

Supporting information

Mesostructured γ - Al_2O_3 -Based Bifunctional Catalysts for Direct Synthesis of Dimethyl Ether from CO_2

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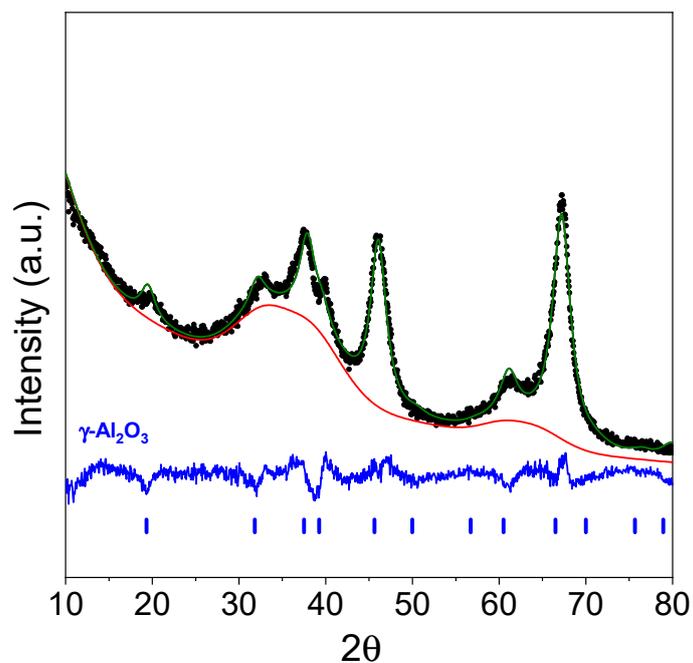


Figure S1 .Rietveld refinement of the WA-XRD pattern of Al_2O_3 _A_900.

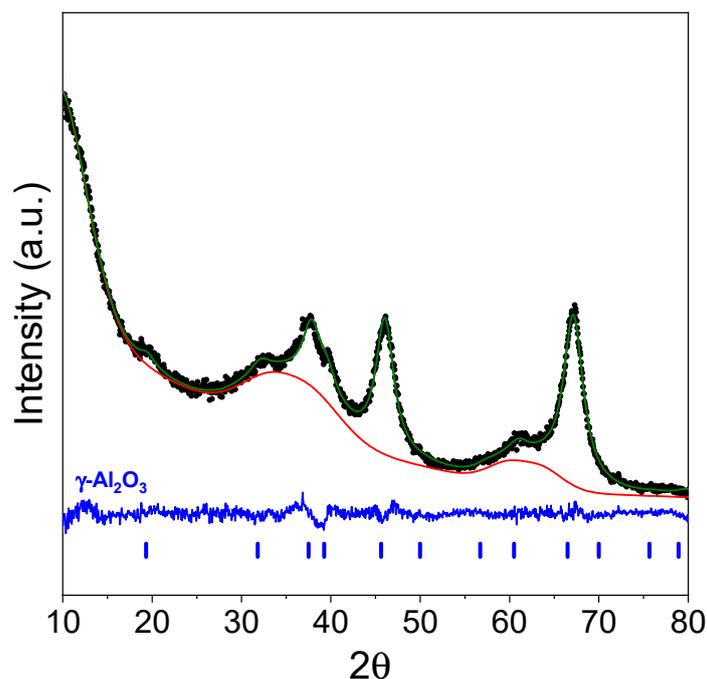


Figure S2. Rietveld refinement of the WA-XRD pattern of Al₂O₃_B_900.

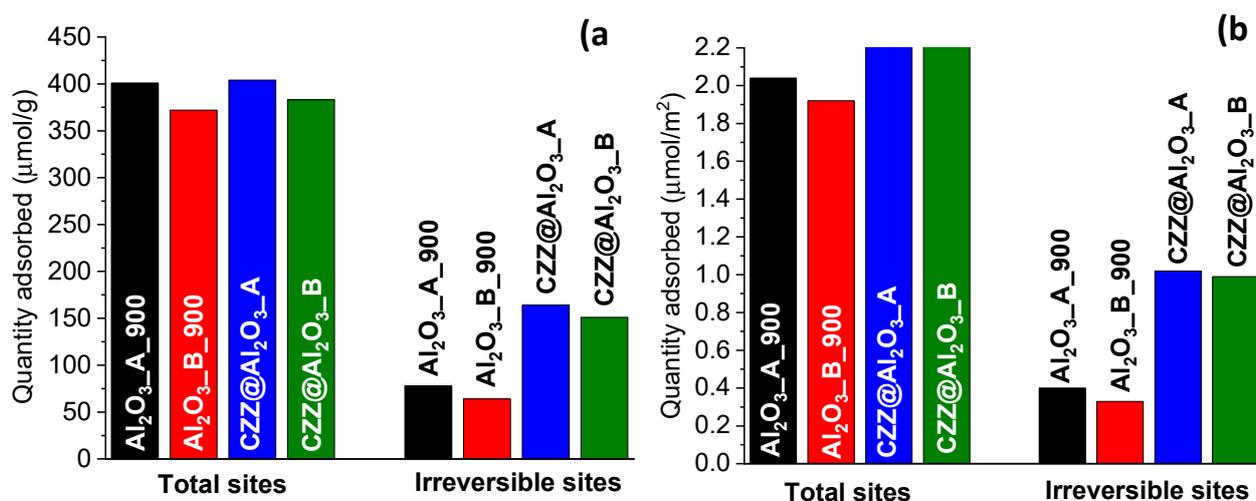


Figure S3. Amount of total and irreversible acid sites determined with NH₃-adsorption microcalorimetry for Al₂O₃_A_900, Al₂O₃_B_900, and the corresponding composites in terms of μmol/g (a) and μmol/m² (b).

Table S1. Mean values of CO₂ conversion, selectivity to CO, methanol, and DME and yield to methanol and DME for the catalytic tests on the composite catalysts and the physical mixture.

	X _{CO2} (mol%)	S _{CO} (mol%)	S _{CH3OH} (mol%)	S _{DME} (mol%)	Y _{CH3OH} (mol%)	Y _{DME} (mol%)
CZZ@Al ₂ O ₃ _A	4.4	55.9	43.7	0.4	1.92	0.02
CZZ@Al ₂ O ₃ _B	3.3	59.2	40.5	0.3	1.34	0.01
CZA+Al ₂ O ₃ _A_900	5.4	43.5	55.0	1.5	2.97	0.08