

## Supplementary material to

### OBTAINING XYLITOL BY HYDROLYSIS-HYDROGENATION OF LIQUORS DERIVED FROM SUGARCANE BAGASSE

Julieta L. Cerioni<sup>1,2</sup>, Maria E. Vallejos<sup>3</sup>, Fernando E. Felissia<sup>3</sup>, María C. Area<sup>3</sup>, Nora N. Nichio<sup>1,2</sup>, Gerardo F. Santori<sup>1,2\*</sup>

<sup>1</sup> CINDECA, Facultad de Ciencias Exactas, Universidad Nacional de La Plata. CCT La Plata- CONICET, 47 N° 257, 1900 La Plata, Argentina

<sup>2</sup> Facultad de Ingeniería, Universidad Nacional de La Plata, 1 esq 47, 1900 La Plata, Argentina

<sup>3</sup> IMAM, UNaM, CONICET, FCEQYN, Programa de Celulosa y Papel (PROCYP), Félix de Azara 1552, Posadas, Misiones, Argentina

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## EXPERIMENTAL

### Catalyst characterization

The Ni content in the solid samples was determined by atomic absorption spectrometry (AA-6650 Shimadzu Spectrophotometer). The equipment was an IL Model 457 spectrophotometer with a single channel and double beam.

Temperature-programmed reduction tests (TPR) were performed using conventional dynamic equipment, and the response was measured using TCD and MS detectors. The feed flow was an H<sub>2</sub>/N<sub>2</sub> ratio of 1/9, and the heating rate was 10 °C min<sup>-1</sup> from room temperature up to 1000 °C.

XRD patterns were recorded on a Philips 3020 powder diffractometer, using Cu K $\alpha$  radiation ( $\lambda = 1.5418 \text{ \AA}$ , intensity = 40 mA, and voltage = 35 kV). The patterns were recorded in the range of  $2\theta = 5^\circ\text{--}80^\circ$ .

Transmission-electron microscopy (TEM) images were taken using a TEM JEOL 100 °C instrument, operated at 200 kV. A graphite pattern was used for calibration. In this analysis, a suspension in 2-propanol was prepared by stirring the solid sample with ultrasound for 10 min.

The particles were considered spherical to estimate the average diameter volume/area ( $d_{va}$ ) using the expression:

$$d_{va} = \frac{\sum n_i \cdot d_i^3}{\sum n_i \cdot d_i^2}$$

where  $n_i$  is the number of particles with diameter  $d_i$ . Histograms of particle size distribution arose from the microphotographs analysis using the clear field image technique.

\* Email: [santori@quimica.unlp.edu.ar](mailto:santori@quimica.unlp.edu.ar)

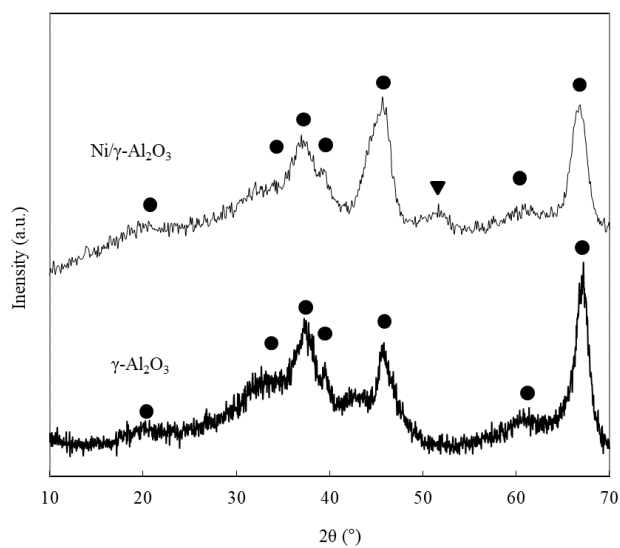


Figure S1. XRD of  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> support and Ni/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst. (●) low crystalline aluminum oxide (JCPDS 04 -0858). (▼) the metallic phase of Ni (JCPDS 4-850).

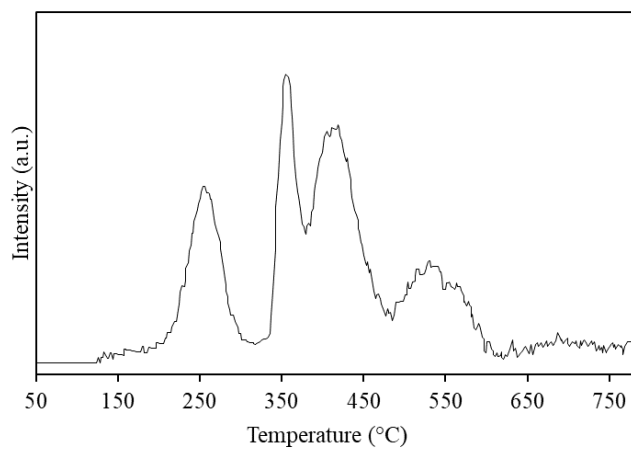


Figure S2. TPR profile of Ni/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst.