

Supporting Information

A novel liquid template corrosion approach for layered silica with various morphologies and different nanolayer thickness †

Wanliang Yang and Baoshan Li *

State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, China. Tel: +86 10-64445611; E-mail: bsli@mail.buct.edu.cn;

In experimental section, we have successfully prepared layered silica with various morphologies using ethyl acetate. When other esters like butyl acetate in place of EA was adding in the experiment, the similar structure particles were obtained (seeing the Fig.S1). Fig. S1a (HRTEM image) shows that the sample was consists of hollow sphere particles and the shells were composed of fold-like layers, which was similar to L₁ sample. Fig. S1b indicate that the particles were irregular and self-assembled by layers. The HRTEM image (Fig. S1c) indicates that the particle was spherical and self-assembled by layers, this sample was prepared using the 5 mol L⁻¹ of aqueous ammonia. The morphology was similar to L₅. The morphology of sample prepared using the concentrated aqueous ammonia (13.4 mol L⁻¹) was like Van Gogh's painting named 'Starry Night' (Fig. S1d). The film was also self-assembled by layers.

According to the aforementioned observations, it is clear that using other esters like butyl acetate instead of EA could obtain the similar structure by the LTC method.

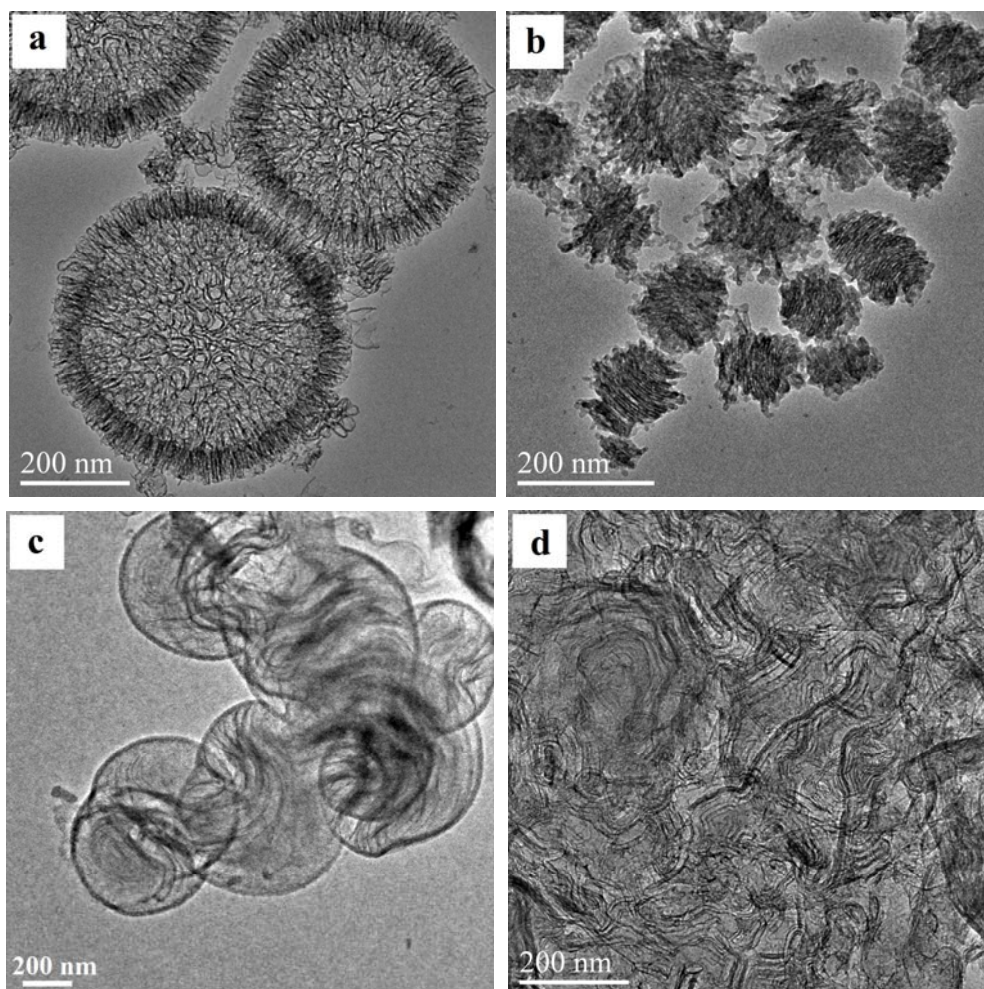


Fig. S1. HRTEM images of the layered silica prepared using butyl acetate at different concentration of aqueous ammonia: a (1.0 mol L^{-1}); b (3.0 mol L^{-1}); c (5.0 mol L^{-1}); d (13.4 mol L^{-1}).