

Fabrication, characterization and properties of $C_{60}(OH)_x$ nanocrystals by a reprecipitation method

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Recently, various kinds of fullerene nanocrystals were reported to be easily grown by the precipitation methods[1-3]. Much interests are concentrated on these methods as the useful techniques for applications of fullerene materials. Polyhydroxylated fullerenes ($C_{60}(OH)_x$:fullerenol) are promising materials for use in the field of life science and so on because of their water-solubility. In this study, we report the fabrication of $C_{60}(OH)_x$ nanocrystals by a reprecipitation method. The structural and morphological characterization of these crystals was performed by SEM and TEM.

Figure 1 shows the SEM image of $C_{60}(OH)_{20}$ (average composition) nanocrystals by using pyridine (good solvent) and *m*-xylene(poor solvent). Nano-crystals with truncated octahedral surface morphology were observed. In this presentation, the detailed relation between morphology and distribution of particle size of the nanocrystals and solvating media will be presented. The electronic properties of these nanocrystals will be also presented.

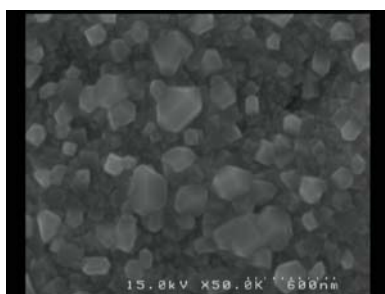


Figure 1. SEM image of $C_{60}(OH)_{20}$ nanocrystals by the reprecipitation method using pyridine (good solvent) and *m*-xylene(poor solvent).

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