

Electronic Supplementary Information

Properties and Activity of Zn-Ta-TUD-1 in the Lebedev Process

Guillaume Pomalaza,^a Pardis Simon,^a Ahmmed Addad,^b Mickaël Capron,^a Franck Dumeignil^{a,*}

^a Univ. Lille, CNRS, Centrale Lille, ENSCL, Univ. Artois, UMR 8181 – UCCS – Unité de Catalyse et Chimie du Solide, F-59000 Lille, France

^b Univ. Lille, CNRS, UMR 8207 – UMET, F-59000 Lille, France

*: corresponding author, franck.dumeignil@univ-lille.fr

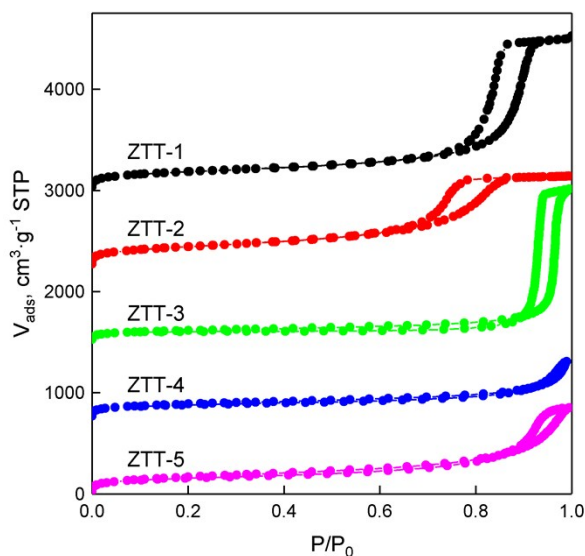


Figure S1 N₂ adsorption-desorption isotherms for all as-prepared catalysts after outgassing at 150 °C for 6 hours.

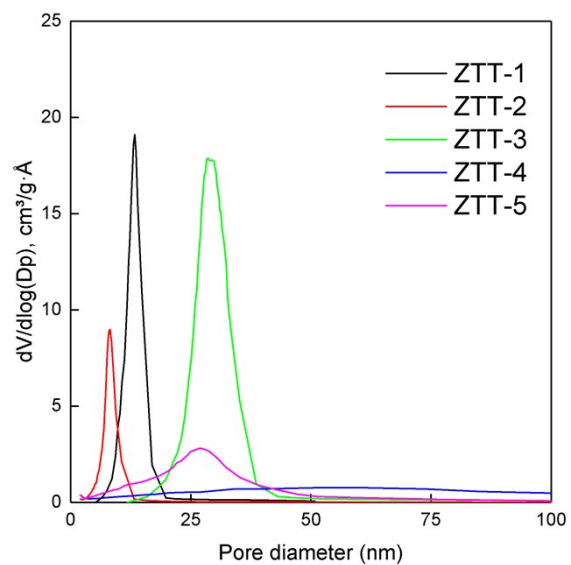


Figure S2 Pore size distribution of ZTT samples

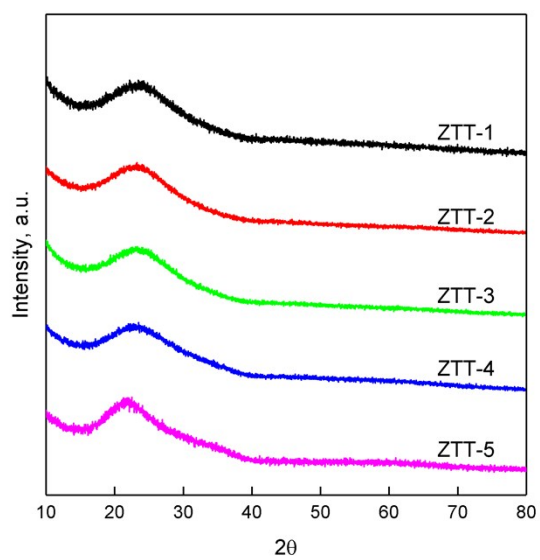


Figure S3 X-ray diffractogram of ZTT samples.

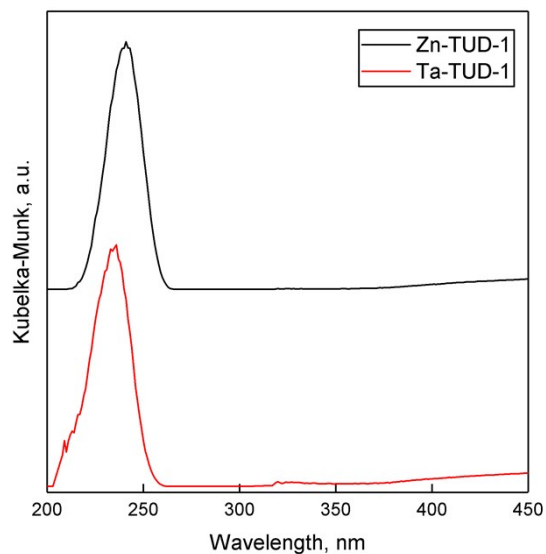


Figure S4 UV-Vis of monometallic TUD-1 samples

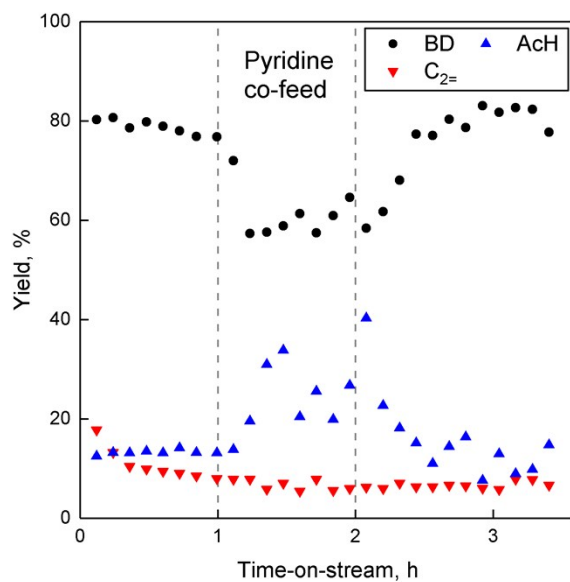


Figure S5 Pyridine poisoning reactivity test of the Lebedev process over ZTT-1. The reaction was carried at 350 °C, WHSV of 0.3 h⁻¹. Concentration of pyridine in ethanol was 5 mol.%.

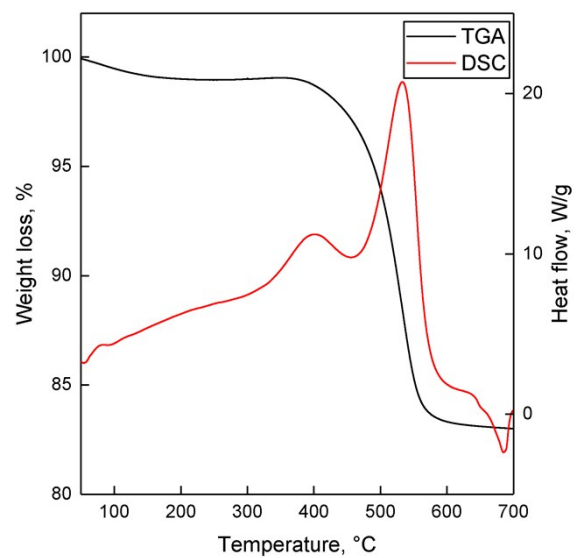


Figure S6 TGA-DSC thermogram of spent ZTT-1 after 72 hours of reaction at 400 °C and $WHSV_{EtOH}$ of 5.3 h⁻¹.

Table S1 Composition of species trapped within spent ZTT-1 catalysts according to their weight determined by TGA. Reaction at 400 °C and $WHSV_{EtOH}$ of 5.3 h⁻¹.

TOS (h)	Volatile compounds (wt.%)	Light coke (wt.%)	Heavy coke (wt.%)	Total (wt.%)
1.5	1.3	0.6	2.4	4.3
6	1.8	0.8	3.7	6.3
24	1.4	0.5	4.3	6.2
48	2.3	0.3	7.6	10.3
72	1.2	0.0	16.0	17.2