

SYNPOL's 2<sup>nd</sup> Annual Course on **"Biomass & Waste Conversion Technologies: syngas production and biotechnological application"**

Oviedo (Spain), 31<sup>st</sup> October 2014

## Speaker Profiles

---



**Dr Miguel Á. Montes** obtained his degree in Physical Chemistry in 1992, at the University of Oviedo (Spain). 1993 he started his PhD at the Instituto Nacional del Carbón (INCAR) on advanced carbon fibres and composites. During his PhD years, he came familiar with advanced surface characterisation techniques which prompted his interest on the Surface Chemistry of Carbon Materials. After his PhD, he was awarded with a Ramsay Fellowship allowing him to spend 4 years in the group of Prof Robert Young at the Manchester Materials Science Centre (UMIST, UK). He then joined the Environmental Chemistry Department at INCAR and became the Head of it from 2005-2009. His research interests are the production of materials from industrial residues (sewage sludge, steel slags, etc.) and their application for tackling environmental problems. He is still strongly bonded to the Surface Chemistry of Carbon Materials devoting also his efforts to prepare heterogeneous, carbon-based catalysts for several applications. Dr Montes is (co)author of more than 70 papers and one patent.



**Dr Beatriz Fidalgo** is Lecturer in Clean Energy Technology at Cranfield University (UK). She graduated from the University of Santiago de Compostela (Spain), where she received her MSc in Chemical Engineering in 2006. She was awarded her PhD in Energy by the University of Oviedo (Spain) in 2010. She developed her thesis research at the Spanish National Institute of Coal (INCAR-CSIC) on the microwave-assisted CO<sub>2</sub> reforming of methane. She holds experience as postdoctoral researcher in the Energy Group at Imperial College (London, UK), where she worked from 2011 to 2014. Her expertise is in thermochemical and thermocatalytic conversion of conventional and renewable carbon-based fuels. Dr Fidalgo is currently involved in research activities related to biomass thermochemical conversion, integrated biorefinery for biofuels, energy and chemicals, and algae research. She has acted as consultant to the petroleum industry in the field of thermochemical processing of heavy oil fractions and published over twenty publications in prestigious international journals.



**Dr J. Ángel Menéndez** graduated from University of Oviedo, Spain, where he received his MSc in Chemistry and PhD in Chemical Engineering in 1988 and 1994, respectively. He worked as research assistant at the Penn State University, USA, from 1995 to 1996. In 1997, he joined INCAR-CSIC in Oviedo, Spain, where he is currently working as a scientific researcher. His research activity is mainly focused in carbon materials and the use of microwave heating applied to industrial processes, leading various research projects on these fields. He is author and co-author of more than 150 scientific publications including various book chapters and patents. He was a former member of the executive committee of the Spanish Carbon Group (GEC) from 2003 to 2011. Dr Menéndez is founder editor of the *GEC Bulletin* (2005-2014) and cofounder of *Xerolutions S.L.*



**MSc Enrique López** holds an MSc in Organic Chemistry from the University of Murcia (Spain, 1999) and a MBA as Technical Director from the ENAE Business School in Murcia (Spain, 2008). He has been in BIONET Engineering from 2005 holding first a position as project engineer, later as head of the Chemical Engineering Unit and since 2011 as Technical Director. At BIONET he has participated in the design and construction of several plants for the industrial biotech sector, including biofuels, pharma, biomaterials and food industry, being in charge of downstream process design and start-up. Prior to join the company he was working as process engineer in a pharma biotech facility (Bioferma S.A., Murcia) for the production of antibiotics through fermentation (120 m<sup>3</sup>/day capacity). Dr López has a broad real experience in the industrial scale-up of biotech processes, from lab process development to industrial process design, construction, start-up and optimization.



**MSc Daniel Beneroso** has a Diploma in Chemical Engineering (University of Málaga, Spain, 2010). He is PhD candidate in the Department of Chemical Processes in Energy and Environment of INCAR-CSIC. As member of the MCAT research group (Microwaves and Carbons Applied to Technology), his doctoral thesis is related to the use of novel pyrolysis technologies as a mean of producing syngas from organic waste to be further used in biotechnological fermentations. Eng. Beneroso has published around 10 papers and contributions to national and international conferences and participates in the European funded SYNPOL project, whose goal is the production of biopolymers by fermentation of syngas.



**Prof Manfred Zinn** heads the research group Bioresource and Life Technologies 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.



**Prof Alexander Steinbüchel** is Director of the Institute of Molecular Microbiology and Biotechnology (IMMB) of the University of Münster, Germany. He graduated in Biology (Diploma, 1980) and Microbiology (PhD, 1983) at the University of Göttingen, Germany. He is mainly interested in i) Metabolism, biosynthesis and biotechnological production of microbial polymers (polyhydroxyalkanoates, polythioesters, cyanophycin) and microbial lipids (triacylglycerols, wax esters), ii) Biogenesis and structure of bacterial storage compounds, iii) Biotechnological production of methylcitric acid and vanillin, and iv) Microbial degradation of

natural rubber, polyamides and polyesters. Prof Steinbüchel has published more than 350 publications plus 70 review articles, nearly 40 books and is Chief Editor of *Applied Microbiology and Biotechnology* as well as of *AMB Express* and member of a few editorial boards of microbiological and environmental international journals. He is also editor of the book series *Biopolymers* (Wiley-VCH) and *Microbiology Monographs* (Springer).



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 CO<sub>2</sub> 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.

## Chairman & Moderator's Profiles

---



**Prof 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 7<sup>th</sup> 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 20 years of laboratory and 11 years of teaching and supervising experience.