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Development of a Highly Active Nanocrystalline Catalyst for
Clean and Renewable Fuels

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312

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The combination of escalating demand for crude oil and approaching global maximum extraction, plus the need to manage greenhouse gas emissions, make the development of sustainable energy sources critical. Bio-derived green diesel/gasoline/jet fuels are the transportation fuels of future. Catalyst Processing Laboratory at the University of New Brunswick is active in this research area including development of new catalytic materials, conversion of biomass into biofuels and catalytic upgrading of biofuels into green diesel/gasoline. Highly active MoS₂ Catalysts were synthesized through an economic hydrothermal approach. A highly dispersed nanosized MoS₂ and CoMoS catalysts with high surface area and high crystalline were synthesized. The catalysts were applied to hydrotreat light cycled oil and upgrade biofuels to green diesel/jet fuels.

Resume of Professor Ying Zheng

Professor Ying Zheng

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Dr. Ying Zheng is a full Professor of the Department of Chemical Engineering, at the University of New Brunswick. Since joined UNB in 1999, Professor Zheng quickly developed a strong research program on Clean and renewable fuels and novel catalytic material. She has successfully established a Catalytic Processing Laboratory that is fully equipped with specialized equipment and instruments serving from lab scale fuel upgrading conduction to final product assessment. She has 4 US/Canadian patents and 100 publications. She was awarded the Humboldt Research Fellowship in 2007, the University Research Scholar in 2009 and the 2010 Syncrude Canada Innovation Award (Canada).