

Supplementary information to

**Formation of manganese phosphate and manganese carbonate during
long-term sorption of Mn²⁺ by viable *Shewanella putrefaciens*:
effects of contact time and temperature**

by

Natalia Chubar^{1,2*}, Cristina Avramut¹ and Tom Visser³

¹Utrecht University, Faculty of Geosciences, Department of Earth Sciences, Budapestlaan 4, 3584
CD, Utrecht, The Netherlands

²Glasgow Caledonian University, School of Engineering and Built Environment, Cowcaddens Road
70, G4 0BA, Glasgow, United Kingdom

³Utrecht University, Faculty of Science, Department of Chemistry, Sorbonnelaan 16, 3584 CA,
Utrecht, The Netherlands

*Natalia Chubar: Natalia.Chubar@gcu.ac.uk

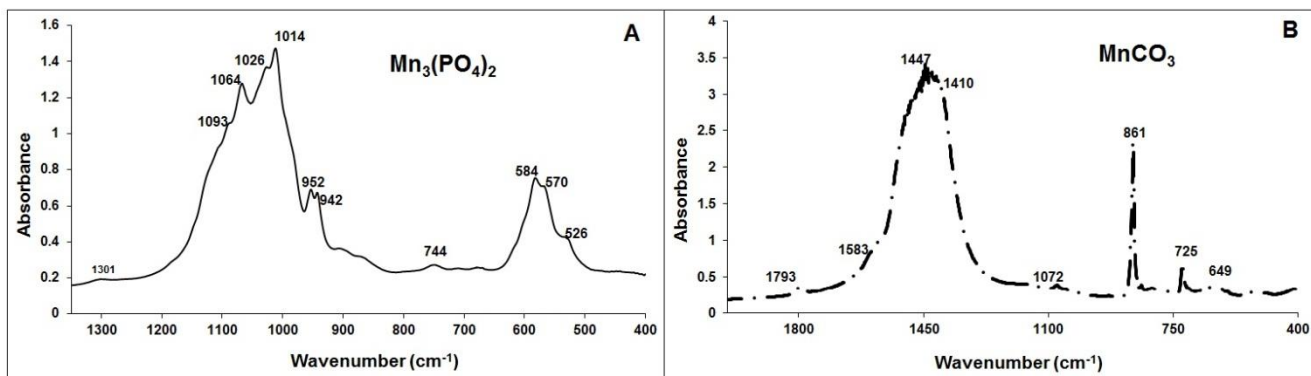


Fig. 1S FTIR spectra of the references: $\text{Mn}_3(\text{PO}_4)_2$ (A) and MnCO_3 (B).

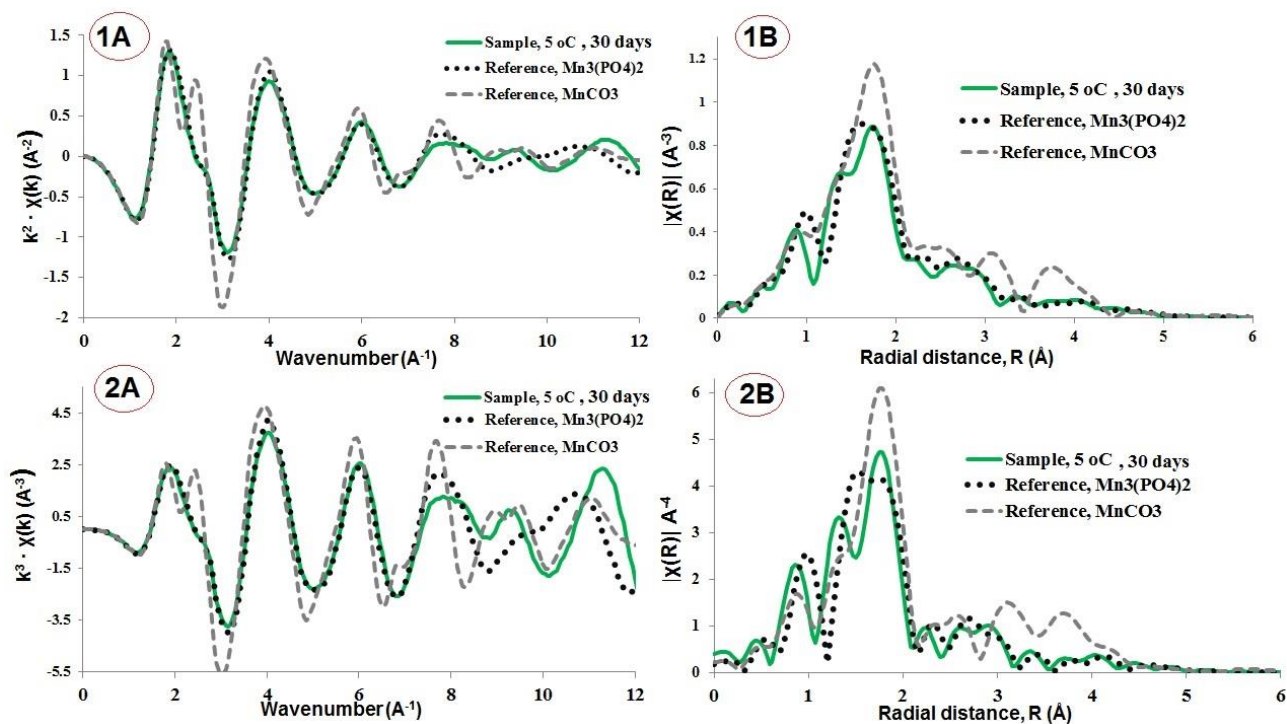


Fig. 2S k^2 -weighted (1) and k^3 -weighted (2) Mn K-edge EXAFS spectra (A) and their Fourier Transforms (B) of Mn-containing sample of *Shewanella putrefaciens* contacted to aqueous Mn^{2+} at 5 °C for 30 days. This figure is linked to the Fig. 4A of the main body of the article.

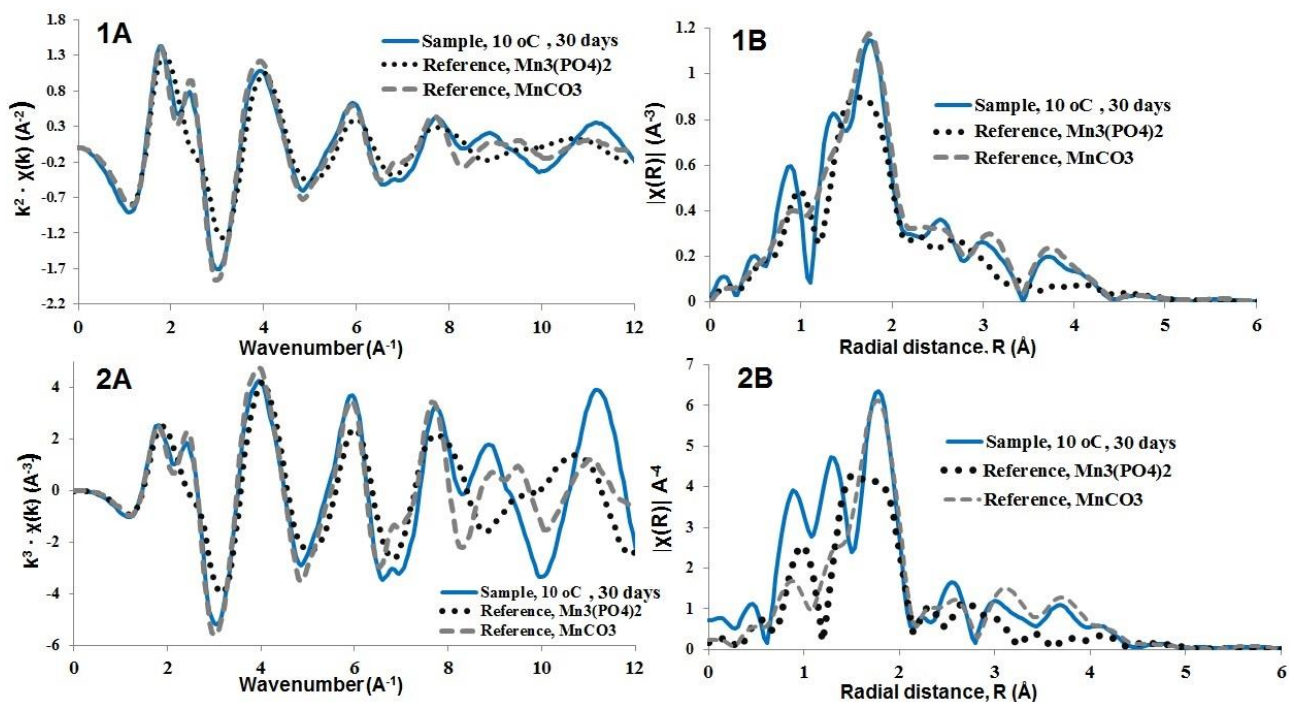


Fig. 3S k^2 -weighted (1) and k^3 -weighted (2) Mn K-edge EXAFS spectra (A) and their FTs (B) of Mn-containing sample of *Shewanella putrefaciens* contacted to aqueous Mn^{2+} at 10 °C for 30 days. This figure is linked to the Fig. 4B of the main body of the article. .

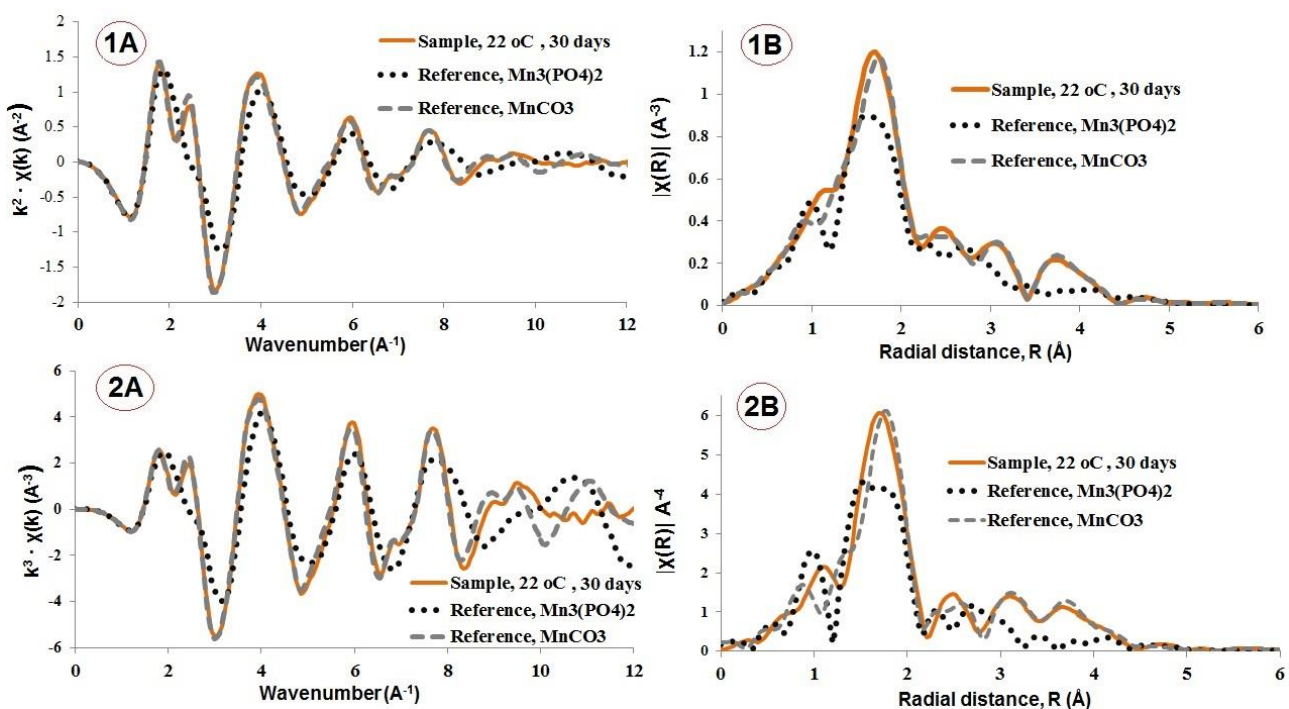


Fig. 4S k^2 -weighted (1) and k^3 -weighted (2) Mn K-edge EXAFS spectra (A) and their FTs (B) of Mn-containing sample of *Shewanella putrefaciens* contacted to aqueous Mn^{2+} at 22 °C for 30 days. This figure is linked to the Fig. 4C of the main body of the article. .

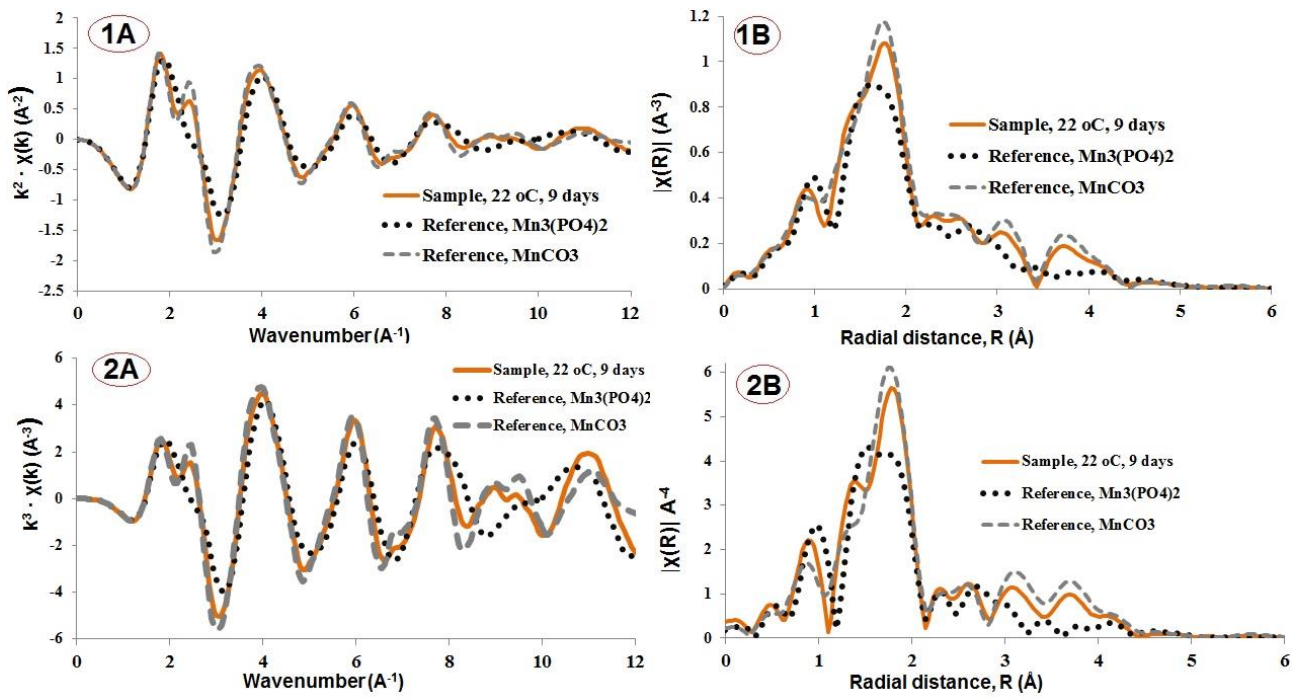


Fig. 5S k^2 -weighted (1) and k^3 -weighted (2) Mn K-edge EXAFS spectra (A) and their FTs (B) of Mn-containing sample of *Shewanella putrefaciens* contacted to aqueous Mn^{2+} at 22 °C for 9 days.

This figure is linked to the Fig. 5 of the main body of the article.

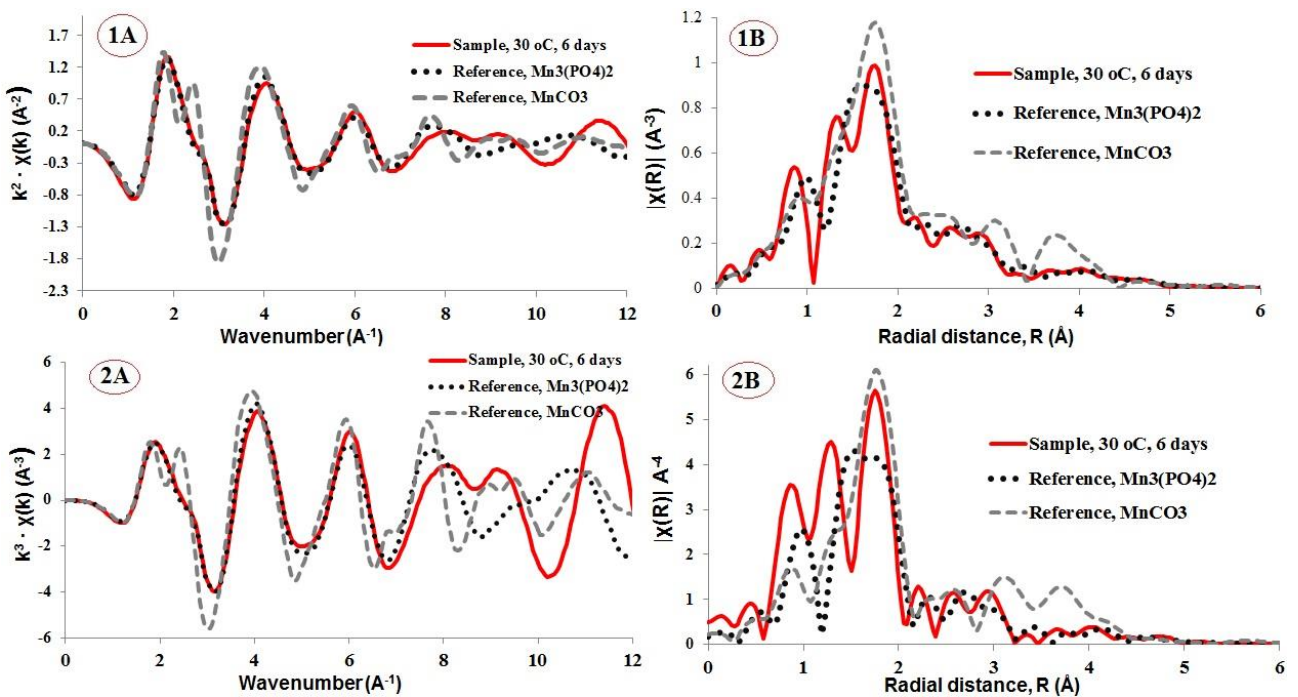


Fig. 6S k^2 -weighted (1) and k^3 -weighted (2) Mn K-edge EXAFS spectra (A) and their FTs (B) of Mn-containing sample of *Shewanella putrefaciens* contacted to aqueous Mn^{2+} at 30 °C for 6 days.

This figure is linked to the Fig. 6A of the main body of the article.

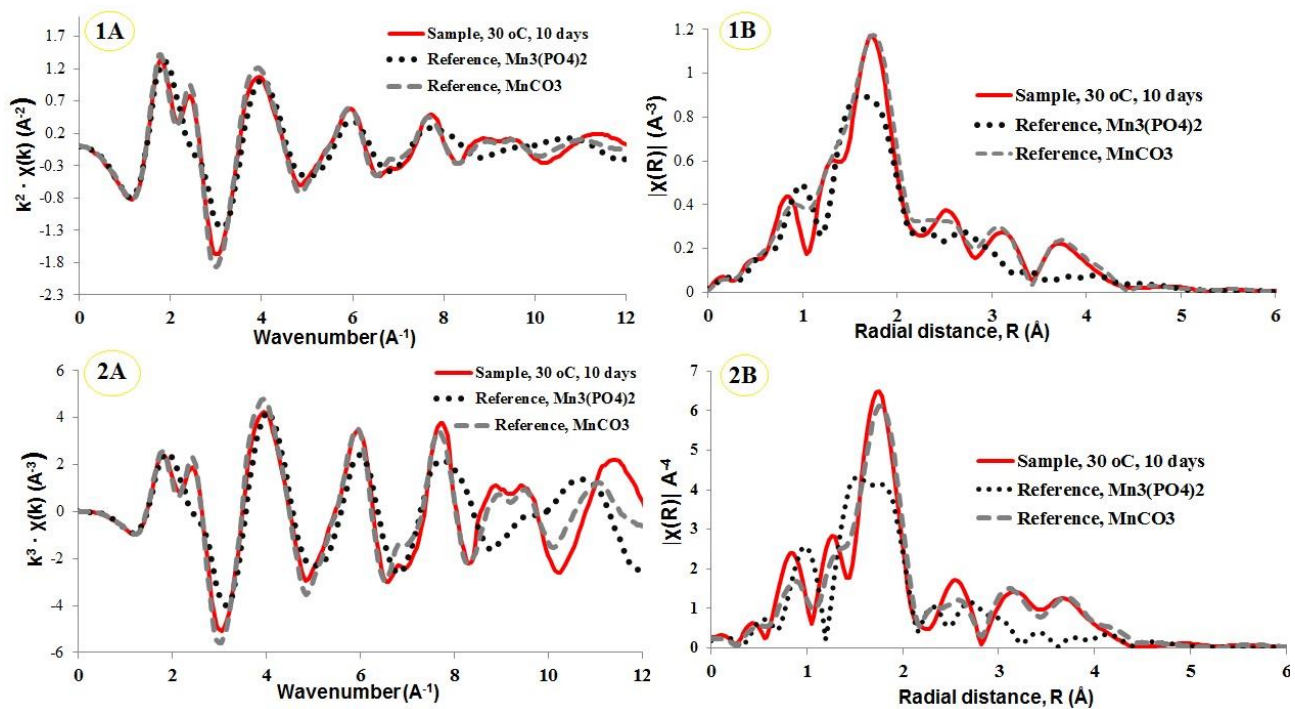


Fig. 7S k^2 -weighted (1) and k^3 -weighted (2) Mn K-edge EXAFS spectra (A) and their FTs (B) of Mn-containing sample of *Shewanella putrefaciens* contacted to aqueous Mn^{2+} at 30 °C for 10 days. This figure is linked to the Fig. 6B of the main body of the article.