From branched self-assemblies to branched mesoporous silica nanoribbons

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Synthesis of compound L-16Phe6PyBr. A pyridine solution (80 mL) of compound **1** (9.6 g, 17 mmol) was heated at 100 °C for 12 h under a nitrogen atmosphere. The resulted solution was evaporated and the residue was recrystallized twice from ethanol-ether (yield: 9.3 g, 85.3 %). FT-IR (KBr): 3293cm^{-1} (ν_{N-H}, amide A), 640 cm^{-1} ($\nu_{C=O}$, amide I), 1534cm^{-1} (ν_{N-H}, amideII) ^{1}H-NMR (400MHz, DMSO-d_6, TMS, 25 °C): δ=0.87 (t, J=6.82Hz, 3H; C$\underline{H_3}$), 1.23 (br, 28H; alkyl), 1.99-2.01 (m, 2H, CONHCH$_2$C$\underline{H_2}$), 2.03-2.06 (m, 2H; C$\underline{H_2}$CH$_2$CONH), 2.22-2.34 (m, 2H; C$\underline{H_2}$CONH), 3.09-3.11 (m, 2H; CONHC$\underline{H_2}$), 3.13-3.15 (m, 2H, PyC$\underline{H_2}$), 4.64 (q, J=7.8Hz, 1H, PhCH$_2$C$\underline{H}$), 4.86 (t, J=7.7Hz, 1H; Ph$\underline{H}$), 6.97 (t, J=5.7Hz, 1H, 3-Ph$\underline{H}$), 7.16 (m, 2H, 1-Ph$\underline{H}$), 7.23 (t, J=4.0Hz, 2H; 2-Ph$\underline{H}$, CON$\underline{H}$CH), 7.27 (s, 1H, CONHC$\underline{H_2}$) 7.89 (d, J=8.0Hz, 1H, CON$\underline{H}$CH), 8.09 (t, J=7.2Hz, 2H; 3-Py$\underline{H}$), 8.43 (t, J=7.8Hz, 1H, 4-Ph$\underline{H}$), 9.53 (d, J=5.5Hz, 2H, 2-PyH). Elemental analysis calcd(%); C, 67.06; H, 9.07; N, 6.52. found: C, 66.0; H, 9.06; N, 6.27.

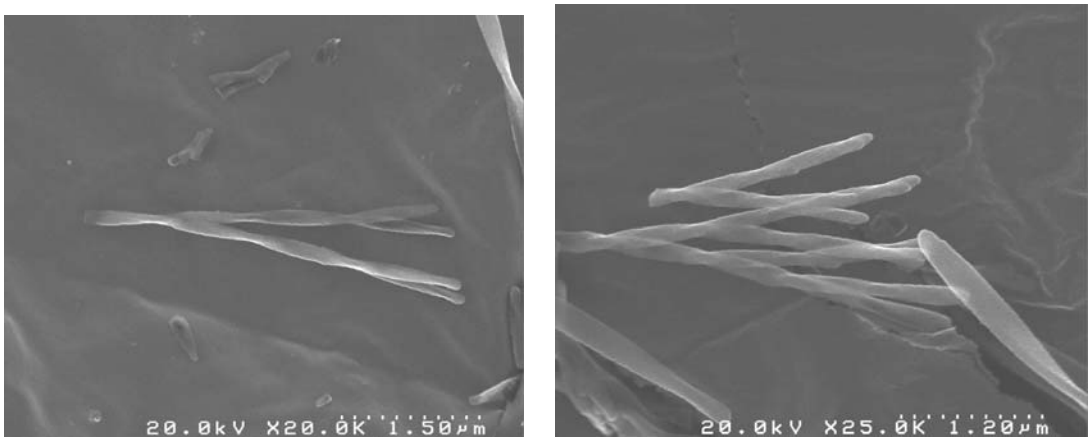

Figure S1. FESEM images of branched mesoporous silica nanoribbons.

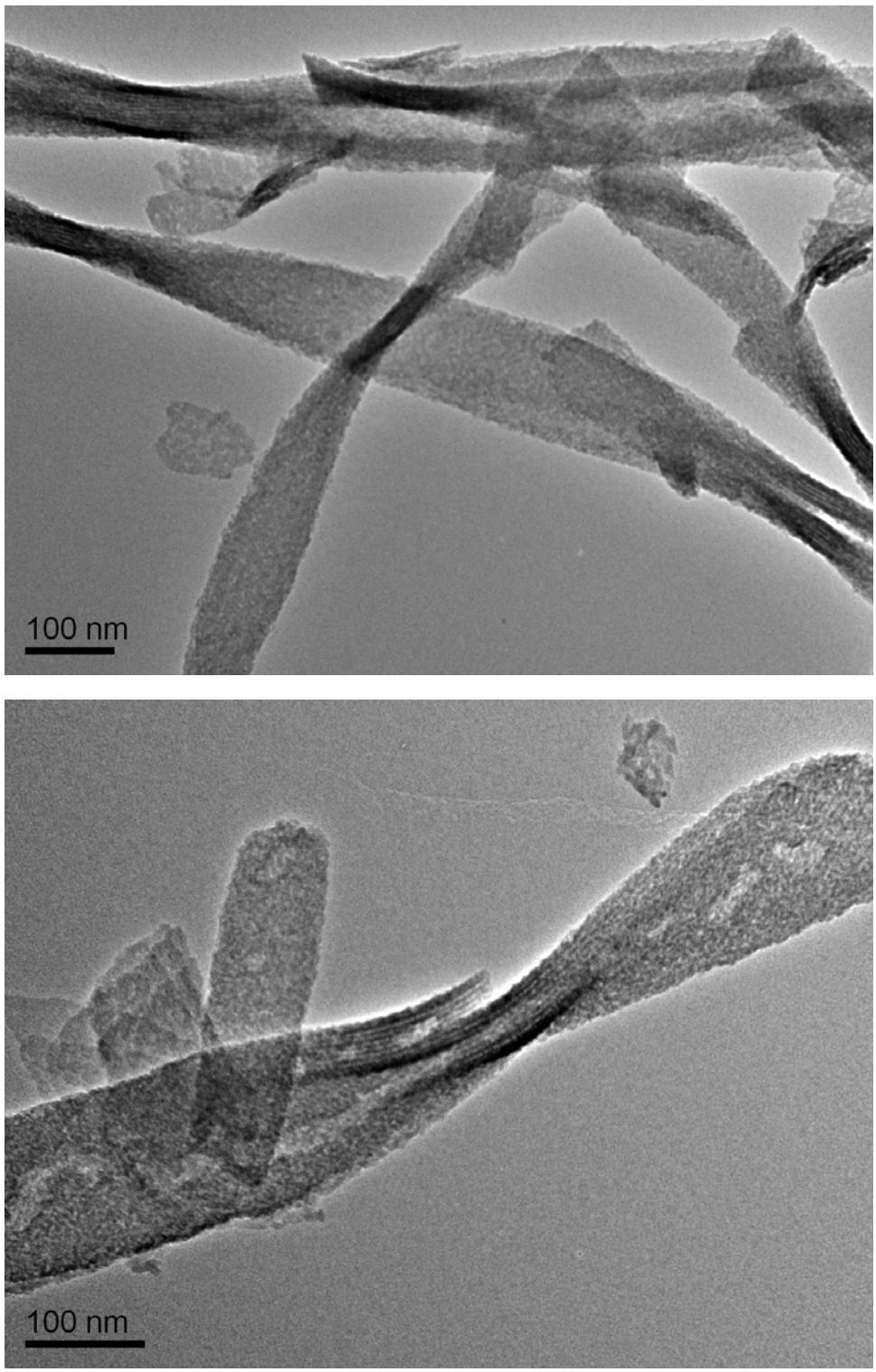

Figure S2. TEM images of branched mesoporous silica nanoribbons.

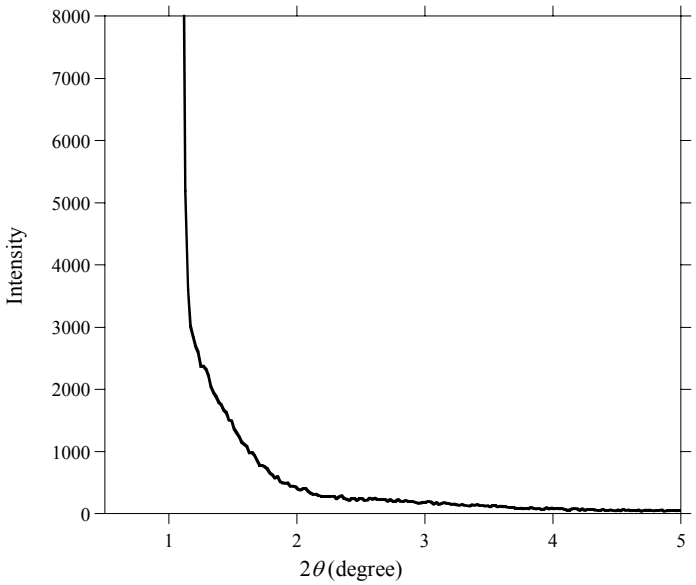

Figure S3. SAXRD patterns of the calcined mesoporous silica nanoribbons.

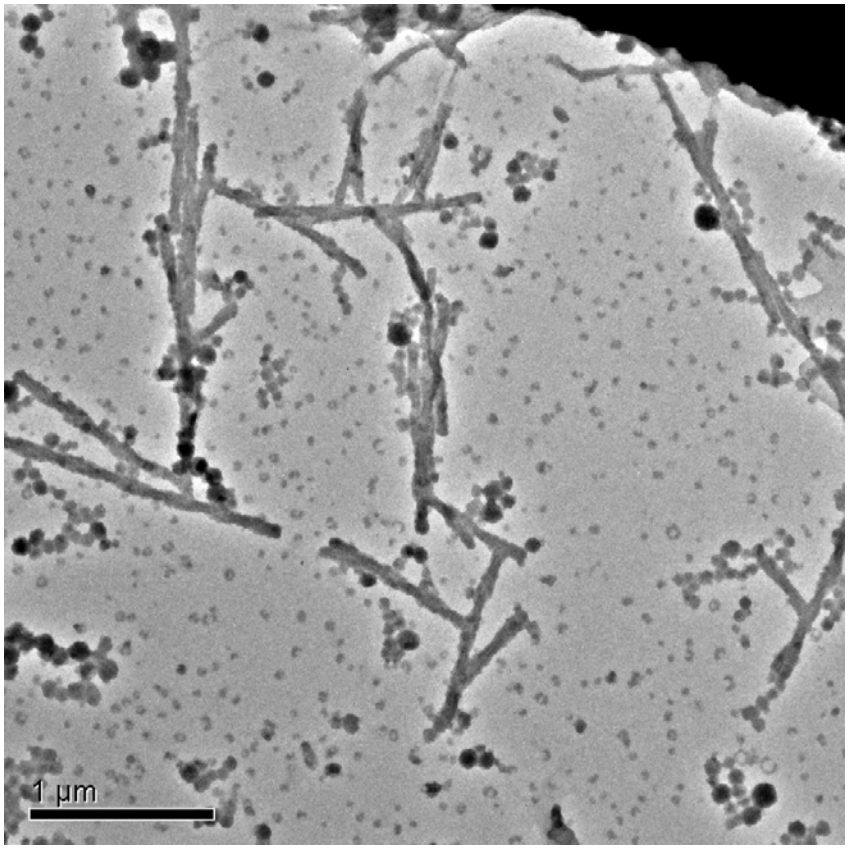

Figure S4. TEM images of the reaction mixture at 160 s.