UNIVERSITÀ DEGLI STUDI FIRENZE

DIPARTIMENTO DI CHIMICA "UGO SCHIFF"

Dottorato di Ricerca in Scienze Chimiche

icfar

Western Institute for Chemicals and Fuels from Alternative Resources (ICFAR)

Prof. Franco Berruti - Western University - Ontario - Canada

Terrà una conferenza dal titolo:

Fractional condensation of bio-oil vapors produced from birch-bark pyrolysis

La S.V. è invitata a partecipare

Venerdì 07 giugno 2013

alle ore 11,00 in Aula Magna

Polo Scientifico e Tecnologico - Sesto Fiorentino

Prof. Piero Frediani

Prof. Andrea Goti

(Coordinatore del Dottorato)

Fractional condensation of bio-oil vapors produced from birch bark pyrolysis

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ABSTRACT

The bio-oil vapors produced from the flash pyrolysis of biomass have been fractionated using a series of three condensers maintained at different temperatures. Birch bark particles have been successfully tested using a bubbling fluidized bed reactor. The temperatures of the condensers have been optimized in order to separate the water present in the bio-oil vapor stream from the organic phases and, consequently, increase the quality and the stability of the bio-oil. The condenser train consisted of an electrostatic precipitator-cum-condenser (C-ESP) installed between two cyclonic condensers. As a result of the high efficiency of the fractional condensation system, the water content of the fractionated bio-oil was reduced to be less than 1 wt%. The effect of pyrolysis temperature on the fractionated bio-oil yield and characteristics is also reported.

Curriculum del prof. BERRUTI

Professor Berruti (Dott. Ing., Chemical Engineering, Politecnico of Turin (1982); PhD, University of Waterloo (1986)) has been professor and Associate Dean at the University of Calgary and Dean at the University of Saskatchewan and at The University of Western Ontario (now Western University). He is the founder of the Institute for Chemicals and Fuels from Alternative Resources (ICFAR). Dr. Berruti is the founding Editor of the International Journal of Chemical Reactor Engineering and the Editor of the Engineering Conferences International (ECI) Symposium Series. Dr. Berruti has co-chaired 9 International Conferences. With areas of expertise in particles technologies, gas-solid fluidization, heavy-oil upgrading technologies, biomass conversion into biofuels and biochemicals, he has written over 200 publications in a number of prestigious journals and books and delivered hundreds of presentations nationally and internationally. He has been awarded four patents. Dr. Berruti is one of the co-inventors of a biomass mobile pyrolysis technology which is being developed and commercialized by Agri-Therm Inc. In addition, he has been extensively contributing to many industrial projects by collaborating with industrial partners in Canada, USA, Mexico, France, Spain and Germany. Recently, he has led the Agricultural Biorefinery Innovation Network, in collaboration with Agriculture and Agri-Food Canada and several industry partners, and he is now the leader of one of four nodes of BioFuel Net Canada, a recently announced Network of Centres of Excellence. Amiong the recent recognitions, he has been awarded the 2012 Western Engineering Prize for Achievement in Research, the 2012 Bantrel Award in Design and Industrial Practice, and the 2011 Ontario Green Chemistry and Engineering Award.