Combined hydrothermal and mechanochemical control of structural modifications of zirconium dioxide for catalytic applications

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Supplementary Materials

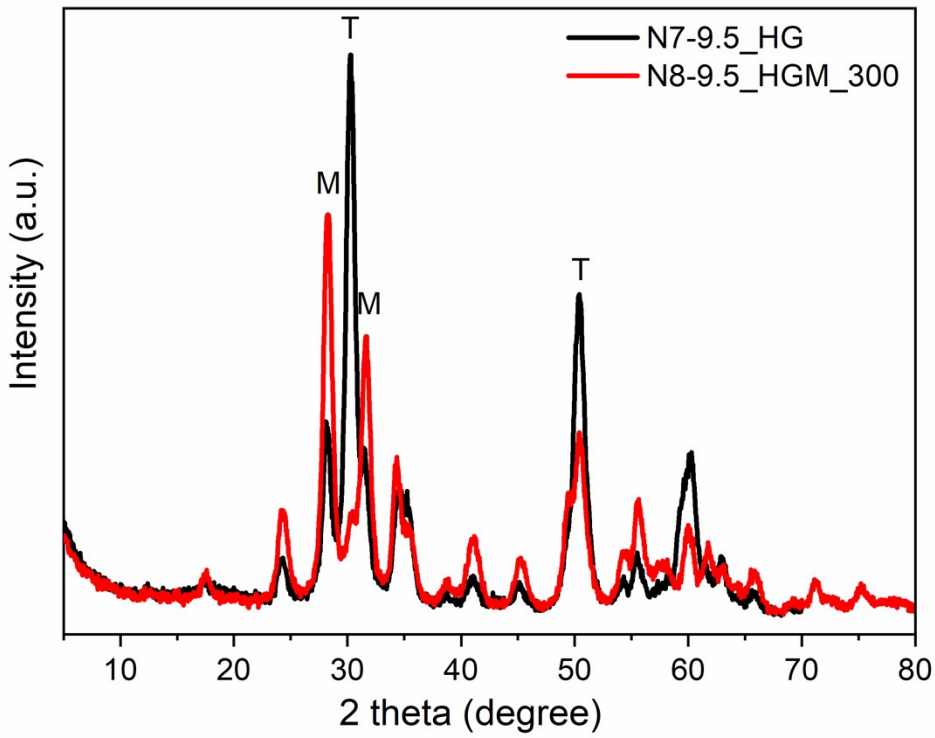
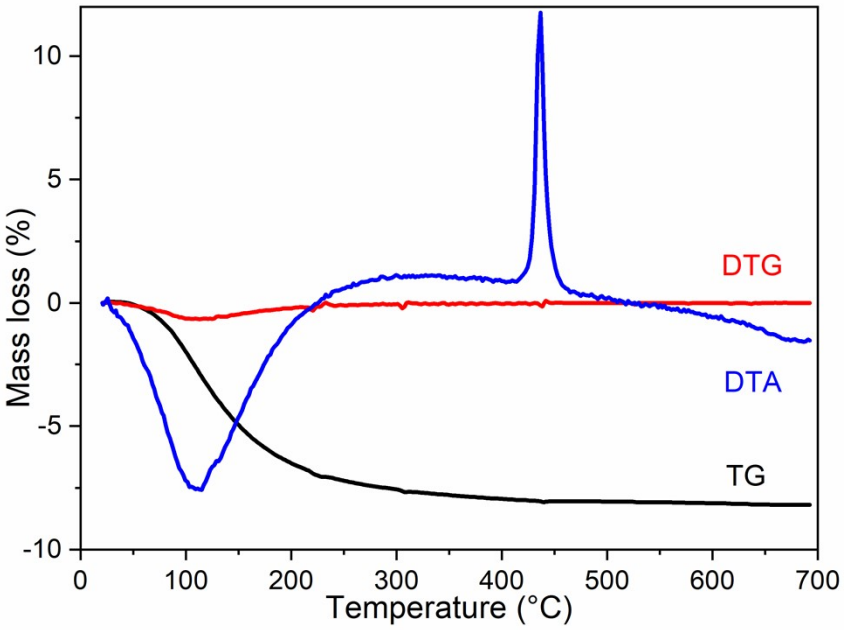


Figure S1. XRD patterns for ZrO_2 precipitated at pH 9.5 after HTT and additional MChT (T and M – peaks for tetragonal and monoclinic phases, respectively).

Table S1. The content of tetragonal and monoclinic phases in the samples based on ZrO_2 precipitated at pH 9.5

Samples	Tetragonal			Monoclinic		
	X_t, %	V_t, %	D_t, nm	X_m, %	V_m, %	D_m, nm
N5-9.5_HX	54	47	9.3	46	53	12.5
N6-9.5_HXM_300	12	9	5.5	88	91	12.1
N7-9.5_HG	60	53	6.9	40	47	9.6
N8-9.5_HGM_300	15	12	5.2	85	88	8.9

a)



b)

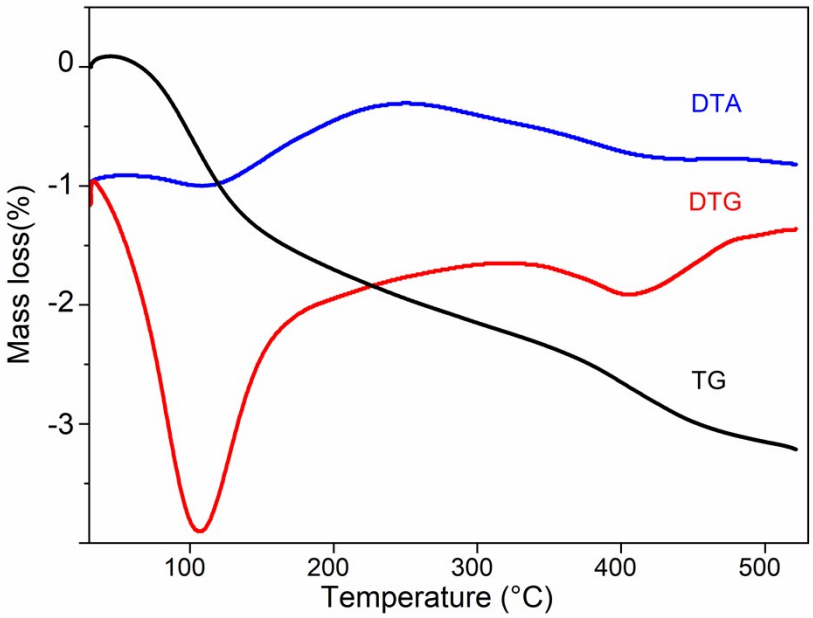


Figure S2. DTA, TG and DTG curves for the a) initial sample N9-7 and b) for sample N15-7_HG after HTT.

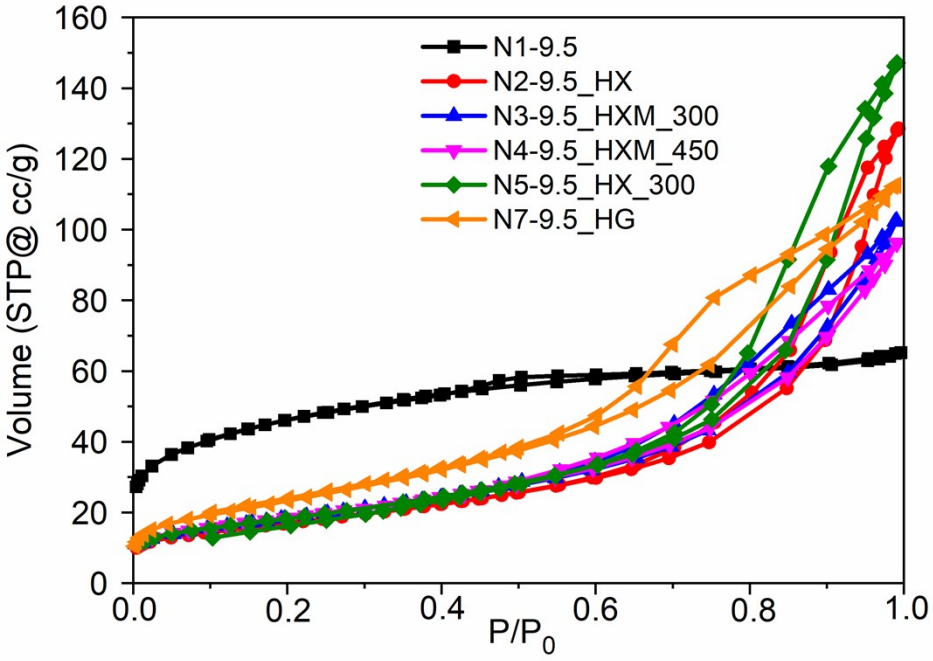


Figure S3. Nitrogen adsorption-desorption isotherms for hydrothermal and milled samples of ZrO_2 precipitated at pH 9.5

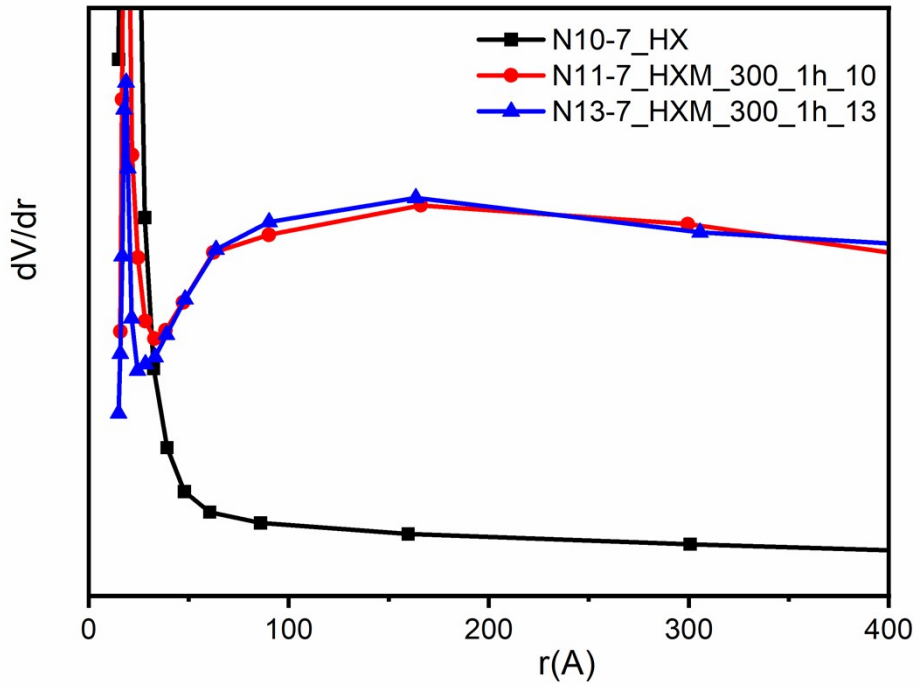


Figure S4. PSD curves for hydrothermal sample N11-7_HX and post-milled samples based on N10-7_HX.

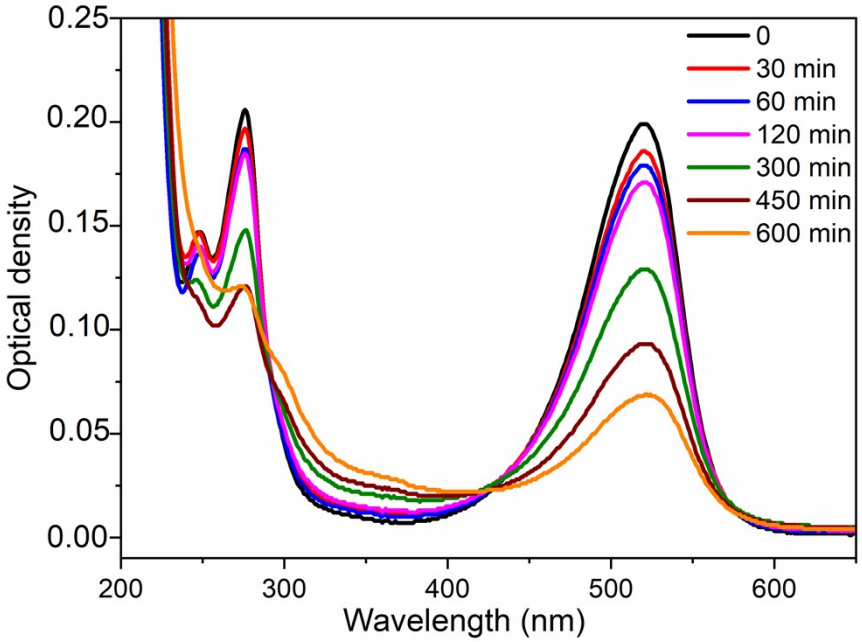


Figure S5. Temporal changes in spectra of safranin T solution in the presence of sample N19-7H7hGM_500_0.5_25.

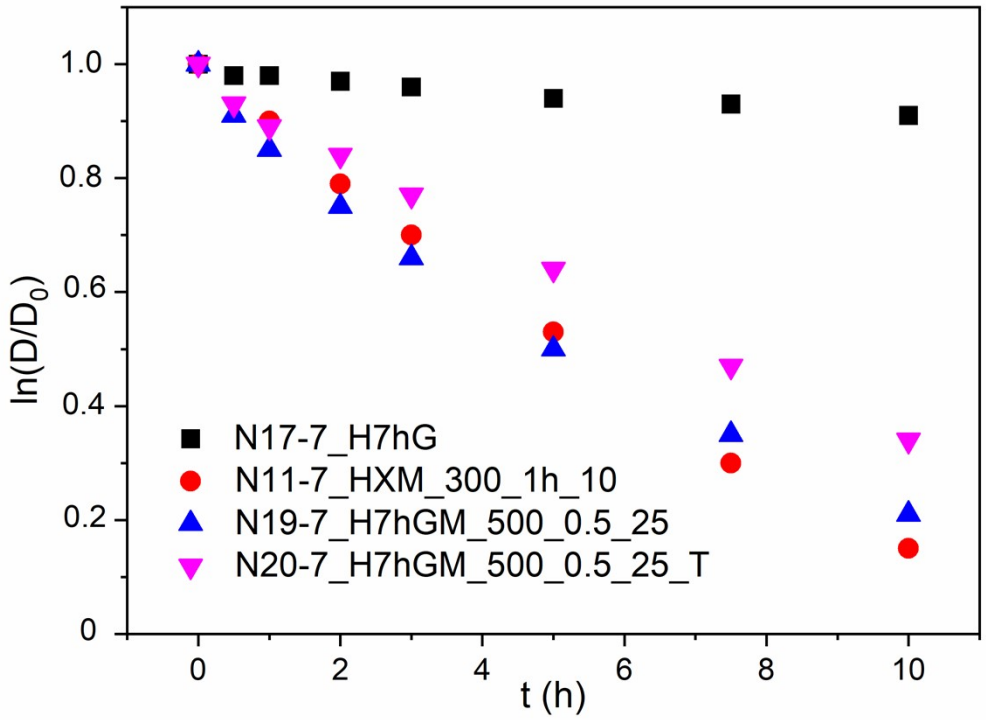


Figure S6. The kinetic curves of safranin T degradation using modified samples based on ZrO_2 precipitated at pH 7.