

*Supplementary Materials*

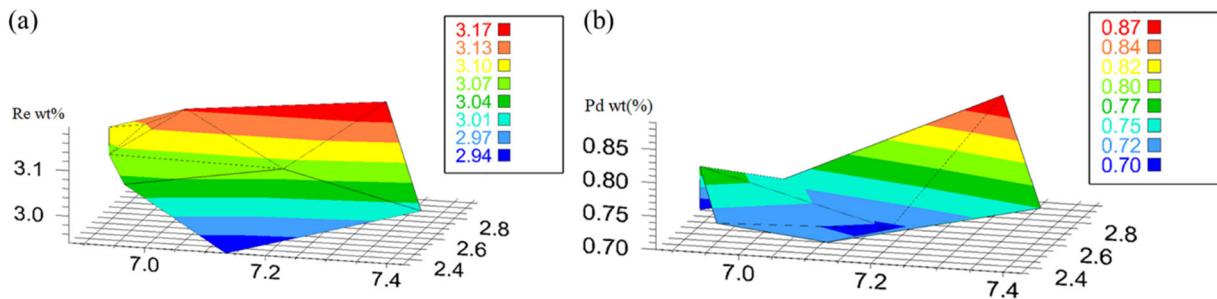
# Kinetics Study of the Hydrodeoxygenation of Xylitol over a ReO<sub>x</sub>-Pd/CeO<sub>2</sub> Catalyst

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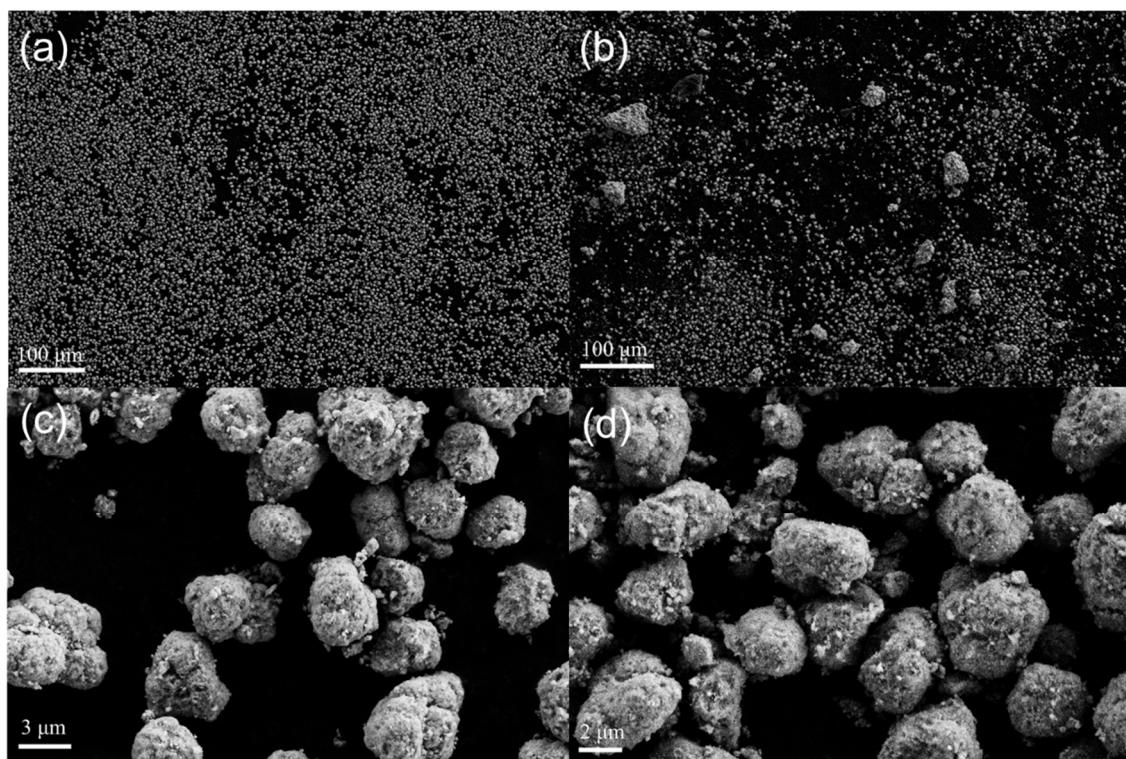
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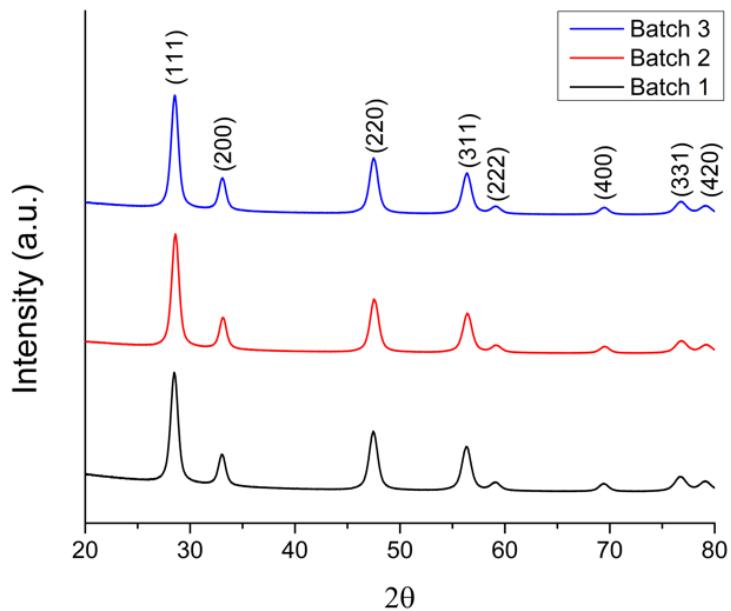
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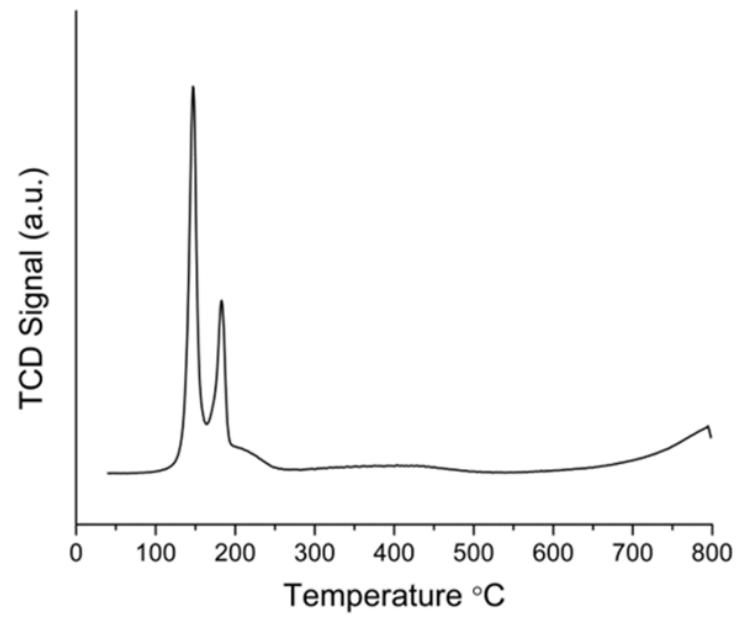
**Figure S1.** XRF X-Y position (in cm) composition contour of  $\text{ReO}_x\text{-Pd}/\text{CeO}_2$  catalyst **(a)** Re contour, **(b)** Pd contour.



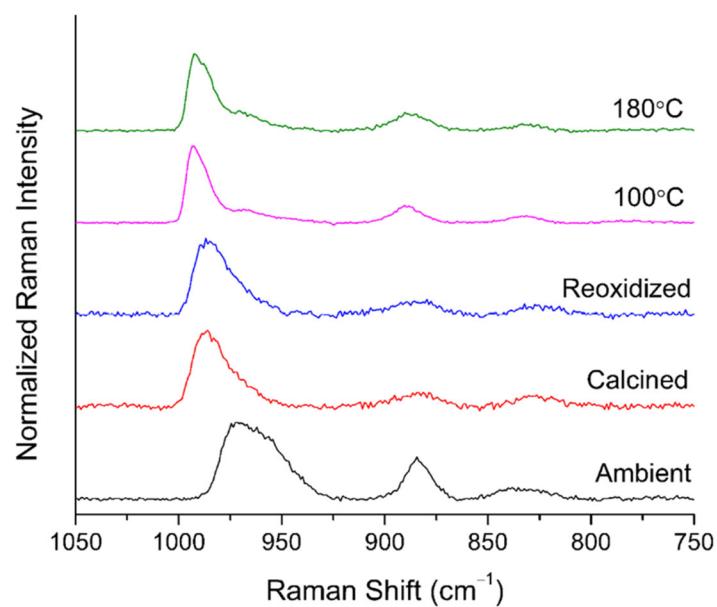
**Figure S2.** SEM of  $\text{CeO}_2$  support and 2 wt%  $\text{ReO}_x\text{-Pd}/\text{CeO}_2$  catalyst. **(a)**  $\text{CeO}_2$   $134 \times$  magnification, **(b)**  $\text{ReO}_x\text{-Pd}/\text{CeO}_2$   $150 \times$  magnification, **(c)**  $\text{CeO}_2$   $3540 \times$  magnification, **(d)**  $\text{ReO}_x\text{-Pd}/\text{CeO}_2$   $4400 \times$  magnification.



**Figure S3.** XRD patterns of 2 wt% ReO<sub>x</sub>-Pd/CeO<sub>2</sub> catalysts at a scanning rate of 2°/min with a step size of 0.02°.



**Figure S4.** Representative H<sub>2</sub> TPR profile of 2 wt% ReO<sub>x</sub>-Pd/CeO<sub>2</sub> catalyst.



**Figure S5.** In-situ Raman spectra of 2 wt% ReO<sub>x</sub>-Pd/CeO<sub>2</sub> catalyst.