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SYNPOL EU FP7 Project

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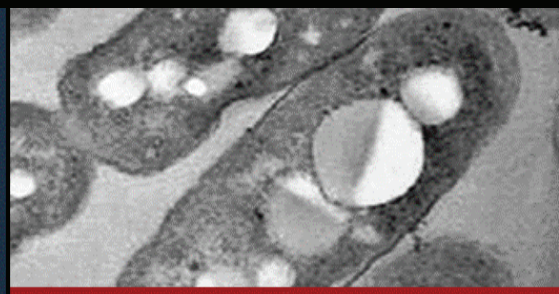

Course objectives

The aim of this course is to provide individuals with an introduction to biomass and waste pyrolysis concepts in industrial settings and their successful implementation for the production of synthesis gas (*syngas*). The course will be lecture-based with visual aids to help the attendees to understand the principles of pyrolysis and syngas processing systems discussed.

The course will be structured into sections based upon the topics presented. The first section ("*Conversion technologies*") will address topics on different furnace reactor designs including aspects such as energy and temperature ratios, feedstock sources, microwave-induced pyrolysis (MIP) techniques, syngas production and gas clean-up design. The second section ("*Biotechnological application*") will deal with actual operational issues of syngas processing systems that also covers issues involved in scale-up to industrial production size furnace reactors and the conversion of syngas to higher added value products such as alcohols and biopolymers.

Discussions about the various downstream uses of syngas as well as the requirement of reducing contaminants present in raw syngas to lower levels prior to its use will be also addressed.

presents

SYNPOL 2nd Annual Course on "Biomass & Waste Conversion Technologies: *syngas production and biotechnological application*"

Instituto Nacional del Carbón (INCAR-CSIC), Oviedo (Spain)

31. October 2014

This project has received funding from the European Union´s Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 311815.

SYNPOL´s Course on "Biomass & Waste Conversion Technologies: *syngas production and biotechnological application*"

Venue

Auditorium of INCAR (Main Building)

C/Francisco Pintado Fe, 26

33011 Oviedo, Spain

Registration

Registration contact before course:
drzyzga@cib.csic.es

Attention: No course fee, but limited access!

08:30 Registration Opening

Course Management

Chairmen: Prof. José Luis García
(CIB-CSIC, Spain)
Dr. J. Ángel Menéndez
(INCAR-CSIC, Spain)

Moderator: Dr. Oliver Drzyzga
(Project Manager; CIB-CSIC, Spain)

Refreshment Breaks

11:15 Coffee Break
(sponsored by SYNPOL)

13:05 Lunch (only free for speakers)

Morning session:
"Conversion technologies"

09:00 Opening Announcements
Prof. José Luis García
(SYNPOL Project Coordinator; CIB-CSIC, Spain)

09:15 Introduction to the pyrolysis of biomass and organic wastes
Dr. Miguel Á. Montes
(INCAR-CSIC, Spain)

09:55 Overview and basics of different thermochemical processes for syngas production
Dr. Beatriz Fidalgo
(Cranfield University, UK)

10:35 KPIs definition in fermentation and downstream experiments for a successful industrial scale-up
Dr. Enrique López
(BIONET INGENIERÍA, Spain)

11:45 Microwave-induced pyrolysis (MIP) of biomass and wastes
Dr. J. Ángel Menéndez
(INCAR-CSIC, Spain)

12:25 Biomass conversion to chars and fuels – strategies, balances & benefits
Dr. Vitaliy L. Budarin
(University of York, UK)

Afternoon session:
"Biotechnological application"

14:30 Syngas production for biotechnological fermentations (SYNPOL project)
MSc. Daniel Beneroso
(INCAR-CSIC, Spain)

15:00 Operations with syngas bioreactors – Process control (SYNPOL)
Prof. Manfred Zinn
(HES-SO, Switzerland)

15:30 Syngas fermentation to biopolymers by autotrophic bacteria (SYNPOL)
Prof. Alexander Steinbüchel
(Münster University, Germany)

16:00 LanzaTechs´ industrial production of chemicals and fuels from syngas
Dr. Sean Simpson
or other LanzaTech representative
(LanzaTech Inc.)

16:30 Course evaluation & Learning outcomes survey
Prof. José Luis García
(SYNPOL Project Coordinator; CIB-CSIC, Spain)

16:45 Closing of the course
(and deliver of assistance certificates)