

Supporting Information

For

Continuous-flow synthesis of an efficient methanofullerene acceptor for bulk-heterojunction solar cells

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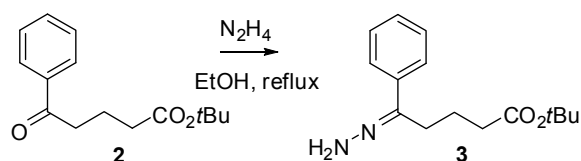
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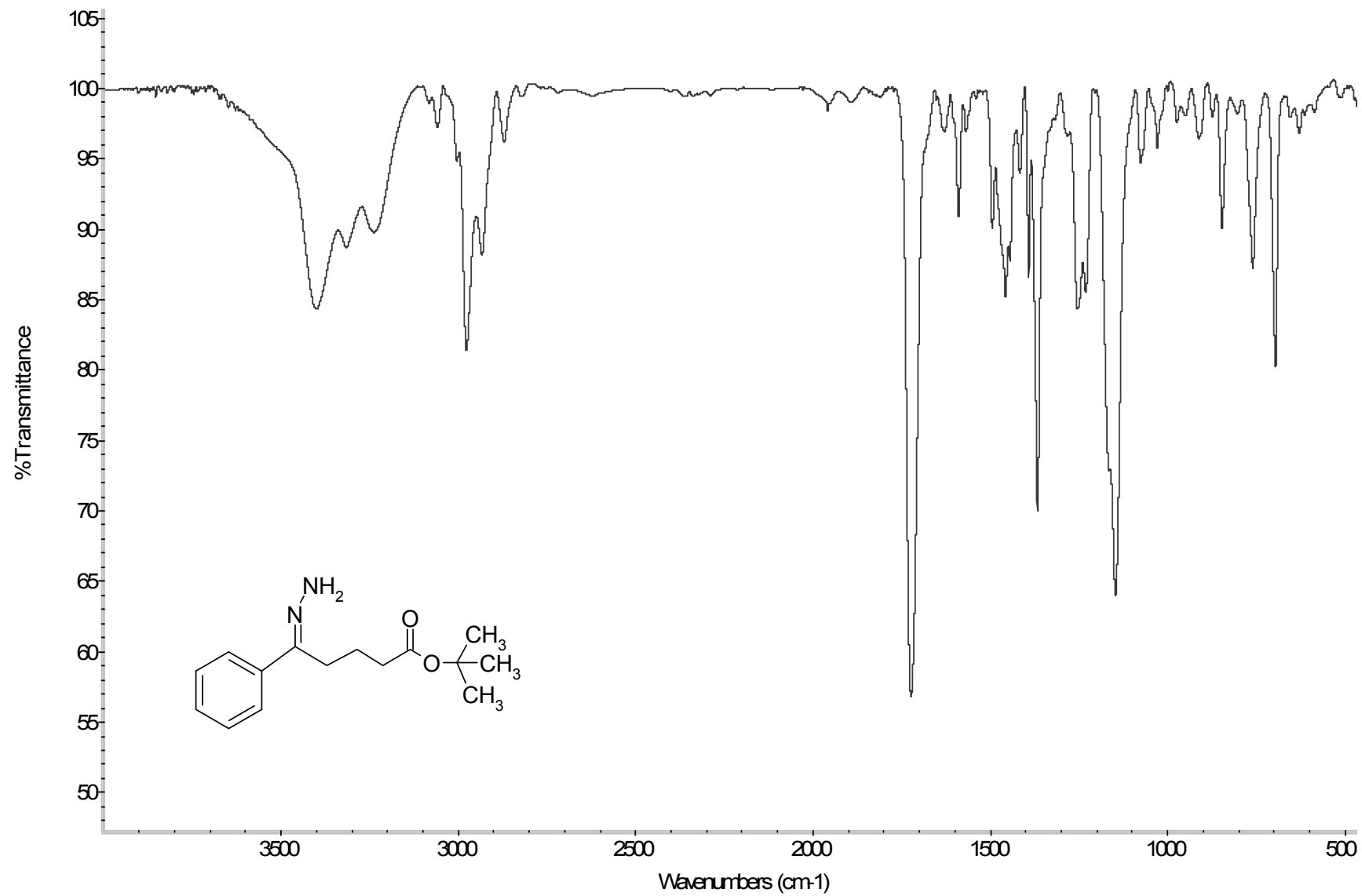
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Synthesis and selected analytical data for *tert*-butyl-4-benzoylbutyrate hydrazone **2**

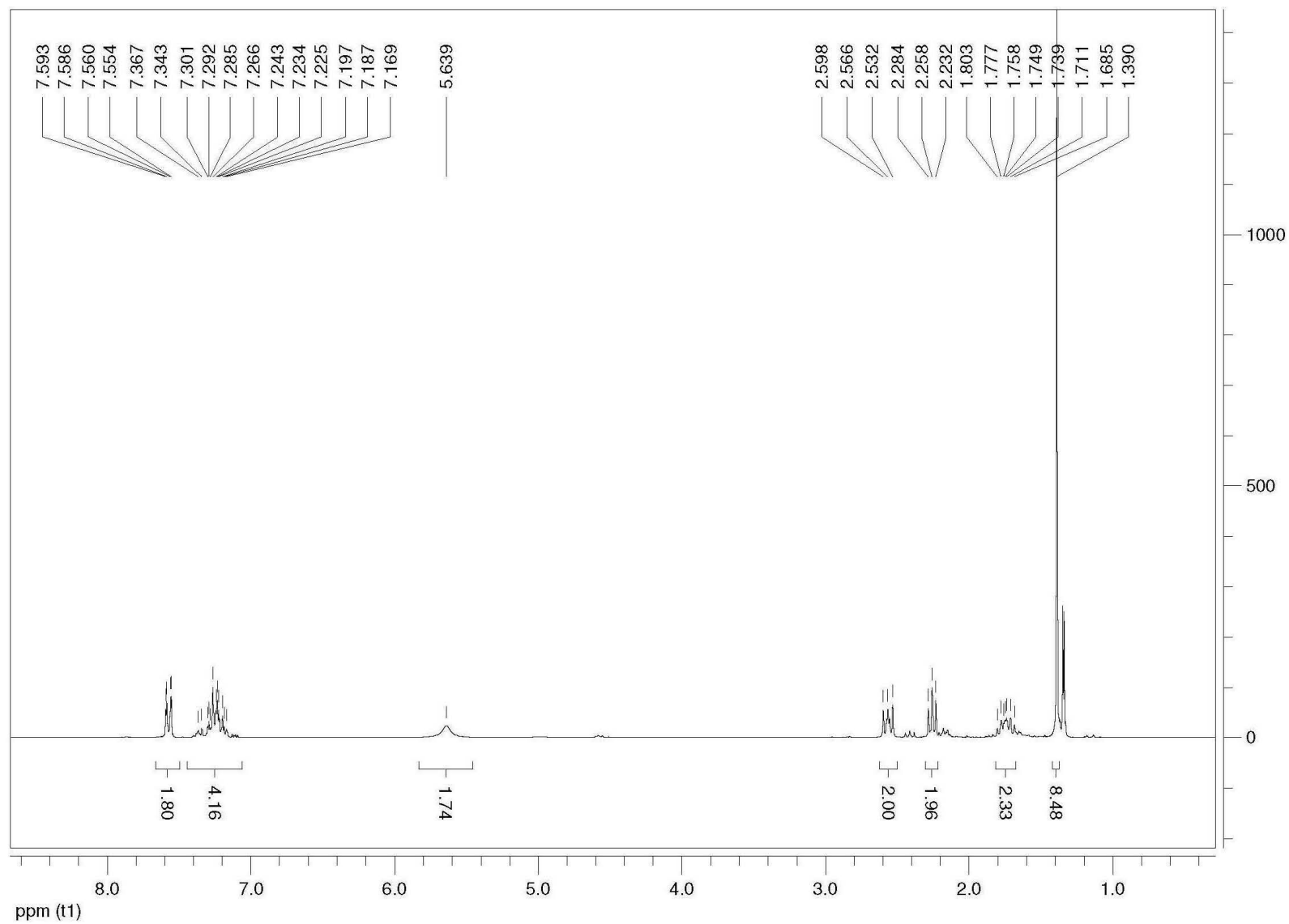


To a solution of ester **2** (420 mg, 1.69 mmol) in ethanol (6 ml), 0.8 ml (16.5 mmol) of hydrazine hydrate were added and the mixture was brought at reflux temperature for 4.5 hours. Then the solvents were evaporated under reduced pressure and the product dried in vacuo. 360 mg (81%) of a clear oil were isolated and used for the next step without further purification. ¹H-NMR (250 MHz, CDCl₃) δ (ppm): 7.57 (m, 2H); 7.29 (m, 3H); 5.64 (br-s, 2H); 2.56 (t, 2H); 2.26 (t, 2H); 1.75 (m, 2H); 1.39 (s, 9H). IR (KBr) 3403, 3239, 2977, 2933, 1724, 1367, 1147, 695 cm⁻¹; ESI-MS *m/z* 263 [M+H]⁺.

FT-IR spectrum of **3** (KBr)



^1H NMR of **3**, CDCl_3



ESI-MS spectrum of **3**

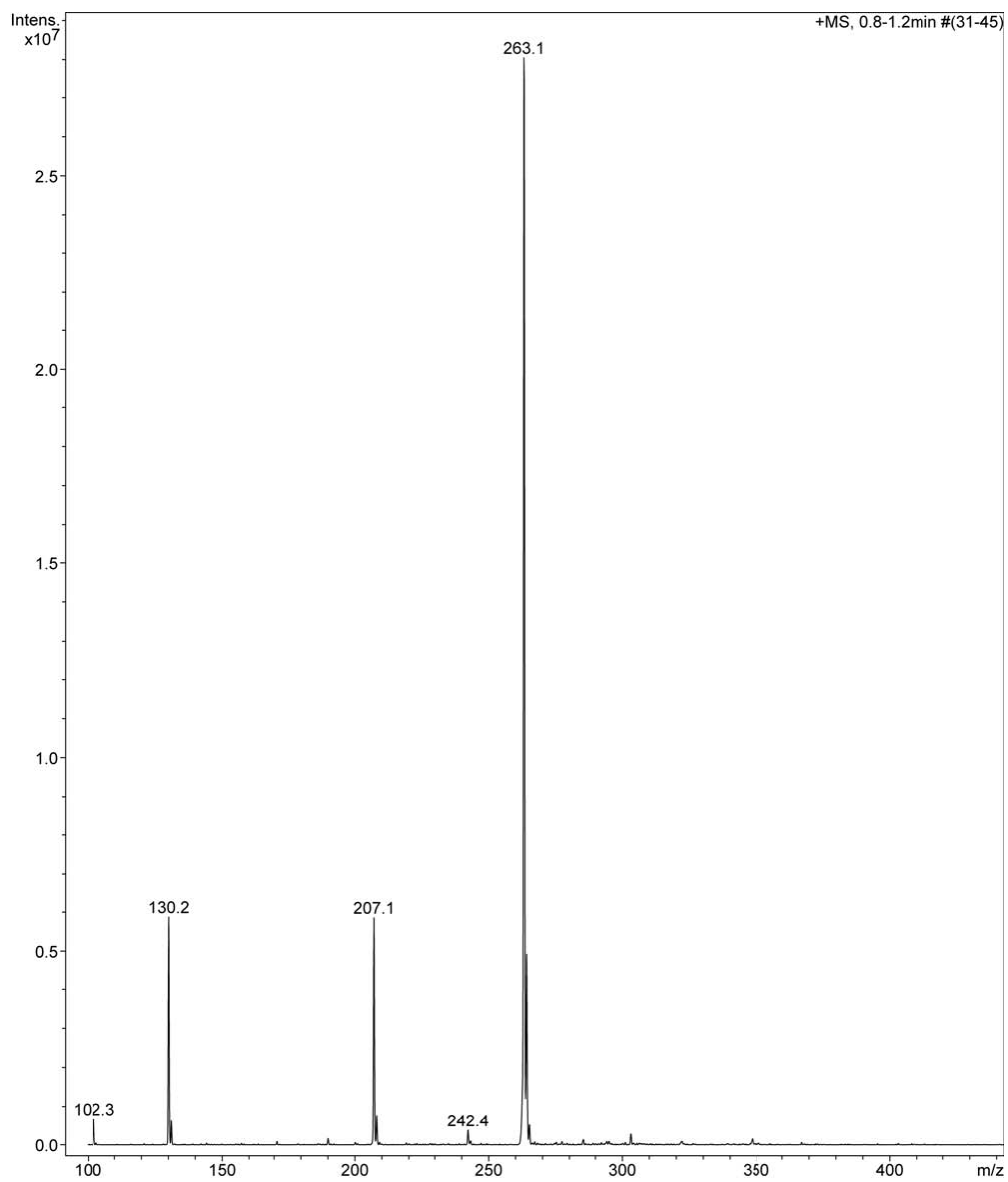


FIGURE S1: microreactor setup

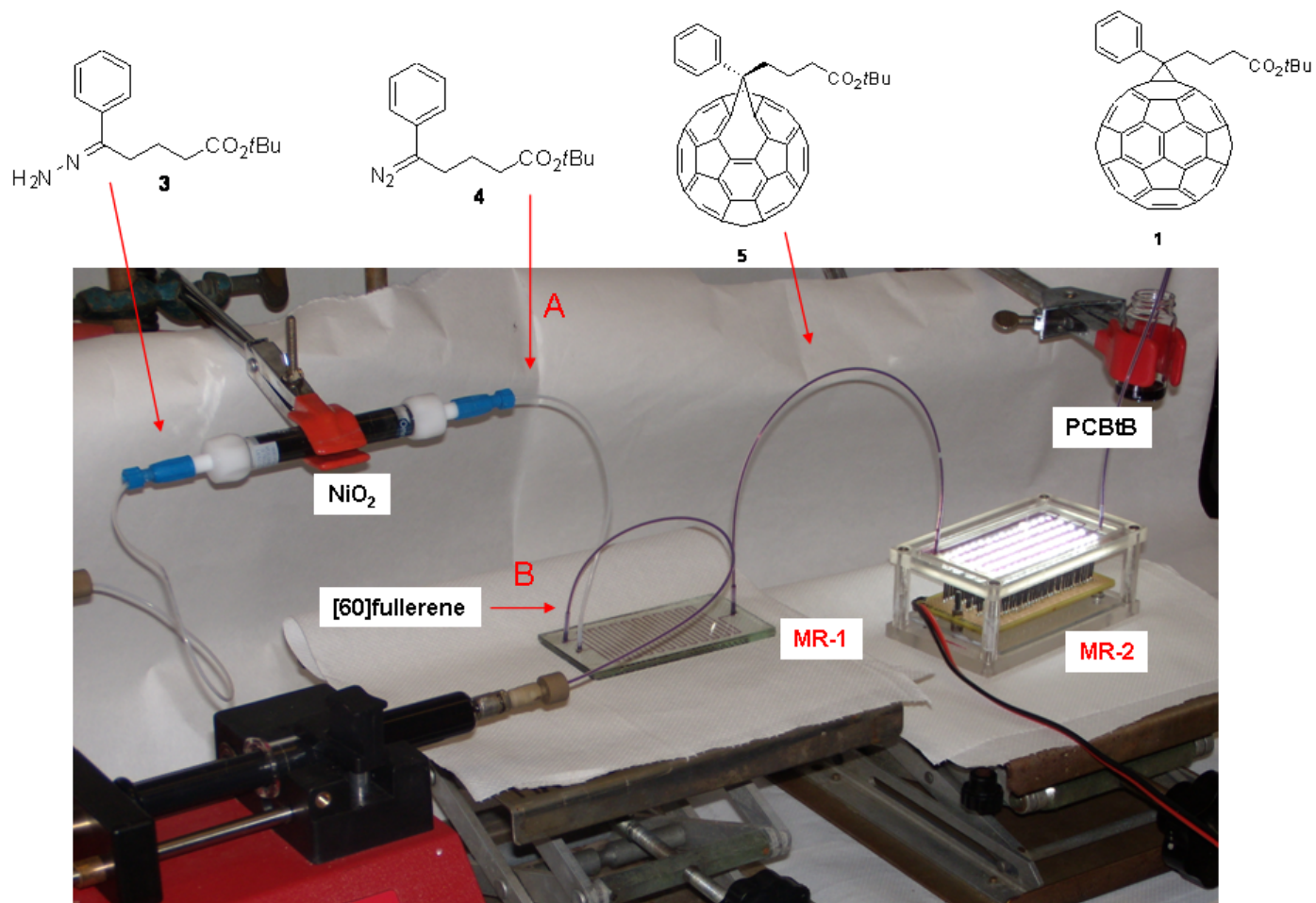
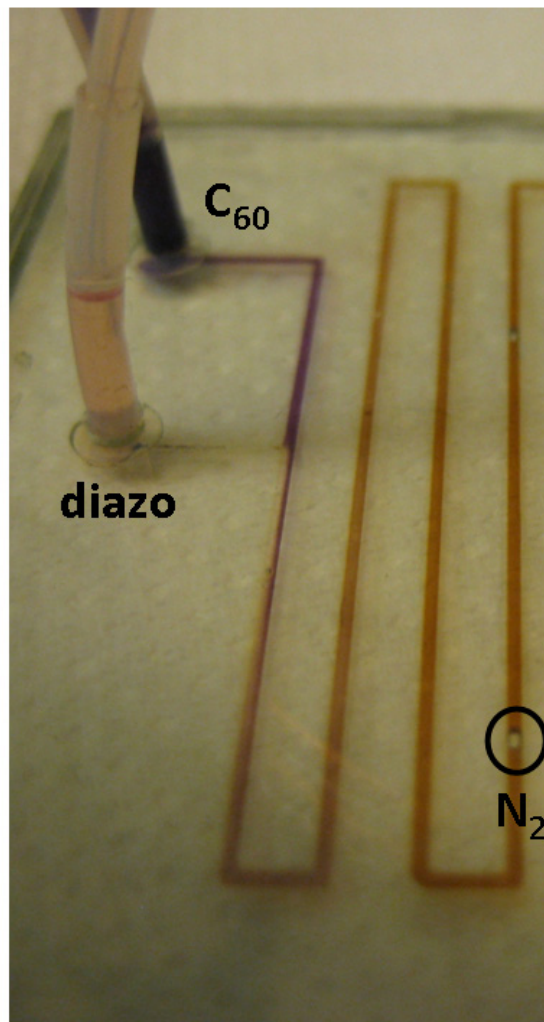
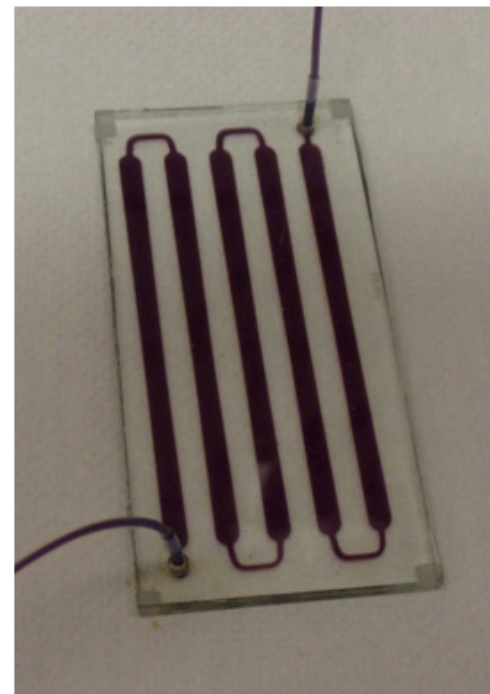
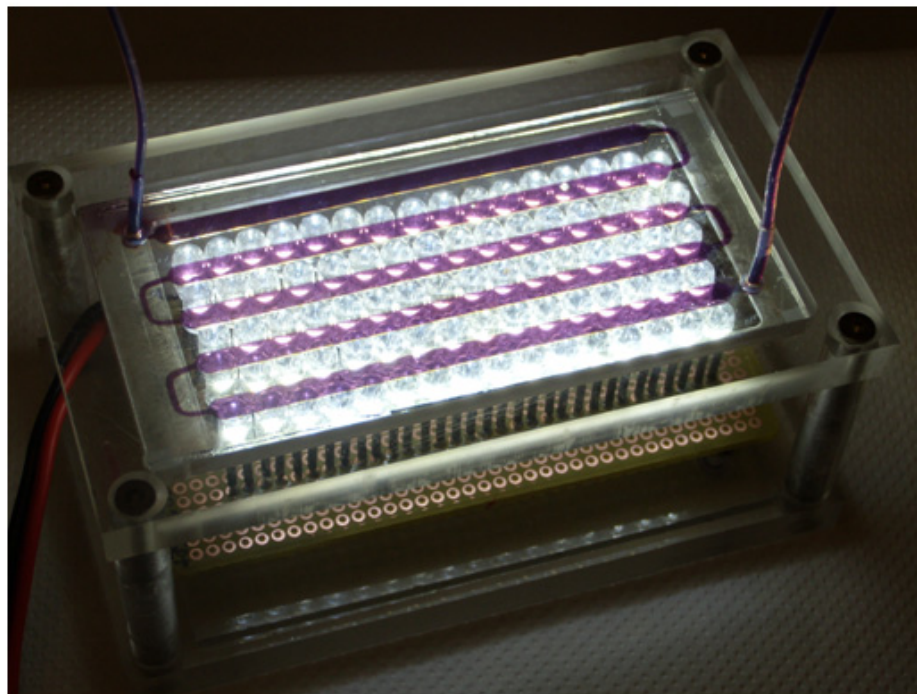


FIGURE S1: details of MR-1



MR-1: total volume = 152 μ L. Main channel: length = 950 mm, width = 0.1 mm, height = 0.32 mm.

FIGURE S1: details of photochemical MR-2



MR-2: total volume = 870 μ L. Each chamber has the following dimensions: length = 77.5 mm, width = 7 mm, height = 0.32 mm.



HPLC traces of reaction mixture aliquots taken at the inlet and outlet of the photochemical chip MR-2. Column: analytical Cosmosil Buckyprep. Eluent: toluene/n-hexane 7:3, flow = 1 ml/min, detector at 340 nm (see experimental section).

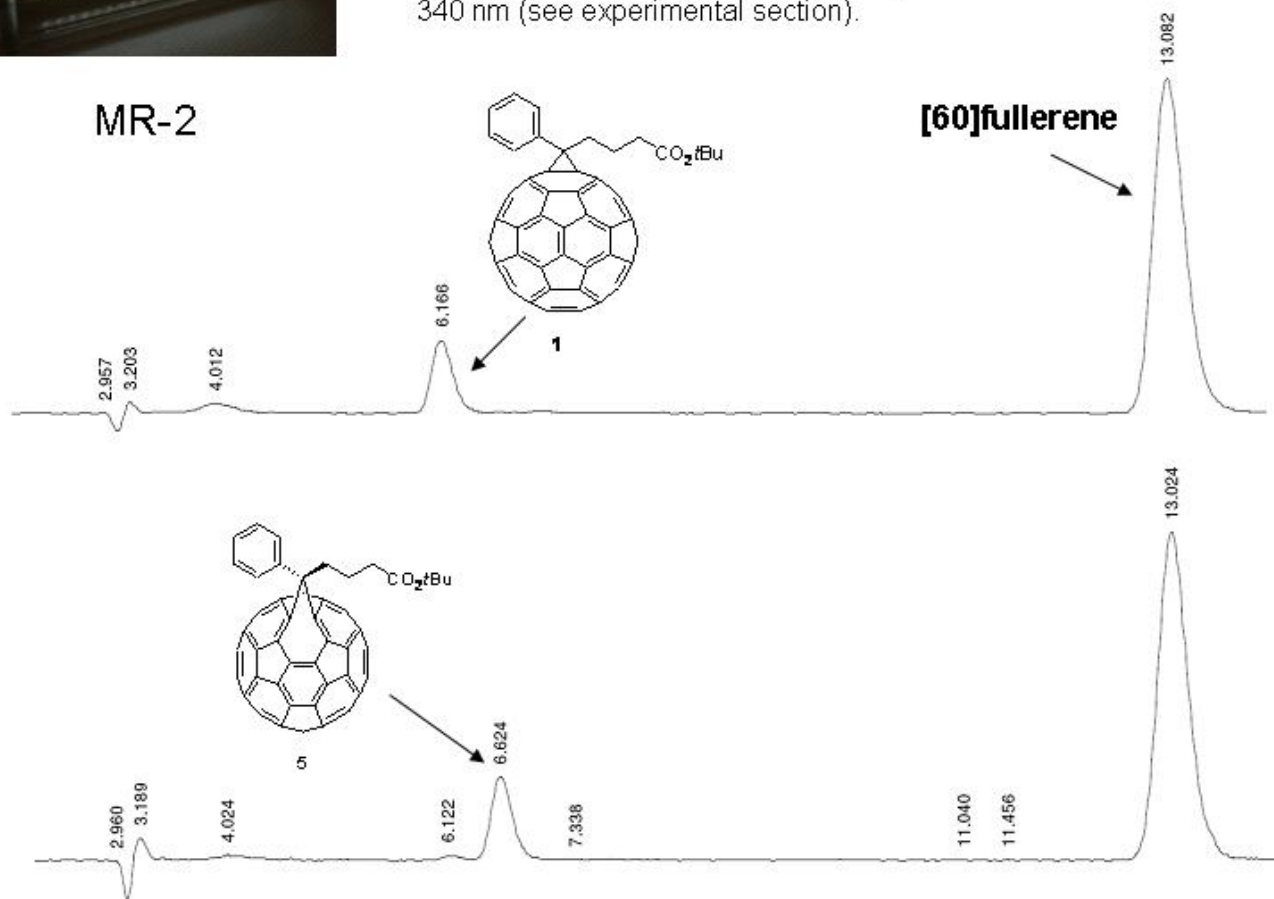
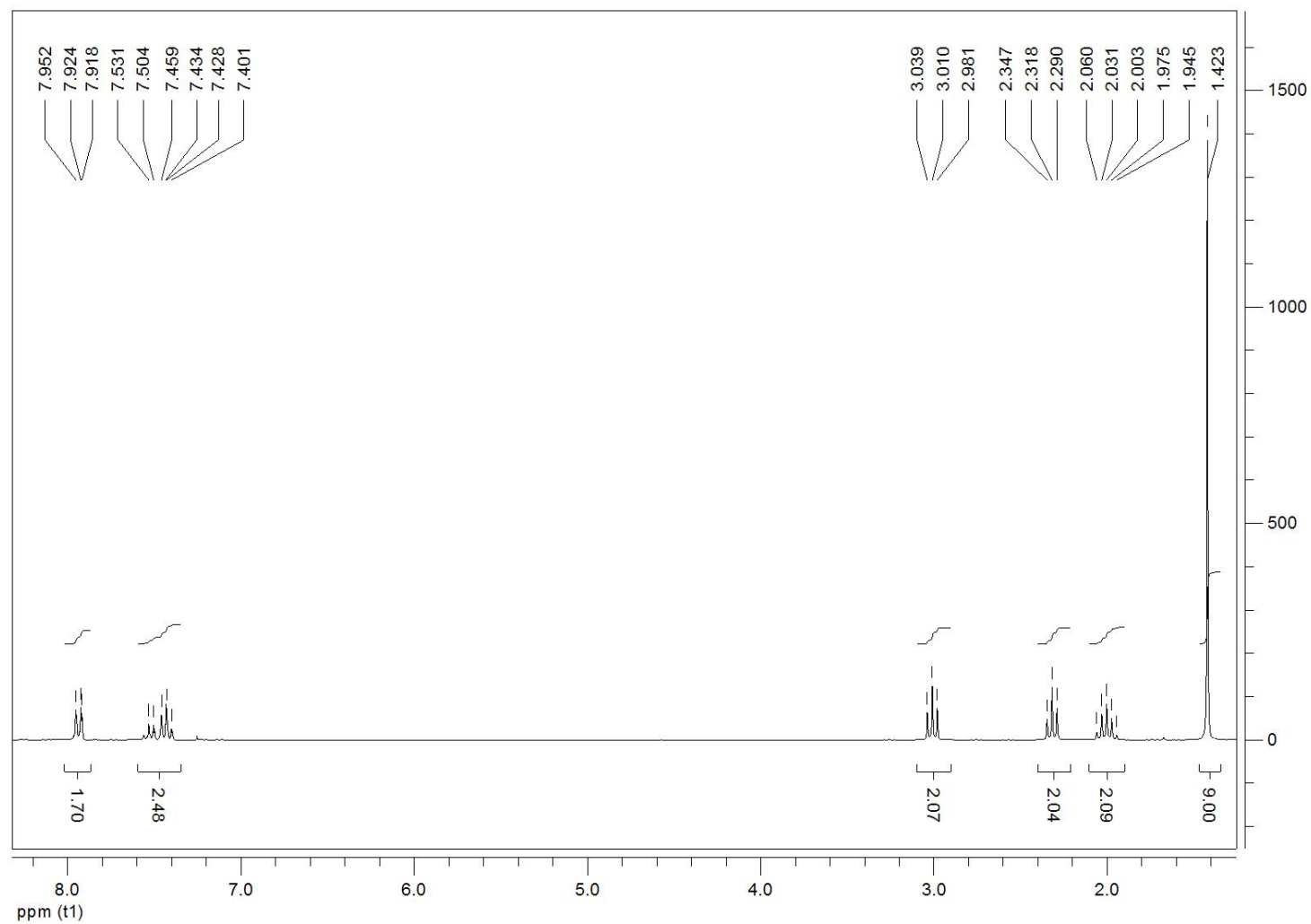


FIGURE S2 ^1H NMR spectrum of PCBtB **1**



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FIGURE S3 ^{13}C NMR spectrum of PCBtB 1

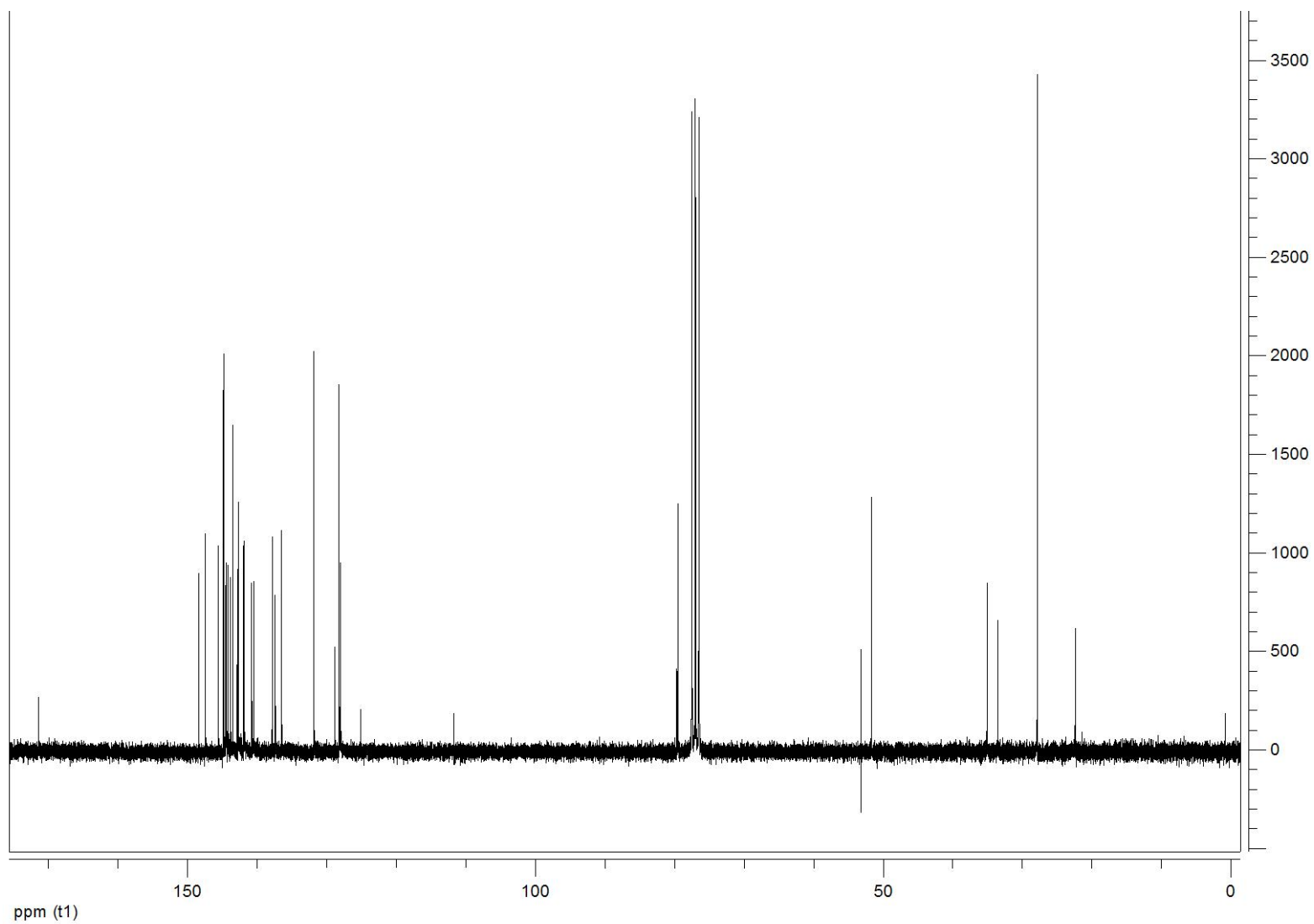


FIGURE S4 APPI-MS spectrum of PCBtB 1

Display Report - Selected Window Selected Analysis

Analysis Name: 6_6PCBtB.d **Instrument:** LC-MSD-Trap-SL **Print Date:** 07/30/2009 05:23:37 PM
Method: def_lcms.m **Operator:** Administrator **Acq. Date:** 4/29/2009 3:05:02 PM
Sample Name: BCBTB in cicloesano 6,6
Analysis Info: 100 uL/min

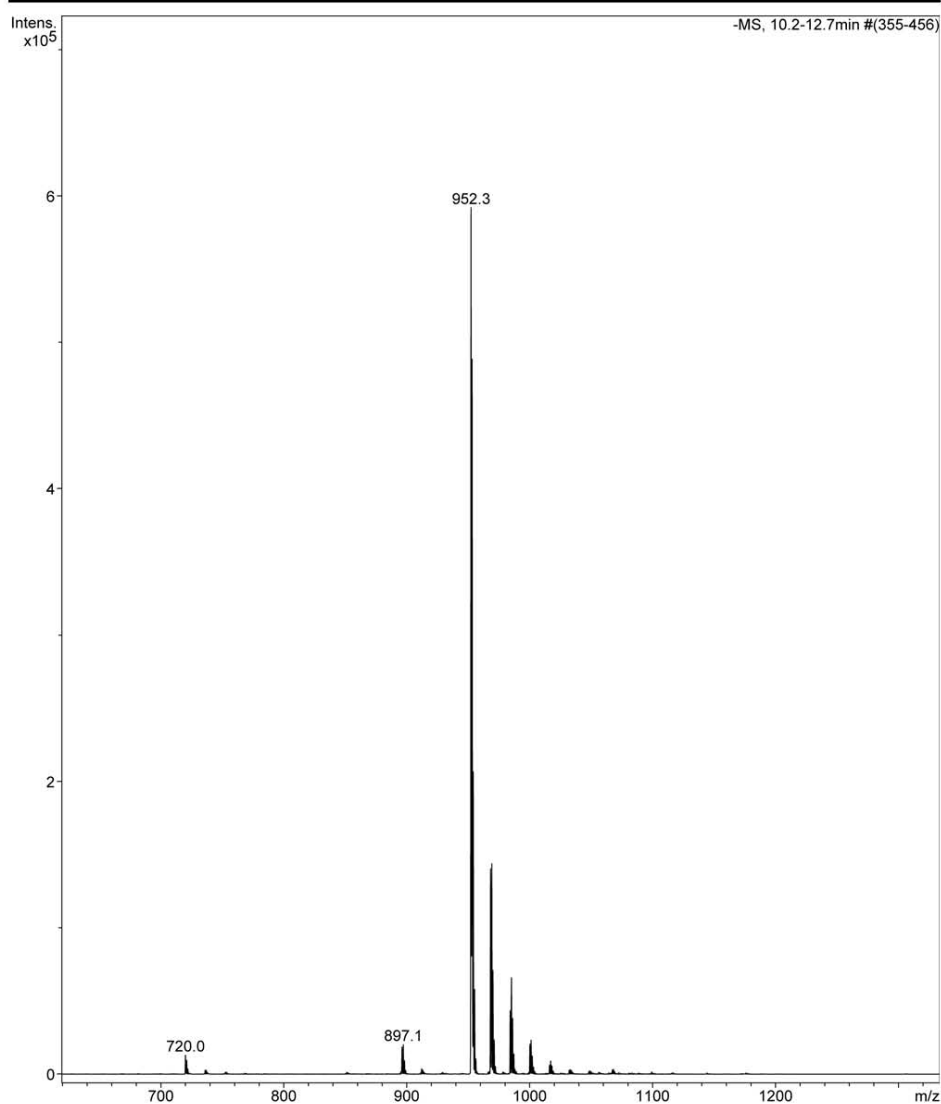
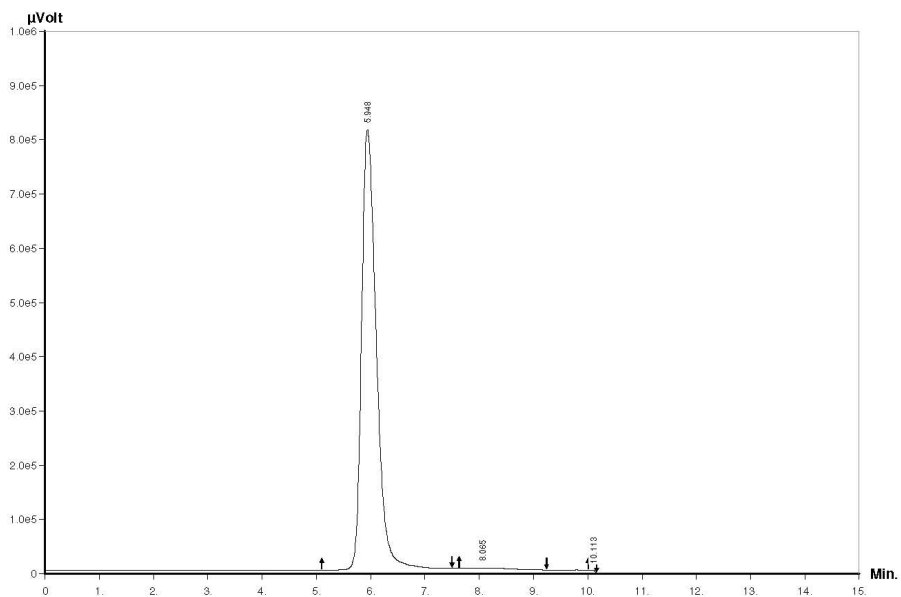


FIGURE S5 HPLC trace for PCBtB 1

Risultati Analisi - Grafico PCBTsemipreanalisi1_MM



Risultati Analisi - Tabella PCBTsemipreanalisi1_MM

Nome Picco	Tempo Rit.	Area	Altezza	Conc.	Area Perc.
Non identificato	5.948	255288.773	810709.986	0.000000	99.447
Non identificato	8.065	1095.894	1664.870	0.000000	0.427
Non identificato	10.113	323.463	4375.814	0.000000	0.126

FIGURE S6 FT-IR spectrum of *tert*-butyl-4-benzoylbutyrate diazomethane 4

