Designing the Forest Biorefinery

In conjunction with the Nordic Wood Biorefinery Conference (NWBC) March 2014

Don’t Miss It!

This biorefinery design course is being offered on the occasion of the 5th Nordic Wood Biorefinery Conference (NWBC http://www.innventia.com/nwbc2014). The course targets forestry company biorefinery decision-making, and will address a wide range of key issues for biorefinery strategy and design. The theme of Day 1 is Advanced Biorefinery Fundamentals, the Day 2 theme is Setting Biorefinery Strategy, and the Day 3 theme is Biorefinery Techno-Economics and Case Studies. Expert faculty from across Europe, North America and around-the-globe will share their experience, including numerous industry case studies.

Registration and practical information

- Course fee: 12 000 SEK excl. VAT. (See the registration form for VAT refund information)
- The course will be held at Innventia in Stockholm city. A limited number of hotel rooms at the special price 1197 SEK per night are available at Elite Hotel Arcadia - close to Innventia. Contact elisabet.jepson@innventia.com for booking code.

Course Leaders

The Course Leader will be Paul Stuart, NSERC Chair in Design Engineering at École Polytechnique of the University of Montreal, and Principal at EnVertis Consultants – who has led similar courses recently in Vancouver Canada (with PAPTAC) and Green Bay Wisconsin (with TAPPI). Peter Axegård, Vice-President and Director of the Biorefinery Business area at Innventia will assist as course leader.
World-Class Faculty

Attached to this second announcement is the draft detailed course syllabus – including expert faculty from around the world.

The course will be offered at the Innventia research centre, located in the north-east part of central Stockholm close to KTH, Sweden’s Royal Institute of Technology. The course will start at noon on Saturday 22 March, and continue for 2½ days through Monday 24 March. At the end of the course, you can plan to join the welcoming reception of NWBC at Innventia.

A Unique Syllabus

This is a critical time for the biorefinery development in the forestry sector – companies are at different points in setting their strategies, and a wide range of promising biorefinery product-process options are being considered. What is the best solution, and how can technologies be systematically evaluated for competitive advantage? There is no silver bullet biorefinery solution, and many questions must be addressed by companies considering successful biorefinery implementation. This course will seek to address some of these, including for example:

• Which biorefinery products will provide sustainably good margins over the long term? Which emerging biorefinery processes are the most promising for making these products?
• What is an appropriate manner to implement lignin precipitation, and build a product portfolio of added-value products over time?
• What are process efficiencies and operating costs today, and what might they be in 5 years from now after the process technologies have matured?
• How do we best use existing mill infrastructure when implementing the biorefinery?
• Can we implement the biorefinery, and at the same time lower the unit costs of our wood, pulp and paper products? What is the profitability of a pulp mill integrated with a biorefinery process, compared to one that is not integrated?

The course format is designed to encourage exchange between instructors and participants. The emphasis on the course is not to present a series of potential biorefinery technologies, however exchanges on the strengths and weaknesses of specific technology strategies will be encouraged. The biorefinery course seeks to bring together forest industry leaders and management, leading technology providers and industry consultants to share their experience in developing biorefinery strategies, in order to better understand emerging biorefinery technologies and their design/implementation within business strategies.
Who Should Attend?

This course is intended primarily for (a) corporate personnel in forestry companies who wish to become more knowledgeable about biorefinery implementation strategy and design methods, as well as (b) mill managers and technical staff who seek to identify and select the best biorefinery strategy at the mill level. The course also seeks to provide knowledge for biorefinery technology providers and consultants to assist them in understanding how biorefinery evaluations can take place, and better understand the range of emerging biorefinery technologies and their design/implementation in a forest company business plan.
Course Outline

Day 1: Advanced Biorefinery Fundamentals
Saturday 22 March 2014

11h00 – 11h15 Welcome and Introductions
Paul Stuart - Ecole Polytechnique and EnVertis Consulting (Montreal QC)
Peter Axegård – Innventia (Stockholm, Sweden)

11h15 – 13h00 Systematic Evaluation of the Forest Biorefinery
Paul Stuart - Ecole Polytechnique and EnVertis Consulting (Montreal QC)

13h00 – 13h15 Networking Break and Light Snack

13h15 – 14h00 EU initiatives- Horizon 2012 and Biobased Industries PPP
Peter Axegård – Innventia (Stockholm, Sweden)

14h00 – 14h45 Forest-Based Biorefining in Chile
Alex Berg – Universidad de Concepción (Biobío Chile)

14h45 – 15h30 Renewal of the Forest Sector Value Chain in South Australia
John Kettle – VTT (Helsinki Finland)

15h30 – 15h45 Networking Break

15h45 – 16h30 Chemical and Physical Characterization of Wood for the Biorefinery
Adriaan van Heiningen – University of Maine (Orono ME)

16h30 – 17h15 Thermochemical Processing of Wood
Patrik Löwnerts – Chemrec (Stockholm Sweden)

17h15 – 18h00 Recap and Discussion
Panel Including Speakers of the Day
Day 2: Setting Biorefinery Strategy
Sunday 23 March 2014

07h30 – 08h00 Coffee and Croissants
08h00 – 08h15 Agenda for the Day
Peter Axegård – Innventia (Stockholm, Sweden)
08h15 – 09h45 Evaluating Product Strategies for the Forest Biorefinery
Virginie Chambost - EnVertis Consulting (Montreal QC)

09h40 – 10h00 Networking Break
10h00 – 11h30 Biorefinery Development and Implementation
Tom Browne - FPInnovations (Pointe-Claire QC)
11h30 – 12h15 Biorefinery Alternatives Under Development
Peter Axegård – Innventia (Stockholm, Sweden)

12h15 – 13h00 Lunch
13h00 – 14h00 Evaluating Biorefinery Strategies Considering Risk and Sustainability
Paul Stuart - EnVertis Consulting (Montreal QC)
14h00 – 14h45 Key Success Factor for the Sustainable Biorefinery: Added-Value Biorefinery Portfolios Via Unique Supply Chains
Paul Stuart - EnVertis Consulting (Montreal QC)

14h45 – 15h00 Networking Break
15h00 – 16h00 Process Modeling and System Analysis of Pulp Mill Biorefineries
Åsa Samuelsson/Karin Lindgren – Innventia (Stockholm Sweden)
16h00 – 17h30 Biorefinery Developments-Influence of Future Policy Instruments
Thore Berntsson – Chalmers University of Technology (Göteborg Sweden)
17h30 – 18h00 Recap and Discussion
Panel Including Speakers of the Day
Day 3: Biorefinery Techno-Economics and Case Studies
Monday 24 March 2014

07h30 – 08h00  Coffee and Croissants
08h00 – 08h15  Agenda for the Day
   Paul Stuart - Ecole Polytechnique and EnVertis Consulting (Montreal QC)
08h15 – 09h00  Wood Pulping and Biorefinery Processes
   Adriaan van Heiningen – University of Maine (Orono ME)
09h00 – 09h45  Biobutanol from Lignocellulosics for Chemicals and
               Liquid Biofuels Production
   Adriaan van Heiningen – University of Maine (Orono ME)

09h45 – 10h00  Networking Break
10h00 – 11h30  The LignoBoost Process
   Per Tomani – Innventia (Stockholm Sweden)
11h30 – 12h15  The LignoForce Process
   Lamfeddal Kouinsi – FPInnovations (Pointe-Claire QC)

12h15 – 13h00  Lunch
13h00 – 13h45  Biochemical Conversion Technology
   Shijie Liu – SUNY ESF (Syracuse NY)
13h45 – 14h30  Options for Producing Hemicelluloses in a Kraft Pulp Mill
   Sverker Danielsson – Innventia (Stockholm Sweden)
14h30 – 15h15  Value Prior to Pulping (VPP) - A Techno-Economic Analysis
   Gopal Goyal – International Paper (Loveland OH)

15h15 – 15h30  Networking Break
15h30 – 16h15  Hydroxy Acid Separation from Black Liquor
   Eemeli Hytönen – VTT (Helsinki Finland)
16h15 – 17h00  Project Independence: Case Study of the Strategy and Development of a
               Biorefinery Project
   Doug Freeman – NewPage (Escanaba MI)
17h00 – 17h30  Recap and Discussion
               Panel Including Speakers of the Day