Electronic Supplementary Material (ESI) for CrystEngComm.

Supplementary Information

Fabrication of $[Cu_2(bdc)_2(bpy)]_n$ thin films using coordination modulation-assisted layer-by-layer growth

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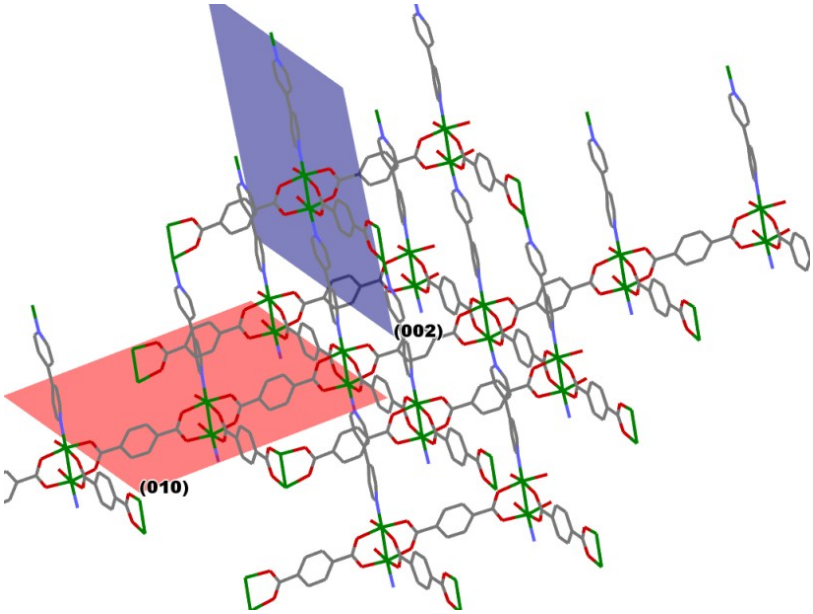

Figure S1. Structure of $[Cu_2(bdc)_2(bpy)]_n$ showing (010) and (002) planes (based on the single-crystal structural assignment). Color code: green: copper; red: oxygen; blue: nitrogen; black: carbon. Hydrogen atoms were omitted for clarity.

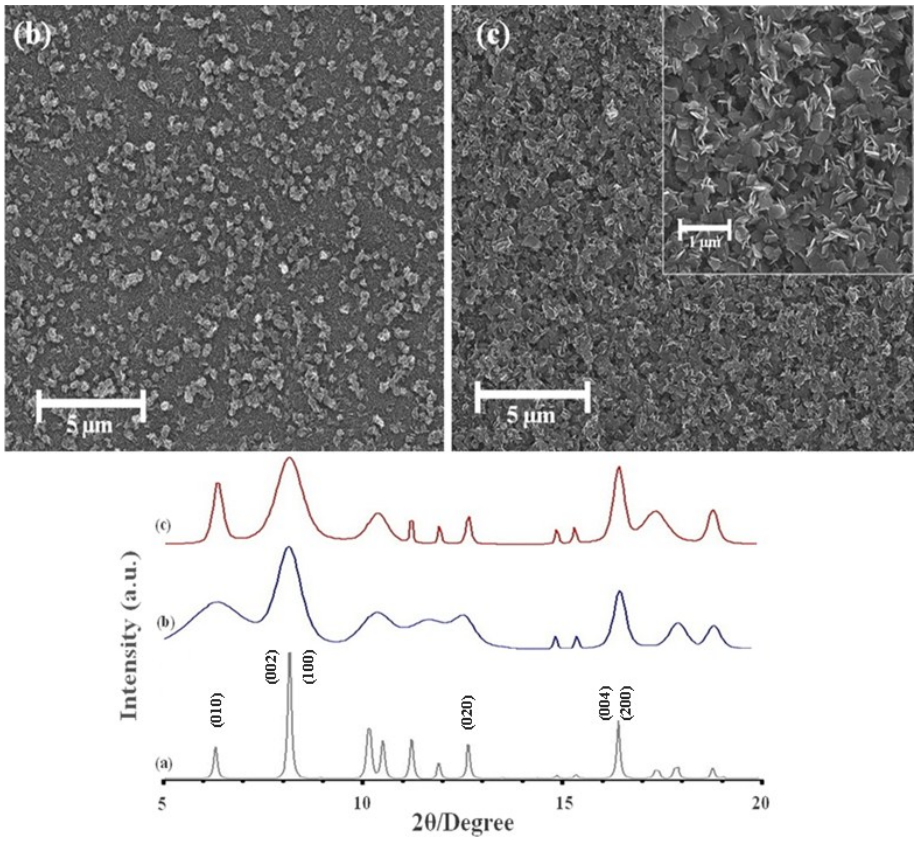

Figure S2. SEM images and XRD patterns of $[Cu_2(bdc)_2(bpy)]_n$ thin films obtained through a two-step (b) and three-step deposition procedure (c). Simulated powder pattern profile is also depicted for the sake of comparison (a).

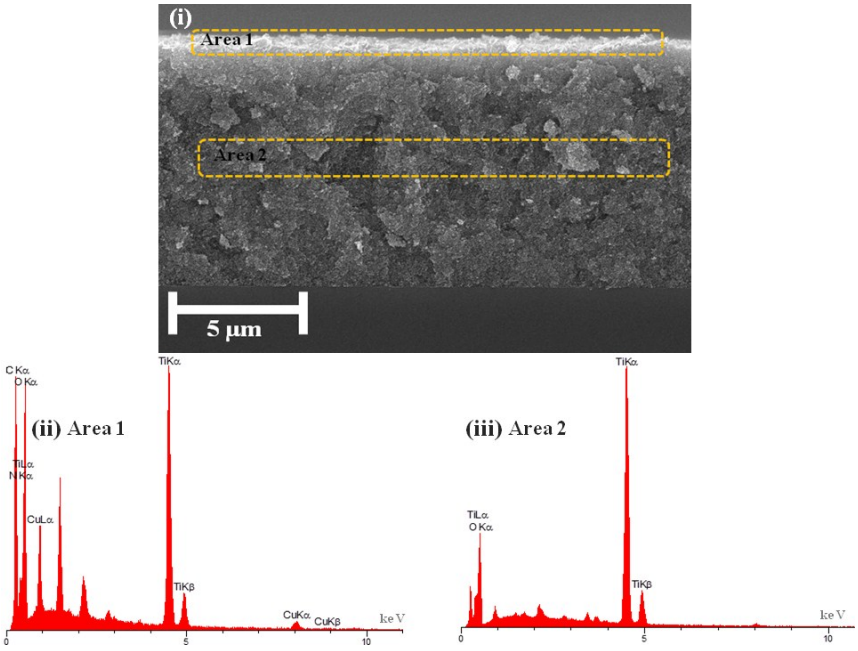

Figure S3. Cross-sectional SEM view of the film prepared through a three-step deposition procedure (i), and EDX data showing the semi-quantitative composition of the film at various area (top and bottom) of the cress section.

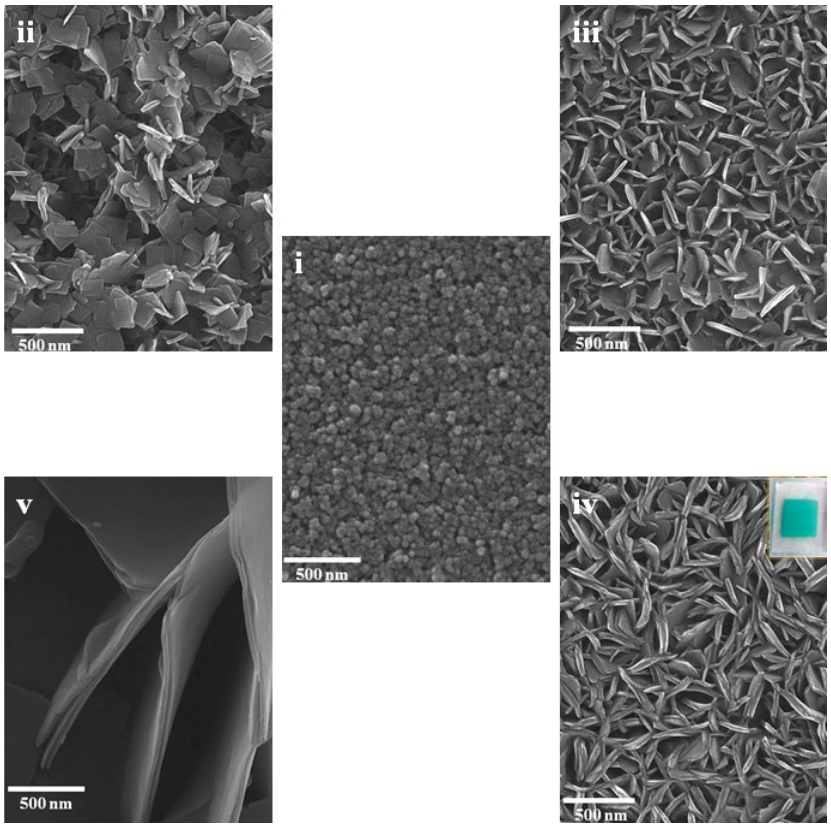

Figure S4. Top view SEM images of: (i) mesoporous TiO_2 support and $[Cu_2(bdc)_2(bpy)]_n$ thin films prepared (ii) without modulator, (iii) with 35 µl, (iv) 70 µl and (v) 140 µl of modulator (added to metal solution). Inset of (iv) shows corresponding digital image.

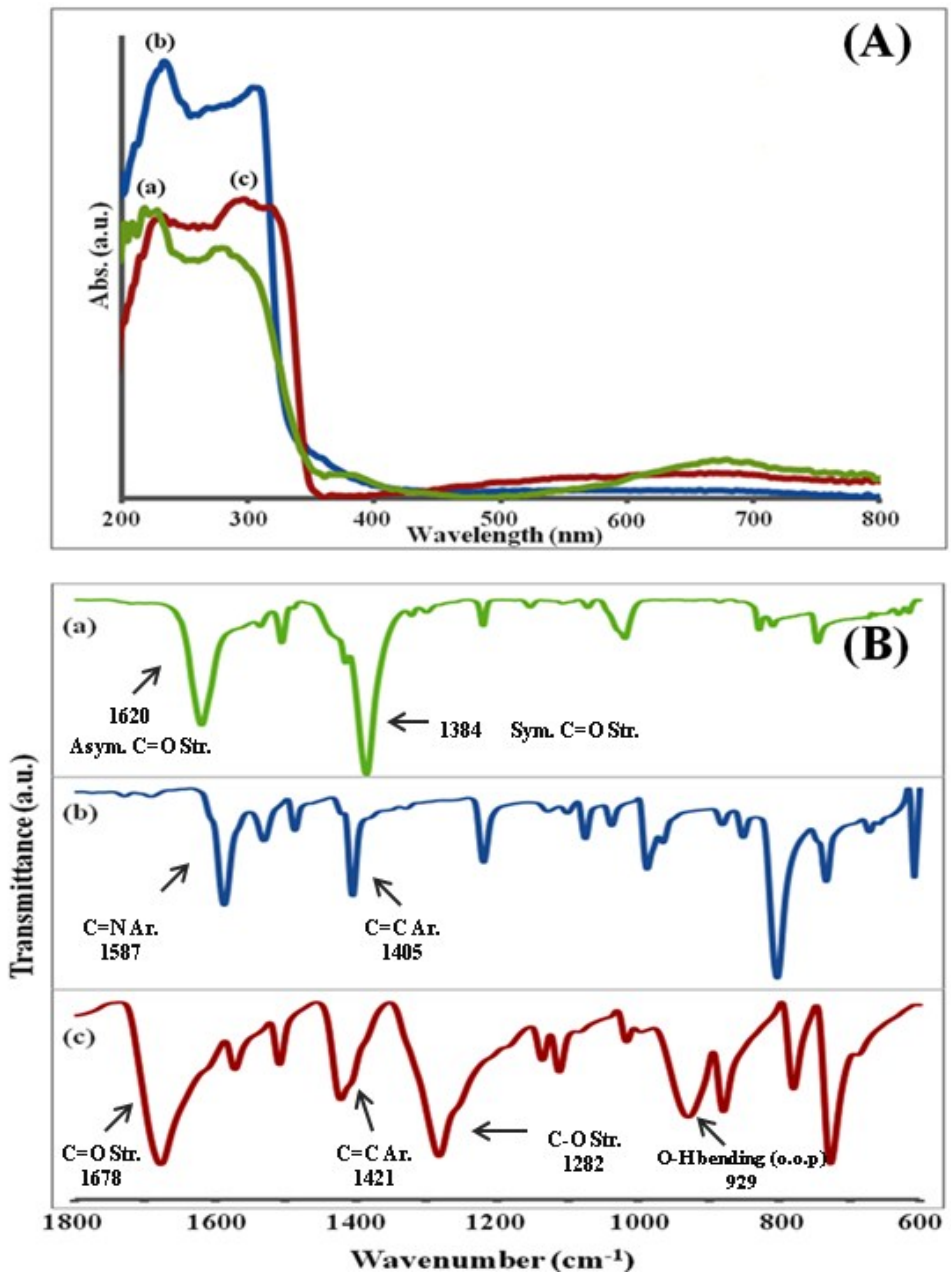

Figure S5. DRS and ATR-FTIR spectra of $[Cu_2(bdc)_2(bpy)]_n$ thin film (obtained after the addition of 70 µl HOAC) (a), bpy (b) and bdc (c) ligands.

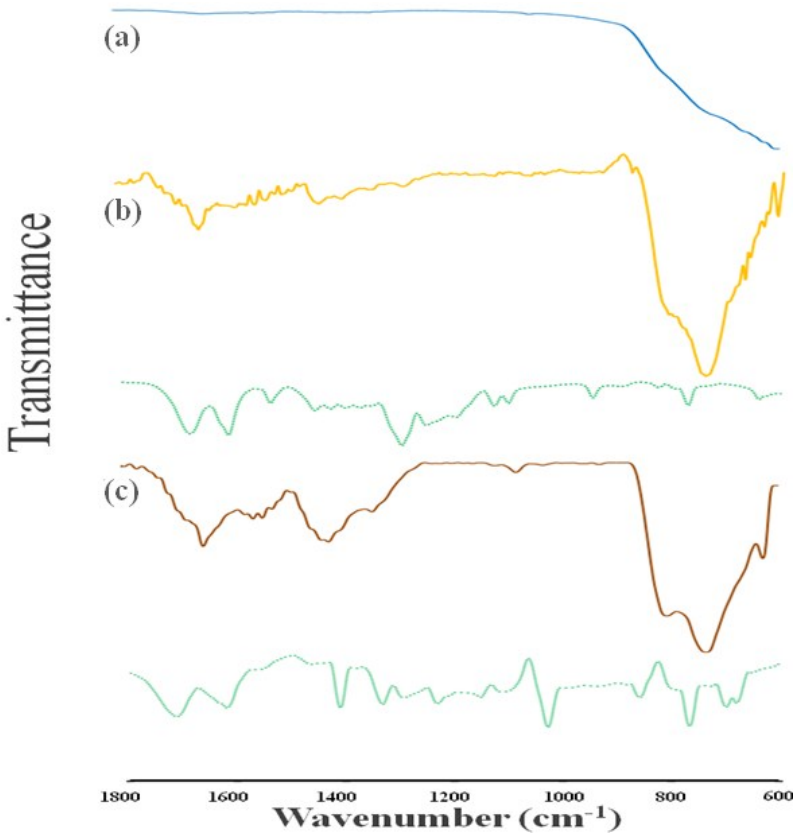

Figure S6. ATR-FTIR spectra of TiO_2 film (a), DHBA- (b) and INA-treated TiO_2 film (c). (Green dotted lines represent free DHBA and INA spectra).

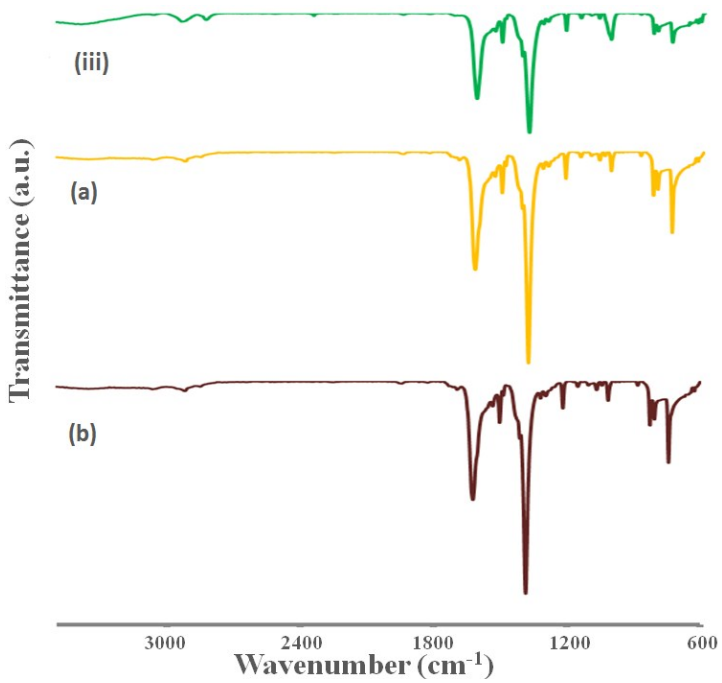

Figure S7. ATR-FTIR spectra of $[Cu_2(bdc)_2(bpy)]_n$ thin films on bare (iii), DHBA- (a) and INA-treated TiO_2 surface (b)

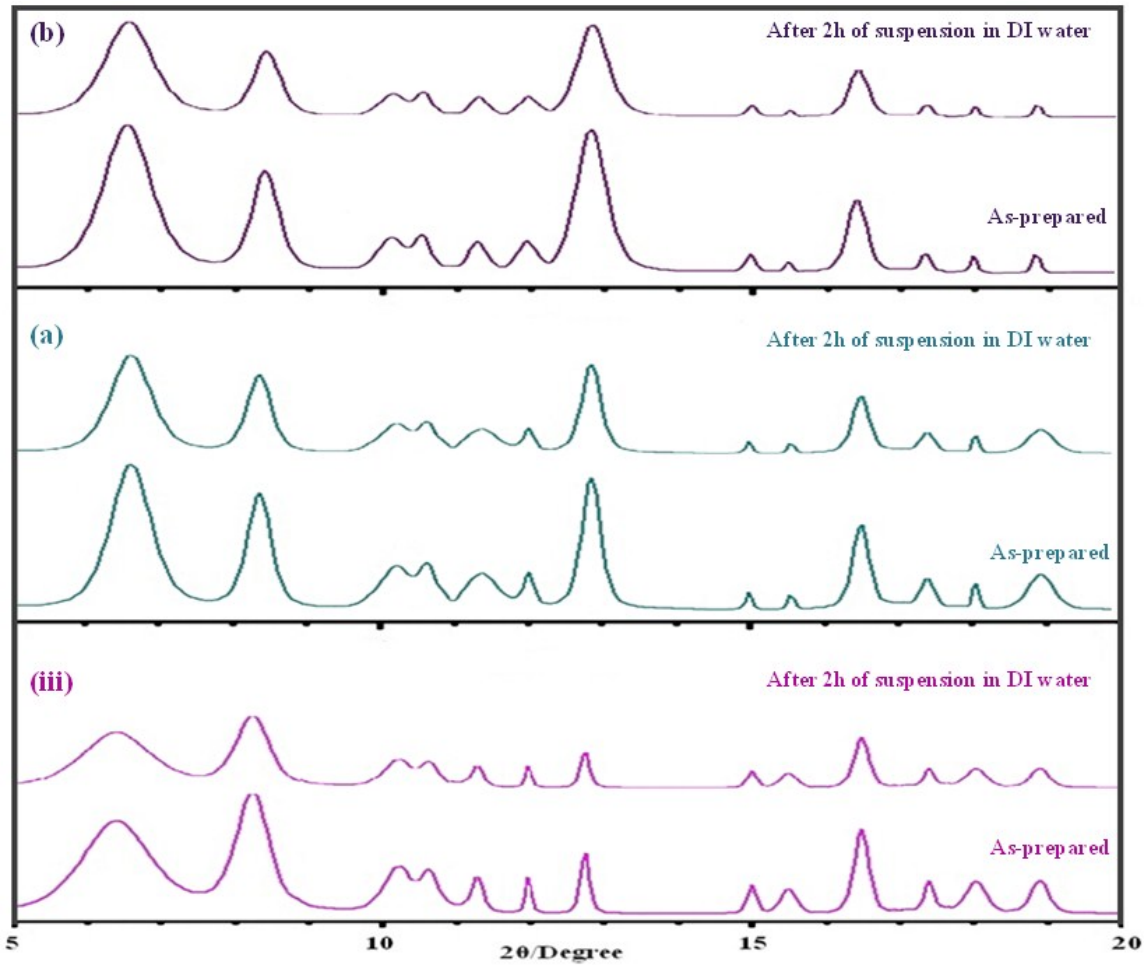

Figure S8. In-plane XRD patterns of $[Cu_2(bdc)_2(bpy)]_n$ thin films grown on bare (iii), DHBA- (a) and INA-treated TiO_2 surfaces (b) after 120 min. of suspension in deionized water.