Electronic Supplementary Information (ESI)

Architectures Varying from Discrete Molecular Units to 2-Dimensional Coordination Polymers and Photoluminescent Behavior of Zinc and Cadmium Comprising of Anionic Zwitter ion of Rigid 4,5-Dicarboxy-1,3-dimethyl-1H-imidazolium iodide

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Figure S1. $^1$H-NMR of H$_2$DDII recorded in DMSO-$d_6$
Figure S2. $^{13}$C-NMR of H$_2$DDII recorded in DMSO-d$_6$
Figure S3. $^1$H-NMR of HDDII (1) recorded in DMSO-d$_6$. 
Figure S4. $^{13}$C-NMR of HDDII (1) recorded in DMSO-$d_6$. 

Zwitter ion (HDDI)
Figure S5. Distance between Zn···Zn in 2.

Figure S6. H-bonding interactions between lattice water molecules and two adjacent rectangular sheets in 2.

Figure S7. 3D supramolecular structure of 2.
Figure S8. Distance between Zn···Zn in one macrocycle in 3.
Figure S9. H-bonding interactions in 4.

Figure S10. Distance between Zn⋯Zn in 4.
Figure S11. CH⋯O interaction in 6.

Figure S12. 3D ABAB packing fashion in 6.
PXRD of compound 1

PXRD of compound 2

PXRD of CP 3

PXRD of compound 4
Figure S13. PXRD of compounds 1-6

Figure S14. Irreversible water removal in CP 3