - 2011:** Wastewater management (7<sup>th</sup> Semester), Undergraduate Course
- **2008 - 2009:** Soil and groundwater remediation (7<sup>th</sup> Semester), Undergraduate Course

## PERSONAL SKILLS AND COMPETENCES

### **Communication skills and competences**

- Good ability to adapt in multicultural environments, gained through her working experience with different people and with multidimensional teams of different scientific backgrounds, such as chemical engineers, biologists, environmentalists and agriculturists
- Good communication skills gained through teaching activities and co-supervising postgraduate and undergraduate students

### **Organizational skills and competences**

- Good experience in project management, gained through her working experience in four research programs
- Leadership skills gained through co-supervision of postgraduate and undergraduate students

### **Technical skills and competences**

Advanced skills in analytical and theoretical techniques, gained through research activities.

#### *Analytical techniques:*

- High Performance Liquid Chromatography (HPLC)
- Ion Chromatography (IC)
- Gas Chromatography (GC)

#### *Theoretical techniques:*

- Aquasim: Computer Program for the Identification and Mathematical Simulation of Aquatic Systems