Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Supporting Information

Pd/ZEOLITE-BASED CATALYSTS FOR THE PREFERENTIAL CO OXIDATION REACTION: ION-EXCHANGE, Si/Al AND STRUCTURE EFFECT.

Miriam Navlani-García[a], Izaskun Miguel-García[a], Ángel Berenguer-Murcia[a], Dolores Lozano-Castelló[,a], Diego Cazorla-Amorós[a] and Hiromi Yamashita[*,b]*

[a]Alicante Materials Institute and Inorganic Chemistry Department, University of Alicante, 03080 Alicante, Spain

[b]Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, 2-1 Yamada-oka, Suita, Osaka 565-0871, Japan.

Support characterisation

- ***XRD analyses***

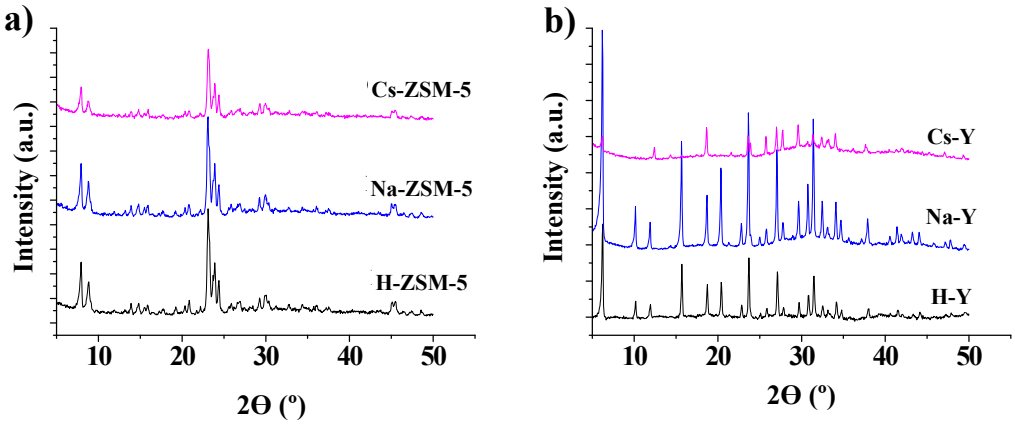

Figure S1. XRD diffractograms of the catalyst supports: a) ZSM-5-based samples and b) Y-based samples.

As it was expected, the ion exchange steps (and the heat treatment performed to convert the ammonium form of the ZSM-5 zeolite in the acid counterpart) did not modify the zeolites crystallinity, as it could be extracted from the comparison between the XRD patterns collected in the literature (See Figure S1) (MFI topology: main peaks at 2Θ = 7.9°, 8.9°, 23.0°, 23.4° and 23.9°; and FAU topology: main peaks at 2Θ = 6.2°, 10.1°, 11.9°, 15.6°, 18.6°, 20.3°, 23.6°, 26.9°, 30.7°, 31.3°, 32.4°, 34.0° [1]) and XRD patterns of the exchanged zeolites. Nevertheless when both zeolites were exchanged with cesium (supports denoted Cs-ZSM-5 and Cs-Y, respectively) a marked decrease in the number and intensity of the XRD peaks is observed compared to the parent commercial zeolites. It should be pointed out that when the ion exchange with cesium is carried out, the used salt contains trace amounts of Ba^{2+}, which has been reported to significantly alter the zeolitic structure [2].

References

[1] M. M. J.Treacy, J. B. Higgins, *Collection of Simulated XRD Powder Patterns for Zeolites Fifth (5th) Revised Edition*, 2007.
[2] F. J. Varela-Gandía, Á. Berenguer-Murcia, D. Lozano-Castelló, D. Cazorla-Amorós, *J. Membr. Sci*, 2010, **351**, 123.