



DIBANET Summer School

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DIBANET Summer School

Rio de Janeiro, Brazil

13-16 December 2010

Federal University of Rio de Janeiro (UFRJ) hosted a one week summer school in Brazil from December 13th to 16th 2010. The DIBANET Summer School, aimed at providing in-depth information on technologies for the sustainable production of second generation diesel fuels. The School was designed for postgraduate students (Masters and PhD) in Chemistry and Chemical Engineering, typically in their first or second years of research, who wanted to engage in the examination of technologies for the sustainable production of second generation diesel fuels, chemicals and biochars from the wastes, residues and non-food crops of Latin America and Europe. The main target groups were contacted via the consortium own network, relevant forums, newsletters and direct emails.



The Summer School took place over four days. Topics of the summer school were covering both hydrolysis and thermal processing for second generation biofuel production. All participants taking part on the course received a certificate of participation.



The location and timing of the first Networking Day and Summer School has been changed from M35 to M18. The D&E activities were implemented in the second year of the project within the modified timeframe and the originally planned resources. The second periodic report therefore contains staff and other costs not planned in the period originally. In the third period these costs will not occur again.





Lecturers of the course included key players in scientific communities and industry from Europe and Latin America:

- Prof. Graciela Baronetti, University of Buenos Aires, Argentina,
- Prof. Tony V. Bridgwater, Aston University, the United Kingdom,
- Dr. Buana Girisuta, University of Limerick, Ireland,
- Prof. Michael H. B. Hayes, University of Limerick, Ireland,
- Mr. Daniel Hayes, University of Limerick, Ireland,
- Mr. Daniel Nowakowski, Aston University, the United Kingdom,
- Dr. Angela Rocha, Federal University of Rio de Janeiro, Brazil,

- Mr. Aparecido Alves, Centre of Sugarcane Technology, Brazil,
- Mr. Sergio Fabián Sein, YPF, Argentina,
- Ms. Ana Maria Ruz, Fundación Chile,
- Dr. Eleni F. Iliopoulou, CERTH, Greece,
- Dr. Angelos A. Lappas, CERTH, Greece,
- Dr. Etelvino Novotny, EMBRAPA, Brazil.

The detailed agenda can be found on the next page.

Website: http://www.dibanet.org/summer_school.php



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13th-16th December 2010

Federal University of Rio de Janeiro

AGENDA

- 13:00 - 13:30 Registration
- 13:30 – 14:00 **Opening and Welcome**
Prof. Luiz Pinguelli Rosa – COPPE’s Director, Federal University of Rio de Janeiro (UFRJ), Brazil
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- 15:45 - 16:00 **Introduction to Biorefinery concept**
Mr. Daniel Hayes, University of Limerick, Ireland
- 15:45 - 16:00 **Introduction to the DIBANET concept**
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- 15:45 - 16:00 **Future importance of residual biomass in the energy matrix**
Mr. Sergio Fabián Sein, YPF, Argentina
- 15:45 - 16:00 **European feedstocks**
Mr. Daniel Hayes, University of Limerick, Ireland
- 15:45 - 16:00 **Latin America feedstocks**
Ms. Magale Rambo, University of Campinas, Brazil
- 15:45 - 16:00 **Sugercane bagasse & trash as feedstock for biofuels**
Mr. Aparecido Alves, Centre of Sugarcane Technology, Brazil
- 15:45 - 16:00 **Sustainability considerations for biofuel feedstocks**
Ms. Ana Maria Ruz, Fundación Chile, Chile
- 16:00 - 16:15 **Biofuels and biomass in the Midwest**
Mr. Chet Culver, Governor of Iowa, USA
- 16:15 - 16:30 **Chemical Engineering Programme at COPPE**
Prof. Luiz Pinguelli Rosa – COPPE’s Director, UFRJ, Brazil
- 16:30 - 18:30 **Poster session**



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DAY 2: TUESDAY

MORNING

INTRODUCTION TO BIOMASS HYDROLYSIS

- 08.30 – 09:15 **Carbohydrate Chemistry**
Prof. Michael H. B. Hayes, University of Limerick
- 09:15 – 09:30 Break
- 09:30 – 10:15 **Important components of biomass for acid hydrolysis**
Prof. Michael H. B. Hayes, University of Limerick
- 10:15 – 10:45 Coffee break
- 10:45 – 11:30 **Conventional analytical methods for biomass analysis**
Mr. Daniel Hayes, University of Limerick
- 11:30 – 11:40 Break
- 11:40 – 12:15 **Rapid analytical methods for biomass analysis (continues)**
Mr. Daniel Hayes, University of Limerick
- 12:15 – 13:15 Lunch

AFTERNOON

THERMAL PROCESSING

- 13:30 – 14:15 **Introduction to biofuels and candidate fuels**
Prof. Tony V. Bridgwater, Aston University
- 14:15 – 14:30 Break
- 14:30 – 15:15 **Introduction to thermal processing of biomass**
Prof. Tony V. Bridgwater, Aston University
- 15:15 – 15:30 Break
- 15:30 – 16:15 **Introduction to biomass analysis for thermal processing**
Mr. Daniel Nowakowski, Aston University





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DAY 3: WEDNESDAY

MORNING

ACID HYDROLYSIS

- 08.30 – 09:15 **Introduction to acid hydrolysis process**
Dr. Buana Girisuta, University of Limerick
- 09:15 – 09:30 Break
- 09:30 – 10:15 **Pre-treatment of biomass for acid hydrolysis**
Ms. Karla Dussan, University of Limerick
- 10:15 – 10:45 Coffee break
- 10:45 – 11:30 **Kinetics of Acid hydrolysis, derivatives**
Dr. Buana Girisuta, University of Limerick
- 11:30 – 11:40 Break
- 11:40 – 12:15 **Continuous production of levulinic acid**
Dr. Buana Girisuta, University of Limerick
- 12:15 – 13:15 Lunch

AFTERNOON

THERMAL PROCESSING

- 13:30 – 14:15 **Fast Pyrolysis**
Prof. Tony A. V. Bridgwater, Aston University
- 14:15 – 14:30 Break
- 14:30 – 15:15 **Characterisation of pyrolysis products**
Dr. Daniel Nowakowski, Aston University
- 15:15 – 15:30 Break
- 15:30 – 16:15 **Catalysis in thermal conversion processes**
Dr. Eleni F. Iliopoulou, CERTH





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DAY 4: THURSDAY

MORNING

PRODUCTS OF ACID HYDROLYSIS

- 08:30 – 09:15 **Applications of levulinic acid derivatives**
Dr. Buana Girisuta, University of Limerick
- 09:15 – 09:30 Break
- 09:30 – 10:15 **Solid acids and catalysis**
Dr. Angela Rocha, Federal University of Rio de Janeiro
Prof. Graciela Baronetti, University of Buenos Aires
- 10:15 – 10:45 Coffee break
- 10:45 – 11:30 **Upgrading of acid hydrolysis products: Esterification**
Dr. Angela Rocha, Federal University of Rio de Janeiro
- 11:30 – 11:40 Break
- 11:40 – 12:15 **Catalytic pyrolysis**
Dr. Eleni F. Iliopoulou, CERTH
- 12:15 – 13:15 Lunch

AFTERNOON

THERMAL PROCESSING

- 13:30 – 14:15 **Upgrading by catalytic cracking**
Dr. Angelos A. Lappas, CERTH
- 14:15 – 14:30 Break
- 14:30 – 15:15 **Biochar from Pyrolysis**
Prof. Michael H. B.Hayes, University of Limerick
Dr. Etelvino Novotny, EMBRAPA
- 15:15 – 15:30 Break
- 15:30 – 15:45 **Closing remarks**
Prof. Michael H. B.Hayes, University of Limerick
- 16:30 – 21:30 NETWORKING PARTY**

