

Stella Bezergianni, PhD

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Summary

Dr. Bezergianni obtained a Chemical Engineering diploma from the Aristotle University of Thessaloniki and thereafter started her graduate studies via a full-scholarship from Lehigh University in USA, obtaining a PhD in Chemical Engineering. She continued her career in industry at ExxonMobil Research & Engineering in Virginia USA as an advanced engineer and two years later earned an international assignment in the Netherlands as a senior engineer in the ESSO Nederland BV refinery, leading a hydroprocessing real time optimization project. Overall the industrial experience was significant for providing valuable insight on corporate R&D approach and understanding of its impact on business economics.

After the four-year industrial experience at ExxonMobil (USA & NL), she aspired to continue her research career in her home country, and started working in the Centre for Research and Technology Hellas, where she got appointed as an assistant researcher in 2006 and an associated researcher in 2009, a position she presently holds. She is currently the head of the hydroprocessing group, which is focused on the production and evaluation of environmentally friendly fuels and biofuels, the development of new technologies for 2nd and 3rd generation biofuels production, as well as optimization of hydroprocessing processes for biofuels production.

Dr. Bezergianni is the scientific advisor in various European and National research projects as well as in research activities in collaboration with national and international industrial partners. She is an author of numerous scientific publications in technical journals, conference proceedings and monographs. She has been a member of several scientific committees, while she is presently chairing the competitiveness committee of the Central Macedonia Section of the National Technical Chamber of Greece.

Education

Lehigh University, Bethlehem, PA

Ph.D. in Chemical Engineering, June 2001 (*G.P.A.*: 3.7/4.0)

Ph.D. dissertation : Assessment of Multivariable Controller Performance

Research Advisor : Professor Christos Georgakis

Aristotle University of Thessaloniki

Chemical Engineering diploma, June 1995 (*G.P.A.*: 8.0/10.0)

Industrial work experience

ExxonMobil Refining & Supply, ESSO Nederland BV, Rotterdam NL

Process Technical Assistance Section

Senior Engineer on Assignment (May 2003–June 2005)

- Real Time Optimization for Hydroprocessing Unit Project – Model development and configuration
- DMC for Hydroprocessing Unit Project: Plant-test, Model Identification, Configuration
- Real Time Optimization course in European Engineering Headquarters (Fawley UK)

ExxonMobil Research & Engineering, Fairfax VA, USA

Advanced Control & Optimization Group

Senior Engineer (March 2001–April 2003)

- Real Time Optimization for Hydroprocessing Units - Model development and Online Support

FMC Corporation, Princeton, NJ, Chemical Products Group

Research Consultant (June 1997 – September 1997)

Multivariate statistical analysis of calciner data in terms of a data management project.

Air Liquide Hellas, Thessaloniki

Process engineer (July 1993 – September 1993)

Studied the process control structure of an air-separation cryogenic plant

Research work experience

Centre for Research & Technology Hellas (CERTH), Chemical Process Engineering & Research Institute, Laboratory of Environmental Fuels and Hydrocarbons

Senior Researcher (November 2009 - Present) / **Assistant Researcher** (July 2005 – October 2009)

- Development of co-processing of lipids with gasoil for hybrid fuels production
- Development for biodiesel production via catalytic hydrotreating of waste cooking oil
- Upgrading of pyrolysis biooil via catalytic hydrodeoxygenation
- Development of statistical models for monitoring catalytic hydrotreating processes
- Development of optimization models for mixing biodiesel & diesel within EN590:2004 specifications
- Study of oxidation and polymerization mechanisms of FAME biodiesel in diesel engines
- Sustainability assessment of bioethanol and biodiesel production processes

University of Western Macedonia, Mechanical Engineering department

Lecturer (2007 – 2010)

Technologies for utilizing and exploiting hydrocarbons (223)

<http://aliakmon.cperi.certh.gr/~sbezerger/uwm223.html>

Lehigh University, Bethlehem, PA, P.C. Rossin College of Engineering & Applied Science

Teaching Assistant (1995 – 2000)

Engineering I (Engr 001) / Instructor: Professor Jakob Y. Kazakia

Process Design I (ChE 233) / Instructor: Professor William L. Luyben

Methods of Analysis in Chemical Engineering (ChE 201) / Instructor: Professor Cesar Silebi

Opportunities for Student Innovation Project / Instructor: Professor Christos Georgakis

Lehigh University, Bethlehem, PA, Chemical Engineering Dpt, Advisor: Professor Christos Georgakis

Research Assistant (June 1996 – December 2000)

- Developed new controller assessment methodology and new closed-loop identification methodology
- Applied statistical monitoring tools for large-scale processes and plant-wide control structures.

Aristotle University of Thessaloniki, Chemical Engineering department / Instructors: prof. Stavros Nychas and prof. Eleftherios Kastrinakis

Diploma thesis (June 1994 – May 1995)

Experimental diploma thesis entitled: “Interaction of air bubbles in water column”

Significant Publications

Selected Peer-Reviewed Scientific Journals (in chronological order)

1. **Bezergianni, S.**, Dagonikou, V., Sklari, S., The Suspending Role of H₂O and CO on Catalytic Hydrotreatment of Gas-oil; Myth or Reality?, *Fuel Processing Technology* **144**, pp. 20-26, 2016
2. Gomes, J.R., **Bezergianni, S.**, Luiz Zotin, J. and Falabella Sousa-Aguiar, F., Biofuels Generation via Hydroconversion of Vegetable Oils and Animal Fats, RSC Environmental Series (ISBN 978-1-84973-801-9), Volume 2015-January, Issue 13, Pages 204-222, 2014 [**Citations=0**]
3. **Bezergianni, S.**, Dimitriadis, and Chryssikou, L.P., Quality and sustainability comparison of one- vs. Two-step catalytic hydroprocessing of waste cooking oil, *Fuel* **126**, pp. 341–344, 2014 [**Citations=11**]
4. **Bezergianni, S.**, Dimitriadis, A. and Meletidis, G., Effectiveness of CoMo and NiMo Catalysts on Co-Hydroprocessing of Heavy Atmospheric Gas Oil - Waste Cooking Oil Mixtures, *Fuel*, **125**, pp. 129-136, 2014 [**Citations=7**]
5. **Bezergianni, S.** and Dimitriadis, A., Comparison Between Different Types of Renewable Diesel, *Renew Sust Energ Rev* **21**, pp. 110–116, 2013 [**Citations=33**]
6. **Bezergianni, S.** and Dimitriadis, A., Temperature Effect On Co-Hydroprocessing of Heavy Gas Oil-Waste Cooking Oil Mixtures for Hybrid Diesel Production, *Fuel* **103**, pp. 579–584, 2013 [**Citations=14**]
7. **Bezergianni, S.**, Dimitriadis, A., Sfetsas, T., and Kalogianni, A., Hydrotreating of waste cooking oil for biodiesel production. Part II: Effect of temperature on hydrocarbon composition, *Bioresource Technol*, **101**(19), pp. 7658-7660, 2010 [**Citations=43**]
8. **Bezergianni, S.**, Dimitriadis, A., Kalogianni, A. and Pilavachi, P.A., Hydrotreating of waste cooking oil for biodiesel production. Part I: Effect of temperature on product yields and heteroatom removal, *Bioresource Technol*, **101**(17), pp. 6651-6656, 2010 [**Citations=49**]
9. Lappas, A.A., **Bezergianni, S.**, Vasalos, I.A. Production of Biofuels via Co-processing in Conventional Refining Processes, *Catal Today*, **145** (1-2), pp. 55-62, 2009 [**Citations=120**]
10. **Bezergianni, S.**, Kalogianni, A., Vasalos, I.A., Hydrocracking of vacuum gas oil-vegetable oil mixtures for biofuels production, *Bioresource Technol* **100**(12), pp. 3036-3042, 2009 [**Citations=84**]

Selected Peer-Reviewed Conference Proceedings (in chronological order)

1. **Bezergianni, S.**, Dimitriadis A., Residual Lipids Incorporation in a Petroleum Refinery, *Proceedings of the Global Conference on Global Warming*, Athens, Greece, May 24-27, 2015
2. **Bezergianni, S.**, Chrysikou, L.P., Life Cycle Assessment of Renewable Biodiesel Produced via Waste Cooking Oil Hydrotreatment, *Proceedings of the 10th Int'l Colloquium Fuels – Conventional and Future Energy for Automobiles*, ISBN 978-3-943563-16-0, Esslingen, Germany, January 20-22, 2015
3. **Bezergianni, S.**, Dimitriadis, A. And Voutetakis, S., Catalytic Hydrotreating of Waste Cooking Oil for White Diesel Production, *Proceedings of First International Congress on Catalysis for Biorefineries (CatBior)*, Torremolinos-Málaga, Spain, October 2-5, 2011
4. Karonis, D., **Bezergianni, S.**, Chilari, D. and Kelesidis, E., Maximizing the Yield of Biodiesel from Waste Cooking Oil Hydroprocessing by Cut-point Optimization, *Am. Chem. Soc., Div. Fuel Chem.*, **55** (1), 2010
5. Christodoulou, P., and **Bezergianni, S.**, The competitiveness of bioethanol production from sugar beet, *Proceedings of 23rd Int'l Commission for Sugar Technology Meeting*, pp. 77-85, Rostock/Warnemünde, Germany, 13-16 May, 2007

Monographs (Books & Book chapters)

- **Bezergianni S.**, Chapter entitled “Catalytic Hydroprocessing of Liquid Biomass for Biofuels Production” as part of "Biofuel", ISBN: 980-953-307-696-1, Editor: In Tech. 2013
- **Bezergianni, S.**, Assessment of Multivariable Controller Performance – Relative Variance Index, *VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG*, ISBN 978-3-639-30287-5, November 2010

Prizes & Awards

Innovation Competition Eurobank – Hellenic Federation of Enterprises : 2nd Innovation Award, July 2011
Wenzel Award for best presentation in the Ph.D. Qualifying Exams, Lehigh University, 1996
Academic scholarship from State Scholarship Foundation, Aristotle University of Thessaloniki, 1995

Invited Lectures

- Invited lecture entitled “Securing the Future with Bio-based Bunker Fuels”, Marine Fuels and Lubricants Conference, Rotterdam, The Netherlands, June 28-29, 2016
- Invited lecture entitled “Biofuels: The Transportation Energy of the Future” in the Biological Sciences and Evolution department, University of Ferrara, Italy, November 6, 2013
- Invited lecture entitled “Is Cooperation with the Private Sector a Challenge? The perspective of Academia” in the “Giacomo Leopardi” *School of Higher Education*, University of Camerino, Italy, May 14, 2012

Selected Research Projects/Funding ID

	Start date	End date	Project title/Total budget/Role of PI	Source of funding/ Project code	Budget* (€)
1	1/16	12/16	Hydroprocessing service contract/Total budget: 300,000€/Project coordinator	Hellenic Petroleum	300,000
2	3/13	12/15	Sustainable use of marine microalgae for the production of biofuels and high-added value biochemicals/ Total budget: 919,030€/Principal researcher	Co-funded by EU Regional Development Fund and Public Funds / 09SYN-32-328	54,980
3	8/13	12/14	Hydroprocessing service contract/ Total budget 141,754€/ Project coordinator	BP	141,754
4	3/11	3/14	Sustainability improvement of Diesel Production Technology (SustainDiesel)/Total budget: 884,842€/ Project coordinator	Co-funded by EU Regional Development Fund and Public Funds / 09SYN-32-328	436,516
5	10/10	5/12	Biodiesel evaluation service contract/ Total budget 129,910€/ Project coordinator	TOYOTA	129,910
6	1/10	12/12	Demonstration of a sustainable & effective 2 nd generation biofuels application in an urban environment (BIOFUELS-2G)/ Total budget: 1,416,350€/ Project coordinator	European Environment Program LIFE+/LIFE08 ENV/GR/00056	337,482
7	11/06	12/08	Biofuels Technological Platform of Thessaly, (Regional Innovation Pole of Thessaly)/ Total Budget: 5,000,000€/ Project coordinator	Co-funded 50% EU Regional Development Funding - 50% Public Funding/ 7-PK06	125,000

*Budget refers budget allocated to CERTH