Supporting Information

Counteracting rapid catalyst deactivation by concomitant temperature increase during catalytic upgrading of biomass pyrolysis vapors using solid acid catalysts

Andreas Eschenbacher[1], Alireza Saraeian[2], Brent H. Shanks[2], Uffe Vie Mentzel[3], Jesper Ahrenfeldt[1], Ulrik Birk Henriksen[1], and Anker Degn Jensen[1,*]

[1]Department of Chemical and Biochemical Engineering, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark

[2]Department of Chemical and Biological Engineering, Iowa State University, Ames, IA 50011, United States

[3]Haldor Topsøe A/S, 2800 Kgs. Lyngby, Denmark

*Correspondence: aj@kt.dtu.dk

The supporting information consists of 3 pages and 3 figures.

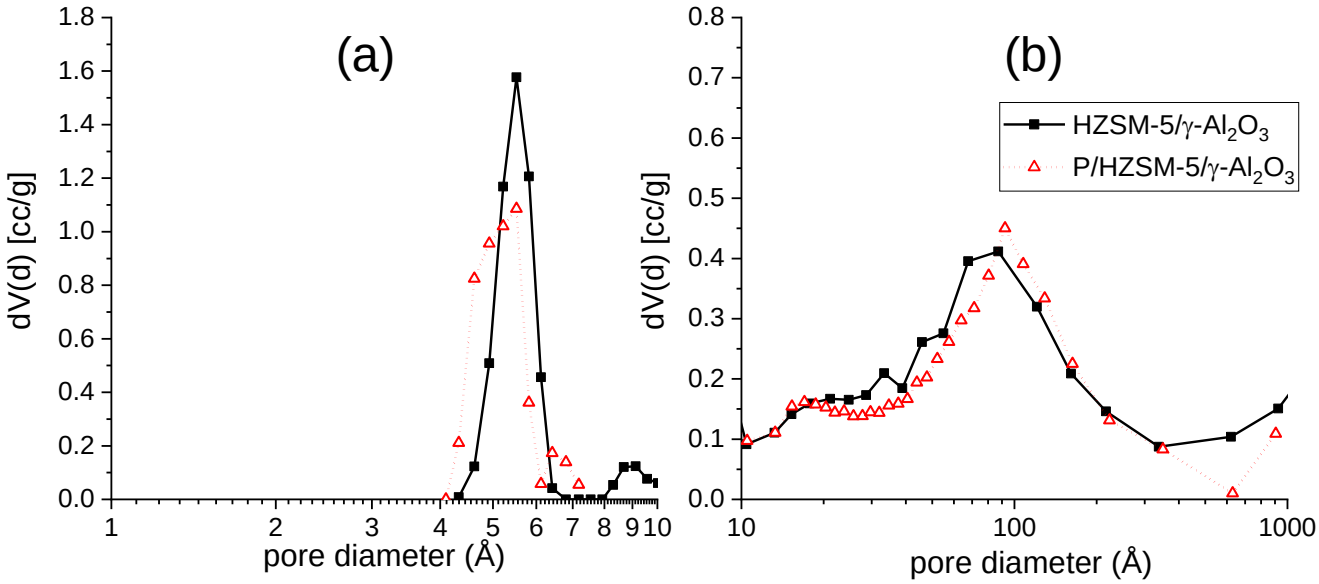

Fig. S1. (a) Pores size distribution of micropores, obtained from applying NL-DFT model to adsorption branch of argon physisorption isotherm. (b) Pores size distribution of mesopores, obtained from applying BJH model to adsorption branch of nitrogen physisorption isotherm.

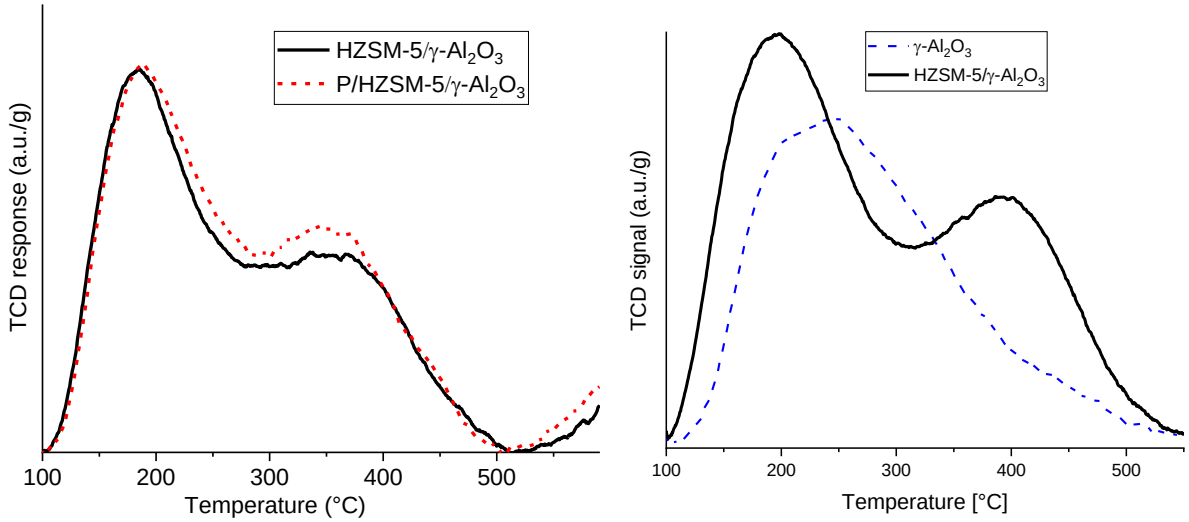

Fig. S2. NH_3-TPD characterization of catalysts.

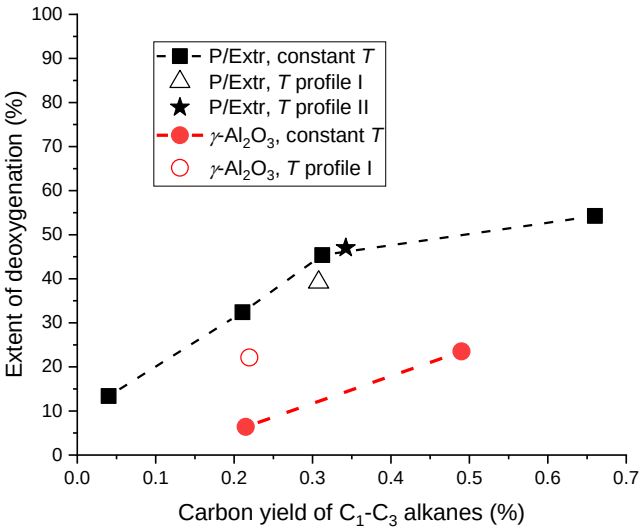

Fig. S3. Correlation of carbon yield of C_1-C_3 alkanes with extent of deoxygeantion

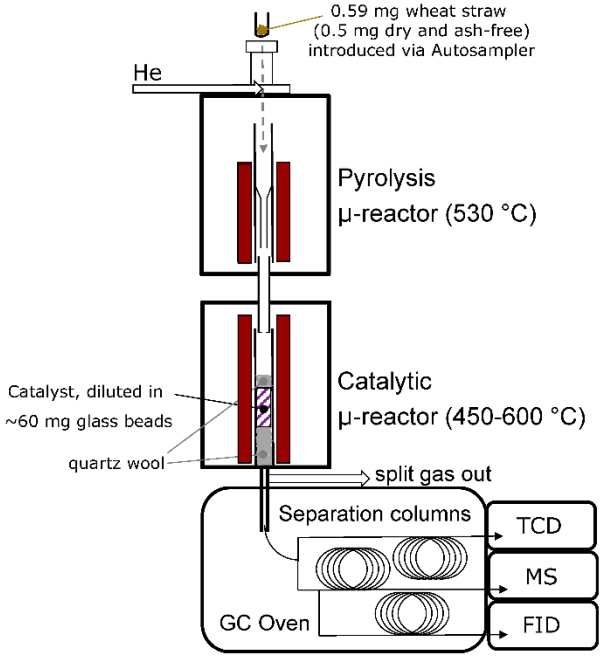

Fig. S4. Schematic of tandem micropyrolyzer-GC-MS/FID/TCD. Cups with biomass were introduced via auto-sampler. Flowrate was 60 ml/min He.