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**Supporting Information**

**for**

# Stepwise *in-situ* Synthesis and Characterization of Metallophthalocyanines@Mesoporous Matrix SBA-15 Composites

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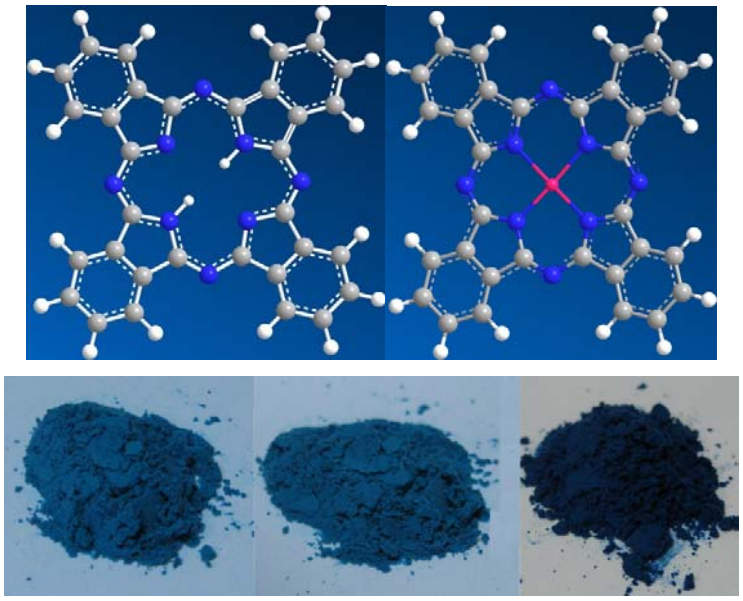


**Figure S1.** Schematic presentations of phthalocyanine (Pc) and metallophthalocyanine (MePc). (Gray sphere: C; White sphere: H; Blue sphere: N; Red sphere: Metal ions.) Phthalocyanine is a beautifully symmetrical 18π-electron aromatic macrocycle, and can play host to over seventy different metal ions in its central cavity to form metallophthalocyanines. Pc and its derivates always have a blue or deep-blue color as colorants and pigments. During the in-situ chemical vapor reaction in this study, the mixture changes from the white to blue or deep blue, indicating the successful synthesis of MePc@SBA composites, as shown as the digital images in the bottom line in Figure **S1**.

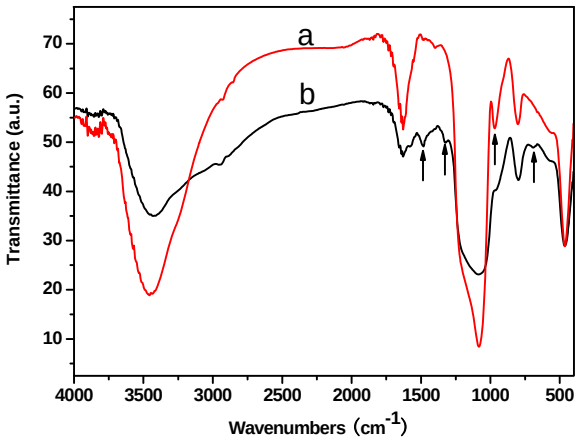



**Figure S2**. FTIR spectra for the as-synthesized SBA-15 (a) and amine group modified SBA-15 (b) powder, respectively. The decrease of the intensity at about 960cm$^{-1}$ for Si-OH group and the bands appearance for NH group (arrowed in b) indicates the successful modification of the inner surface with amine group.

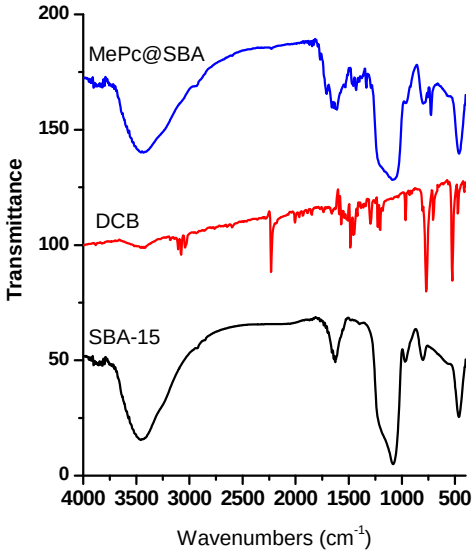



**Figure S3.** FTIR spectra for the starting materials SBA-15 powder and Pc precursor DCB, and the resultant A-MePc@SBA composite.

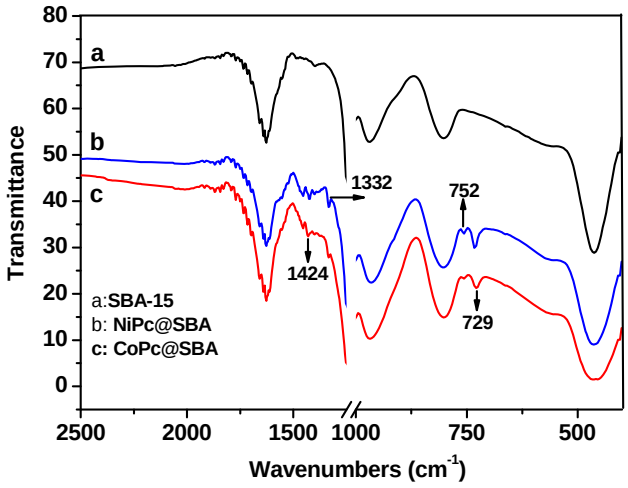



**Figure S4.** Typical FTIR transmittance spectra for V-MePc@SBA composites.

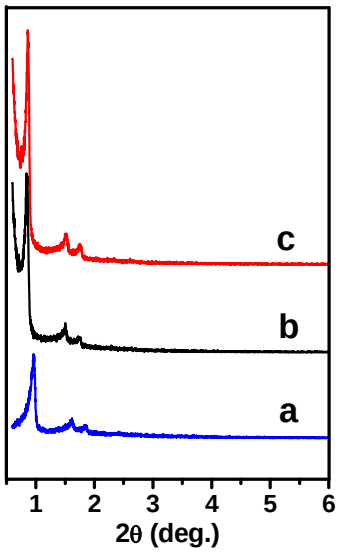



**Figure S5.** SAXRD patterns of the SBA-15 (a) and V-MePcs@SBA composites (b:NiPc and c:CoPc), respectively.

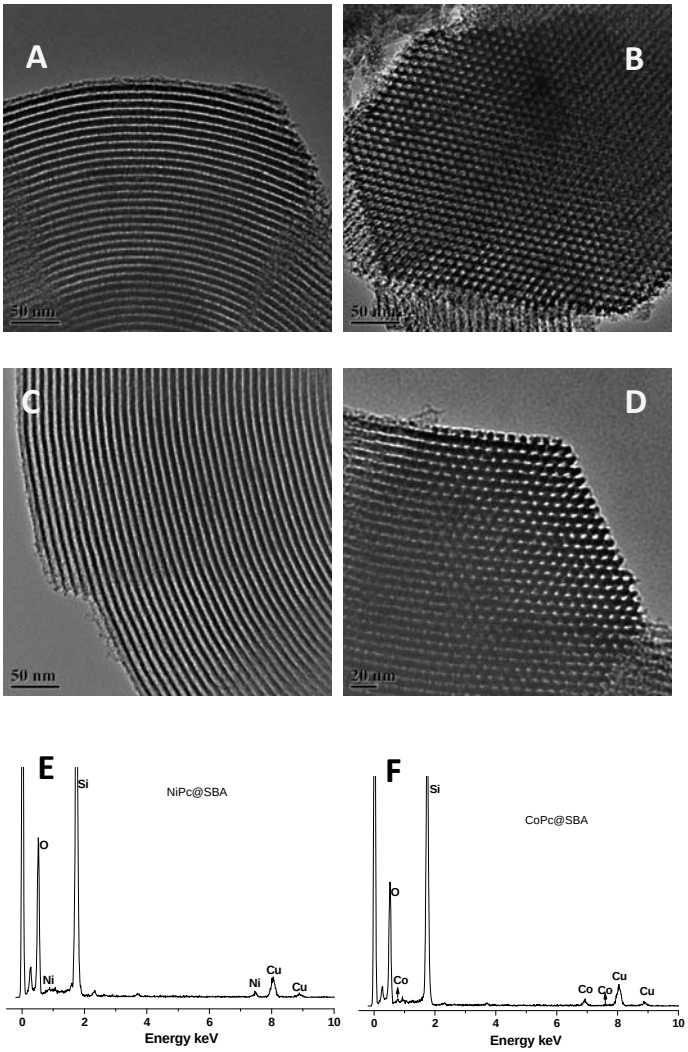
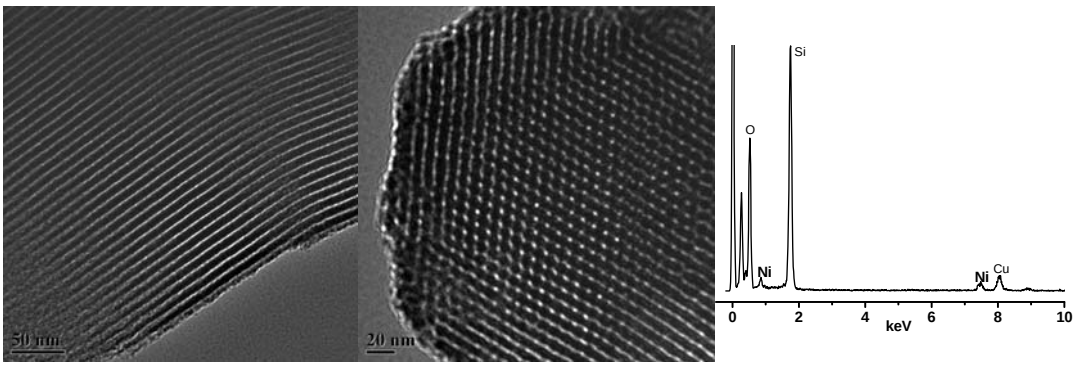



**Figure S6.** Typical TEM images of SBA-15 (A, B) and V-MePc@SBA (C, D). E and F present the EDS spectra of NiPc@SBA and CoPc@SBA.



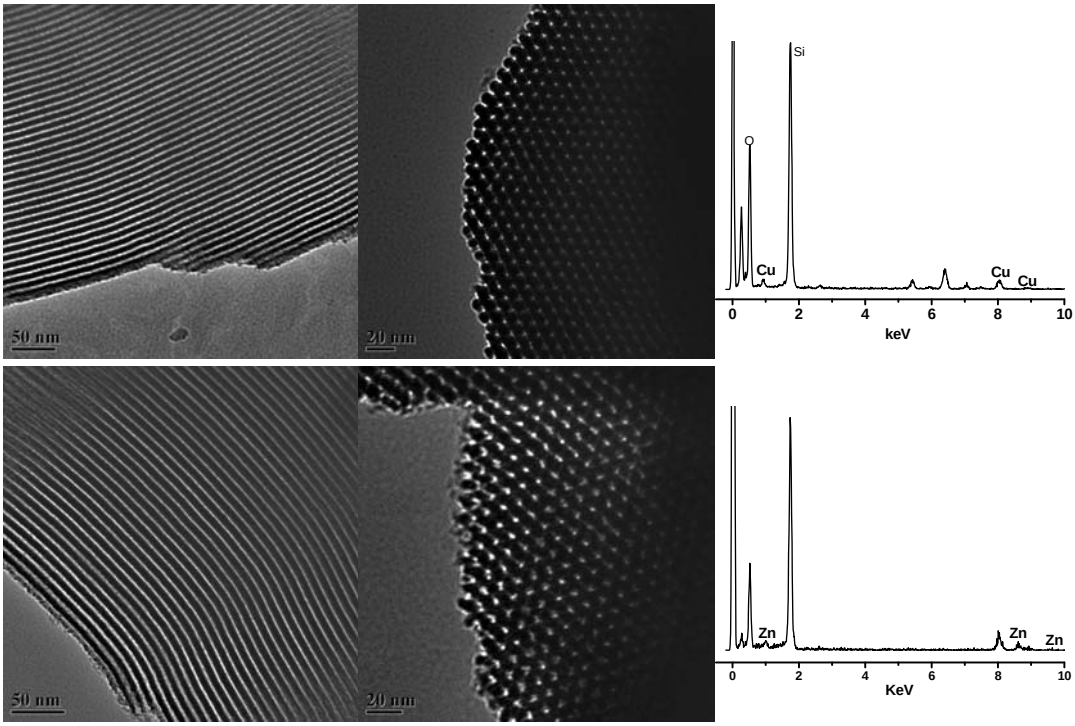



**Figure S7**. Typical TEM Images for A-MePcs@SBA composites perpendicular and parallel to the electron beams, and the corresponding EDX spectra, respectively.

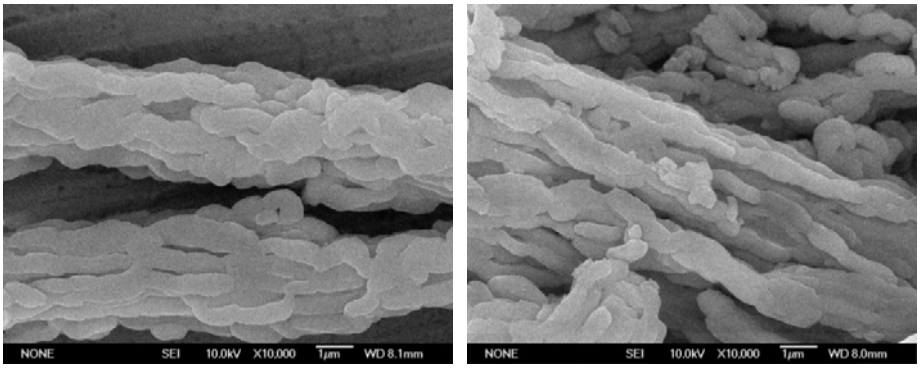



**Figure S8**. Typical FESEM images before (left) and after (right) the in-situ synthesis of MePcs in the mesoporous channels via a chemical vapor reaction.