Self-Organization of Self-Assembled Tetrameric Porphyrin Arrays on Surfaces

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Porphyrin 1. 

$^1$H-NMR (300 MHz, CDCl$_3$): δ 9.04 (4H, d, o-pyridyl, J = 5.9 Hz), 8.95 (4H, d, β-pyrrole, J = 4.4 Hz), 8.79 (4H, d, β-pyrrole, J = 4.8 Hz), 8.17 (4H, d, m-pyridyl, J = 5.9 Hz), 8.13 (4H, d, o-phenyl, J = 8.4 Hz), 7.78 (4H, d, m-phenyl, J = 8.4 Hz), 1.70 (18H, s, tert-butyl), -2.86 (2H, s, internal pyrrole). ESI-MS: calculated for C$_{50}$H$_{44}$N$_6$ (relative intensities theoretical): 728 (100), 729 (57), 730 (15), 731 (3), 732 (0.4). m/z (M + H$^+$ relative intensities found): 729.5 (100), 730.3 (60), 731.3 (18). UV-Vis - $\lambda$, nm in toluene ($\varepsilon \times 10^4$ cm$^{-1}$M$^{-1}$) 419.5 (26), 515 (1.2), 548 (0.5), 589 (0.36), 648 (0.23).

Porphyrin 5: $^1$H-NMR (300 MHz, CDCl$_3$): δ 9.05 (4H, d, 2,6-pyridyl, J = 5.9 Hz), 8.96 (2H, d, β-pyrrole, J = 4.8 Hz), 8.92 (2H, s, β-pyrrole), 8.84 (2H, s, β-pyrrole), 8.79 (2H, d, β-pyrrole, J = 5.5 Hz), 8.18 (4H, d, 3,5-pyridyl, J = 5.9 Hz), 8.15 (4H, d, 3,5-phenyl, J
= 8.1 Hz), 7.79 (4H, d, 2,6-phenyl, J=8.06Hz), 1.63 (18H, s, tert-butyl), -2.83 (2H, s, internal pyrrole). ESI-MS: calculated for C_{50}H_{44}N_{6} (relative intensities theoretical): 728 (100), 729 (57), 730 (15), 731 (3), 732 (0.4). m/z (M + H\(^+\) relative intensities found): 729 (100), 730 (60), 731 (18). UV-Vis - λ, nm in toluene (ε × 10\(^4\) cm\(^{-1}\)M\(^{-1}\)) 419.5 (37), 514.5 (1.7), 548 (0.72), 592 (0.51), 645.5 (0.31)

**SI Figure 1.** Deposition of tetrameric array 4 (1 × 10\(^{-6}\) M) on glass by multiple dip coating.