

# The role of starch in nano-magnetite formation: a spectrometric and structural investigation

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Additional materials characterization

TEM

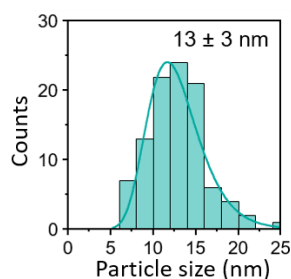


Fig. S1: TEM derived particle sizes distribution fitted with Log-normal profile of CP-R0.

FTIR

Fourier transform infrared (FTIR) spectra were collected with a Bruker Vertex 70v vacuum spectrometer in transmission mode in the spectral range of 6000 to 100  $\text{cm}^{-1}$ . 100 scans with a resolution of 4  $\text{cm}^{-1}$  were recorded for each sample. Pellets were prepared by mixing approximately 0.5 mg of sample with 150 mg spectroscopic grade KBr.

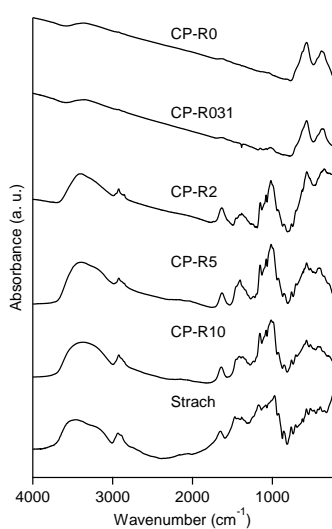


Fig. S2. FTIR spectra of native starch and the CP products at different R value.



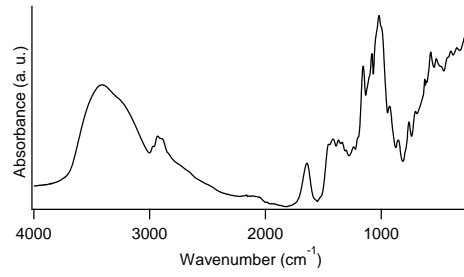


Fig. S3. FTIR spectrum of the OP-R10After.

### Mössbauer spectrometry

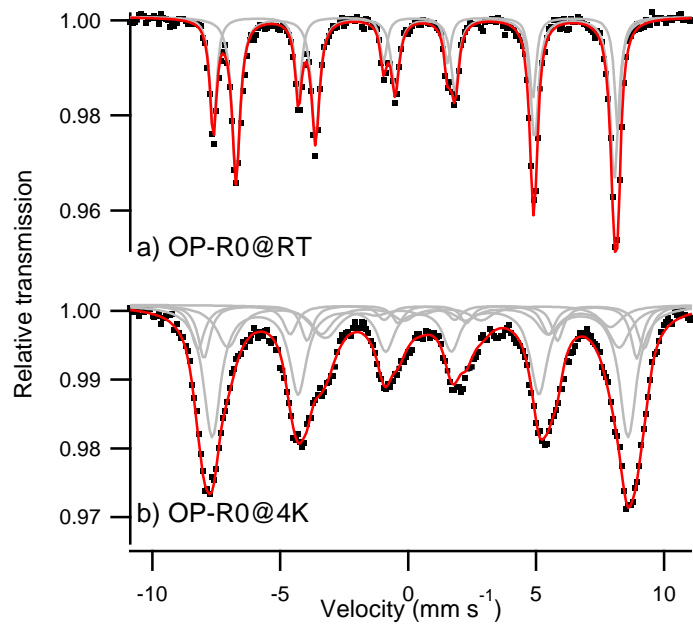


Fig. S4. Mössbauer spectra of OP-R0 at room temperature and 4 K.