

Efficient Synthesis of Copillar[5]arenes and Their Host–Guest Properties with Alkyl Bromide

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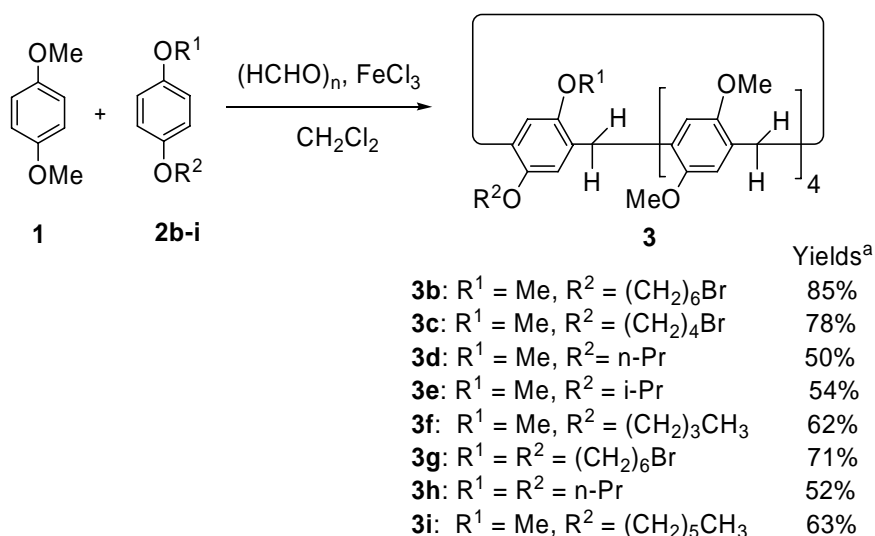
Supporting Information

1. Materials and methods

The 1,4-bis(ethoxy)pillar[6]arene was synthesized according to the literature procedure¹. Solvents were either employed as purchased or dried according to the procedures described in the literatures. ¹H NMR (400 MHz) and ¹³C NMR (100 MHz) spectra were recorded with a Bruker DRX 400 spectrometer by using CDCl₃ as solvent and TMS as an internal standard. Matrix-assisted laser desorption ionization time-of flight (MALDI-TOF) mass measurements were performed with an Autoflex III smart-beam spectrometer. Thin layer chromatography was performed by using commercial Merck silica gel plates (GF254), and visualization was carried out at 254 nm.

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2. General Procedure for the preparation of copillar[5]arenes (**3b-i**)



^aisolated yields, calculated with the feed amounts of compounds **2b-i**.

Scheme S1. Preparation of pillar[5]arenes by oligomerization of different 1,4-dialkoxybenzenes.

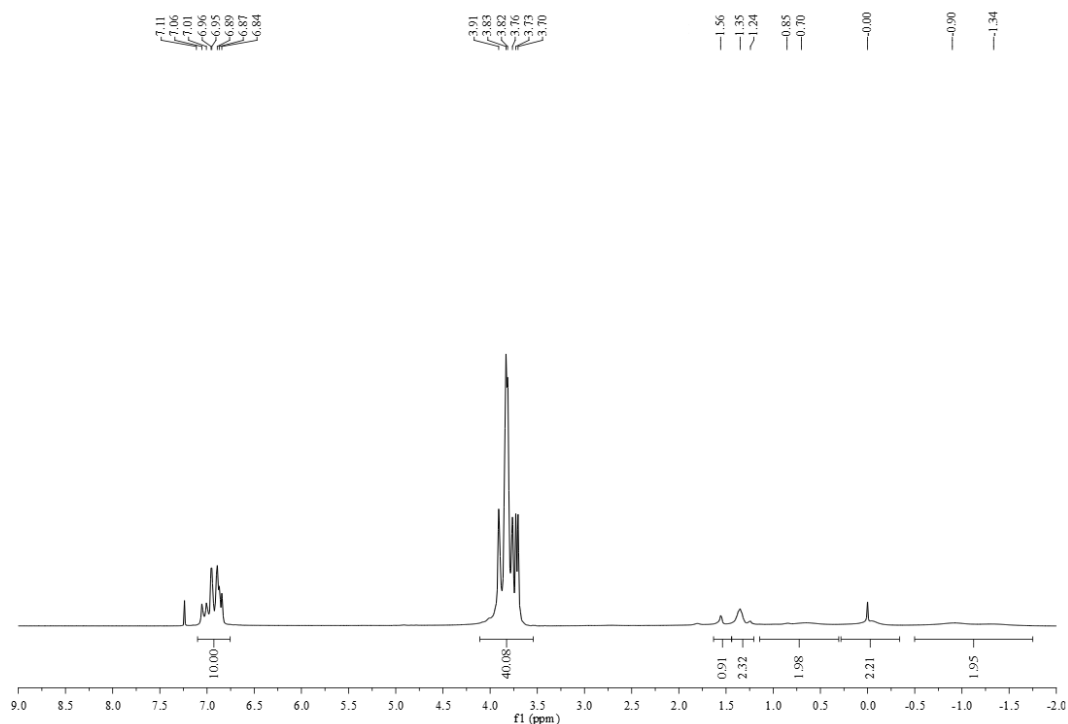


Figure S1 ¹H NMR spectrum (CDCl₃) of copillar[5]arene **3b**.

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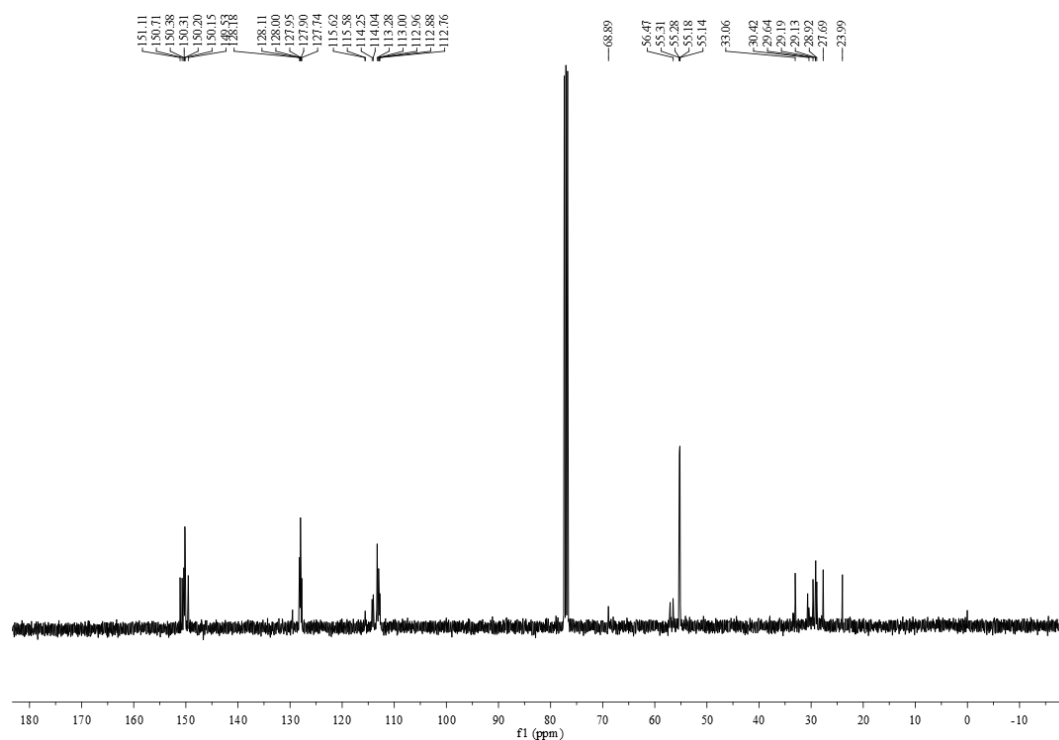


Figure S2 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3b**.

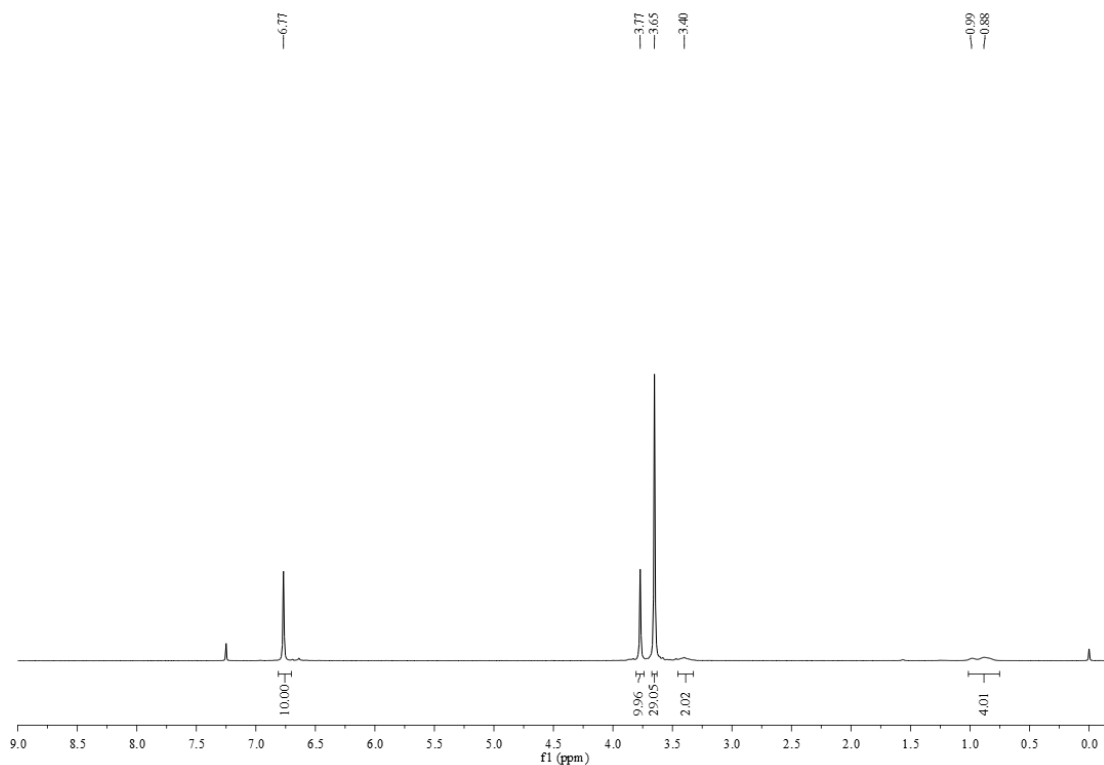


Figure S3 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3c**

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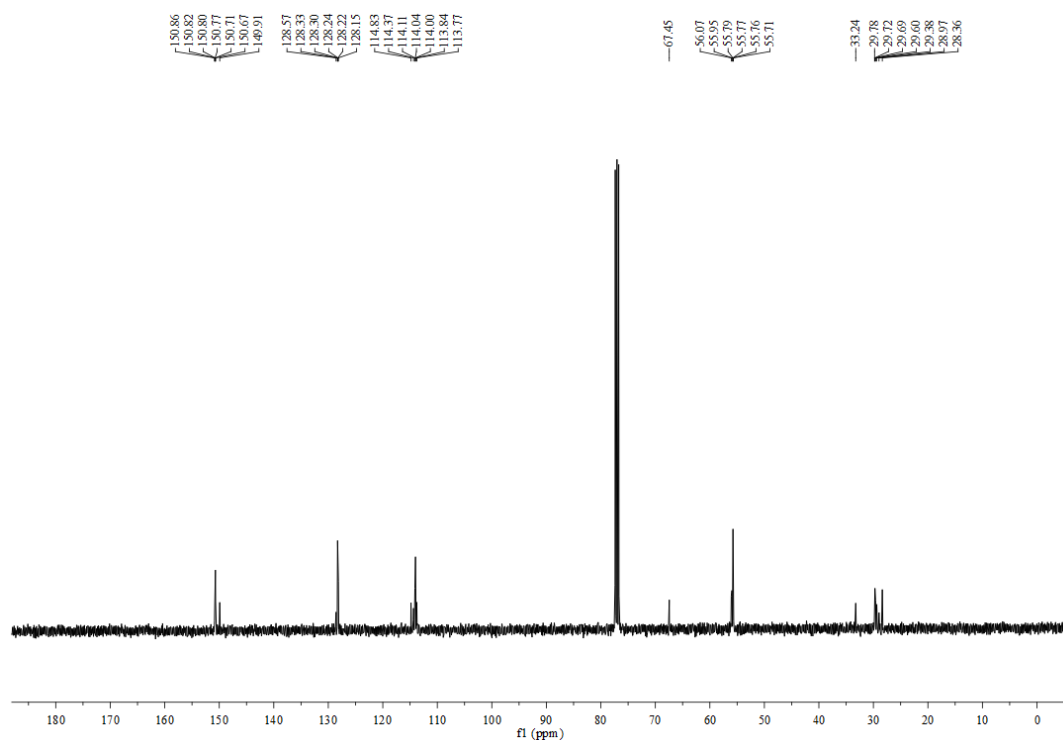


Figure S4 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3c**.

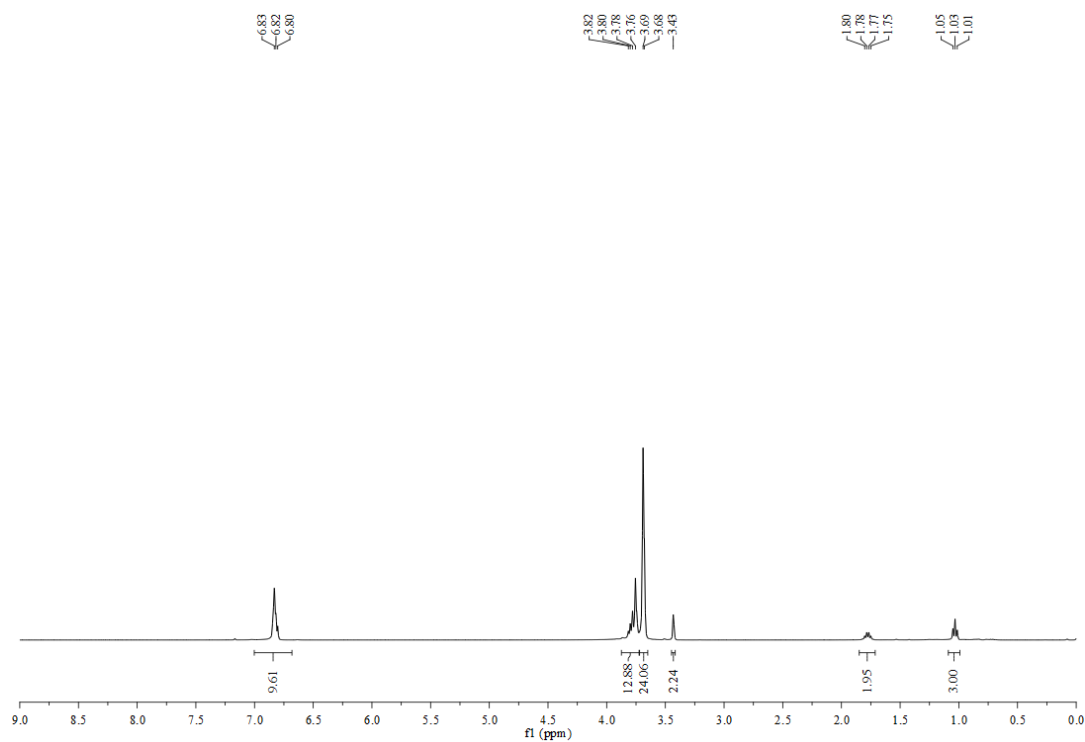


Figure S5 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3d**.

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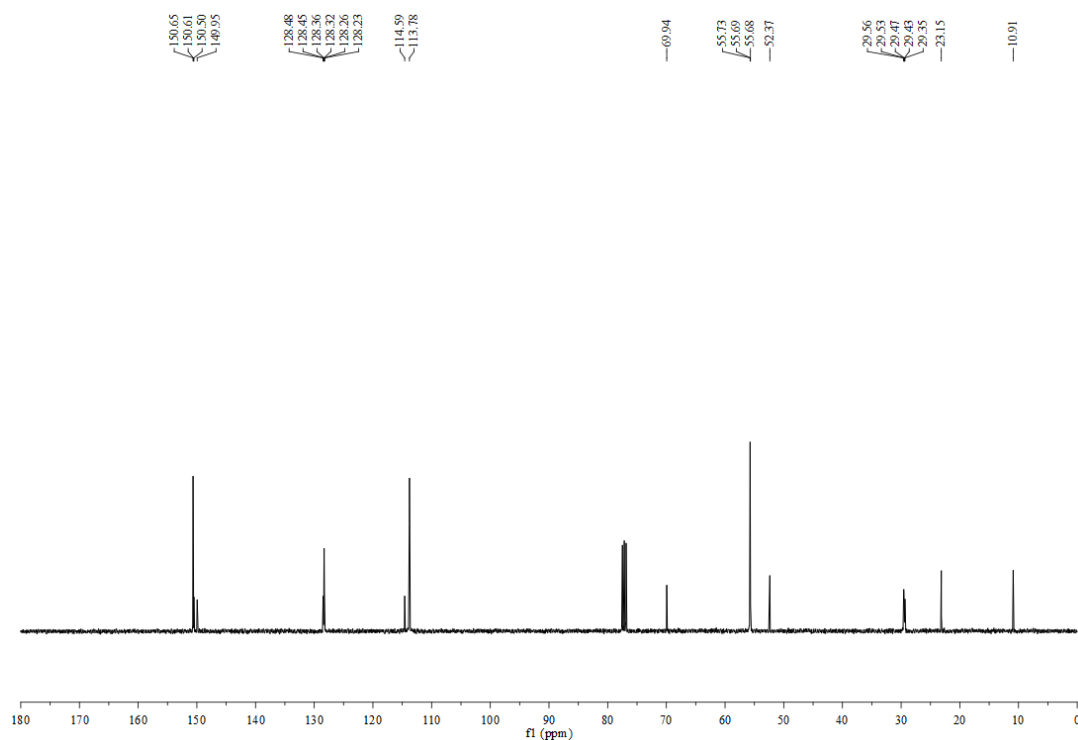


Figure S6 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3d**.

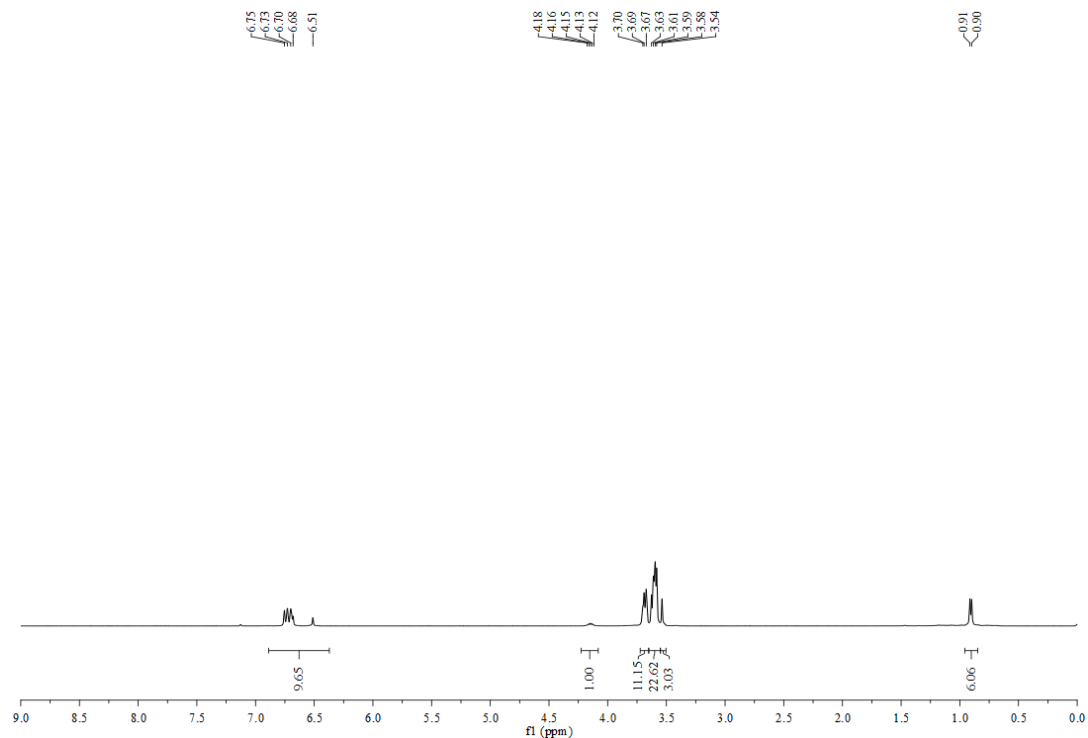


Figure S7 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3e**.

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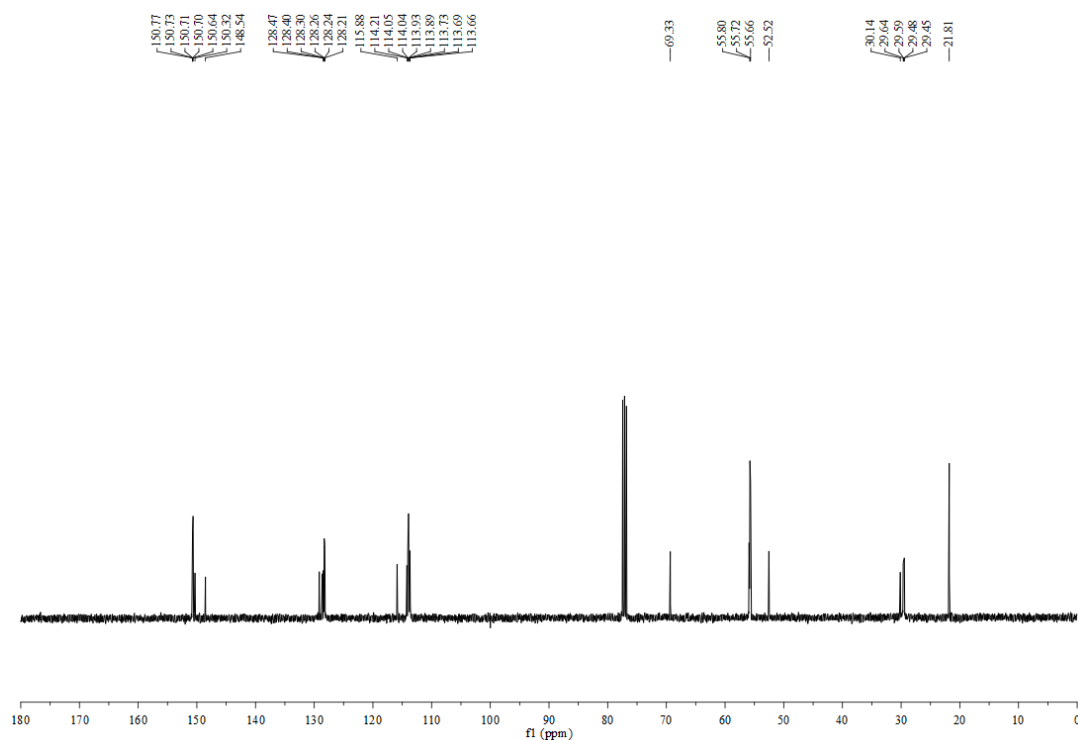


Figure S8 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3e**.

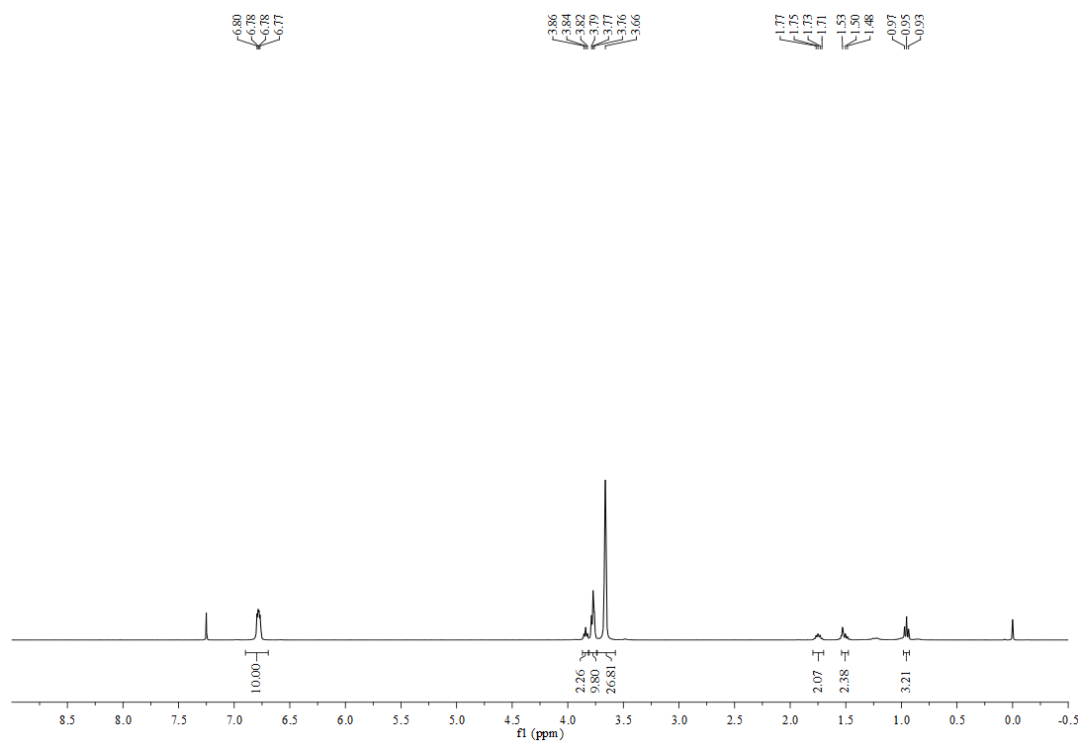


Figure S9 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3f**.

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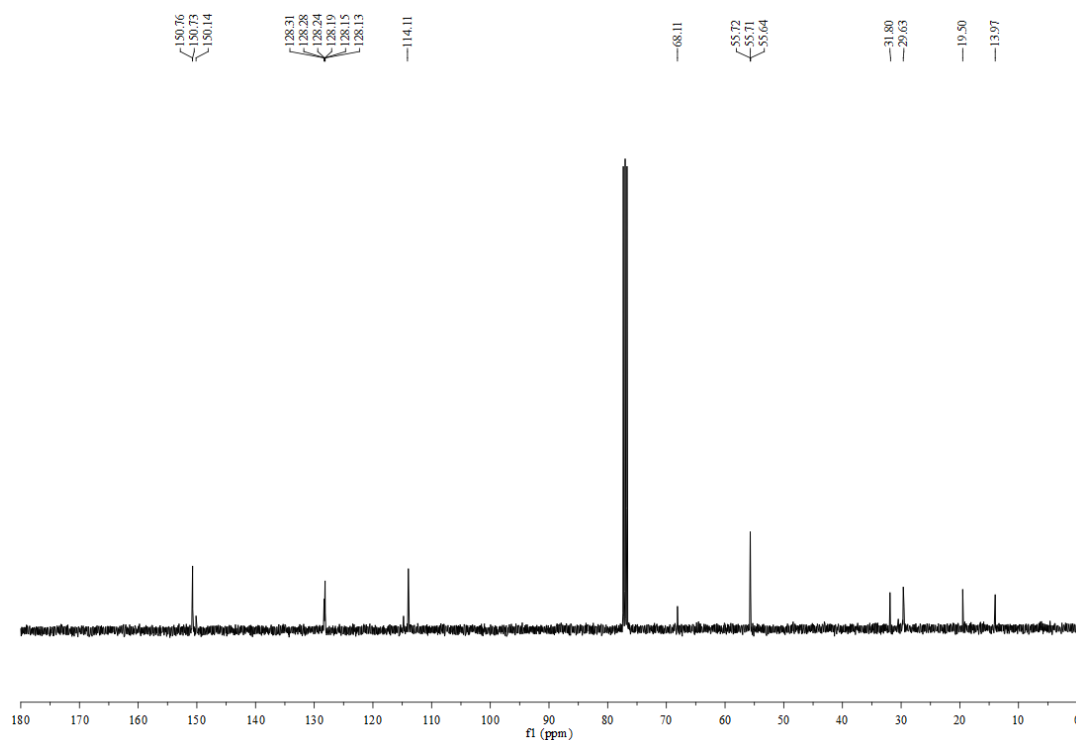


Figure S10 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3f**.

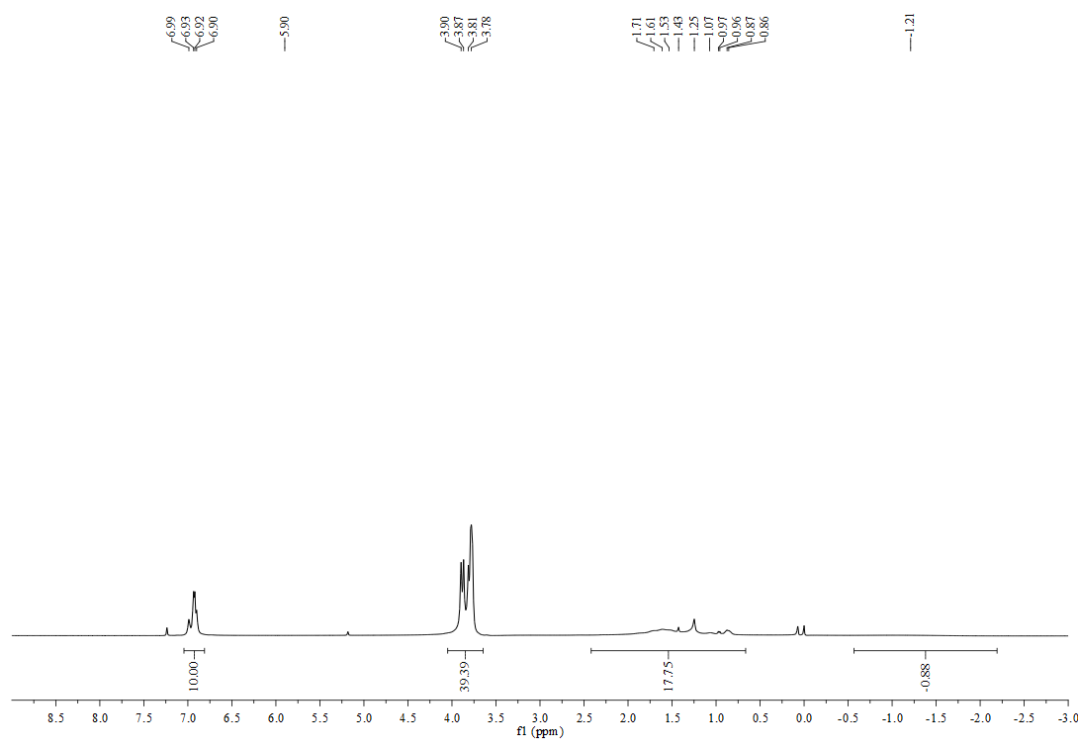


Figure S11 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3g**.

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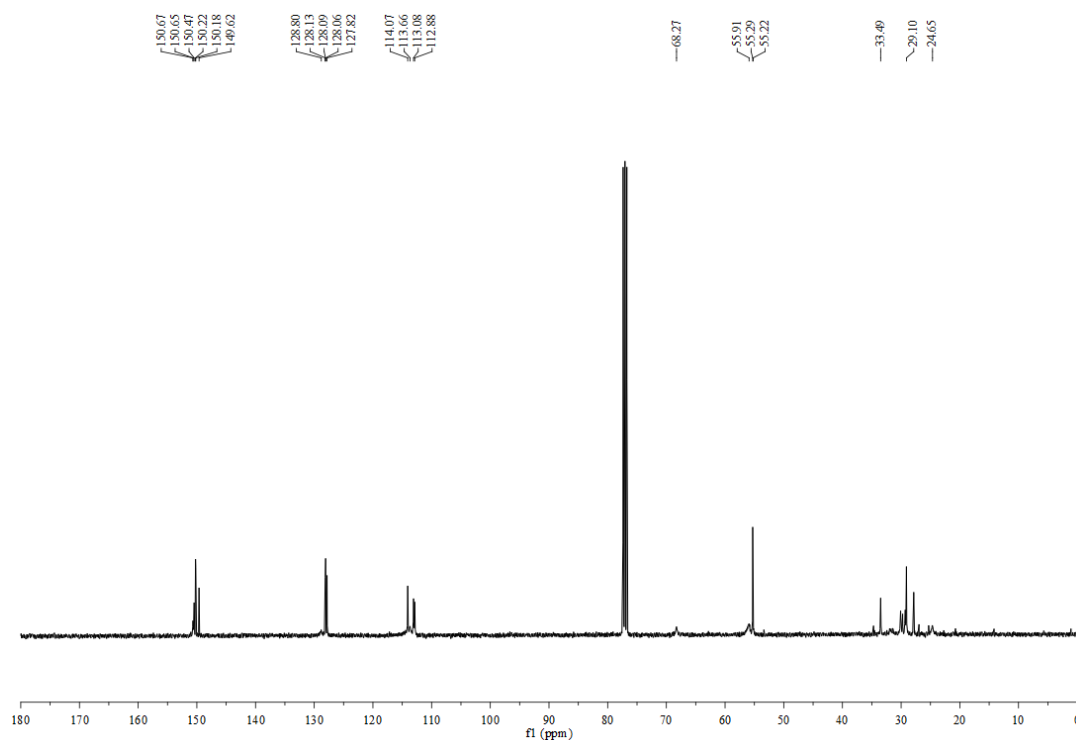


Figure S12 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3g**.

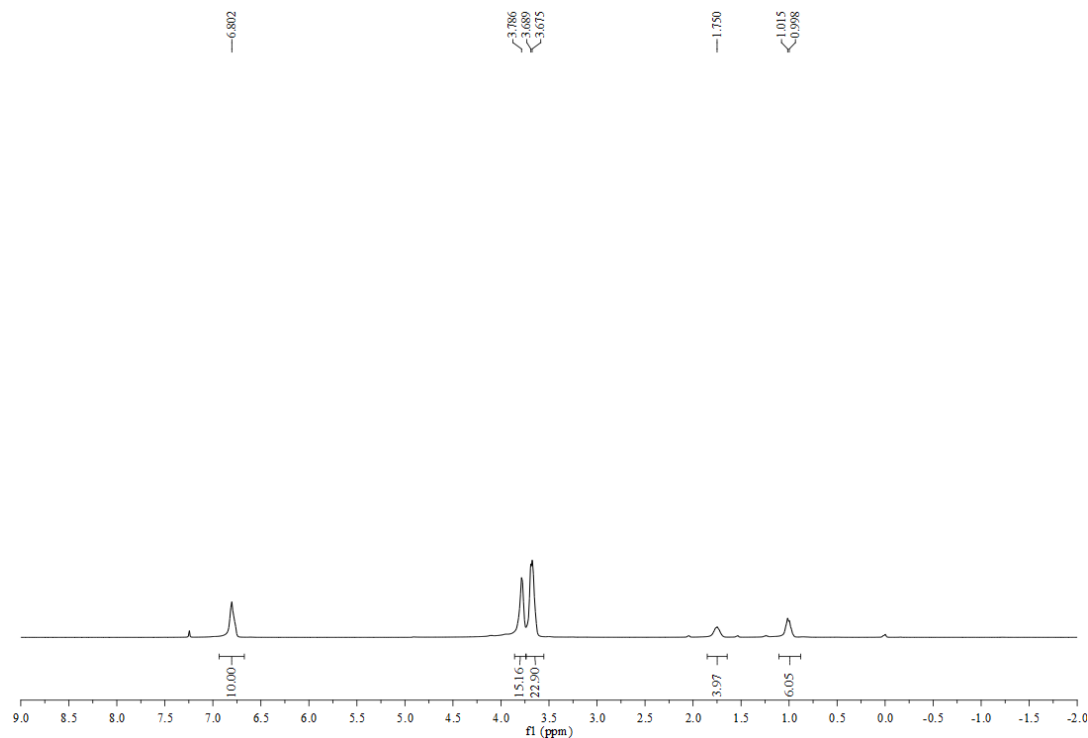


Figure S13 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3h**.

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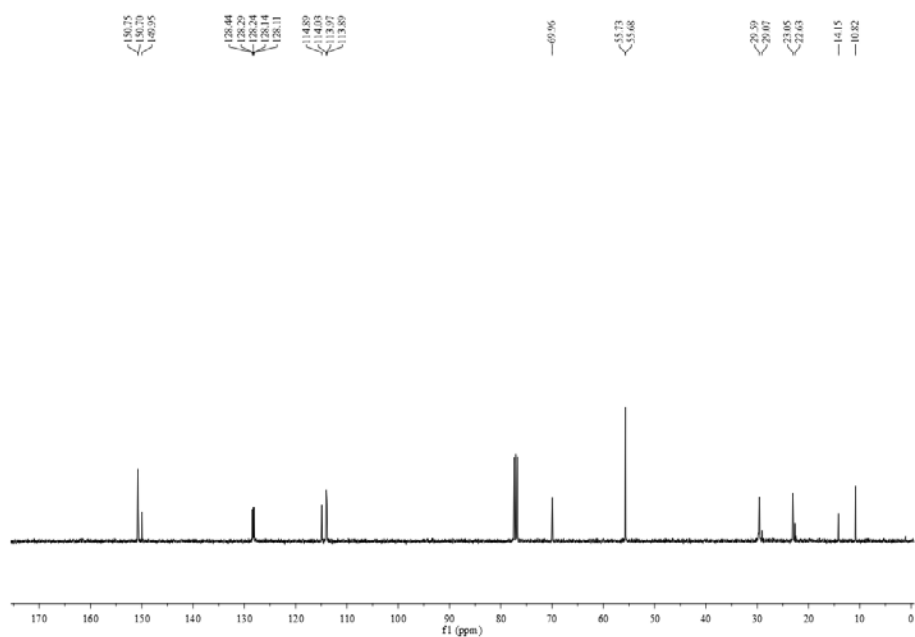


Figure S14 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3h**.

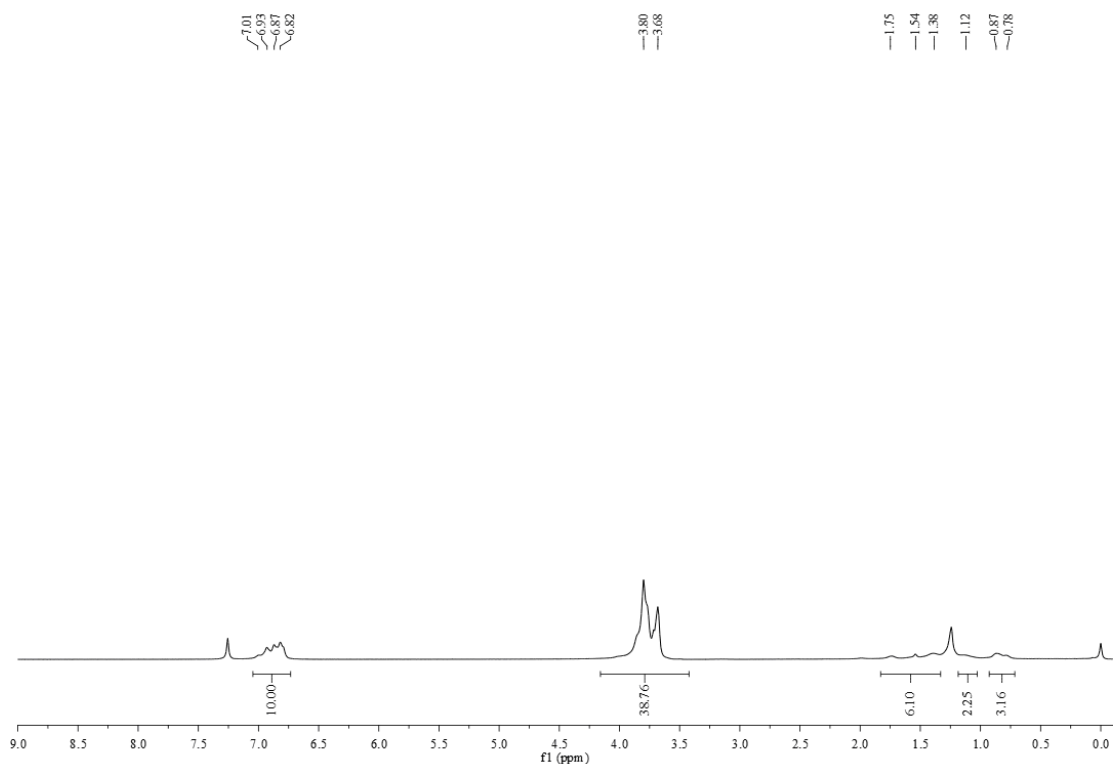


Figure S15 ^1H NMR spectrum (CDCl_3) of copillar[5]arene **3i**.

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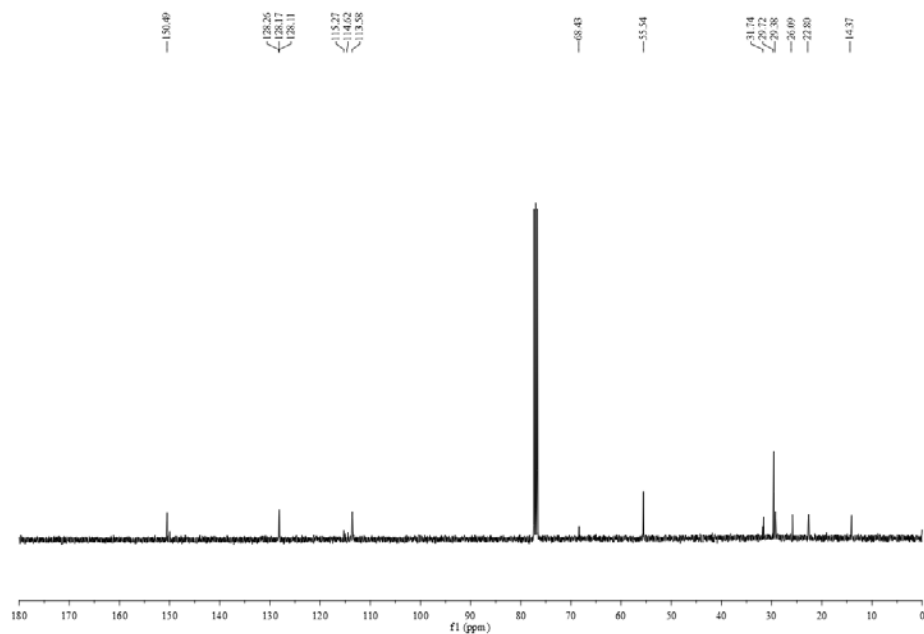


Figure S16 ^{13}C NMR spectrum (CDCl_3) of copillar[5]arene **3i**.

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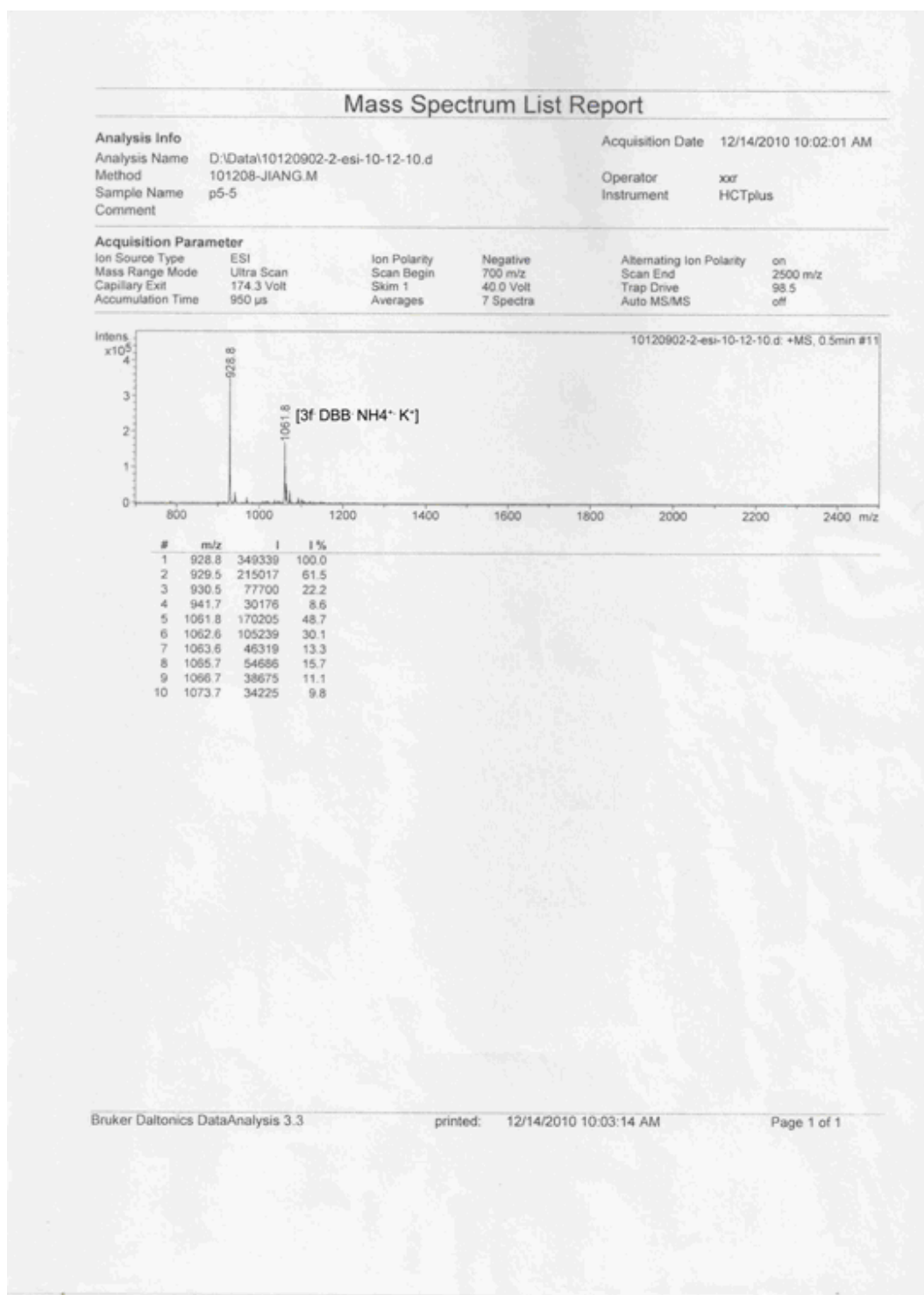


Figure S17 Mass (ESI) spectra of an equimolar mixture of **3f** and DBB

References

- 1 D. Cao, Y. Kou, J. Liang, Z. Chen, L. Wang and H. Meier, *Angew. Chem. Int. Ed.*, 2009, **48**, 9721-9723.