Mod Chem Appl 2018, Volume: 06
DOI: 10.4172/2329-6798-C1-009

Efficient, environmentally preferable approach for denitrogenation and desulfurization of hydrocarbons using ionic liquids

Alak Bhattacharyya, Erin Broderick, Susan Yang, Becky Mezza, Manuela Serban and **Christopher Nicholas**
UOP - A Honeywell Company, USA

Ionic liquids (ILs) are ionic compounds composed of a bulky hetero-organic cation and a relatively smaller anion. This class of materials possesses many environmentally preferable properties, such as low vapor pressures, good solvency, diverse chemical properties, high ionic conductivities, and good heat transfer properties. This talk will describe how these novel materials are used successfully for the removal of sulfur and nitrogen compounds in hydrocarbons, which drastically improves the efficiency and economics of downstream fluid catalytic cracking and hydrocracking processes while minimizing air pollution. In addition to traditional ionic liquids with hetero-organic cations, the contaminant extraction applications of relatively inexpensive carbonium pseudo ionic liquids (CPILs), composed of bulky organic cations, will be discussed. An extraction cycle will be shown that includes efficient recycle of the ionic liquid. This talk will discuss the design, synthesis, separation, regeneration and catalytic application of ILs and CPILs for environmentally cleaner transportation fuels, gases, and petrochemicals.

alak.bhattacharyya@honeywell.com

Conversion of biomass and CO_2 into valuable chemicals

Buxing Han
Chinese Academy of Sciences, China

Green chemistry is the future of chemistry and chemical industry. Biomass provides us a huge amount of renewable carbon source. CO_2 is the major greenhouse gas. It is also an abundant, nontoxic, nonflammable, easily available and renewable carbon source. Conversion of the renewable carbon resource into valuable chemicals and fuels is an important area of green chemistry, which is also an effective route to the sustainable development of our society. However, efficient transformation of biomass and CO_2 into value-added chemicals and high-quality fuels is a long-standing task. In recent years, we are very interested in properties of green solvents and their applications in catalytic conversion biomass and CO_2 in green solvents. In this presentation, I would like to discuss some of our results.

hanbx@iccas.ac.cn