

Advanced Topics in Energy Densification

Level: Doctor's degree

Line of research: Biorefinery, biofuels and engines

Sub-Line: Science and technology of biofuels and bioelectricity.

Compulsory subject: No

Class Load: 60

Credits: 4

Objective:

This course aims to develop the ability to understand the fundamental concepts of energy densification, its analysis, and understanding of the formation of solid fuels used with this Technique.

Methodology:

Discussion of currents and relevant solid biofuel topics articles and discussion about topics from the books put in Bibliography.

The articles will be provided by the professor when the course is offered.

Bibliography:

- Brand, M.A; Energia de Biomassa Florestal, Rio de Janeiro, Ed. Interciência, 2010.
- Cortez, L.A.B; Lora, E.E.S., Biomassa para energia, Ed. UNICAMP, 2014.
- Nunes, L.J.R.; Matias, J.C.O.; Catalão, J.P.S; Torrefaction of Biomass for Energy Applications, Ed.Academic Press, 2017.
- Basu, P.; Biomass Gasification, Pyrolysis, and Torrefaction, ed. Academic Press, 2º edição, 2013.
- Brienzo, M.; Bioethanol and Beyond: Advances in Production Process and Future Directions, Ed.nova science publishers, 2018.
- Christoforou E., Fokaides P. A.; Advances in Solid Biofuel, ed.Springer Nature, 2018.
- Nzihou A.; Handbook on Characterization of Biomass, Biowaste and Related By-products, ed.Springer Nature, 2020.
- Gent S., Twedt M., Gerometta C., Almberg E.; Theoretical And Applied Aspects Of Biomass Torrefaction, ed. Elsevier, 2017.

Tópicos Avançados em Densificação Energética

Level: Doutorado

Line of research: Biorefinery, biofuels and engines

Sub-Line: Science and technology of biofuels and bioelectricity.

Compulsory subject: Não

Class Load: 60

Credits: 4

Objetivo:

O objetivo desse curso é desenvolver a habilidade e o entendimento fundamental dos conceitos de densificação energética, suas análises e entendimento da formação de um combustível sólido usado com essa técnica.

Metodologia:

Discussão de artigos relevantes na área de combustível sólido e discussão sobre tópicos de livros colocados nas referências. Os artigos serão providenciados pelo professor.

Referências:

- Brand, M.A; Energia de Biomassa Florestal, Rio de Janeiro, Ed. Interciência, 2010.
- Cortez, L.A.B; Lora, E.E.S., Biomassa para energia, Ed. UNICAMP, 2014.
- Nunes, L.J.R.; Matias, J.C.O.; Catalão, J.P.S; Torrefaction of Biomass for Energy Applications, Ed.Academic Press, 2017.
- Basu, P.; Biomass Gasification, Pyrolysis, and Torrefaction, ed. Academic Press, 2ª edição, 2013.
- Brienzo, M.; Bioethanol and Beyond: Advances in Production Process and Future Directions, Ed.nova science publishers, 2018.
- Christoforou E., Fokaides P. A.; Advances in Solid Biofuel, ed.Springer Nature, 2018.
- Nzihou A.; Handbook on Characterization of Biomass, Biowaste and Related By-products, ed.Springer Nature, 2020.
- Gent S., Twedt M., Gerometta C., Almberg E.; Theoretical And Applied Aspects Of Biomass Torrefaction, ed. Elsevier, 2017.