

Componente curricular:

Carga horária: 27 horas

Unidade responsável: Departamento de Engenharia Química

Tipo de componente:

Ementa: Biocombustíveis de primeira e de segunda geração, composição da biomassa, processos de conversão termoquímica (torrefação, pirólise, gaseificação), energias renováveis, Power-to-X, caracterização da biomassa

Modalidade: Presencial

Ano-período: módulo 2021.2 (06/12/21 – 14/12/21)

Quantidade de Avaliações: 0

Objetivos:

Conhecer as principais tecnologias relacionadas aos biocombustíveis e à bioenergia em geral, entender o potencial econômico e ambiental desses processos no Brasil e no mundo, entender os desafios ligados à implantação em larga escala desses processos.

Conteúdo:

Biocombustíveis de primeira geração (Prof. Jean-Michel Lavoie, inglês)

Biocombustíveis de segunda geração (Prof. Jean-Michel Lavoie, inglês)

Composição da biomassa (Prof. Jean-Michel Lavoie, inglês)

Processos de conversão termoquímica (Prof. Jean-Michel Lavoie, inglês)

Processos de conversão biológica (Prof. Jean-Michel Lavoie, inglês)

Energias renováveis (Prof. Bruna Rego de Vasconcelos, português)

Power-to-X (Prof. Bruna Rego de Vasconcelos, português)

Caracterização da biomassa (Prof. Thierry Ghislain, inglês)

Apresentação do *Laboratoire des Technologies de la Biomasse/Université de Sherbrooke* (Profs. Jean-Michel Lavoie, Bruna Rego de Vasconcelos, Thierry Ghislain)

Oportunidades de bolsas de estudo para mobilidade internacional: estágio, doutorado e pós-doutorado (Profs. Jean-Michel Lavoie, Bruna Rego de Vasconcelos, Thierry Ghislain)

Outras atividades:

Seleção de alunos para estágio remunerado de graduação e pós-graduação

Áreas de interesse: engenharia química, engenharia de alimentos, química, química analítica, engenharia florestal, engenharia agrônoma, engenharia de petróleo, zootecnia

Etapas da seleção:

- 1) Avaliação do currículo (inglês ou francês)
- 2) Entrevista (inglês ou francês)

Divulgação do resultado: 14/12



A ONE-STOP FACILITY FOR YOUR INDUSTRIAL NEEDS

The Biomass Technologies Laboratory, located at the Université de Sherbrooke's Scale-Up Center, brings together a multidisciplinary team focused on the valorization of carbon-based waste (from biomass to CO₂). Our experts carry out research and development ranging from a simple test tube to the level of pilot-scale production processes.

TURN YOUR INNOVATION PROJECTS INTO REALITIES!

This new one-stop model is there to help you develop large-scale collaborative projects. Our goal is to add value to carbon-based industrial by-products, while complying with government policies aimed at resolving climate change issues.

OBJECTIVES

- Accelerate the development of new processes related to the production of bio-based fuels and products from various types of carbon-based waste.
- Provide the high level of analytical support needed to understand and monitor the new laboratory-developed technologies tailored to the constraints specific to your waste materials.
- Offer companies involved in the valorization of carbon-based waste - such as forest, agricultural, institutional, and urban biomass - a leading-edge environment supported by multidisciplinary expertise.
- Train highly qualified professionals who meet the real needs of the industry.



ENJOY THE ADVANTAGES OF A MULTIDISCIPLINARY TEAM

EXPERTISE AND INFRASTRUCTURE

- Consultation and implementation of an R&D action plan
- State-of-the-art analytical support offering the characterization of any sample of a carbon-based material
- High-pressure and high-temperature laboratory
- Workshop for the assembly of pilot platforms
- Steam explosion unit
- Food laboratories and expertise in maple-syrup production

OPPORTUNITIES FOR COLLABORATION

- Valorization of biomass and carbonaceous waste
- Alcoholic fermentation (fuels and distilleries); algae and biomethane production
- Thermochemical conversion (gasification, pyrolysis, roasting, liquefaction)
- Electro-fuels and products (Power-to-X)
- Physicochemical analysis of different substrates (liquids, solids, and gases)
- Implementation of analytical techniques dedicated to the processes
- Development of new technologies in the food or maple-syrup sector

BENEFITS OF PARTNERSHIP

- Gain access to the analytical strength of BTL: a collaborative environment with high-tech equipment.
- Reduce the risks associated with the industrialization of processes.
- Reduce your R&D costs with significant financial leverage.
- Work with researchers, research professionals, and highly qualified students who could become your future workforce.
 - Approximately 80% of the students are hired by partners.
- Benefit from ongoing support from the Business Partnership Group.

EXAMPLES OF TECHNOLOGIES DEVELOPED

- Nonenzymatic biomass hydrolysis
- Valorization of sugars with 5 carbons
- Hydrocarbon reforming
- Exhaust-gas and renewable-electricity conversion (Power-to-X)
- Mobile roasting unit
- Biomethanization of cellulosic substrates
- Pelletization



**HAVE A PROJECT IN MIND?
CONTACT US TO MAKE IT HAPPEN!**

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