

Supplementary Material: CO removal from hydrogen stream through methanation on Ru/C catalysts doped with lanthanum and barium

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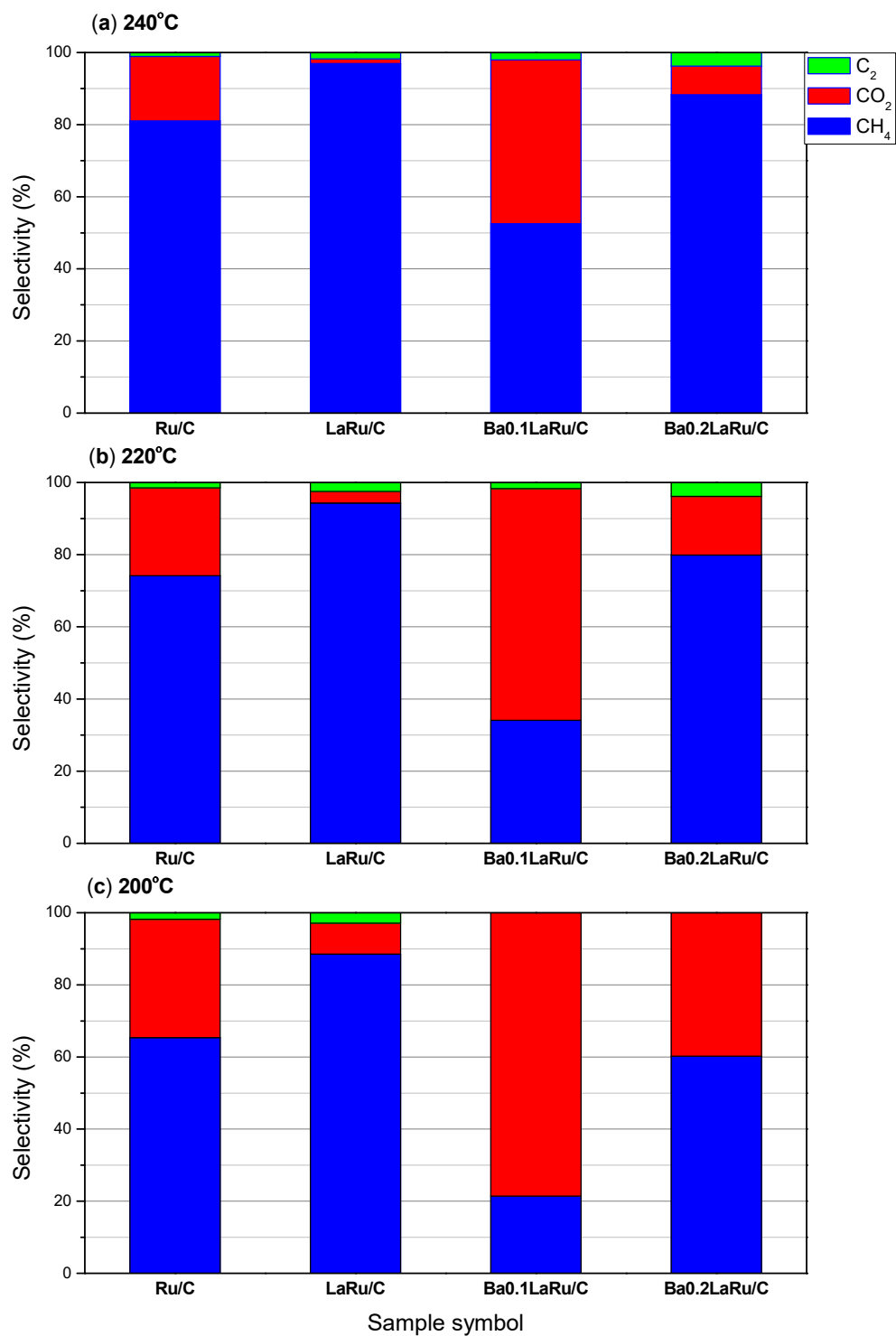


Figure S1. - Selectivity towards methane, carbon dioxide and C2 hydrocarbons for CO hydrogenation over the Ru- based catalysts at (a) 240°C, (b) 220°C, and (c) 200°C. Experimental conditions: mass of catalyst: 0.02 g(C+Ru); gas composition: 1 vol.% CO, 99 vol.% H₂; total flow rate: 80 cm³/min.

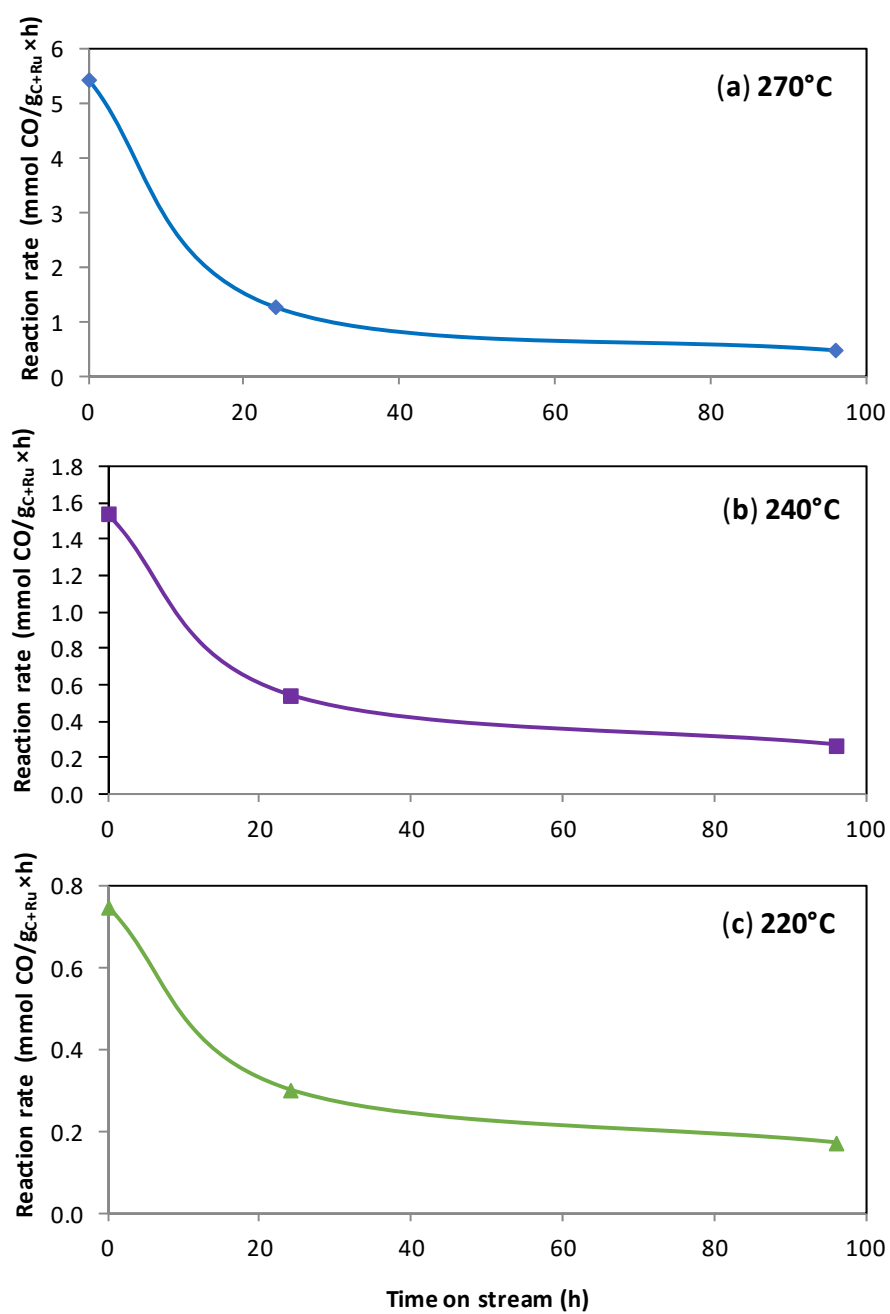


Figure S2. - Time on stream performance of the Ba_{0.1}LaRu/C catalyst; measurements conditions: (a) 270°C, (b) 240°C, and (c) 220°C, 0.1 MPa, CO+H₂ (1:99), 80 ml/min; overheating conditions: 300°C, 0.1 MPa, CO+H₂ (1:99), 80 ml/min;.

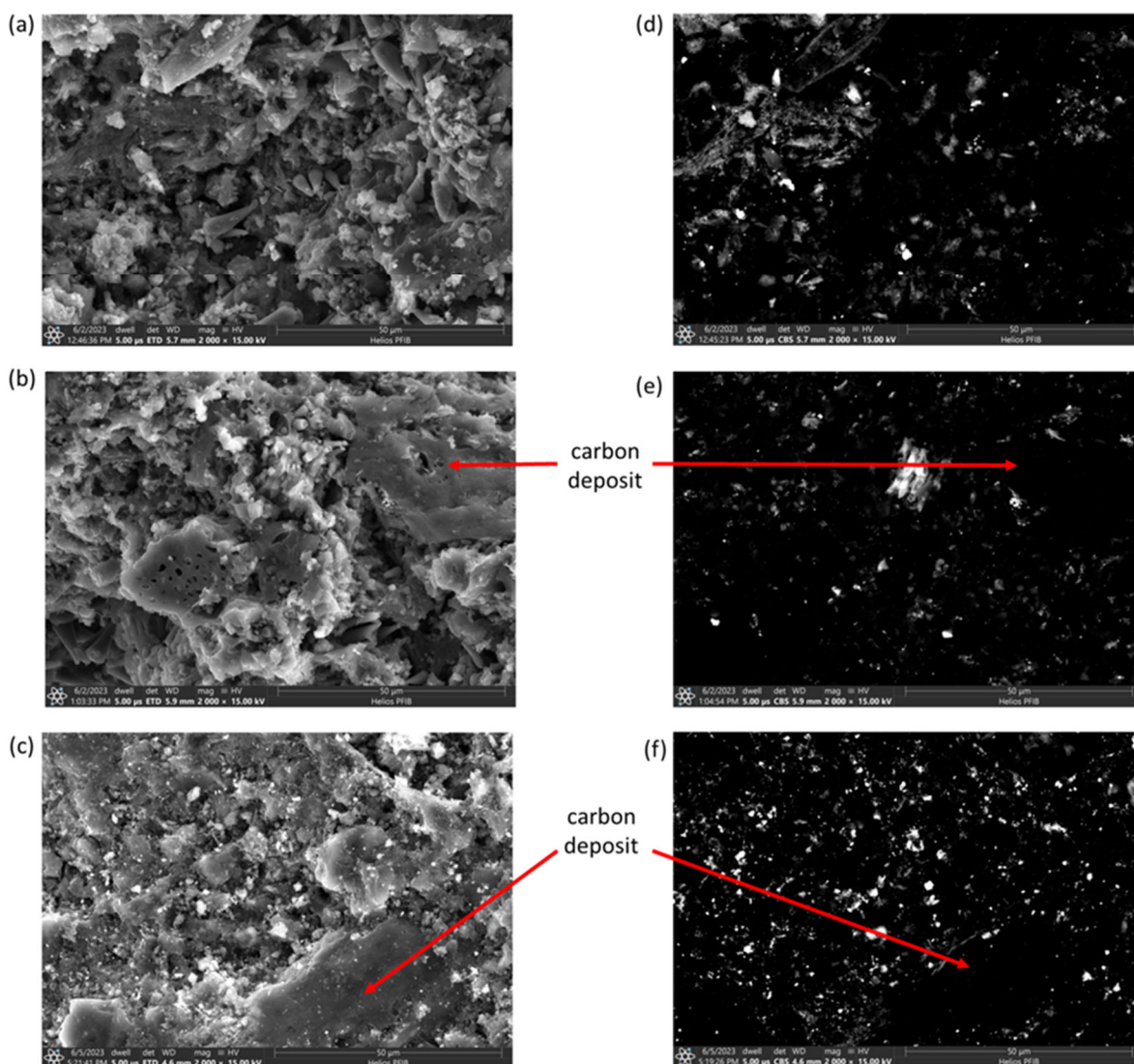


Figure S3. SEM results for catalysts after activity tests for the following systems: topography and backscatter images of Ba_{0.2}LaRu/C (a,d), LaRu/C (b,e) and Ba_{0.1}LaRu/C (c,f).