

Effects of support and Rh additive on Co-based catalysts in the ethanol steam reforming reaction

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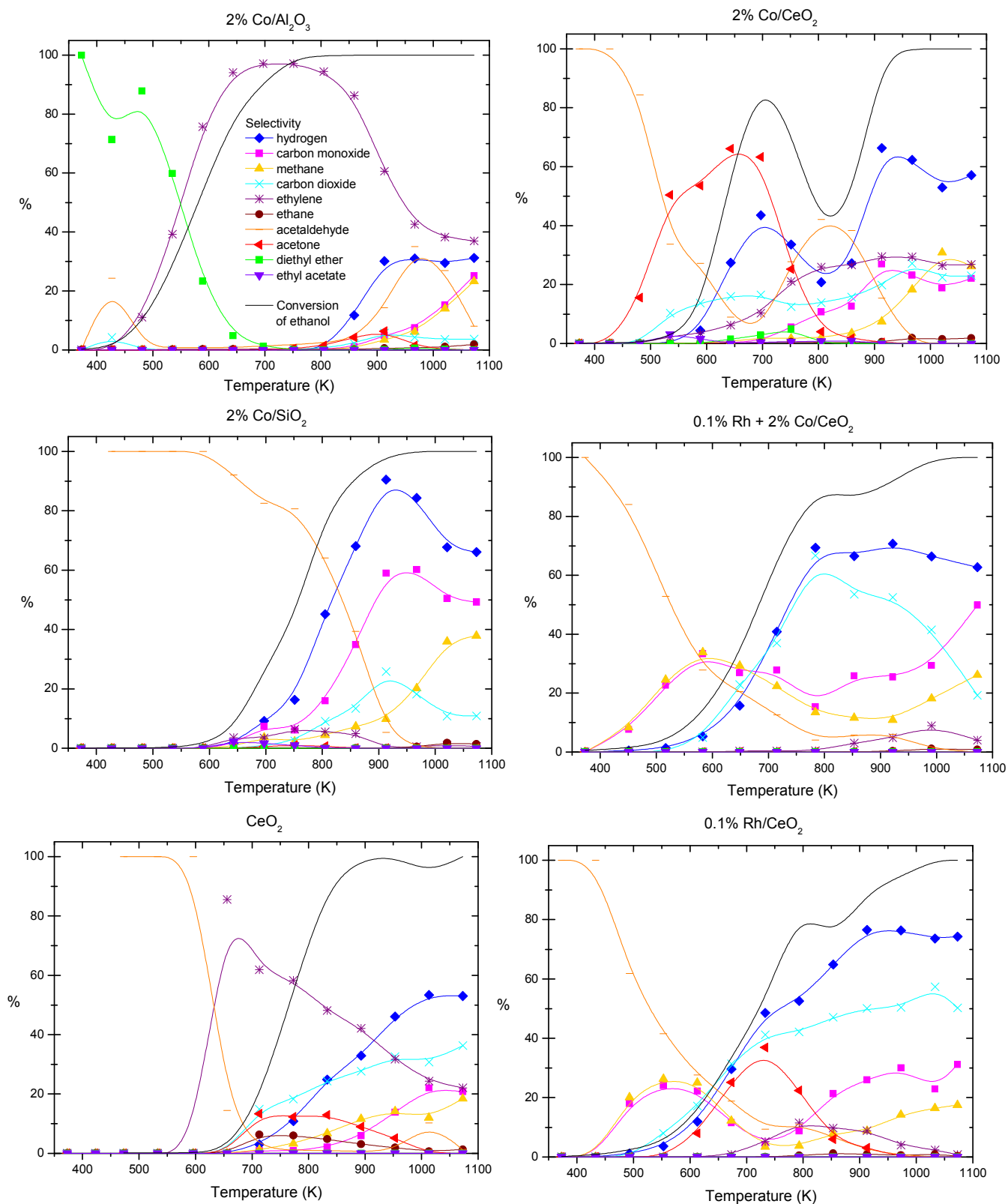


Figure S1: Conversion and selectivities as a function of temperature for the ethanol-water steam reforming reaction (1:3 ratio) performed with linear heating (3 K/min) from 373 to 1073 K.

Catalysts	2% Co/Al ₂ O ₃	2% Co/SiO ₂	2% Co/CeO ₂	10% Co/CeO ₂	0,1% Rh + 2% Co/CeO ₂	0,1% Rh/CeO ₂	CeO ₂
Conversion of ethanol (%)	94,50	28,60	59,20	68,00	78,20	54,60	19,60

Products	Selectivities (%)						
hydrogen	0	17,50	38,59	45,25	50,81	30,00	3,49
carbon monoxide	0,07	11,75	6,52	5,95	16,57	2,44	0,84
methane	0	4,36	0,82	2,07	20,52	1,85	2,79
carbon dioxide	0,10	15,32	53,16	61,00	57,13	40,84	16,86
ethylene	97,45	3,40	4,83	3,43	0,28	7,17	58,66
acetaldehyde	1,58	63,80	5,96	5,51	5,49	5,55	1,08
acetone	0,33	0,10	28,71	22,04	0	41,88	15,82

Table S1: Conversion and selectivities in the EtOH + H₂O (1:3) reaction at 723 K on different oxide-supported Co catalysts and on Co- and Rh-containing ceria based catalysts. Data is taken at 100 min reaction time.