

## Supporting information

### **Influence of nature and environment of manganese in Mn-BEA zeolite on NO conversion in selective catalytic reduction with ammonia**

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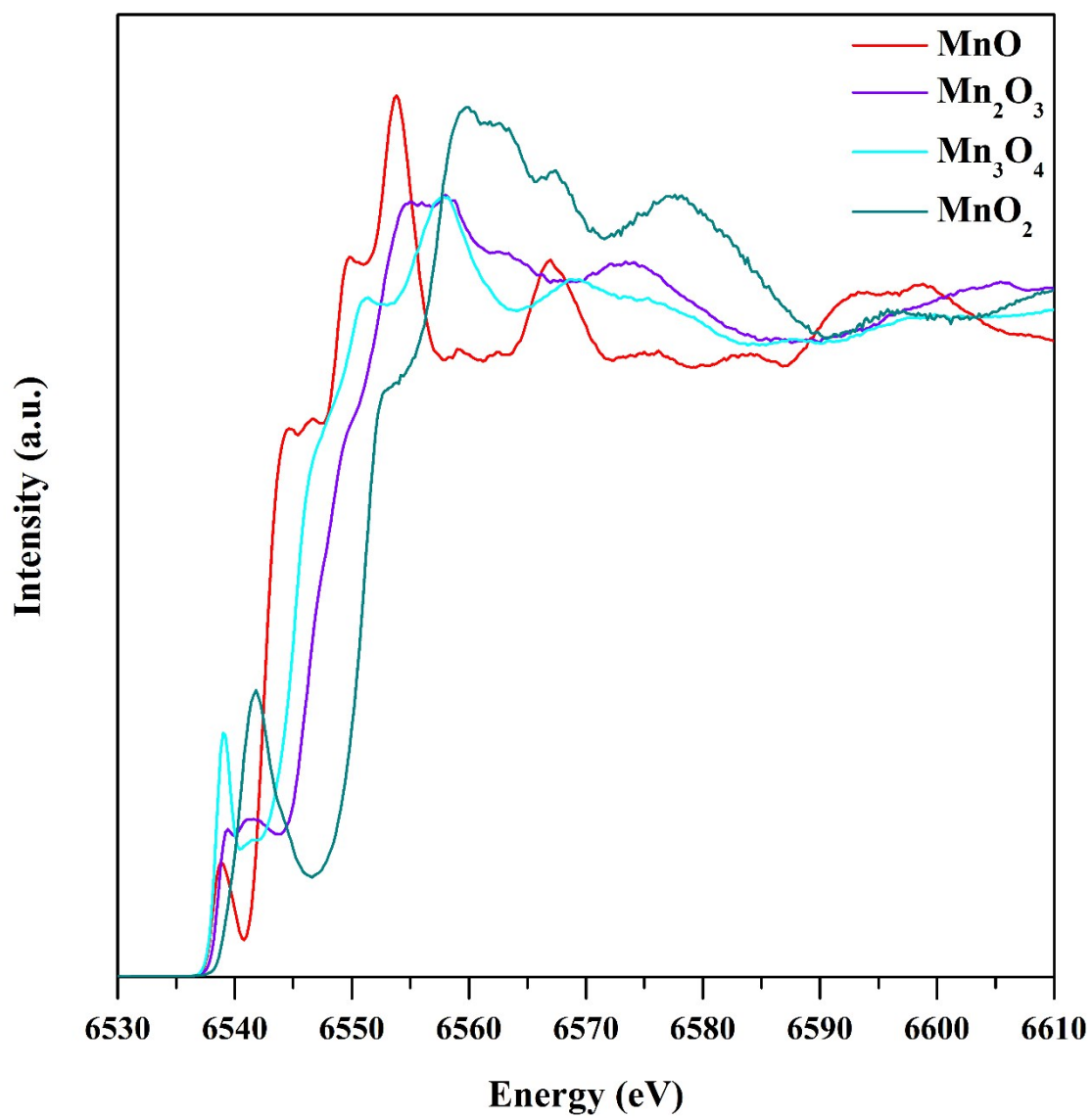
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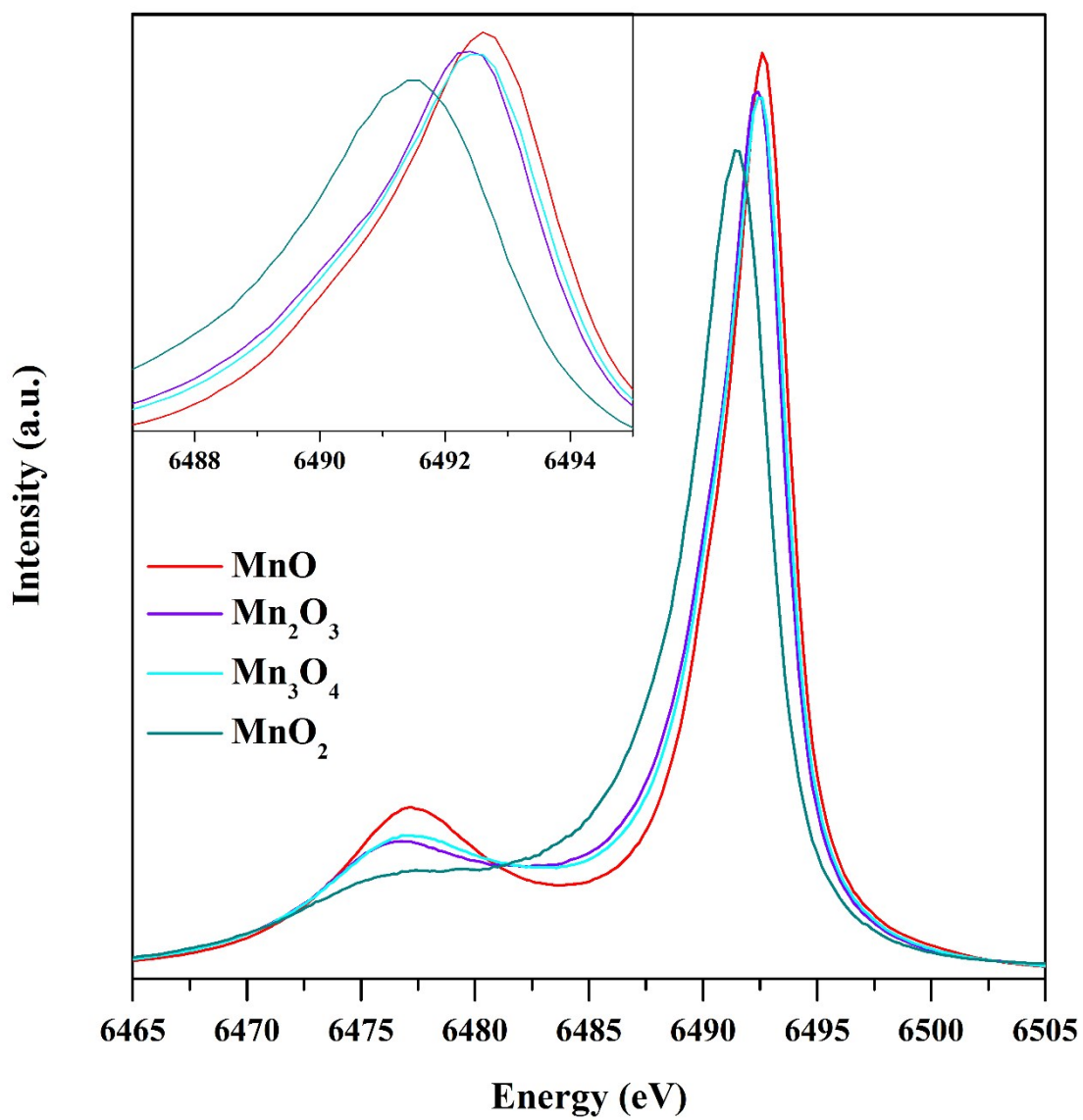
Supporting information to the article *Influence of nature and environment of manganese in Mn-BEA zeolite on NO conversion in selective catalytic reduction with ammonia* contains four figures and provides additional data of XES and XAS spectroscopy on studied zeolite samples and reference materials.

The XAS and XES experiments on MnO, Mn<sub>2</sub>O<sub>3</sub>, Mn<sub>3</sub>O<sub>4</sub> and MnO<sub>2</sub> (Sigma-Aldrich) were carried out at beamline ID26 of the European Synchrotron Radiation Facility (ESRF) in Grenoble, France. The beamline was in the same configuration as described in the experimental part of the paper. HERFD-XANES spectra for manganese oxide were recorded at the maximum of Mn K $\beta$  line.

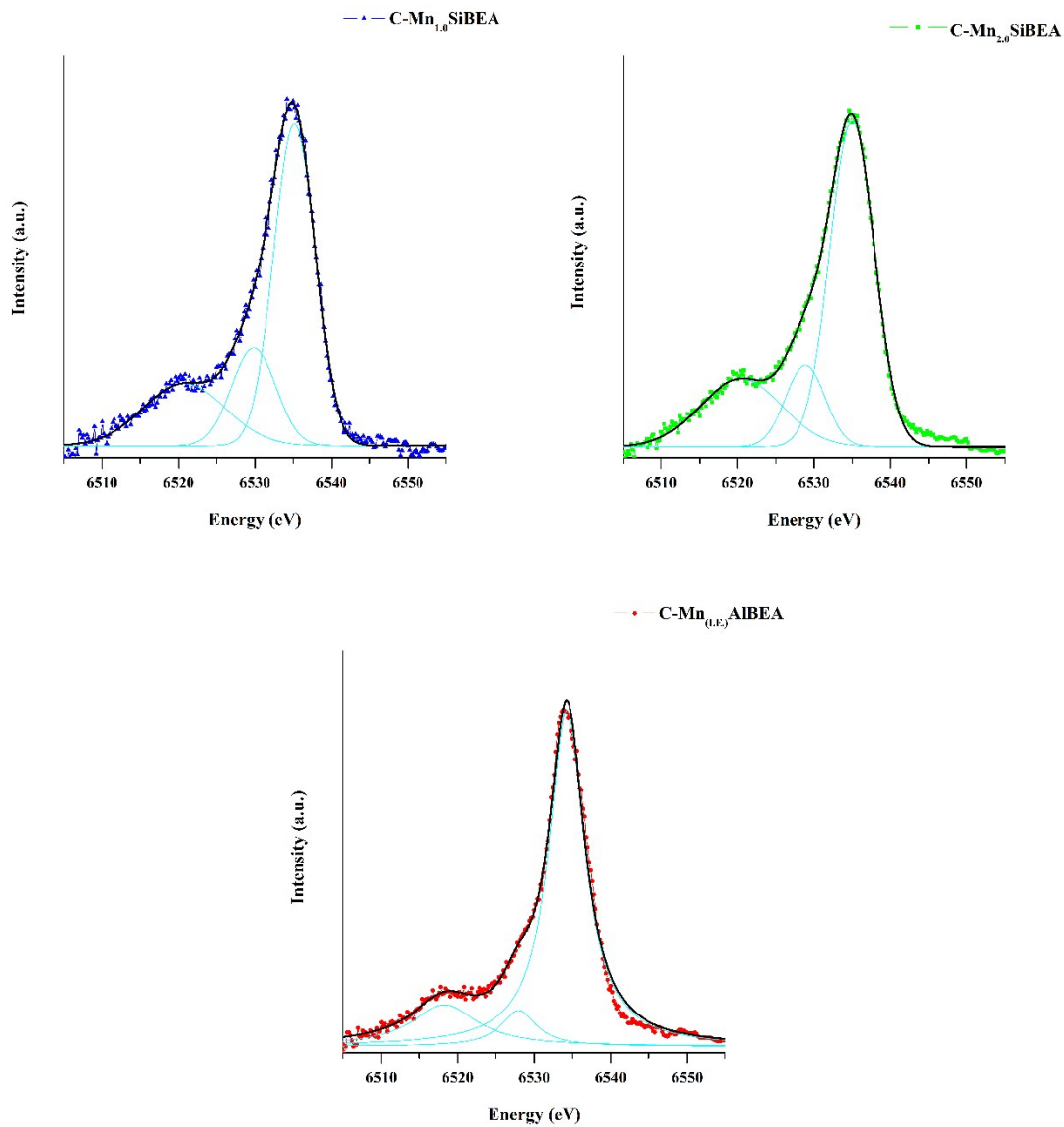
The Mn VTC K $\beta$  XES spectra of C-Mn<sub>(1.E.)</sub>AlBEA, C-Mn<sub>1.0</sub>SiBEA and C-Mn<sub>2.0</sub>SiBEA were fitted with Lorentzian functions in order to determine the number of components.



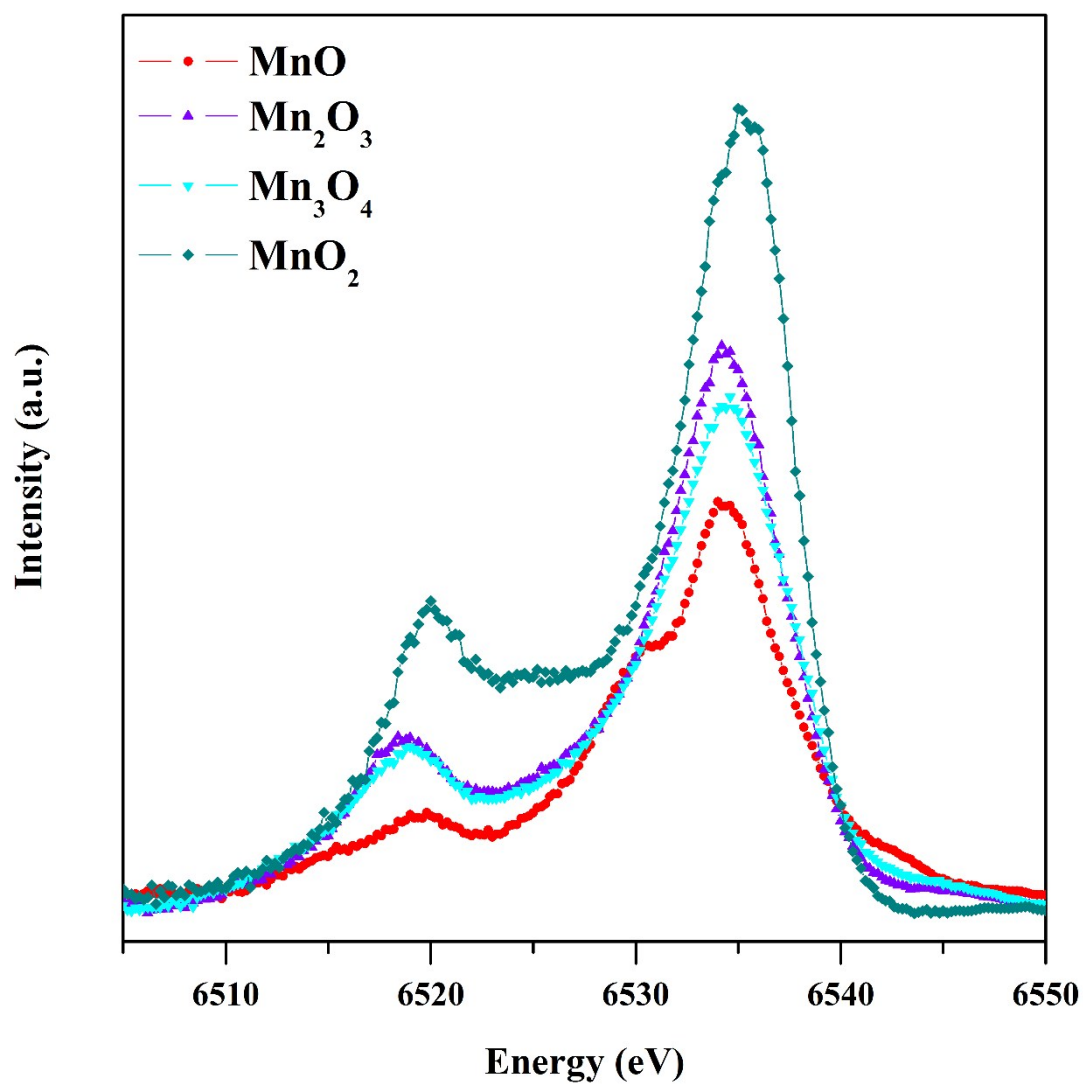
**Figure S1.** K $\beta$  HERFD-XANES spectra at the Mn K edge of MnO, Mn<sub>2</sub>O<sub>3</sub>, Mn<sub>3</sub>O<sub>4</sub> and MnO<sub>2</sub>



**Figure S2.** Mn CTC K $\beta$  XES spectra of MnO, Mn<sub>2</sub>O<sub>3</sub>, Mn<sub>3</sub>O<sub>4</sub> and MnO<sub>2</sub>.



**Figure S3.** Mn VTC K $\beta$  XES spectra of C-Mn<sub>(I.E.)</sub>AlBEA, C-Mn<sub>1.0</sub>SiBEA and C-Mn<sub>2.0</sub>SiBEA.



**Figure S4.** Mn VTC K $\beta$  XES spectra of MnO, Mn<sub>2</sub>O<sub>3</sub>, Mn<sub>3</sub>O<sub>4</sub> and MnO<sub>2</sub>.