Electronic Supplementary Information for

Rapid preparation of highly luminescent CdTe nanocrystals in an Ionic liquid via a microwave-assisted process

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1. ^{1}H NMR measurement

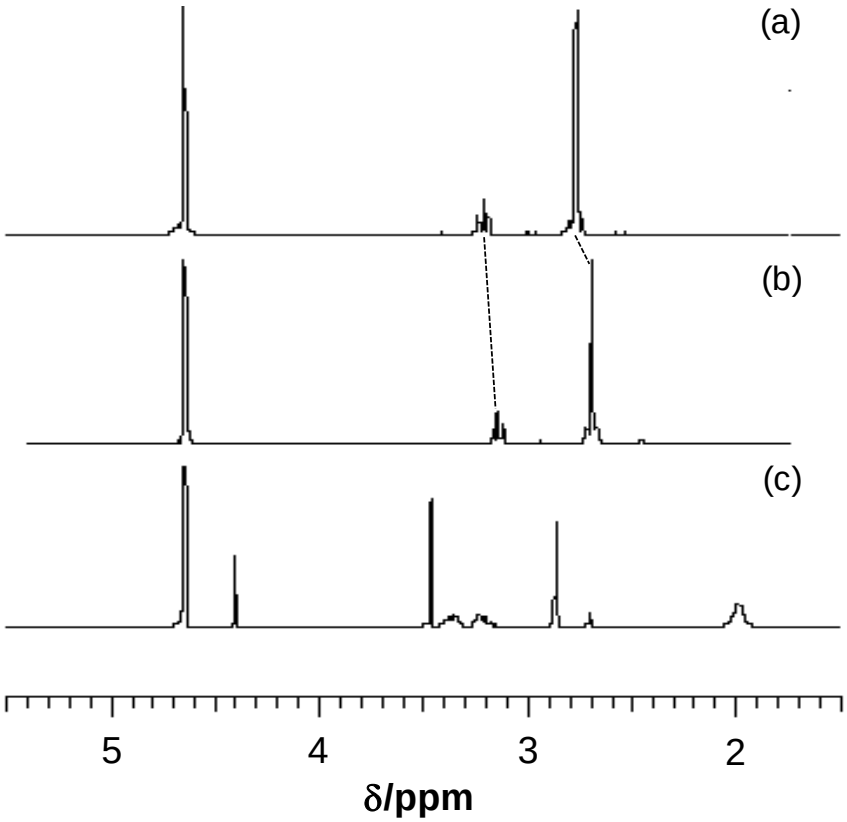

Fig. S1 ^{1}H NMR spectra of (a)DMAET, (b)DMAET with $CdCl_2$ in D_2O, and (c) the same solution with (b) after the contact with the ionic liquid, MOMPyrTf_2N.

Upon the addition of $CdCl_2$, the peaks for DMAET(a) showed upfield shift by 0.1 ppm(b), indicating the formation of cadmium-DMAET complex. The signals for cadmium-DMAET complex(b) disappeared after the extraction to the ionic liquid. Instead, new signals which can be assigned to MOMPyr^{+}, the cationic component of ionic liquid appeared. The cadmium-DMAET complex was extracted from water to the ionic liquid phase via cation-exchange mechanism.

2. XRD patterns

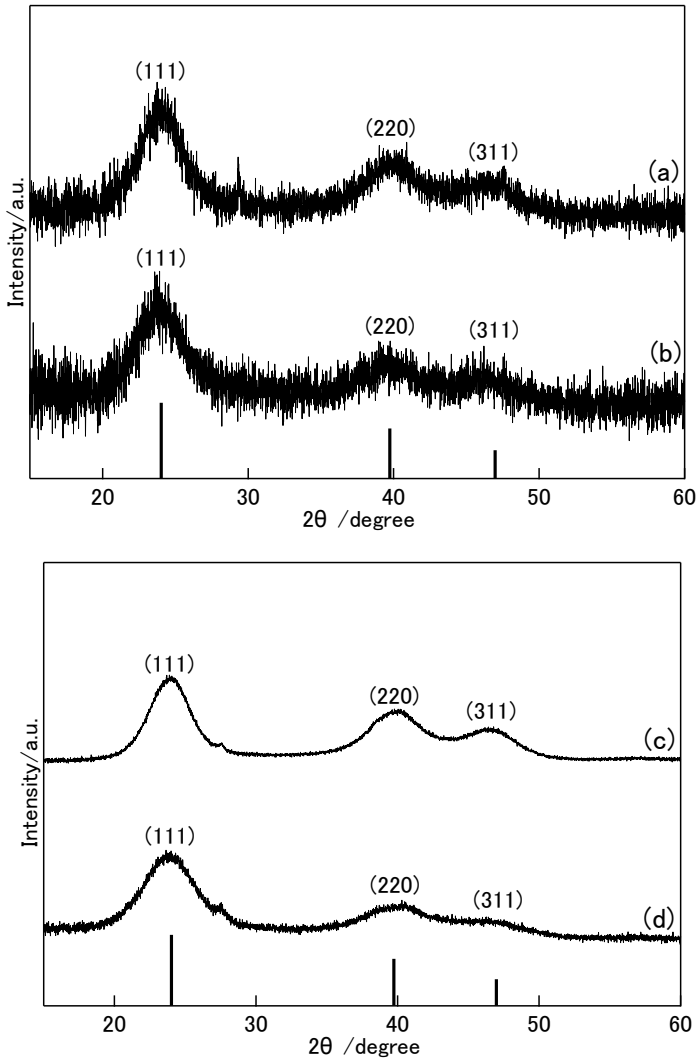

Fig. S2 XRD profiles of CdTe nanocrystals prepared via (a) microwave irradiation and (b) convective heating in the ionic liquid at 150 °C, (c) microwave irradiation and (d) convective heating in water at 100 °C. All these samples showed zincblende crystalline structure, which is the stable crystal structure for bulk CdTe crystal.

3. Spectral evolusion of absorption and photoluminescence of CdTe NCs prepared in aqueous solution.

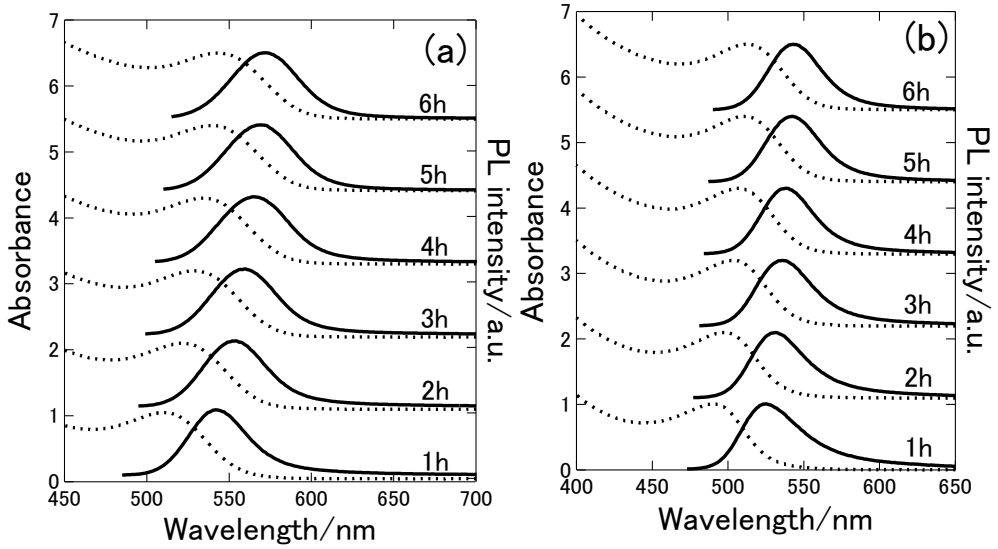

Fig. S3 Absorption (broken lines) and the corresponding PL (λ_{ex} = 400 nm, solid lines) spectral changes of CdTe NCs prepared by (a) microwave irradiation and (b) convective heating in water at 100 ºC.

4. Spectral change of CdTe NCs before and after the ligand exchange from cationic DMAET to anionic TGA in the ionic liquid and water, respectively.

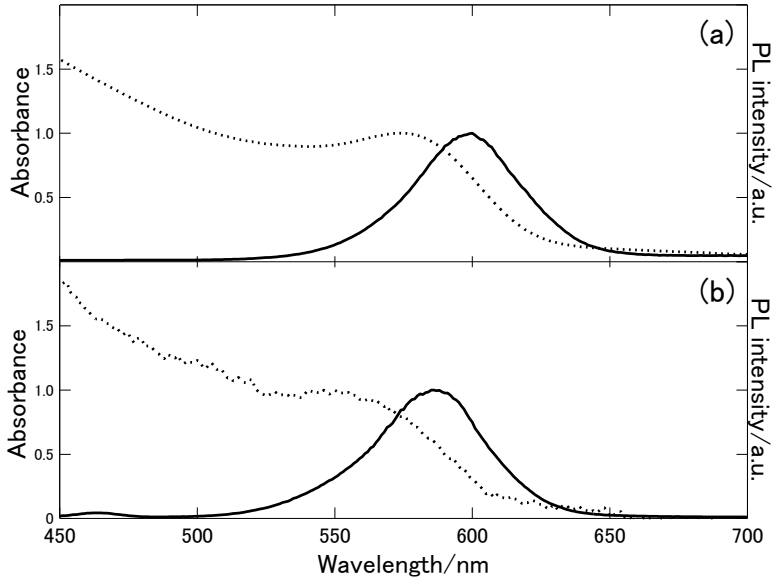

Fig. S4 Absorption (broken lines) and PL spectra (solid lines) of CdTe NCs capped with (a)DMAET in MOMPyrTf$_2$N and (b) TGA in chloroform.