

## Dye-sensitized solar cells incorporating a “liquid” hole transporting material

### Supporting information:

**Synthesis of tris-[4-(2-methoxy-ethoxy)-phenyl]-amine:** To sodium 2-methoxyethylate (prepared from 2-methoxyethanol (250mL) and sodium (10.08g), and concentrated in vacuum to about 80mL) sym-collidine (440mL), copper(I)iodide (13.43g) and tris(4-bromophenyl)amine was added and the reaction mixture and refluxed for 14 hours. Filtered hot, the solvent was evaporated in vacuum. The residue extracted with *tert*-butyl-methyl-ether (TBME) (250mL), washed with HCl (3N, 200mL), twice with water (200mL) and with brine (200mL). Dried over MgSO<sub>4</sub>, and concentrated under vacuum. The residual oil chromatographed under medium pressure (on silicagel, eluted with heptane and heptane:TBME 2:1) yielding *tris*-[4-(2-methoxy-ethoxy)-phenyl]-amine (20.06g, 61%, brown oil). All chemicals were obtained from Aldrich.  
<sup>1</sup>H-NMR: (400 MHz, CDCl<sub>3</sub>) 6.95 (2H), 6.81 (2H), 4.10 (2H), 3.75 (2H), 3.45 (3H).  
MS: (CI) m/e 467 (M<sup>+</sup>)