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Ionic Covalent Organic Frameworks: Design of a Charged Interface Aligned on 1D Channel Walls and Its Unusual Electrostatic Functions

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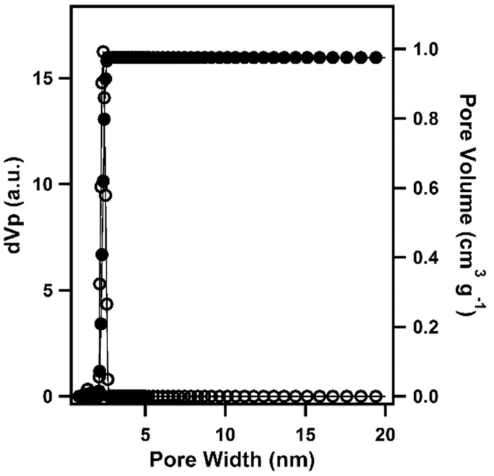
During the submission of the revised manuscript, the authors submitted a draft version of the Supporting Information, which contains a plagiarized part for the synthesis of compounds **2**, **3**, **4**, **5**, and **6** taken from a previously published paper.[1] As a result, an incorrect synthesis and characterization of compounds **5** and **6** has been published, which could have hindered the work being repeated. These errors were brought to the authors' attention by a reader. A revised Supporting Information, with corrections to the synthetic procedure, characterization, and references for compounds **5** and **6** as well as a corrected pore size distribution profile of PyTTA-TPhA-COF in the right panel of Figure S9, is made available online along with this Corrigendum.

The correct version reads:

5,6-Bis(4-formylbenzyl)-1-methyl-1*H*-benzimidazole (**5**): To a two-necked round-bottom flask (200 mL) equipped with a condenser and a magnetic stir bar was added successively compound **4** (3.0 g, 10.4 mmol), 4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)benzaldehyde (7.2 g, 31.2 mmol), K_2CO_3 (11.5 g, 83.2 mmol), water (20 mL), and 1,4-dioxane (100 mL), and the resulting mixture was degassed by three freeze–pump–thaw cycles. Then, $Pd(PPh_3)_4$ (500 mg, 0.43 mmol) was added under N_2. The system under N_2 protection was stirred and heated to reflux in an oil bath. After 24 h, the system was cooled down to room temperature. The resulting mixture was poured into water (300 mL), and this mixture was extracted with ethyl acetate (300 mL × 3). The ethyl acetate layers were collected and dried over anhydrous $MgSO_4$ for 2 h, and the ethyl acetate solution was then filtered through a 5 cm-long alumina oxide pad. The collected solution was evaporated to dryness under reduced pressure, and the crude product was subjected to silica gel column chromatography with a mixture of ethyl ether and hexane (1:2 v/v) as eluent. The second fraction was collected and evaporated under reduced pressure to dryness to give compound **5** as a brown powder (2.54 g, 7.48 mmol) in a yield of 72%. ^{1}H NMR (600 MHz, $CDCl_3$): $\delta = 3.44$ (s, 3 H), 7.25 (d, $J = 7.7$ Hz, 1 H), 7.52 (d, $J = 7.7$ Hz, 1 H), 7.64 (d, $J = 8.0$ Hz, 2 H), 7.89 (s, 1 H), 7.99–8.02 (m, 4 H), 8.18 (d, $J = 8.2$ Hz, 2 H), 10.07 (s, 1 H), 10.11 (s, 1 H). ^{13}C NMR (150 MHz, $CDCl_3$): $\delta = 34.63$, 121.83, 125.16, 125.97, 129.43, 129.88, 129.96, 130.60, 131.41, 132.33, 135.26, 135.78, 142.37, 144.32, 144.58, 145.80, 191.72, 192.17. IR (KBr): $\tilde{\nu} = 542$, 698, 722, 809, 830, 1072, 1166, 1211, 1256, 1335, 1379, 1438, 1497, 1604, 1692 (s), 2852 cm^{-1}. MALDI-TOF-MS: *m*/*z*: calcd for $C_{22}H_{16}N_2O_2 + H^+$: 341.129 $[M + H^+]$; found: 341.285. EI-TOF-MS: *m*/*z*: calcd for $C_{22}H_{16}N_2O_2^{\ +}$: 340.1212 $[M]^+$; found: 340.1212. Elemental analysis: calcd for $C_{22}H_{16}N_2O_2$: C 77.63, H 4.74, N 8.23 %, found: C 77.26, H 4.95, N 6.66 %.

5,6-Bis(4-formylbenzyl)-1,3-dimethylbenzimidazolinium bromide (**6**): Compound **5** (1.0 g, 2.9 mmol) and acetonitrile (10 ml) were added to a 100 ml pressure tube. After cooling to −78 °C, cooled bromomethane (1.0 mL, 28.7 mmol) was added the mixture under nitrogen atmosphere. The sealed pressure tube was heated to 100 °C and the reaction mixture was stirred overnight. After cooling to room temperature, the mixture was transferred to a 50 ml round-bottom flask. Compound **6** was obtained as a yellow powder (1.22 g, 2.7 mmol) in a yield of 97% after rotary evaporation under reduced pressure. The crude product was pure enough for the synthesis of COFs. ^{1}H NMR (400 MHz, $CDCl_3$): $\delta = 3.77$ (s, 6 H), 7.49 (s, 2 H), 7.71 (d, $J = 7.9$ Hz, 4 H), 8.07 (d, $J = 7.9$ Hz, 4 H), 10.15 (s, 2 H), 10.81 (s, 1 H). ^{13}C NMR (100 MHz, $CDCl_3$): $\delta = 37.59$, 128.38, 128.63, 129.77, 129.90, 130.69, 136.62, 141.16, 146.23, 191.54. IR (KBr): $\tilde{\nu} = 626$, 714, 776, 827, 843, 1016, 1104, 1180, 1211, 1342, 1380, 1462, 1609, 1695 (s), 2848, 3449 cm^{-1} (br). ESI-TOF-MS: *m*/*z*: calcd for $C_{23}H_{19}N_2O_2^{\ +}$: 355.1447 $[M-Br]^+$; found: 355.151. EI-TOF-MS: *m*/*z*: calcd for $C_{23}H_{18}N_2O_2^{\ +}$: 354.1368 $[M-(HBr)]^+$; found 354.1375. Elemental analysis: calcd for $C_{23}H_{19}BrN_2O_2$: C 63.46, H 4.40, N 6.44 %; found: C 62.21, H 4.22, N, 6.07 %.

The pore size distribution profile of PyTTA-TPhA-COF (Figure S9, right panel) should be corrected as follows:



Furthermore, in the Communication itself, the sentence on page 4982, right column, line 7 from bottom "PyTTA-BFBIm-iCOF exhibited diffraction peaks at 3.48°, 5.14°, 7.06°, 10.60°, 14.35°, and 23.88°" should read "PyTTA-BFBIm-iCOF exhibited diffraction peaks at 2.92°, 4.42°, 5.92°, 6.96°, 8.96°, and 23.88°".
None of the transcription errors affect the findings and conclusions of the paper. The authors sincerely apologize for these errors.

[1] K. Oisaki, Q. Li, H. Furukawa, A. U. Czaja, O. M. Yaghi, *J. Am. Chem. Soc.* **2010**, *132*, 9262 – 9264.