Fig. s1 The view of the 1-D supramolecular column formed by $[\text{Cu}(1)\text{(2,2-bpy)}_2]^{2+}$ complexes in compound 1 along the c axis.

Fig. s2 The packing structure of the TMCs in compound 3.
Fig. s3 the IR spectra for compounds 1-3.

Electronic Supplementary Material (ESI) for CrystEngComm
This journal is © The Royal Society of Chemistry 2014
Fig. s4 the XPS spectra of vanadium, arsenic in compounds 1-3 and XPS spectra of copper in compounds 1-2.
Fig. s5 the experimental and simulated XRD patterns for compounds 1-3.

Fig. s6 the UV-Vis spectra of DMSO solutions of compounds 1-3.
Fig. s7 the photoluminescence properties of DMSO solutions of compounds 1-3. The photoluminescence properties of DMSO solutions of compounds 1-3 were studied. The emission spectrum of compound 1 at room temperature is depicted in Fig. s6. It can be observed that an intense emission occurs at 421 nm (λex = 380 nm), which can be assigned to the emission of intra-ligand charge transfer. The emission peak in compound 1 is red shifted relative to that of the free 2,2-bpy ligand (λmax = 415nm). The red shift has been regarded as due to the complexation of the organic ligand with the copper atom. The emission spectra of compounds 2-3 at room temperature are depicted in Fig. s6. Compound 2 exhibits an emission peak at 423 nm (λex = 360 nm), compound 3 exhibits an emission peak at 424 nm (λex = 371 nm), respectively. The photoluminescence mechanism of compounds 2-3 can also be attributed to the intra-ligand transition because that similar emission is also observed for pure organic ligands.