

Workshop of IEA Bioenergy Task 33: Thermal Gasification of Biomass Gasification and Alternative Fuels Development

Thursday, 14 April 2011

Head of the Avon – North, Copthorne Hotel, Commodore,
449 Memorial Avenue, Christchurch, New Zealand (www.commodore.net.nz)

Background

The First Semi-Annual Task Meeting 2011 of IEA Bioenergy Task 33 will be held in Christchurch on 12 to 14 April. Most of the country representatives from Europe, North America, New Zealand and Japan will attend the meeting. The first two days are only for the country members with one day meeting and one day site visit. On 14 April, there will be a workshop on Gasification and Alternative Fuels Development, which is open to all interested.

Biomass gasification has been attracting more and more interests in research, development and commercialisation worldwide. This is driven not only by the concern for a sustainable environment, but also by the diverse products that gasification gas can produce including heat, electricity, syngas, hydrogen and Fischer-Tropsch (FT) liquid fuels.

Objectives

- to overview the current international R&D status of biomass gasification;
- to update the R&D activities on gasification and alternative fuels in New Zealand; and
- to provide technical information on gasification of various feedstocks and their blend including woody biomass, coal and sewage biosolid.

Other Information

Invited speakers are active experts in biomass gasification and alternative fuels development from Australia, Austria, USA and NZ. This flyer includes the workshop programme, primary speakers' biography and registration form.

Registration is free and closed on 4 April.

The hotel offers complimentary shuttle transfer to and from the Christchurch Airport and free parking.



PROGRAMME

8:30	Registration, tea
8:55	Welcome, Dr. Shusheng Pang Professor and Director, Wood Technology Research Centre, University of Canterbury, New Zealand
9:00	Dr. Richard Bain Principal Engineer, National Bioenergy Center, National Renewable Energy Laboratory, USA Biomass Gasification R&D Activities in North America
9:45	Dr. John Sanderson Principal Environmental Engineer, Earth Systems, Australia Biomass Gasification in Australia
10:30	Tea break
11:00	Dr. Reinhard Rauch Head of Project Group, Institute of Chemical Engineering Vienna University of Technology, Austria Conversion of Biomass Over Steam Gasification to Biofuels and Chemicals - Actual Status of Work
11.45	Mr. Doug Williams Managing Director, Fluidyne Co., New Zealand The Enigma of Gasification (Cinderella or Princess)
12:30	Lunch
13:30	Professor Shusheng Pang R&D Activities on Biomass Gasification for Syngas and Liquid Fuels at the University of Canterbury
14:00	Dr. Tana Levi Technology Operations Manager, CRL Energy Ltd., New Zealand Thermo-chemical Conversion R&D Activities at CRL Energy including the Gasification of Coal and Biomass for Purified Hydrogen Production
14:30	Rick Dobbs Technical Manager of UCG, Solid Energy, New Zealand Underground Coal Gasification (UCG) - A Transformational Technology
15:00	Tea break
15:30	Dr. Woei-Lean Saw Research Fellow, Department of Chemical and Process Engineering, University of Canterbury, New Zealand Production of Hydrogen-Rich Syngas from Steam Gasification of Blend of Biosolids and Wood using a Dual Fluidised Bed Gasifier
16:00	Chris Penniall PhD student, Department of Chemical and Process Engineering, University of Canterbury, New Zealand Reactor and Catalyst Development for Fischer-Tropsch Synthesis Applicable to Small Scale Wood Processing Plants in New Zealand
16:30	End

PRIMARY SPEAKERS' BIOGRAPHY

Dr Richard Bain is a Principal Engineer in the National Bioenergy Center at the National Renewable Energy Laboratory (NREL) in Golden, Colorado. He has been at NREL since 1990, and has extensive experience in the thermal conversion of biomass, municipal wastes, coal, and petroleum. He is a lead researcher in the area of production of transportation fuels and hydrogen via biomass thermochemical conversion; technical advisor to DOE and USDA on biofuels demonstrations; and Task Leader for the IEA Bioenergy Annex Thermal Gasification of BiomassTask.

Dr John Sanderson holds the position of Principal Environmental Engineer with Earth Systems in Melbourne. In this role, John provides specialist technical and engineering consulting on biomass and bioenergy technologies and projects, including the emerging field of biochar, and conducts greenhouse gas and energy audits to comply with the relevant regulations and standards. John has extensive experience in biomass combustion and gasification systems, having developed and commercialised the small 15kWe Tasman gasifier for remote/developing regions, conducted trials on the thermal conversion of sewage sludge and brown coal under hydrothermal and supercritical water gasification reaction conditions and undertaken a feasibility study on the prospect of a bioenergy plant utilising burnt wood residues for the Marysville region. Most recently, he is leading the Proof-of-Concept technology development team in the development of a mobile device for producing biochar from woody weeds, funded under the Victorian Government's Smart SME's MVP program.

Dr. Reinhard Rauch is the Head of the R&D group of synthesis biofuels in the Institute of Chemical Engineering, Vienna University of Technology. He has been as a senior researcher working on Future Energy Technology and Bioenergy 2020+. He has expertise in biomass steam gasification with dual fluidised bed gasifier; analytics and measurements of the product gas; and usage of the gas from biomass steam gasification for synthesis gas applications (Fischer Tropsch, Methanation). He is the Austrian representative to the IEA Bioenergy Thermal Gasification of Biomass Task.

Doug Williams is the Managing Director of Fluidyne Gasification, New Zealand. Since 1976, he has been involved with the development of Fluidyne gasification systems (15kWe- 2MWe) for engine powered electrical generation, and process heat. The emphasis of this work has been to produce a gas free of condensable hydrocarbons, overcoming the issues of gas cleaning and toxic waste disposal. He has worked with many University groups studying gasification, and is currently supporting the establishment of facilities at Ulster University, Northern Ireland. He continues to work in retirement with commercial groups wishing to implement gasification, and selected student mentoring assisting research into biomass carbons. Most of this work has been conducted outside of New Zealand.

Dr. Shusheng Pang is a Professor of Chemical and Process Engineering and Director of Wood Technology Research Centre, University of Canterbury. He is also a Fellow of the International Academy of Wood Science, a board member of the Bioenergy Association of New Zealand, and the NZ representative to the IEA Bioenergy Thermal Gasification of Biomass Task. He has developed strong interests in thermo-chemical conversion of biomass, bio-solids and blended biomass with coal to energy and liquid fuels. He is currently leading a 6-year (2008-2014) research programme on 'biomass to hydrogen-rich syngas and liquid fuels' which is funded by both the New Zealand Foundation for Research, Science and Technology and industry. The research team led by Professor Pang has developed and constructed a number of research facilities including a 100 kW dual fluidised bed gasifier, a transparent cold fluidised bed gasifier model, a bench scale pyrolysis reactor, a pilot scale pyrolysis reactor and a micro-channel Fischer-Tropsch reactor.

Dr Tana Levi has been with CRL Energy Ltd. for 4 years and manages the technology group as well as leading the hydrogen and clean energy programme. The research projects Tana is involved range from co-gasification and combustion system design and development to gas membrane separation technologies and high temperature corrosion and metal dusting. She is a Chartered Engineer and a Chartered Chemist. She has over 20 years experience working in industry specializing in high temperature corrosion in industrial environments. She also worked on materials performance in entrained gasifier environments at the European Unions Joint Research Centre in The Netherlands, managed commercial projects looking at materials for HRSG in IGCC plant and FGD systems in the Ministry of Energy in Madrid, Spain, and managed the high temperature materials team at Industrial Research Ltd. New Zealand.

REGISTRATION

Registration fee: free

Registration deadline: 4 April 2011

Email to:

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ATTENDEE DETAILS

First Name: _____ Surname: _____

Position: _____

Company/Organisation: _____

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Special food required: _____