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Realization of sensitized erbium luminescence in Si-nanocrystal composites obtained from solution processable sol-gel derived materials

(Supporting Information)

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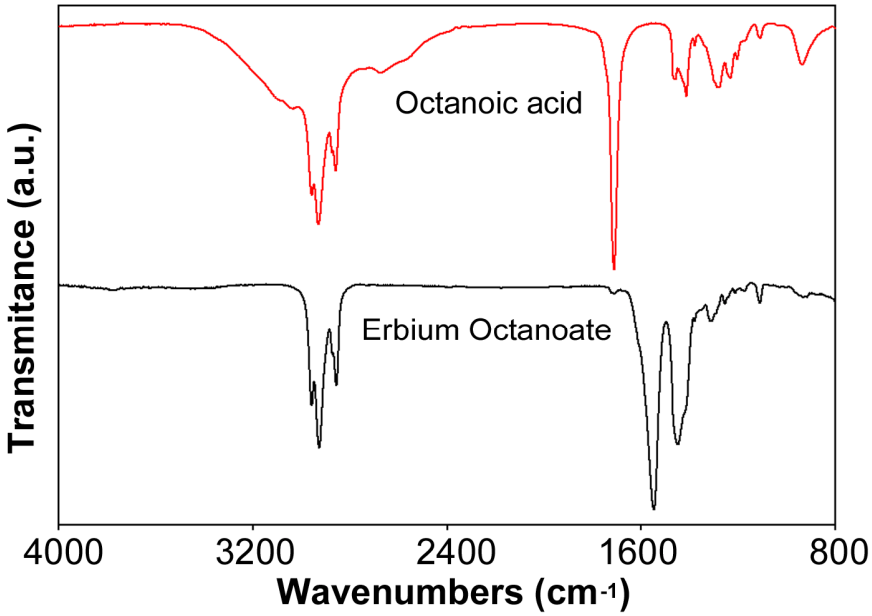
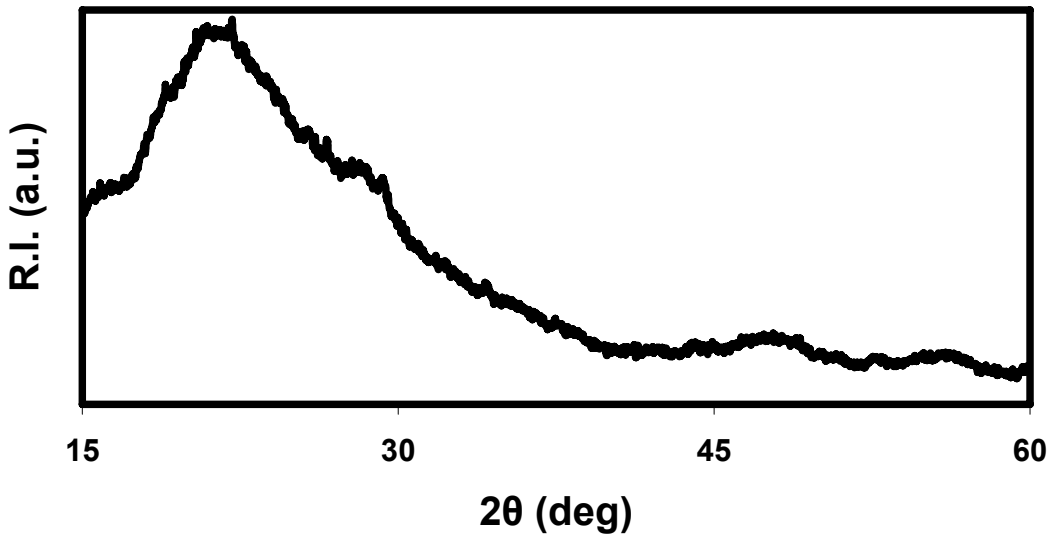
Characterization of Erbium Octanoate. Erbium octanoate (ErOct) was chosen as a alternative precursor that balances solubility and reactivity. ErOct is prepared by dissolving ErA in anhydrous m-xylene and adding three equivalents of octanoic acid, followed by stirring for 1 hour at room temperature. IR spectroscopy (Figure 6) shows the disappearance of the spectral signature of octanoic acid (i.e., OH stretching at ca. 3400 cm^{-1} and C=O stretch at ca. 1700 cm^{-1}) and the appearance of a doublet appears between 1400 – 1600 cm^{-1} attributable to C-O symmetric and asymmetric stretches.[1] Electrospray mass spectrometry afforded a peak corresponding to 597 g/mol confirming of the product is ErOct.



X-ray diffraction pattern of sample 4a.



References:

1. Silverstein, R. M. W., F. X., *Spectrometric Identification of Organic Compounds*. 6th Edition ed.; John Wiley & Sons, Inc. : 1996.