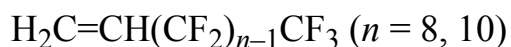


SUPPORTING INFORMATION FOR

**Convenient Protocols for Mizoroki-Heck Reactions of Aromatic Bromides
and Polybromides with Fluorous Alkenes of the Formula**



Haw-Lih Su,[†] Janos Balogh,[†] Mohammed Al-Hashimi,[†] Dave G. Seapy,[†] Hassan S.

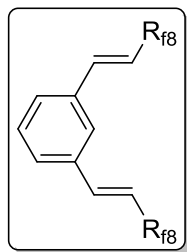
Bazzi,^{*,†} and John A. Gladysz^{*,‡}

[†]Department of Chemistry, Texas A&M University at Qatar, P.O. Box 23874, Doha, Qatar, and

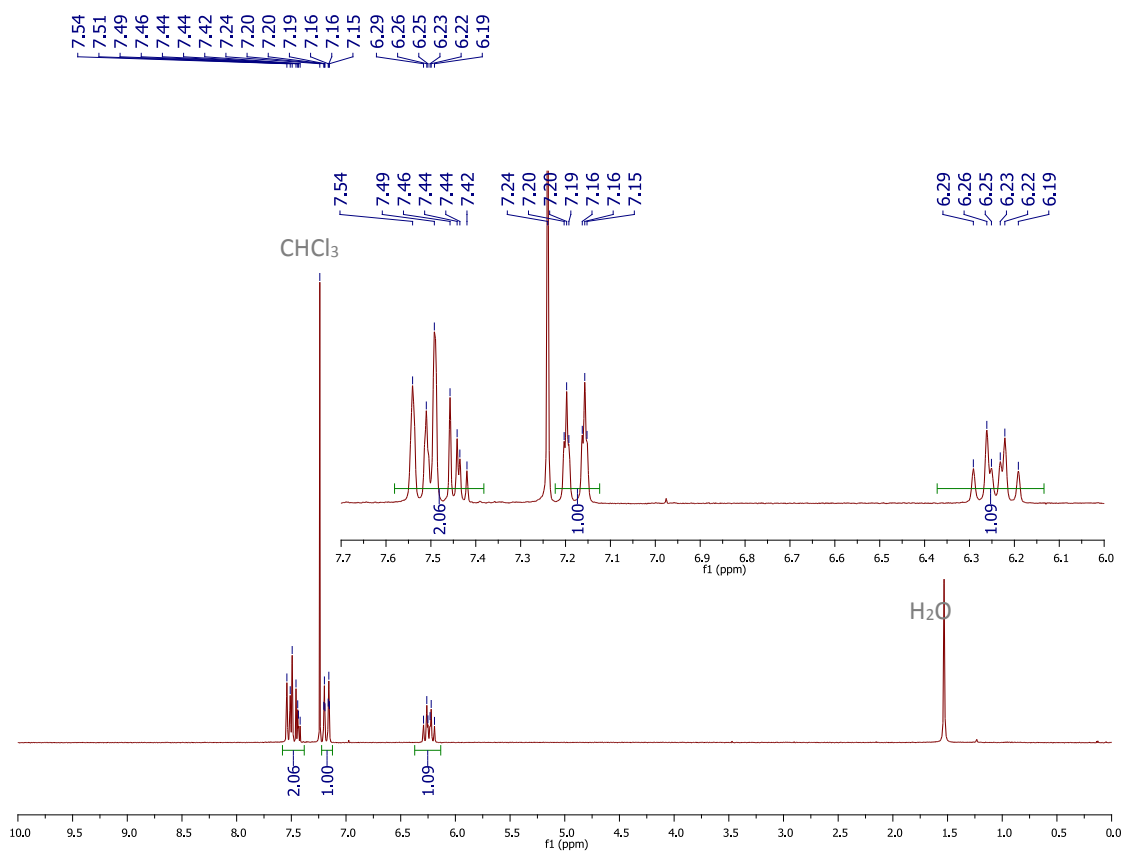
[‡]Department of Chemistry, Texas A&M University, P.O. Box 30012, College Station, Texas,

77842-3012, USA.

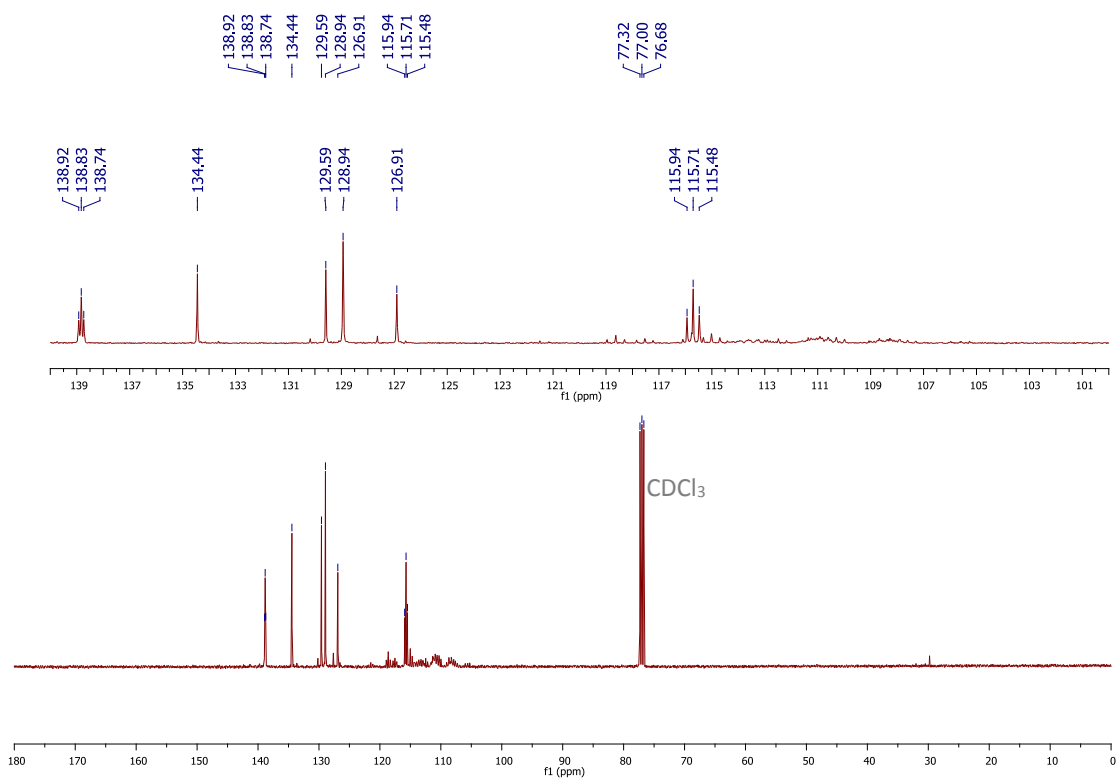
(*E,E*)-1,3-C₆H₄(CH=CHR_{f8})₂ (3**)**



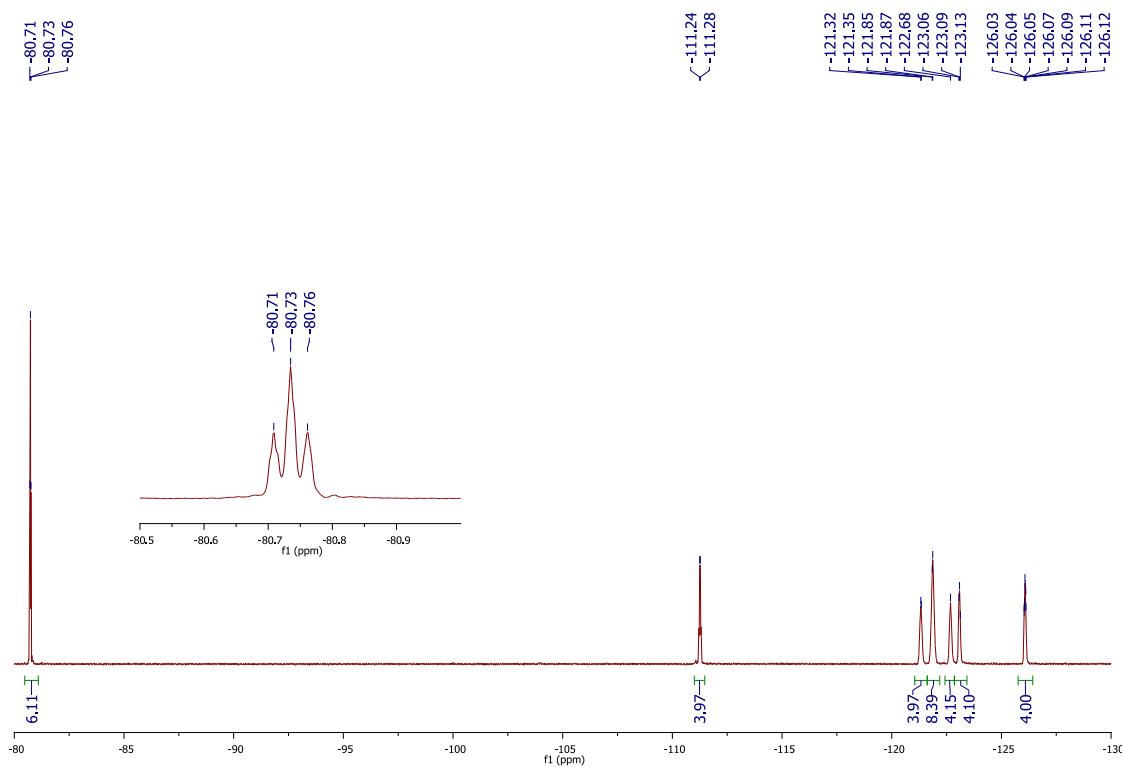
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E*)-1,3-C₆H₄(CH=CHR_{f8})₂ (**3**)



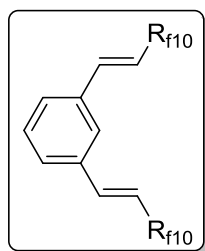
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E,E*)-1,3- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})_2$ (**3**)



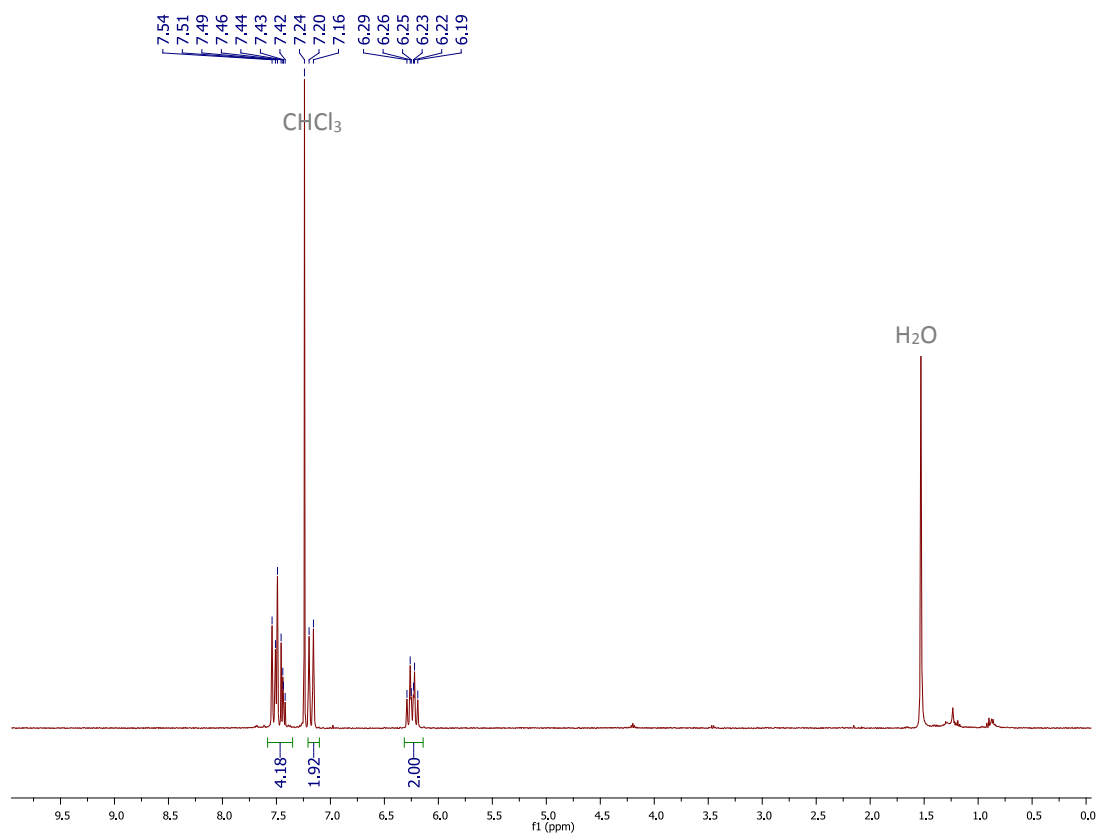
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E,E*)-1,3- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})_2$ (**3**)



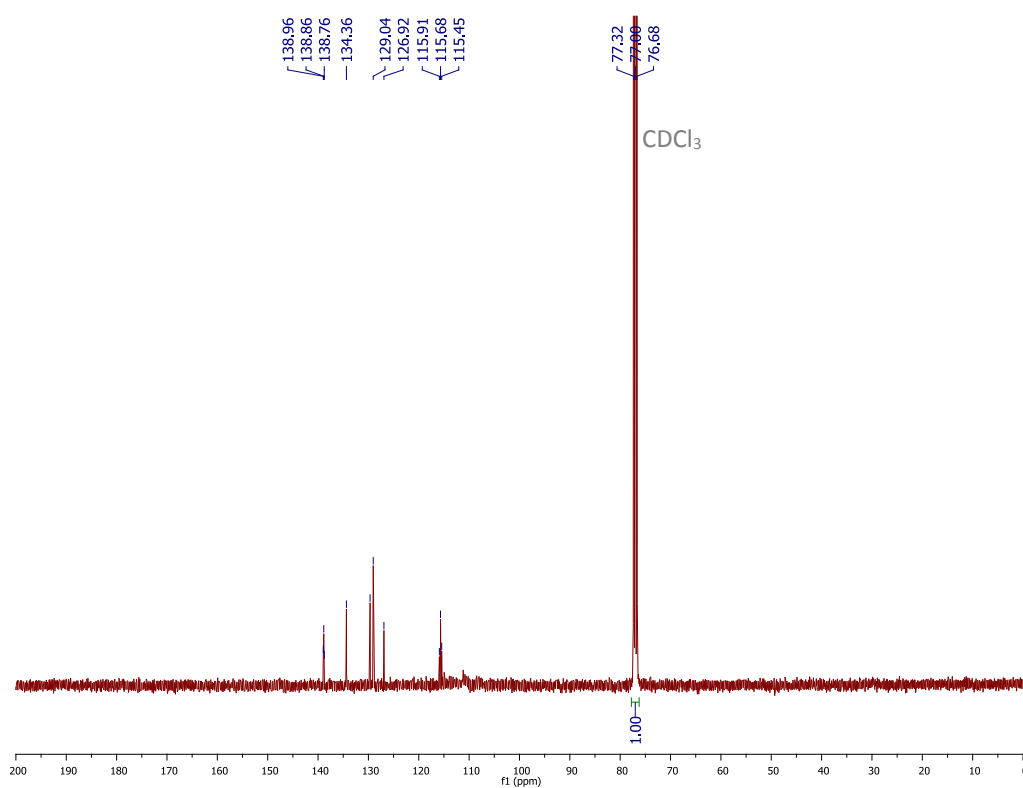
(*E,E*)-1,3-C₆H₄(CH=CHR_{f10})₂ (4)



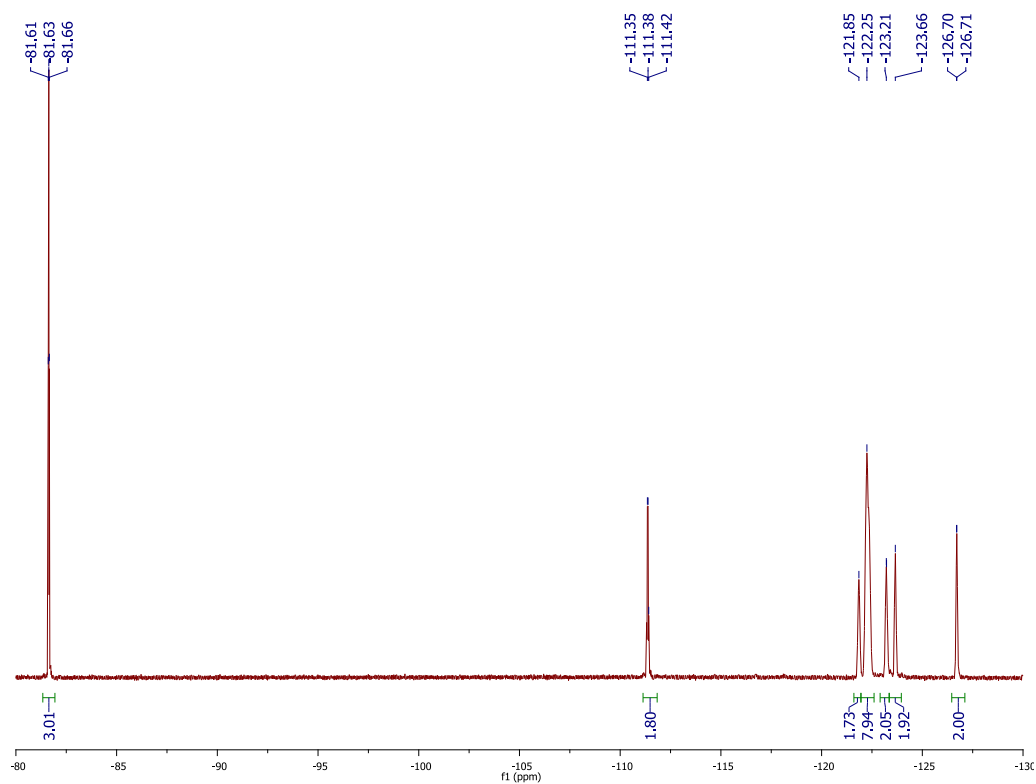
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E*)-1,3-C₆H₄(CH=CHR_{f10})₂ (4)



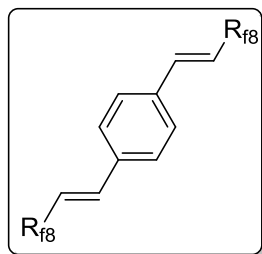
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E,E*)-1,3- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f10}})_2$ (**4**)



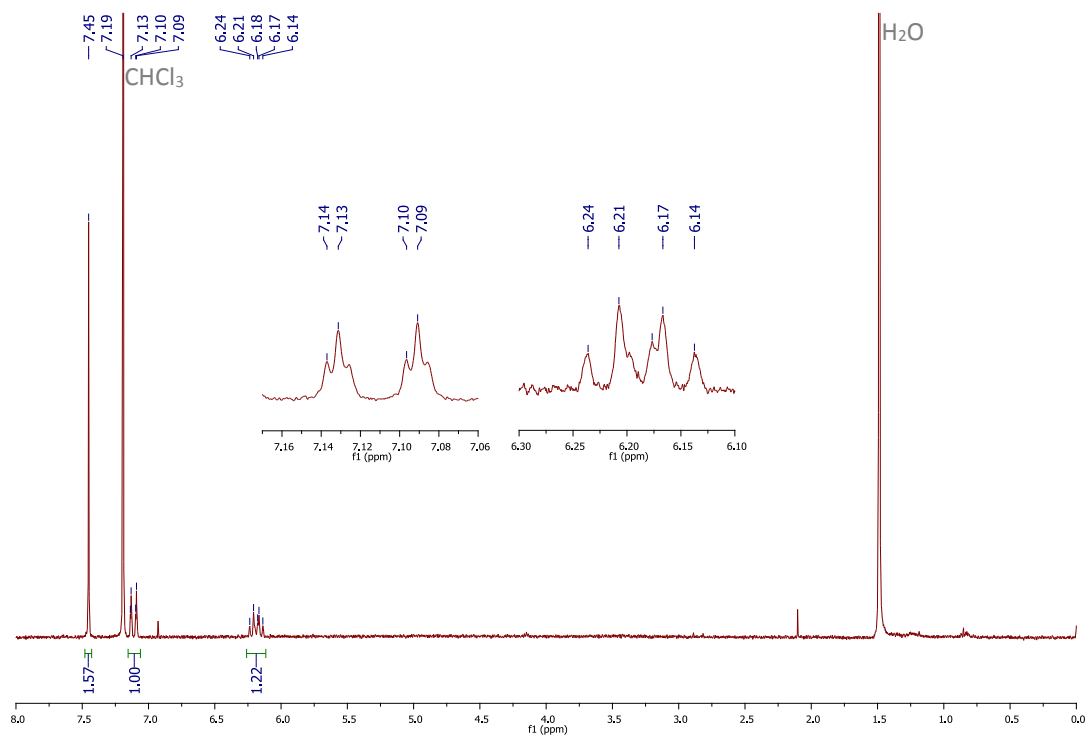
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E,E*)-1,3- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f10}})_2$ (**4**)



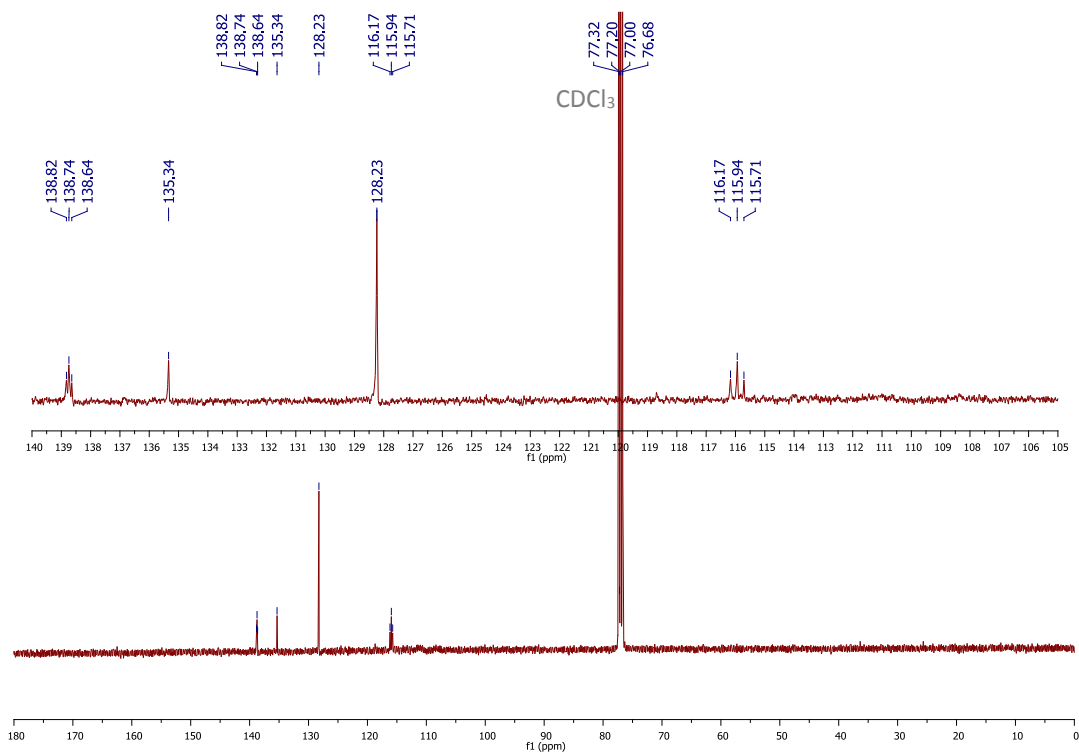
(*E,E*)-1,4-C₆H₄(CH=CHR_{f8})₂ (5)



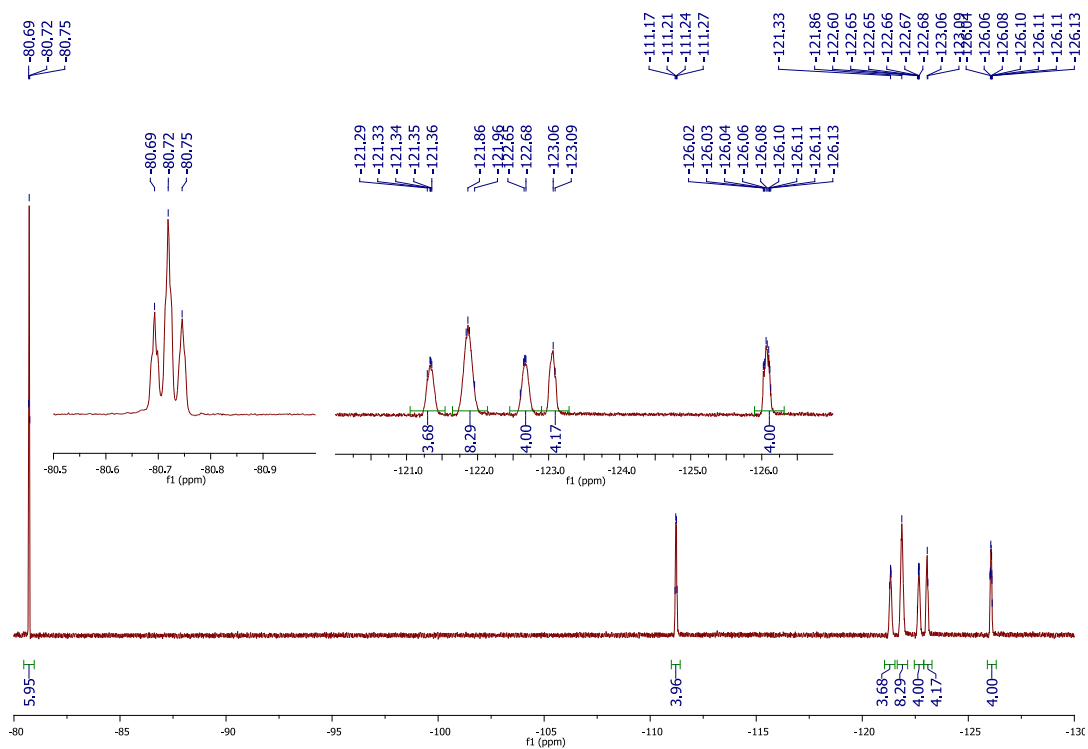
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E*)-1,4-C₆H₄(CH=CHR_{f8})₂ (5)



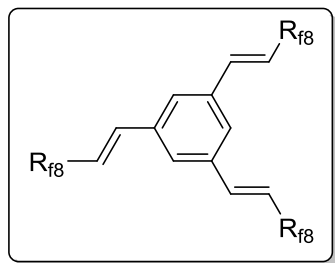
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz, 45 °C) of (*E,E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})_2$ (**5**)



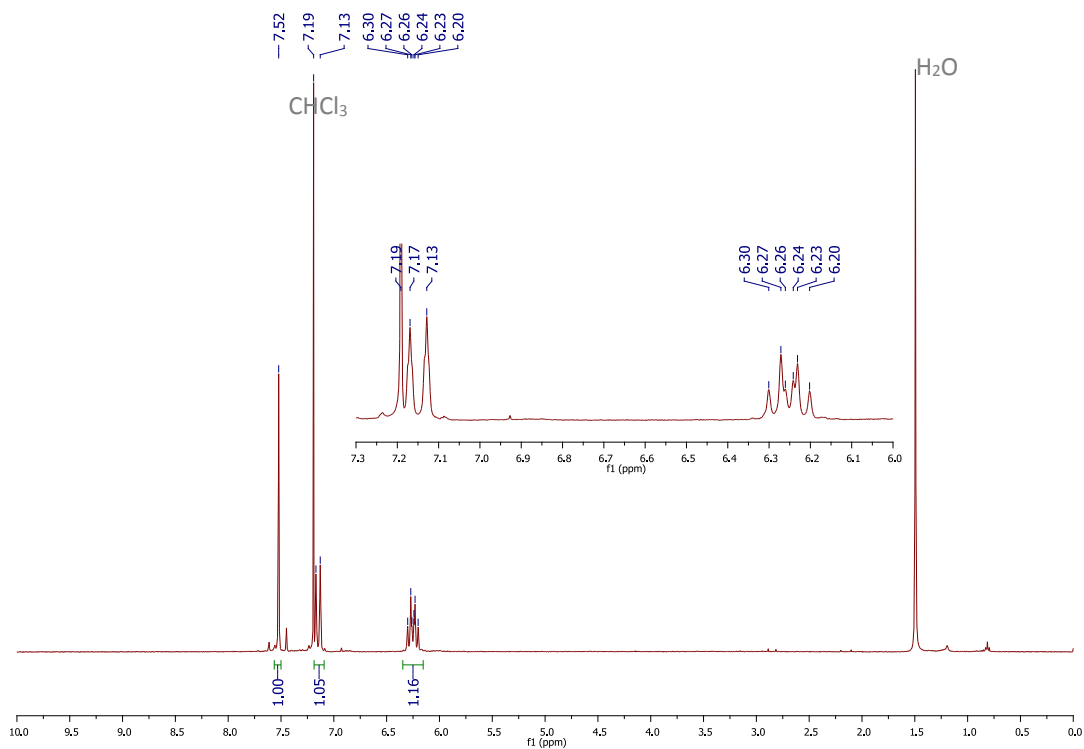
^{19}F NMR spectrum (CDCl_3 , 376 Hz, 45 °C) of (*E,E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})_2$ (**5**)



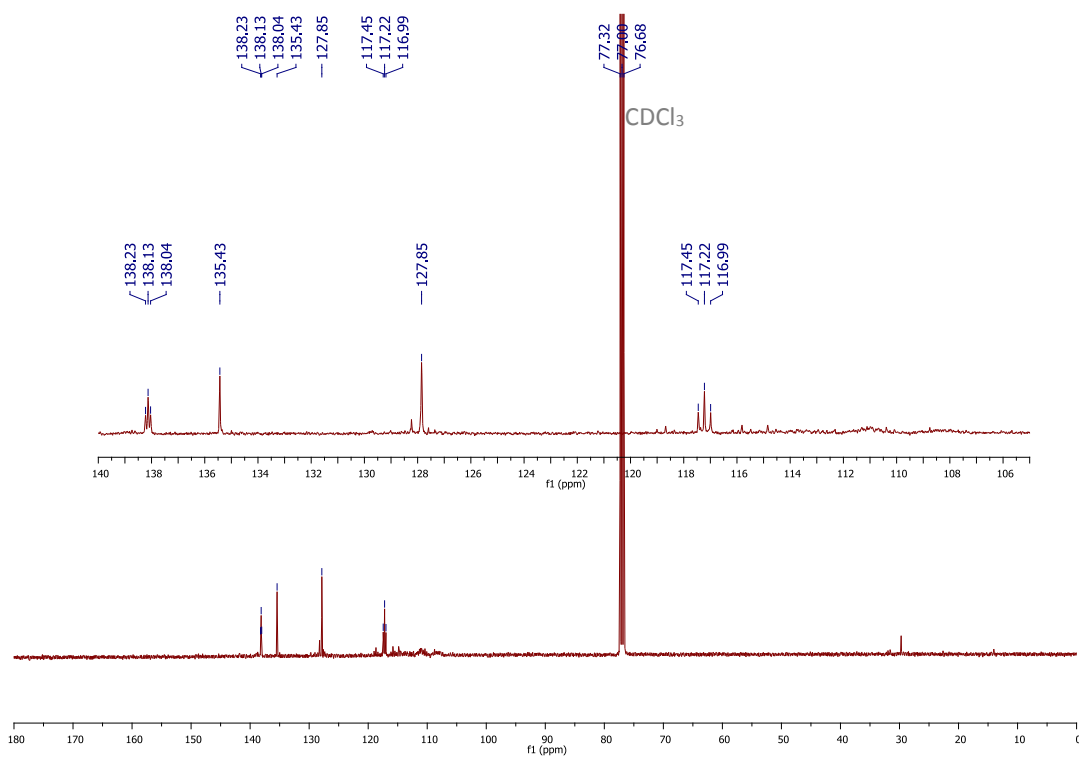
(*E,E,E*)-1,3,5-C₆H₃(CH=CHR_{f8})₃ (6)



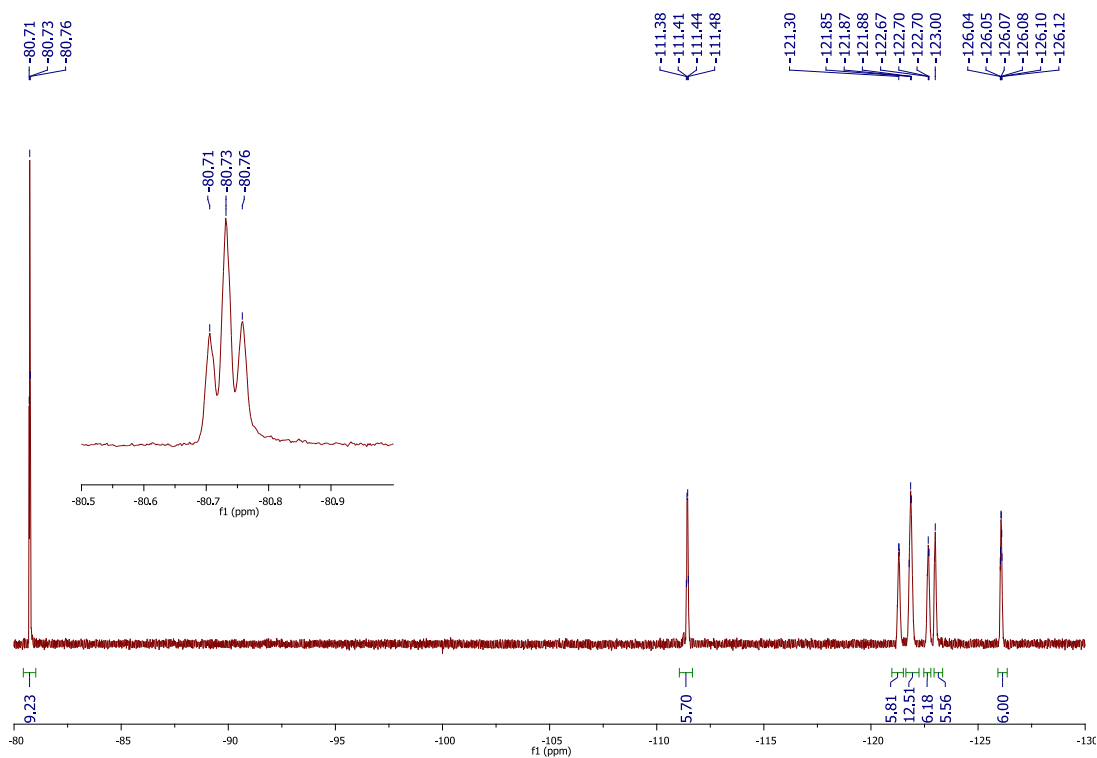
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E,E*)-1,3,5-C₆H₃(CH=CHR_{f8})₃ (6)



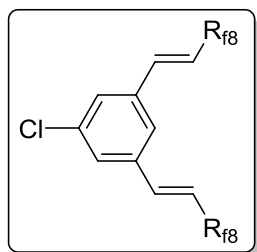
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz, 45 °C) of (*E,E,E*)-1,3,5- $\text{C}_6\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})_3$ (**6**)



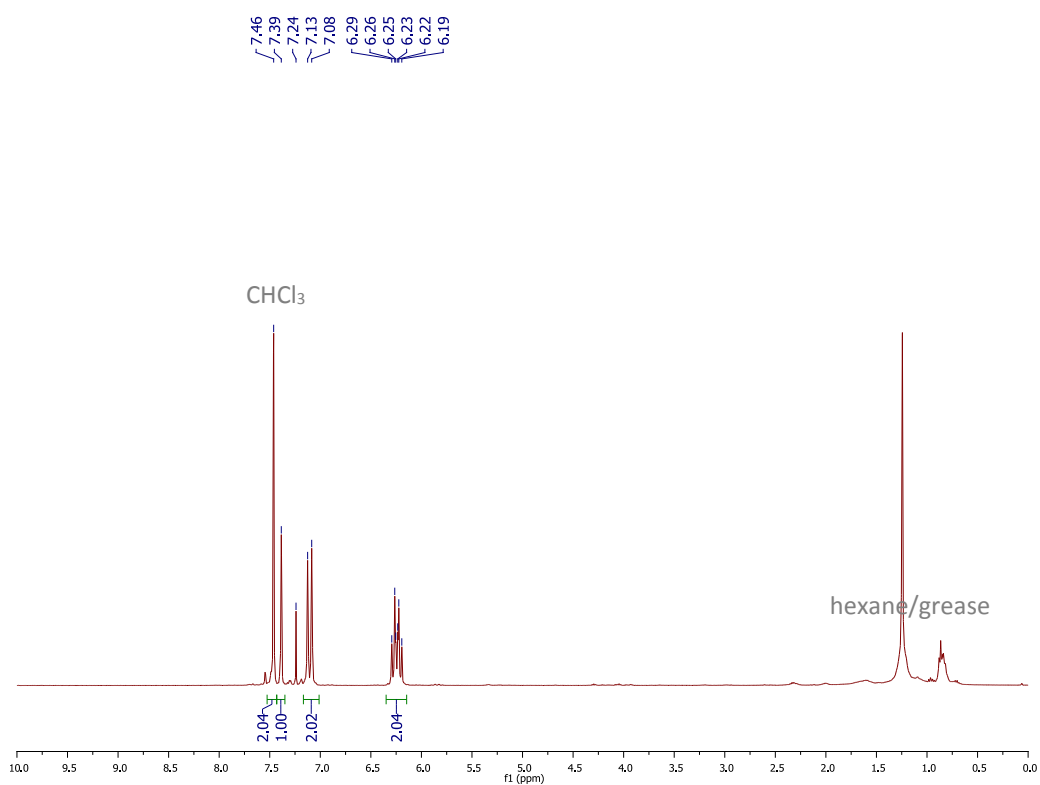
^{19}F NMR spectrum (CDCl_3 , 376 Hz) of (*E,E,E*)-1,3,5- $\text{C}_6\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})_3$ (**6**)



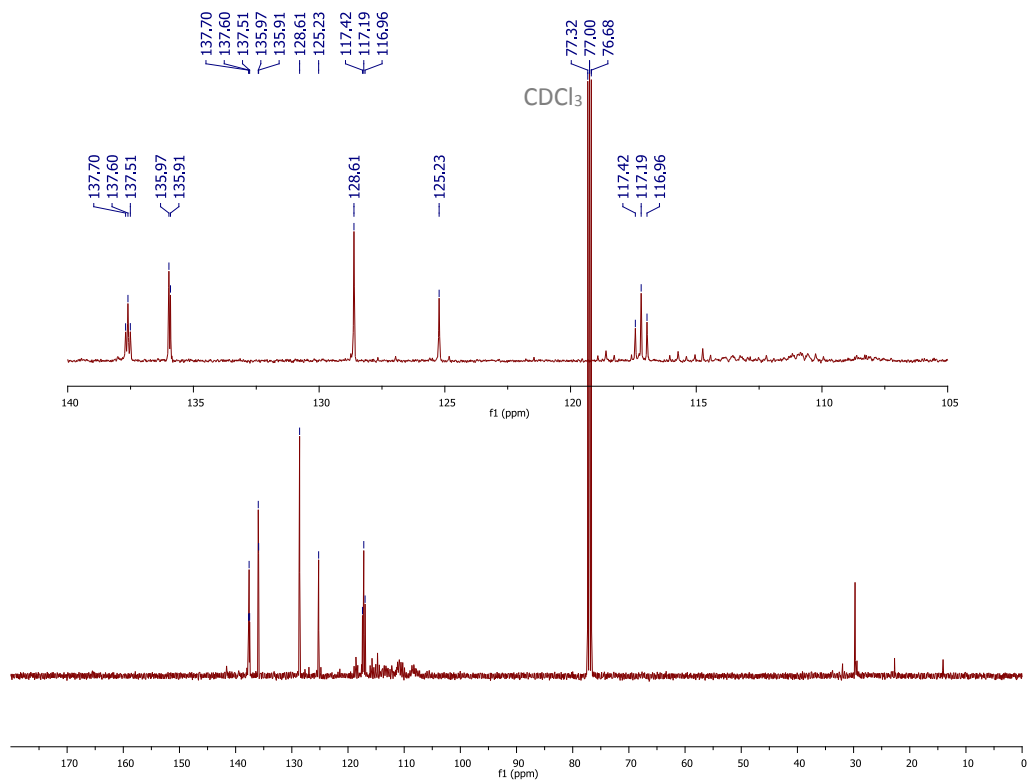
(*E,E*)-1,3,5-C₆H₃(CH=CHR_{f8})₂(Cl) (7)



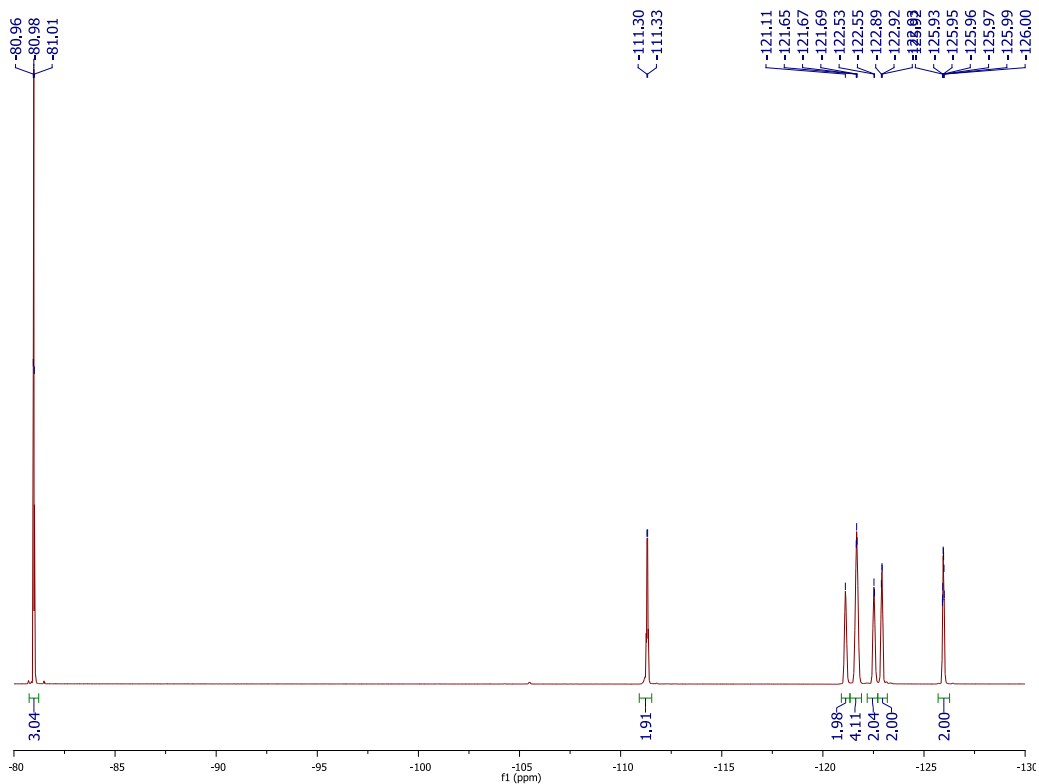
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E*)-1,3,5-C₆H₃(CH=CHR_{f8})₂(Cl) (7)



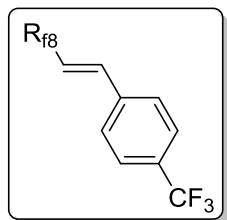
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E,E*)-1,3,5- $\text{C}_6\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})_2(\text{Cl})$ (**7**)



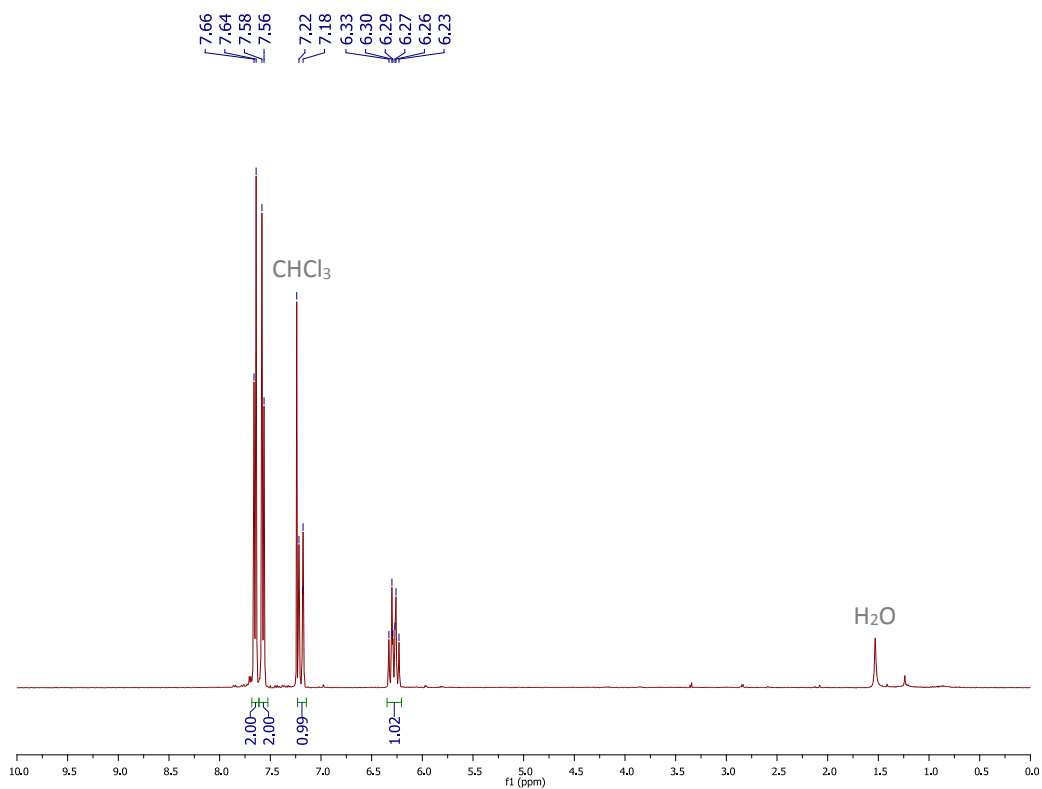
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E,E*)-1,3,5- $\text{C}_6\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})_2(\text{Cl})$ (**7**)



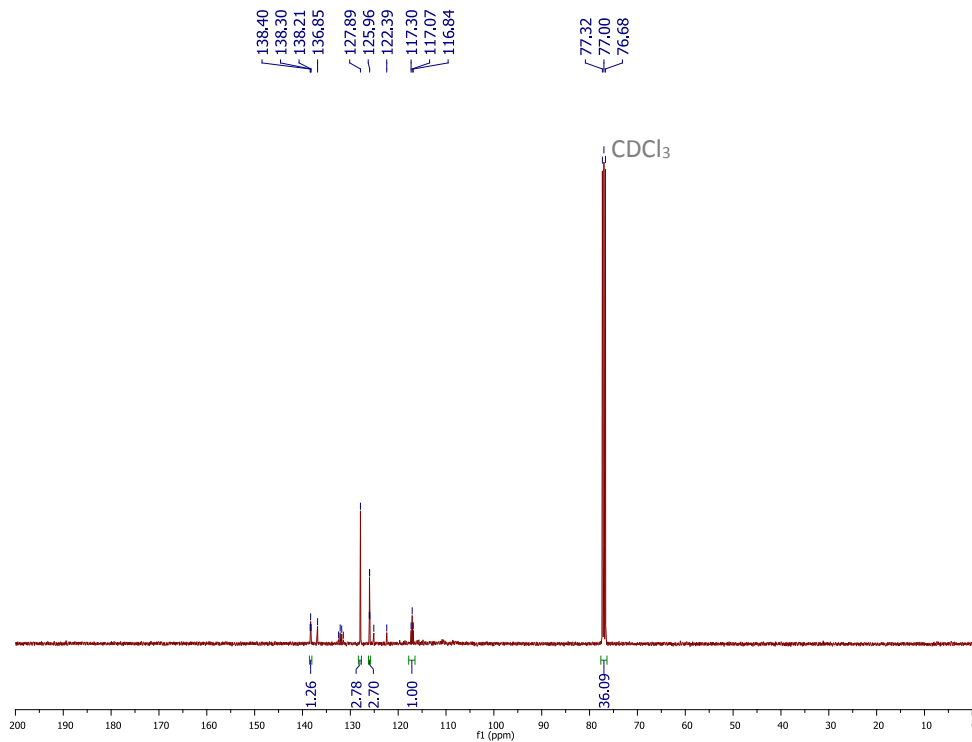
(*E*)-1,4-C₆H₄(CH=CHR_{f8})(CF₃) (8)



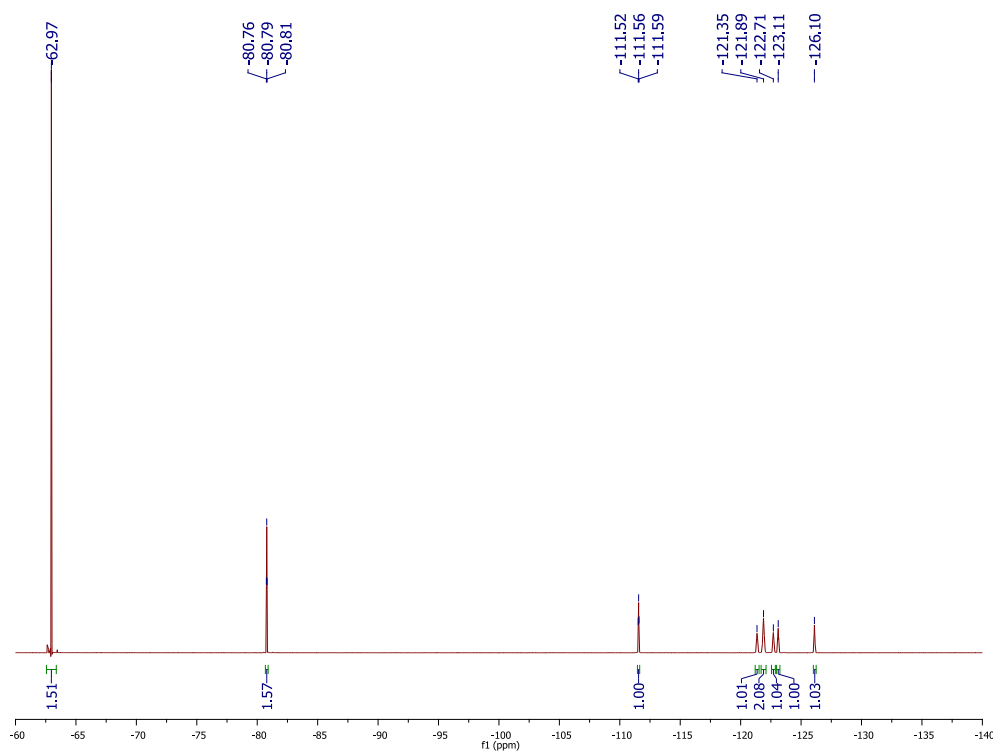
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E*)-1,4-C₆H₄(CH=CHR_{f8})(CF₃) (8)



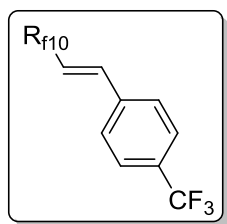
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{CF}_3)$ (**8**)



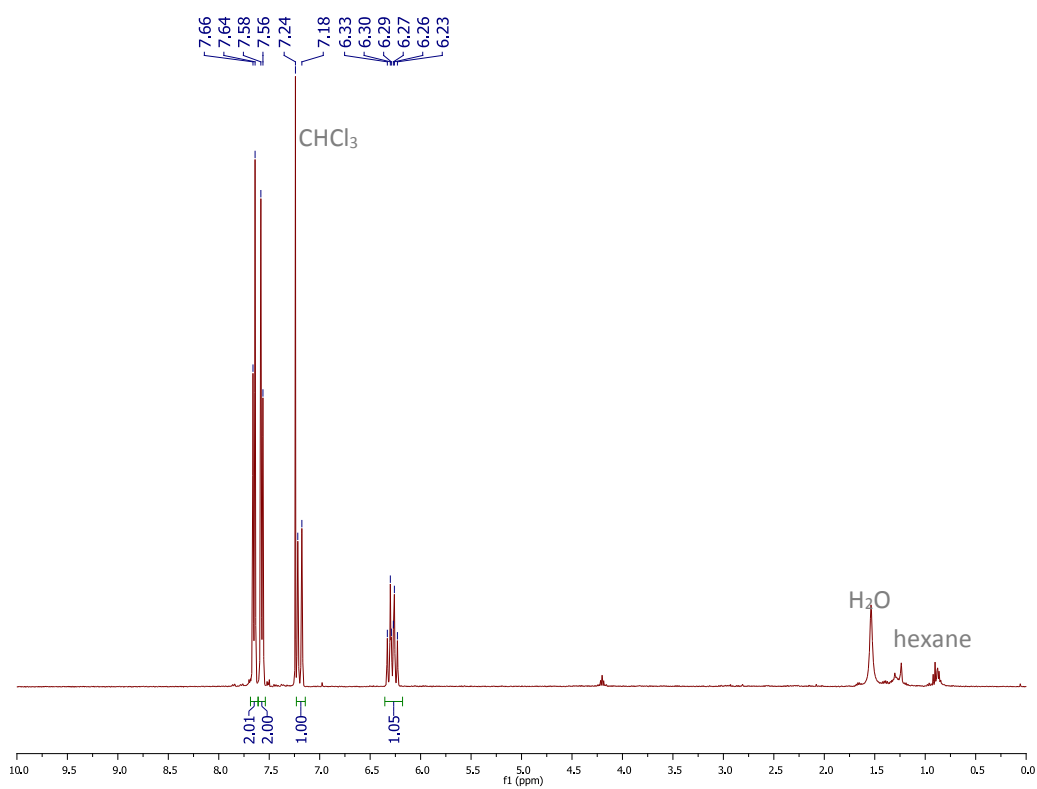
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{CF}_3)$ (**8**)



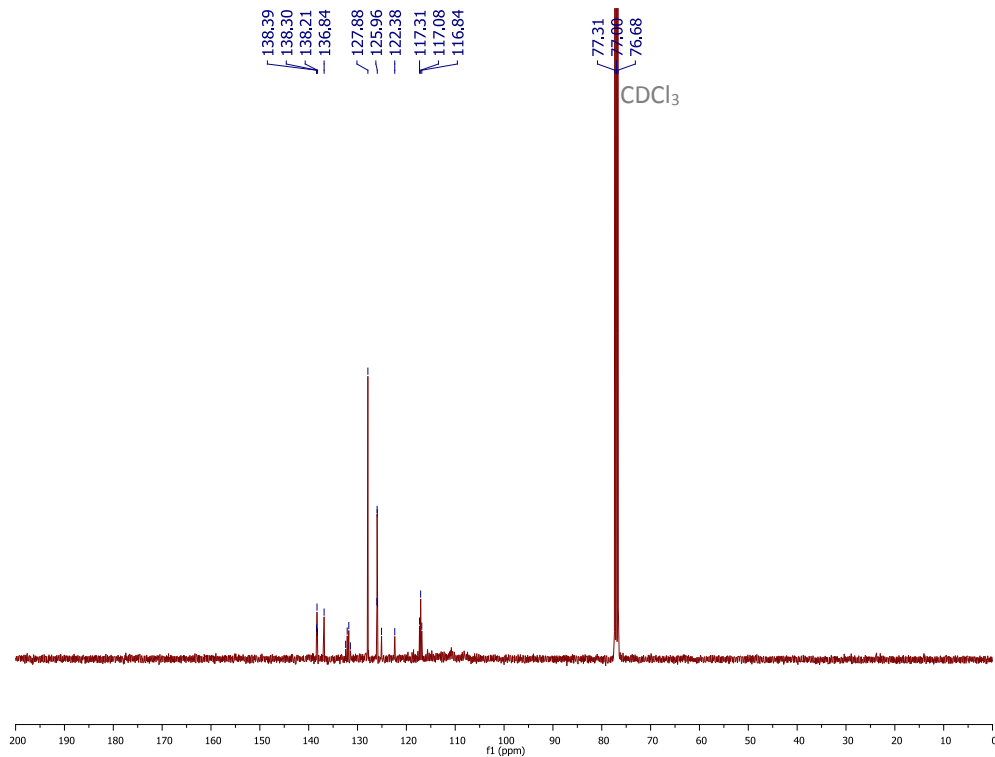
(*E*)-1,4-C₆H₄(CH=CHR_{f10})(CF₃) (9)



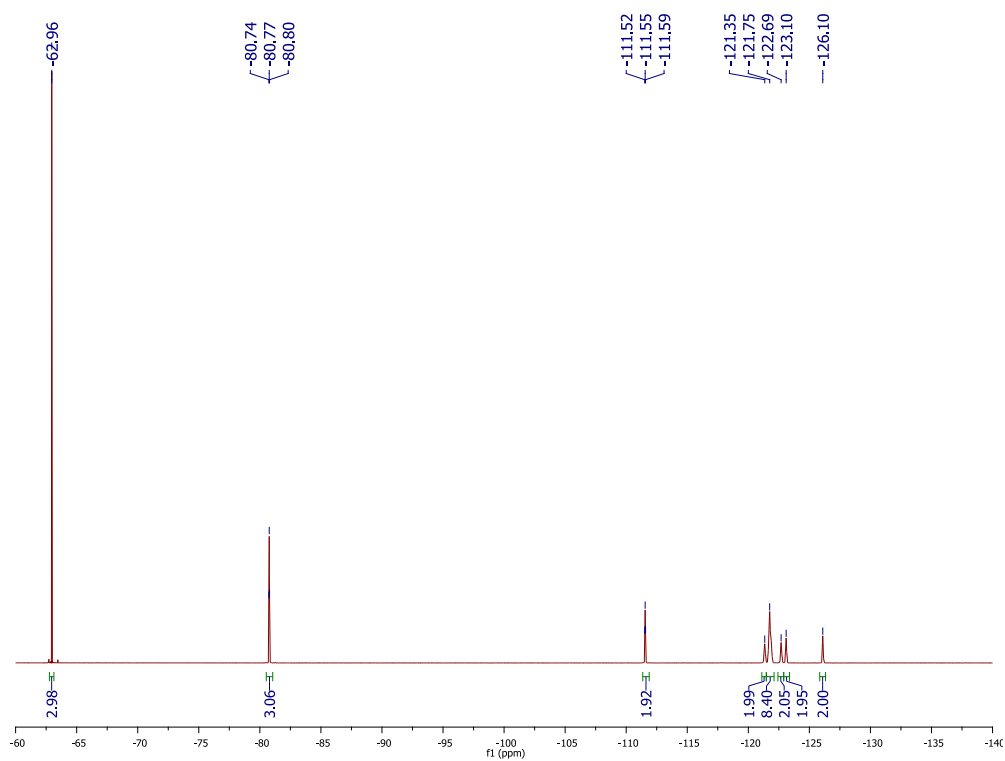
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E*)-1,4-C₆H₄(CH=CHR_{f10})(CF₃) (9)



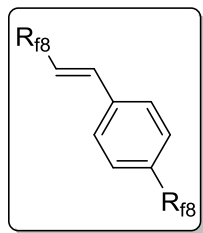
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f}10})(\text{CF}_3)$ (**9**)



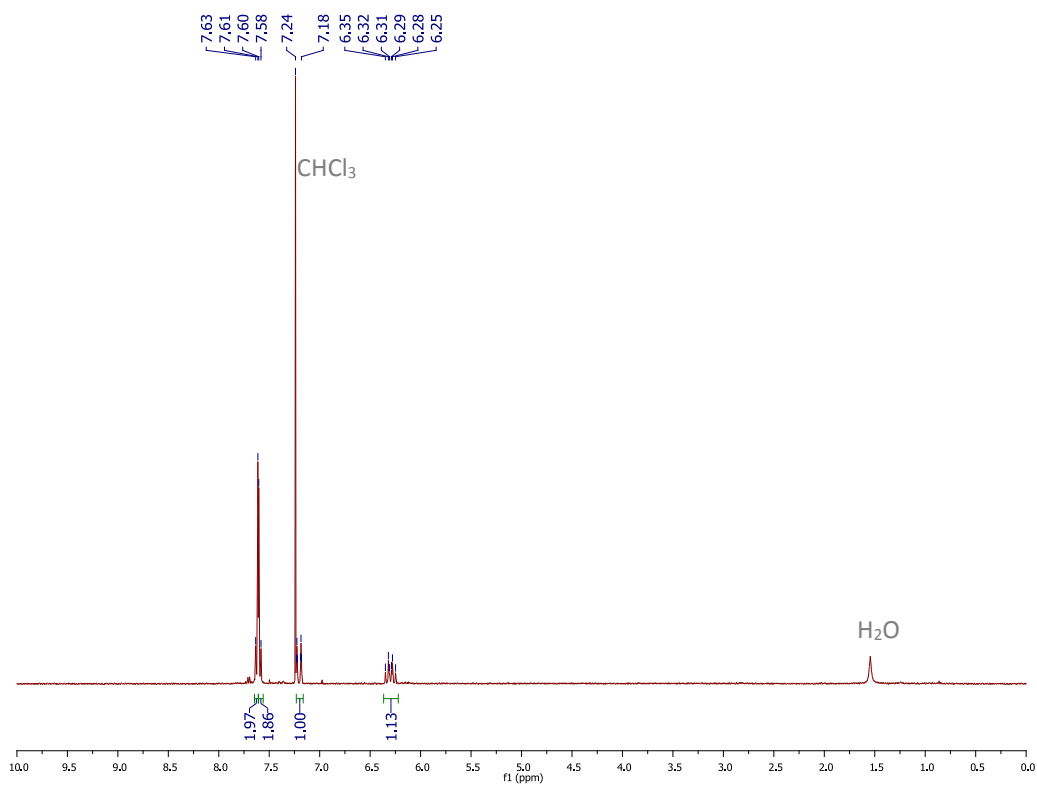
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f}10})(\text{CF}_3)$ (**9**)



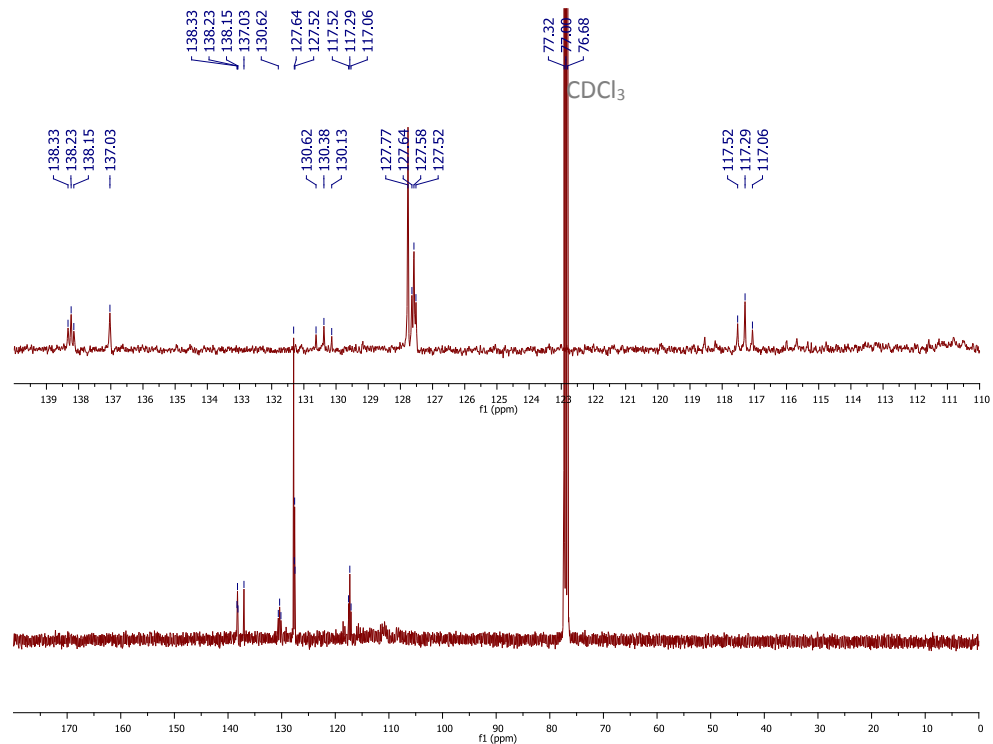
(*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (10**)**



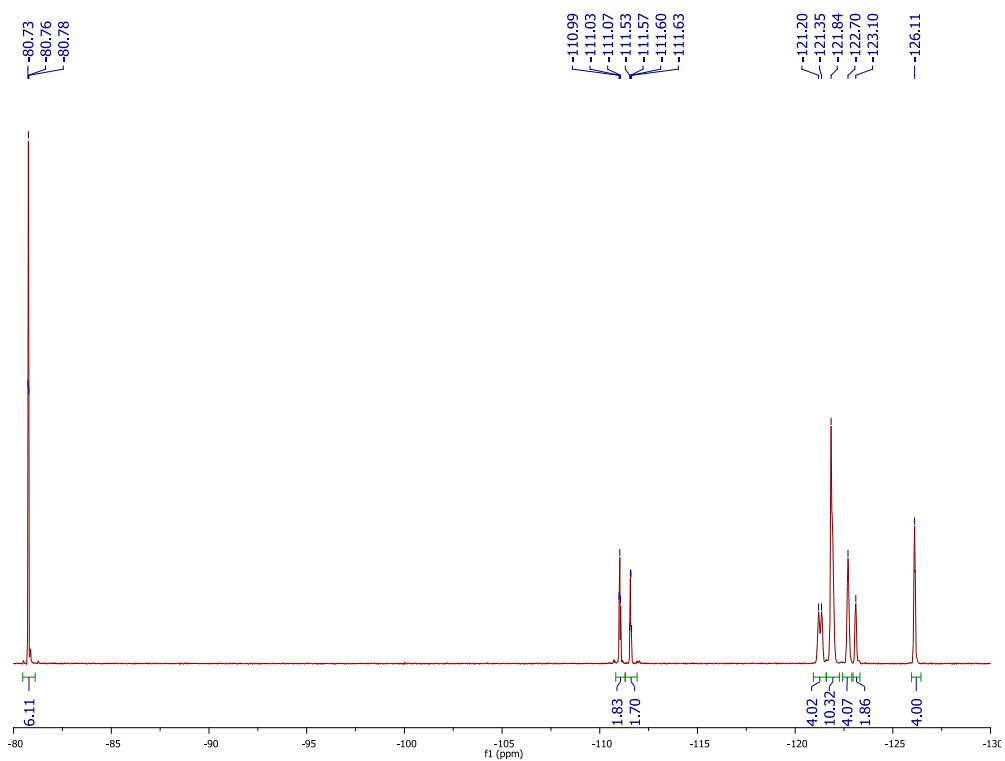
^1H NMR spectrum (CDCl_3 , 400 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (**10**)



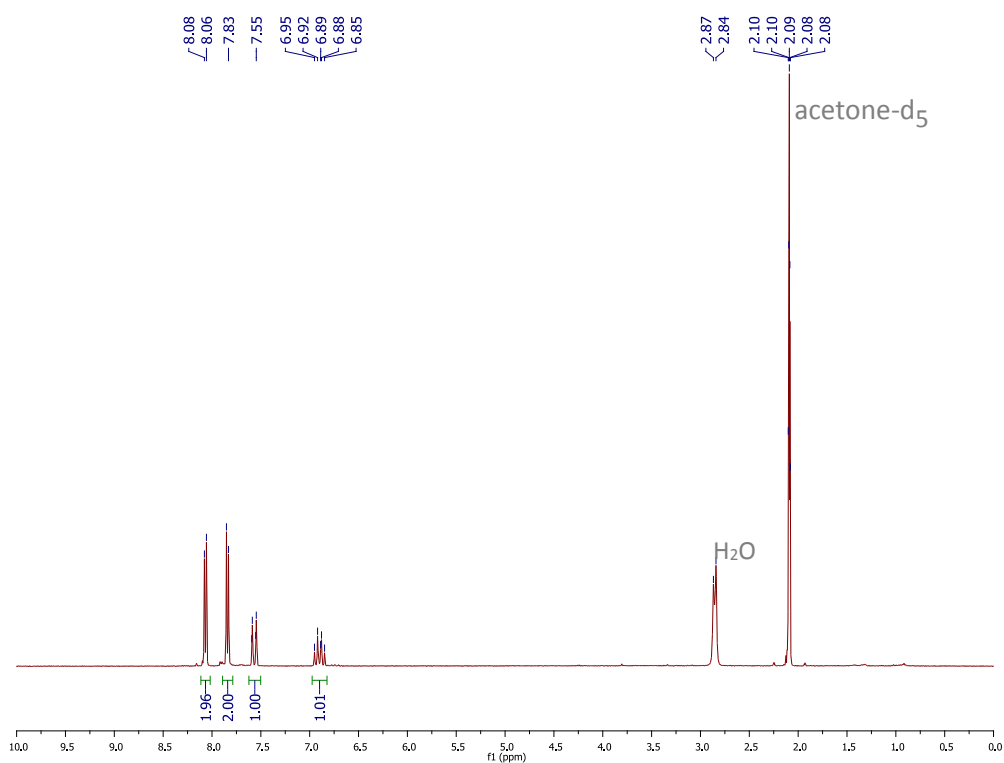
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (**10**)



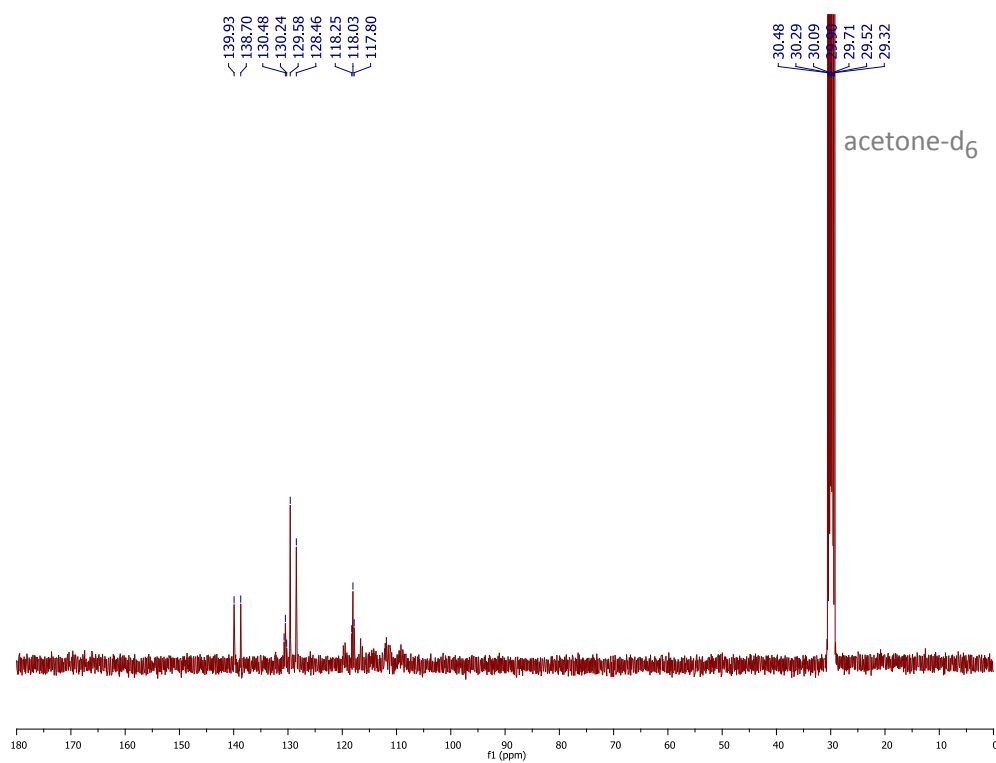
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (**10**)



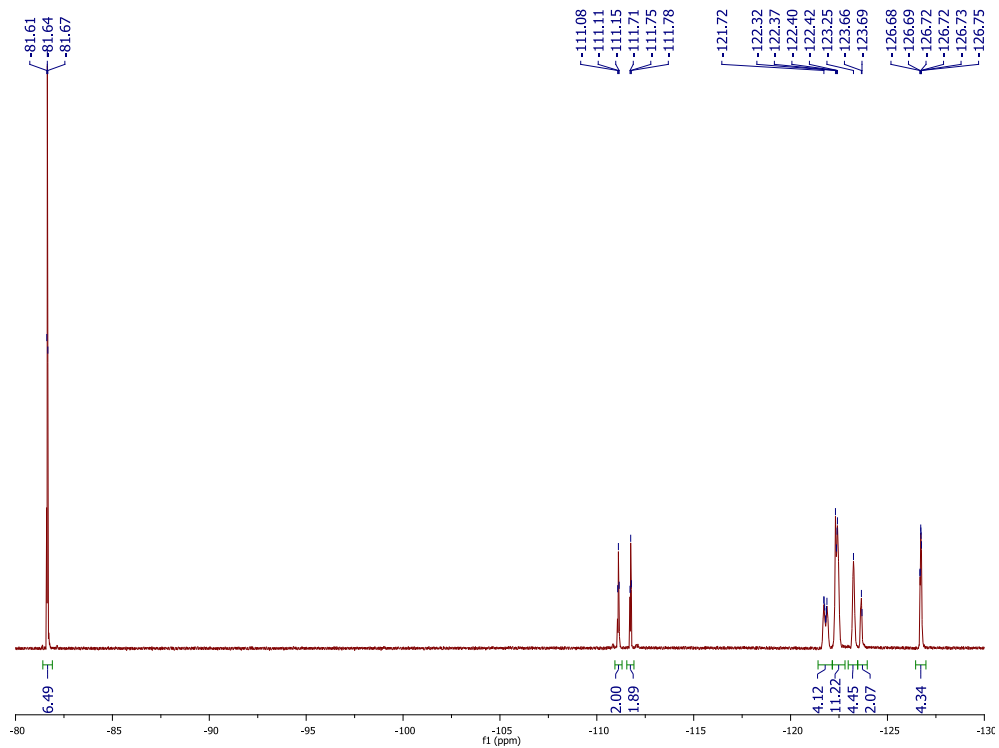
^1H NMR spectrum (acetone- d_6 , 400 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (**10**)



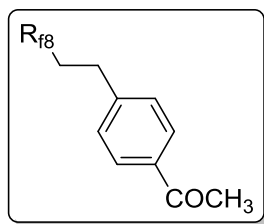
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (acetone- d_6 , 100 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (**10**)



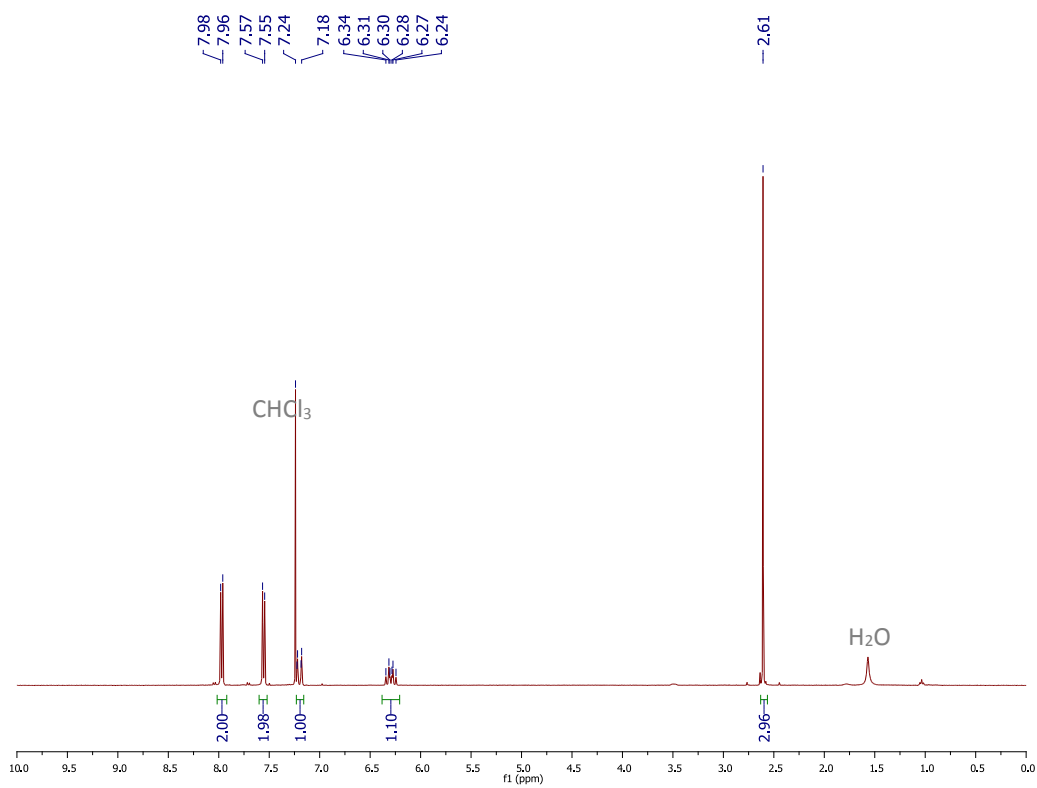
^{19}F NMR spectrum (acetone- d_6 , 376 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{R}_{\text{f8}})$ (**10**)



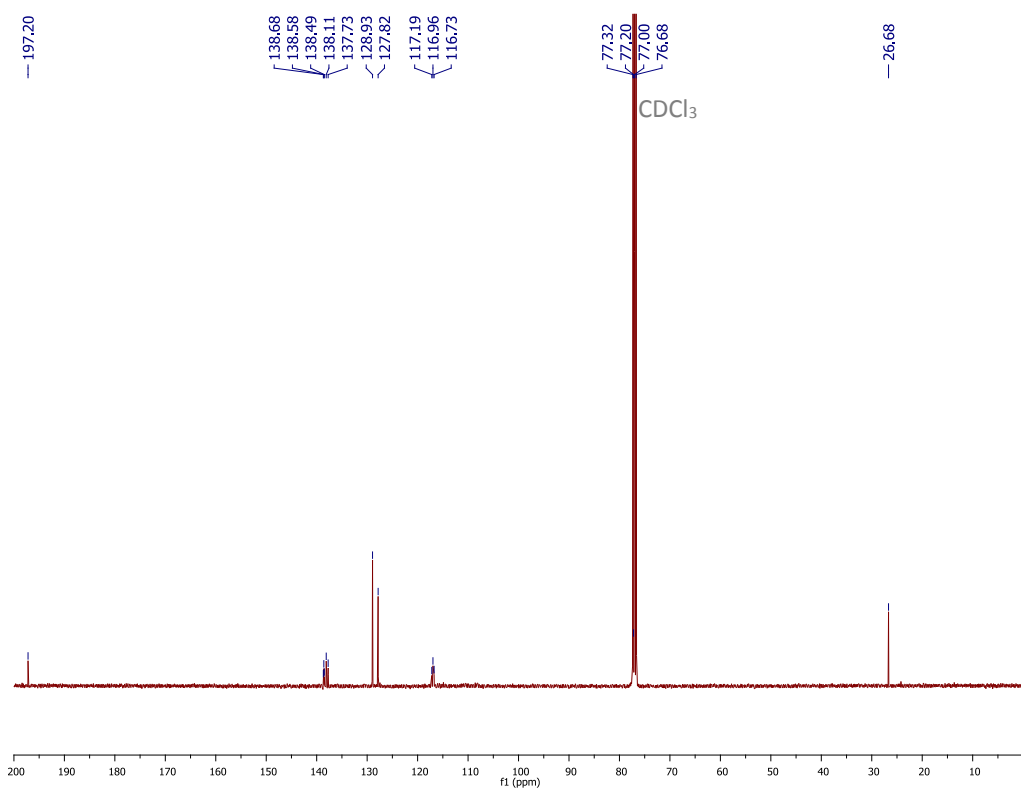
(*E*)-1,4-C₆H₄(CH=CHR_{f8})(COCH₃) (11)



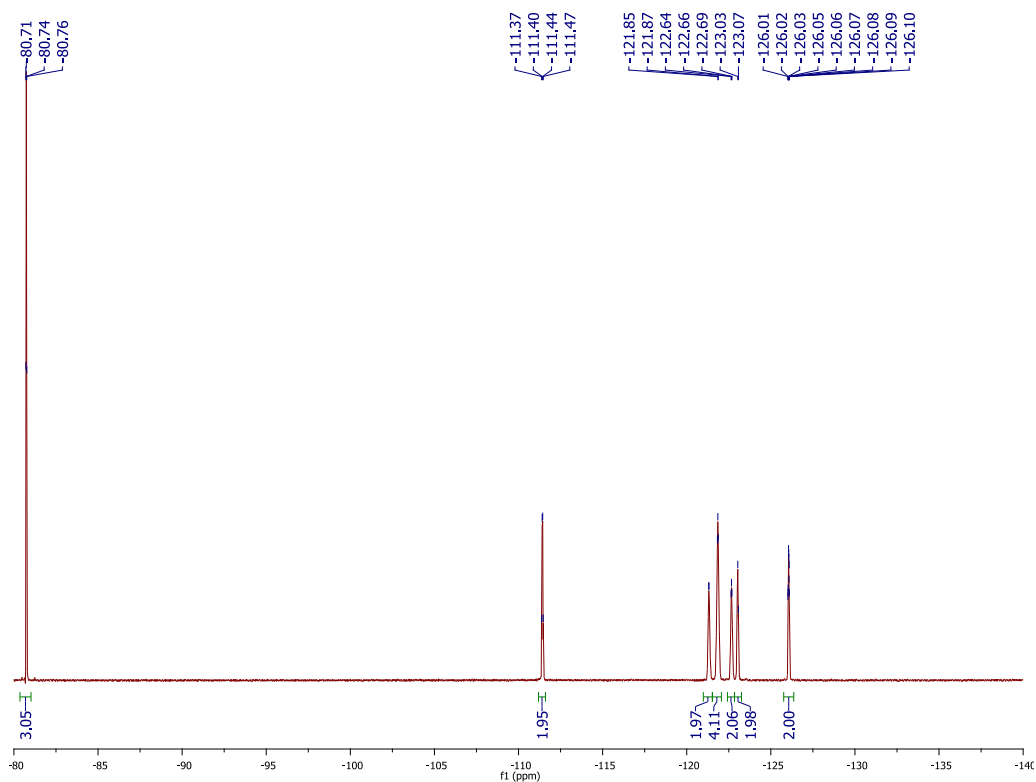
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E*)-1,4-C₆H₄(CH=CHR_{f8})(COCH₃) (**11**)



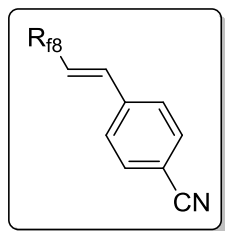
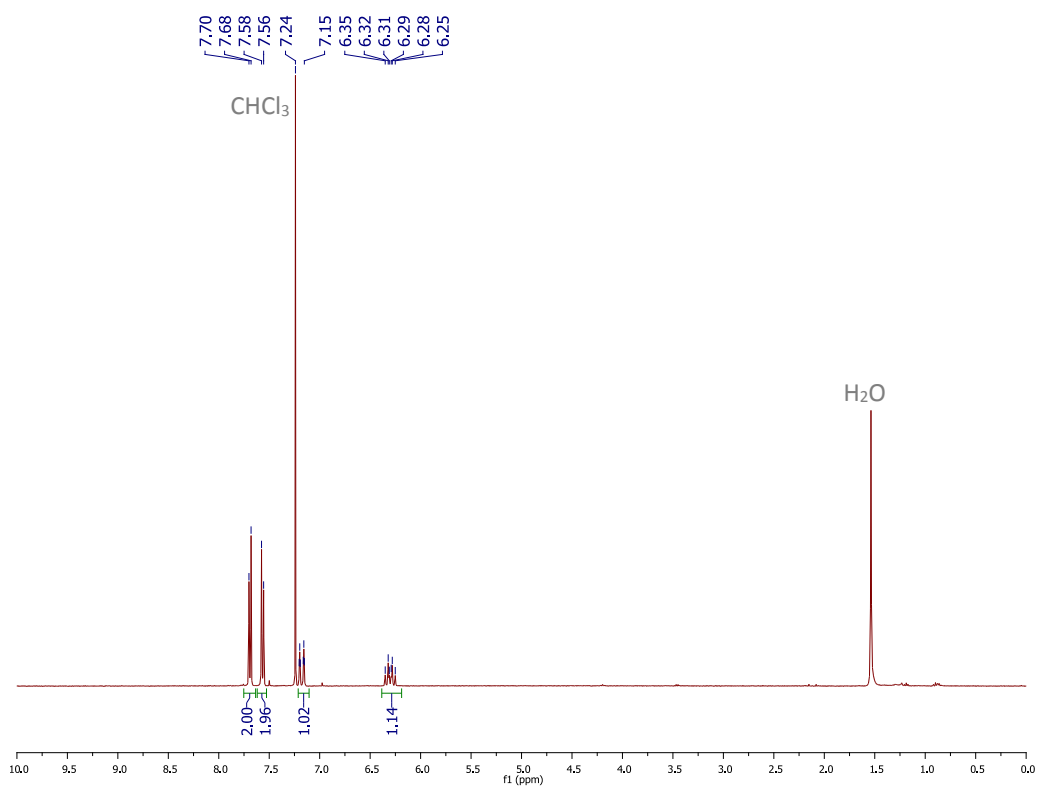
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{COCH}_3)$ (**11**)



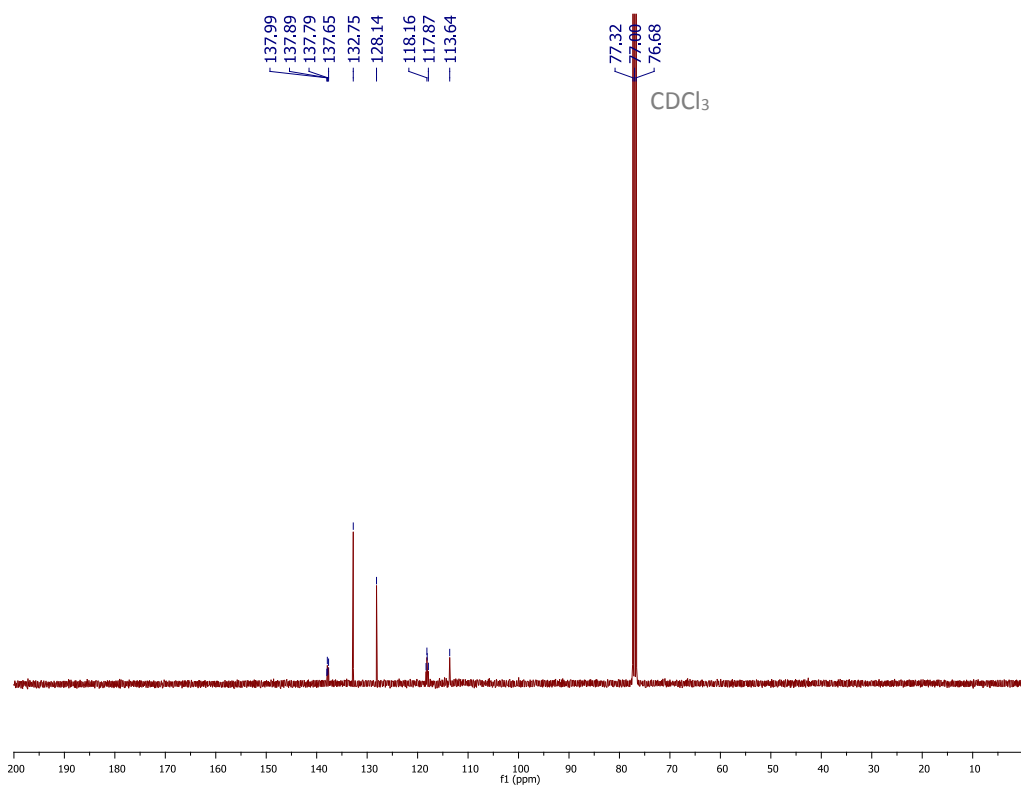
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{COCH}_3)$ (**11**)



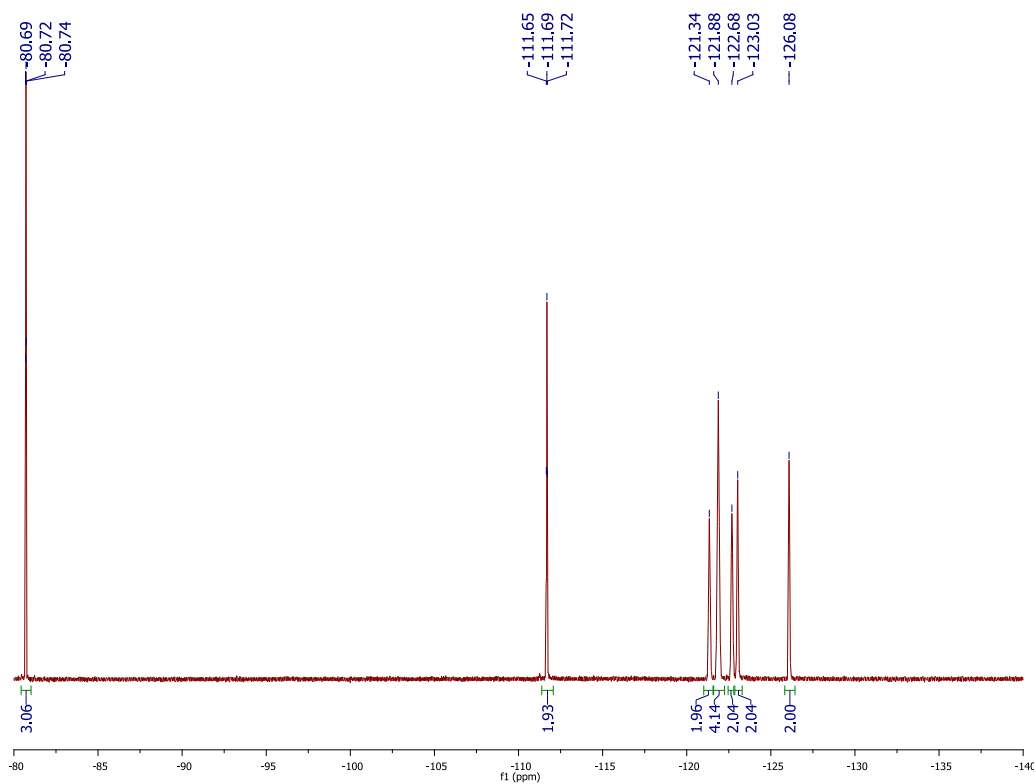
(E)-1,4-C₆H₄(CH=CHR_{f8})(CN) (12)

¹H NMR spectrum (CDCl₃, 400 MHz) of (*E*)-1,4-C₆H₄(CH=CHR_{f8})(CN) (**12**)

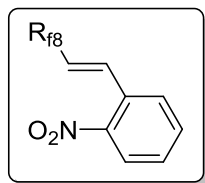
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{fg}})(\text{CN})$ (**12**)



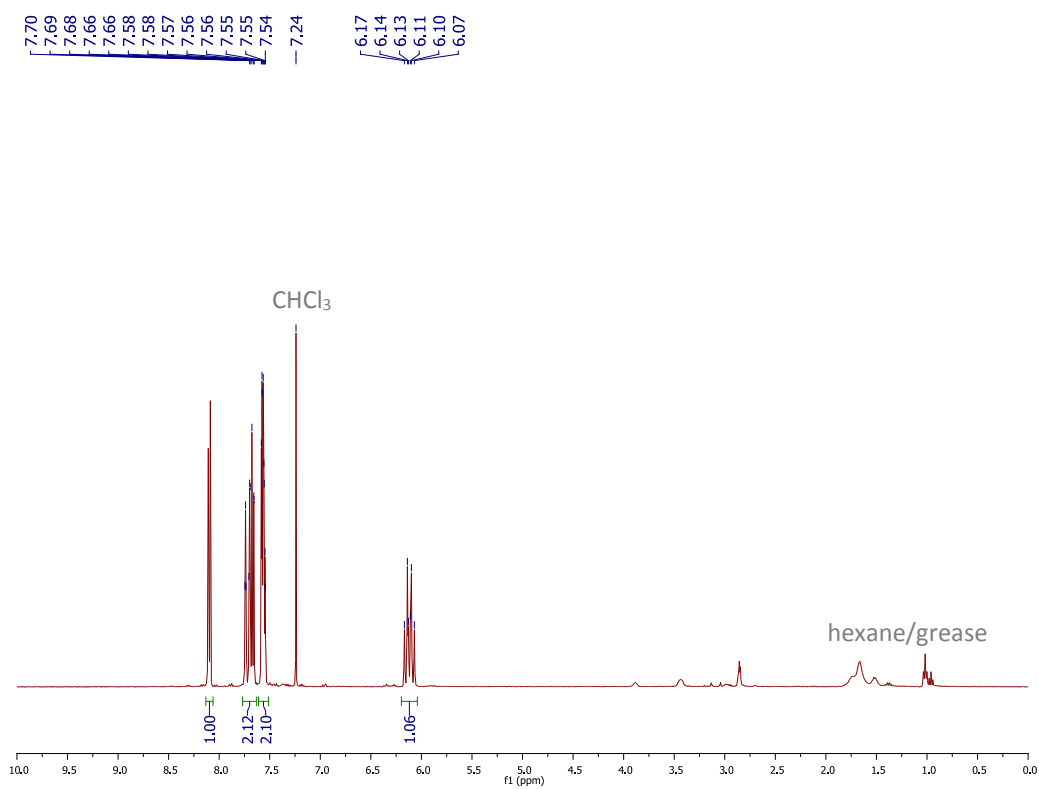
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,4- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{fg}})(\text{CN})$ (**12**)



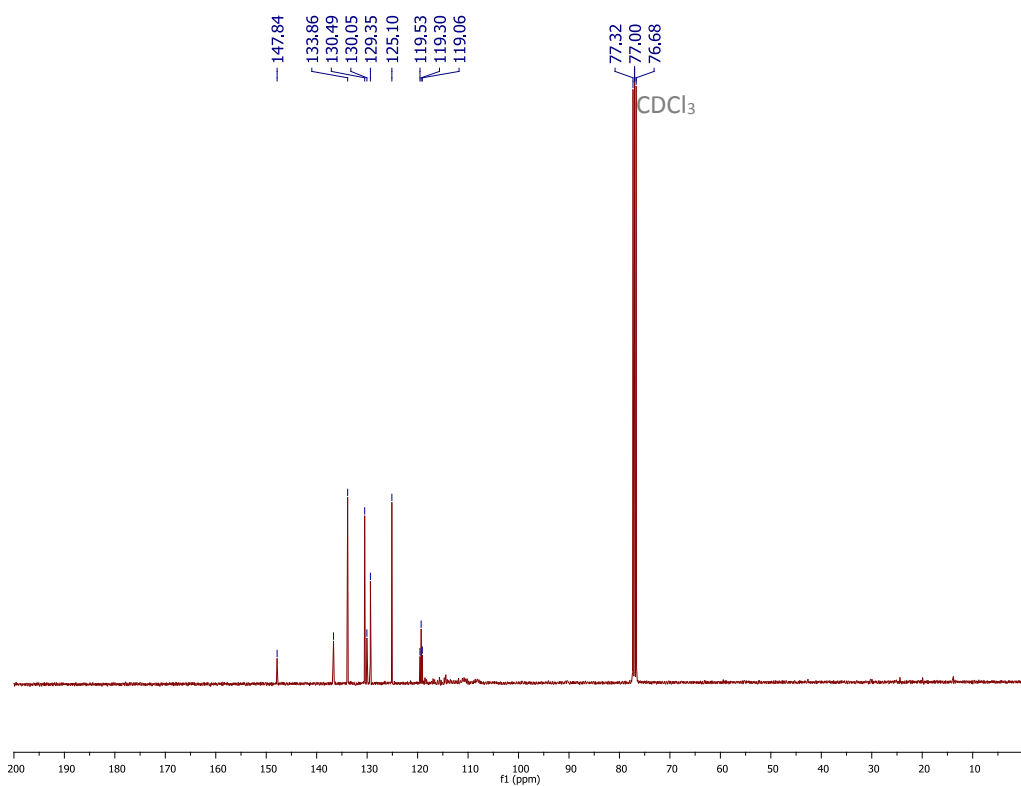
(*E*)-1,2-C₆H₄(CH=CHR_{f8})(NO₂) (13)



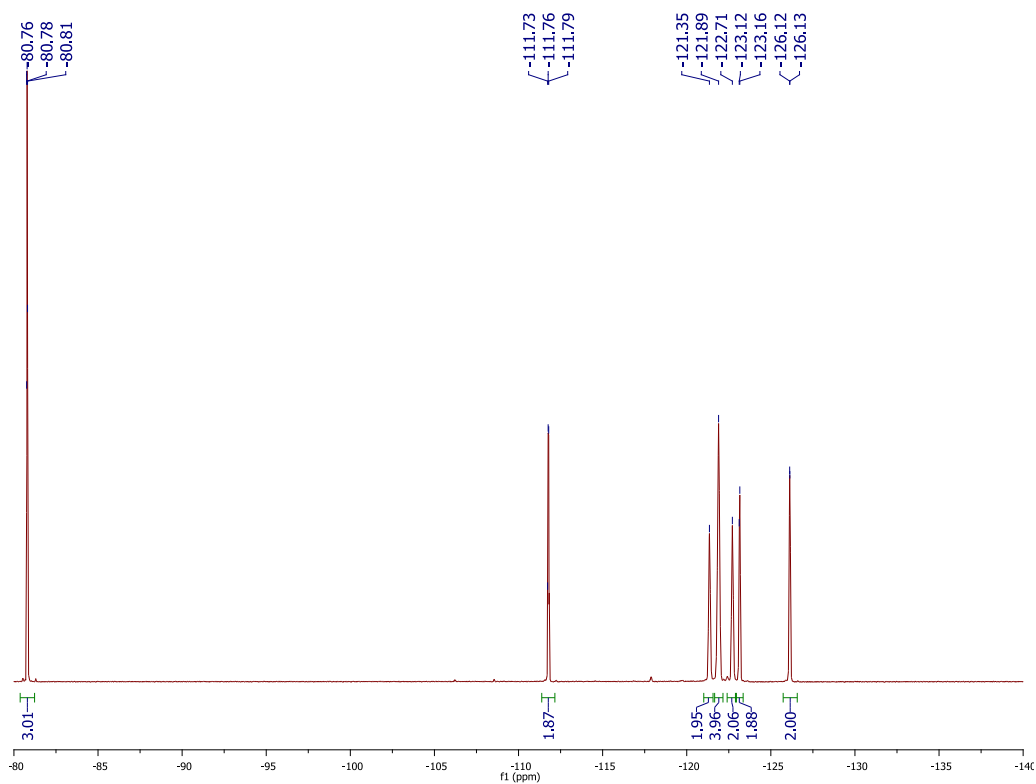
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E*)-1,2-C₆H₄(CH=CHR_{f8})(NO₂) (**13**)



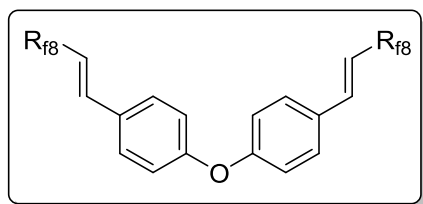
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,2- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{NO}_2)$ (**13**)



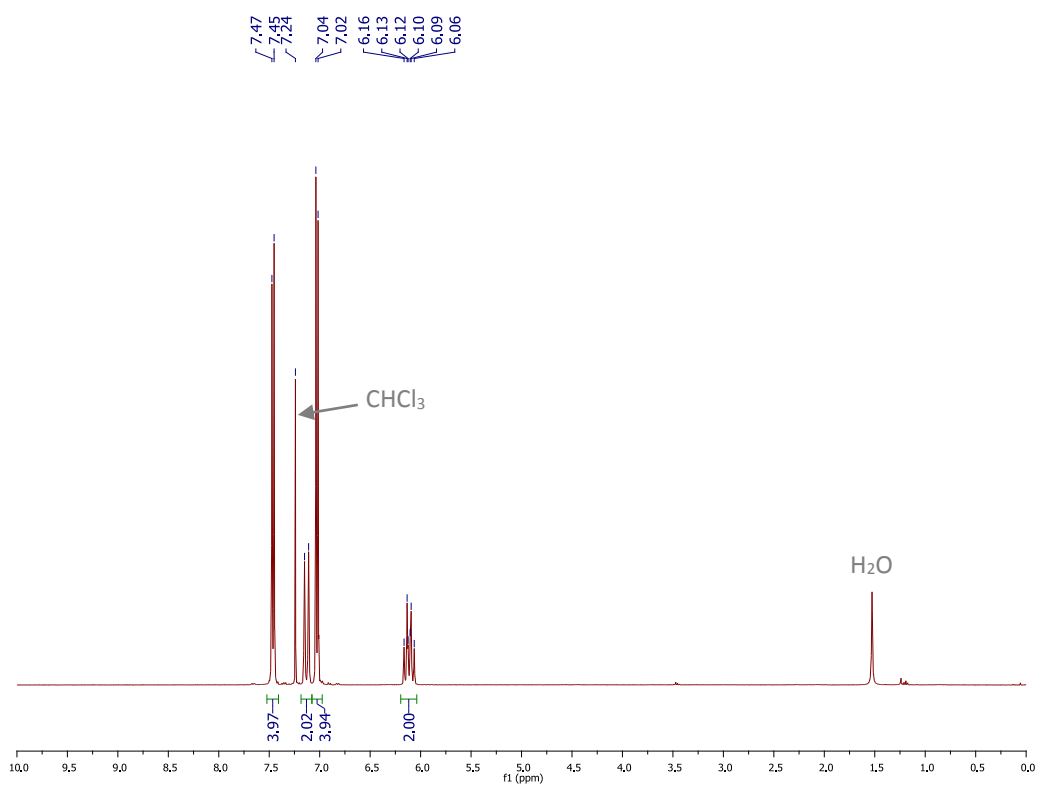
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,2- $\text{C}_6\text{H}_4(\text{CH}=\text{CHR}_{\text{f8}})(\text{NO}_2)$ (**13**)

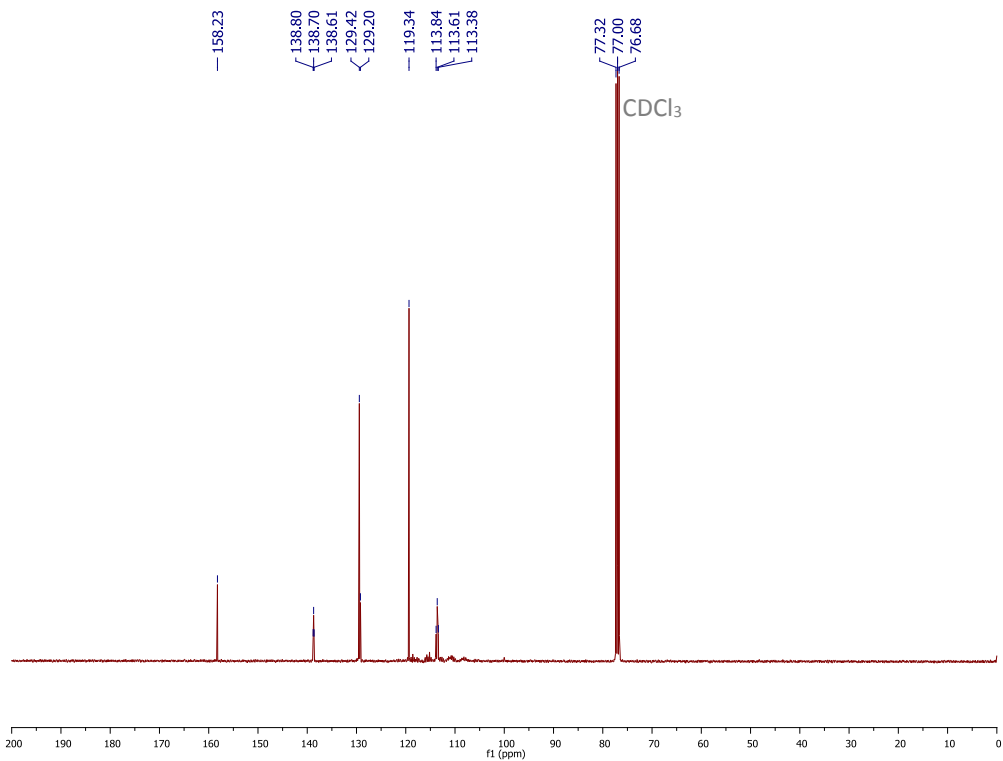
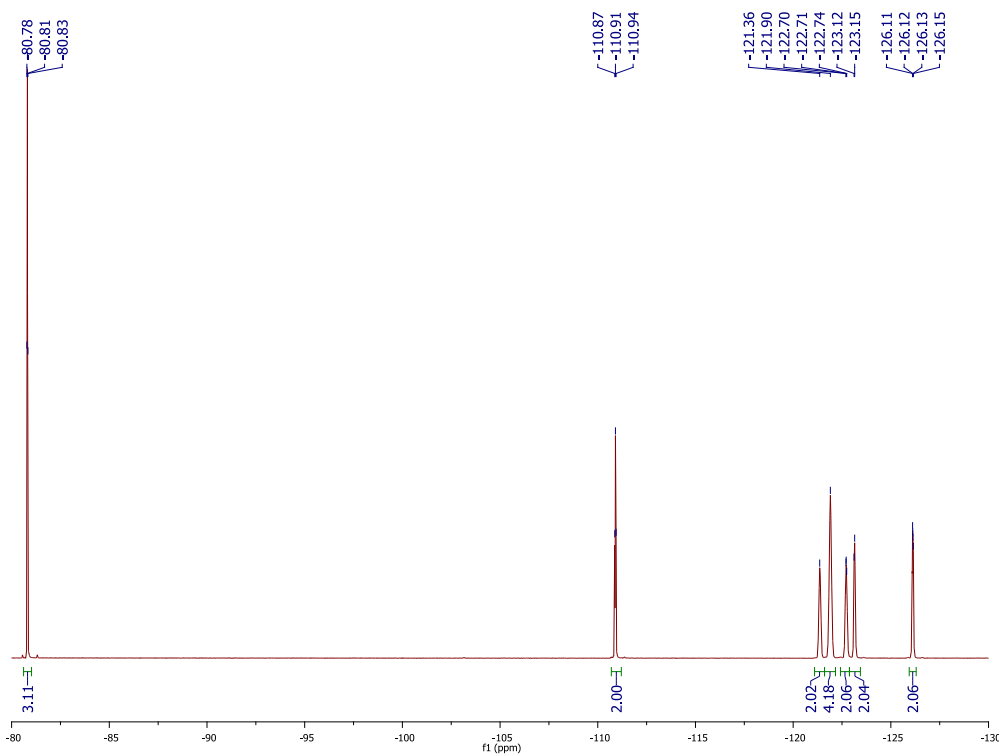


(*E,E*)-[1,4-C₆H₄(CH=CHR_{f8})]₂O (14)

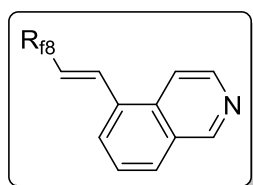


¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E*)-[1,4-C₆H₄(CH=CHR_{f8})]₂O (**14**)

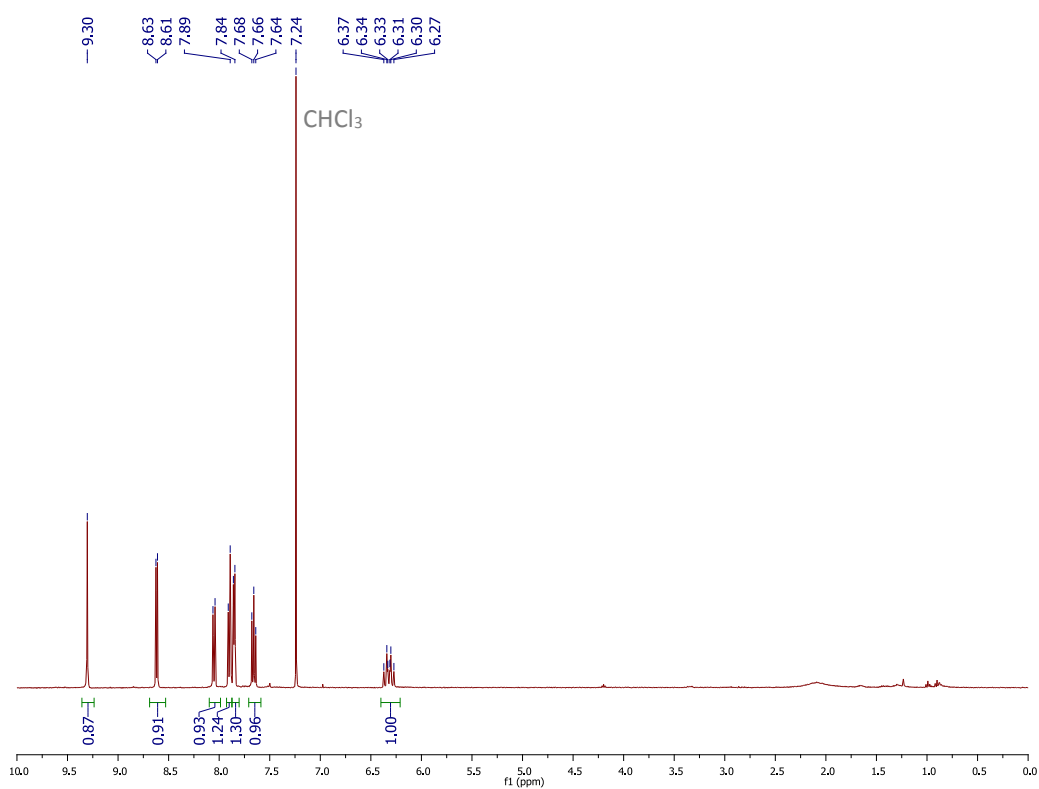


¹³C{¹H} NMR spectrum (CDCl₃, 100 MHz) of (*E,E*)-[1,4-C₆H₄(CH=CHR_{f8})]₂O (**14**)¹⁹F NMR spectrum (CDCl₃, 376 MHz) of (*E,E*)-[1,4-C₆H₄(CH=CHR_{f8})]₂O (**14**)

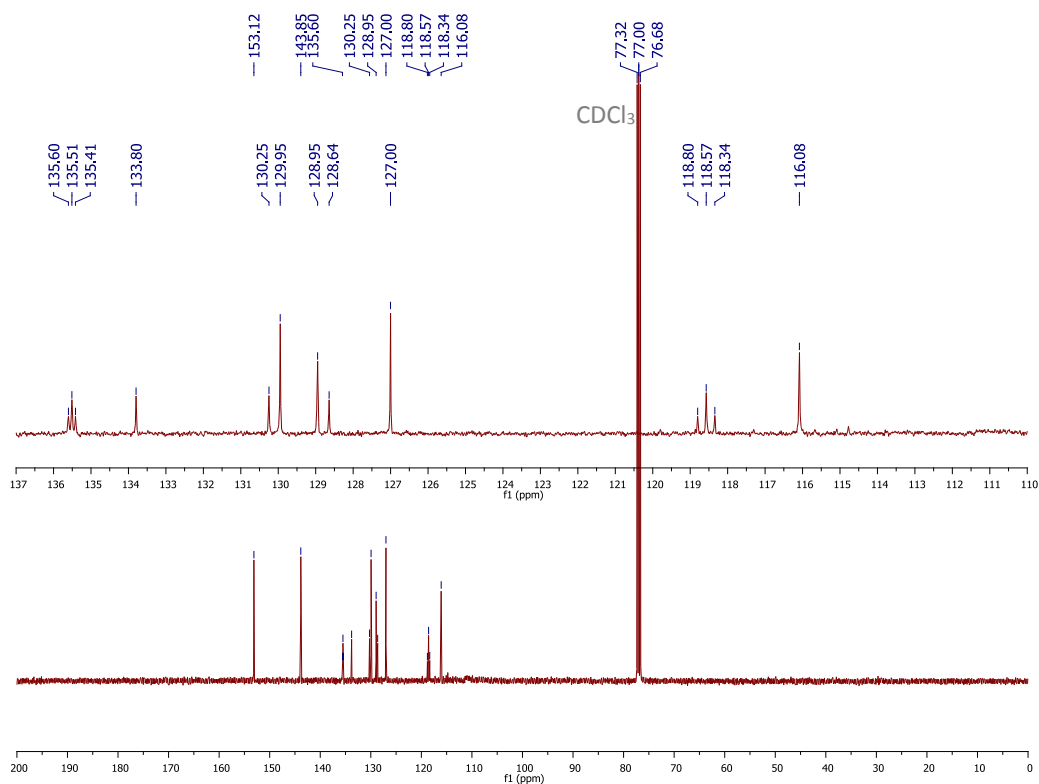
(E)-5-iso-NC₉H₆(CH=CHR_{f8}) (15)



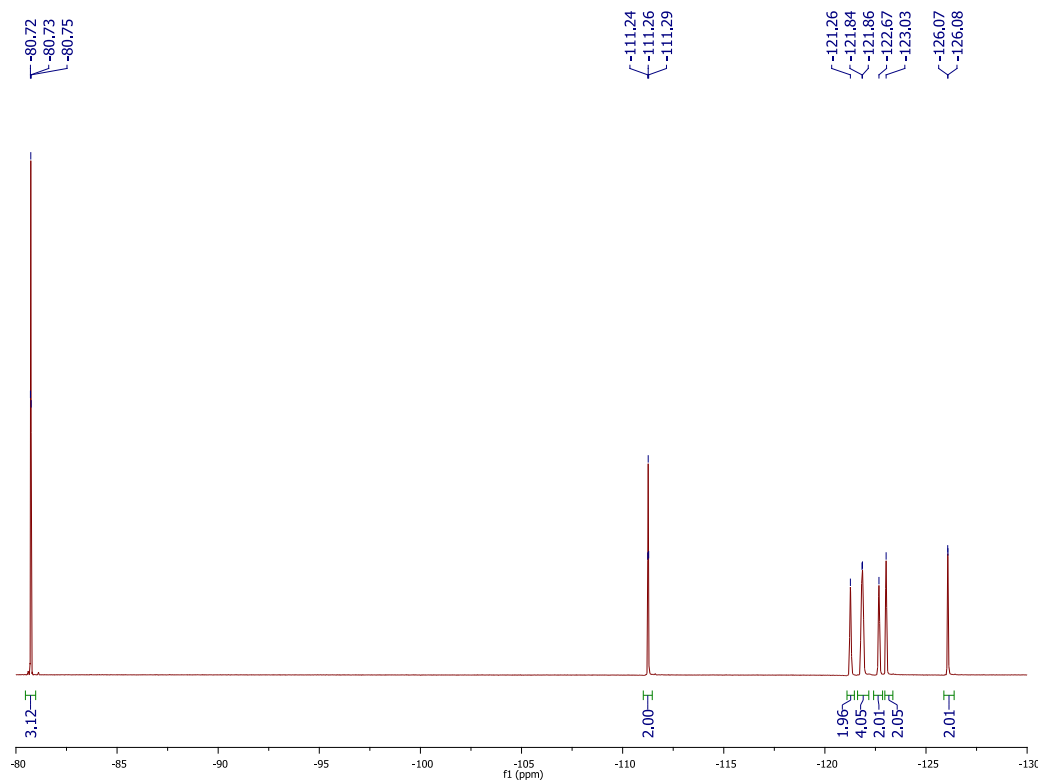
¹H NMR spectrum (CDCl₃, 400 MHz) of (E)-5-iso-NC₉H₆(CH=CHR_{f8}) (15)



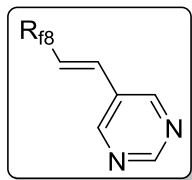
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-5-iso- $\text{NC}_9\text{H}_6(\text{CH}=\text{CHR}_{\text{f8}})$ (**15**)



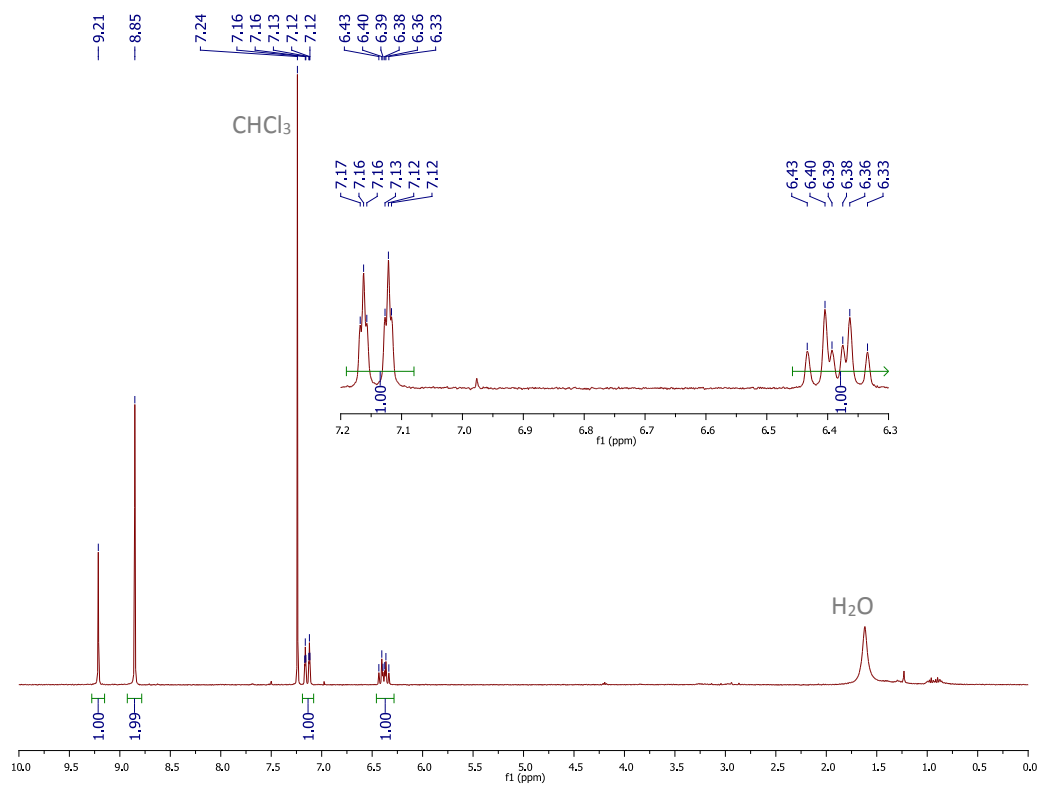
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-5-iso- $\text{NC}_9\text{H}_6(\text{CH}=\text{CHR}_{\text{f8}})$ (**15**)



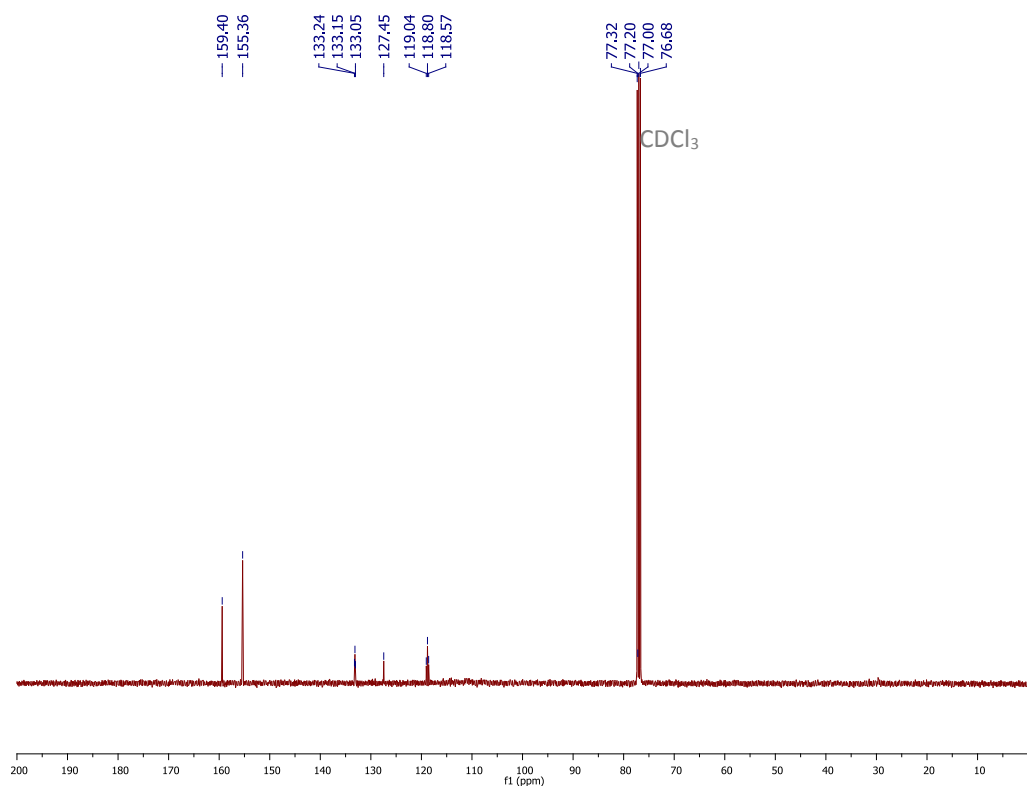
(E)-1,3,5-N₂C₄H₃(CH=CHR_{f8}) (16)



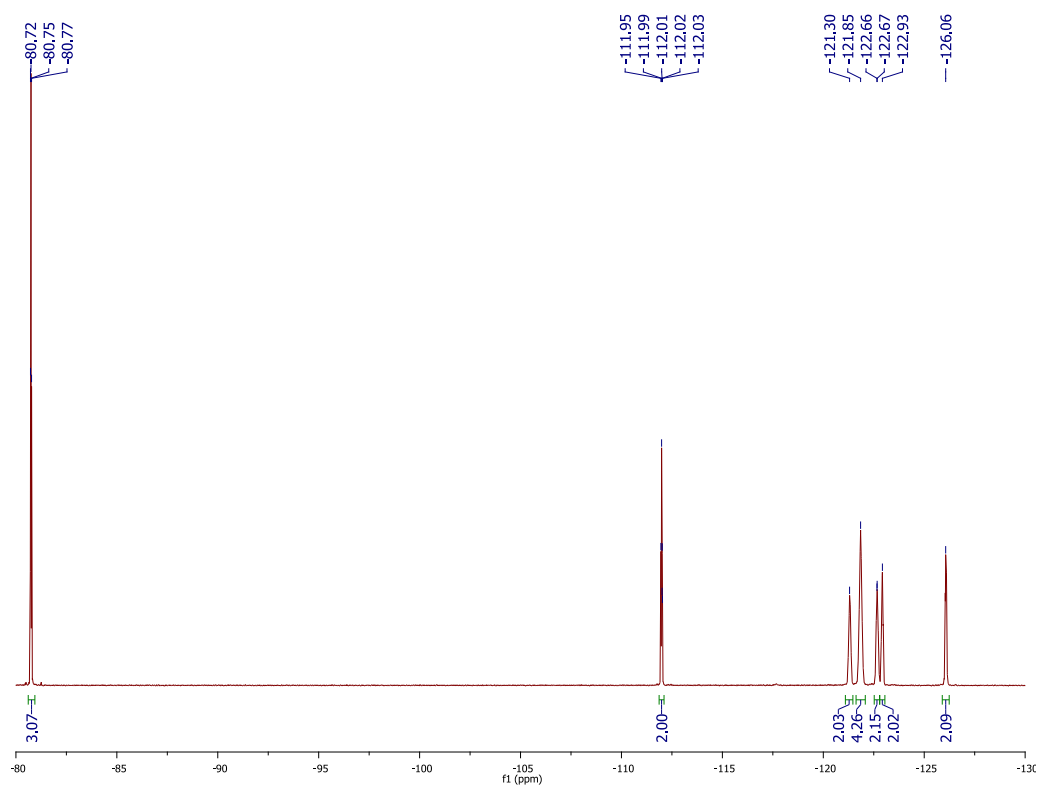
¹H NMR spectrum (CDCl₃, 400 MHz) of (E)-1,3,5-N₂C₄H₃(CH=CHR_{f8}) (**16**)



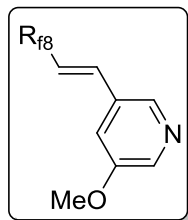
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-1,3,5- $\text{N}_2\text{C}_4\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})$ (**16**)



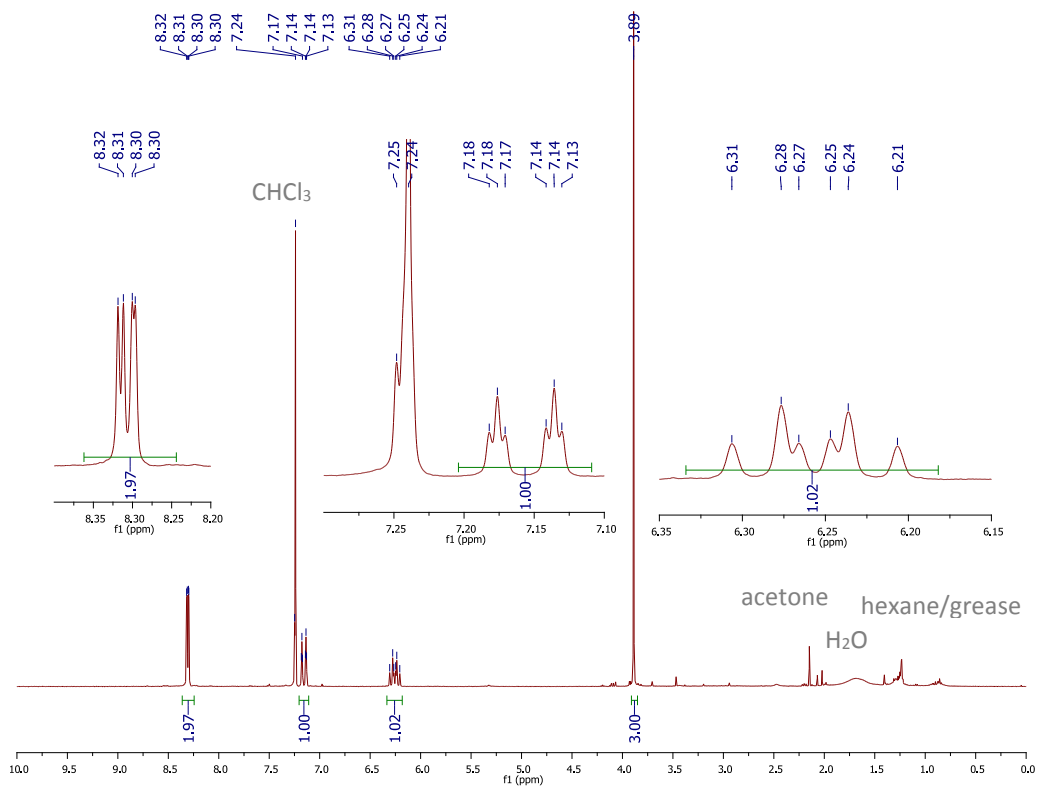
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-1,3,5- $\text{N}_2\text{C}_4\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})$ (**16**)



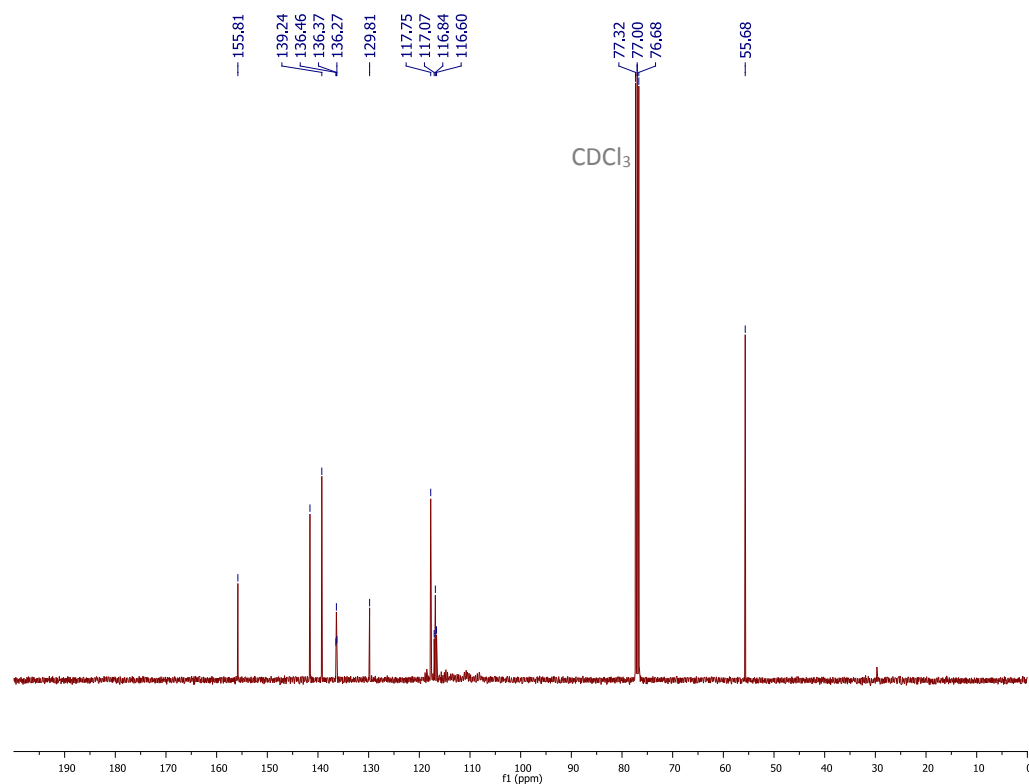
(*E*)-3,5-NC₅H₃(CH=CHR_{f8})(OMe) (17)



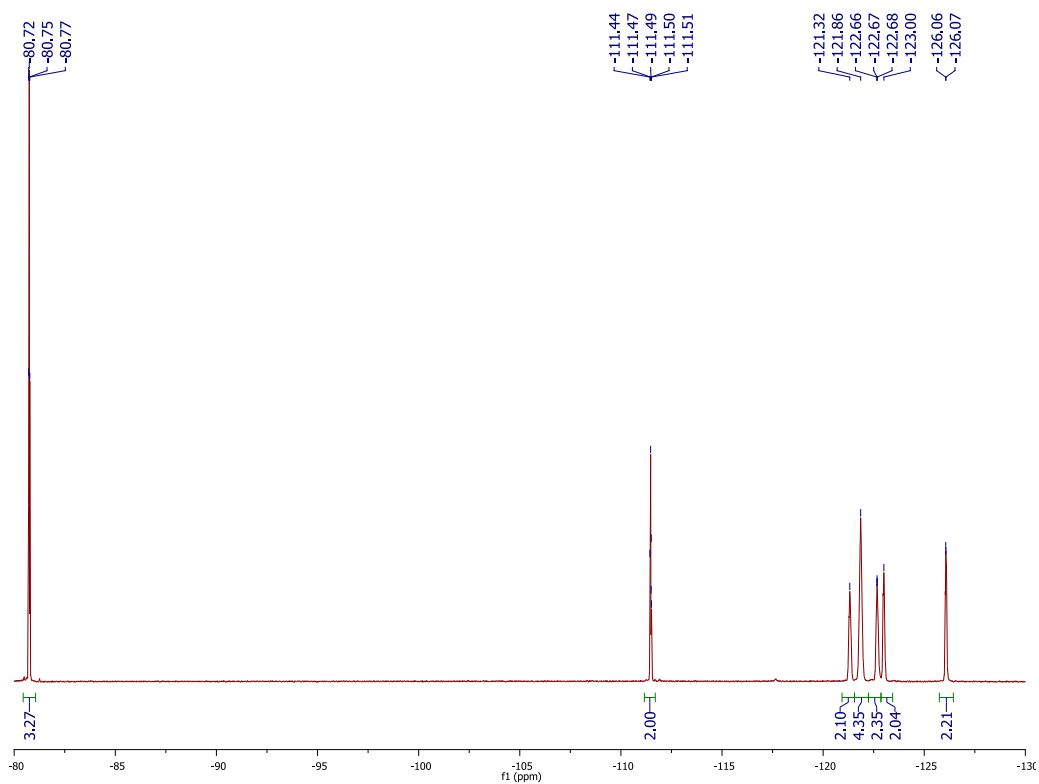
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E*)-3,5-NC₅H₃(CH=CHR_{f8})(OMe) (**17**)



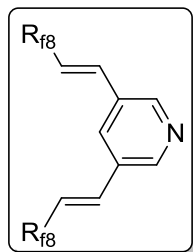
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E*)-3,5- $\text{NC}_5\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})(\text{OMe})$ (**17**)



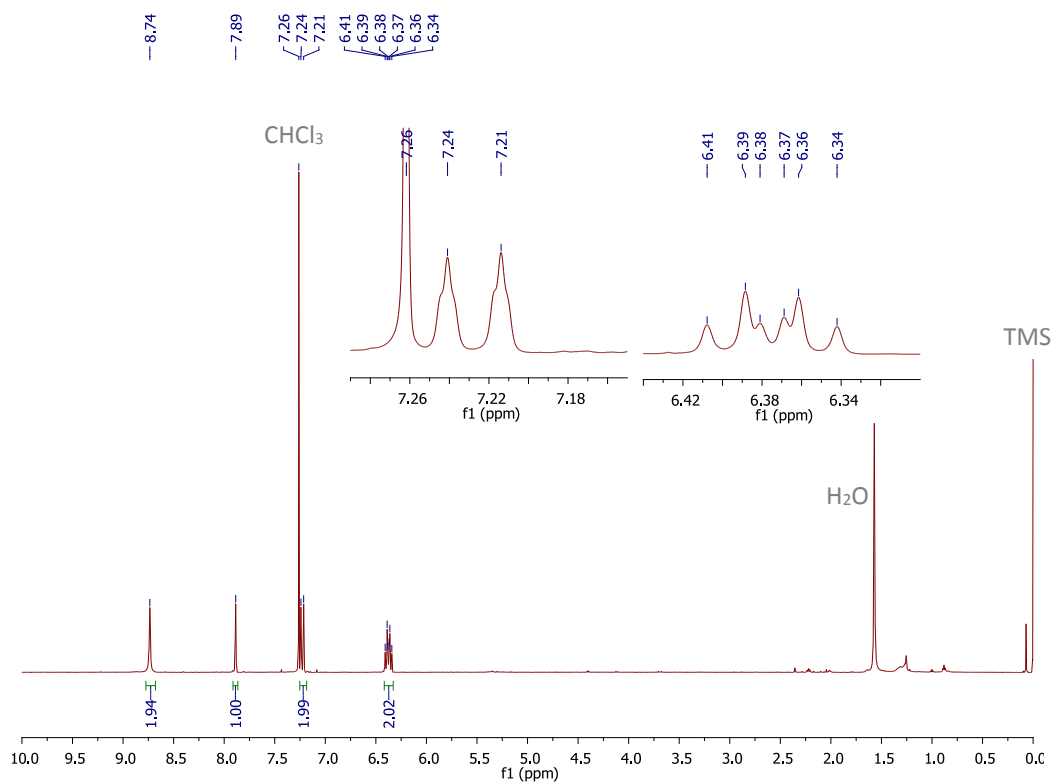
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E*)-3,5- $\text{NC}_5\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})(\text{OMe})$ (**17**)



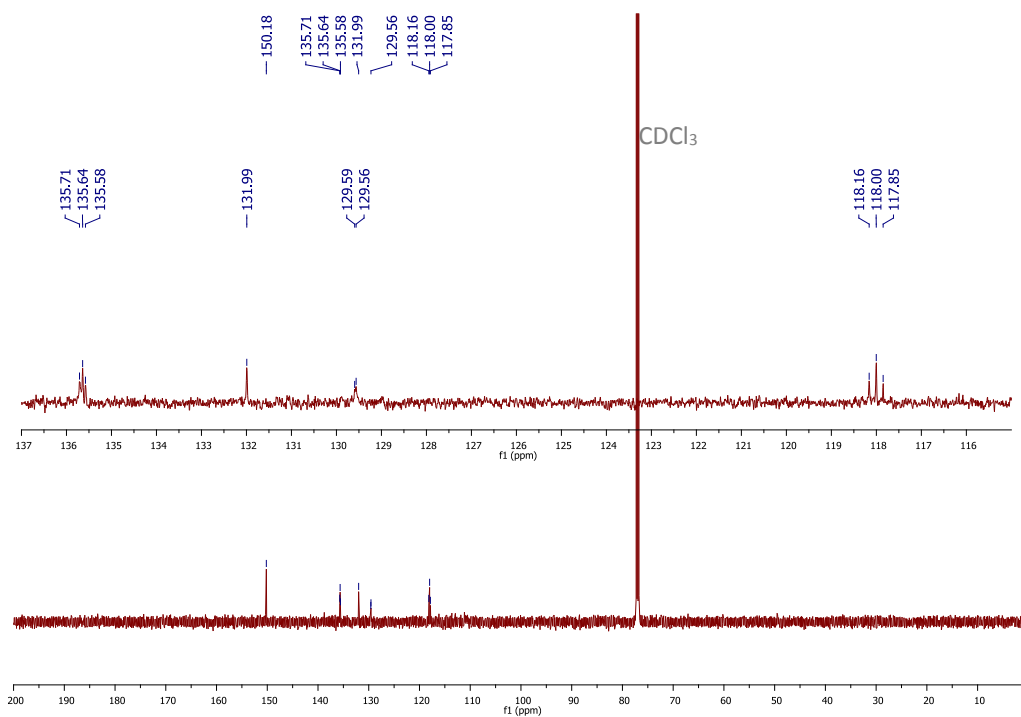
(*E,E*)-3,5-NC₅H₃(CH=CHR_{f8})₂ (18**)**



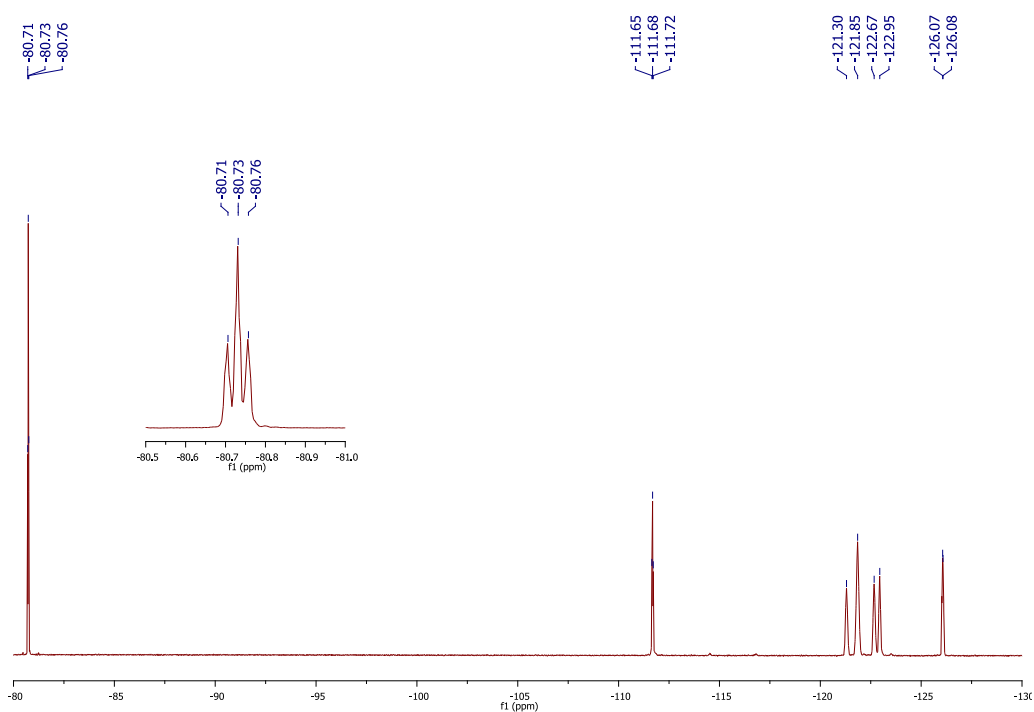
¹H NMR spectrum (CDCl₃, 400 MHz) of (*E,E*)-3,5-NC₅H₃(CH=CHR_{f8})₂ (**18**)



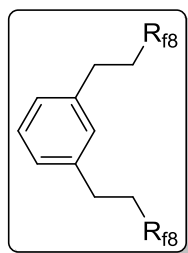
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of (*E,E*)-3,5- $\text{NC}_5\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})_2$ (**18**)



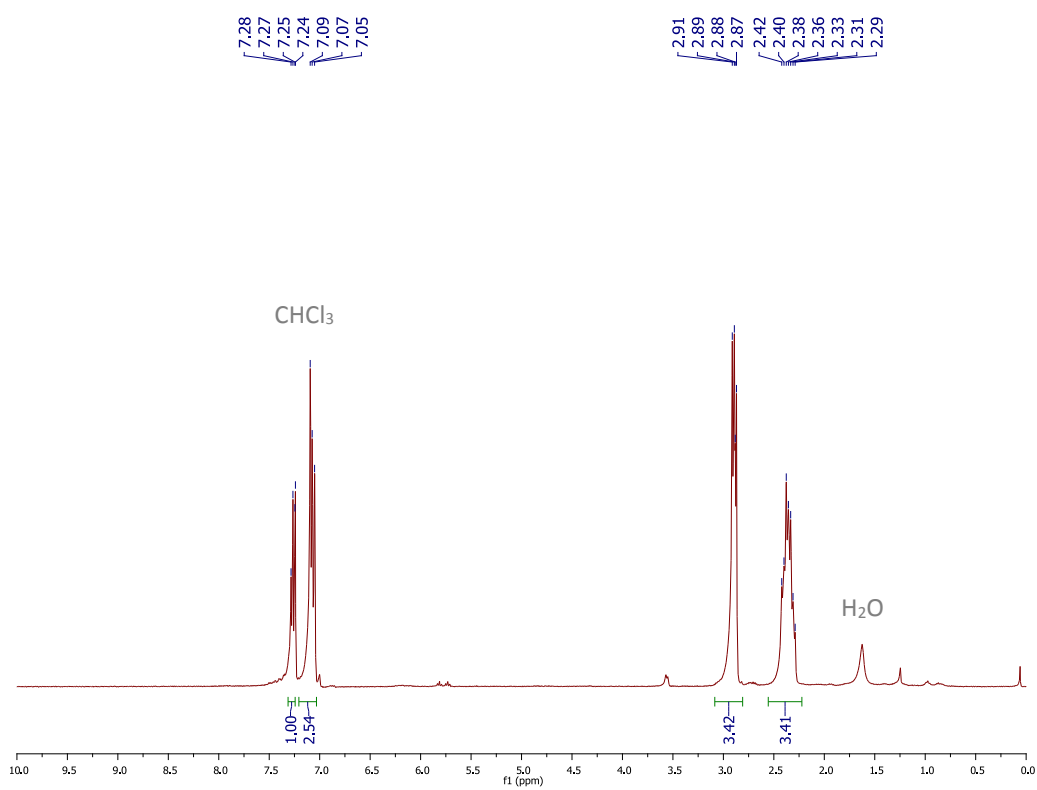
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of (*E,E*)-3,5- $\text{NC}_5\text{H}_3(\text{CH}=\text{CHR}_{\text{f8}})_2$ (**18**)



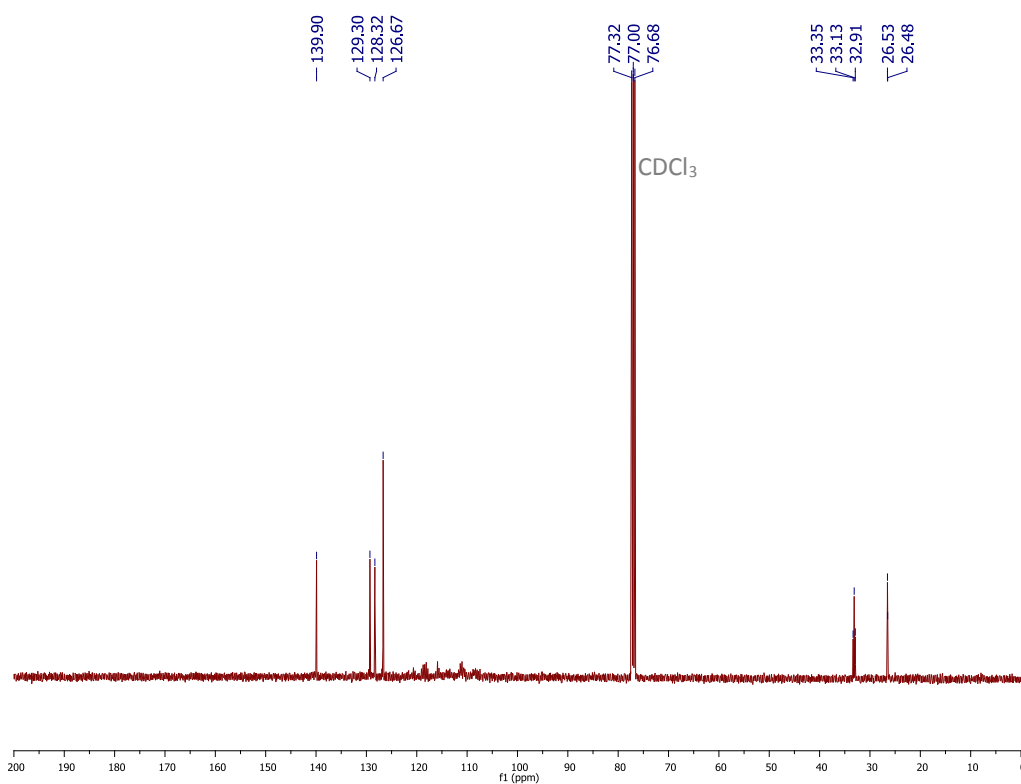
1,3-C₆H₄(CH₂CH₂R_{f8})₂ (19)



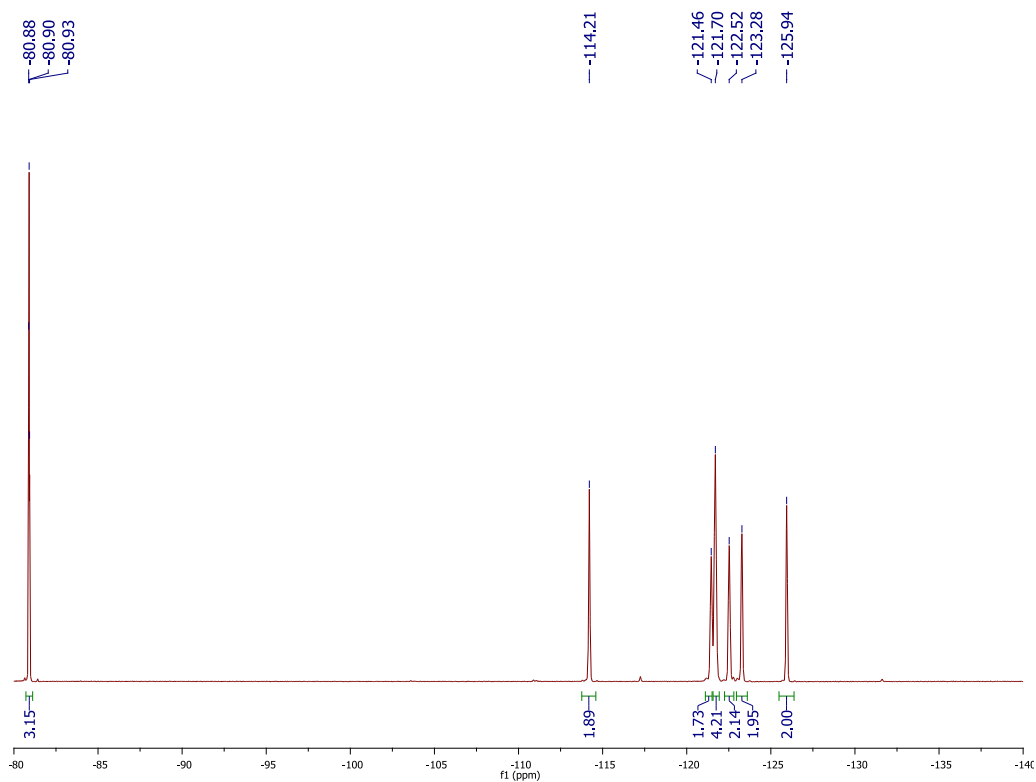
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,3-C₆H₄(CH₂CH₂R_{f8})₂ (**19**)



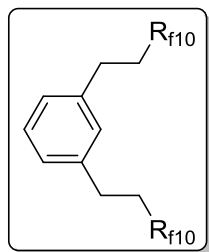
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,3- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2$ (**19**)



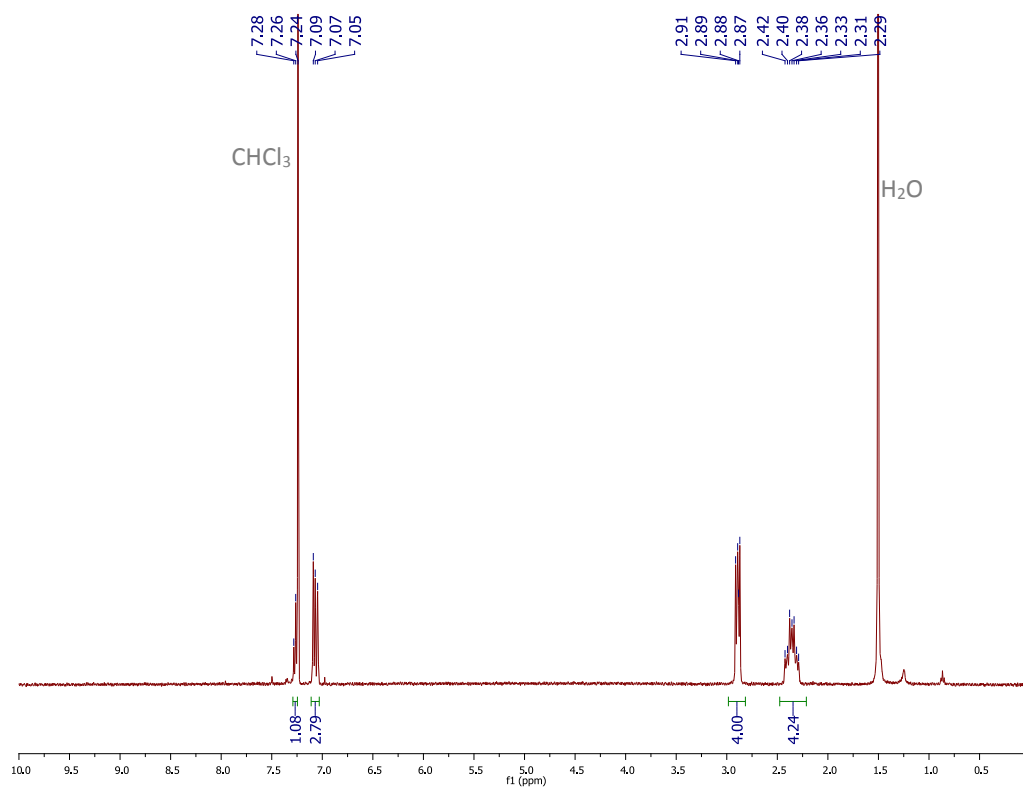
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,3- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2$ (**19**)



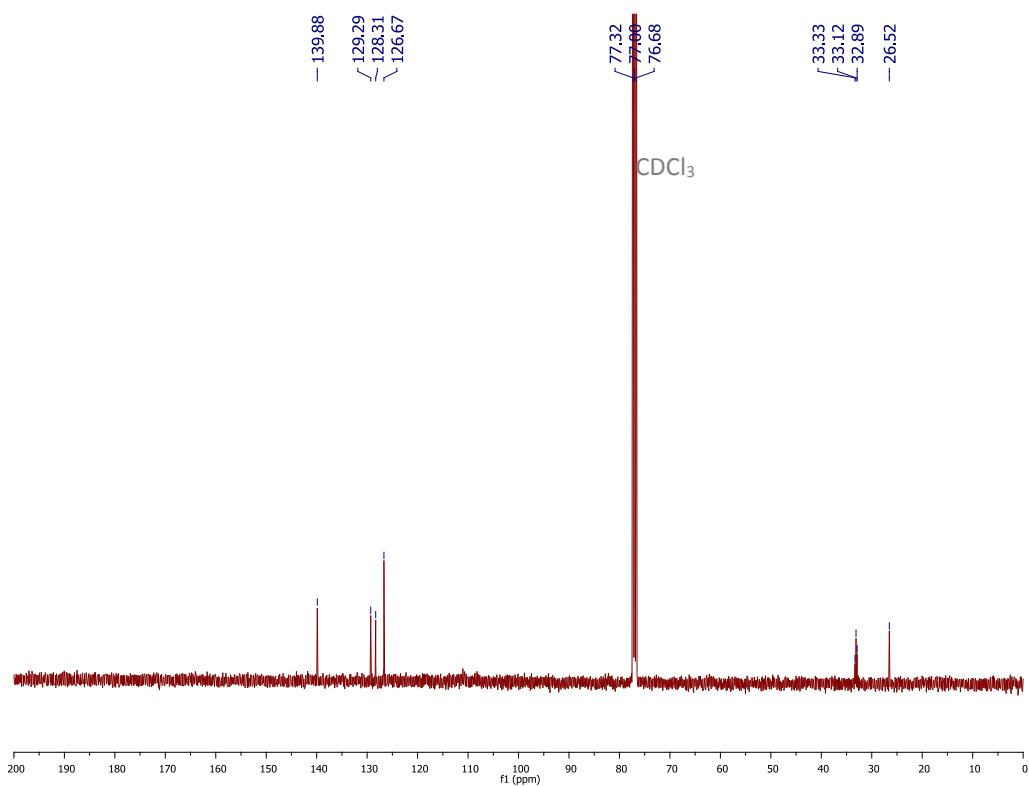
1,3-C₆H₄(CH₂CH₂R_{f10})₂ (**20**)



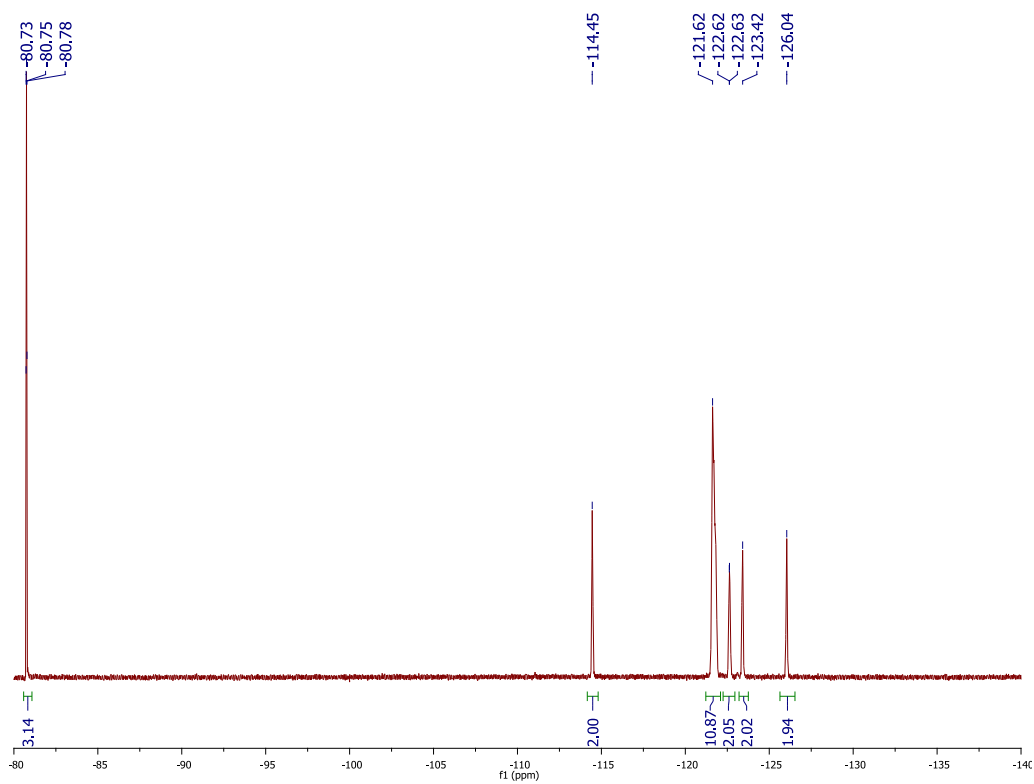
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,3-C₆H₄(CH₂CH₂R_{f10})₂ (**20**)



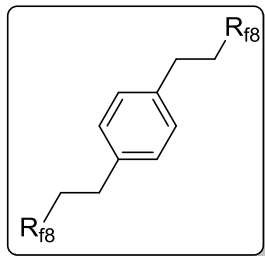
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,3- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f10}})_2$ (**20**)



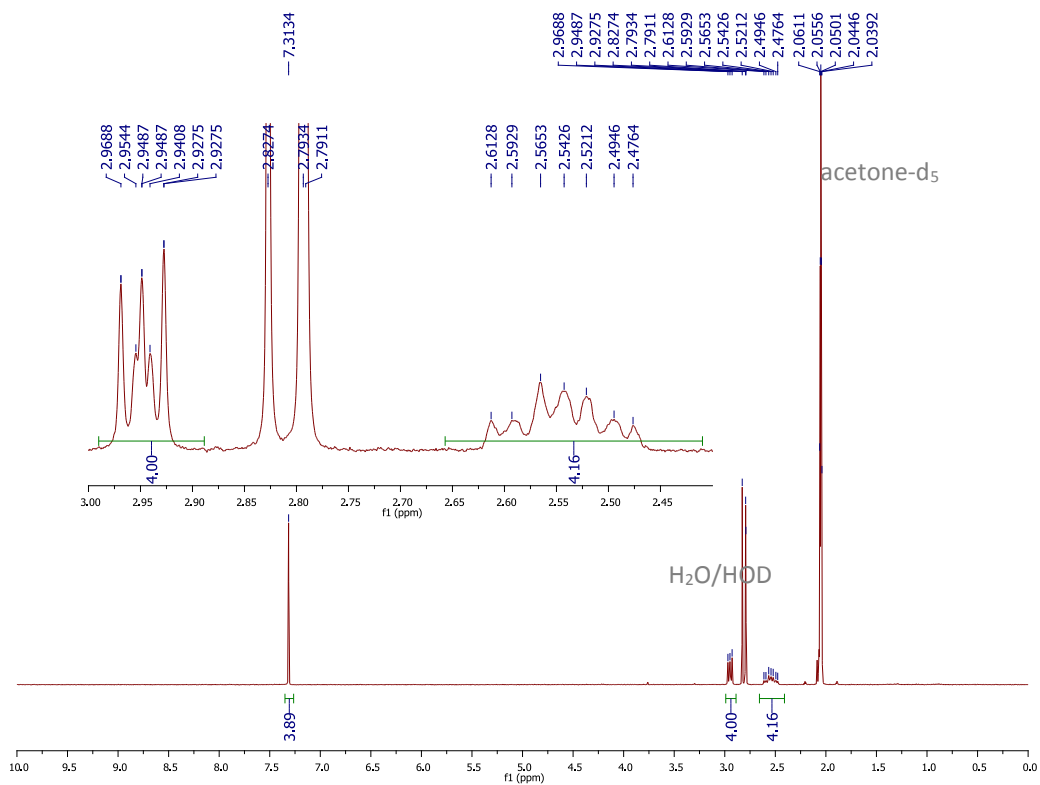
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,3- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f10}})_2$ (**20**)



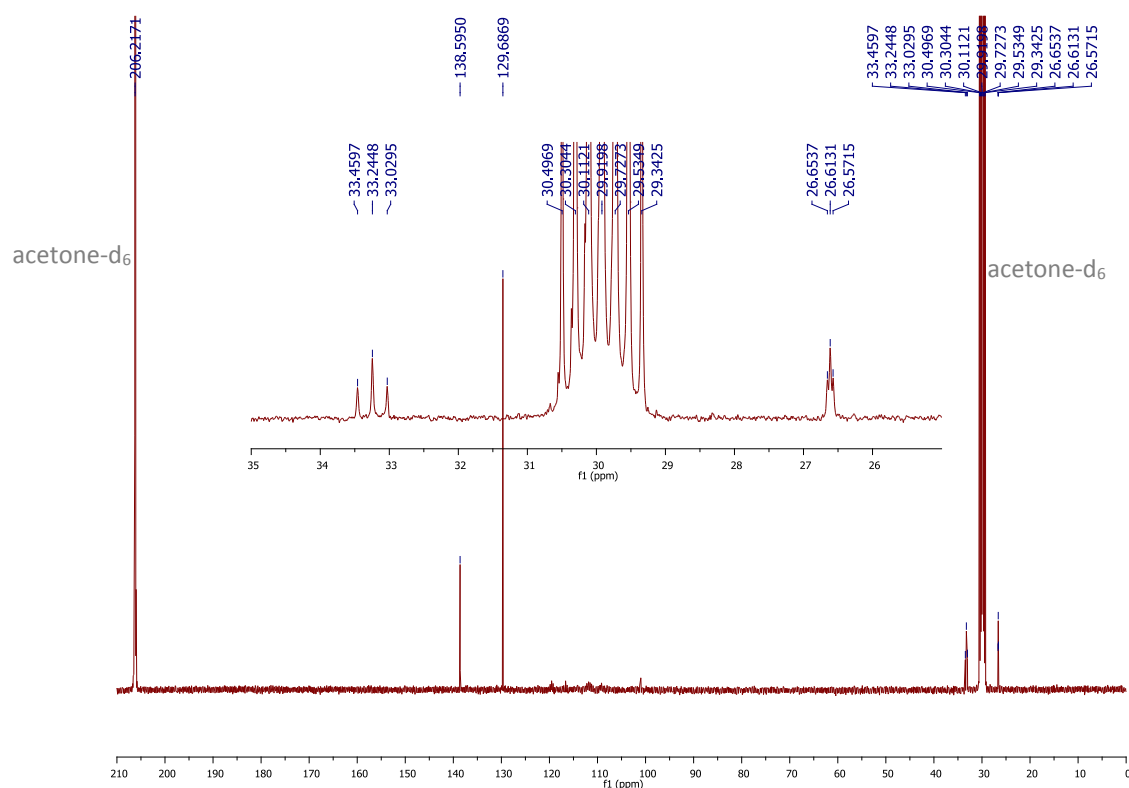
1,4-C₆H₄(CH₂CH₂R_{f8})₂ (21)



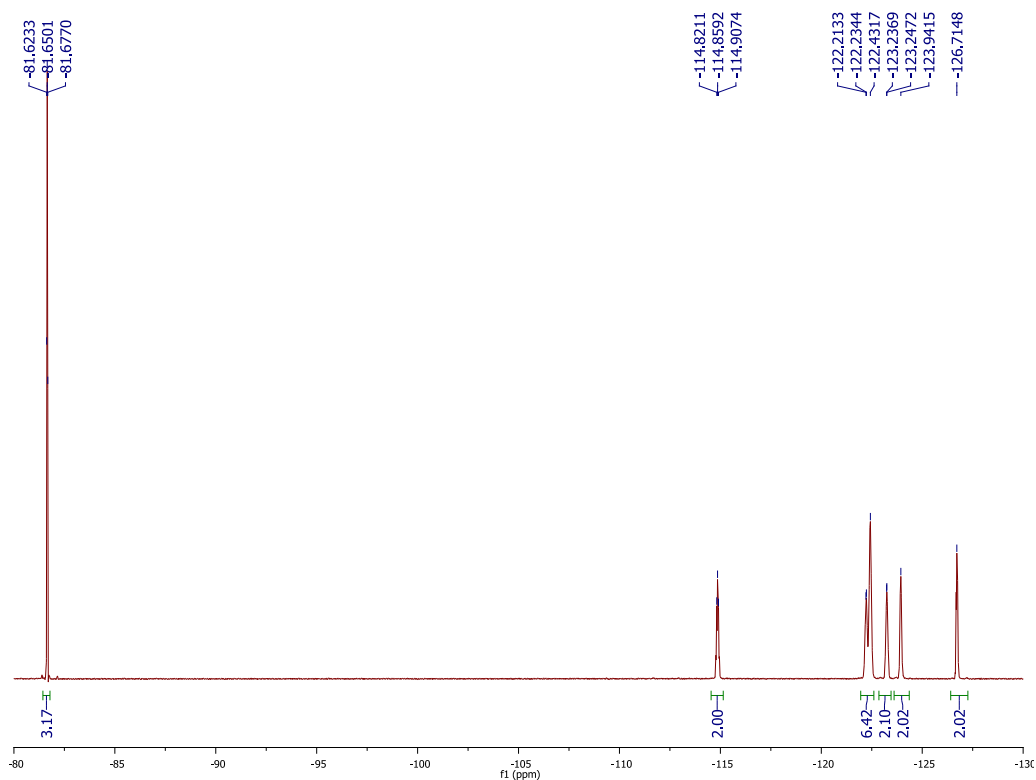
¹H NMR spectrum (acetone-d₆, 400 MHz) of 1,4-C₆H₄(CH₂CH₂R_{f8})₂ (21)



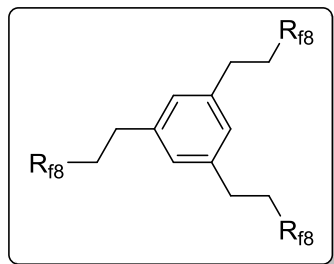
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (acetone- d_6 , 100 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2$ (**21**)



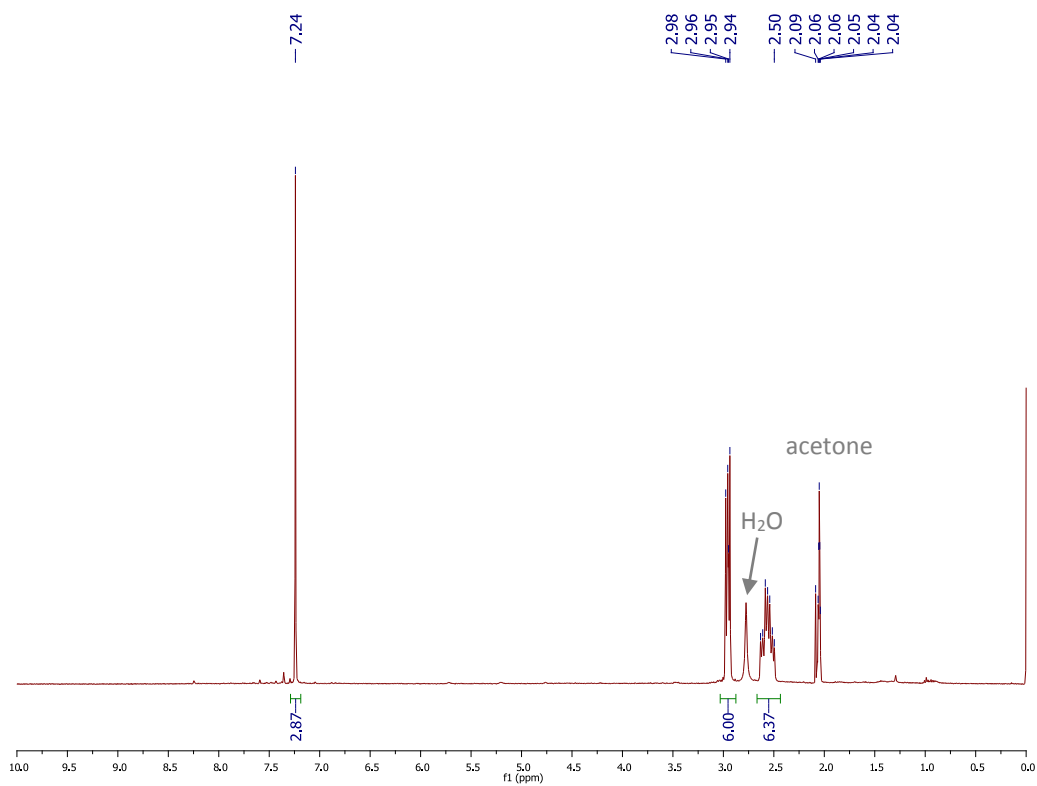
^{19}F NMR spectrum (acetone- d_6 , 376 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2$ (**21**)



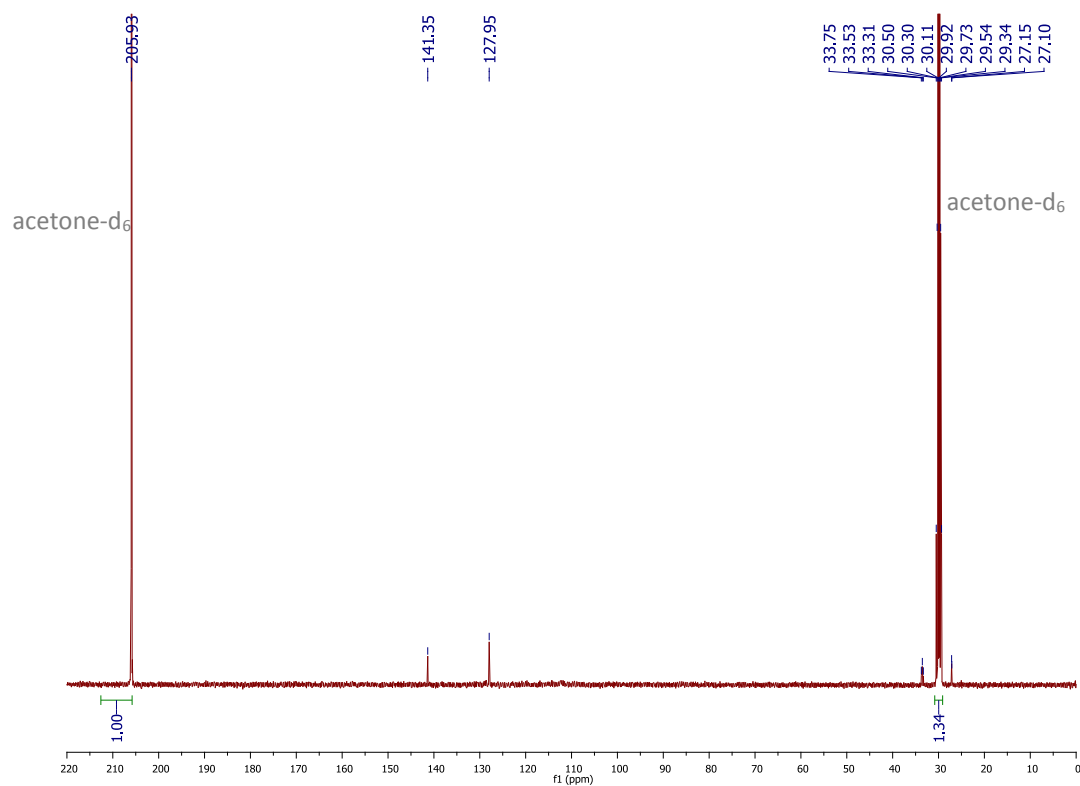
1,3,5-C₆H₃(CH₂CH₂R_{f8})₃ (22)



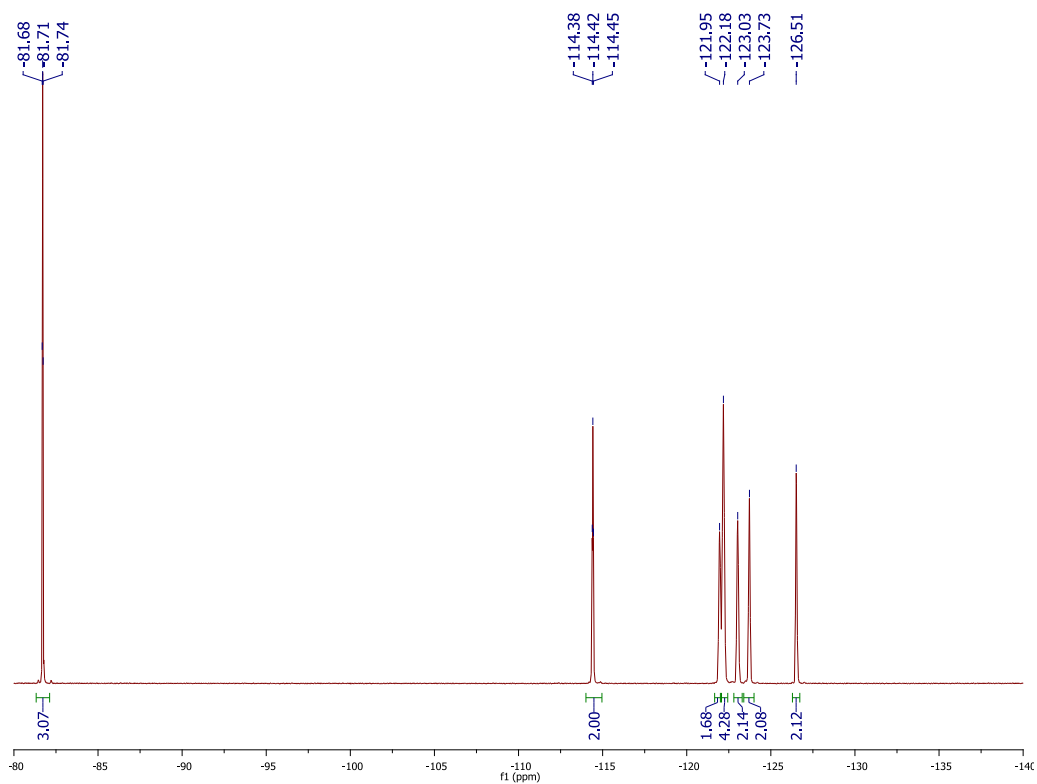
¹H NMR spectrum (acetone-d₆, 400 MHz) of 1,3,5-C₆H₃(CH₂CH₂R_{f8})₃ (**22**)



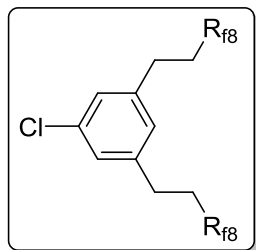
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (acetone- d_6 , 100 MHz) of 1,3,5- $\text{C}_6\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_3$ (**22**)



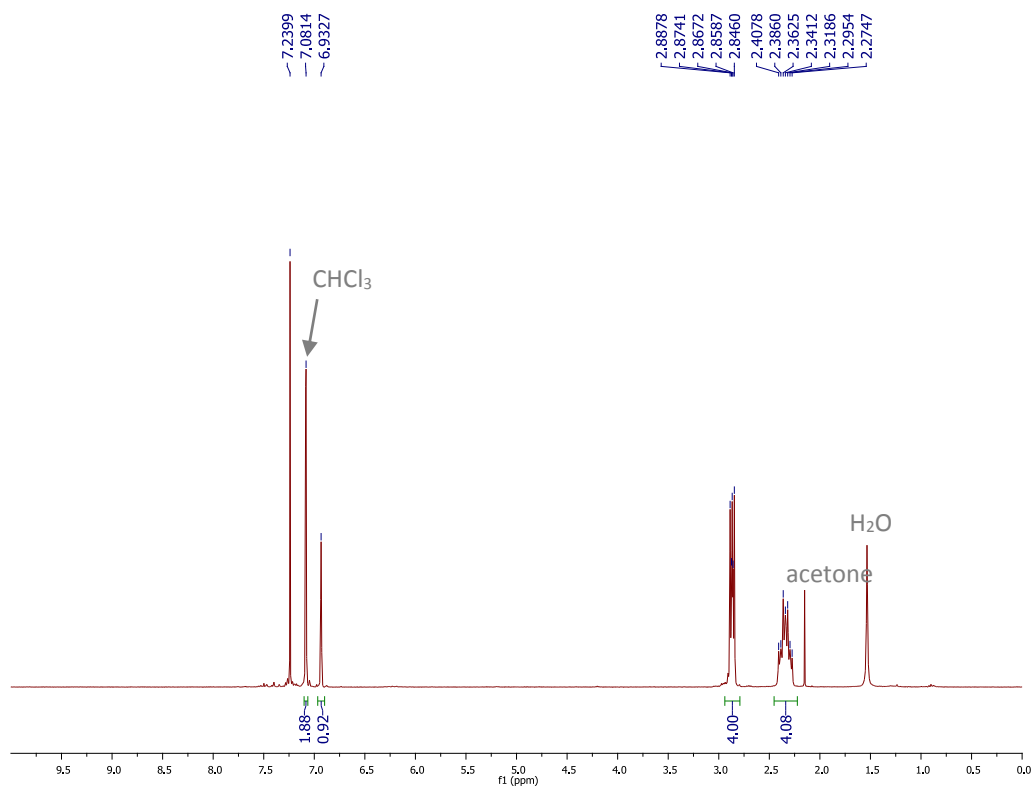
^{19}F NMR spectrum (acetone- d_6 , 376 MHz) of 1,3,5- $\text{C}_6\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_3$ (**22**)



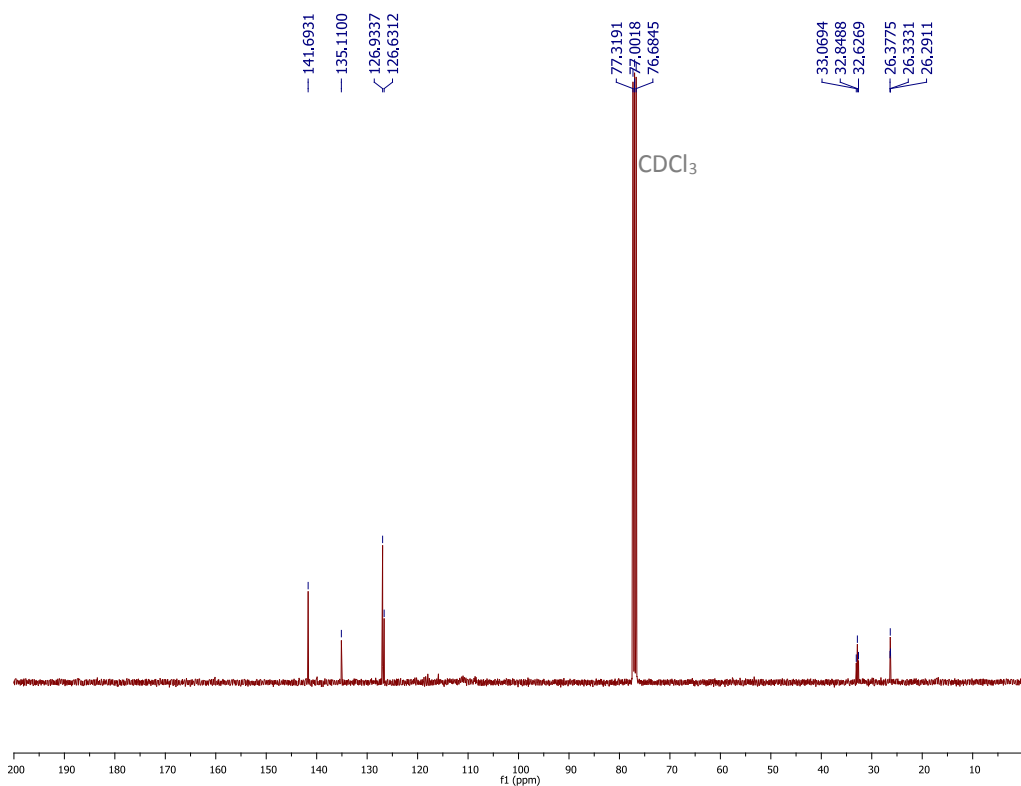
1,3,5-C₆H₃(CH₂CH₂R_{f8})₂(Cl) (23)



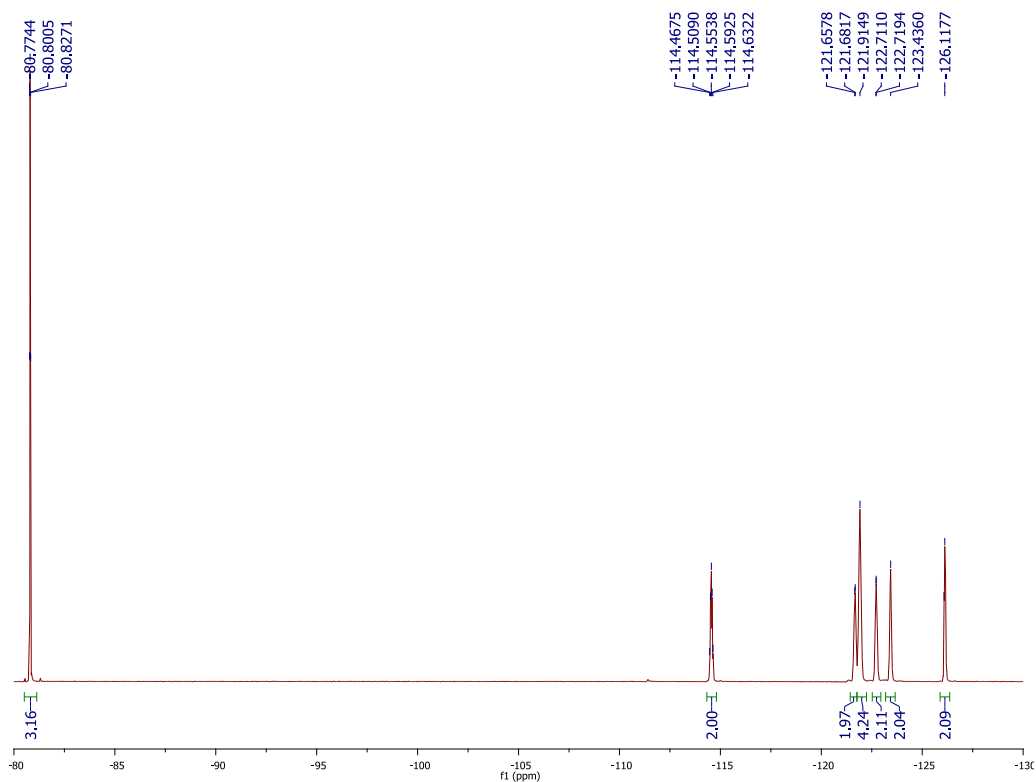
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,3,5-C₆H₃(CH₂CH₂R_{f8})₂(Cl) (**23**)



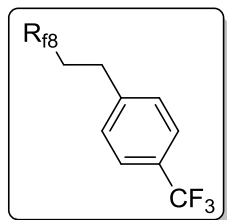
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,3,5- $\text{C}_6\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2(\text{Cl})$ (**23**)



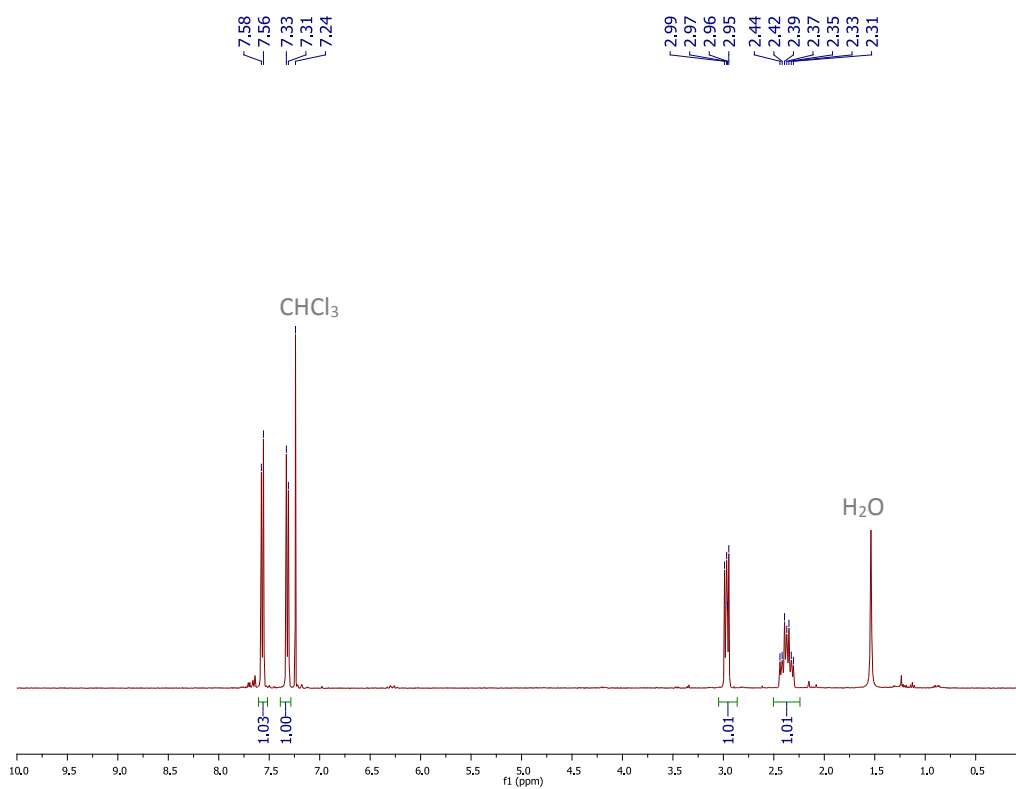
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,3,5- $\text{C}_6\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2(\text{Cl})$ (**23**)



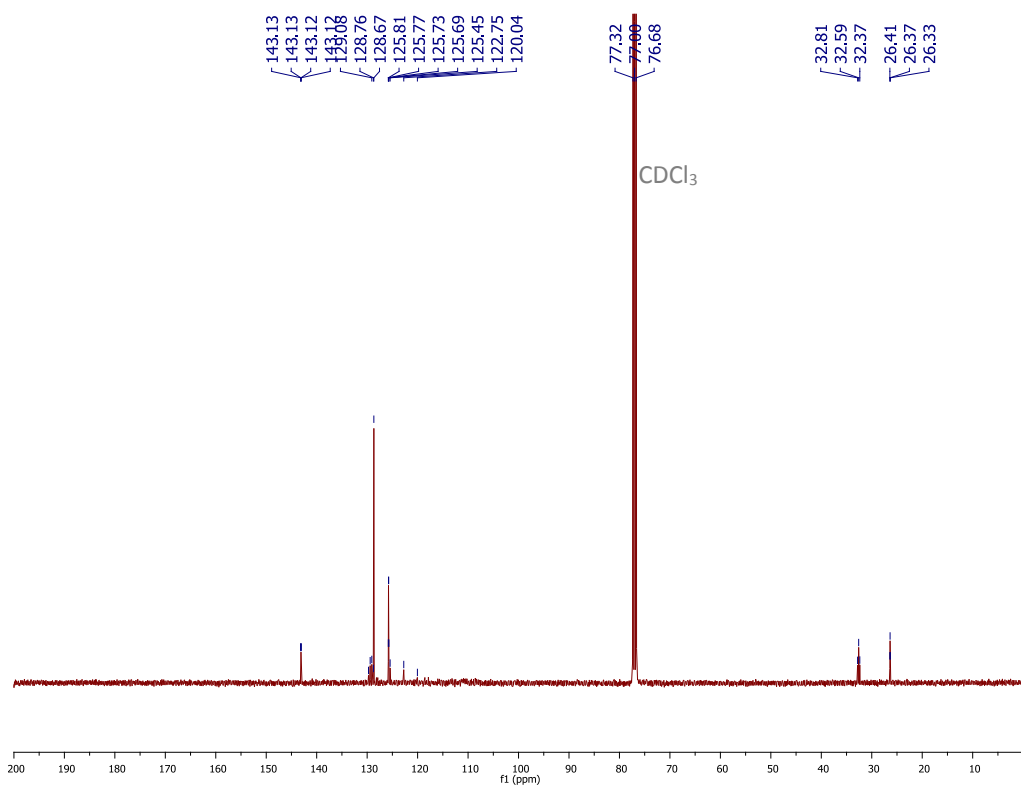
1,4-C₆H₄(CH₂CH₂R_{f8})(CF₃) (24)



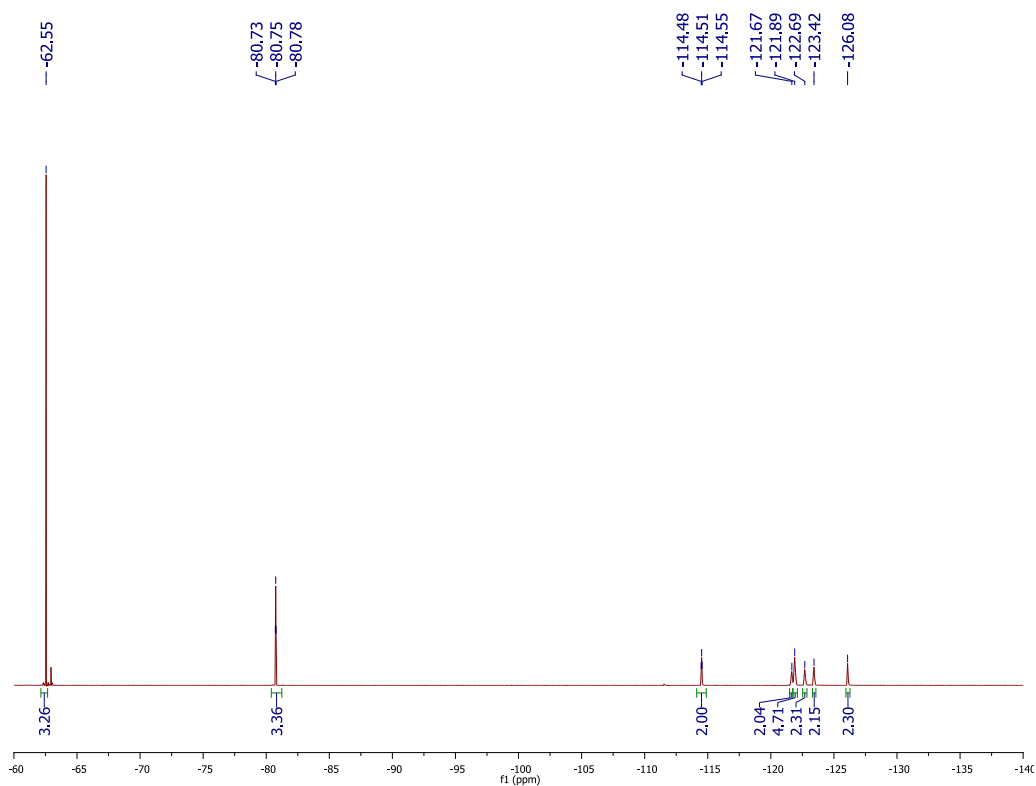
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,4-C₆H₄(CH₂CH₂R_{f8})(CF₃) (**24**)



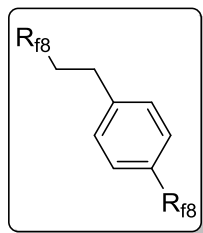
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{CF}_3)$ (**24**)



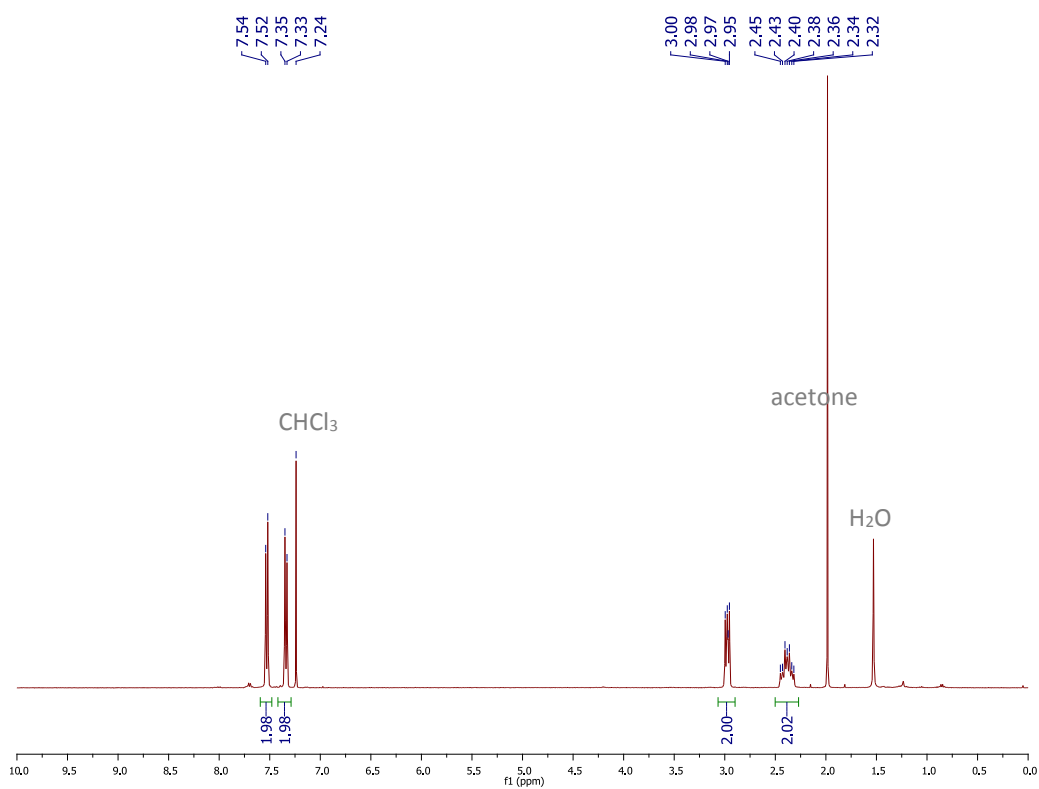
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{CF}_3)$ (**24**)



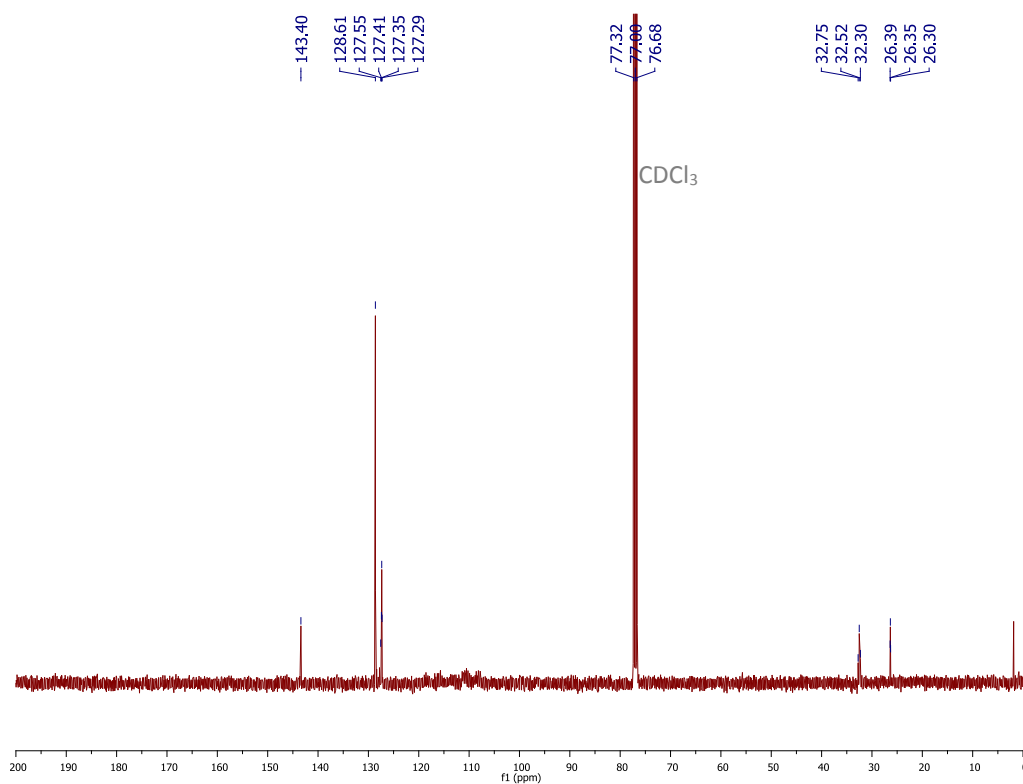
1,4-C₆H₄(CH₂CH₂R_{f8})(R_{f8}) (25)



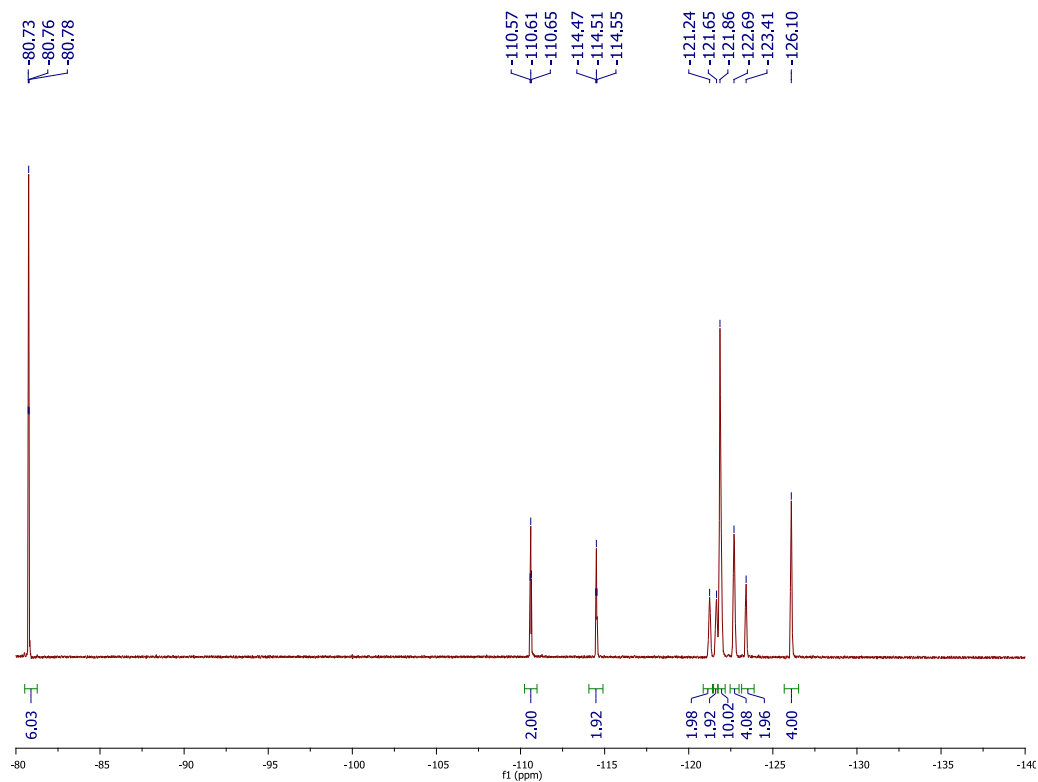
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,4-C₆H₄(CH₂CH₂R_{f8})(R_{f8}) (25)



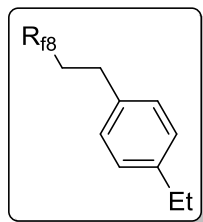
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{R}_{\text{f8}})$ (**25**)



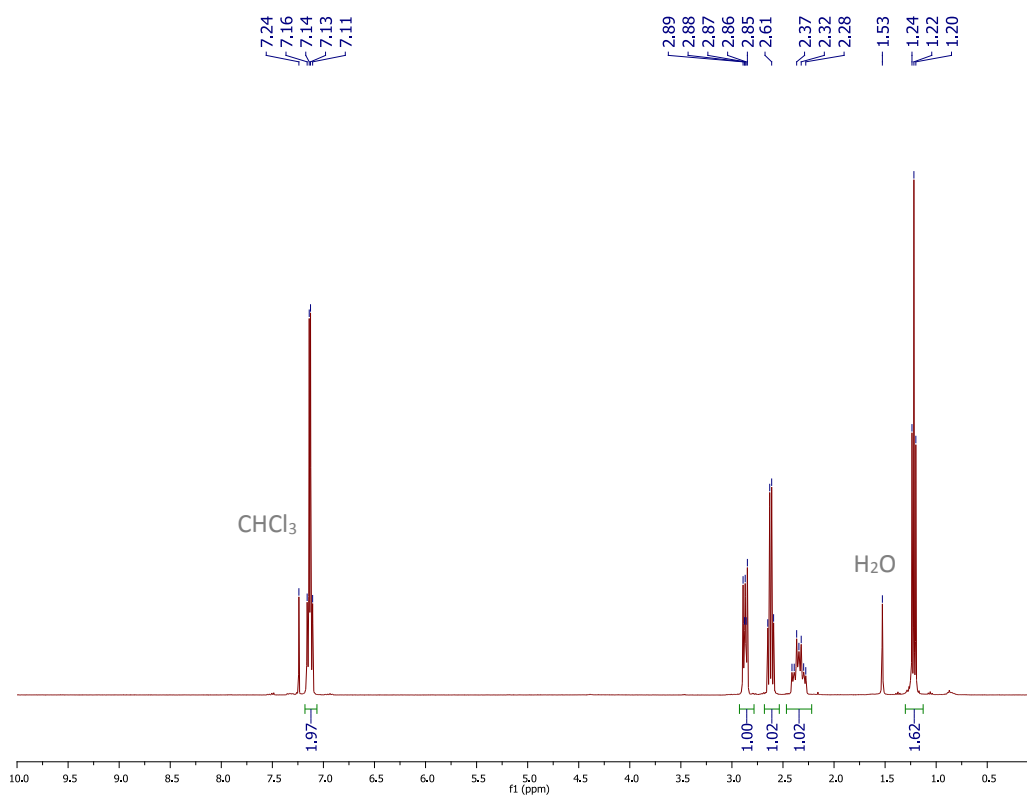
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{R}_{\text{f8}})$ (**25**)



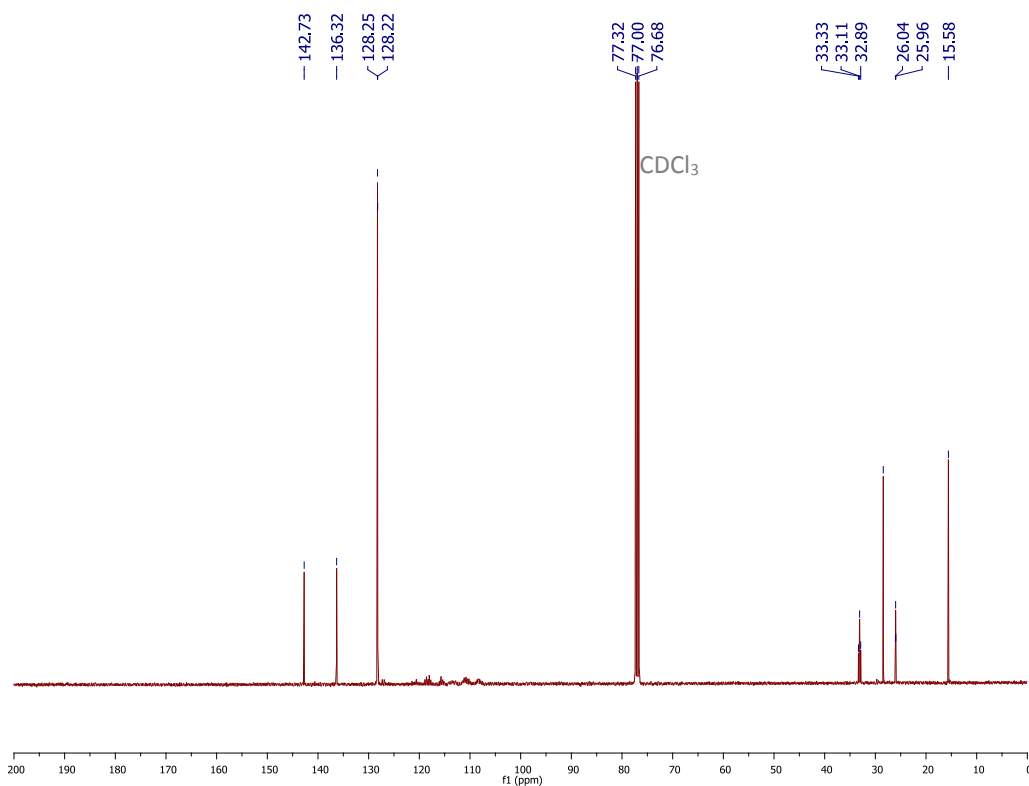
1,4-C₆H₄(CH₂CH₂R_{f8})(CH₂CH₃) (26)



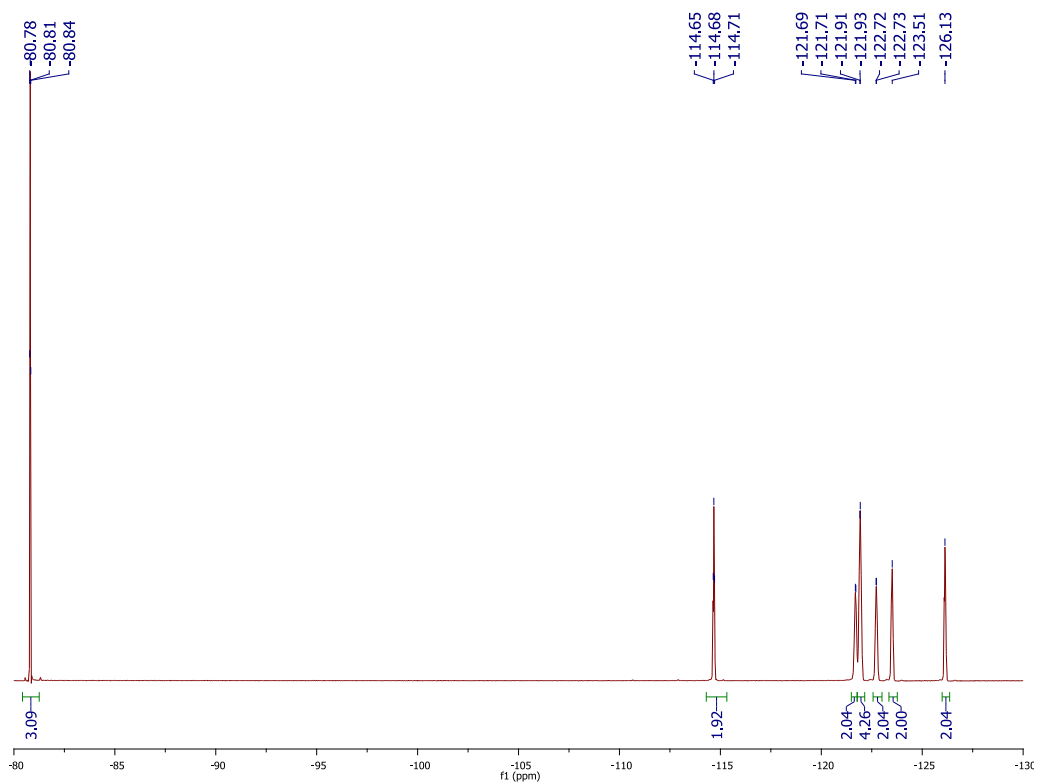
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,4-C₆H₄(CH₂CH₂R_{f8})(CH₂CH₃) (**26**)



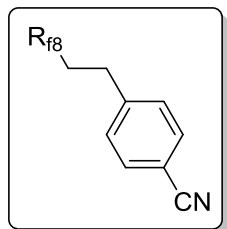
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{CH}_2\text{CH}_3)$ (**26**)



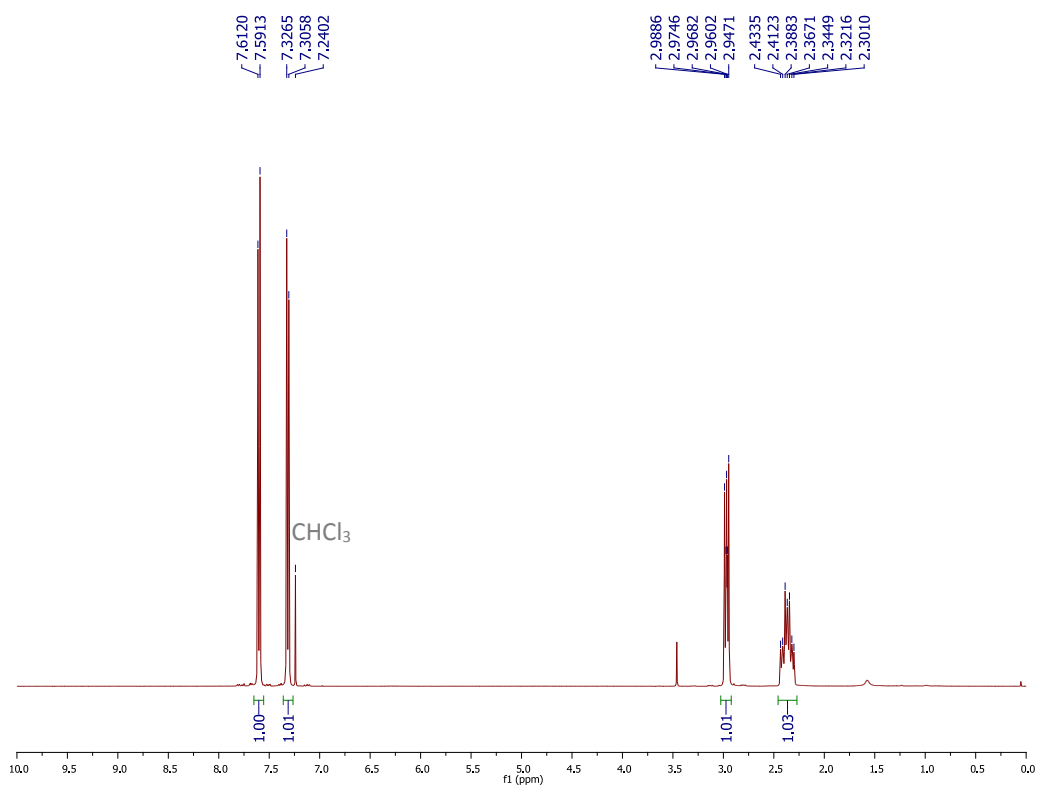
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{CH}_2\text{CH}_3)$ (**26**)



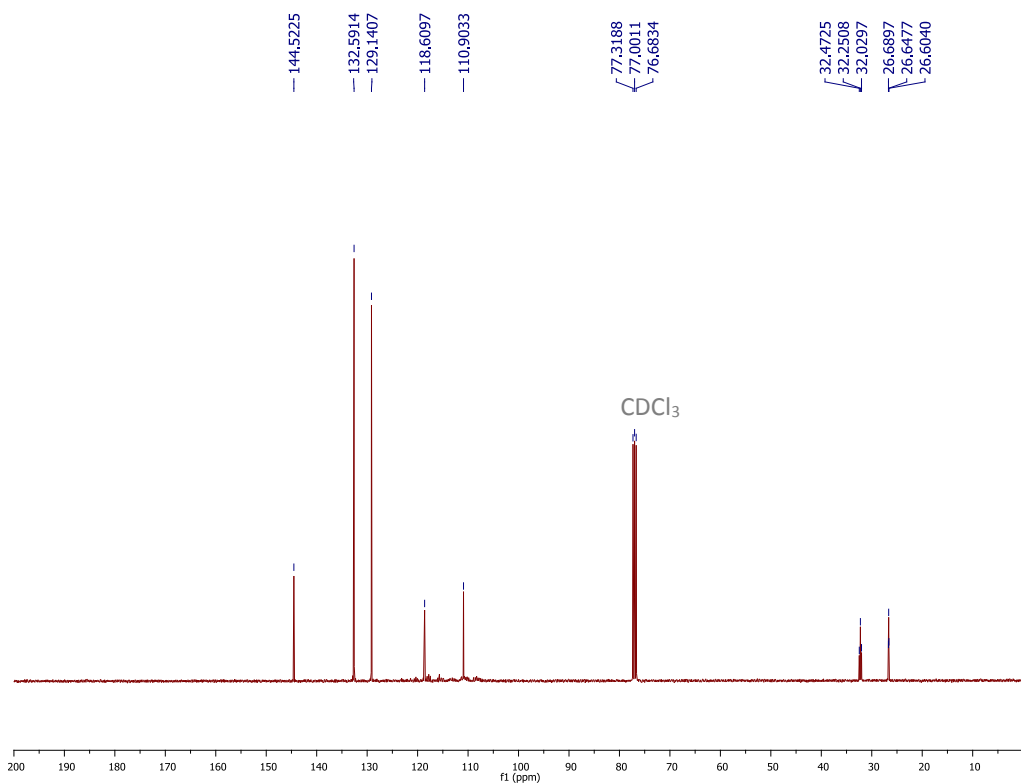
1,4-C₆H₄(CH₂CH₂R_{f8})(CN) (27)



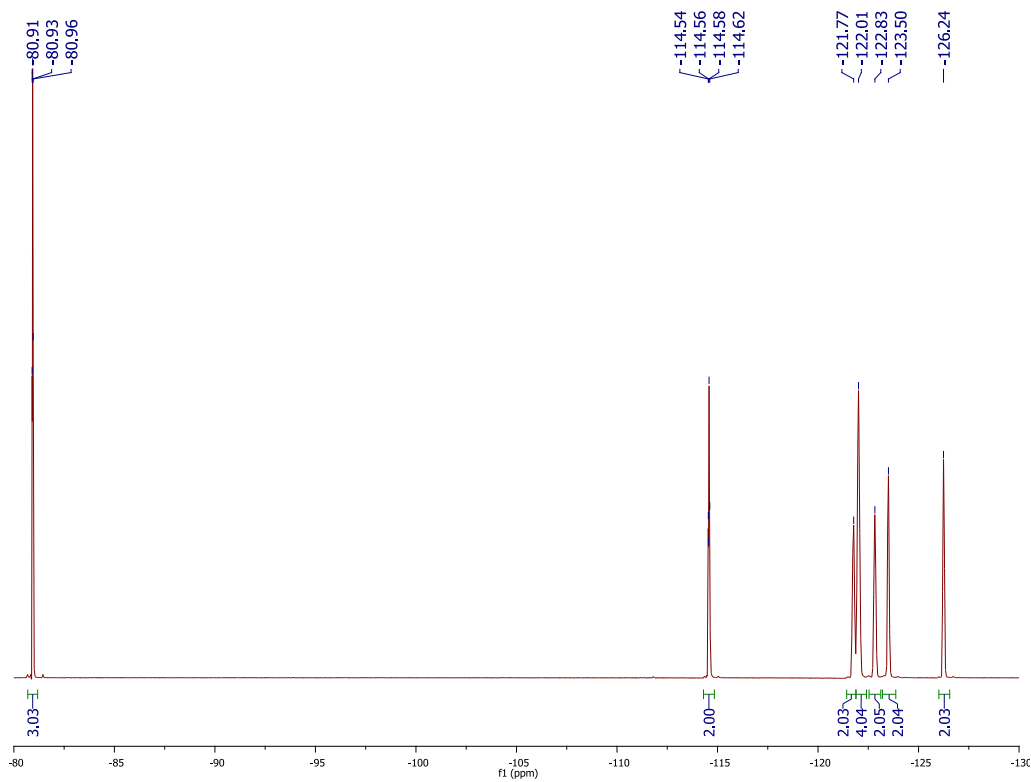
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,4-C₆H₄(CH₂CH₂R_{f8})(CN) (**27**)



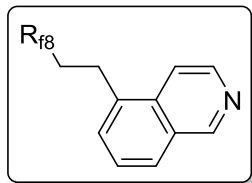
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{CN})$ (**27**)



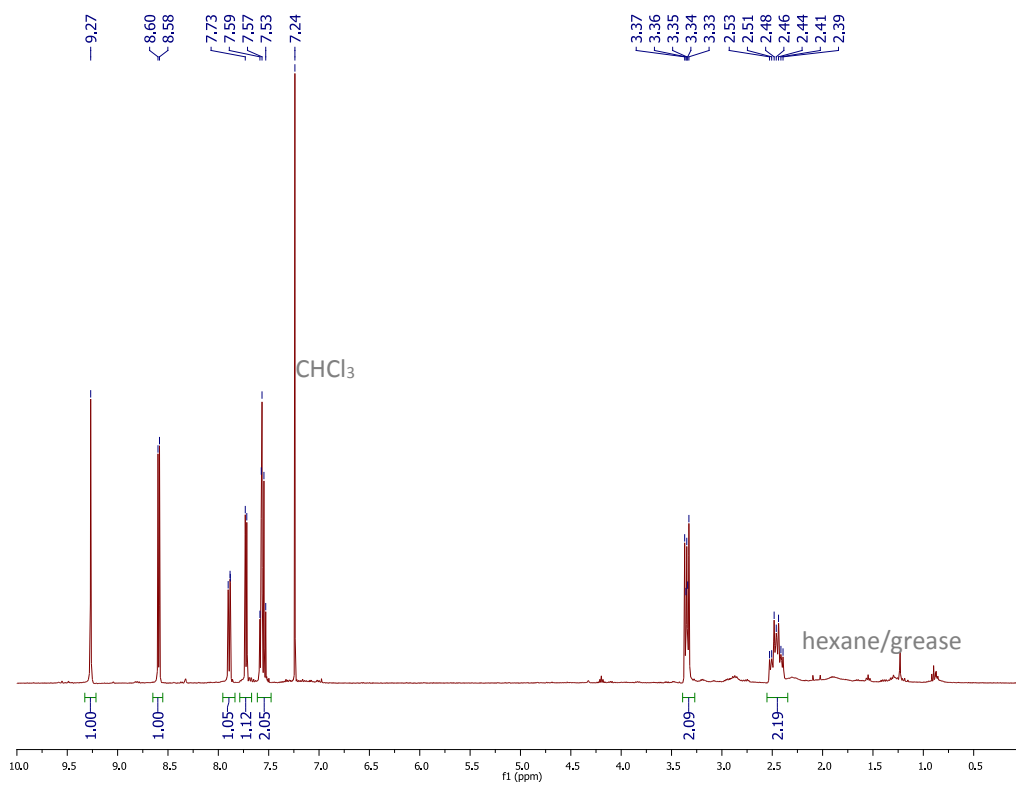
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,4- $\text{C}_6\text{H}_4(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})(\text{CN})$ (**27**)



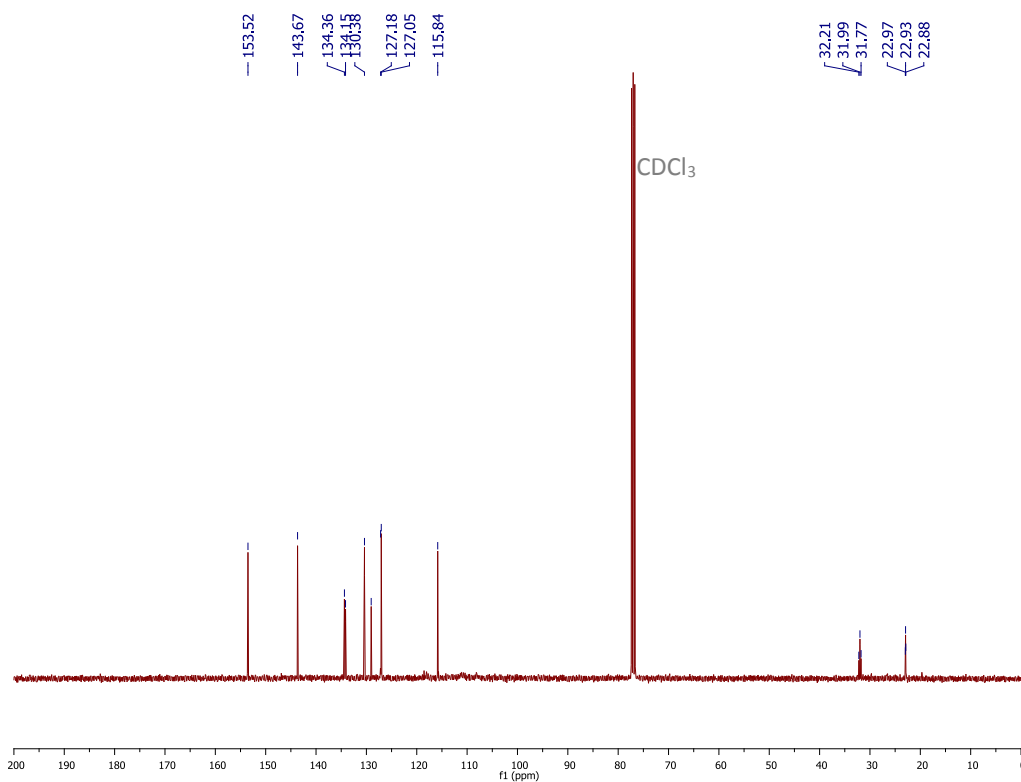
5-iso-NC₉H₆(CH₂CH₂R_{f8}) (28)



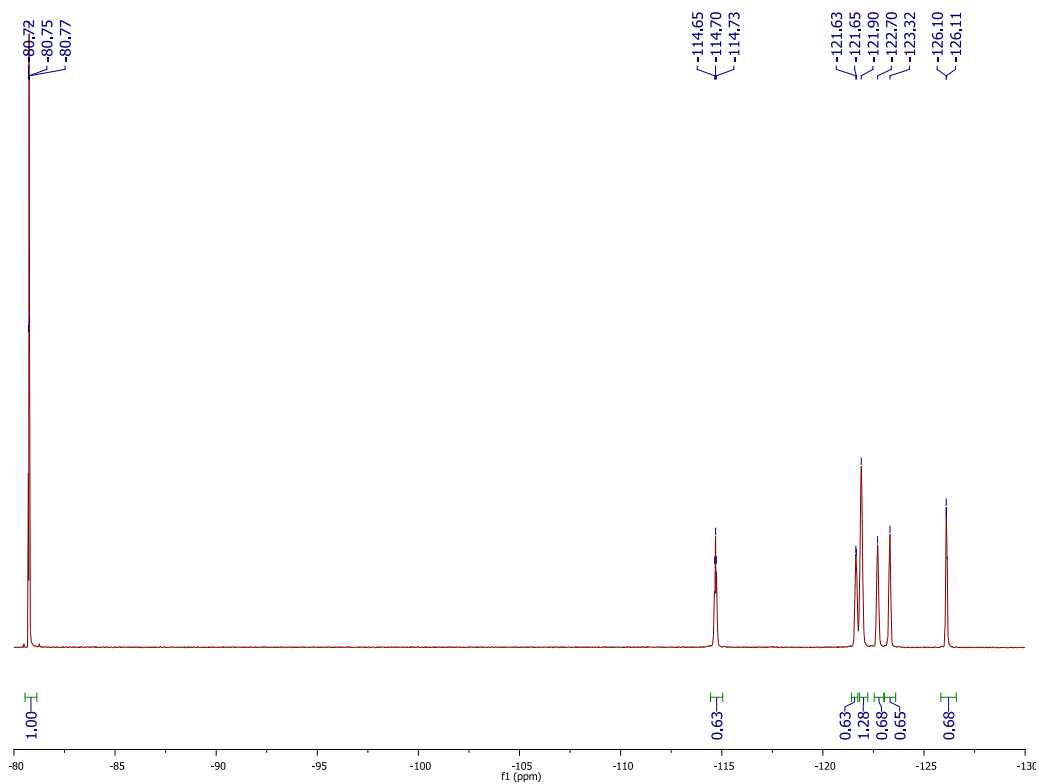
¹H NMR spectrum (CDCl₃, 400 MHz) of 5-iso-NC₉H₆(CH₂CH₂R_{f8}) (28)



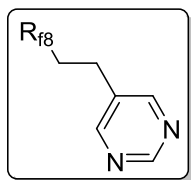
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 5-iso- $\text{NC}_9\text{H}_6(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})$ (**28**)



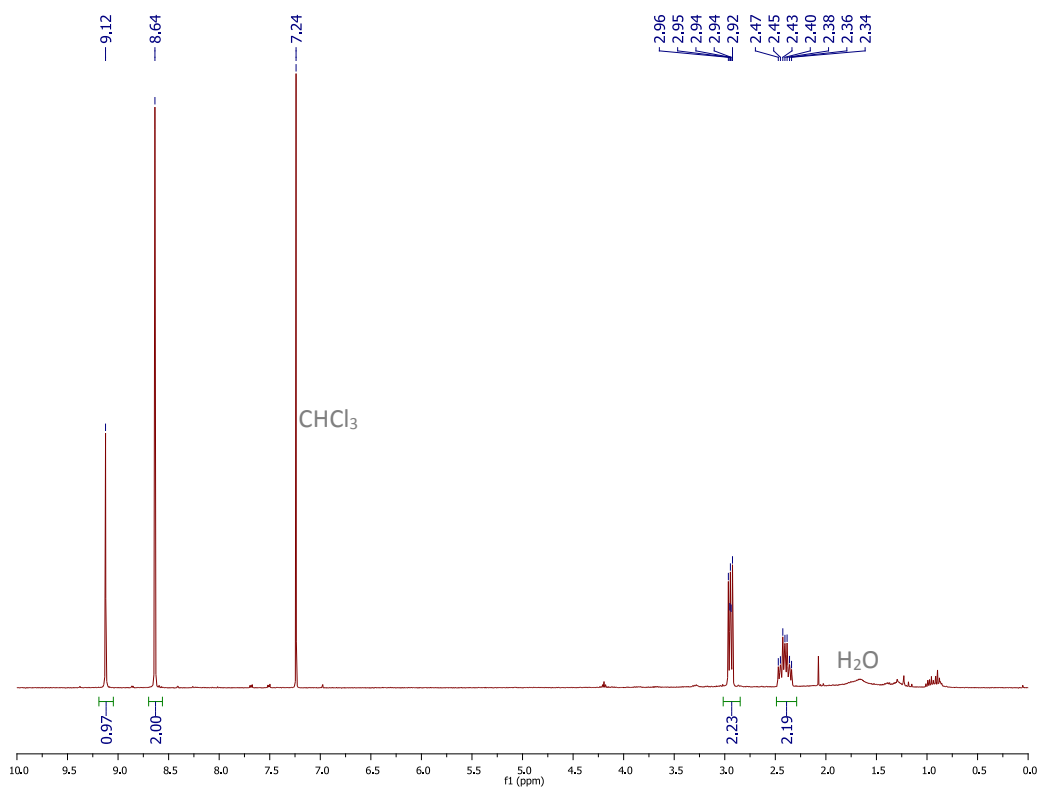
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 5-iso- $\text{NC}_9\text{H}_6(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})$ (**28**)



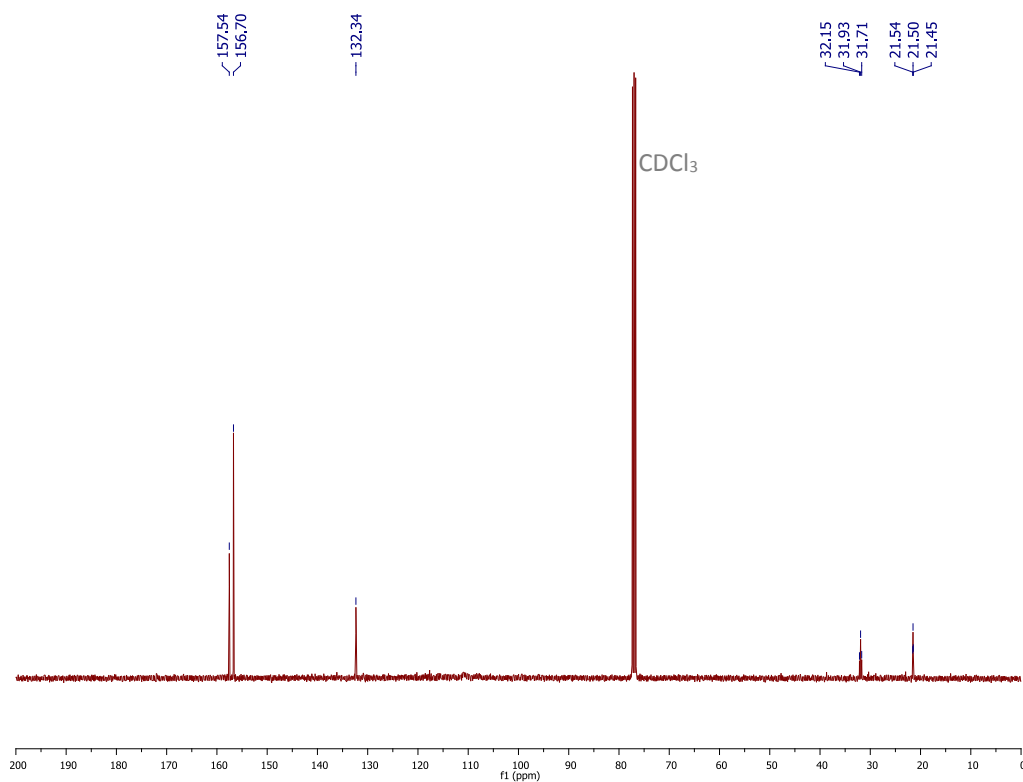
1,3,5-N₂C₄H₃(CH₂CH₂R_{f8}) (29)



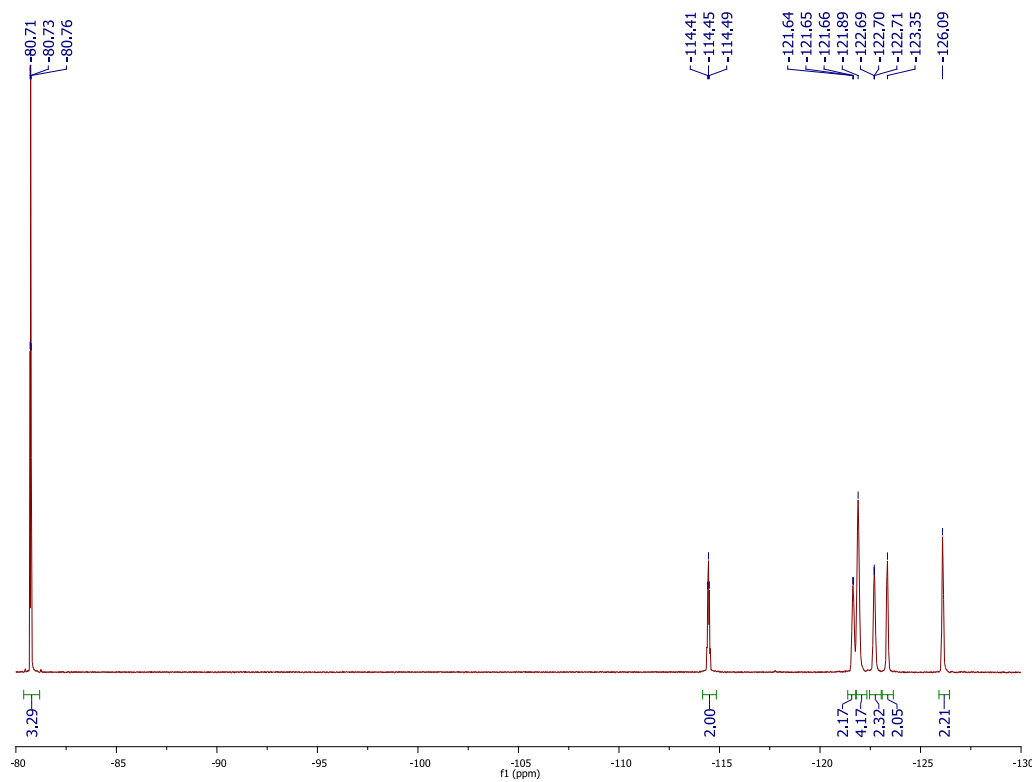
¹H NMR spectrum (CDCl₃, 400 MHz) of 1,3,5-N₂C₄H₃(CH₂CH₂R_{f8}) (29)



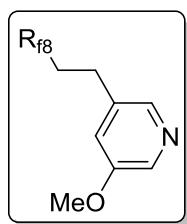
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 1,3,5- $\text{N}_2\text{C}_4\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})$ (**29**)



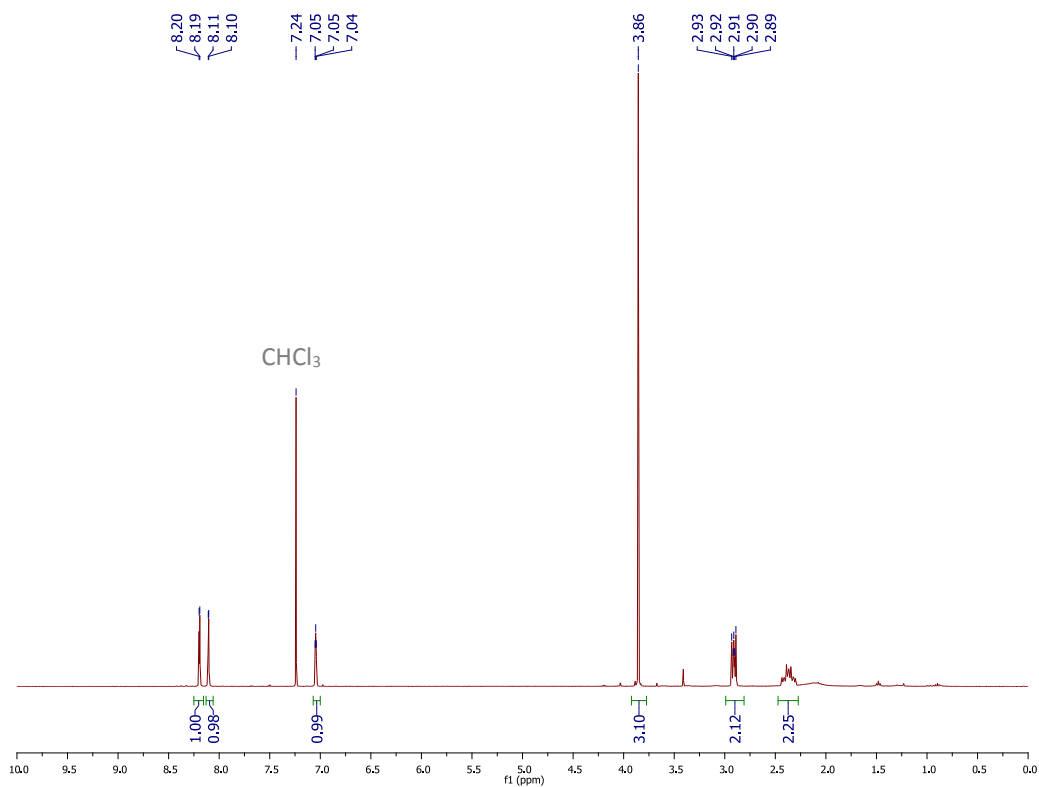
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 1,3,5- $\text{N}_2\text{C}_4\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})$ (**29**)



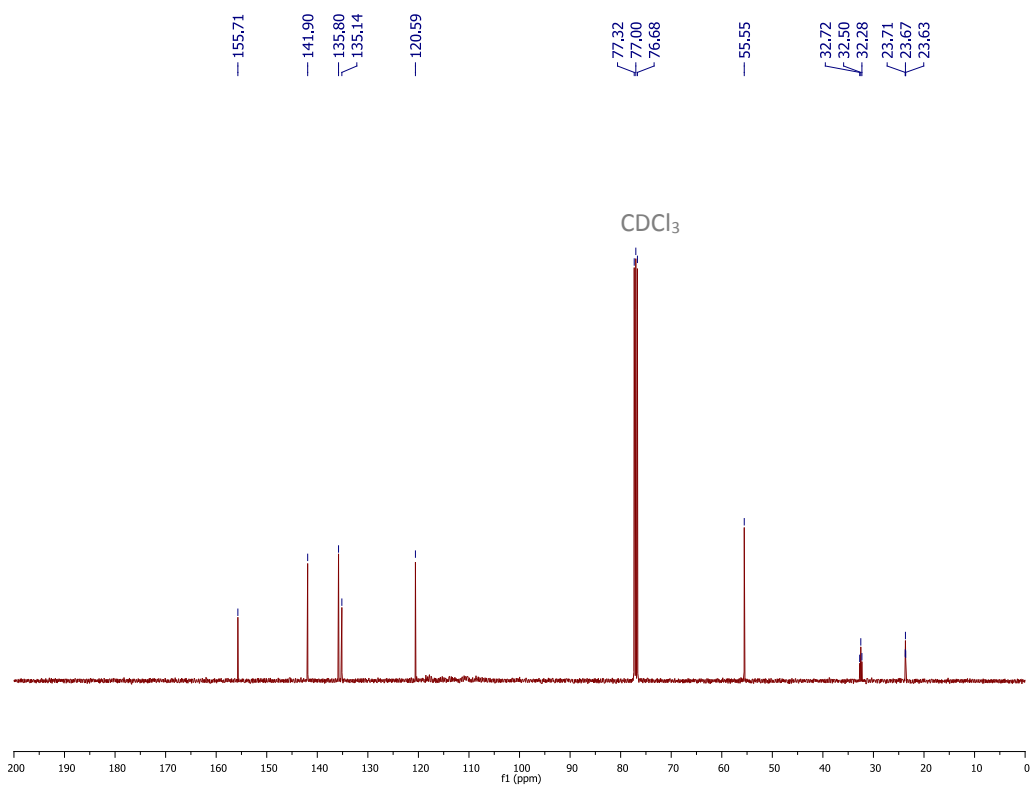
3,5-NC₅H₃(CH₂CHR_{f8})(OMe) (30)



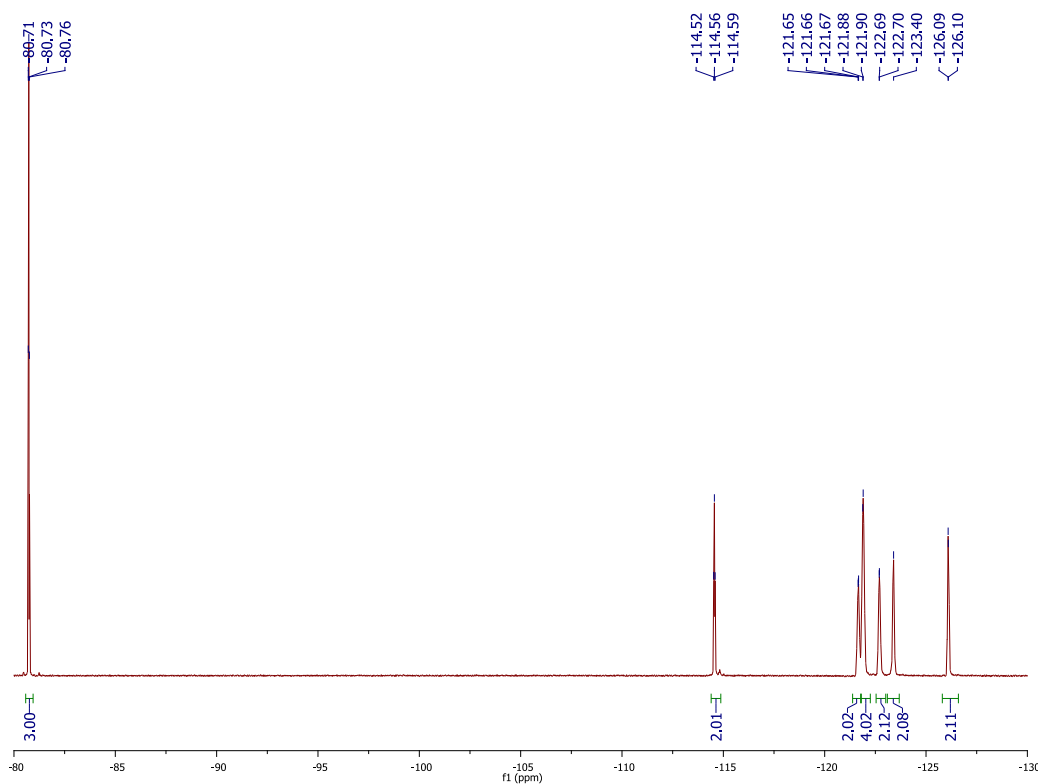
¹H NMR spectrum (CDCl₃, 400 MHz) of 3,5-NC₅H₃(CH₂CHR_{f8})(OMe) (30)



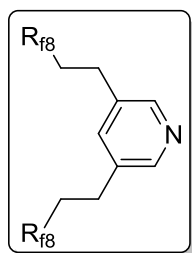
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 3,5- $\text{NC}_5\text{H}_3(\text{CH}_2\text{CHR}_{\text{f8}})(\text{OMe})$ (**30**)



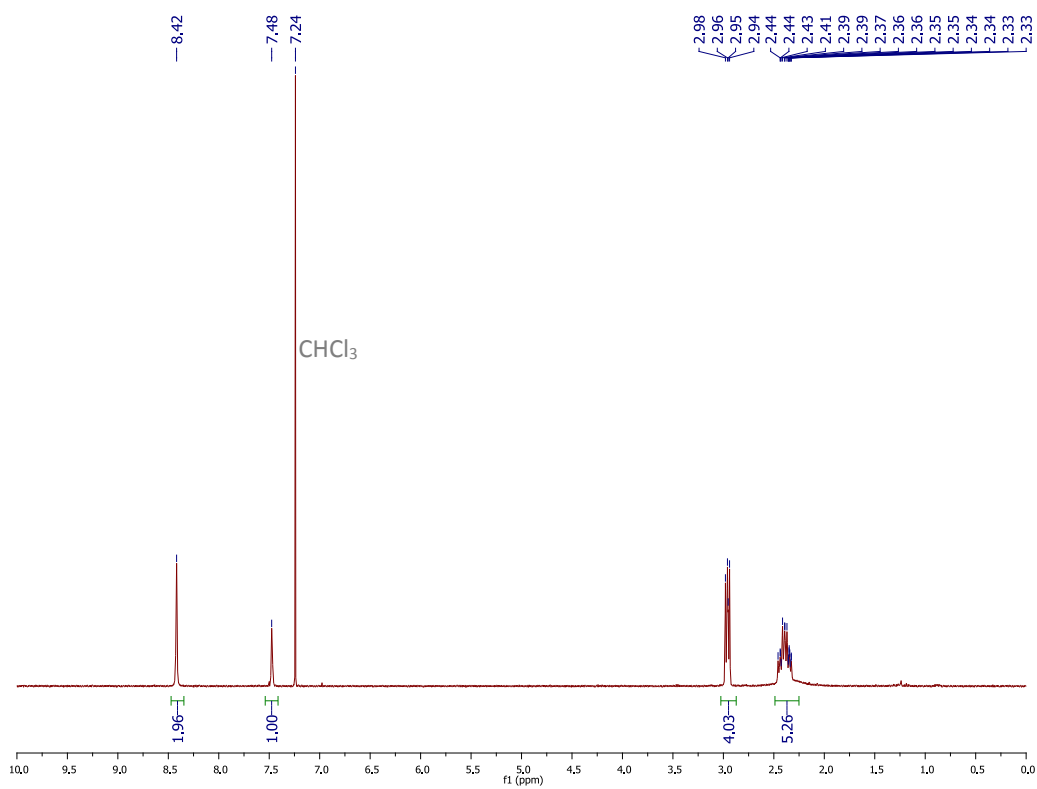
^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 3,5- $\text{NC}_5\text{H}_3(\text{CH}_2\text{CHR}_{\text{f8}})(\text{OMe})$ (**30**)



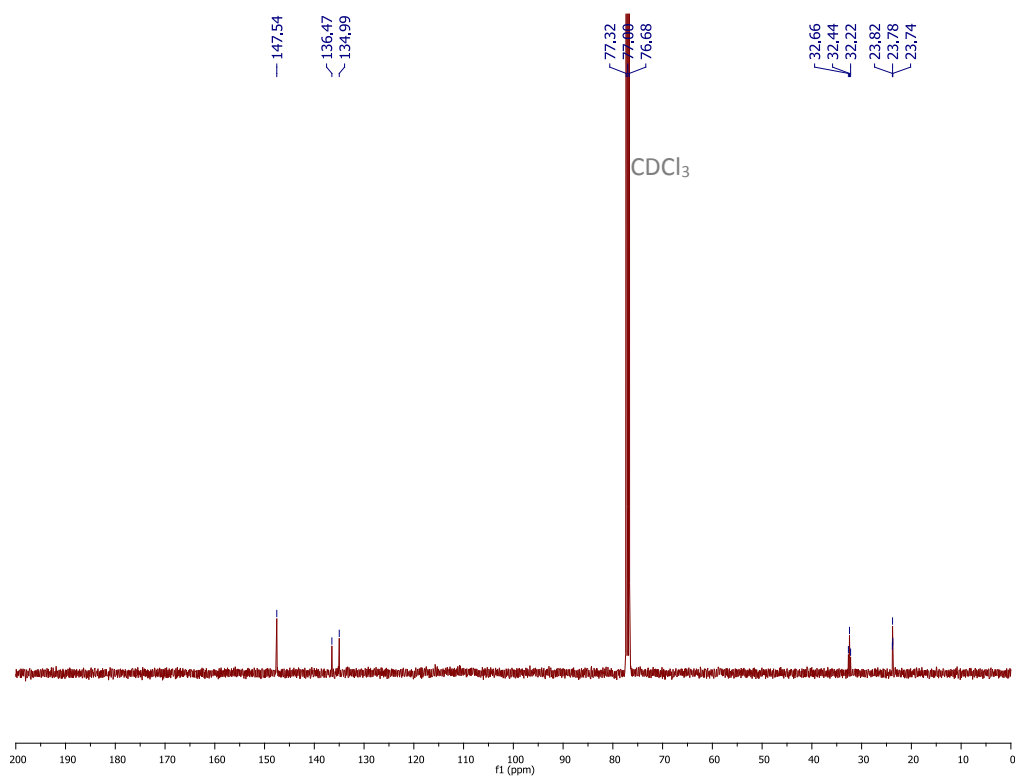
3,5-NC₅H₃(CH₂CH₂R_{f8})₂ (31)



¹H NMR spectrum (CDCl₃, 400 MHz) of 3,5-NC₅H₃(CH₂CH₂R_{f8})₂ (**31**)



$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (CDCl_3 , 100 MHz) of 3,5- $\text{NC}_5\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2$ (**31**)



^{19}F NMR spectrum (CDCl_3 , 376 MHz) of 3,5- $\text{NC}_5\text{H}_3(\text{CH}_2\text{CH}_2\text{R}_{\text{f8}})_2$ (**31**)

