September, 3rd – 5th| 2013
Vienna | Austria

I|C|P|S 13
International Conference on Polygeneration Strategies

PROGRAM

www.icps-conference.eu

TOPICS

- Gasification
- Gas Treatment
- Syngas Application
- Modelling and Simulation

CHARGES

Regular:	€ 450,--
Students:	€ 350,--

SCIENTIFIC COMMITTEE

Hermann Hofbauer, *Vienna University of Technology*
Martin Kaltschmitt, *Hamburg University of Technology*
Dr. Fabrizio Scala, *Italian National Council for Research*
Prof. Dr. Guangwen Xu, *Chinese Academy of Sciences*
Prof. Dr. Jürgen Karl, *Friedrich-Alexander-University*
Dr. David Serrano, *Madrid Institute for Advanced Studies*
Dr. Reinhard Rauch, *Bioenergy2020+*
Prof. Dr. Christoph Pfeifer, *University of Natural Resources and Life Sciences, Vienna*
Prof. Dr. Tobias Pröll, *University of Natural Resources and Life Sciences, Vienna*

AIM OF THE CONFERENCE

Biomass gasification is a key technology for a high efficient biomass utilisation in the future. All different types of energy currently used within our energy system can be provided by the conversion of solid biomass into syngas: heat, electricity and biofuels. Therefore such polygeneration systems have become more and more important within energy policy and industry in recent years. This is the reason why this topic has been discussed on several conferences. But slowly it is realised that for economic and environmental reasons as well as due to limited biomass resources such polygeneration systems could be much more promising if they are part of integrated biorefineries. Such biorefineries are characterised by a wide range of different biomass feedstock as well as a broad variety of different products to be used as a raw material as well as an energy carrier.

Against this background the main aim of the conference is it to present the current state-of-the-art of syngas production from different biomass feedstock and in various capacities, the syngas cleaning and syngas utilisation for the provision of e.g. biofuels and bulk chemicals. Additionally ideas and concepts of such integrated biorefinieries are presented, discussed and assessed. Furthermore a platform for the exchange of information, results and experiences is offered. Therefore researchers as well as industrial representatives are invited to participate within this conference.

ADDRESS

Vienna University of Technology
Karlsplatz 13
1040 Wien

MAP

CONFERENCE VENUE – VIENNA UNIVERSITY OF TECHNOLOGY

Vienna, the capital of Austria, lies in the heart of Europe. It is one of Europe's most fascinating cities with a rich history, countless cultural attractions, excellent infrastructure, and reasonable living costs. In 2011, Vienna was rated as the world's most livable city for the third year in a row.
The Vienna University of Technology (TU Vienna) is located in the centre of Vienna. Founded in 1815, TU Vienna has a long tradition of being at the leading edge of scientific c research and education. TU Vienna is among the most successful technical universities in Europe and is Austria's largest scientific - technical research and educational institution.

RECEPTION BY THE MAYOR OF THE CITY OF VIENNA

The Mayor of Vienna will host the conference attendees at a typical Viennese Vine Tavern, a so called "Heurigen", in the suburbs of Vienna on Tuesday evening.

Event Address:
"Fuhrgassl Huber" - Neustift am Walde 68 - 1190 Vienna

PROGRAMME TUESDAY, 3rd September 2013

08:00	**Registration**	Organization committee	
09:00	**Initial welcome and Introduction** **IEA Bioenergy Task 33 - Overview about industrial biomass gasification plants** **4th international Symposium on Gasification and its Applications - iSGa-4 - Vienna 2014**	Hofbauer H., Rauch R., Xu G.	
10:00	**Coffee break**		
10:30	**GASIFICATION AND PYROLYSIS SESSION**	introduction by the chairman	
10:40	**CURRENT SCIENTIFIC RESULTS AS BASIS FOR DUAL FLUID TECHNOLOGY DEVELOPMENT**	Schmid J. C.	Vienna University of Technology, Institute of Chemical Engineering – Future Energy Technology (Austria)
11:00	**GASIFICATION OF STRAW - INVESTIGATIONS ON THE CARBON DEGRADATION AND ASH MELTING BEHAVIOR**	Hofmann A., Bozic D.	Department of Environmental-, Process- and Energy Engineering, Management Center Innsbruck (Austria)
11:20	**GASIFICATION CONCEPT TESTING FOR DUAL FLUIDIZED-BED BASED SNG PROCESS**	Tuomi S., Kurkela E.	VTT Technical Research Centre of Finland (Finnland)
11:40	**INTEGRATED FAST PYROLYSIS OF BIOMASS - FROM LABORATORY TO DEMONSTRATION SCALE**	Lindfors C., Oasmaa A.	VTT Technical Research Centre of Finland (Finnland)
12:00	**INTERMEDIATE BATCH PYROLYSIS OF LIGNIN FOR BIO-PRODUCTS AND ENERGY**	Nistri R., Rizzo A.M.	RE-CORD / Department of Industrial Engineering - University of Florence (Italy)
12:20	**ONLINE DETECTION OF H2O AND CO IN THE HUMID RAW GAS FROM THE GASIFIER USING TERAHERTZ SPECTROSCOPY**	Bidgoli H., Cherednichenko S.	Department of Energy and Environment, Chalmers University of Technology (Sweden)
12:40	**Lunch**		
14:00	**GASIFICATION AND PYROLYSIS SESSION**	introduction by the chairman	
14:10	**SOME RELEVANT ASPECTS IN FLUIDIZED BED GASIFICATION OF BIOMASS**	Ruoppolo G., Chirone R.	CNR - Istituto di Ricerche sulla Combustione (Italy)
14:30	**NUMERICAL CFD SIMULATIONS FOR OPTIMIZING A BIOMASS GASIFIER REACTOR DESIGN AND OPERATING CONDITIONS**	George E.	CRIGEN (France)
14:50	**EXPERIMENTAL INVESTIGATION OF SORPTION ENHANCED REFORMING WITH LIMESTONE FROM IRON PRODUCTION**	Diem, R., Müller S.	Vienna University of Technology, Institute of Chemical Engineering – Future Energy Technology (Austria)
15:10	**PARAMETRIC INVESTIGATION OF AN ALLOTHERMAL BIOMASS GASIFICATION PROCESS COUPLED WITH A WATER-GAS-SHIFT REACTOR USING CALCIUM OXIDE**	Armbrust N., Poboß N.	Institute of Combustion and Power Plant Technology (IFK), University of Stuttgart (Germany)
15:30	**Coffee break**		
16:00	**GAS TREATMENT SESSION**	introduction by the chairman	
16:10	**CHARACTERIZATION OF NO REDUCTION BY BIOMASS TAR IN MICRO FLUIDIZED BED**	Xu G., Yang S.	State Key Laboratory of Multi-phase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences (China)
16:30	**USING A MANGANESE ORE AS CATALYST FOR UPGRADING BIOMASS DERIVED GAS**	Marinkovic J., Berguerand N.	Department of Energy and Environment, Chalmers University of Technology (Sweden)
16:50	**AN EXPERIMENTAL APPROACH FOR THE PRODUCTION OF PURE HYDROGEN BASED ON WOOD GASIFICATION**	Fail S., Rauch R.	Vienna University of Technology, Institute of Chemical Engineering – Future Energy Technology (Austria)
19:30	**RECEPTION BY THE MAYOR OF THE CITY OF VIENNA AT HEURIGEN RESTAURANT „FUHRGASSL HUBER“**	Organization committee	

GASIFICATION

WEDNESDAY, 4th September 2013

	08:00	**Registration**	Organization committee	
SYNGAS APPLICATION	09:00	**SYNGAS APPLICATION SESSION**	introduction by the chairman	
	09:10	**POSSIBLE ROLE OF A BIOREFINERY´S SYNGAS PLATFORM IN A BIOBASED ECONOMY – ASSESSMENT IN IEA BIOENERGY TASK 42 "BIOREFINERY**	Jungmeier G., Van Ree R.	Joanneum Research (AUT)
	09:30	**PRODUCTION OF MIXED ALCOHOLS FROM BIOMASS DERIVED SYNTHESIS GAS USING SULFIDIZED MOLYBDENUM CATALYST**	Weber G., Rauch R.	Bioenergy 2020+ GmbH (AUT)
	09:50	**POSSIBILITIES FOR A FLEXIBLE OPERATION OF A FIXED BED METHANATION - RESULTS FROM DYNAMIC SIMULATION**	Matthischke S., Rönsch S.	DBFZ – Deutsches Biomasseforschungszentrum (Germany)
	10:10	**WOODFIRE – INVESTIGATION IN THE REPLACEMENT OF NATURAL GAS BY RAW PRODUCER GAS IN INDUSTRIAL HIGH-TEMPERATURE APPLICATIONS**	Stauder K., Huber M.B.	Department of Environmental-, Process- and Energy Engineering, Management Center Innsbruck (AUT)
	10:30	**Coffee break**		
	11:05	**HYDROGEN PRODUCTION BASED ON TRADITIONAL DUAL FLUID GASIFICATION VERSUS HYDROGEN FROM SORPTION ENHANCED REFORMING**	Müller S., Pröll T.	Vienna University of Technology, Institute of Chemical Engineering – Future Energy Technology (AUT)
	11:25	**POLYGENERATION OF SNG, HEAT AND POWER BASED ON BIOMASS GASIFICATION AND WATER ELECTROLYSIS - CONCEPTS AND THEIR ASSESSMENT**	Wagner H, Wulf C.	Institute of Environmental Technology and Energy Economics, Hamburg University of Technology (TUHH) (Germany)
	11:55	**POSTER SESSION**		
	12:35	**Lunch**		
MODELLING & SIMULATION	13:45	**MODELLING AND SIMULATION SESSION**	introduction by the chairman	
	13:55	**DEVELOPMENT OF A MODELLING TOOL REPRESENTING BIOMASS GASIFICATION IN A DUAL FLUIDISED BED UNIT**	Noubli H., Valin S.	Le Laboratoire d'Innovation pour les Technologies des Energies Nouvelles et les nanomatériaux (France)
	14:15	**SIMULATION-BASED CONCEPT STUDY OF AN INNOVATIVE SMALL-SCALE BIOMASS-TO-SNG PLANT WITH EXCESS POWER INTEGRATION**	Buttler A., Fendt S.	Institute for Energy Systems, Technische Universität München (Germany)
	14:35	**HIGH PURITY HYDROGEN FROM BIOMASS GASIFICATION IN DUAL FLUIDIZED BED SYSTEM: ASPEN PLUS PROCESS SIMULATION**	Muresan M., Hofbauer H.	Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering (Romania)
	14:55	**MATCHING FLUCTUATIONS IN ELECTRICITY FROM RENEWABLES - AN EVALUATION OF FEASIBILITY FOR BIO-SYNGAS UPGRADING TO SNG**	Walspurger S., Dijkstra W.	ECN, Energy research Centre of the Netherlands (Netherlands)
	15:15	**Coffee break**		
	15:40	**MODELLING AND SIMULATION SESSION**		
	15:50	**KNOCK PREDICTION IN PRODUCER GAS FUELLED SI ENGINES**	Shivapuji A., Dasappa S.	Research Scholar, Center for Sustainable Technologies, Indian Institute of Science (India)
	16:10	**SCALING OF BIOMASS GASIFICATION REACTOR USING CFD SIMULATION**	Thapa R.-K., Pfeifer C.	Department of Process Energy and Environmental Technology, Telemark University College (Norway)
	16:30	**COMPENDIUM OF THE INTERNATIONAL CONFERENCE ON POLYGENERATION STRATEGIES13**		

EXCURSION (two alternative tours are offered)

FULL DAY EXCURSION (TOUR 1) 8:00 - 18:00

Excursion to the BIOENERGY 2020+ RESEARCH FACILITIES INCLUDING PILOT- AND DEMONSTRATION PLANTS IN GÜSSING AND OBERWART (BURGENLAND)

Timetable

08:00 – 10:30 Transfer to the plant site
10:30 – 12:00 Visitation of the CHP Oberwart
12:00 – 13:00 Lunch
13:00 – 15:30 Visitation of the CHP Güssing (Technikum, BioFT, BioSNG)
15:30 – 18:00 Transfer back to Vienna City Center via Vienna International Airport (if requested)

In autumn 2006, the scientific proponents of the Knet-Networks of RENET Austria and the Kplus-Centre Austrian Bioenergy Centre, agreed upon a joint submission within the framework of the newly formed COMET Programme. In October 2007, concrete measures for the unification of both predecessor organizations could begin to form the K1-Centre BIOENERGY2020+.
The purpose of the Competence Centre is the research, development and demonstration in the "Energetic use of Biomass" sector.
The research performance and services thereby cover the entire value-added chain. An integrated part of this excursion is a visitation of the biomass gasification plants in Güssing and Oberwart.
Please note that the research centre in Güssing is about 2 ½ hour away from Vienna city center and traffic can potentially delay the arrival of the bus in Vienna.

HALF DAY EXCURSION (TOUR 2) 9:00 - 14:00

Excursion to AUSTRIA´S LARGEST FOREST BIOMASS POWER STATION BY WIEN ENERGIE IN SIMMERING

Timetable

08:00 – 09:00 Transfer to the plant site
09:00 - 12:00 Visitation of Vienna Biomass Plant
12:00 - 13:00 Lunch
13:00 - 14:00 Transfer back to Vienna City Center via Vienna International Airport (if requested)

On 20 October 2006, Europe's largest forest biomass power station was fully commissioned in Simmering. € 52 million was invested in producing environmentally friendly energy, stimulating economic growth and safeguarding jobs. This power station supplies around 48,000 households in Vienna with electricity and 12,000 with district heating.
The forest biomass power station, located in Vienna's Simmering District, converts quality wood into electricity and heating, without having a negative impact on nearby forest recreational areas. Currently, around 1.5 % of annual energy needs are met by using biomass to produce energy. A target has been set to increase the share of electricity produced from renewable energy to 78.1 % by 2010. The biomass power station is an important part of efforts to achieve this objective. Compared to a conventional thermal power station, the biomass power station in Simmering emits around 144,000 fewer tonnes of carbon dioxide each year.

EXCURSION IMPRESSIONS

Oberwart

Güssing

Vienna Biomass Plant

Test facility at VUT
(construction in progress)

There is the possibility to visit the laboratory at Vienna University of Technology - Austria's largest technical scientific research and educational institution – at Getreidemarkt 9, to get a better idea of the application-oriented research work of the Institute of Chemical Engineering.
A novel 100 kW dual fluid reactor system for solid fuel conversion is currently under construction and can be inspected. Cold flow models for gasification and chemical looping applications demonstrate the fluid dynamic feasibility of the proposed reactor concepts.
This opportunity will be available in the afternoon of Thursday September 5th – 14:00 – 19:00 - and on request during the conference.

REGISTRATION & FEES

Regular:	€ 450,--
Students:	€ 350,--

The fee includes the participation in all lectures and presentations, coffee breaks, and lunch on both conference days (3. – 4. 9. 2013) as well as a conference package (proceedings, programme, etc.) and access to the internal area of the International Conference of Polygeneration Strategies 13 webpage. In this area you will have access to the electronic (pdf) versions of the presentations and other material after the event.
Social programme and technical excursions are additional events and are not included in the registration fee.
Please note that the registration deadline is August 20th 2013.
Registration after this deadline is only possible at the conference desk. The onsite conference fee is € 500,–.

INFORMATION

Vienna University of Technology
Institute of Chemical Engineering
Department of Chemical Process Engineering and Fluidization
ICPS 13 Organization Committee
Getreidemarkt 9/166
1060 Vienna
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Find more Information at **www.icps-conference.eu**

Veranstalter:

TU WIEN TECHNISCHE UNIVERSITÄT WIEN Vienna University of Technology

bioenergy2020+

Stadt Wien
Wien ist anders.