Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Tunable J-type aggregation of silicon phthalocyanines in surface-anchored metal-organic framework thin film

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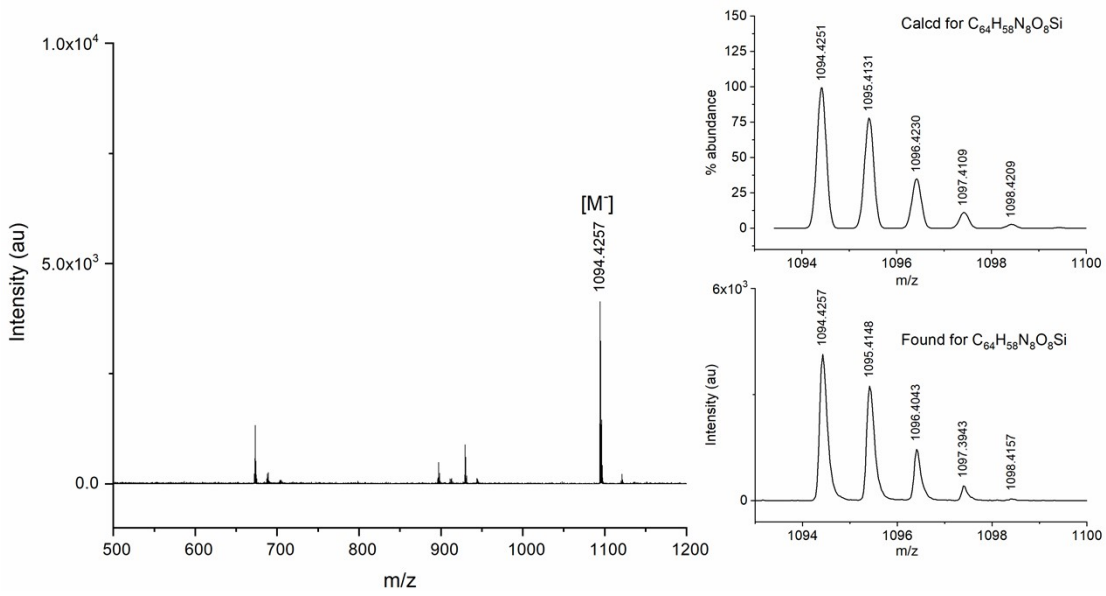

Fig. S1 HR-MS MALDI ToF spectra of **SiPc 2**.

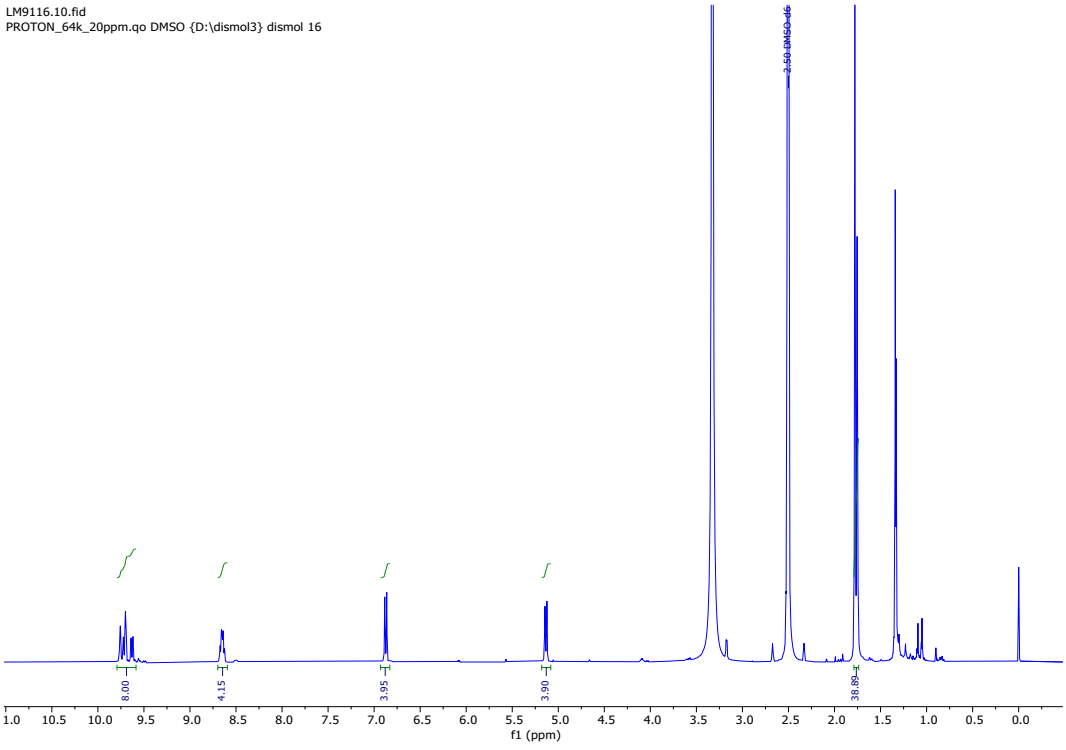

Fig. S2 ^{1}H NMR spectrum of **SiPc 2**.

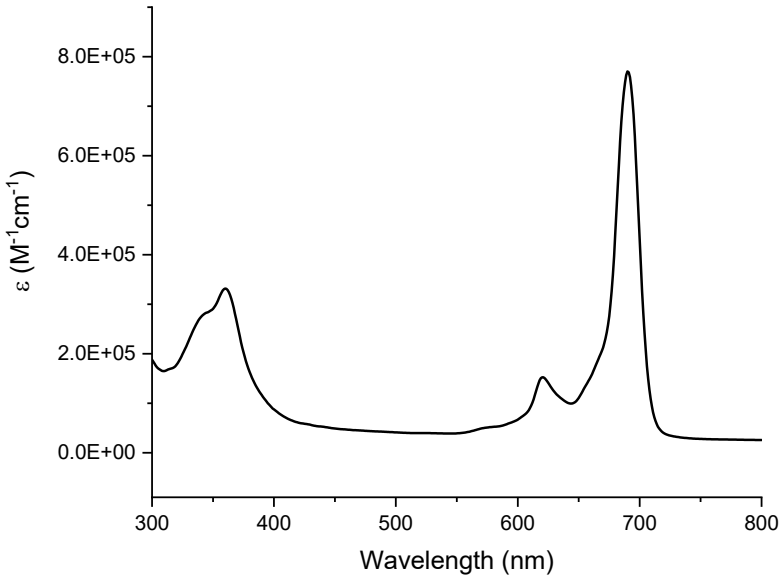

Fig. S3 UV-Vis spectrum of **SiPc 2**.

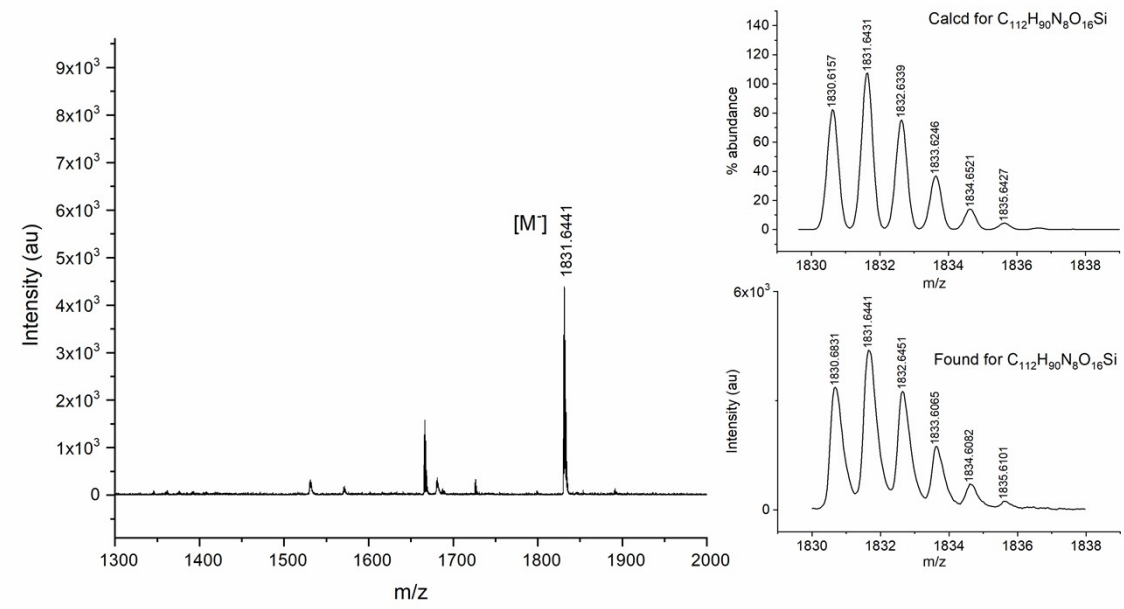

Fig. S4 HR-MS MALDI ToF spectra of **SiPc 3**.

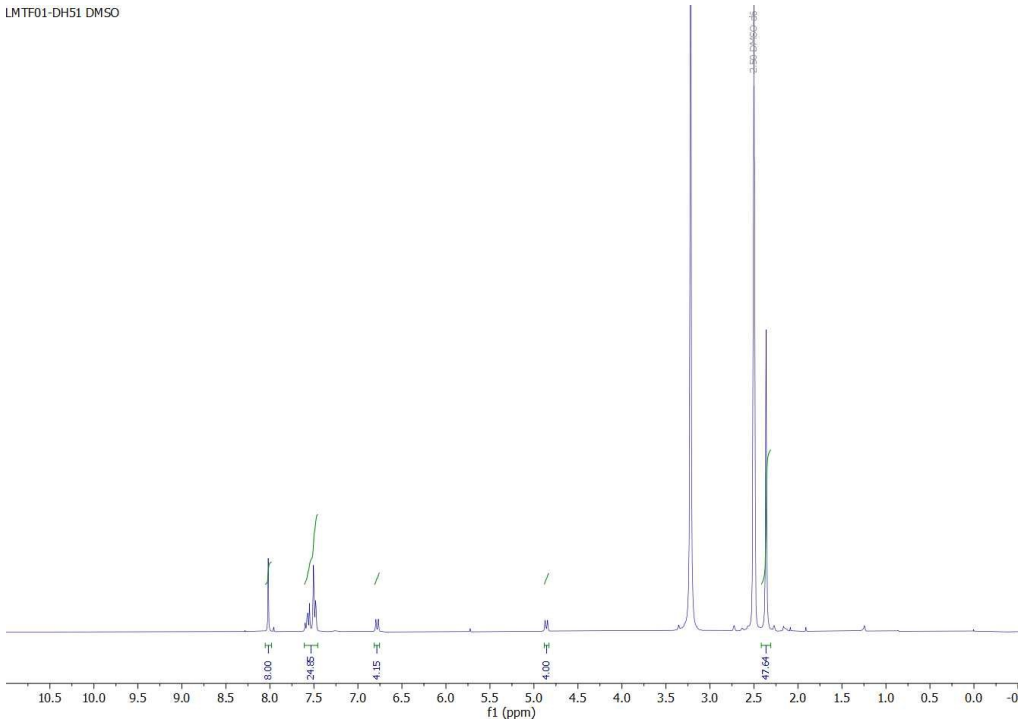

Fig. S5 ^{1}H NMR spectrum of **SiPc 3**.

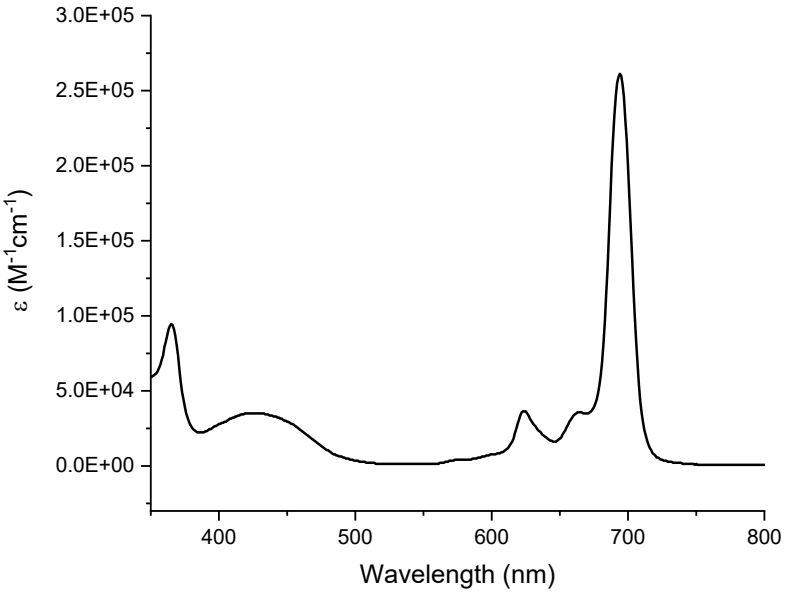

Fig. S6 UV-Vis spectrum of **SiPc 3**.

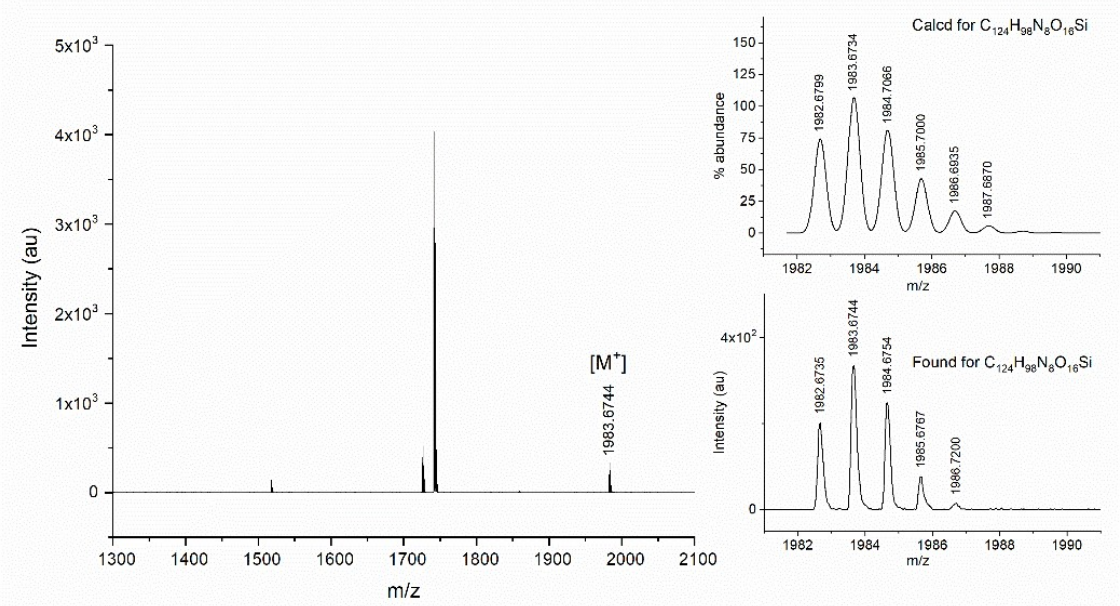

Fig. S7 HR-MS MALDI ToF spectra of **SiPc 4**.

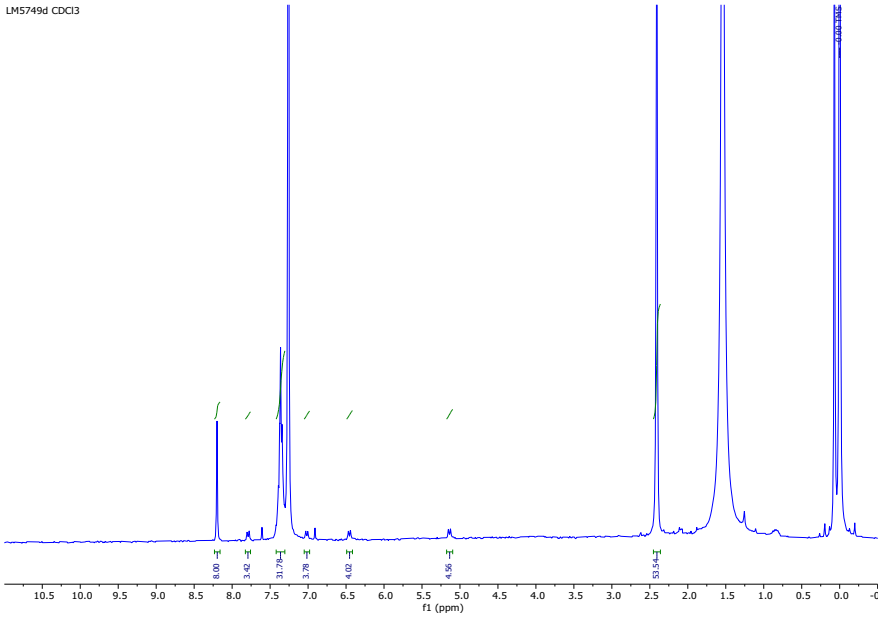

Fig. S8 ^{1}H NMR spectrum of **SiPc 4**.

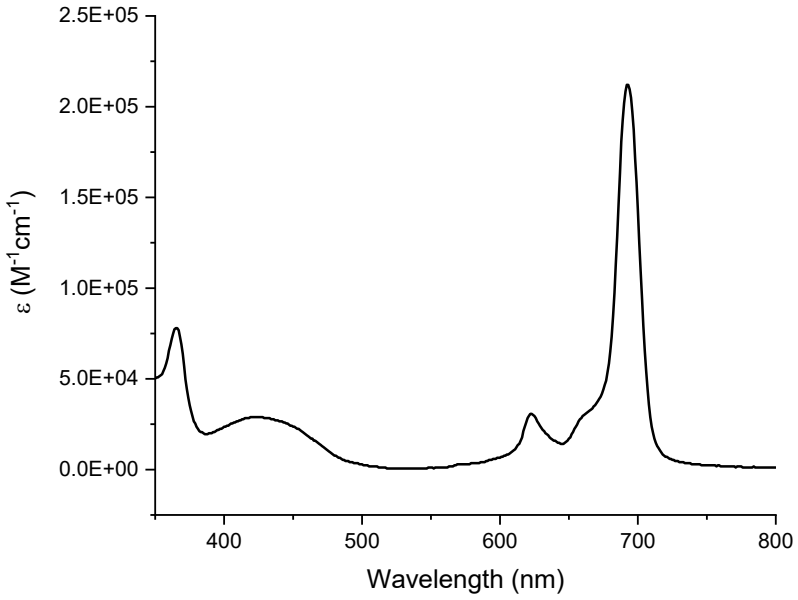

Fig. S9 UV-Vis spectrum of **SiPc 4**.

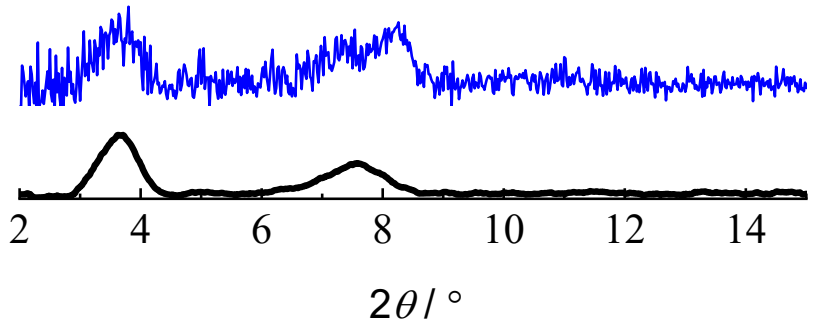

Fig. S10 Out (black) and in-plane (blue) x-ray diffraction patterns of **SiPc 2**.

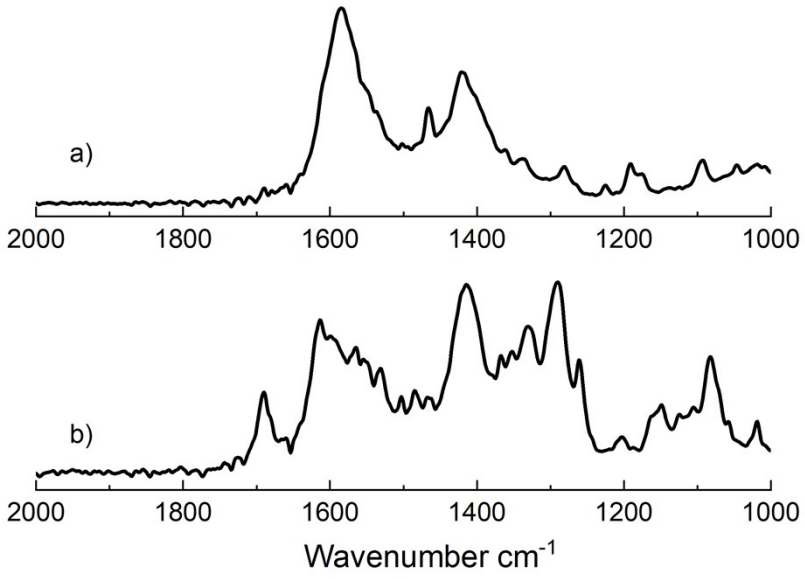

Fig. S11 FT-IRRAS spectra of Zn-**SiPc 2** and **4**.

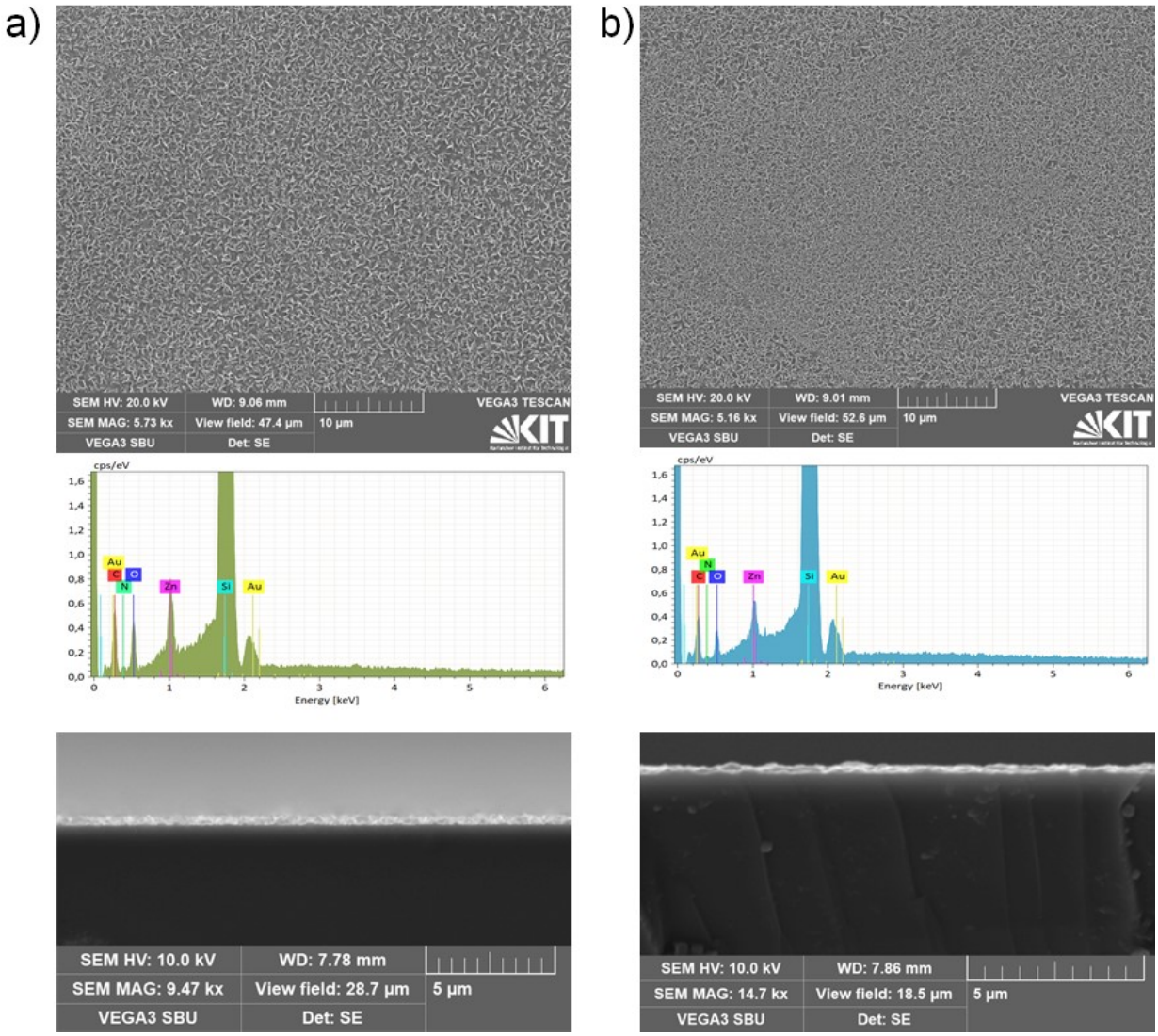

Fig. S12 SEM images of a) Zn-**SiPc** 2 and b) 4 grown on Si/SiO_2 substrate (top panel: morphology, middle panel: shows elemental analysis results, bottom panel: cross section).