

Supporting Information: Self-Assembly of Supramolecular Platinum Complexes with *bis*-4-Pyridyl Cavitands

Hershel Jude,[†] David Sinclair,[‡] Neelaldri Das,[†] Michael S. Sherburn,^{‡*}

and Peter J. Stang^{*†}

[†]Department of Chemistry, University of Utah, 315 South 1400 East, Rm. 2020,

Salt Lake City, Utah 84112

[‡]Research School of Chemistry, Australian National University, Canberra, ACT 0200,
Australia

sherburn@rsc.anu.edu.au; stang@chem.utah.edu

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General methods. C-Pentyltetrabromocavitand (1),¹ C-pentyl-A,C-dibromo-B,D-diiodocavitand (3),² 4-iodopyridine,³ 2,9-(*trans*-Pt(PEt₃)₂NO₃)₂phenanthrene (11),⁴ and 1,4-bis((PEt₃)₂Pt(CF₃SO₃))₂-benzene were prepared according to literature procedures. 1,4-bis((PEt₃)₂Pt(NO₃))₂-benzene (9) and 4,4'-bis((PEt₃)₂Pt(NO₃))₂-biphenyl (10) were prepared according to literature procedures for the analogues CF₃SO₃⁻ salts,⁵ substituting AgNO₃ for AgCF₃SO₃. All other reagents were purchased and used without further purification. NMR spectra were recorded on 300 MHz NMR spectrometers. The ¹H chemical shifts are reported relative to residual solvent signals, and ³¹P NMR resonances were referenced to an external unlocked sample of 85% H₃PO₄ (δ 0.0). Mass spectra were recorded on a Quadrupole Mass Spectrometer using electrospray ionization.

- (1) Bryant, J. A.; Blanda, M. T.; Vincenti, M.; Cram, D. J. *J. Am. Chem. Soc.* 1991, 1113, 2167-2172.
- (2) Barrett, E. S.; Irwin, J. L.; Turner, P.; Sherburn, M. S. *J. Org. Chem.* 2001, 66, 8227-8229.
- (3) Coudret, C. *Synth. Commun.* 1996, 26, 3543-3547.
- (4) Kryschenko, Y. K.; Seidel, S. R.; Arif, A. M.; Stang, P. J. *J. Am. Chem. Soc.* 2003, 125, 5193-5198.
- (5) Manna, J.; Kuehl, C. J.; Whiteford, J. A.; Stang, P. J.; Muddiman, D. C.; Hofstadler, S. A.; Smith, R. D. *J. Am. Chem. Soc.* 1997, 119, 11611-11619.

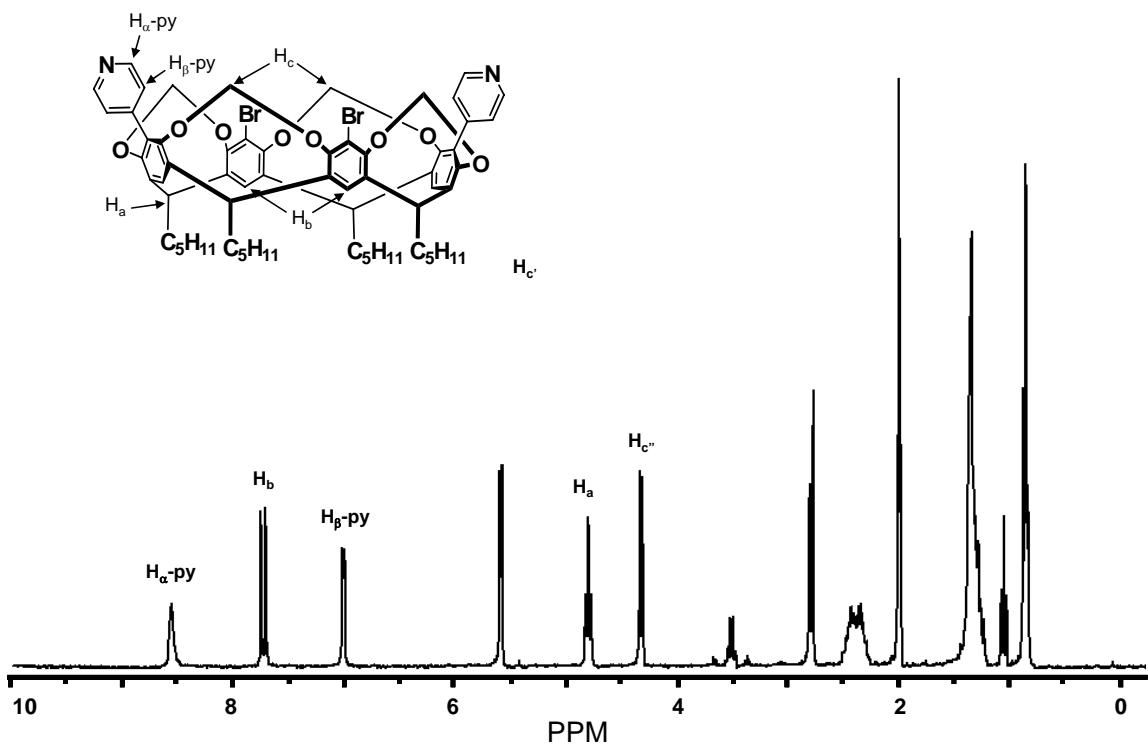


Figure S1. ¹H NMR of A in CD₃COCD₃.

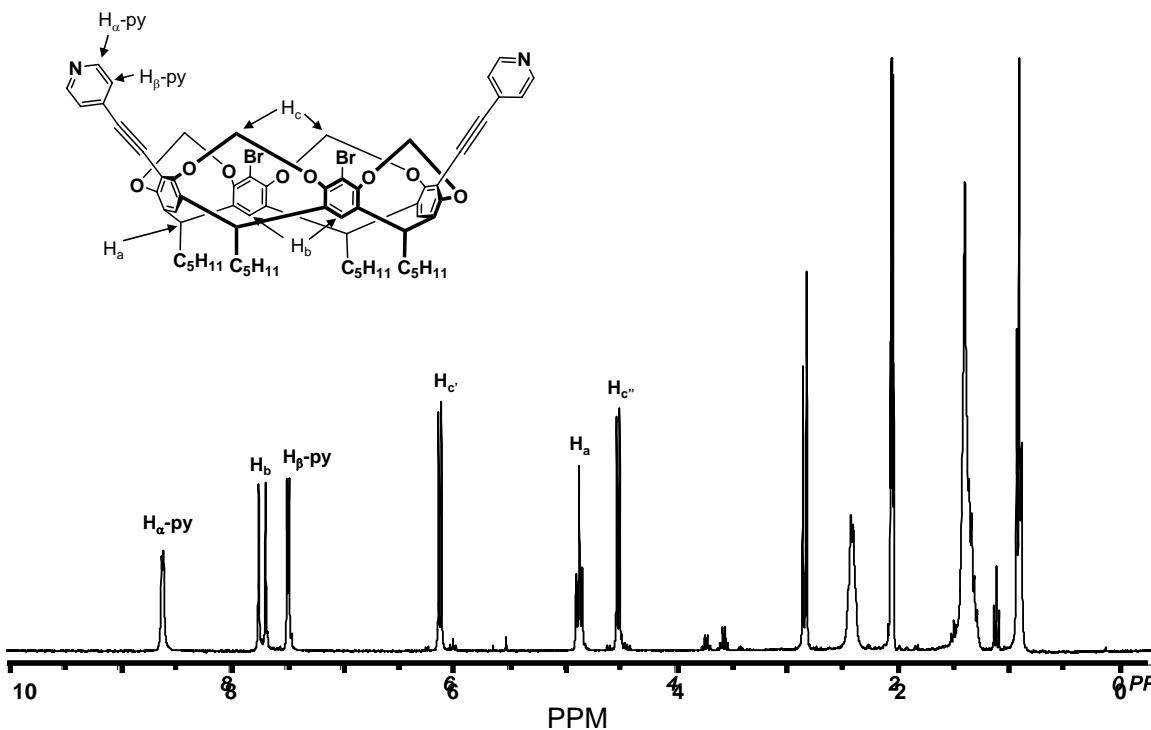


Figure S2. ¹H NMR of **B** in CD₃COCD₃.

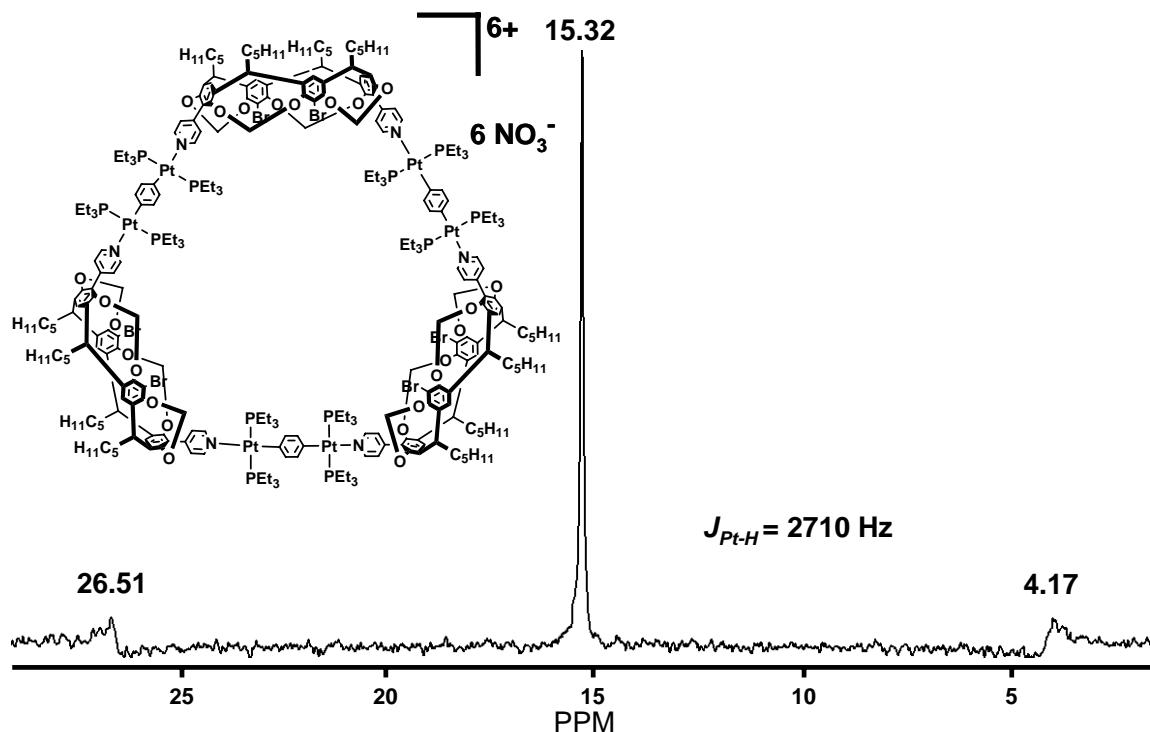


Figure S3. ³¹P NMR of **6a** in CD₃NO₂.

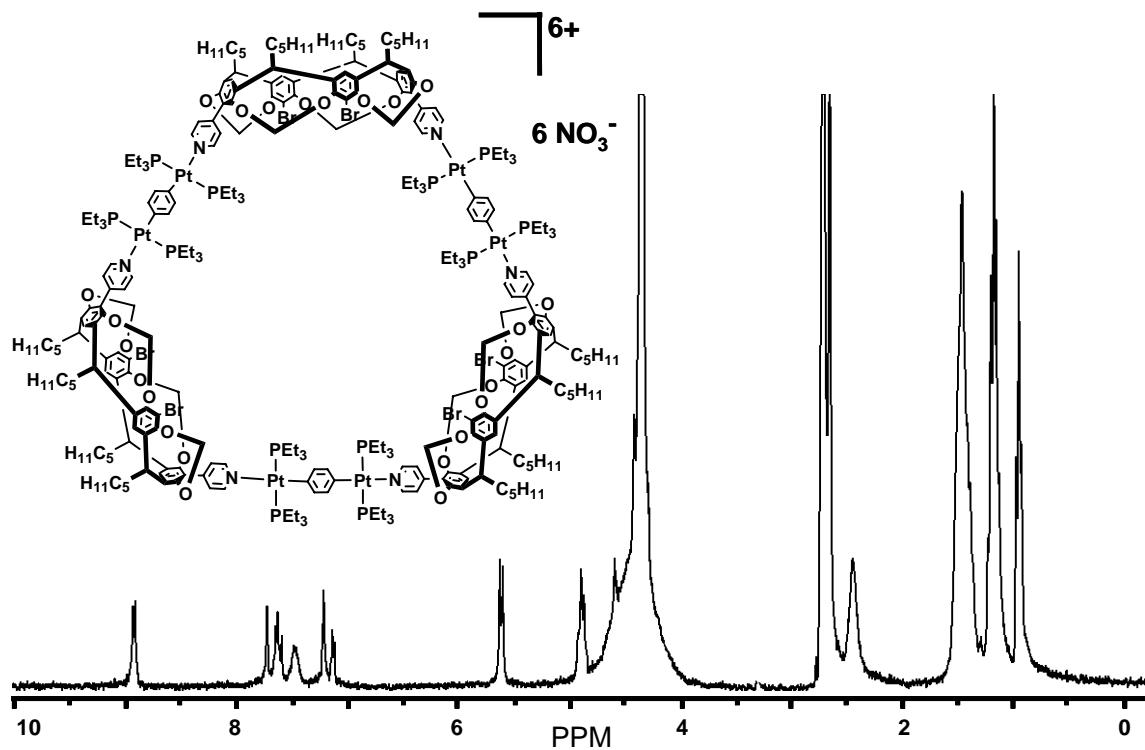


Figure S4. ^1H NMR of **6a** in CD_3NO_2 .

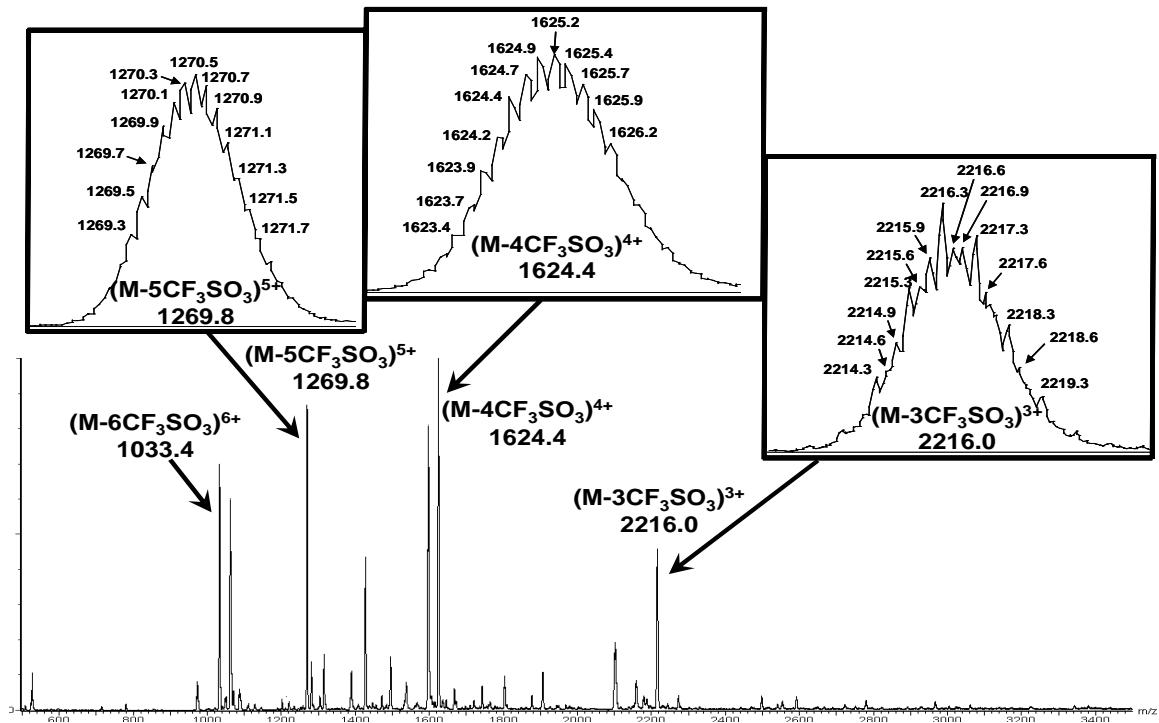


Figure S5. ESI-MS of **6a**.

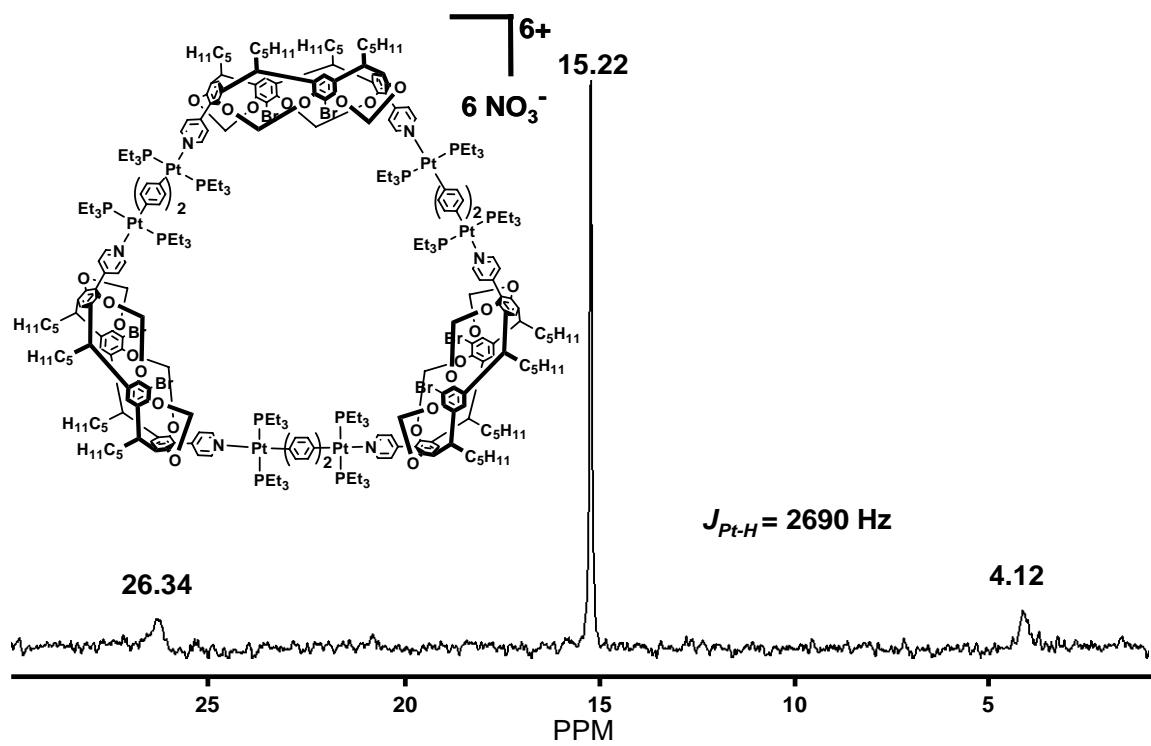


Figure S6. ^{31}P NMR of **6b** in CD_3NO_2 .

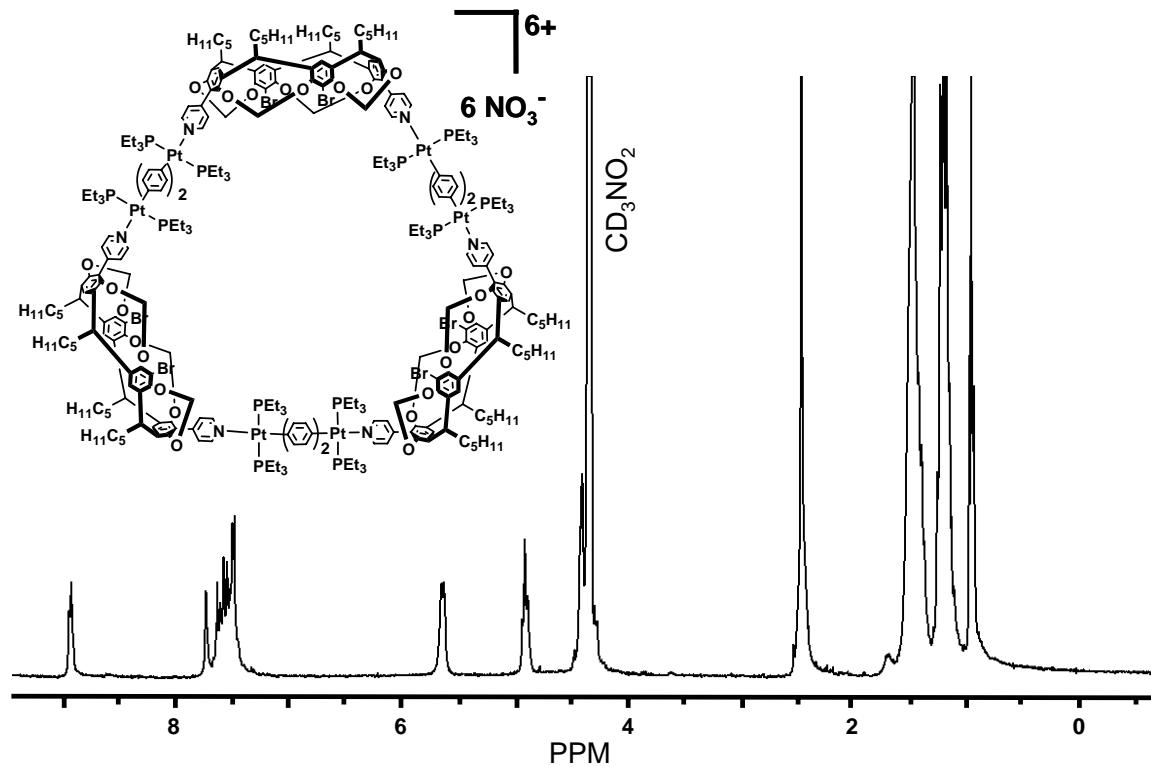


Figure S7. ^1H NMR of **6b** in CD_3NO_2 .

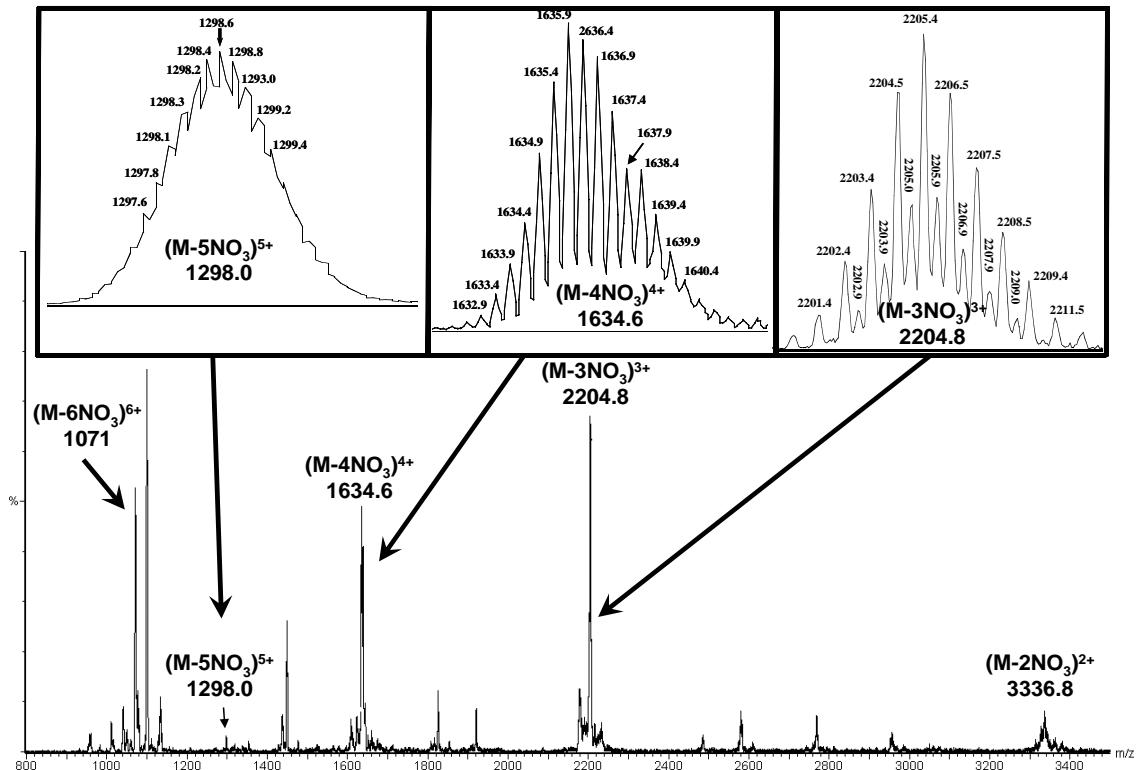


Figure S8. ESI-MS of **6b**.

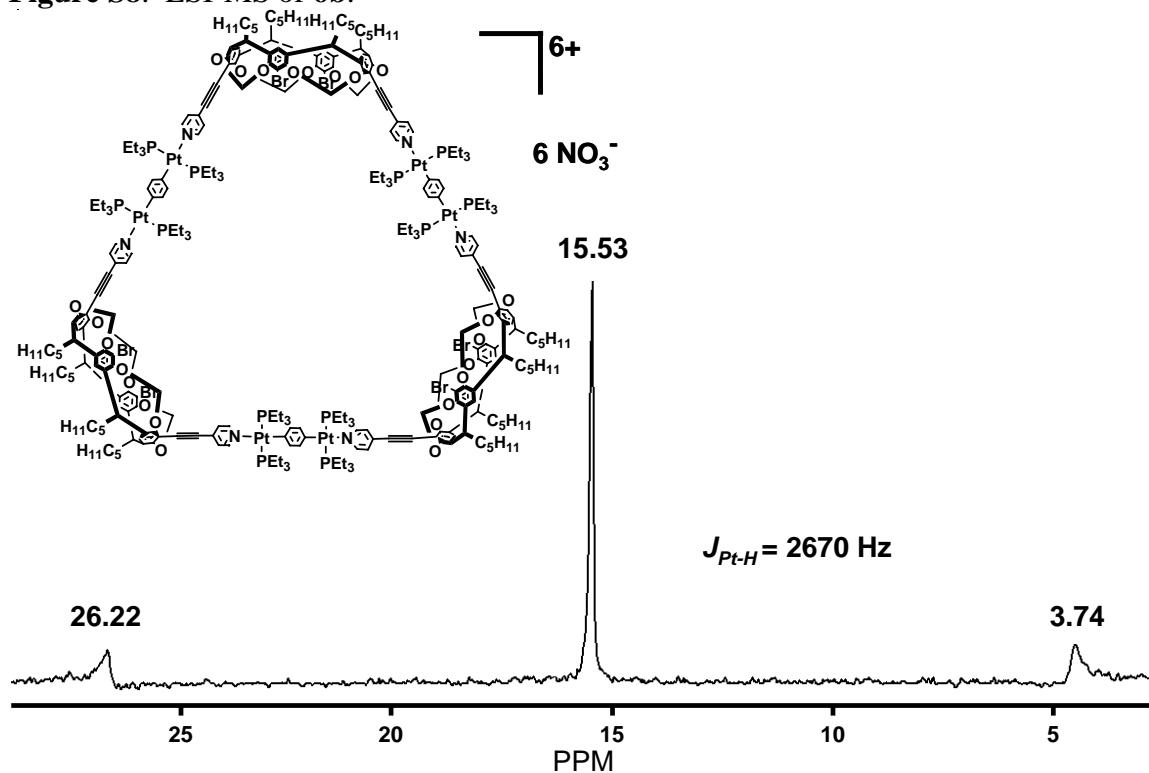


Figure S9. ^{31}P NMR of **7a** in CD_3NO_2 .

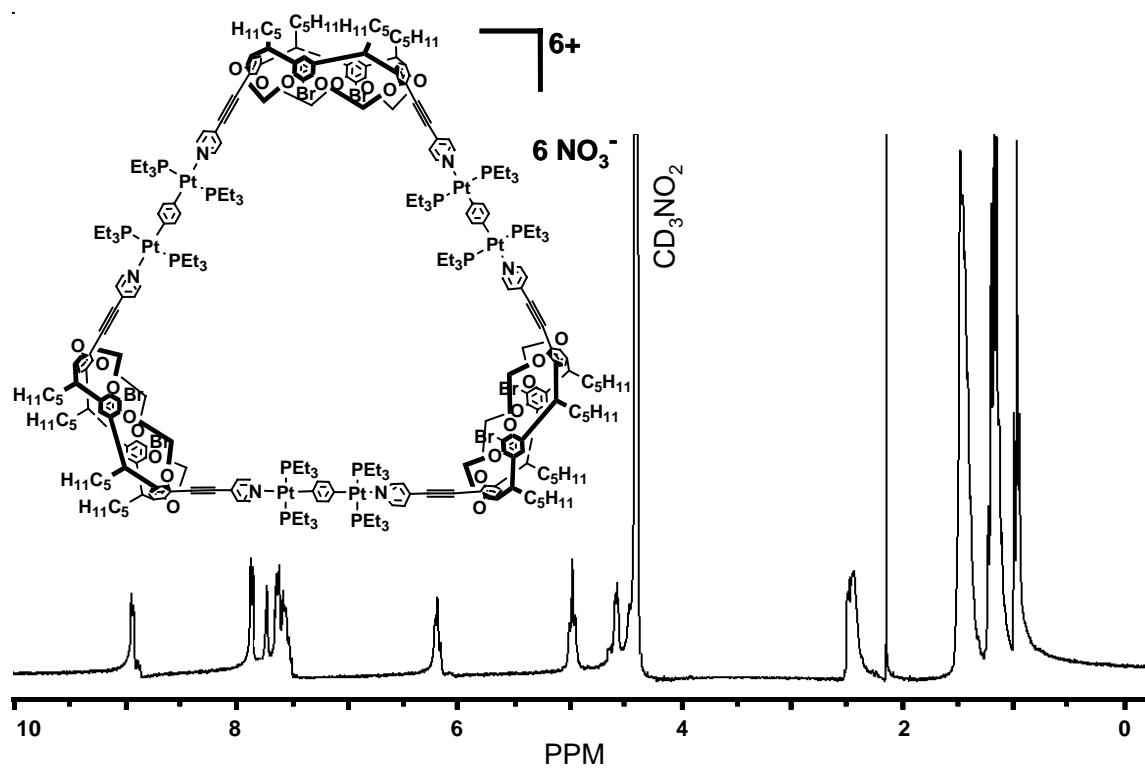


Figure S10. ^1H NMR of **7a** in CD_3NO_2 .

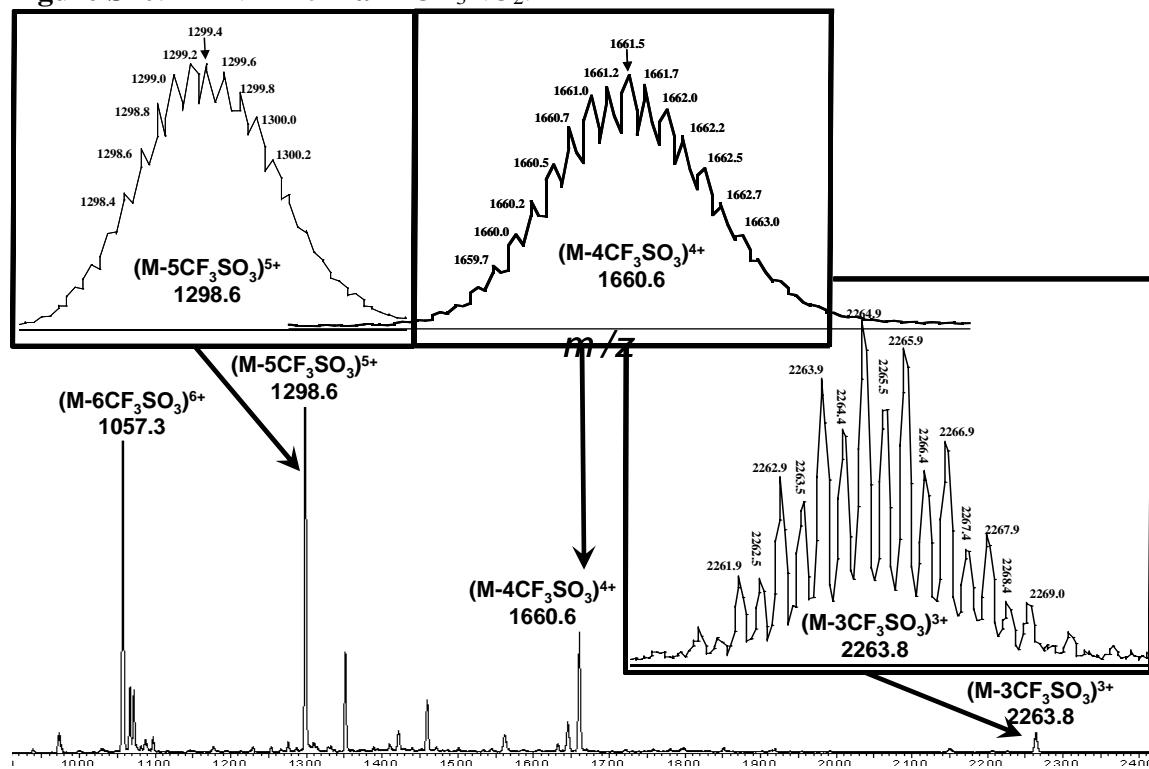


Figure S11. ESI-MS of 7a.

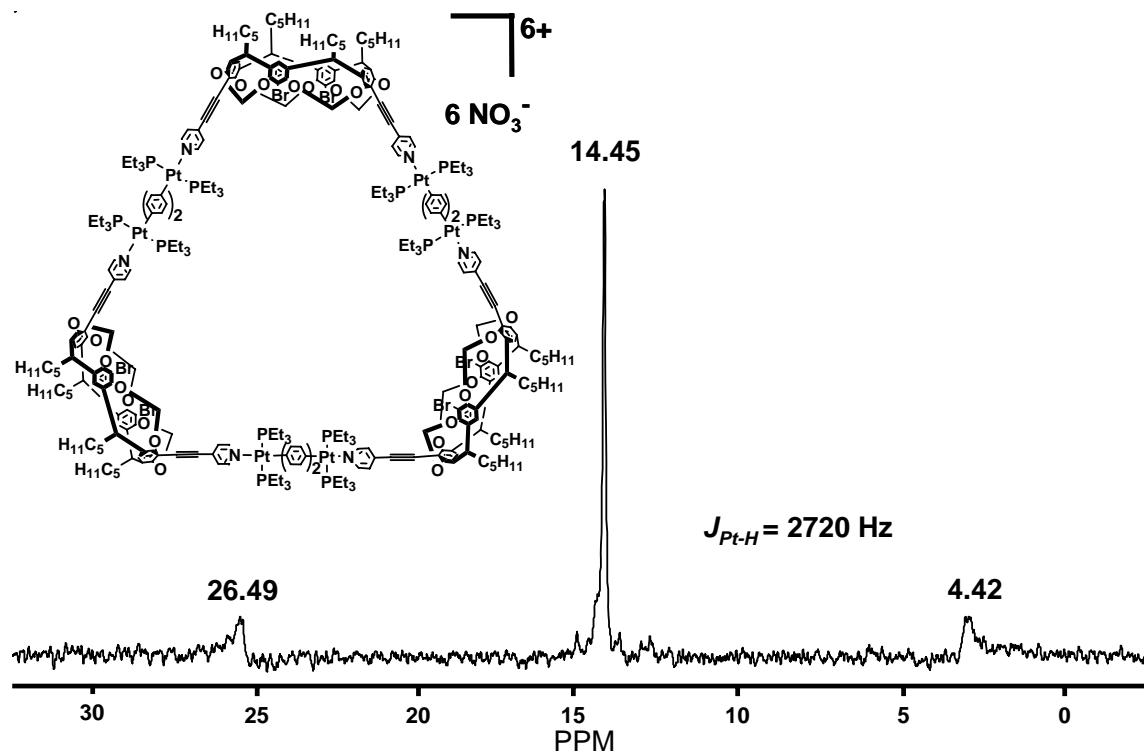


Figure S12. ^{31}P NMR of 7b in CD_3NO_2 .

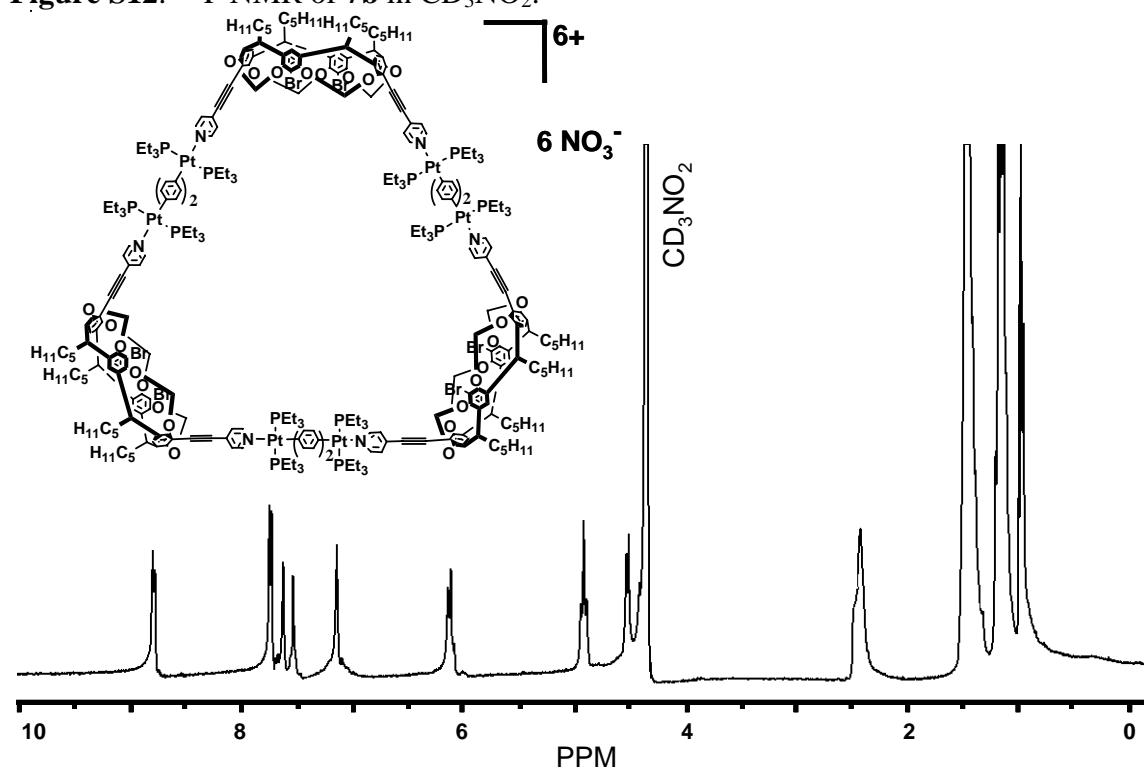


Figure S13. ^1H NMR of **7b** in CD_3NO_2 .

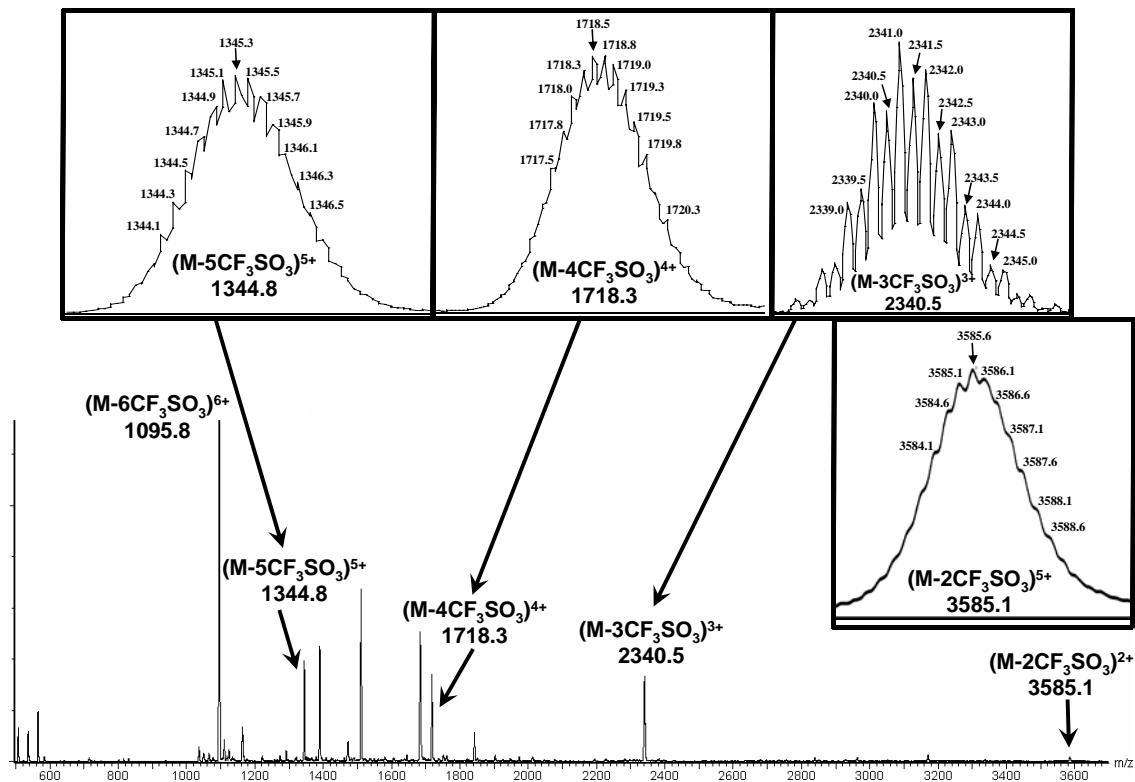


Figure S14. ESI-MS of **7b**.

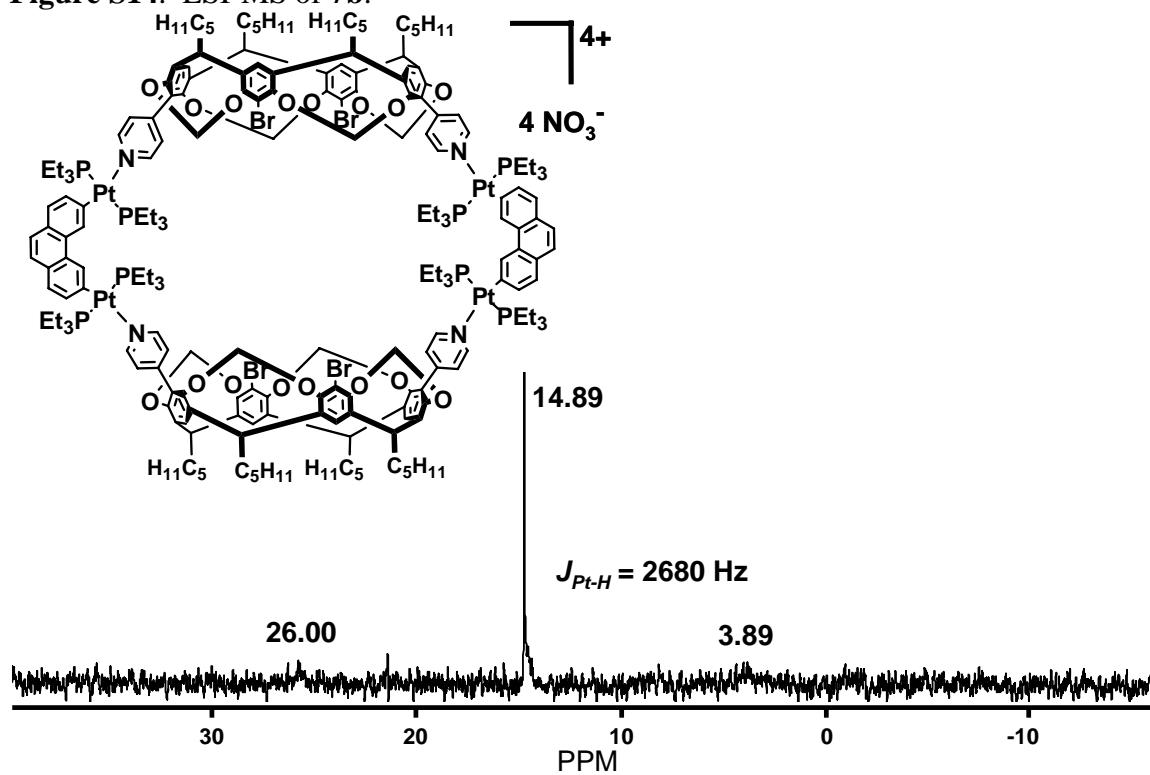


Figure S15. ^{31}P NMR of 8a in CD_3NO_2 .

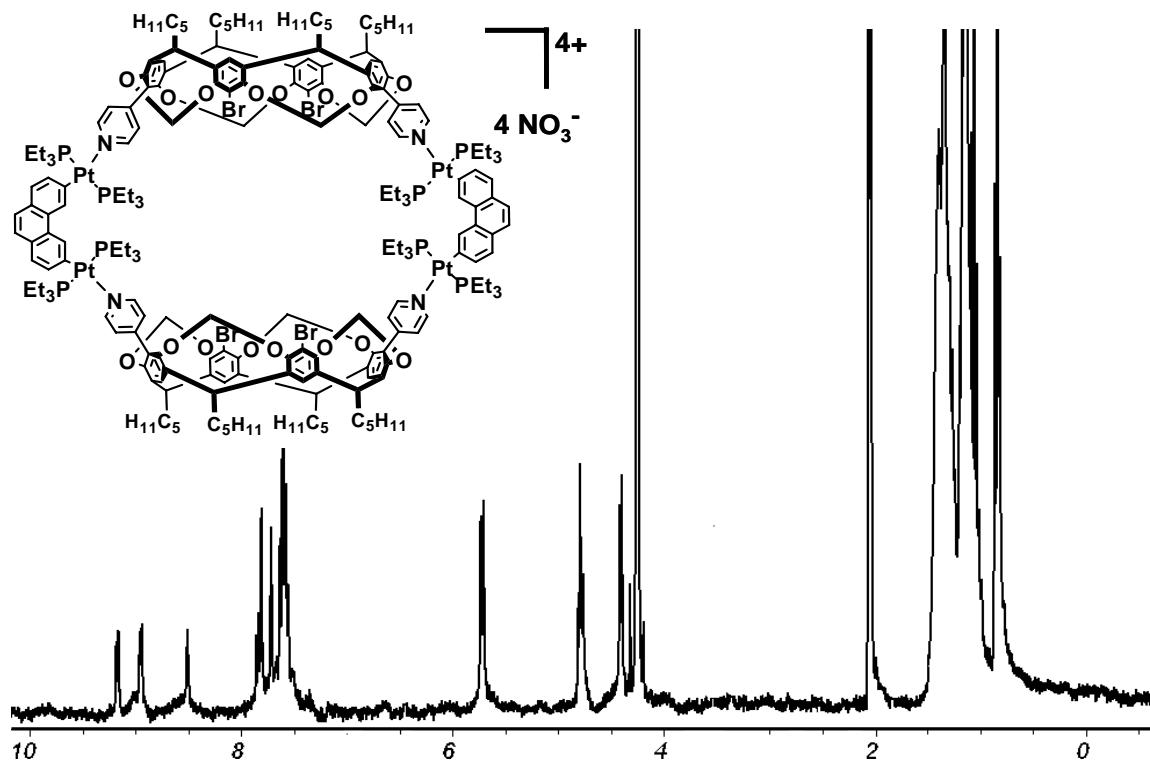


Figure S16. ^1H NMR of 8a in CD_3NO_2 .

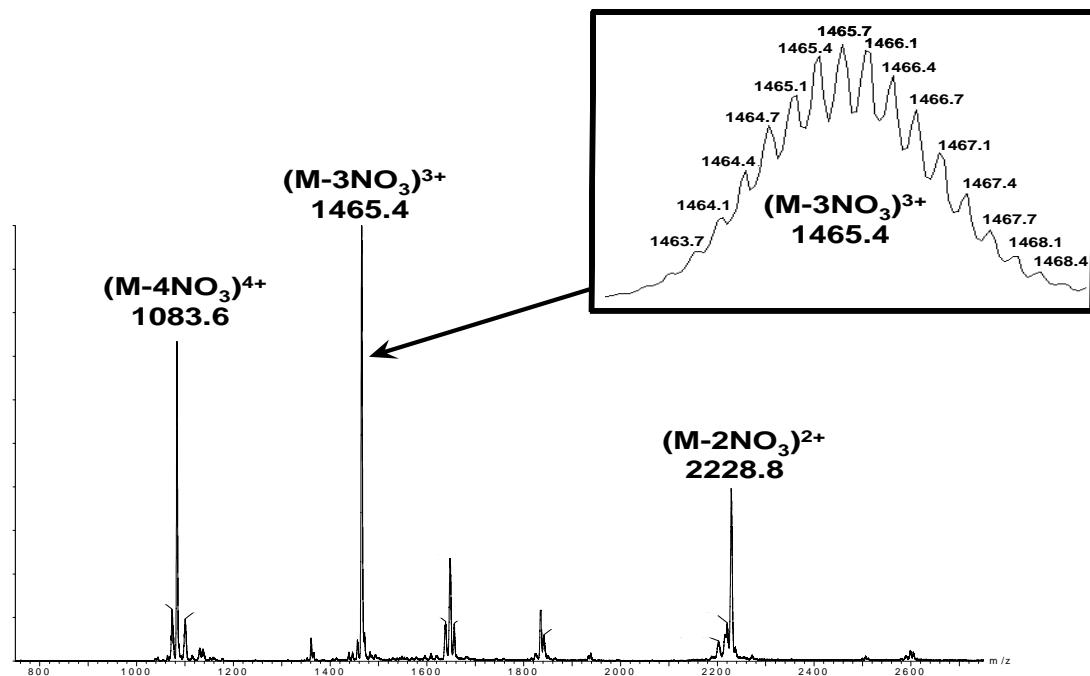


Figure S17. ESI-MS of 8a.

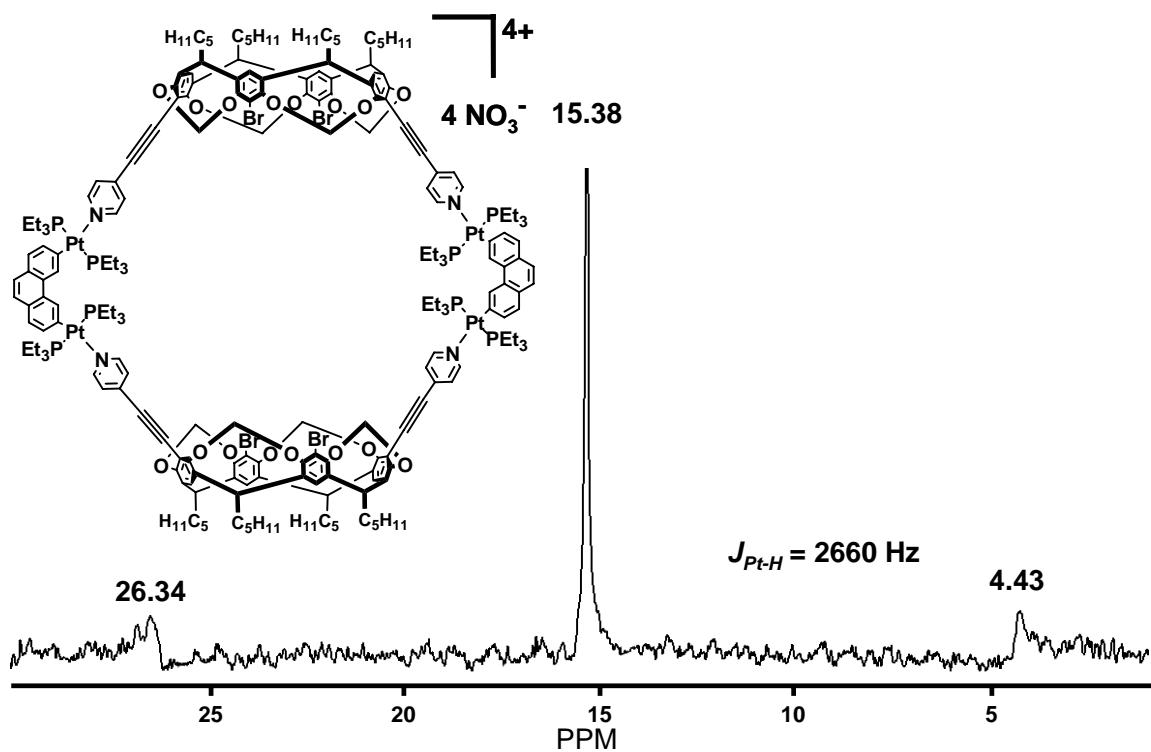


Figure S18. ^{31}P NMR of **8b** in CD_3NO_2 .

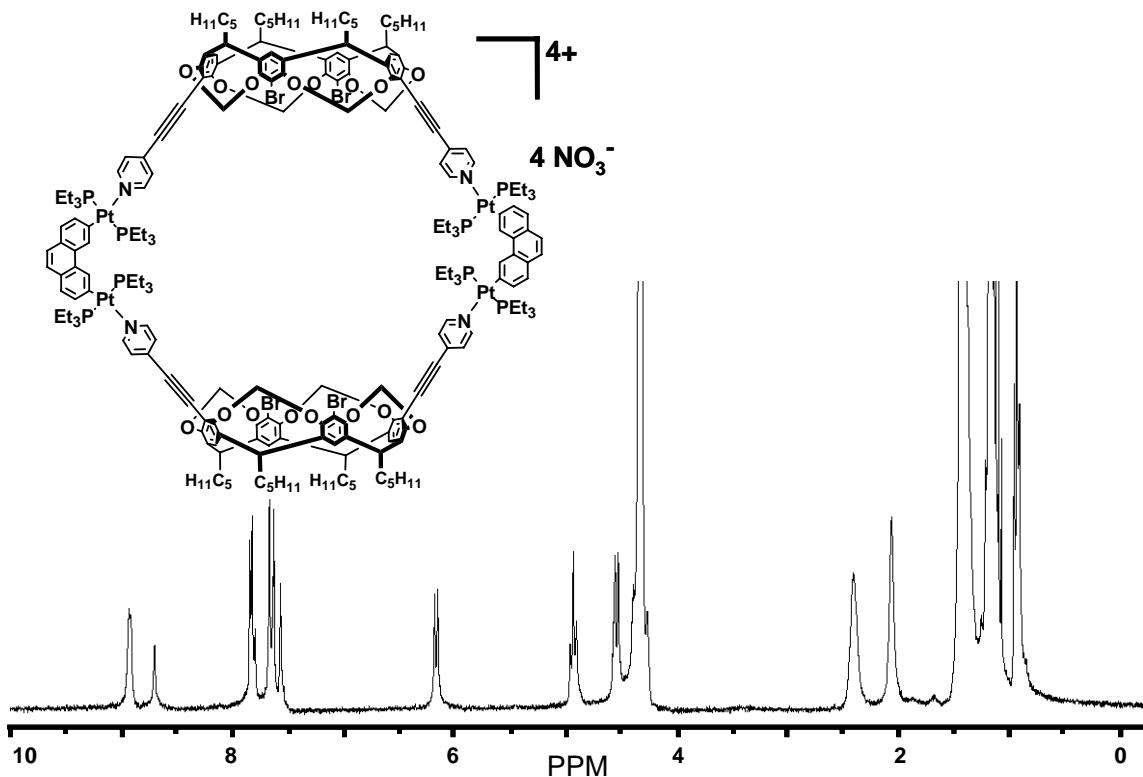


Figure S19. ^1H NMR of **8b** in CD_3NO_2 .

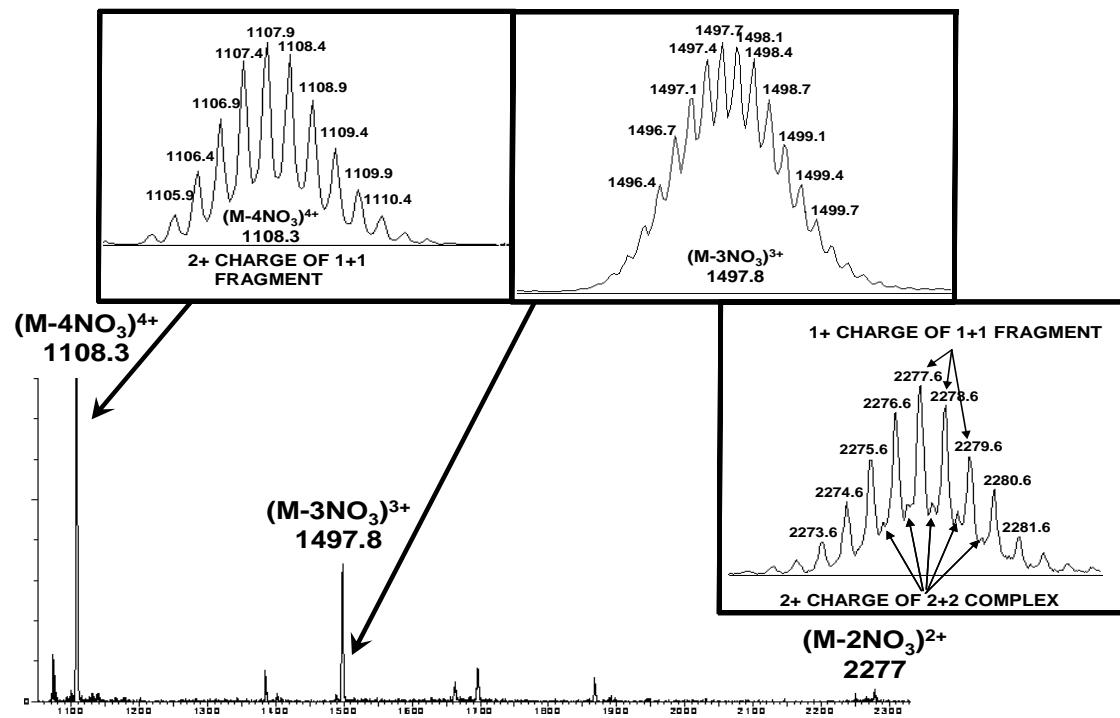


Figure S20. ESI-MS of **8b**.