

SUPPLEMENTARY INFORMATION

Carbazole Oligomers Revisited: New Additions at the Carbazole 1- and 8-positions Properties

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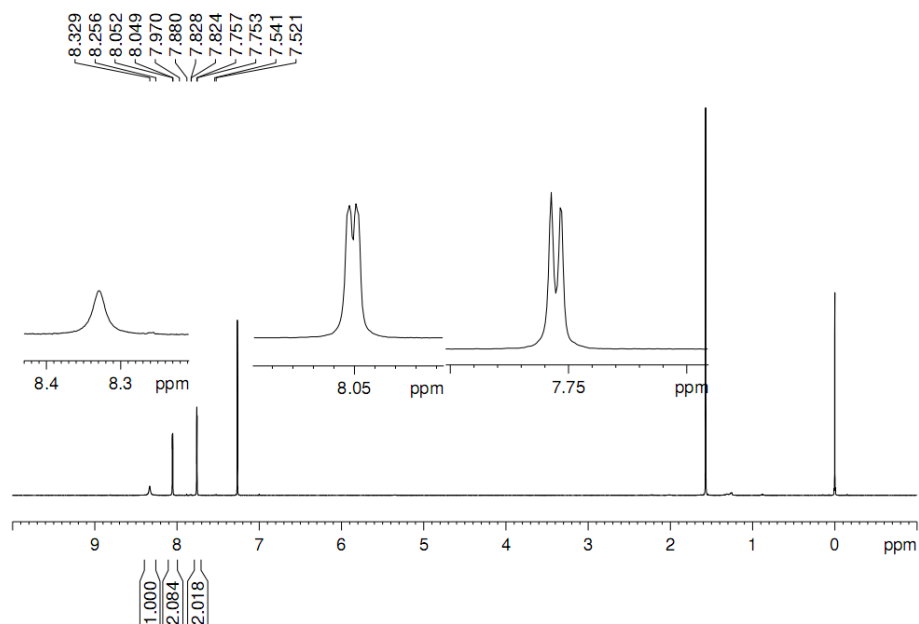
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1. INSTRUMENTATION.

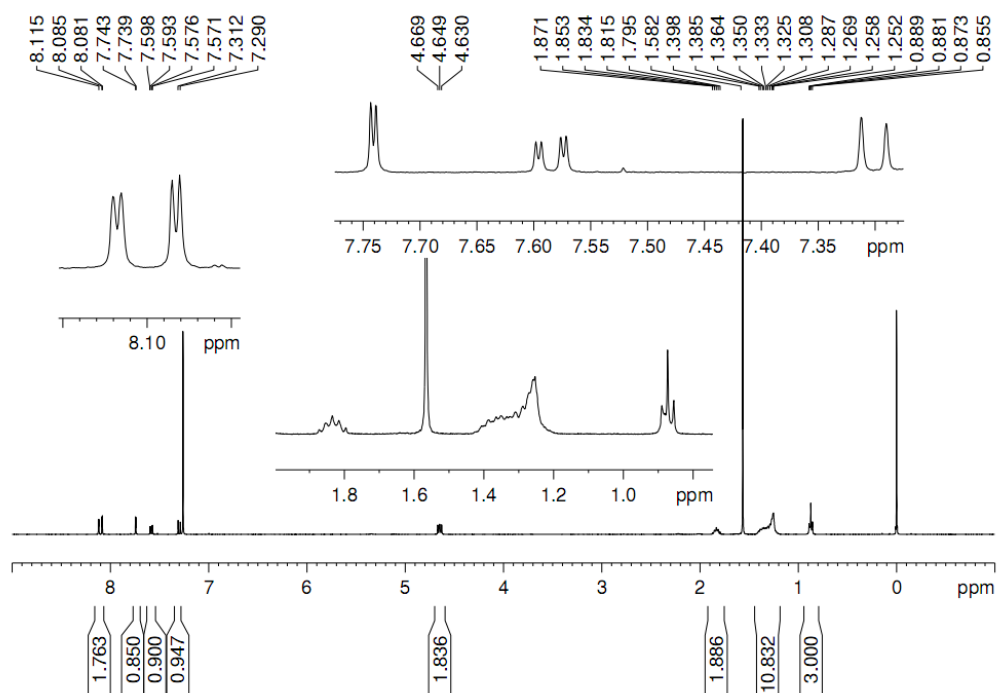
All commercially available starting materials, reagents and solvents were used as supplied, unless otherwise stated, and were purchased from Aladdin, Acros Organics and Puyang Huicheng Chemical Co. Ltd. All reactions were carried out under a dry nitrogen atmosphere and the temperatures were measured externally. Carbazole was recrystallised from toluene before use. *N*-Bromosuccinimide was recrystallized from water before use. For brominations using bromine no nitrogen was used to prevent contamination of the nitrogen line. DMF was dried over CaH_2 with stirring overnight followed by distillation under reduced pressure. Tri(isopropyl)borate was distilled over sodium wire. THF and toluene were dried using sodium wire and benzophenone indicator. DCM was dried over calcium sulfate and distilled. Tetrabutylammonium hydrogen sulfate was used as the phase transfer catalyst (PTC). Reported yields are isolated yields. Purification of most intermediates and all final products was accomplished in most cases by gravity column chromatography, using silica gel. For qualitative purity tests of all intermediates and final products, a single spot (visualized using UV-light at 254 nm and 365 nm) was obtained. All materials were dried using a vacuum oven. Elemental analysis was used for quantitative purity checks of all final products. ^1H NMR spectra are reported in parts per million (PPM) relative to tetramethylsilane as an internal standard. For Cz-2 the residual solvent peak of CH_2Cl_2 in CD_2Cl_2 was taken as the internal standard. When the residual CHCl_3 proton peak in CDCl_3 , at approximately 7.24 ppm, interfered with peak assignment, spectra in CD_2Cl_2 were taken to clarify characterisation. ^1H NMR: (Bruker AV400); Mass Spectrometry: Agilent (1100 LC/MSD Trap); Elemental Analysis: Elementar (Vario Micro-cube); UV-VIS: Shimadzu UV-VIS-NIR Spectrophotometer (UV-3600); PL: Edinburgh instruments (FLSP920 spectrometers); DSC: PerkinElmer Instruments (Diamond DSC); TG/DTA: SII Exstar 6000, (TG/DTA 6300); HPLC: Waters 1525 Binary HPLC Pump with 2489 UV-VIS Detector; Raman

2. ^1H -NMR SPECTRA.

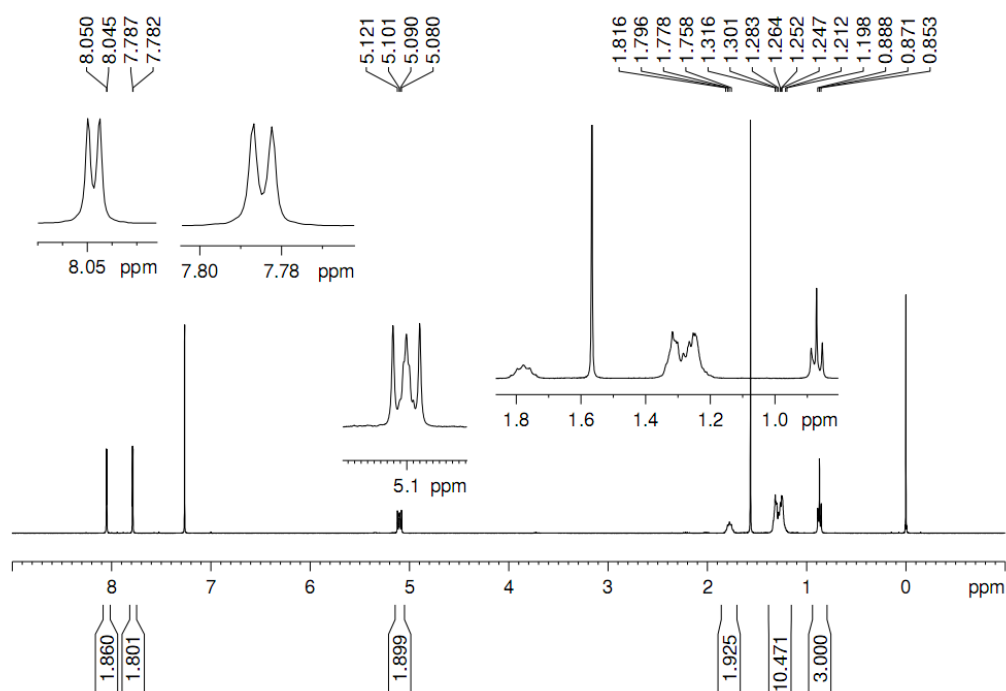
Compound 4



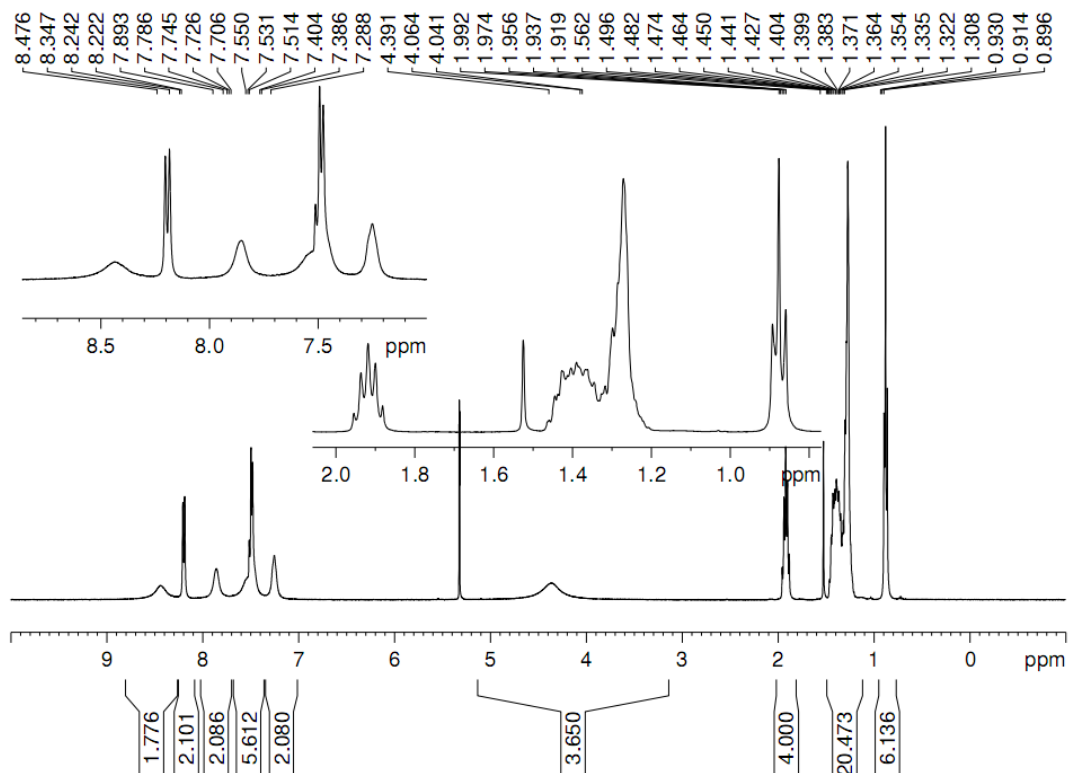
Cz-3Br



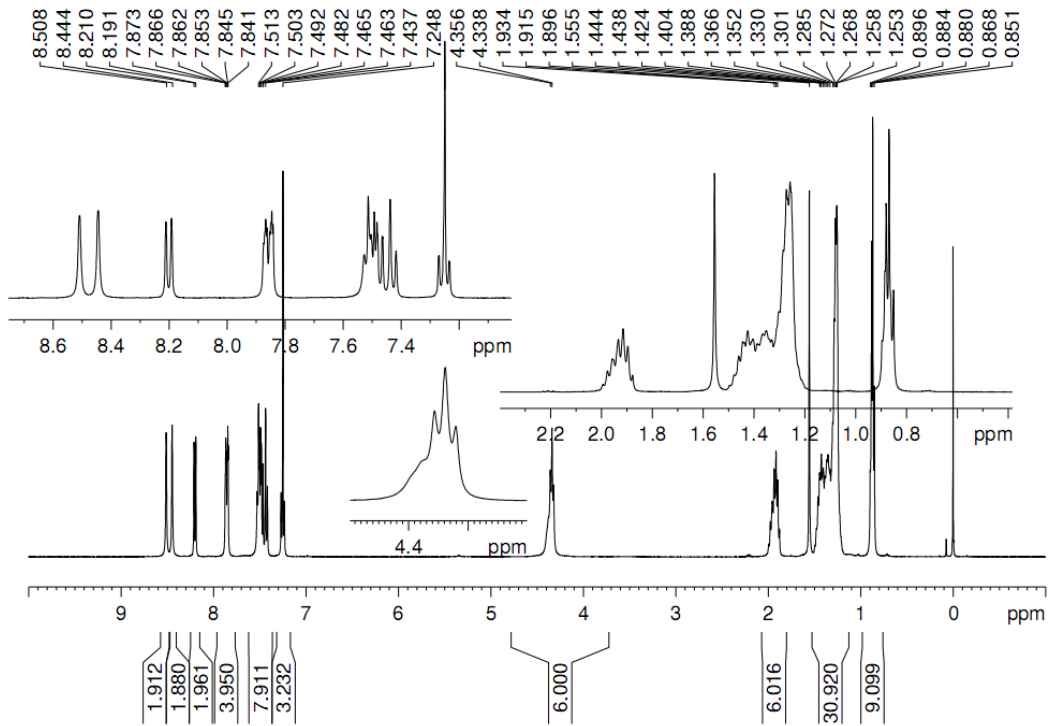
Cz-4Br



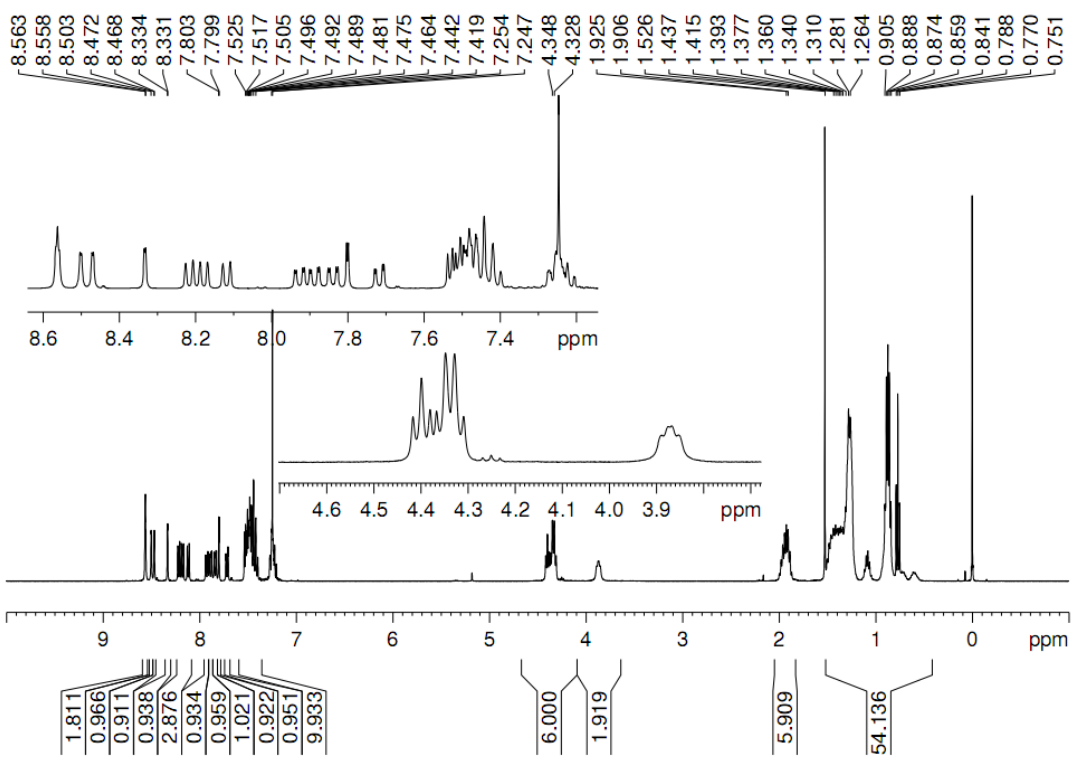
Cz-2



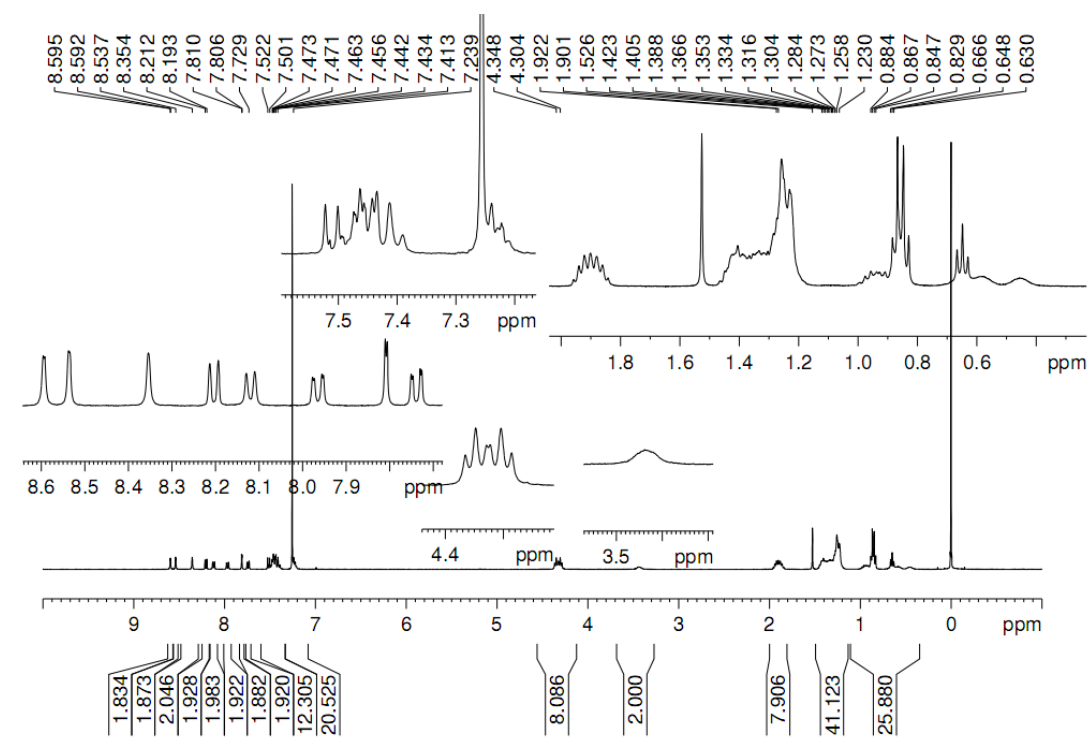
Cz-3



Cz-4

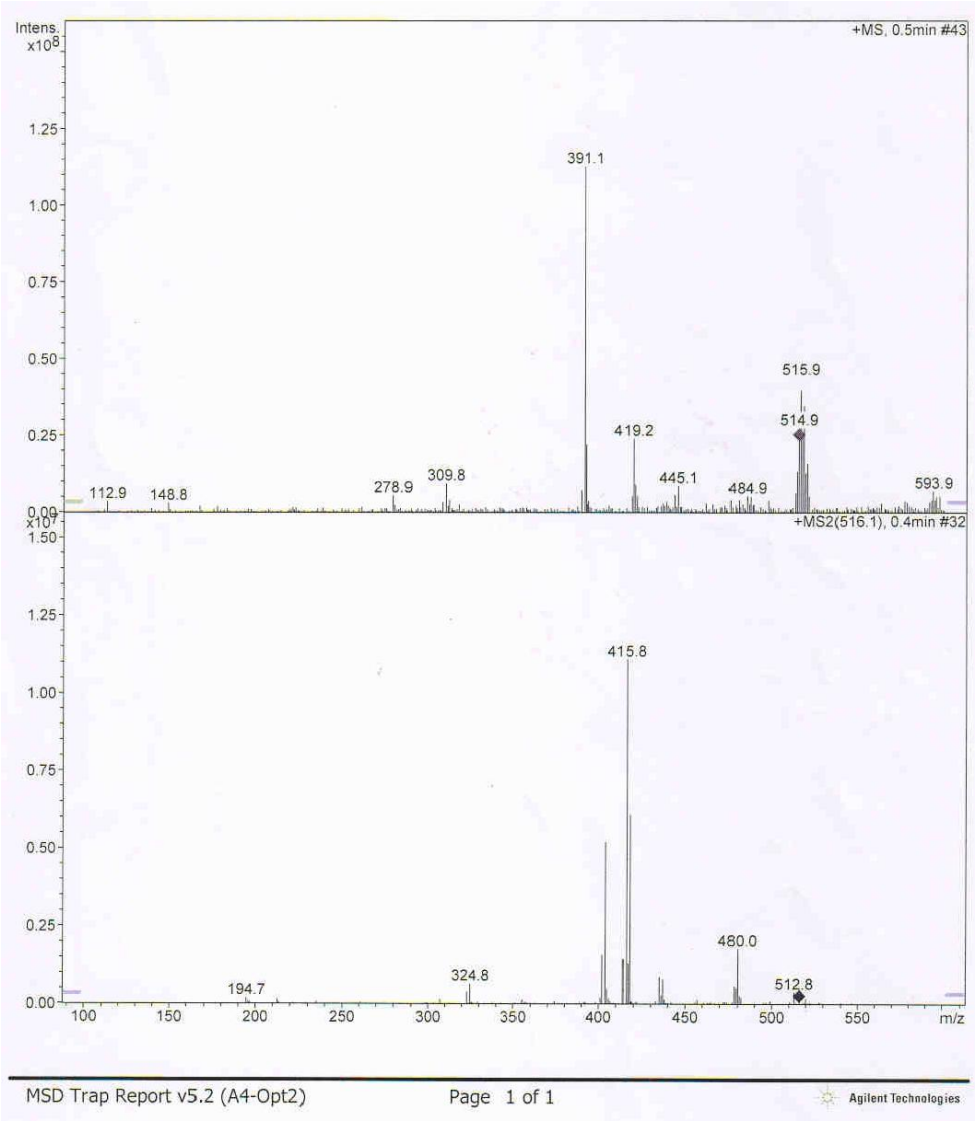


Cz-5

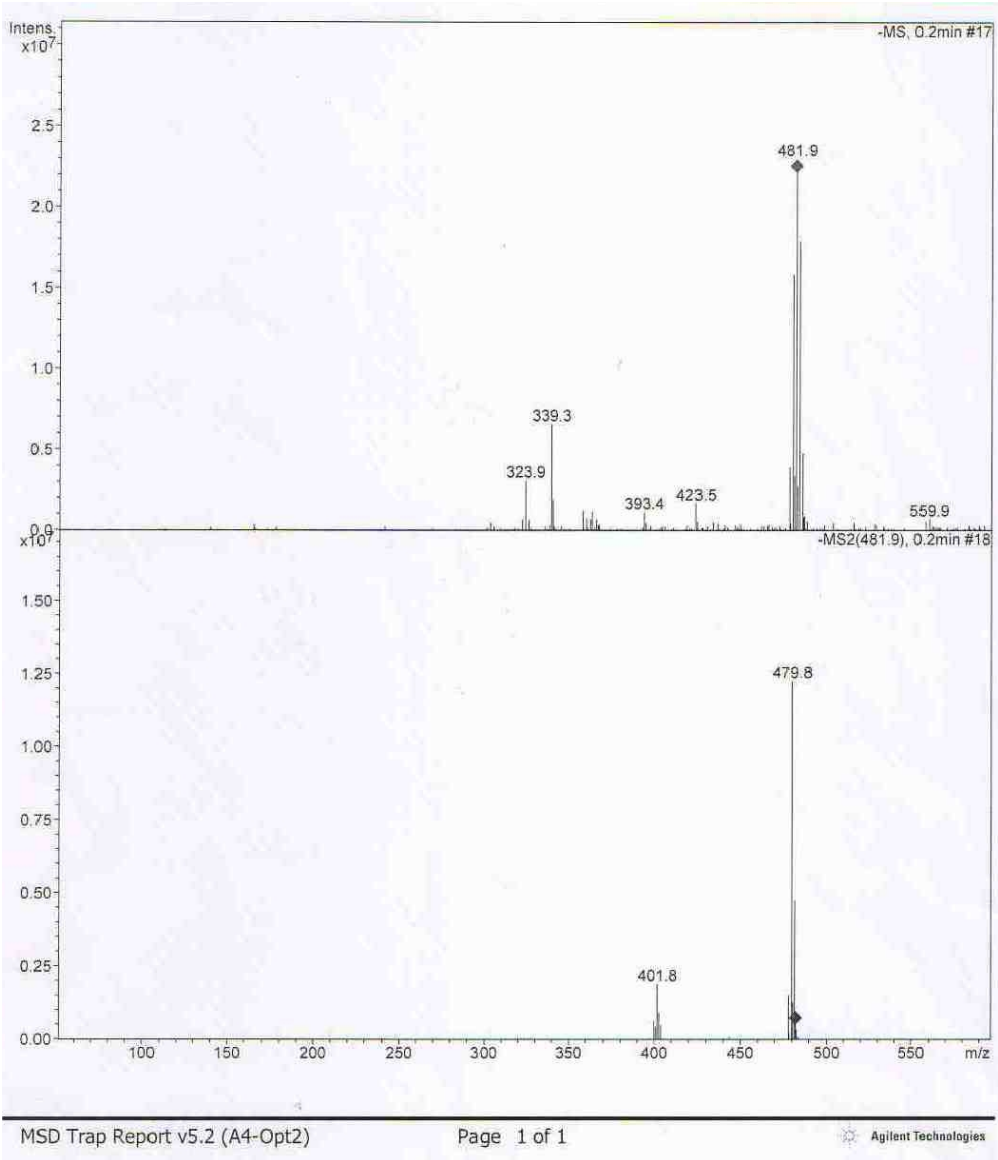


3. MASS SPECTRA.

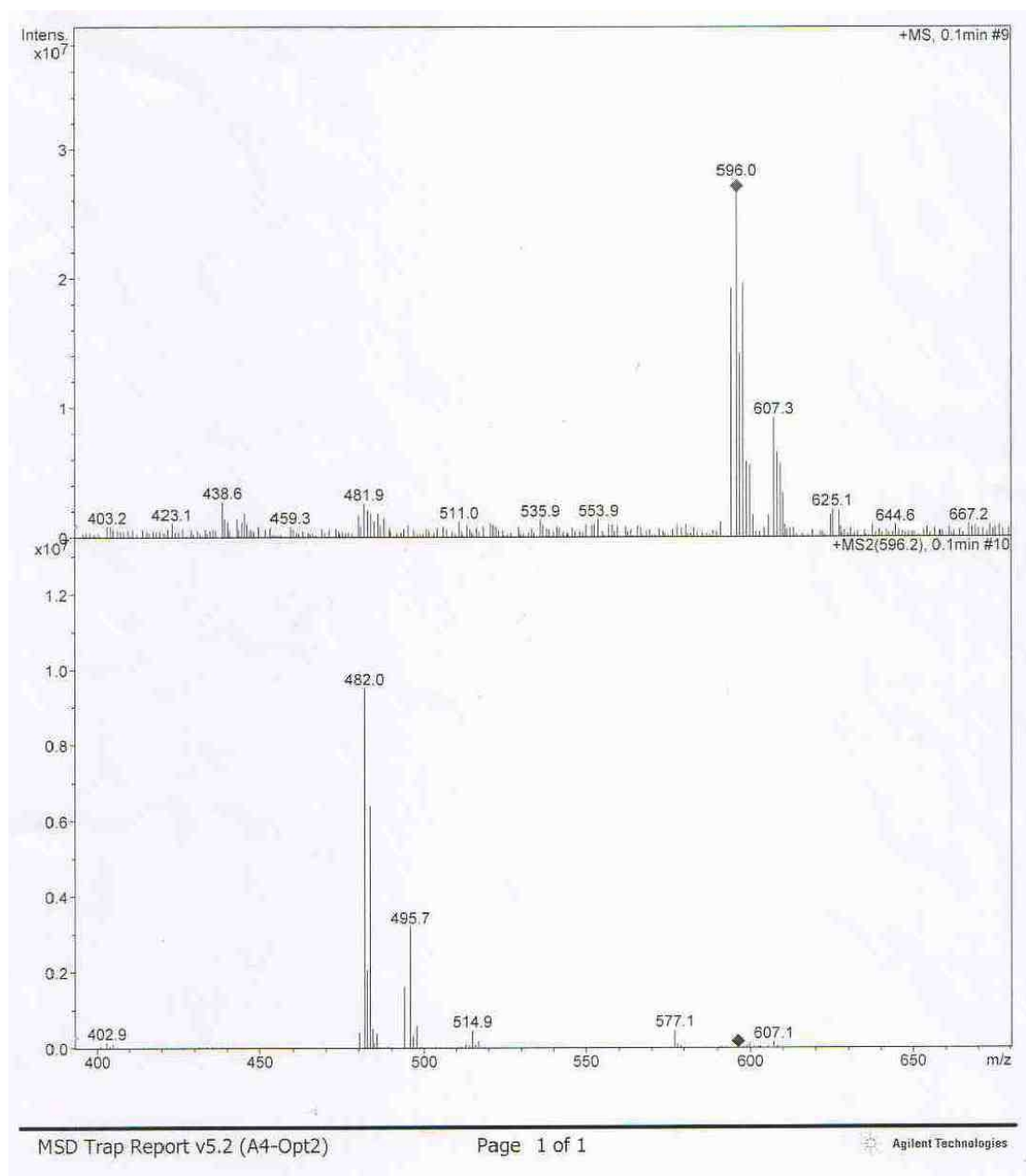
Cz-3Br



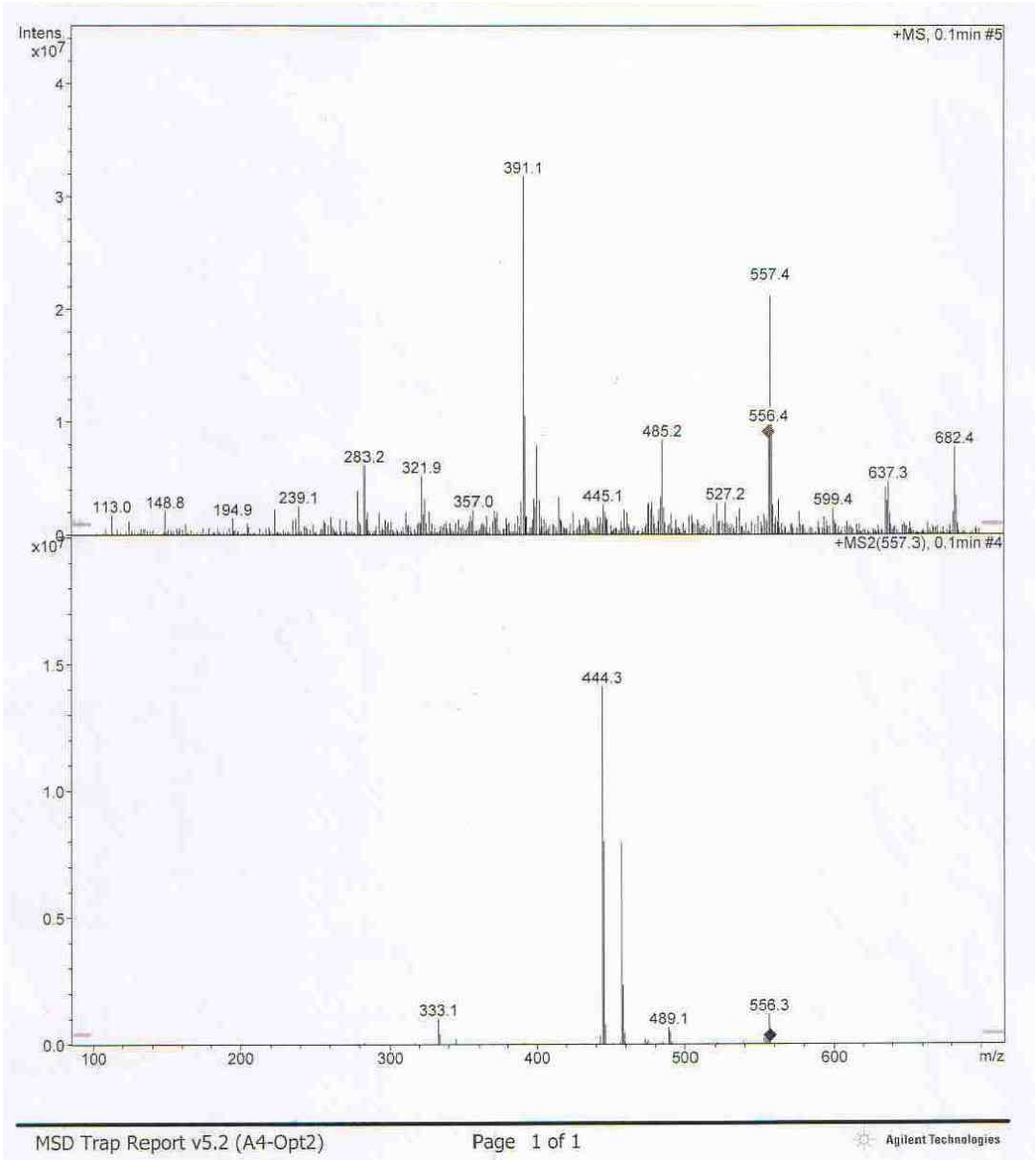
Compound 4



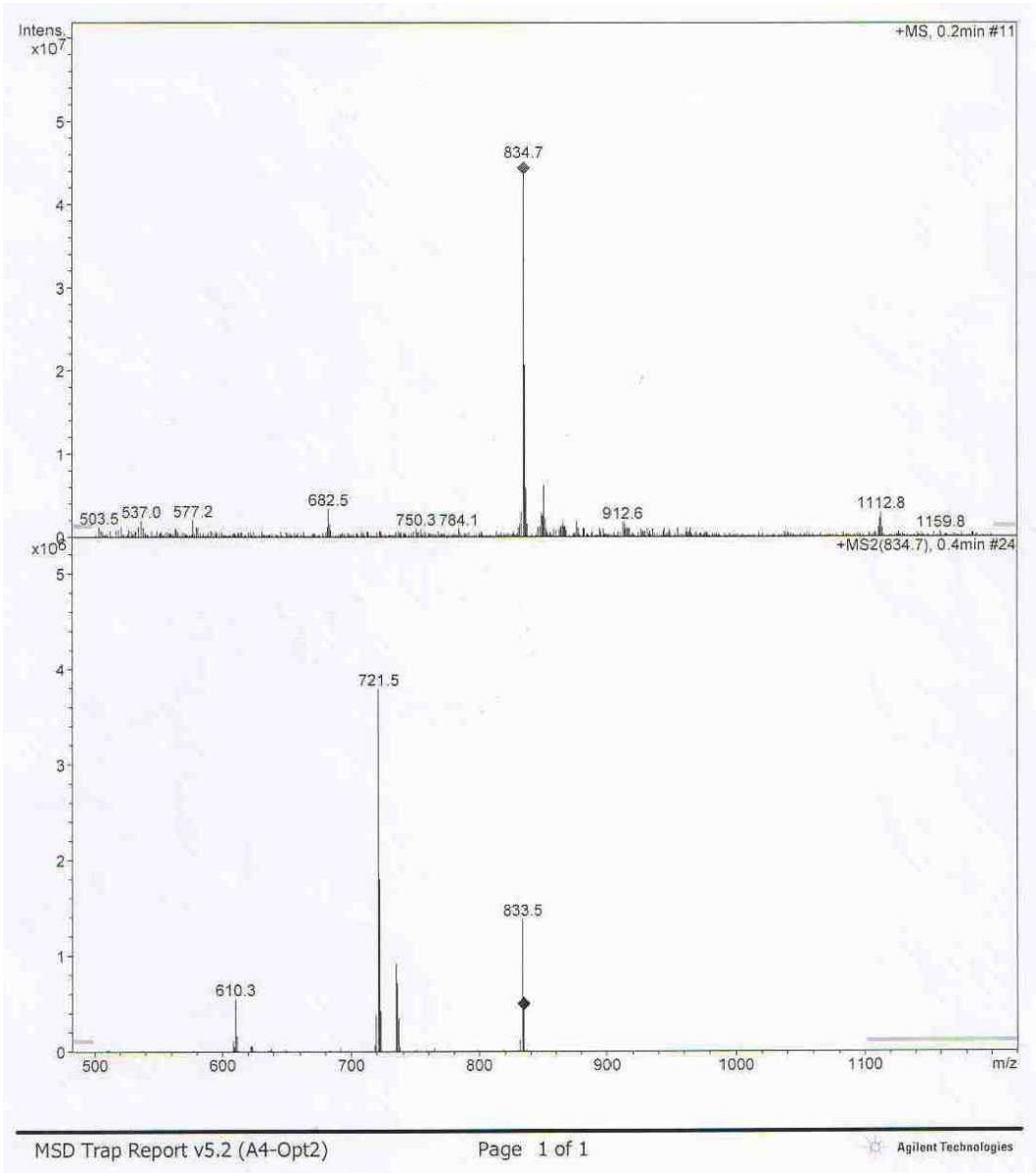
Cz-4Br



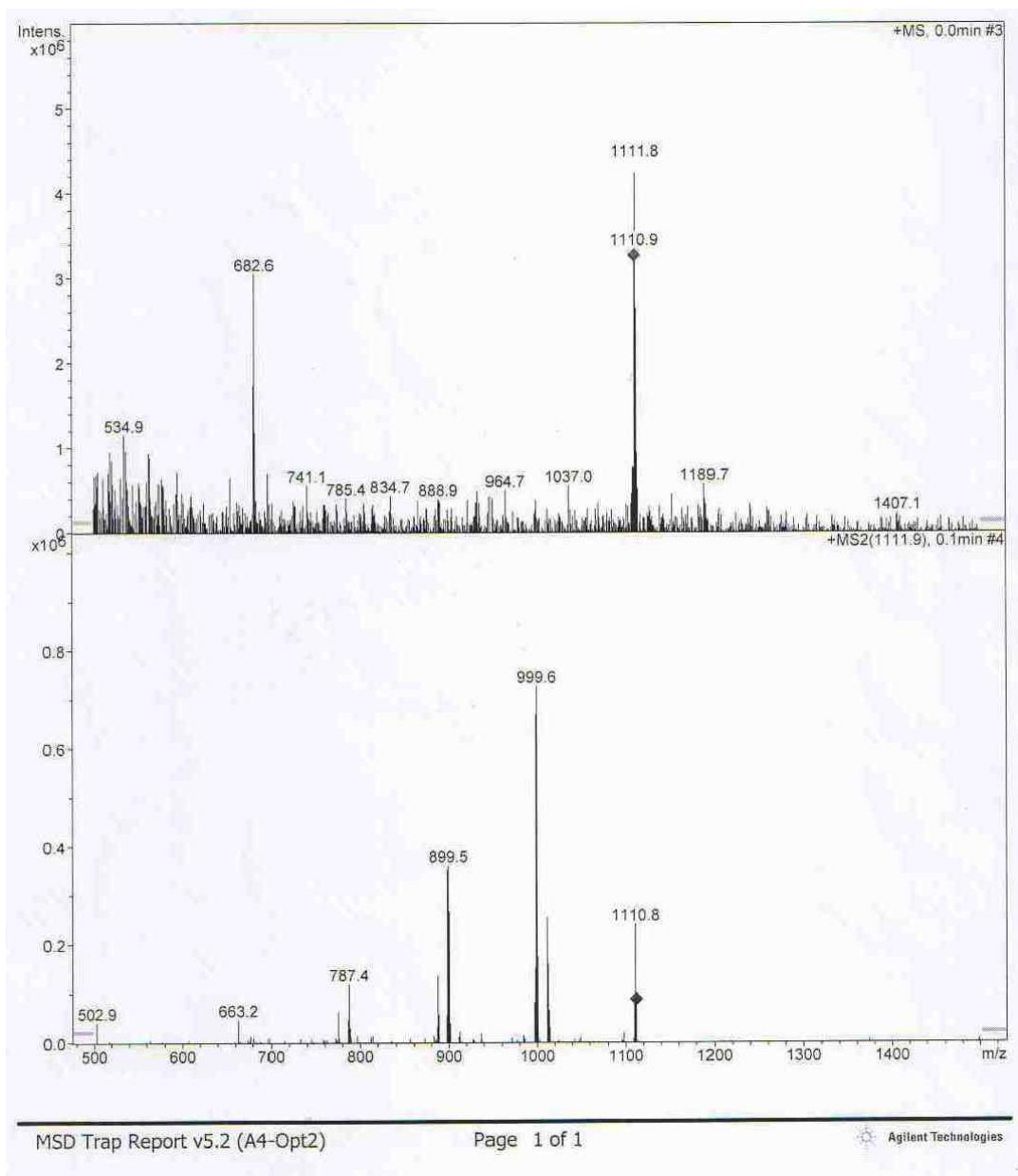
Cz-2



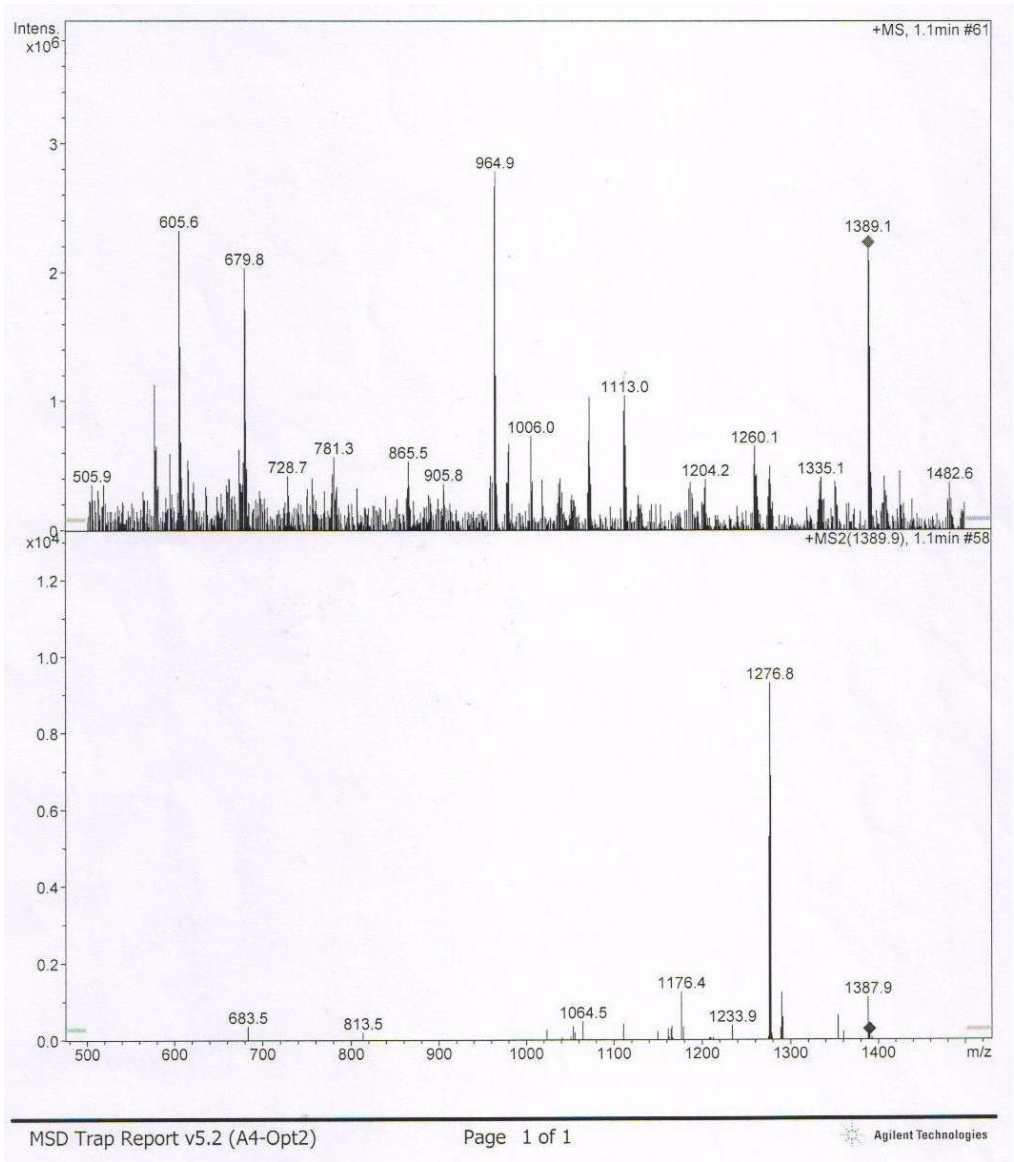
Cz-3



Cz-4



Cz-5



4. PHOSPHORESCENCE SPECTRA OF Cz(2-5).

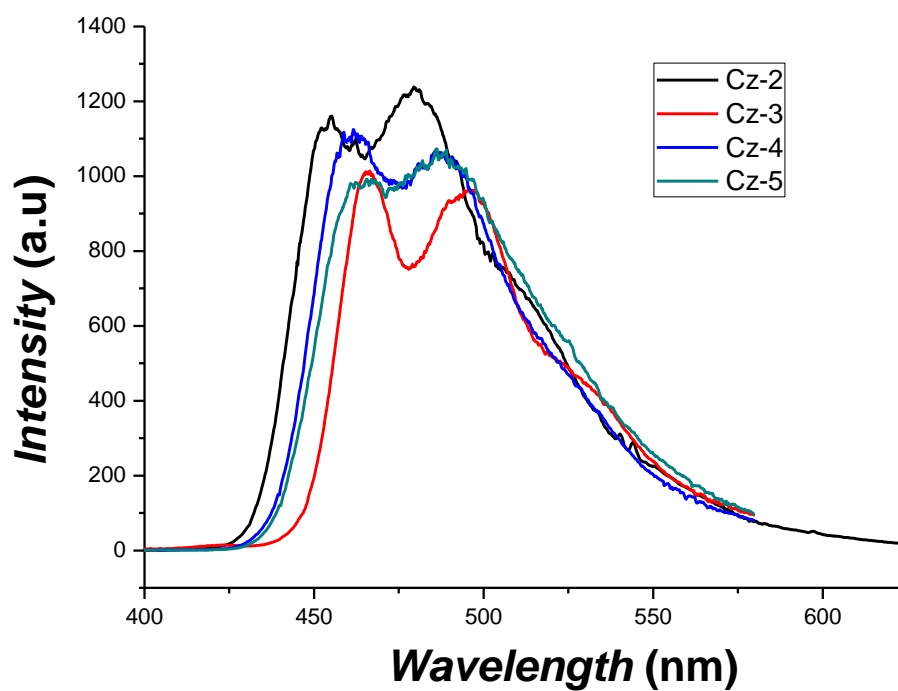


Fig. S1. Phosphorescence spectra of Cz(2-5) in 2-methyltetrahydrofuran at 77K.