CHEMPLUSCHEM

Supporting Information

Supramolecular Gelation of Europium and Calcium Cholates through the Nucleation-Elongation Growth Mechanism

Raju Laishram and Uday Maitra*

Table SI1. IR data of NaCh, CaCh and EuCh lyophilized samples.

Samples	$\nu_{c=o}$ (Symmetric stretching) cm^{-1}	$\nu_{c=o}$ (Asymmetric stretching) cm^{-1}
NaCh	1401	1555
CaCh sol	1411	1551
CaCh gel	1405	1550
EuCh sol	1408	1548
EuCh gel	1405	1542

TEM Imaging

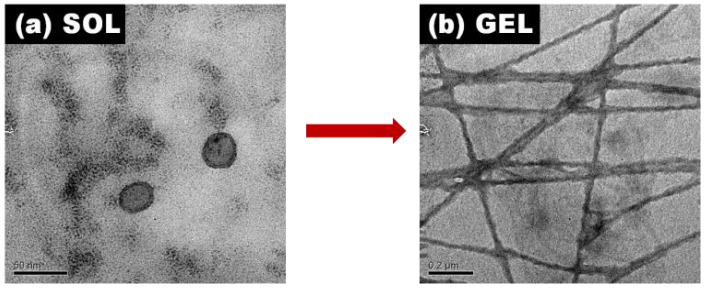

Fig. SI1 TEM of CaCh (lyophilized sample; 15/30 mM): (a) solution (just after mixing) and (b) gel (after 3 h)

TEM images (SI1) of CaCh gave similar results as the AFM (Fig. 2). The particles were observed to be ~30 nm in the sol phase. After gel formation, a fibrous network with fibre diameter of ~30 nm was seen which was similar to the diameter of the particles in the sol phase.

Confocal Imaging

The morphology changes were also studied using fluorescence confocal imaging. Rhodamine 6G was used as the fluorescence dye. The imaging was done just after mixing and also after 3 hrs. The resolution of confocal is 200 nm so individual particles or fibres cannot be resolved. However, clear transition from particle-like structures, in sol phase, to fibres like morphology. In gel phase, was observed.

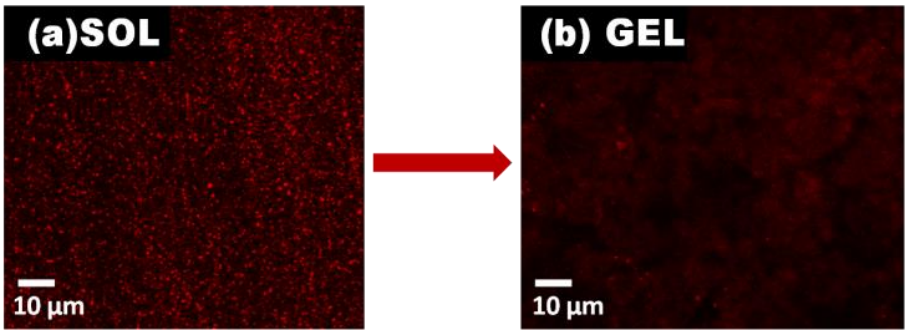

Fig SI2 Fluorescence confocal image of CaCh: (a) solution and (b) gel

EuCh gelation was fast and we were unable to get the TEM and Confocal images of sol phase having particles, we got only fibrous network. However, the AFM images prove the particles to fibre transition in sol to gel. This was because the hydrophobic nature of the carbon coated copper grid used in TEM imaging accelerates the aggregation process, whereas the hydrophilic nature of the mica sheet used for AFM imaging aggregation slows down the aggregation. In confocal imaging, the imaging took more time (~10-30 min) and, moreover, we cannot freeze the sample at the sol phase. Thus, for fast gelling EuCh, we were not able to observe the sol phase, only EuCh gel phase was observe (SI4).

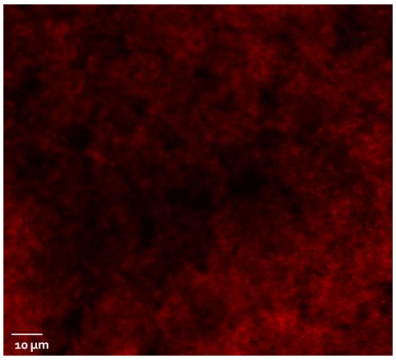

Fig. SI3 Fluorescence confocal image of EuCh gel

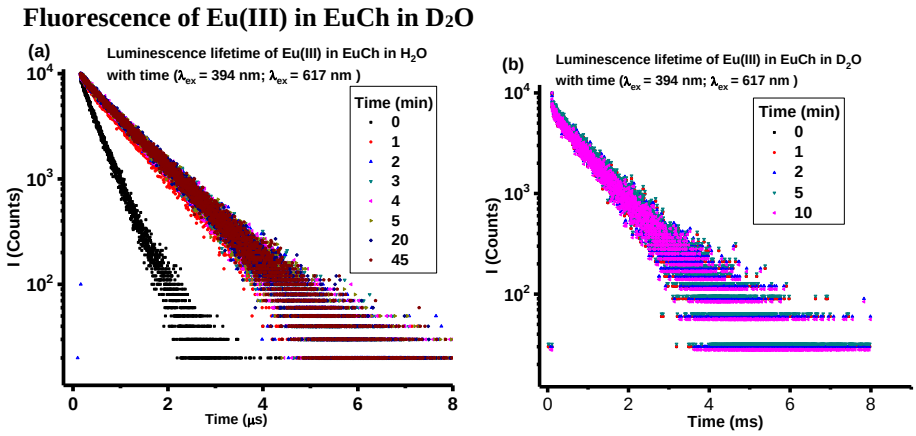

Fig. SI4 Luminescence lifetime of EuCh with time in (a) H_2O and(b) D_2O

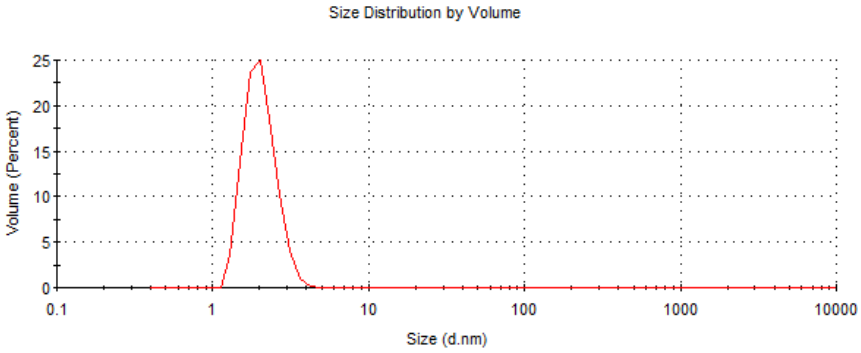

Fig. SI5 DLS of CaCh (5/15 mM) sol