

Electronic Supplementary Information

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"Fast and Continuous Processing of a new Sub- Micronic Lanthanide-based Metal-Organic Framework"

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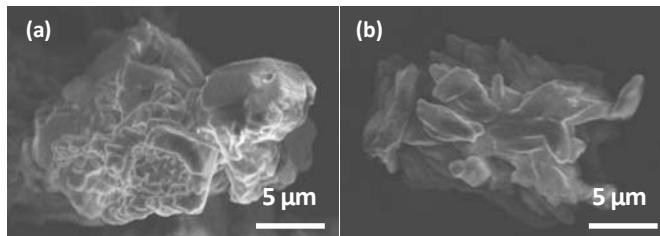
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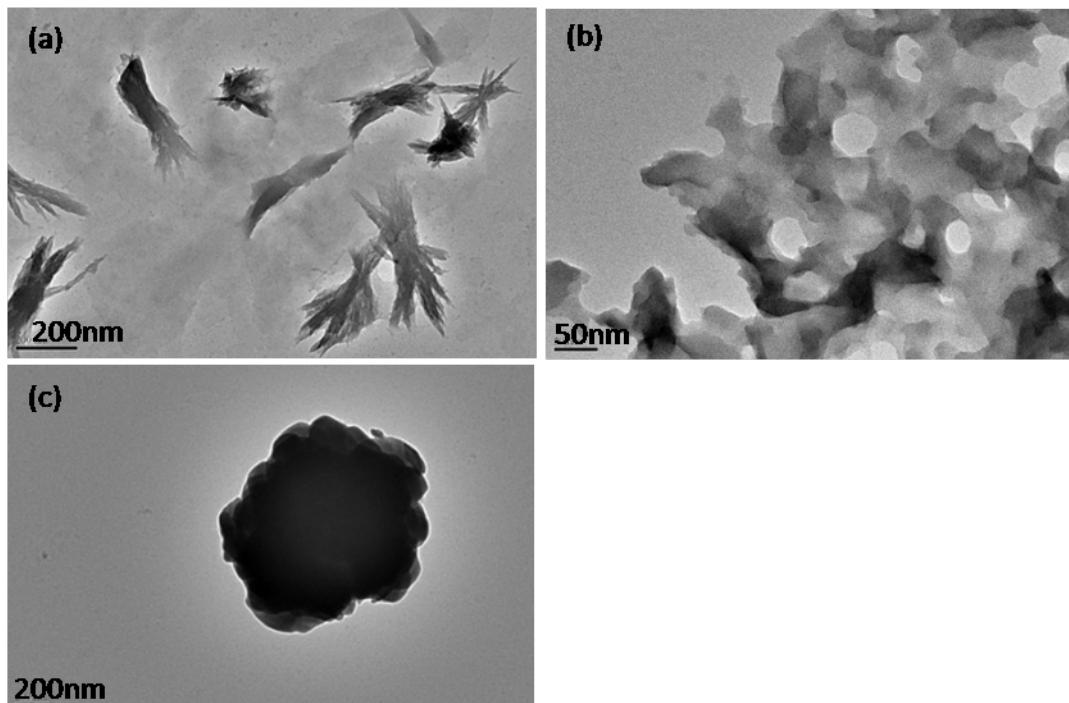
ESI-1: SEM images of two morphologies observed from the powder resulting of batch solvothermal synthesis

ESI- 2 : A TEM grid was prepared by directly casting a drop of liquid resulting from HT-HP process at 150°C – 10MPa for a residence time of 30 s.

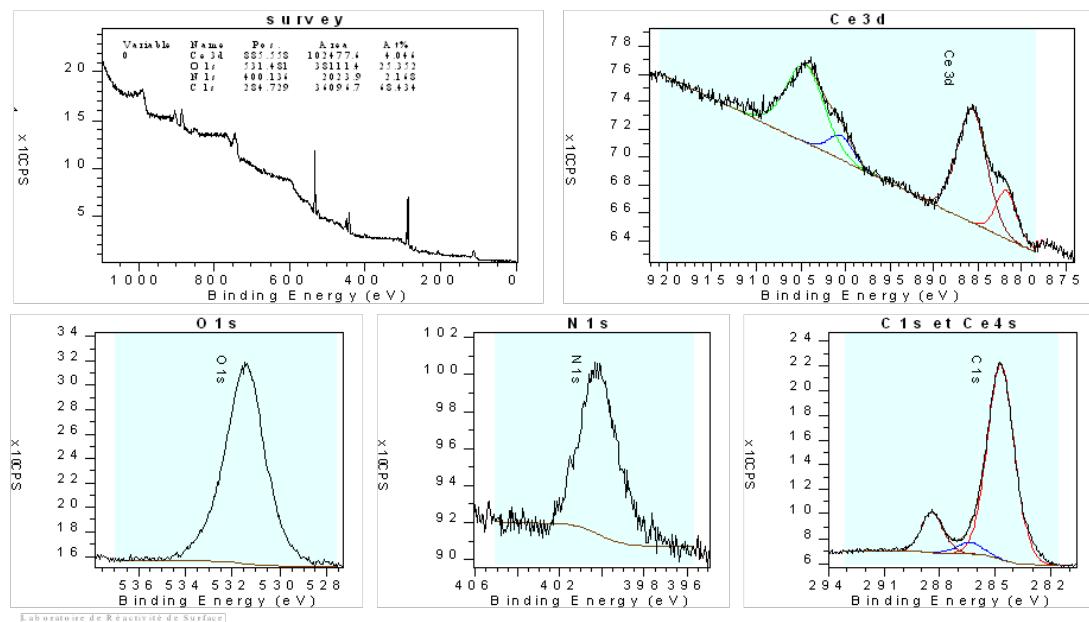
ESI-3: XPS spectra of Ce₅(OOC-C₆H₄-COO)_{7.5}(DMF)₄ showing the complete absence of Ce(IV): one of the characteristic signatures of Ce(IV) is a well defined peak at 915-917 eV.^{1,2}



ESI-1:SEM images of two morphologies observed from the powder resulting of batch solvothermal synthesis (residence time: two hours).



ESI- 2 : A TEM grid was prepared by directly casting a drop of liquid resulting from HT-HP process at 150°C – 10 MPa for a residence time of 30 s. TEM pictures show scarce solid phase from which several particle morphologies are distinguished (among which a very small minority of the flower-shaped Ce₅(BDC)_{7.5}(DMF)₄ – (c)). This tends to prove the polyphasic aspect of the mixture. Due to extremely low yield, no powder has been recovered by centrifugation with, as a consequence, no XRay diffraction pattern.



ESI-3: XPS spectra of Ce₅(OOC-C₆H₄-COO)_{7.5}(DMF)₄ showing the complete absence of Ce(IV): one of the characteristic signatures of Ce(IV) is a well defined peak at 915-917 eV.^{1,2}

Quantitative analysis of elements: Ce : 4,0 % (theory : 4,3%) ; O : 25,4 % (29,6 %) ; N : 2,2 % (3,1 %) ; C : 68,4 % (62,6%)

References:

1: NIST X-ray Photoelectron Spectroscopy Database, Version 4.1 (National Institute of Standards and Technology, Gaithersburg, 2012); <http://srdata.nist.gov/xps/>.

2 : Zhang, F., et al., Surf. Sci., 2004. **563**(1-3): p. 74-82.