



DIBANET E-Learning Course

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DIBANET E-learning

<http://www.dibanet.org/elearning.php>

The DIBANET project offers two e-learning courses on diesel production from wastes and residues. The courses are built on the DIBANET Summer School structure and consist of 5-5 modules on the hydrolysis as well as on thermal processing of biomass for second generation biofuel production. Each module includes chapters that are comprehensive units themselves. The chapters are prepared by professors and industry players from both Europe and Latin America:

- Mr. Aparecido Alves, Centre of Sugarcane Technology, Brazil
- Prof. Graciela Baronetti, University of Buenos Aires, Argentina
- Prof. Tony V. Bridgwater, Aston University, the United Kingdom
- Prof. Marcia Miguel Castro Ferreira, University of Campinas, Brazil
- Ms. Karla Dussan, University of Limerick, Ireland
- Dr. Buana Girisuta, University of Limerick, Ireland
- Prof. Michael H. B. Hayes, University of Limerick, Ireland
- Mr. Daniel Hayes, University of Limerick, Ireland
- Dr. Eleni F. Iliopoulou, CERTH, Greece
- Dr. Angelos A. Lappas, CERTH, Greece
- Dr. Etelvino Novotny, EMBRAPA, Brazil
- Mr. Daniel Nowakowski, Aston University, the United Kingdom
- Ms. Magale Rambo, University of Campinas, Brazil
- Dr. Angela Rocha, Federal University of Rio de Janeiro, Brazil
- Ms. Ana Maria Ruz, Fundacion Chile
- Mr. Sergio Fabián Sein, YPF, Argentina

The e-learning was prepared with Articulate software that makes it easier to access the e-learning materials by any type of Internet browsers. Articulate is a ppt based program that makes it possible to add flash animations, attachment as well as narration to the chapters. Each chapter has been prepared based on the Manual, Presentation template and Presentation explanation template prepared by Geonardo Ltd to keep consistency and harmony among the chapters.



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The structure of the courses is presented on the following pages:



Course structures

Course 1: Thermal processing of biomass for second generation biofuel production

Introduction to DIBANET

- ◆ [Chapter 1: Introduction to DIBANET concept](#)
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- ◆ [Chapter 2: Introduction to biorefinery concept](#)
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- ◆ [Chapter 3: Importance of biomass in the energy matrix](#)
Mr. Sergio Fabian Sein, YPF, Argentina

Pyrolysis

- ◆ [Chapter 1: Biofuels](#)
Prof. Tony Bridgwater, Aston University, the United Kingdom
- ◆ [Chapter 2: Biomass Slow Pyrolysis](#)
Prof. Tony Bridgwater, Aston University, the United Kingdom
- ◆ [Chapter 3: Thermal biomass conversion by gasification technology](#)
Prof. Tony Bridgwater, Aston University, the United Kingdom

Fast pyrolysis

- ◆ [Chapter 1: Biomass pyrolysis](#)
Prof. Tony Bridgwater, Aston University, the United Kingdom
- ◆ [Chapter 2: Biomass Fast Pyrolysis Opportunities](#)
Prof. Tony Bridgwater, Aston University, the United Kingdom
- ◆ [Chapter 3: Biomass Catalytic Pyrolysis](#)
Dr. Eleni F. Iliopoulou, CERTH, Greece

Upgrading of pyrolysis products

- ◆ [Chapter 1: Upgrading biomass fast pyrolysis liquids](#)
Prof. Tony Bridgwater, Aston University, the United Kingdom
- ◆ [Chapter 2: Upgrading of acid hydrolysis products: esterification](#)
Dr. Angela Rocha, Federal University of Rio de Janeiro, Brazil
- ◆ [Chapter 3: Upgrading by catalytic cracking](#)
Dr. Angelos A. Lappas, CERTH, Greece

Assessment of diesel miscible biofuels produced

- ◆ [Chapter 1: Analysis of DMBs produced.](#)
Mr. Sergio Fabian Sein, YPF, Argentina



Course 2: Hydrolysis of biomass for second generation biofuel production

Introduction to DIBANET

- ◆ [Chapter 1: Introduction to DIBANET concept](#)
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- ◆ [Chapter 2: Introduction to biorefinery concept](#)
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- ◆ [Chapter 3: Importance of biomass in the energy matrix](#)
Mr. Sergio Fabian Sein, YPF, Argentina

Feedstocks for diesel miscible biofuel and platform chemical production

- ◆ [Chapter 1: Carbohydrate chemistry: important components for acid hydrolysis](#)
Prof. Michael H. B. Hayes, University of Limerick, Ireland
- ◆ [Chapter 2: Feedstocks of Latin America](#)
Prof. Marcia Miguel Castro Ferreira and Magale Rambo, University of Campinas, Brazil
- ◆ [Chapter 3: European biorefining feedstocks](#)
Dr. Daniel Hayes, University of Limerick, Ireland
- ◆ [Chapter 4: Conventional analytical methods for biomass analysis](#)
Dr. Daniel Hayes, University of Limerick, Ireland
- ◆ [Chapter 5: Rapid analytical methods for biomass analysis: NIR](#)
Dr. Daniel Hayes, University of Limerick, Ireland
- ◆ [Chapter 6: Rapid analytical methods for biomass analysis: NIR II.](#)
Dr. Daniel Hayes, University of Limerick, Ireland

Acid hydrolysis of biomass

- ◆ [Chapter 1: Introduction to acid hydrolysis](#)
Dr. Buana Girisuta, University of Limerick, Ireland
- ◆ [Chapter 2: Pre-treatment of biomass for acid hydrolysis](#)
Karla Dussan, University of Limerick, Ireland
- ◆ [Chapter 3: Kinetics of Acid hydrolysis and derivatives](#)
Dr. Buana Girisuta, University of Limerick, Ireland
- ◆ [Chapter 4: Products of acid hydrolysis](#)
Dr. Buana Girisuta, University of Limerick, Ireland

Catalysis in Acid hydrolysis

- ◆ [Chapter 1: Catalysis in acid hydrolysis of biomass](#)
Dr. Angela Rocha, Federal University of Rio de Janeiro, Brazil
- ◆ [Chapter 2: Heteropolyacids as solid catalysts: Properties, synthesis and characterization](#)
Prof. Graciela Baronetti, University of Buenos Aires, Argentina
- ◆ [Chapter 3: Catalysis in Thermal Conversion Processes](#)
Dr. Eleni F. Iliopoulou, CERTH, Greece

Assessment of diesel miscible biofuels produced

- ◆ [Chapter 1: Analysis of DMBs produced](#)
Mr. Sergio Fabian Sein, YPF, Argentina



How to use

The DIBANET project offers two e-learning courses on diesel miscible fuel production from wastes and residues, free-of-charge. The courses are available (after registration) to everyone interested in second generation diesel production on the following link: <http://www.dibanet.org/elearning.php>. Both courses consist of 5-5 modules on the hydrolysis as well as on thermal processing of biomass for second generation biofuel production. Each module includes chapters that are comprehensive units themselves. The selected chapter is opening in a new tab in the Internet browser.

Home
DIBANET processes
Course 1: Hydrolysis
Course 2: Thermal processing
Helpdesk
Profile Management
Log out

Welcome to the DIBANET e-learning!
You can access the courses on hydrolysis and thermal processing in the Menu on the left side.
The chapters are prepared by professors and industry players from both Europe and Latin America:

- Mr. Aparecido Alves, Centre of Sugarcane Technology, Brazil
- Prof. Graciela Baronetti, University of Buenos Aires, Argentina
- Prof. Tony V. Bridgewater, Aston University, the United Kingdom
- Prof. Marcia Miguel Castro Ferreira, University of Campinas, Brazil
- Ms. Karla Dussan, University of Limerick, Ireland
- Dr. Buana Girsuts, University of Limerick, Ireland
- Prof. Michael H. E. Hayes, University of Limerick, Ireland
- Mr. Daniel Hayes, University of Limerick, Ireland
- Dr. Eleni F. Illopoulou, CERTH, Greece
- Dr. Annalena A. Lanza, CERTH, Greece

It is possible to can access the materials of the courses after logging in and clicking on the selected course number. The chapters of the courses are listed under each other according to the given module structure. Switching between the courses is possible in the main menu of the e-learning platform on the left side.

Users can ask for assistance in case of any technical problem or content related question via the Helpdesk. The selected chapter will open in a new tab in the Internet browser.

Each chapter consists of one main presentation about the selected topic that can be stoped or replayed any time. All relevant support materials are available as attachments to the given chapter.

111: Introduction to DIBANET concept (06:30 / 12:39) ATTACHMENTS EXIT

DIBANET processes & products & their linkages

1. Feedstock Optimisation → Biomass 1000 Kg

2. Acid Hydrolysis → Levulinic acid 250 Kg, Furfural 150 Kg, Solid residues 500 Kg, Formic acid 100 Kg

3. Esterification → Sustainable Ethanol

4. Pyrolysis → Bio-oil, 6. Biochar

5. Upgrading of pyrolysis bio-oil → Upgraded Bio-oil

Ethyl levulinate, Upgraded Bio-oil → Diesel Miscible Biofuels

articulate POWERED PRESENTATION SLIDE 13 OF 25 PAUSED 00:02 / 00:27 NOTES



On the menu of the left side it is possible to select

- ◆ to list the title of the slides with the Outline button,
- ◆ the small scale version of the slides with the Thumbnails,
- ◆ or the detailed text description to the slide with the Note button.
- ◆ the Search function to assist searching in the text or notes of the slides.

It is also possible to see the notes at the bottom part of the each slide or to switch to full screen or back to normal view. Users can pause, switch to the next or previous slides with the navigation panel and set the volume level as well. [How to use](#) presentation for the e-learning is available for the participants at the e-learning site.