catalysts

Supplementary Material: Oxidative Dehydrogenation of Liquefied Petroleum Gas on Copper, Zinc and Iron Oxide Impregnated on MFI Zeolite Assisted by Electric Power

Amin Alamdari and Ramin Karimzadeh *

Department of Chemical Engineering, Tarbiat Modares University (TMU), Jalal Al Ahmad Highway, P.O. Box, Tehran, 14115-4838, Iran; amin.alamdari@modares.ac.ir

* Correspondence: ramin@modares.ac.ir; Tel.: +98-21-8288-3315

Received: 26 May 2018; Accepted: 22 June 2018; Published: date

Figures

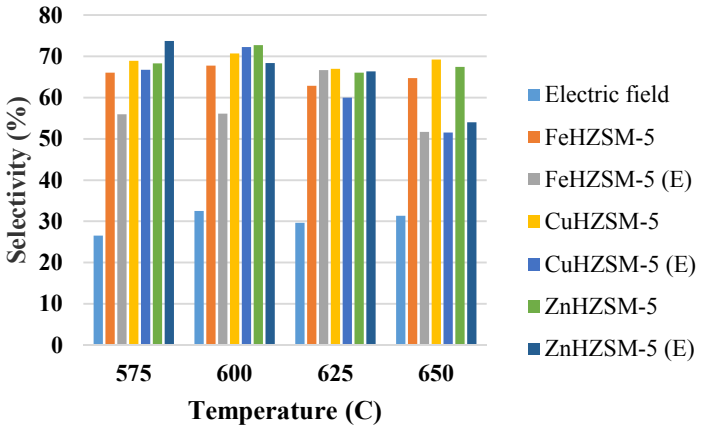

Figure S1. Effect of temperature in oxidative dehydrogenation of LPG for 4%wt. FeHZSM-5, 4%wt. CuHZSM-5 and 4%wt. ZnHZSM-5 catalysts on selectivity in presence and absence of electric field: 100 mg catalyst, 6 mA, 10 mm gap distance and 4% wt. metal loading.

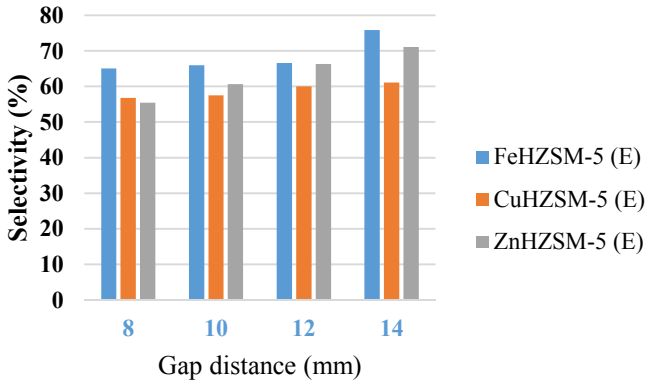

Figure S2. Effect of gap distance in oxidative dehydrogenation for 4%wt. FeHZSM-5, 4%wt. CuHZSM-5 and 4%wt. ZnHZSM-5 catalysts on olefin selectivity: 100 mg catalyst, 625 °C, 6 mA, and 4% wt. metal loading.

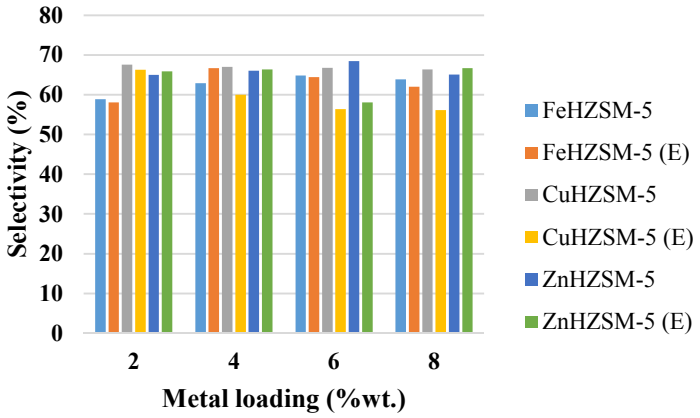

Figure S3. Effect of metal loading in oxidative dehydrogenation for 4%wt. FeHZSM-5, 4%wt. CuHZSM-5 and 4%wt. ZnHZSM-5 catalysts on olefin selectivity: 100 mg catalyst, 625 °C, 6 mA, and 10 mm gap distance.

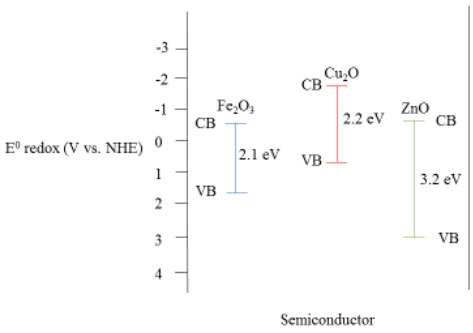

Figure S4. Band gap, potentials of valence and conduction bands of various semiconductor metal oxides.

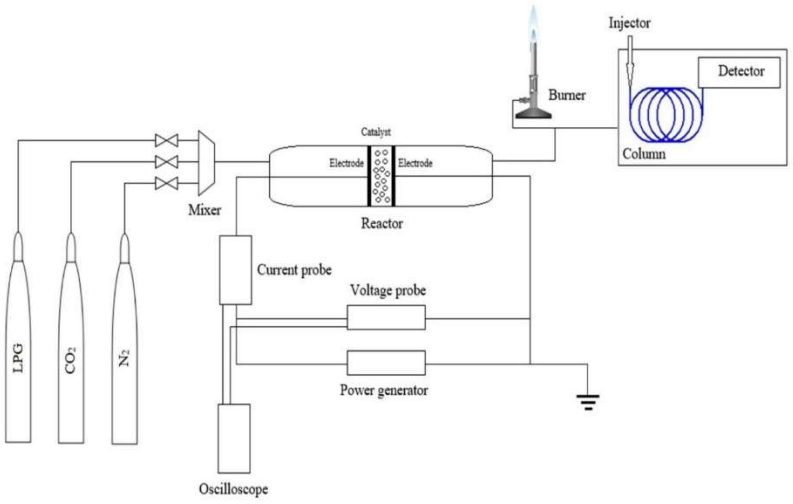

Figure S5. The schematic of fixed bed flow type reactor in the electric field.