Project Title	Integrated management and exploitation of multi-dispersed agricultural residues – application to energy production		
Acronym	SYNAGRON	Project Coordinator	Prof. Vagelis G. Papadakis
Organization	University of Patras (UP), School of Engineering, Department of Environmental Engineering Professor VAGELIS G. PAPADAKIS		

The University of Patras participates via the Departments of Environmental Engineering (**Prof. V.G. Papadakis, Project Coordinator**) and the Department of Chemical Engineering (**Prof. M. Kornaros**).

Vagelis G. Papadakis is **Professor** in **Physical and Chemical Environmental Processes, Durability and Sustainability of Constructions** in the Department of Environmental Engineering, of the University of Patras (UP).

Prof. V.G. Papadakis obtained his diploma in Chemical Engineering in 1986 and his Ph.D. in Chemical Engineering 1990 from the University of Patras (UP). He received 3-year scholarships during his undergraduate studies and 4-year fellowship for graduate studies from the Institute of Chemical Engineering Sciences (ICE/HT). In 1993 he received the **International Prize (Wason Medal for Materials Research)** of the American Concrete Institute (ACI). Furthermore, in 1997 he obtained a 2-year Marie Curie Research Training Grant for the Danish Technological Institute (DTI). He also received a 1-year Marie Curie Return Grant in 2000. From 1992-1997 he worked as a **Post-Doctoral Fellow - Researcher in** ICE/HT, and from 1994 until 1996, as teaching staff at the Department of Chemical Engineering of the University of Patras. In 1999-2000 he worked as Head of Concrete Technology Laboratory, division of Research & Quality, at the company of TITAN Cement Co. S.A. He has also worked (2000-2001) as researcher at the National Technical University of Athens, in the School of Chemical Engineering. Between 2001-2006 he was employed as Adjunct Assistant Professor at the University of Patras and the University of Ioannina and from 2003-2007 he was an R&D Consultant & Research Fellow at the Patras Science Park S.A. From 2007-2016 he worked as an **Associate Professor** in the Department of Environmental and Natural Resources Management of the University of Patras. In 2016 he was elected as **full Professor** at the same university.

The **research interests** of **Prof. V.G. Papadakis** are focused in the fields of: (a) Environmental cost and life cycle analysis and software development and applications (b) Mathematical modeling and experimental investigation of physical and chemical processes: Porous media characterization, drying, diffusion, reaction engineering, design and analysis of chemical reactors, (c) Heterogeneous catalysis and environmental management, (d) The development, promotion and exploitation of Innovation and the regional development, Techno-economical analysis, etc. **Prof. V.G. Papadakis** is author or co-author of more than **55 research publications** in Peer Reviewed International Journals with a total Impact Factor = **162,93** and average IF/paper = **3,47**, which have received over **4000 citations** (Scopus), giving him a **Hirsch (h)-index= 29**. He also has a **large number of publications** and **presentations** in peer reviewed international (**>70**) and national (**>50**) conference proceedings and **two (2) patents** (European Patent No 94600002.3/28.01.94 and OBI No 20050200111/04.02.2005). He is **author** of several books, chapters and **co-creator** of software packages. He participated in various committees (such as National Representative, 7th Framework Programme) and acts as reviewer in over 30 international journals. **Prof. V.G. Papadakis** has acted as **Project leader and Manager and Researcher** at **33** National R&D projects. He has also participated as **Senior Researcher** in **20** European or National R&D projects. He has supervised **two (2) Post-doctoral works** and **six (6) PhD Theses**. Furthermore, he has also supervised > **13 MSc** Theses and > **60 Diploma** dissertations.

M. Kornaros is Professor of physical processes in the Department of Chemical Engineering (UP). He obtained his Diploma in 1989 and his Ph.D. in 1995 (both in Chemical Engineering, UP). He is the Head of the Laboratory of Biochemical Engineering and Environmental Technology (LBEET) in the Department of Chemical Engineering at UP. His main research interests are **organic wastes valorisation for production of bio-based compounds, anaerobic fermentation, exploitation of agroindustrial wastes and wastewaters for liquid and gaseous biofuels production and modeling of biological processes**. He has extensive expertise in co-ordination and participation in European and Cross-Border projects (**more than 50 in the last 15 years and more than 3 mil euros in funding for LBEET**). Successfully completed projects include: INTEGRASTE, MISSTOW, Bio-SURFEST, AGROENERGY, SWAM, GoW, POPULAR amongst others. He has published more than 60 scientific papers, several book chapters and more than 110 international conference proceedings. Up-to-date he has supervised as principal advisor 2 post-doctoral fellows, 2 PhD students (having successfully completed their theses) while 2 more are underway, 38 MSc students that have defended their theses and 12 more that are in progress and more than 70 BSc students in their diploma thesis. He is active reviewer in more than 30 international journals and conference proceedings. Throughout his career, he has chaired 15 sessions in National and International Conferences while has also been member of the Organization Committee and/or the Scientific Committee in numerous conferences.

Moreover, in the staff of UP dealing with SYNAGRON belong **Prof. F. Coutelieris, Dr. C. Zafiri, Dr. G. Prodromidis, Mrs. V. Aravani** and **Mrs. E. Arvaniti**

Prof. F. Coutelieris, is currently Professor at the Department of Environmental Engineering at the University of Patras, located at Agrinio, Greece. He obtained his PhD in Chemical Engineering in 1995 at Chemical Engineering Department, University of Patras, Greece, and subsequently made postdoctoral research visits to the Mechanical Engineering Department, University of Thessaly, Greece, to the National Center for Scientific Research "Demokritos", Greece, to the Unilever R&D Centre, Vlaardingen, the Netherlands, and to Department of Mechanical Engineering, University of Western Macedonia, Greece before taking up his faculty position at the University of Patras in 2008. His research areas include modelling of environmental engineering applications and especially, (a) macroscopic and microscopic modelling of energy systems, (b) modelling of transport processes in complex porous structures, and (c) mathematics of experimentation. His scientific record includes more than 60 articles published in international refereed scientific journals, while it has been worldwide acknowledged with more than 900 citations. He is a regular reviewer in more than 45 relevant scientific journals and research funding agencies, and he is/was a member in the organizing and scientific committees of international and national scientific conferences. Furthermore, he has supervised one (1) Post-doctoral work, five (5) PhD Theses, one (1) MSc Thesis and more than 40 Diploma dissertations. He is married with the painter Natasa Kontouli (three children). More scientific info is available at http://simulab.env.upatras.gr/people/1.

Dr. George N. Prodromidis is currently postdoc researcher at the Department of Environmental Engineering at the University of Patras, located at Agrinio, Greece. He obtained his PhD on Mathematical modelling and optimization of RES-based power plants in 2014 from the same department. He also carried out founded postdoctoral research, mainly on thermodynamical modelling and optimization of stand-alone hybrid RES-based units. His scientific record includes 13 articles published in international refereed scientific journals and participation in 4 international conferences with oral presentations.

Mrs. Vasiliki Aravani is a PhD candidate in the Department of Environmental Engineering at University of Patras. She graduated first from the same department in 2017 and was awarded with Skoura scholarship. During her studies she fulfilled her internship at the TITAN Cement Company where she dealt with ISO issues, environmental inspections and legislation. The same period she fulfilled also her Erasmus Traineeship at Justus, Liebig University of Giessen in Germany where she contributed to research by conducting field, laboratory and data collection work. From November 2017 to October 2019, she worked in the field of quality control, performing chemical and microbiological analyses on environmental and food samples, according to ISO policies. In November 2019, she was announced as a PhD candidate in the Department of Environmental Engineering.

Mrs. Eleni Arvaniti is a PhD candidate in the Department of Environmental Engineering at University of Patras. She holds a Degree in Business Administration and an M.B.A from University of Patras. Since 2007 she has been involved in the design and implementation of several national and EU funded developmental / research project dealing with Innovative technologies, entrepreneurship, regional development, environmental sustainability and Open Innovation while she has conducted a series of studies (feasibility studies, cost-benefit analyses, business plans, action plans, etc).

INDICATIVE R&D PROJECTS:

4/2016 - 4/2021 **Project title:** "*Collaborative Digitization of Natural and Cultural Heritage (CD-ETA)*", Interreg Europe, EU Programme, Φορείς: Euroregion PlevenOlt, Bulgaria (Coordinator), Harghita County Council (Romania), University of Patras (Greece), Association of municipalities of the RIBERA ALTA region (Spain), foundation for research and innovation (Italy), Regional Development Agency of Gorenjska (Slovenia), Foundation Saint Mary the Royal of Historic Heritage (Spain), Estonian War Museum General Laidoner Museum (Estonia). **Position:** Coordinator of the Greek side. (**V.G. Papadakis**)

12/2013 - 12/2015 **Project title:** *"Development and Implementation of Decentralised Solar-Energy-Related Innovative Technologies for Public Buildings, in the Mediterranean Basin Countries (DIDSOLIT-PB)"*, ENPI CBCMED, EU Programme, Parners: Autonomous University of Barcelona, Spain (Coordinator), Institute for Innovation & Sustainable Development- AEIPLOUS (Greece), Egyptian Association for Energy and Environment (Egypt), Al-Balqa' Applied University (Jordan), Alexandria University (Egypt), Mediterranean Agronomic Institute of Chania (Greece), Eco-System Europa SL (Spain). **Position:** Coordinator of the Greek side. (**V.G. Papadakis**)

Existing **Project Title:** *"Maximizing the biogas producing potential of existing and operating anaerobic bioreactors"*, Funding organization: Ministry of Education, Lifelong Learning and Religious Affairs/O.P. "Education and Lifelong Learning"/Action "Archimedes III: Support of research groups in TEI". **Amount of grant:** 75.000€ (11.250€ as partner). (**M. Kornaros**)

2/2011 - 9/2015 **Project title:** *"Sustainable management via energy exploitation of end-of-life dairy products in Cyprus DAIRIUS"*, **EU – LIFE + Environment Policy and Governance, contract ENV/CY/000721**. The project's main target was the development and implementation of policies especially focused on the sustainable management and exploitation of expired dairy products aiming at the gradual improvement of the environmental performance of the dairy sector. LBEET was responsible for developing, designing and testing in pilot scale the energy valorisation of expired dairy products through co-digestion with other agroindustrial wastes in Cyprus. **Amount of grant:** 1.426.840€ (380.000€ as partner). (**M. Kornaros**)

3/2010 - 6/2012 **Project title:** *"Development of sustainable biogas strategies for integrated agroindustrial waste management (BIOGAIA)"*, **European Territorial Cooperation Programme Greece – Italy 2007-2013, contract No. 902020**. LBEET coordinated this Project which aimed at identifying alternative waste streams/substrates in the cross-border region of Greece - Italy that could be appropriately combined through co-digestion in centralized anaerobic digestion plants achieving a year-round efficient operation and stable energy production. **Amount of grant:** 1.406.000€ (410.000€ as partner). (**M. Kornaros**)

SELECTED PUBLICATIONS:

1. Katrivesis, F.K., A.D. Karela, V.G. Papadakis, and C.A. Paraskeva, *Journal of Water Process Engineering*, **27**, 193-204 (2019).
2. Tsiaras, E., D.N. Papadopoulos, C.N. Antonopoulos, V.G. Papadakis and F.A. Coutelieris, *Renewable Energy*, **149**, 1271-1281 (2020).
3. Charisiou N.D., Baklavaridis A., **Papadakis V.G.**, Goula M.A., *Waste Biomass Valori*, 7 (**2016**) 725-736.
4. Charisiou N.D., Konstantakou P.P., **Papadakis V.G.**, *Environ Eng Manag J*, 15 (**2016**) 2709-2717.
5. Demis S., Tapali J.G., **Papadakis V.G.**, *Waste Biomass Valori*, 6 (**2015**) 843-853.
6. Badogiannis E., Aggeli E., **Papadakis V.G.**, Tsivilis S., *Cement Concrete Comp*, 63 (**2015**) Article number 2536 1-7.
7. Dareioti M.A., **Kornaros M.**, *Bioresource Technol*, 167 (**2014**) 407-415.
8. Bhatnagar A., Kaczala F., Hogland W., Marques M., Paraskeva C.A., **Papadakis V.G.**, Sillanpaa M., *Environ Sci Pollut R*, 21 (**2014**) 268-298.
9. Tapali J.G., Demis S., **Papadakis V.G.**, *Comput Concrete*, 12 (**2013**) 755-774.
10. Antiohos S.K., Tapali J.G., Zervaki M., Sousa-Coutinho J., Tsimas S., **Papadakis V.G.**, *Constr Build Mater*, 49 (**2013**) 455-463.
11. Apostolopoulos C.A., Demis S., **Papadakis V.G.**, *Constr Build Mater*, 38 (**2013**) 139-146.
12. Arvaniti E.C., Zagklis D.P., **Papadakis V.G.**, Paraskeva C.A., *Int J Chem Eng*, (**2012**) Article number 607219.
13. Dareioti M.A., Dokianakis S.N., Stamatelatou K., Zafiri C., **Kornaros M.**, *Waste Manage*, 30(10) (**2010**) 1841-1848.
14. Dareioti M.A., Dokianakis S.N., Stamatelatou K., Zafiri C., **Kornaros M.**, *Desalination*, 248 (1-3) (**2009**) 891-906.
15. Antonopoulos C.N., **Papadakis V.G.**, Stylios C.D., Efstathiou M.P., Groumpos P.P., *Sci Publ Policy*, 36 (2009) 511-521.
16. Apostolopoulos C.A., **Papadakis V.G.**, *Constr Build Mater*, 22 (**2008**) 2316-2324.
17. Antonopoulou G., Stamatelatou K., Venetsaneas N., **Kornaros M.**, Lyberatos G., *Ind Eng Chem Res*, 47(15) (**2008**) 5227-5233.
18. Paraskeva C.A., **Papadakis V.G.**, Tsarouchi E., Kanellopoulou D.G., Koutsoukos P.G., *Desalination*, 213 (**2007**) 218-229.
19. Antiohos S.K., **Papadakis V.G.**, Chaniotakis E., Tsimas S., *Cement Concrete Res*, 37 (**2007**) 877-885.
20. Apostolopoulos C.A., **Papadakis V.G.**, *J Mater Eng Perform*, 16 (**2007**) 236-241.
21. **Papadakis V.G.**, Efstathiou M.P., Apostolopoulos C.A., *Comput Concrete*, 4 (**2007**) 1-18.
22. Paraskeva C.A., **Papadakis V.G.**, Kanellopoulou D.G., Koutsoukos P.G., Angelopoulos K.C., *Water Environ Res*, 79 (**2007**) 421-429.