



SYNPOL's 3rd Annual Course on "Industrialization of Biotechnological Processes: *basics and real case stories from bench to industry*"

Murcia (Spain), 23rd October 2015

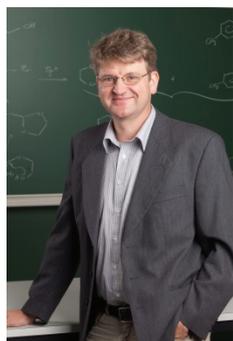
Speaker Profiles



Dr Kevin O'Connor is an associate professor at the School of Biomolecular and Biomedical Science, Head of Microbiology and a Principal Investigator at the Centre for Synthesis and Chemical Biology at UCD (University College Dublin, Ireland). Prof O' Connor has uniquely developed and patented technology for converting plastic waste into a biodegradable plastic. He has filed five patents relating to biopolymer production and product development. He has a strong background in technology development for PHA-production, molecular investigations of PHA-production as well as protein engineering (random and site directed) for biocatalyst development and fundamental understanding of enzyme activity. He has published over 75 international scientific papers. Prof O' Connor is the Chair of the scientific committee for the Biobased Industries Joint Undertaking (BBI JU) and a member of the EC expert group for biobased products. He is a member of the editorial board of Applied Microbiology and Biotechnology.



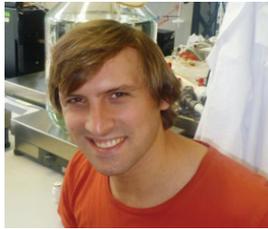
Dr Manuel Cánovas, Full Professor, Dept. of Biochemistry and Molecular Biology, University of Murcia, Spain, is involved in Metabolic Engineering and Systems Biology. He received his Biochemistry degree from the University of Murcia and PhD in Biochemistry from the same University. He moved to the University College of Swansea, where he obtained his PhD in Biochemical Engineering. He also moved to the University of Bath as visiting Lecturer (1986). In 1988 he was appointed as Lecturer permanent position at the Dept. of Biochemistry and Molecular Biology B and Immunology at the University of Murcia (Spain). He was promoted to the habilitation Full Professor position in 2004. He belongs to the Spanish Society of Biochemistry (SBBM) and the board of the Spanish Society of Biotechnology (SEBiot), he is the president of the Spanish Network of Systems Biology (REBS). His current research interests are based on the study of the anaerobic metabolism of *Enterobacteriaceae* such as *E. coli* and *Proteus mirabilis*, the identification and characterization of genes involved in the carnitine metabolism and their connection with central metabolism expression, the Systems biology of *E. coli* and *S. Cerevisiae*, the role of cAMP on the regulation of bacterial metabolism by protein acetylation, the control of transcription and post-translational modification by Lys-acylation and the development of Synthetic Biology Modules for central carbon regulation in *E. coli* as new tools for new biocatalytic processes.



Dr Manfred Zinn heads the research group Bioprocesses and Biomaterials at HES-SO Valais (Sion, Switzerland). He is mainly interested in bioprocesses with prokaryotes and eukaryotes. His core activity is the tailor-made biosynthesis of polyhydroxyalkanoates in bacteria for industrial and medical applications. With respect to bioprocesses he is designing and optimizing diverse cultivation methods (batch, fed-batch, chemostat, two-stage chemostat, biofilm chambers) and is familiar with up-scaling of fermentations from agar plate to pilot scale (200 L). State-of-the-art in process controlling (PAT) has been developed in his group to assess the performance of cells and bioprocesses. Prof Zinn has published more than 55 publications in peer reviewed journals, 9 book chapters and proceedings, and filed 3 patents.



Dipl.-Eng Daniel Egger (Biotechnology Engineer, 2006 at ZHAW Wädenswil, Switzerland and MBE, 2008 at Steinbeis-Hochschule Berlin, Germany) has experience in fermentation of biopolymer producing organisms and bioreactor designs for special application. He is currently Marketing Director and a member of the Executive Board at INFORS HT. After working for a drug research laboratory for several years, he worked at an engineering consultancy, designing and qualifying biotech plants. At INFORS HT, he took over the product management for the bioreactor portfolio in 2010, and in 2011 he became Head of Marketing, assuming the responsibility for the whole product portfolio.



Dr Patrick Sagmeister (with a background in technical chemistry specializing on process engineering) is working as project manager and data scientist at the data science and software company EXPUTECH GmbH, Austria. Aiming at the development of scalable and efficient industrial bioprocesses, his field of research is the science-based optimization, characterization and model-based analysis of industrial up- and downstream processes. Key publications and patents in this field include the development of novel control algorithms based on mass balances, methods for the efficient processing of fermentation data and novel methods for efficient bioprocess characterization.



MSc Ricardo Egea is a Rural Engineer from Polytechnic University of Valencia, having completed his MSc in 1991. After graduation he pursued a career in finance for several years. Later on he completed a full time MBA at the Graduate Business School INSEAD (Fontainebleau, France). After the MBA he went back to engineering joining a small consulting company specialized in food engineering as Project Director. In 1999, he founded BIONET Engineering S.L. (Murcia) as a process engineering consulting, being environmental technologies their core competence at that time. In 2008, he and BIONET started activities in the Biotech field, and in 2011 they decided Biotech Engineering to be their unique activity.



Dr Ruth Ordoñez is a chemical engineer who graduated from Universidad Complutense of Madrid in 2006. Afterwards she continued with Master's degree in Engineering of Industrial Processes in 2008 and completed her PhD work in 2012 achieving *Cum Laude* grade. Her thesis focused on evaluating technical and environmentally different wastewater reclamation technologies to minimize water consumption in papermaking. This work resulted in publishing 10 papers in scientific journals and 7 communications to international congresses. In 2011, Dr Ordoñez joined BIONET Engineering S.L. as process engineer to work in downstream processes for the Biotech industry. She is now responsible of BIONET's downstream pilot plant, in which she develops processes and is responsible for BIONET's membrane filtration systems process engineering.



Dr Marta Tortajada has a diploma in Chemical Engineering and a PhD in Automatics and Systems Engineering. During her doctoral thesis she worked in systems biology, constraint-based modelling and expression and immobilization of glycosidic enzymes. She has worked at BIOPOLIS S.L. since 2003, and is currently responsible of the Microbial Biotechnology Department, developing contract research on isolation, improvement and manufacturing of recombinant proteins, microbial catalysts, active ingredients and key organic compounds such as chemical synthons and microbial polymers for chemical, pharmaceutical and food industries. Dr. Tortajada has published around 20 papers, patents and contributions to international conferences and participated in several public funded projects, related to the obtaining of biodegradable polymers, and the production of building blocks by fermentation, and several national consortia devoted to biofuels.



Dr Elena Puerta-Fernández (Senior Scientist at Abengoa Research) graduated in Pharmacy at the University of Granada (Spain) in 1999. She obtained her PhD in Biochemistry and Molecular Biology at the University of Granada in 2003. 2004, Elena was awarded a MEC fellowship to conduct post-doctoral studies on non-coding RNAs in bacteria under the supervision of Dr. Ronald R. Breaker at the University of Yale. In 2007, she was awarded an I3P contract with the Spanish National Research Council (CSIC) to work on gene regulation of cyanobacteria as an associate professor (collaborating with the Biochemistry Department of the University of Seville). In 2011, she joined the Department of Genetics at the University of Seville as a Research Associate. She has mentored four PhD. Students and is currently the supervisor of two PhD. students. Elena is co-author of 14 publications in prestigious peer-reviewed journals, with more than 25 contributions to national and international scientific meetings. She is also co-inventor of two patents for the development of inhibitor RNA molecules against hepatitis C virus. In January 2013, she joined the biotechnology department of ABENGOA RESEARCH where she is the principal investigator of a project for the industrial production of biofuels.



MSc Steven Verstichel is master in bioscience engineering with a specialization in environmental technology at the State University of Gent (Belgium). He is working for 16 years at OWS (Organic Waste Systems NV, Belgium) and is the head of the Biodegradability, Compostability and Ecotoxicity (BCE) department. He is the author or co-author of several scientific articles on biodegradation and compostability. Within the company he is also responsible for the organisation of European projects.



Dr Christophe Mihalcea graduated in Chemistry at the University of Kassel (Germany) and joined there the Technical Physics Department for his PhD thesis (1998). He then joined AIST in Tsukuba (Japan) developing future generation optical data storage solutions before taking up a position at the hard drive manufacturer Seagate in Pittsburgh (USA) in 2001 to continue R&D in the magnetic data storage industry. Chris joined LanzaTech Inc. in 2007 soon after the foundation of the company and was involved with the development of the commercial gas fermentation technology from the outset. Chris worked in a variety of fields such as media optimization, fermenter technology as well as on fermentation methods and strategies. He furthermore was involved with gas clean-up and conditioning and also developed high productivity CO₂ sequestering strategies using hydrogen as the energy source. Dr Mihalcea leads the fermentation team at LanzaTech where new technologies on varying microbial bases are constantly developed to expand LanzaTech's IP and product portfolio.



Dr José Luis García, primary coordinator of SYNPOL project, has a PhD in Chemistry and Bachelor in Pharmacy from the Complutense University of Madrid (UCM). He has worked as Professor at the UCM and as Head of Research Group in Antibióticos S.A.. He is currently Research Professor at the Biological Research Center (CIB, Madrid) from the Spanish National Research Council (CSIC) where he leads the Environmental Biotechnology group. He has held various positions as manager of Science Policy in the CICYT, as Deputy Director General of Research at the CSIC, and as Advisor in the Ministry of Science and Innovation. He has been President of the Spanish Society of Biotechnology and is currently the National Representative of IDEAS Programme at the EU 7th Framework Programme. His research expertise focuses on various aspects of the fields of biochemistry, genomics and biotechnology with more than 300 publications including articles, books and patents. Prof García has founded two spin-off companies of the CSIC devoted to the analysis of genomes (Lifesequencing S.L.) and genetic diagnosis (Secugen S.L.).



Dr Oliver Drzyzga is Environmental Microbiologist. He received his PhD in Microbiology from the University of Oldenburg (Germany, 1996). He pursued postdoctoral works at the University of Marburg, Germany (1997-1998) and at the University of Groningen, The Netherlands (1999-2000). Then he turned to the University of Bremen (Germany) for preparing the habilitation process in Microbiology. In 2004, he was awarded the *venia legendi* for Microbiology and the German academic title of a "Privatdozent" (Private Lecturer, Associate Professor). From 2005 to 2011, he joined the Complutense University of Madrid (Spain) to lead works in Genetics and Molecular Biology of newly isolated bacteria with capacities to transform and degrade cholesterol and other steroid compounds. Since 2012, he works as Project Manager of the EU FP7 project SYNPOL at the Biological Research Center (CIB-CSIC) in Madrid, Spain. Dr Drzyzga is author of 50 scientific publications and accumulates 21 years of laboratory and 11 years of teaching and supervising experience.