Supplementary Information

Cd(II) based metal organic framework: a photosensitive current conductor†

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Structure of the device with electrical property measurement set up:

The set up of the electrical characterization technique is illustrated by the following schematic diagram. The active area of the thin film of complex **1** was maintained as 7.065 $\times 10^{-2}$ cm^{-2} by shadow mask. The thickness of the film was measured as 800 nm by surface profiler. The I-V characteristic was measured by the sourcemeter interfaced with computer. The photoresponse of the device was measured by illuminating with 1.5 AM light source.

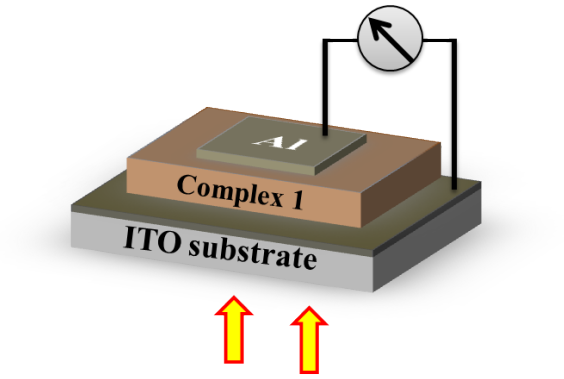

Fig. S1| Schematic diagram of the active device interfaced with sourcemeter.

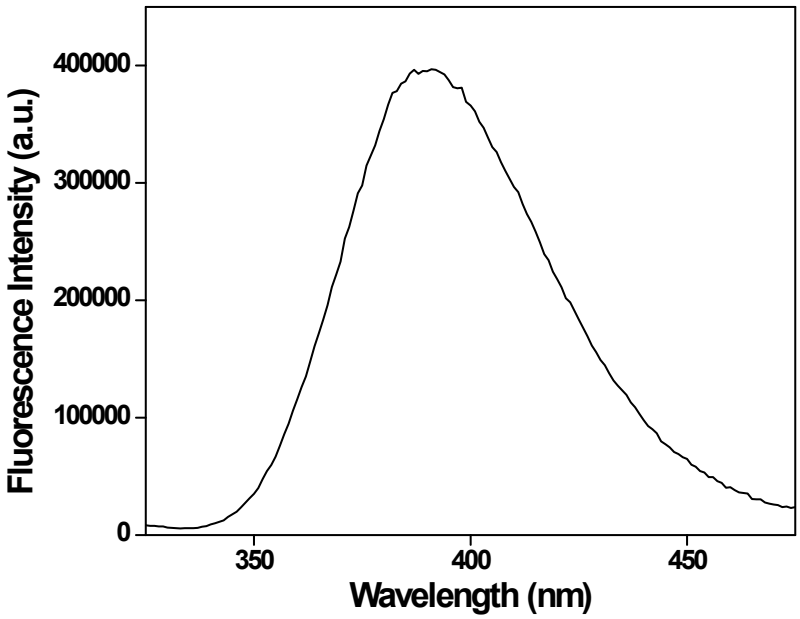

Fig. S2| Fluorescence spectrum of complex **1** in solid state at room temperature

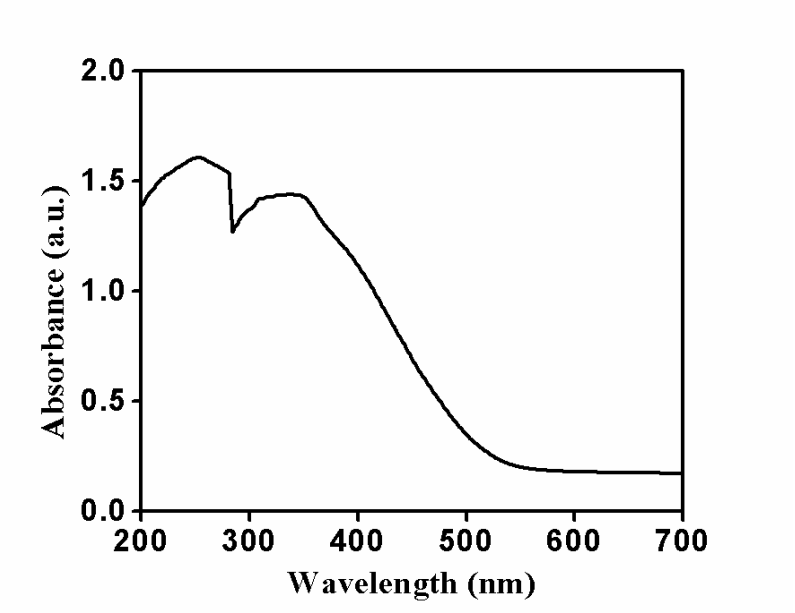

Fig. **S3**| UV-vis absorption spectrum of complex **1** in solid state at room temperature

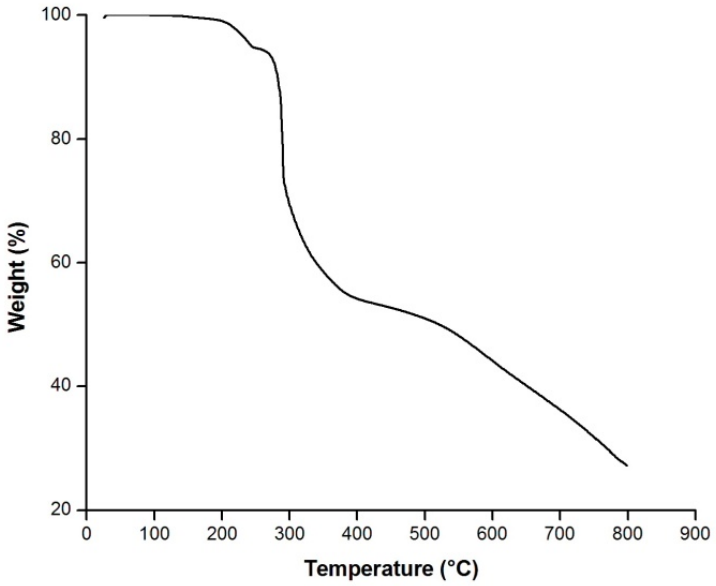

Fig. S4| TGA of complex **1** under nitrogen atmosphere

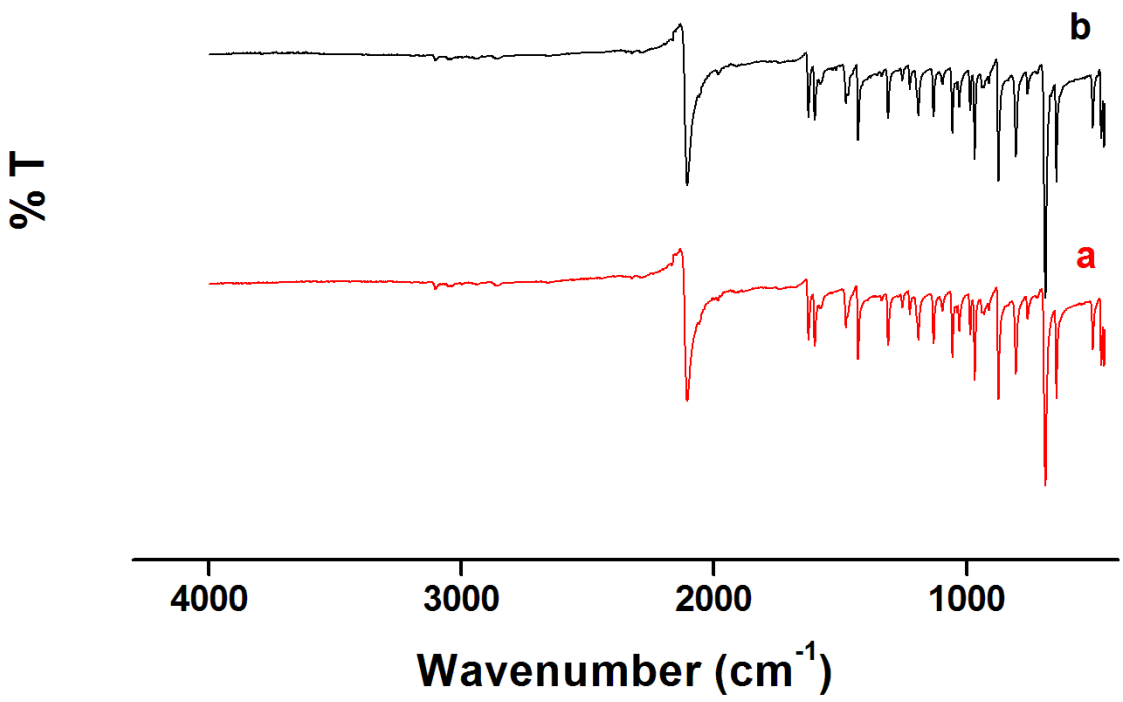

Fig. S5| FT-IR spectra of complex **1** before (a) and after (b) heating the complex at 120 °C indicating the stability of the material.

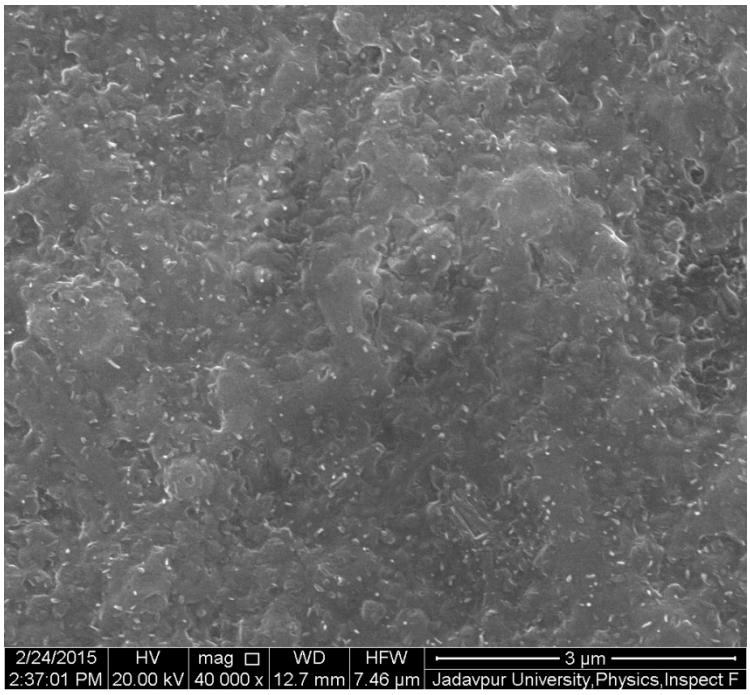

Fig. S6: SEM image of complex **1**

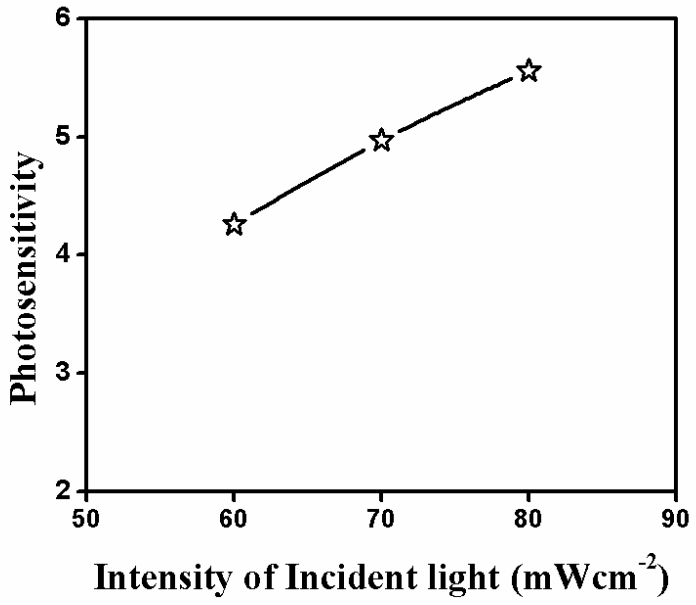

Fig. S7| Photosensitivity at Intensity 80 $mWcm^{-2}$, 70 $mWcm^{-2}$and 60 $mWcm^{-2}$

The variation of photosensitivity was plotted against intensity of incident radiation of light (Fig. S7). This plot exhibits that the variation is moderately linear.

During photocurrent measurement there are some possibilities of heating effect on the measurement. The heating effect can increase the photocurrent. To check the effect of heat on

carrier transportation we have recorded the photocurrent at fixed bias 1V under constant exposure of light (80mWcm^{-2}) after each 60 second of exposure time. Fig. S8 exhibits that the photocurrent doesn't increase with time rather decreases little bit. This decrease may be due to the light induced degradation of the material with prolonged exposure. This study falsify our argument of heating effect on photocurrent.

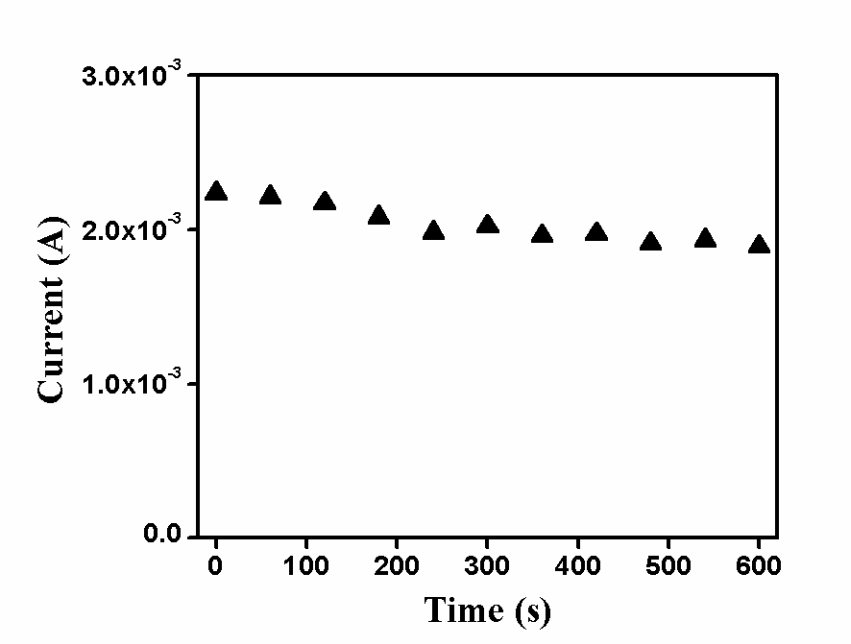

Fig. S8| Photo current measurement at constant bias of 1.0 V under constant light exposure (80mWcm^{-2}) for 10 min.

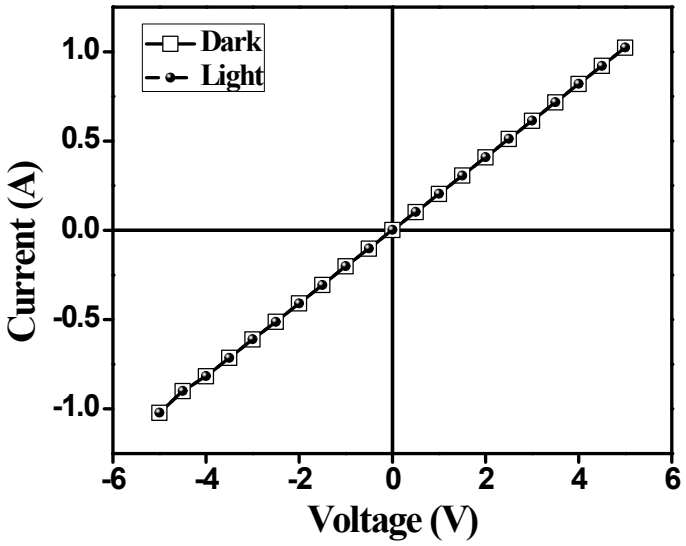

Fig. S9| Current- Voltage characteristics of ITO/Al junction under dark (zero $mWcm^{-2}$) and light illumination (of intensity 80 $mWcm^{-2}$) conditions

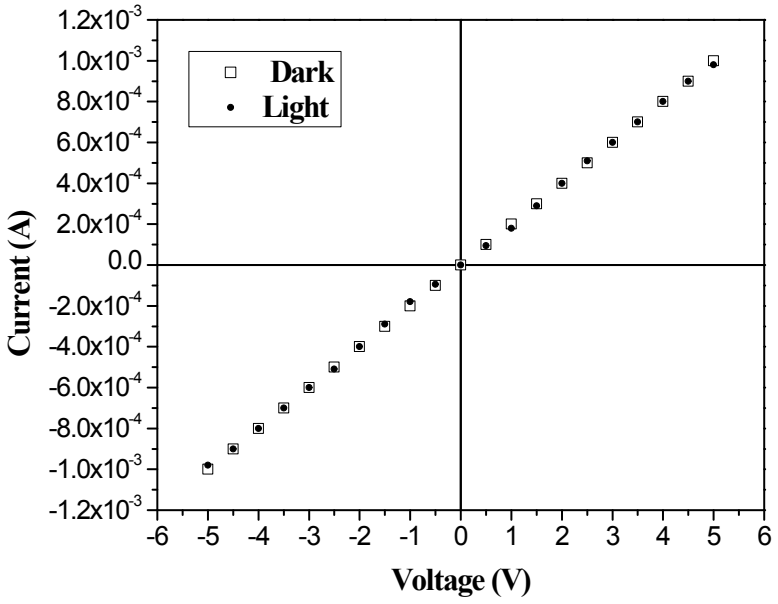

Fig. S10| Current- Voltage characteristics of ITO/3-bpd/Al junction under dark (zero $mWcm^{-2}$) and light illumination (of intensity 80 $mWcm^{-2}$) conditions