SUPPORTING INFORMATION

EFFECT OF THE ACIDITY OF HZSM-5 ZEOLITE AND THE BINDER IN THE DME TRANSFORMATION TO OLEFINS

Paula Pérez-Uriarte*, Mónica Gamero, Ainara Ateka, Marta Díaz, Andrés T. Aguayo, Javier Bilbao

Department of Chemical Engineering, University of the Basque Country (UPV/EHU). P.O. Box 644, 48080. Bilbao (Spain). Tfo: +34 94 601 53 61

Corresponding author: Paula Pérez-Uriarte; paula.perez@ehu.es

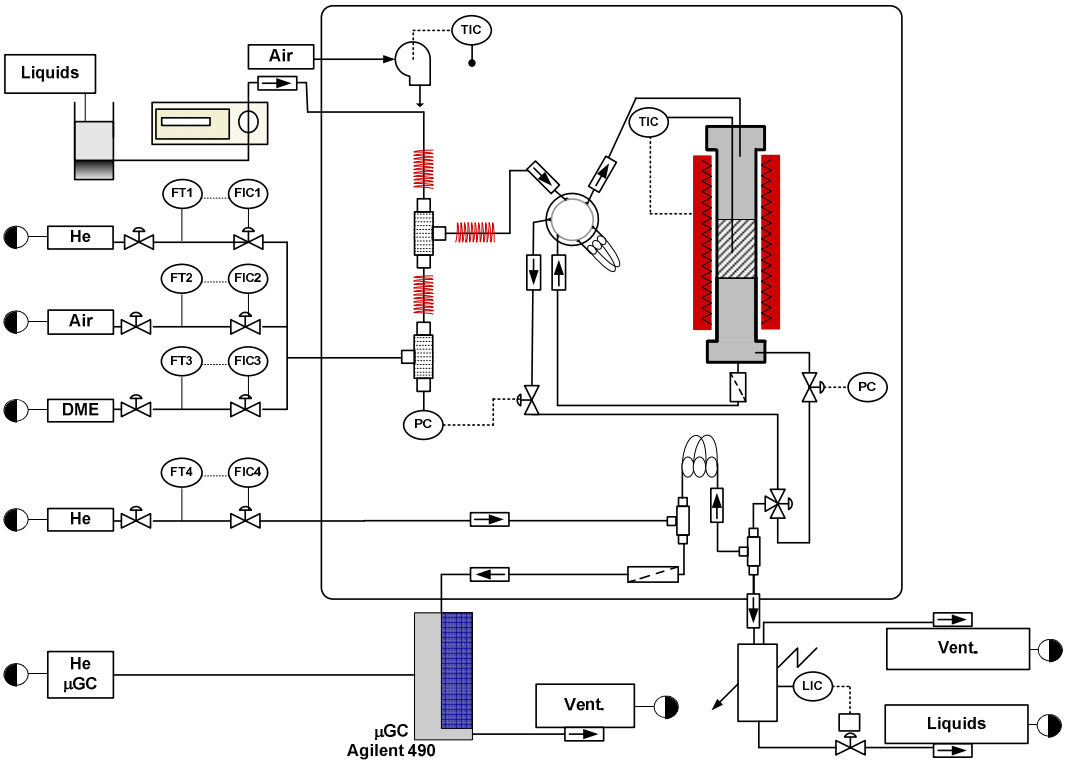

Figure S1. Reaction equipment.

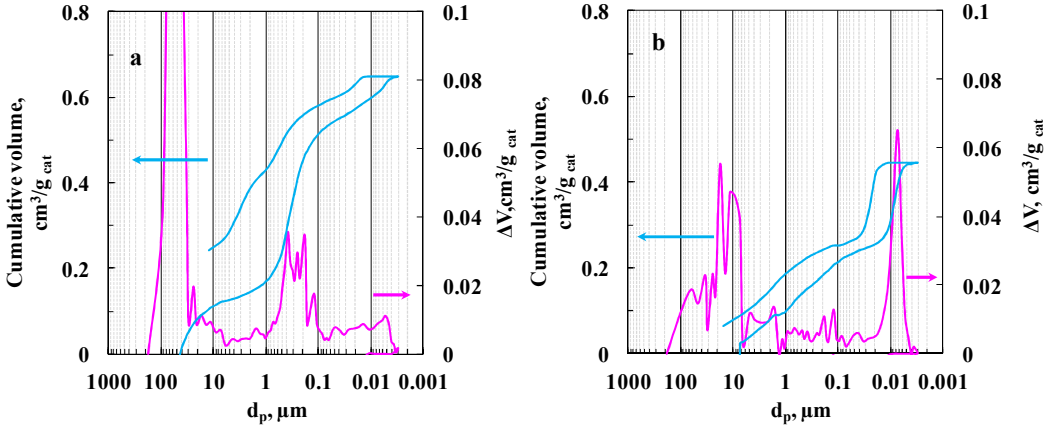

Figure S2. Size distribution for meso and macropore for CZ-280/bentonite (a) and CZ-280/boehmite catalysts (b), determined by Hg intrusion porosimetry.

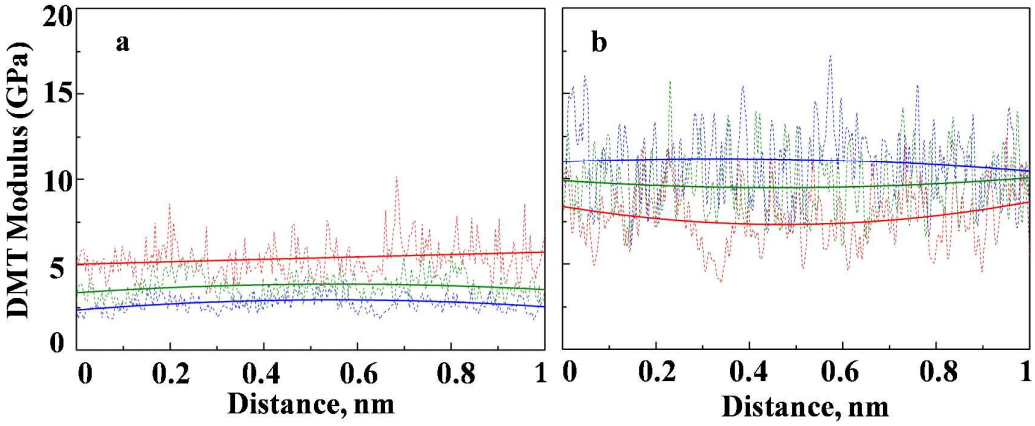

Figure S3. Comparison the attrition resistance for bentonite (a) and boehmite (b) from the measure of the ratio of pressure required to fracture at different depths in the particle.

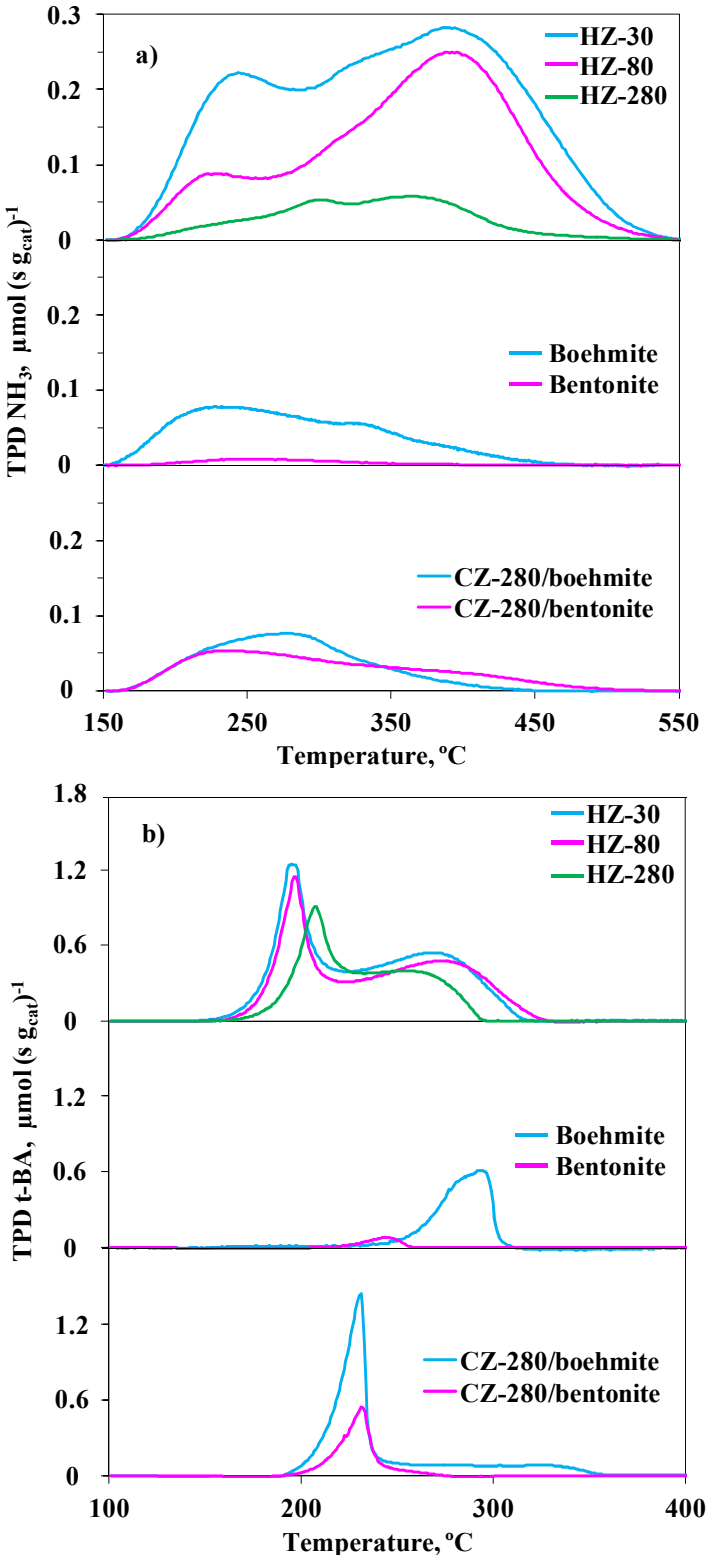

Figure S4. Comparison of TPD profiles of NH3 (a) and t-BA (b) for zeolites, binders and catalysts.

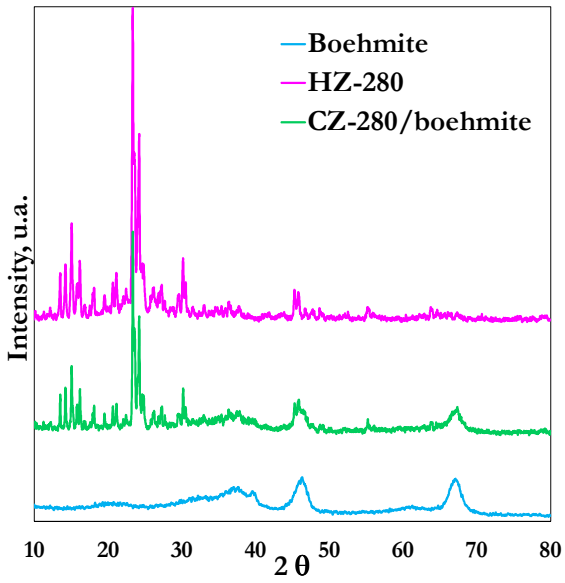

Figure S5. X-ray expectras for HZSM-5 zeolite, boehmite and corresponding catalyst.

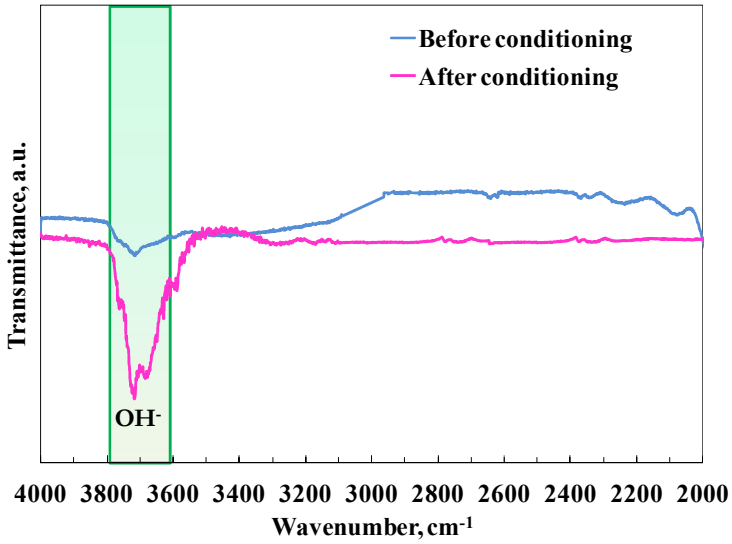

Figure S6. Identification of group OH^- formation by comparing the FTIR spectra of CZ-280/boehmite catalyst before and after conditioning.

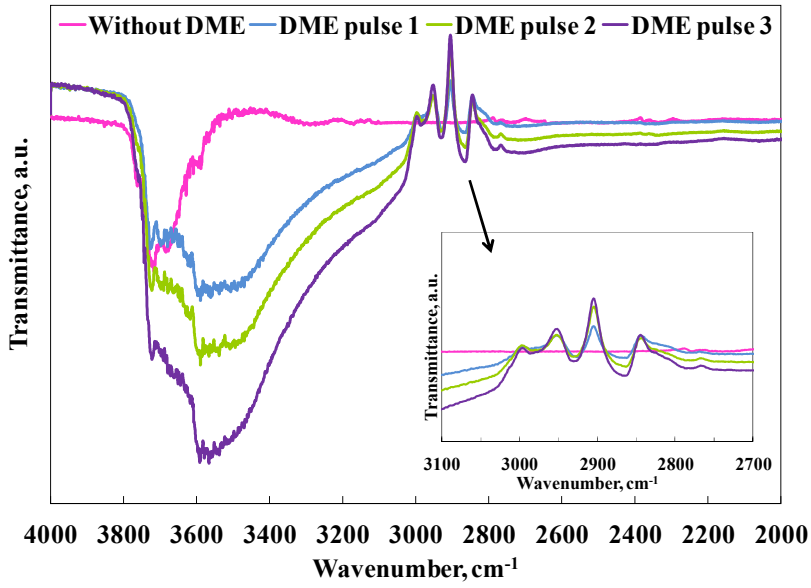

Figure S7. Checking the increase in the intensity of group methoxi bands, by comparing the FTIR spectra of CZ-280/boehmite catalyst before and after the reaction, by successive pulses of DME. Reaction conditions: catalyst, CZ-280/boehmite; 375 °C.

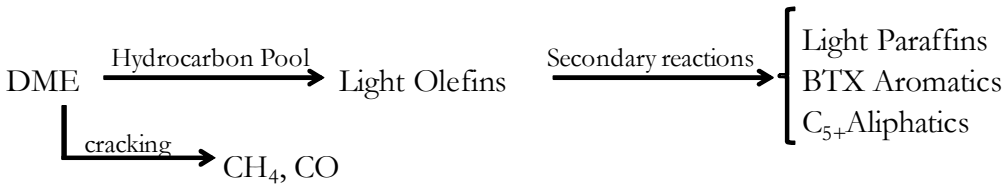

Figure S8. Scheme (similar to the MTO process) of the evolution of product formation with the reaction progress.