

Supporting Information for

**Transition Metal-Free Direct Trifluoromethylthiolation of
Indoles using Trifluoromethanesulfonyl Chloride in the
Presence of Triphenylphosphine**

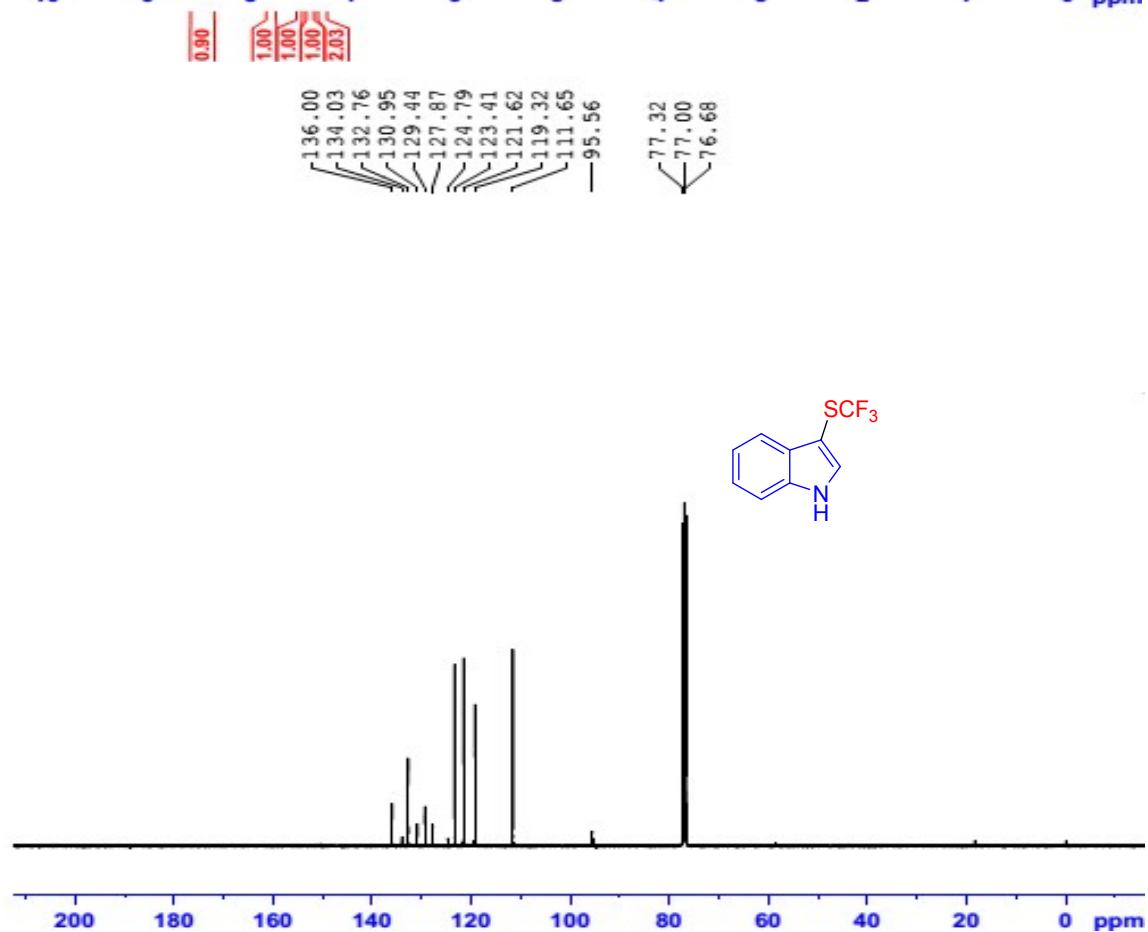
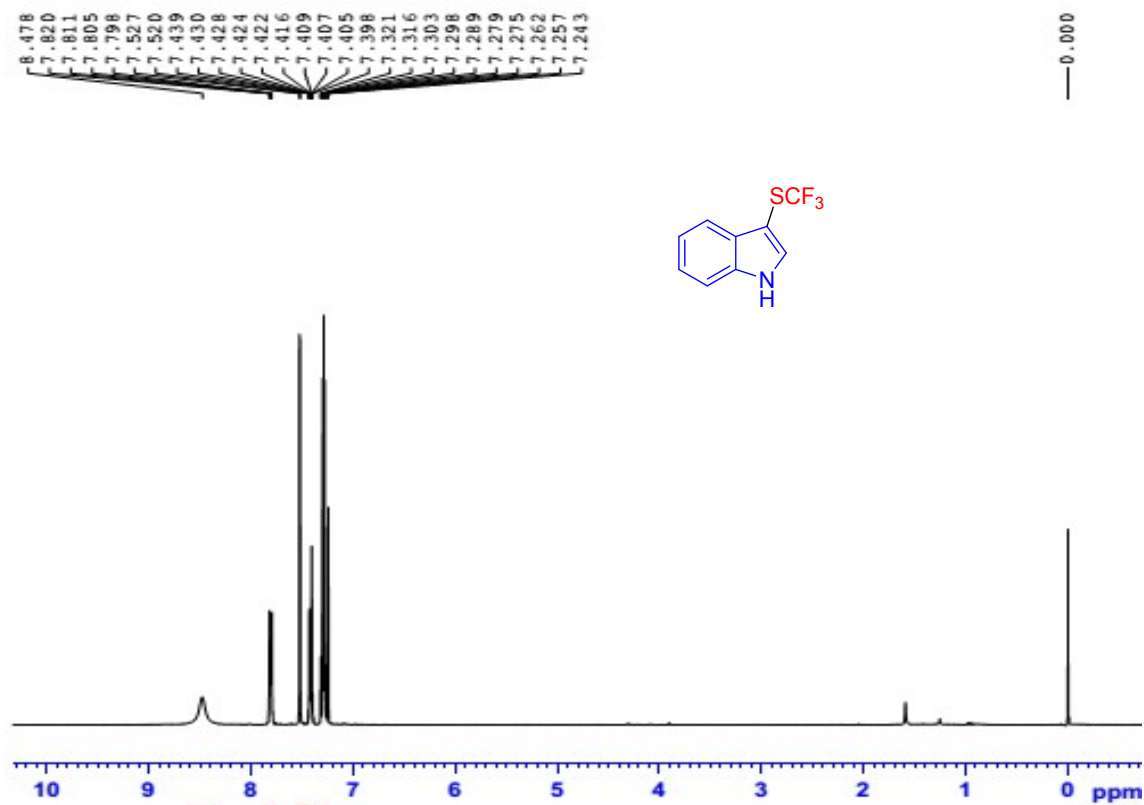
Kui Lu, ^{*a} Zhijie Deng, ^b Ming Li, ^a Tianjiao Li ^b and Xia Zhao ^{*b}

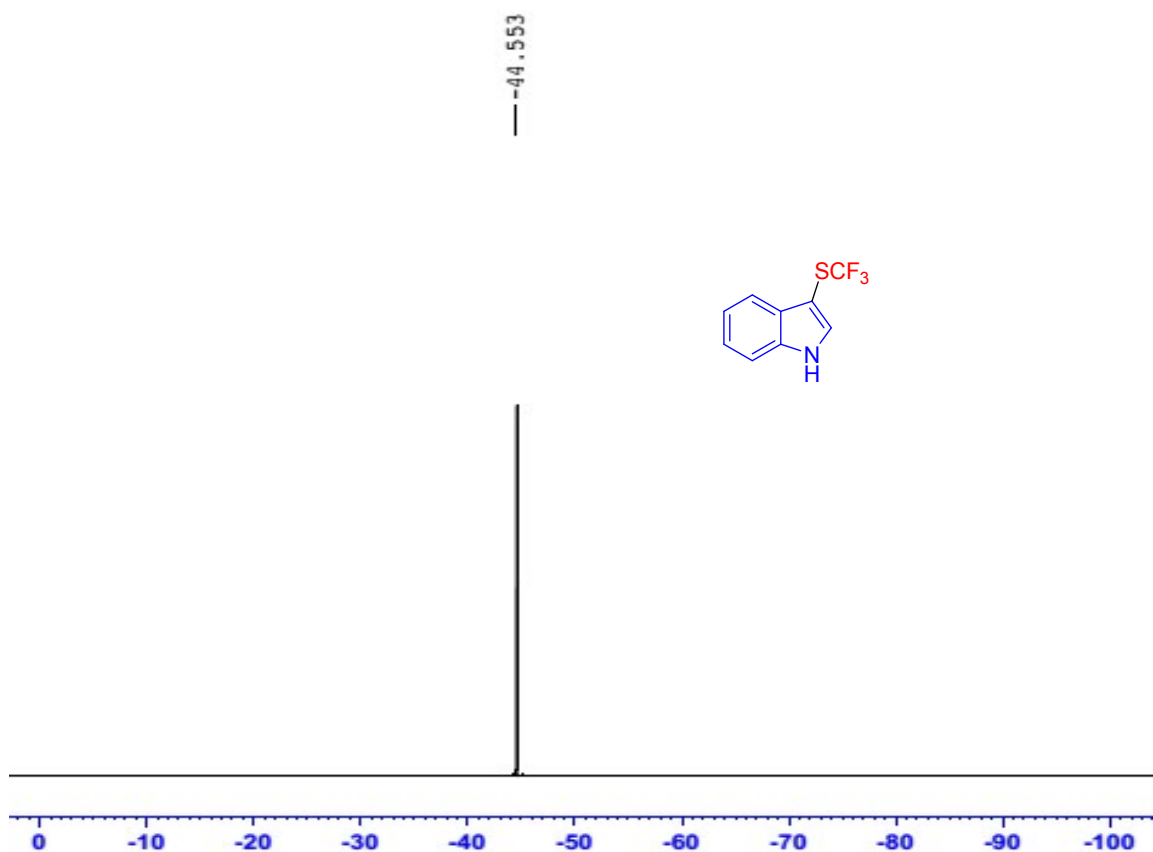
^a *China China International Science and Technology Cooperation Base of Food Nutrition/Safety and Medicinal Chemistry, Key Laboratory of Industrial Microbiology of Ministry of Education, Tianjin Key Laboratory of Industry Microbiology, College of Biotechnology, Tianjin University of Science & Technology, Tianjin, China, 300457,*

^b *College of Chemistry, Tianjin Key Laboratory of Structure and Performance for Functional Molecules, Key laboratory of Inorganic-organic Hybrid Functional Material Chemistry, Ministry of Education, Tianjin Normal University, Tianjin 300387, China*

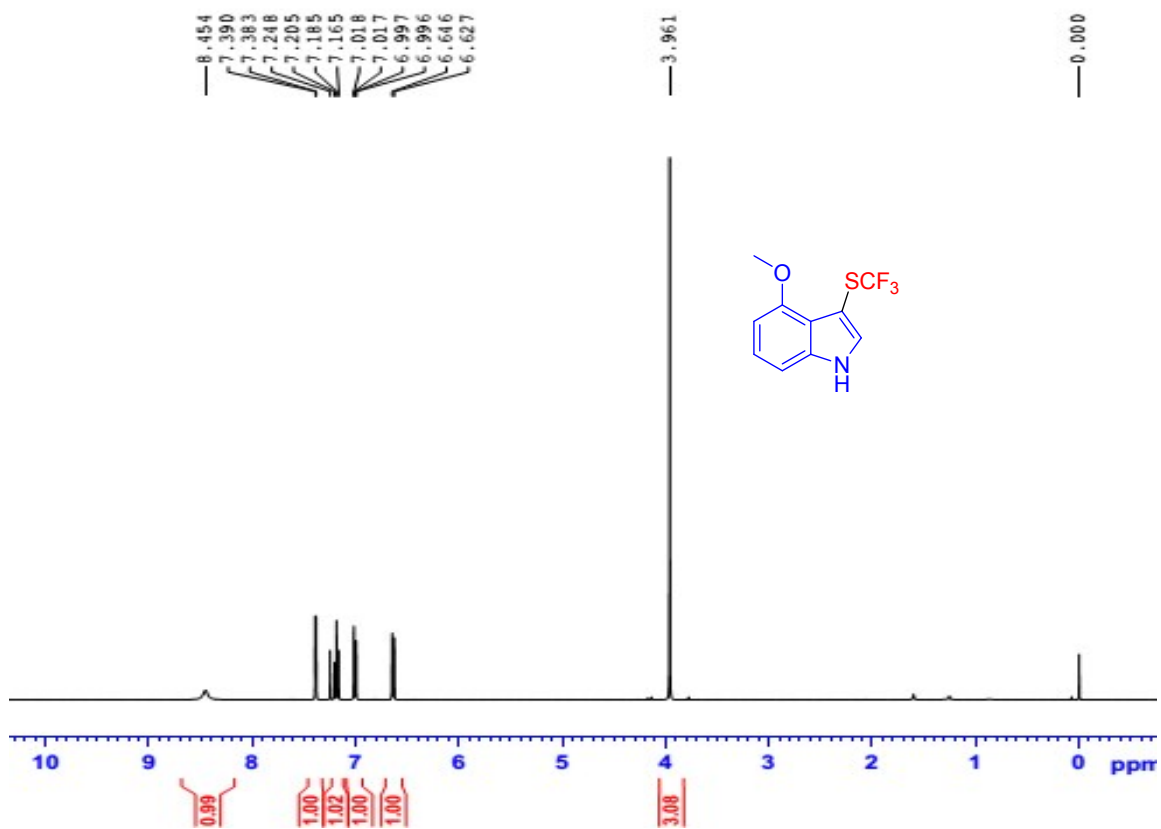
*E-mail: lukui@tust.edu.cn; hxxzyzhx@mail.tjnu.edu.cn;

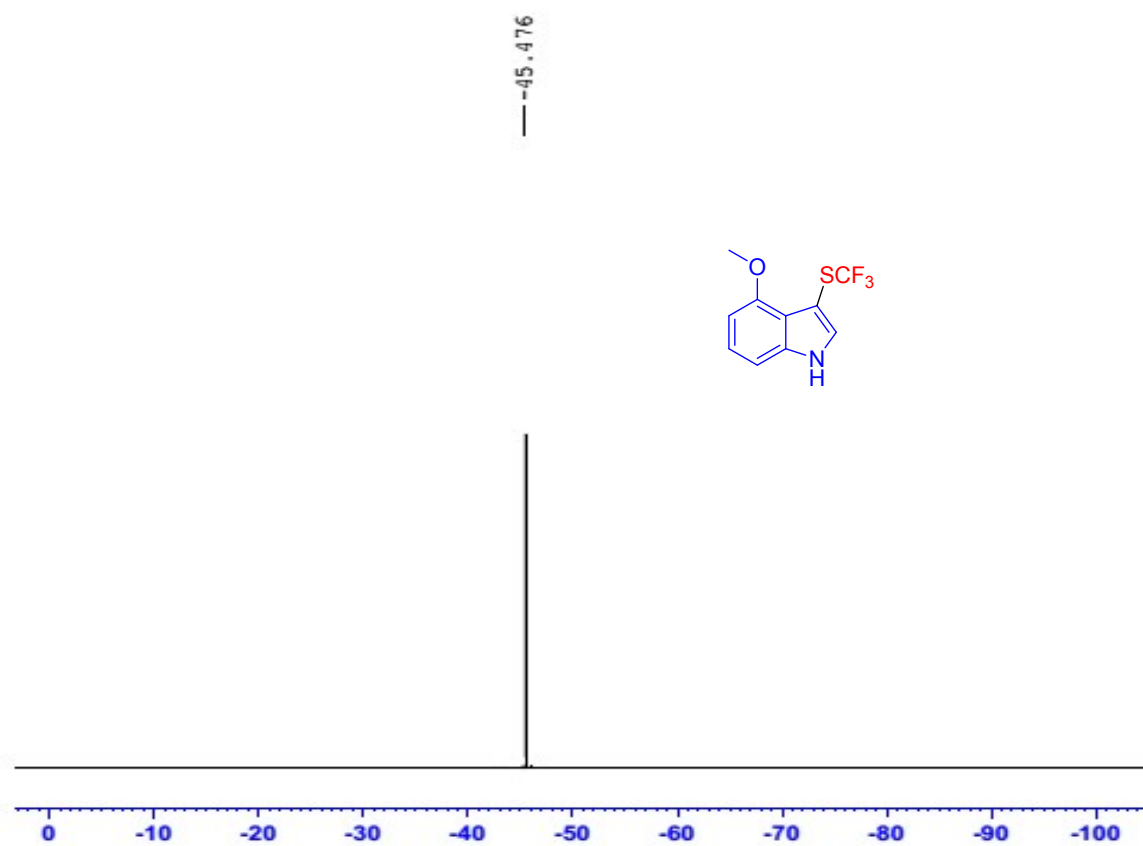
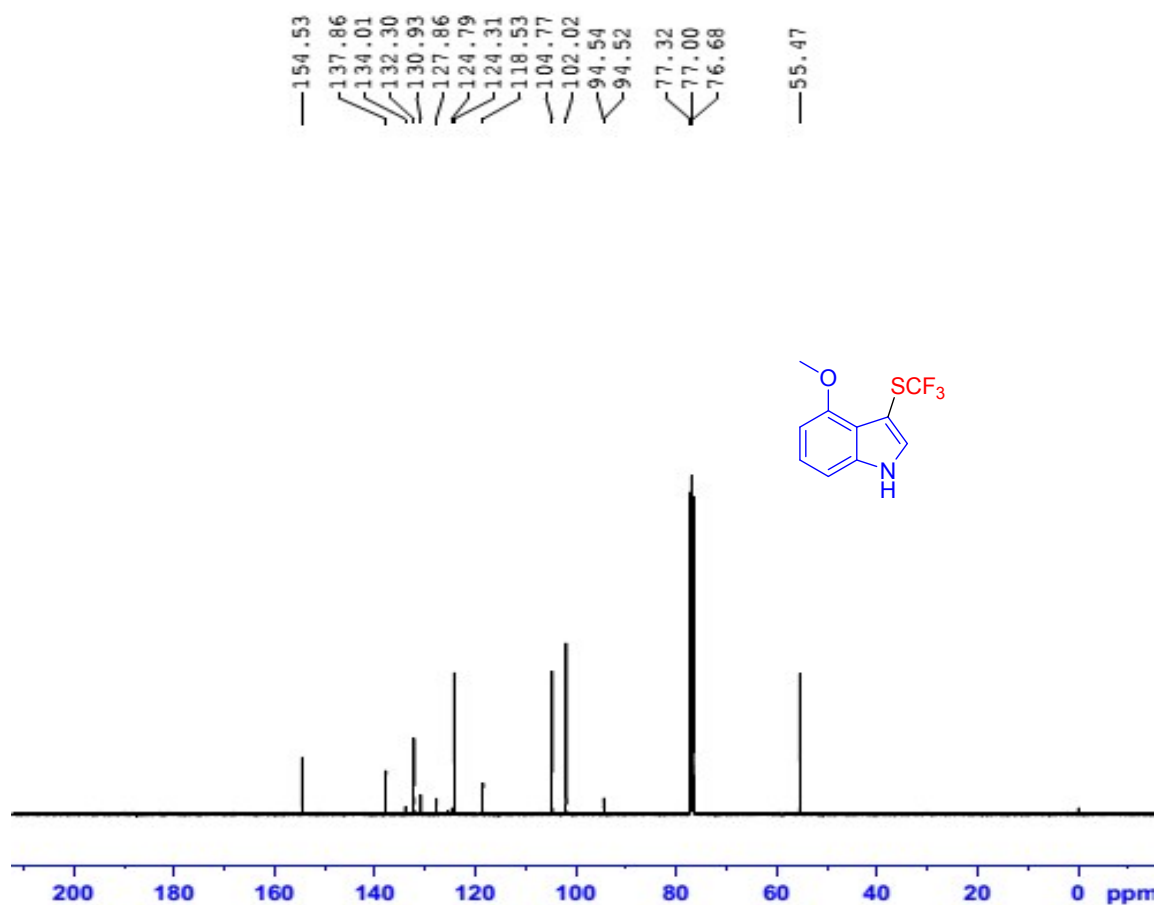
^1H , ^{19}F and ^{13}C NMR spectra of 3-((trifluoromethyl)thio)-1H-indole (11a) in CDCl_3



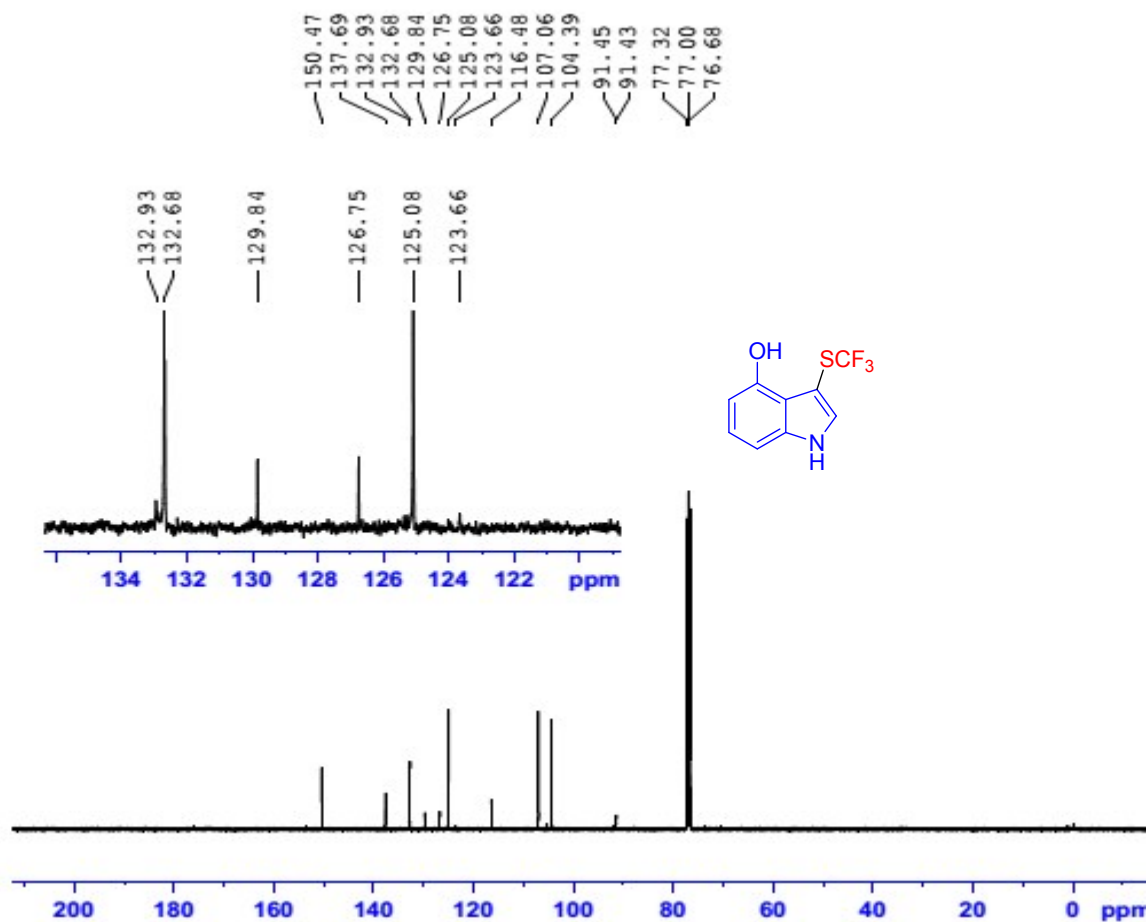
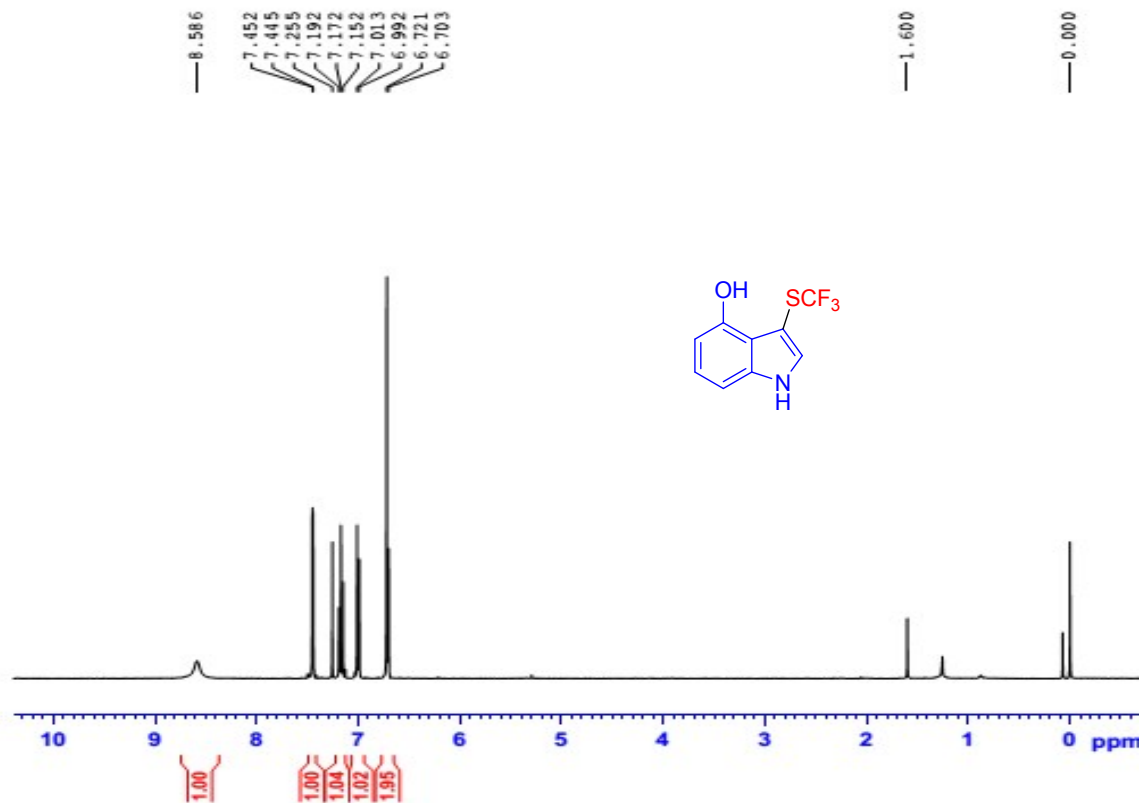


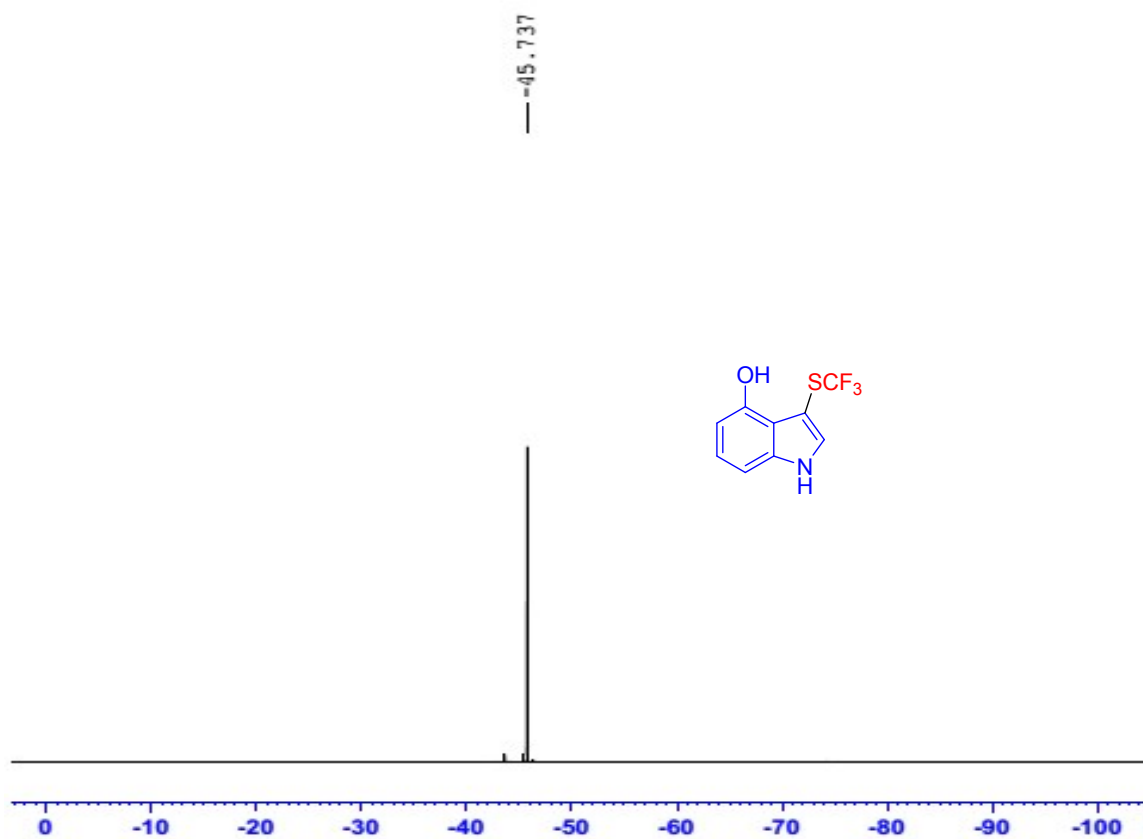
^1H , ^{19}F and ^{13}C NMR spectra of *4-methoxy-3-((trifluoromethyl)thio)-1H-indole (11b)* in CDCl_3



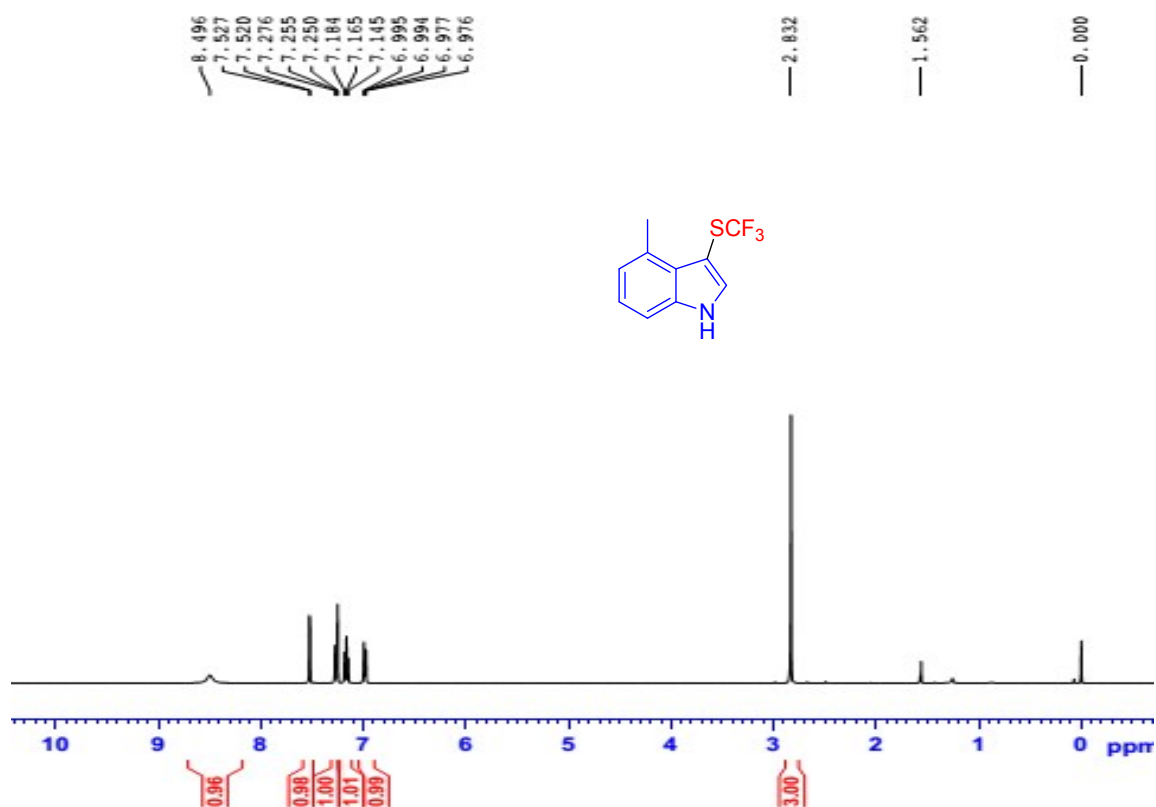


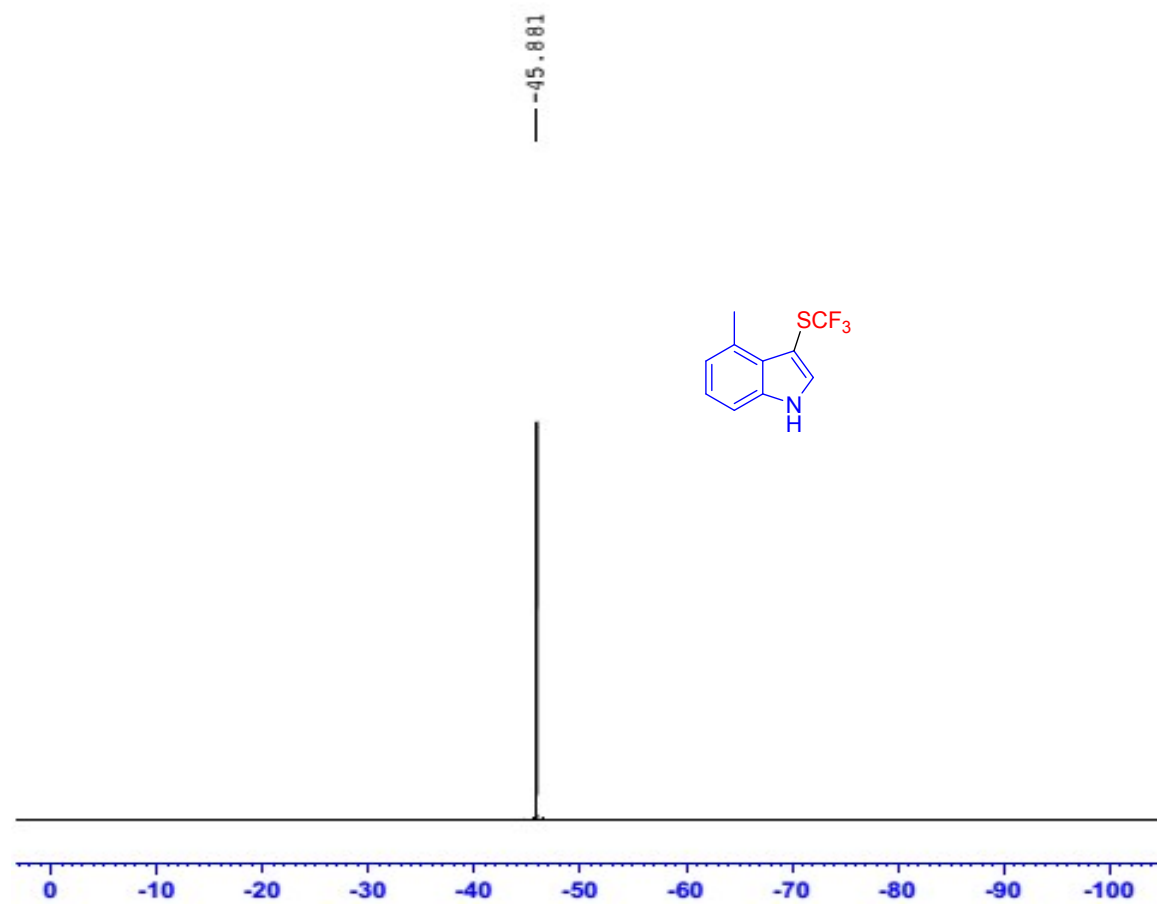
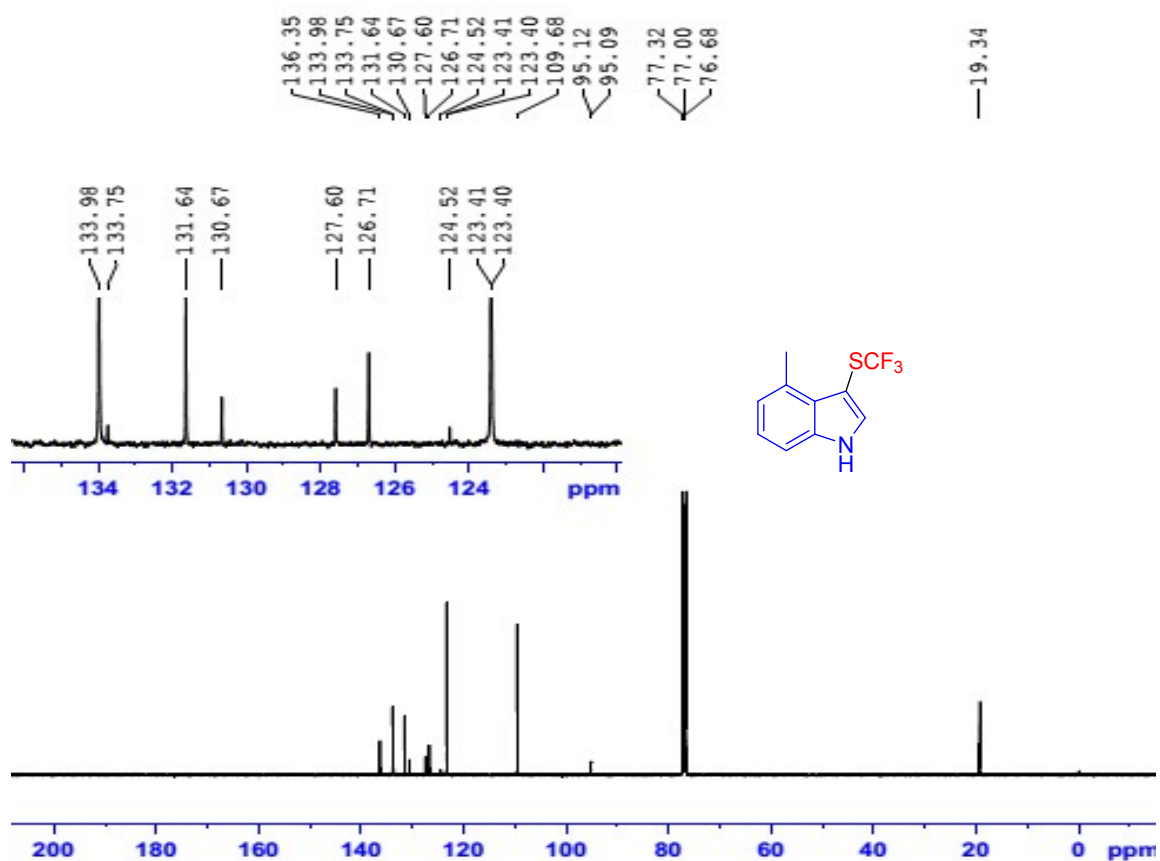
^1H , ^{19}F and ^{13}C NMR spectra of 3-((trifluoromethyl)thio)-1H-indol-4-ol (11c) in CDCl_3



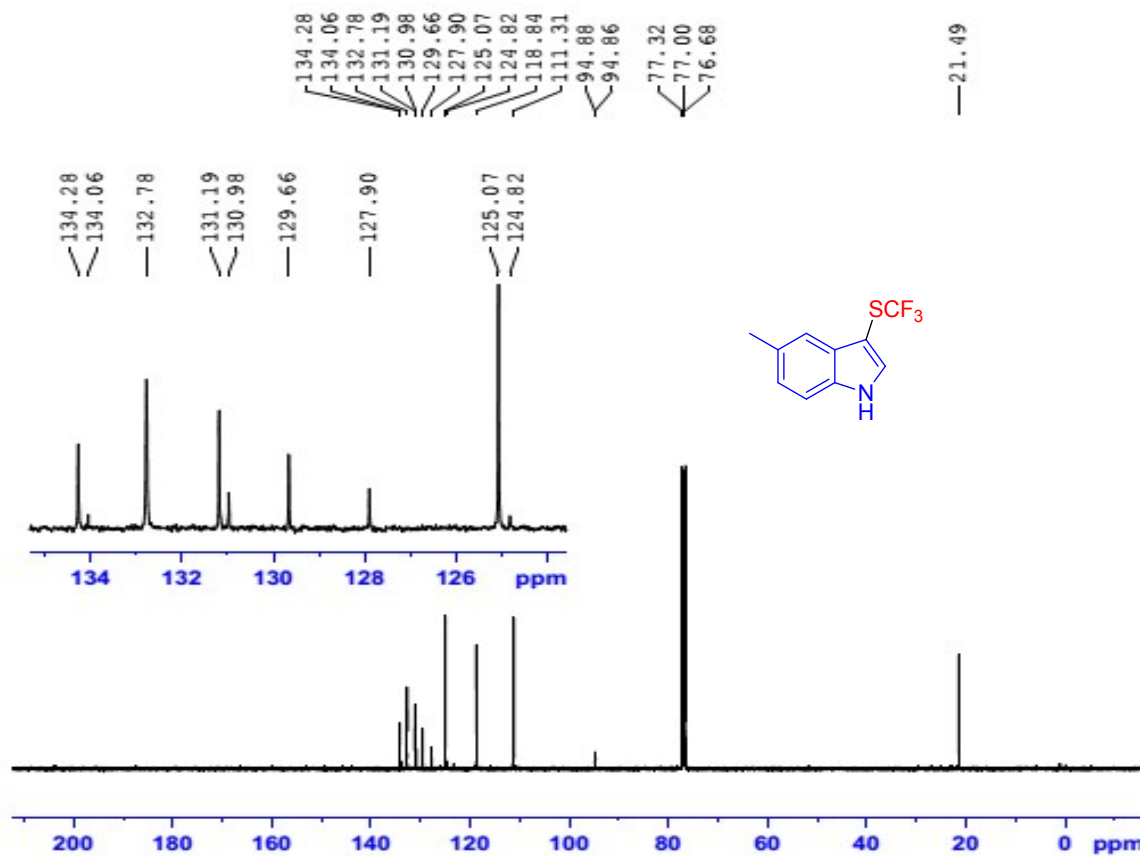
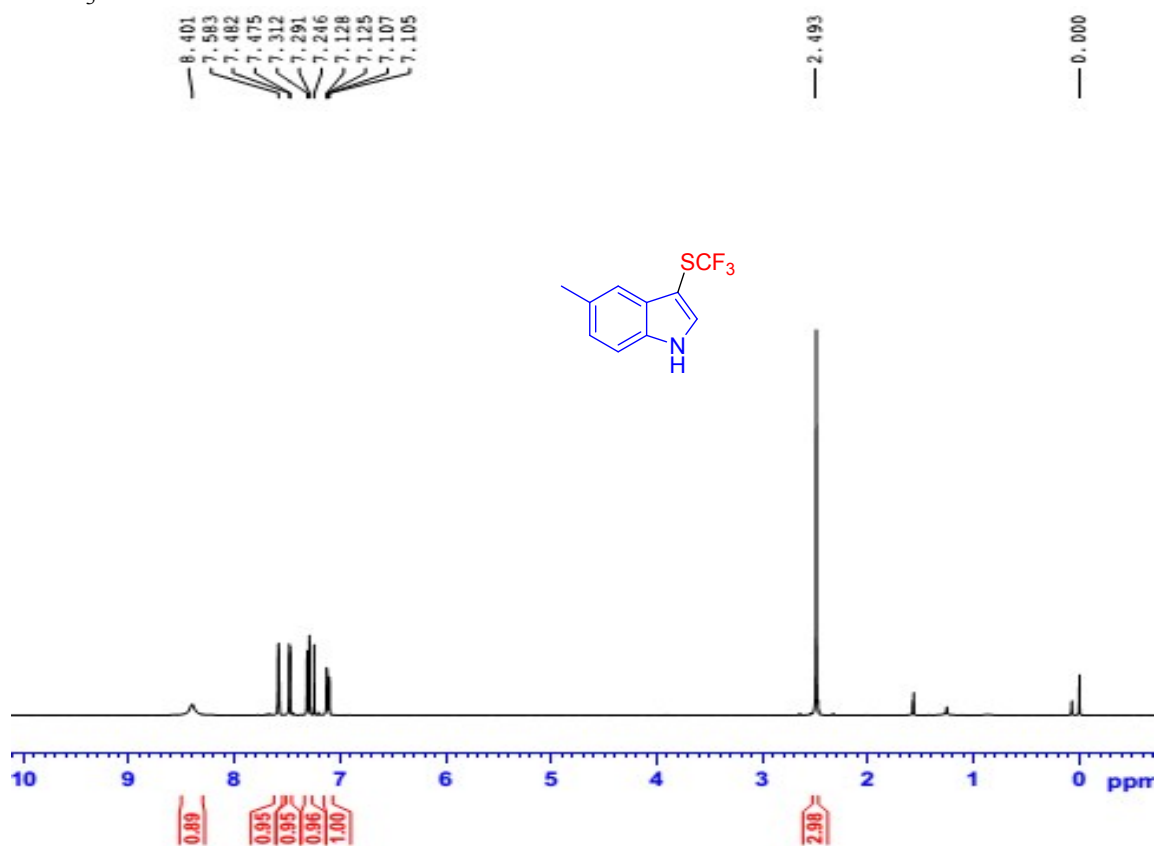


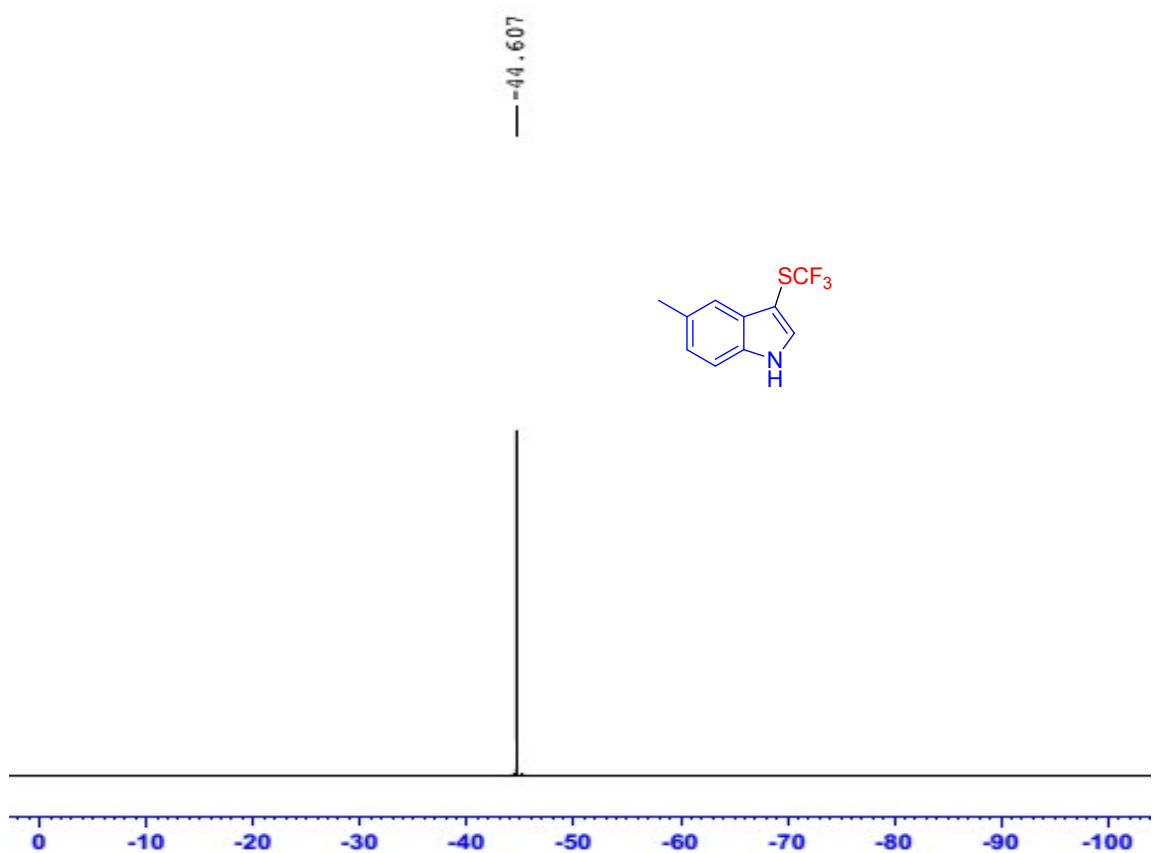
^1H , ^{19}F and ^{13}C NMR spectra of **4-methyl-3-((trifluoromethyl)thio)-1H-indole (11d)** in CDCl₃



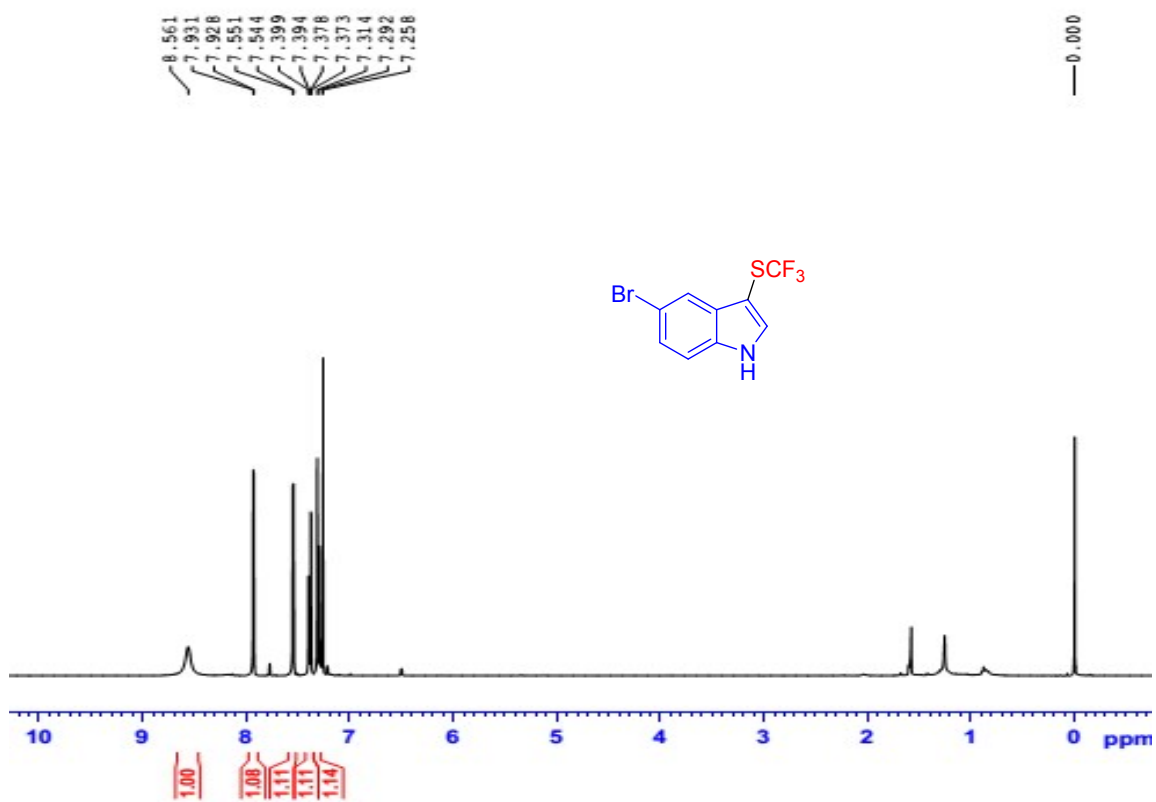


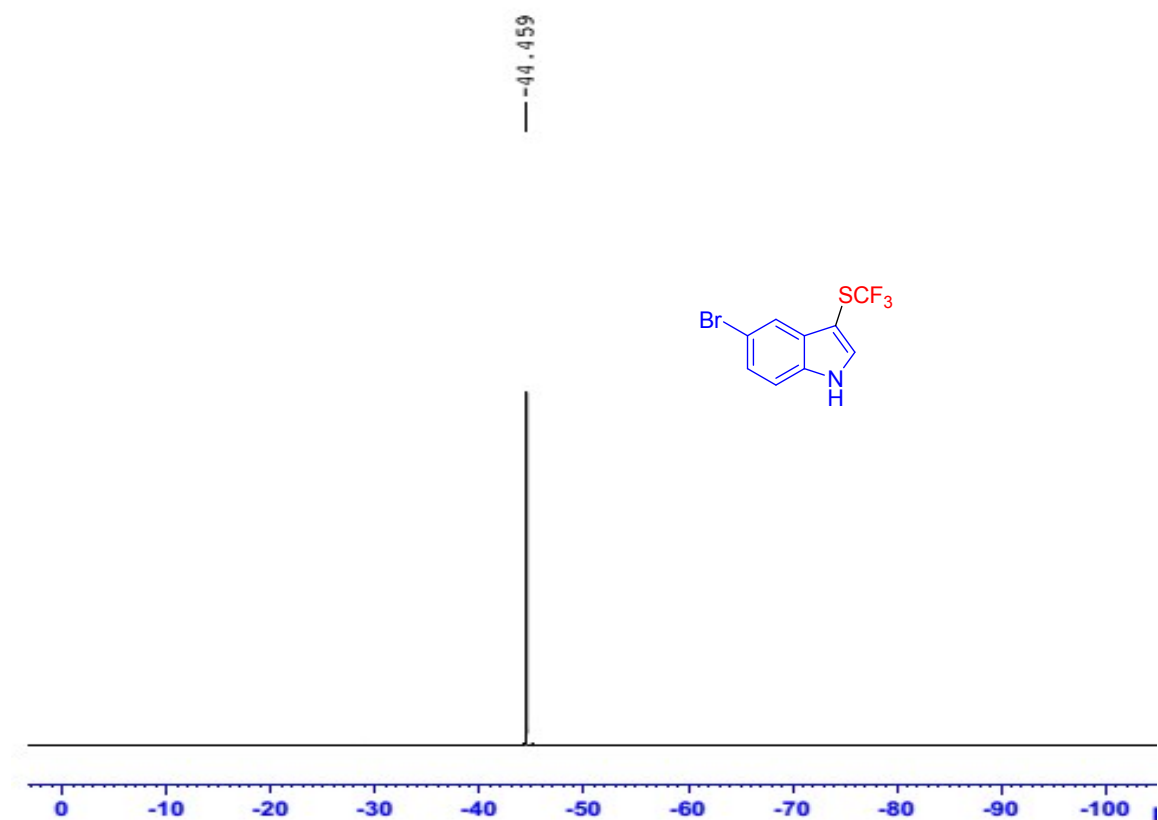
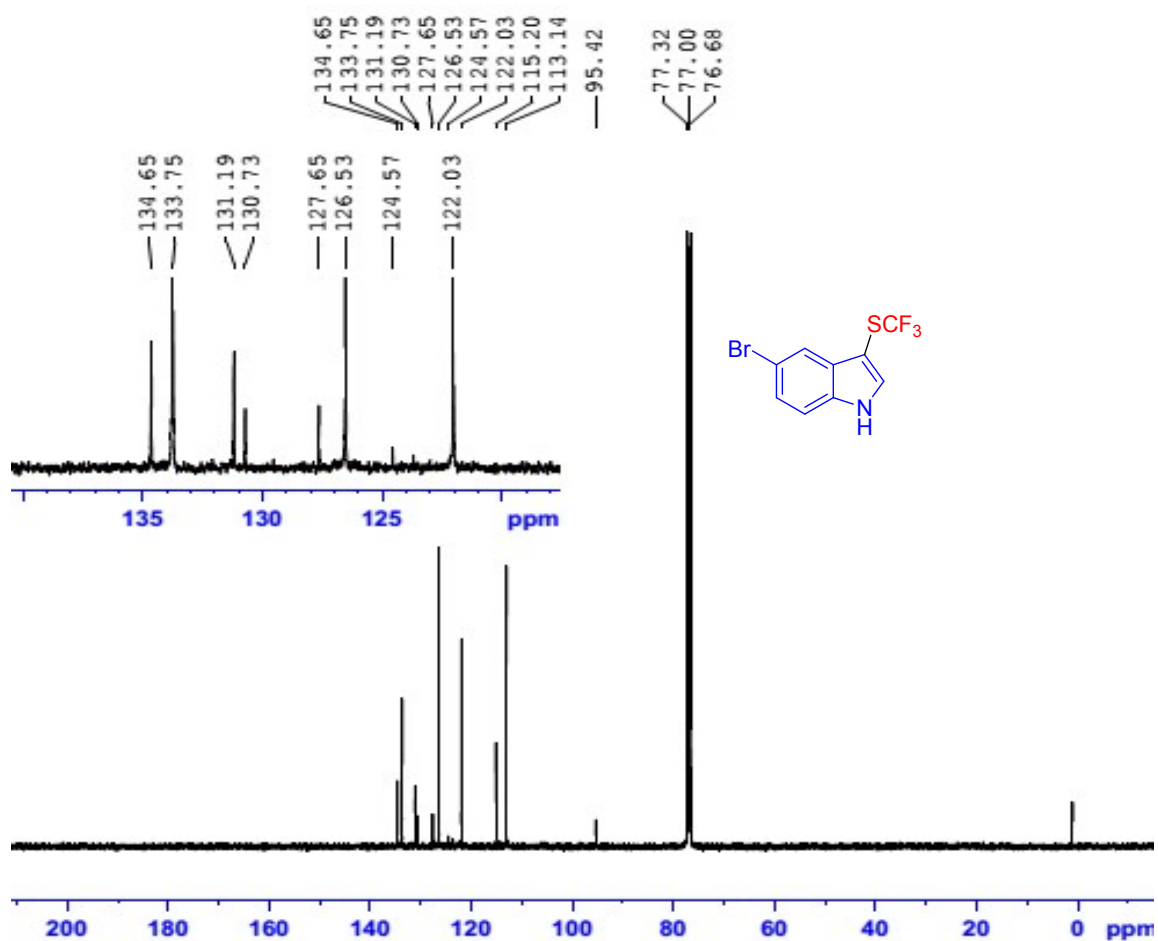
^1H , ^{19}F and ^{13}C NMR spectra of *5-methyl-3-((trifluoromethyl)thio)-1H-indole (11e)* in CDCl_3



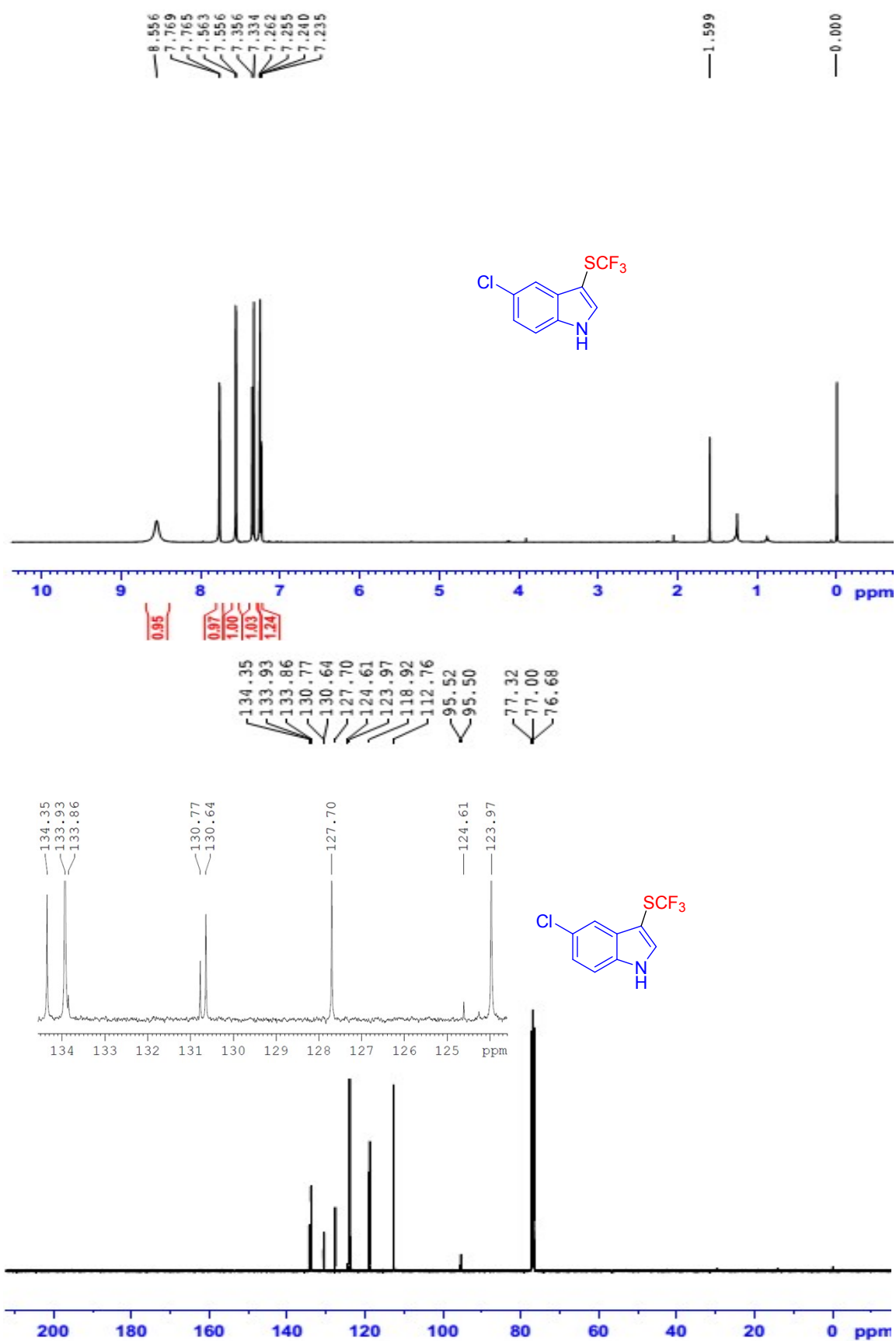


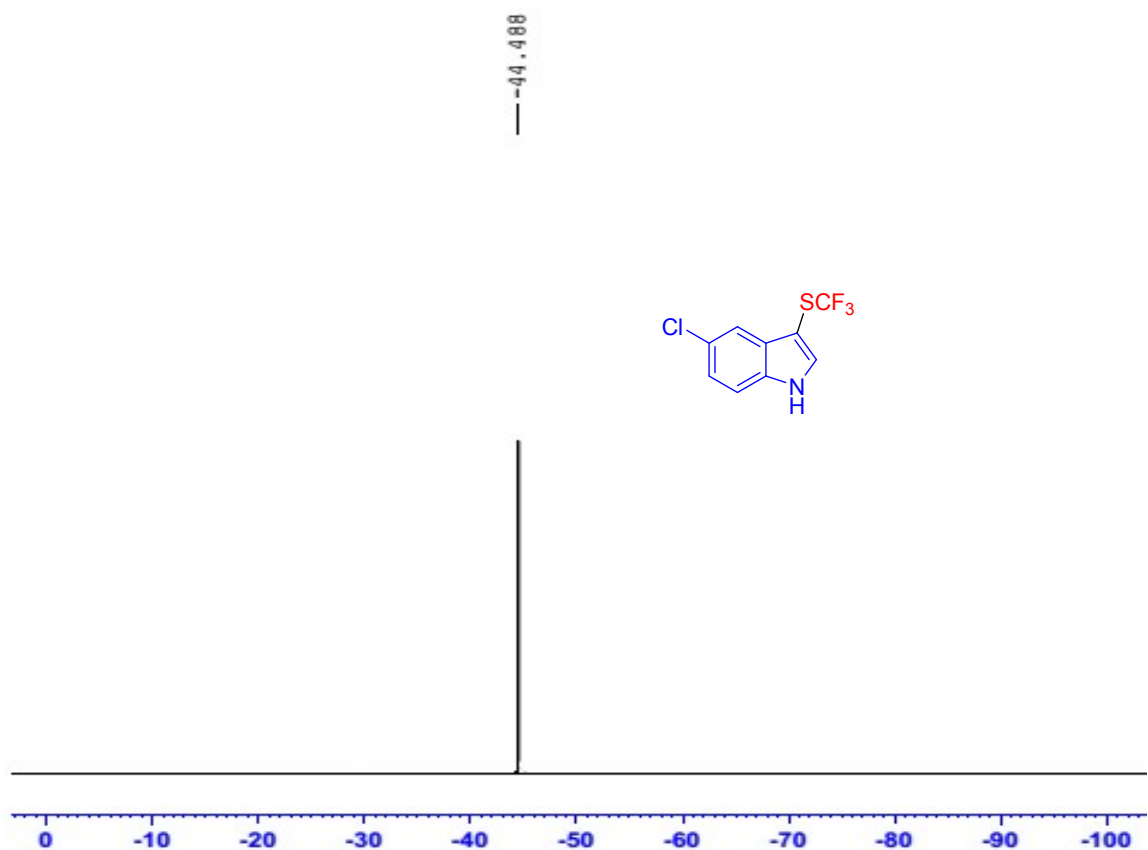
¹H, ¹⁹F and ¹³C NMR spectra of 5-bromo-3-((trifluoromethyl)thio)-1H-indole (11f) in CDCl₃



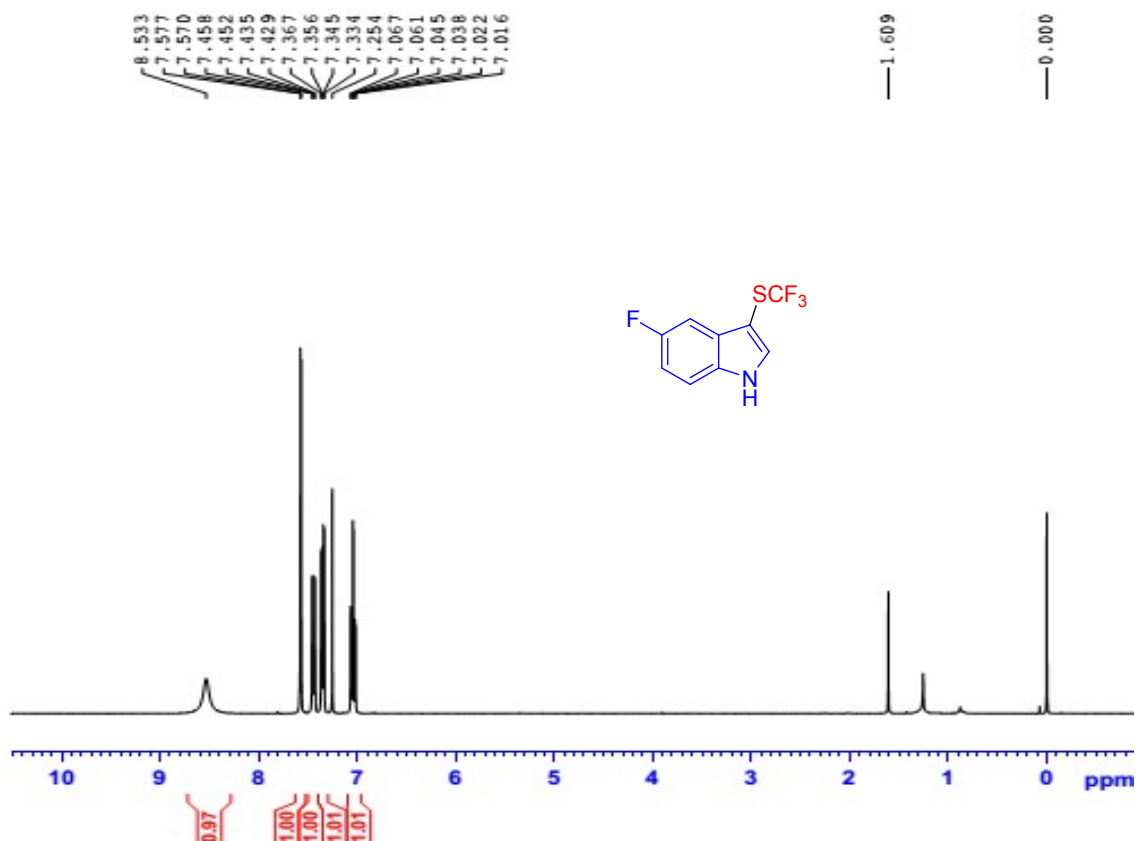


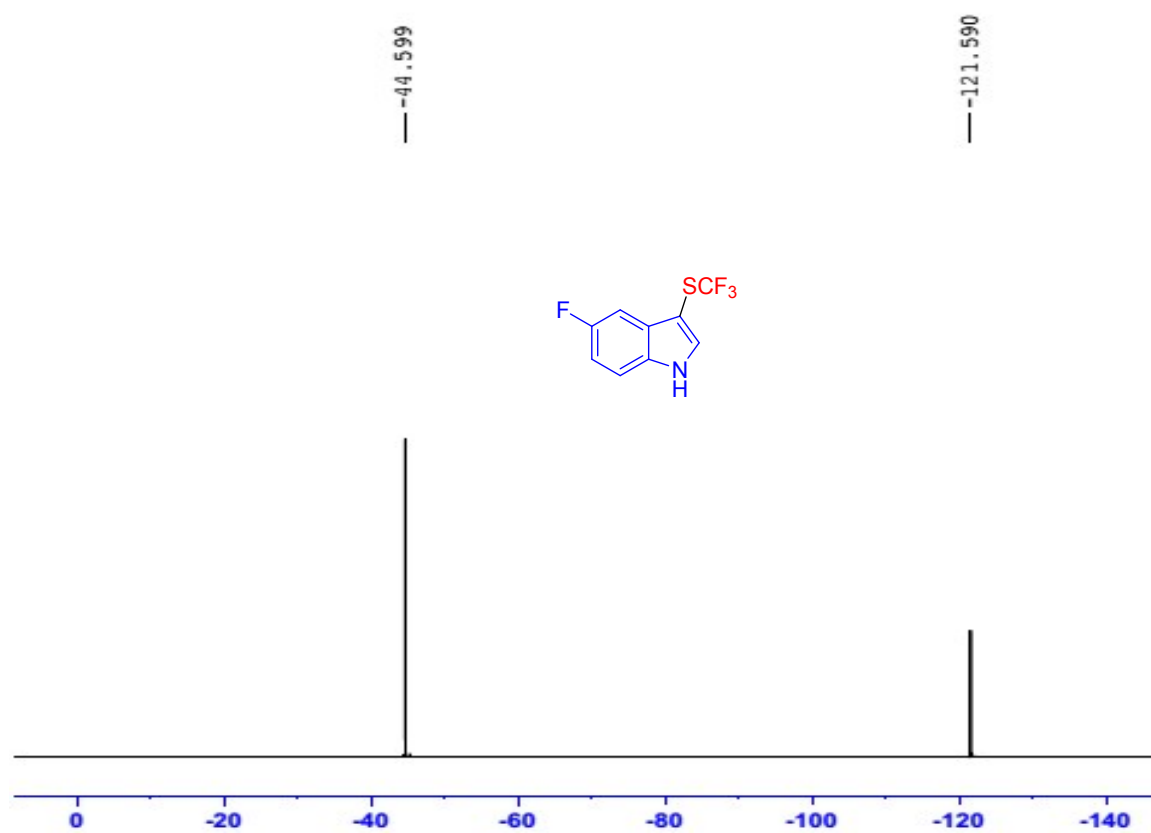
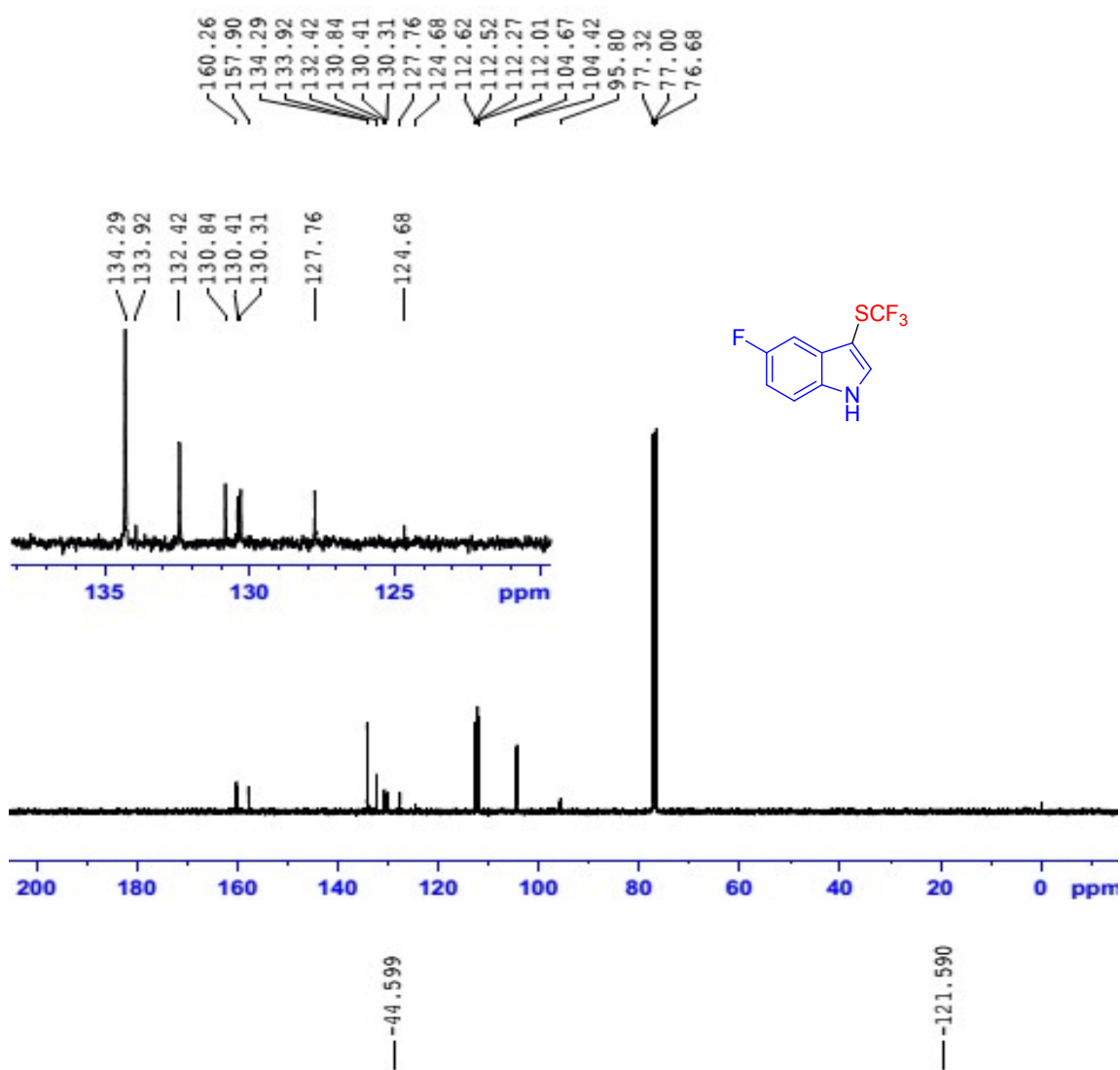
^1H , ^{19}F and ^{13}C NMR spectra of *5-chloro-3-((trifluoromethyl)thio)-1H-indole (11g)* in CDCl_3



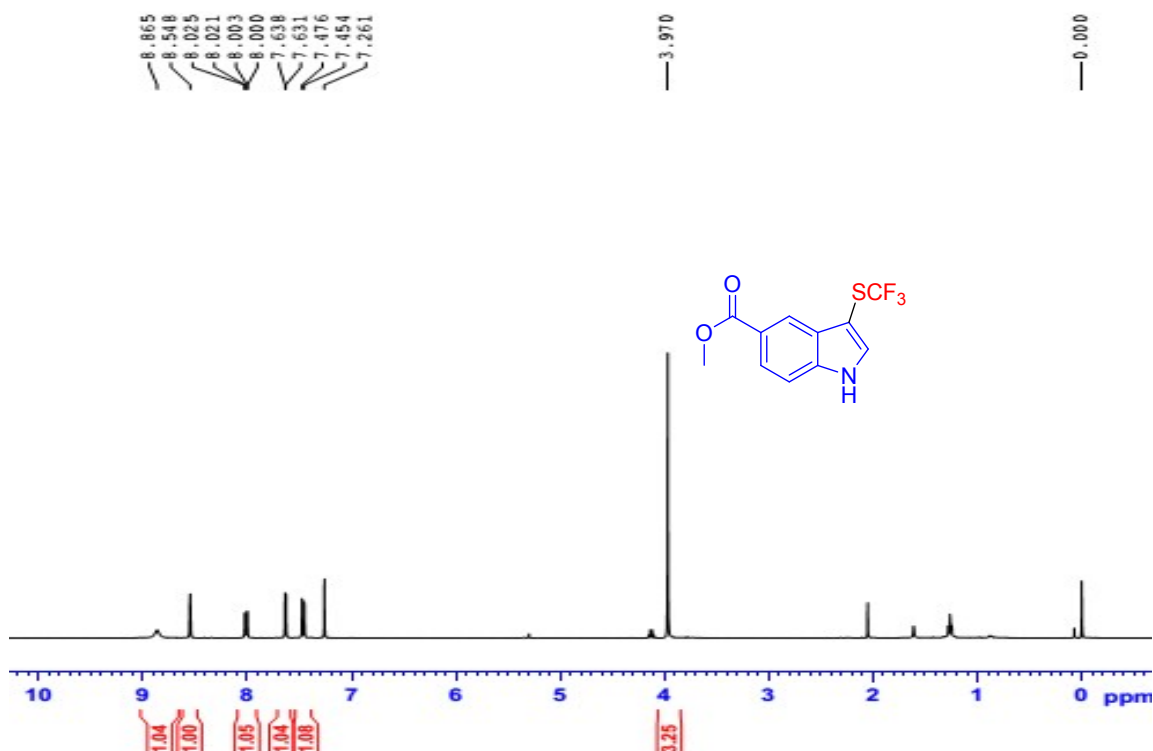


^1H , ^{19}F and ^{13}C NMR spectra of 5-fluoro-3-((trifluoromethyl)thio)-1H-indole (11h) in CDCl₃

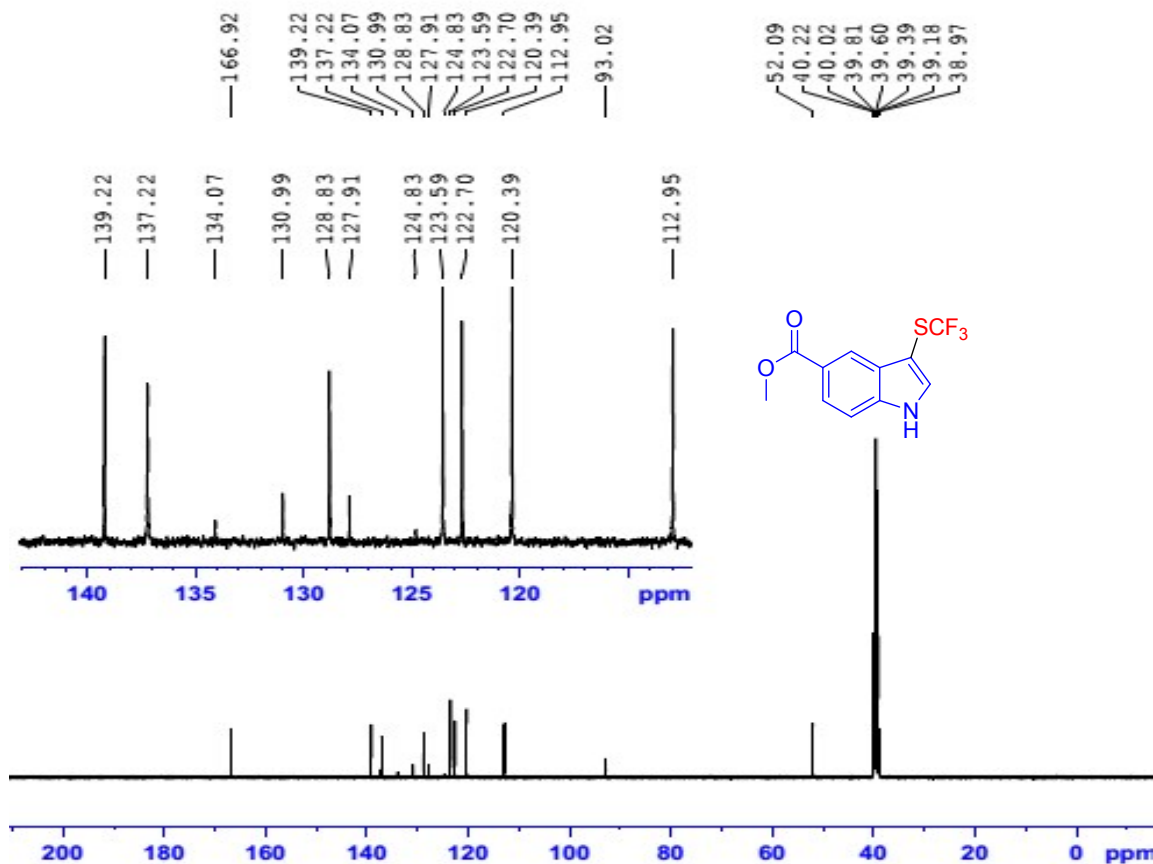


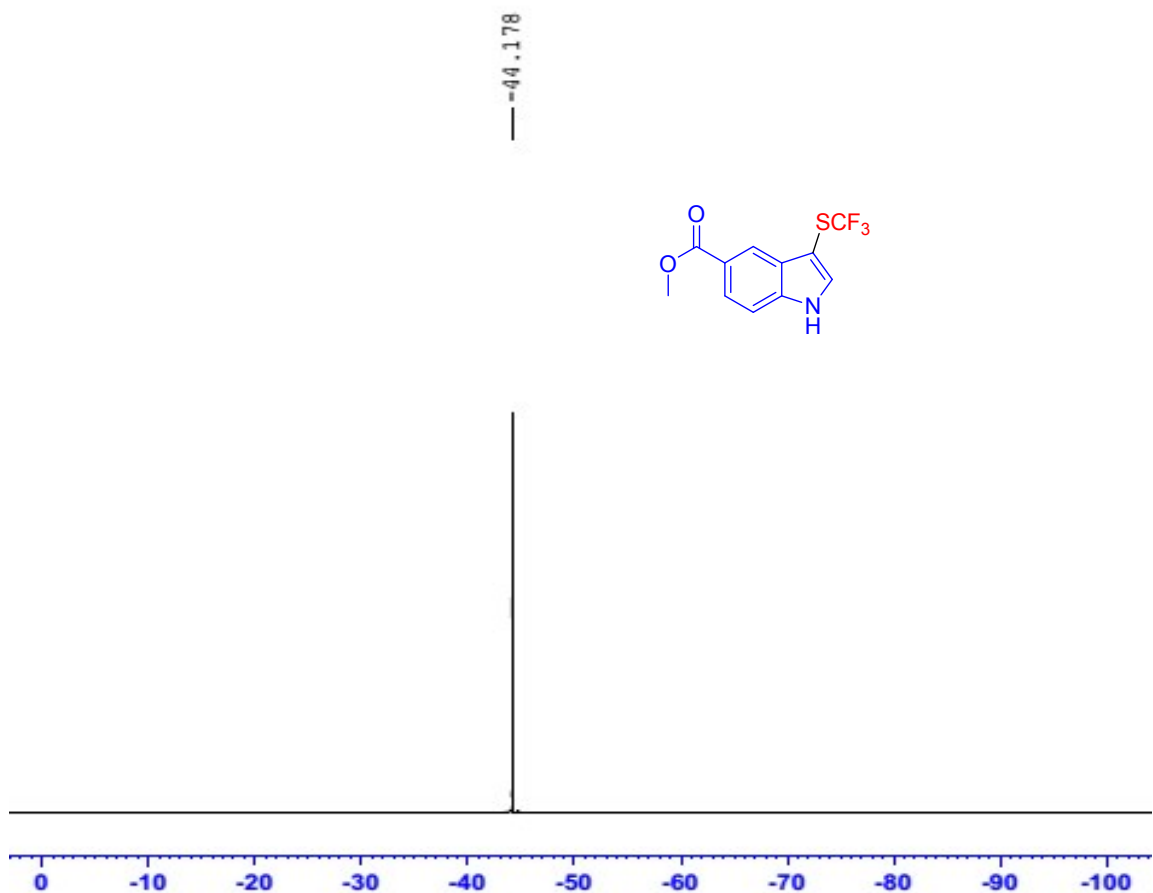


^1H NMR spectra of *methyl 3-((trifluoromethyl)thio)-1H-indole-5-carboxylate (11i)* in CDCl_3

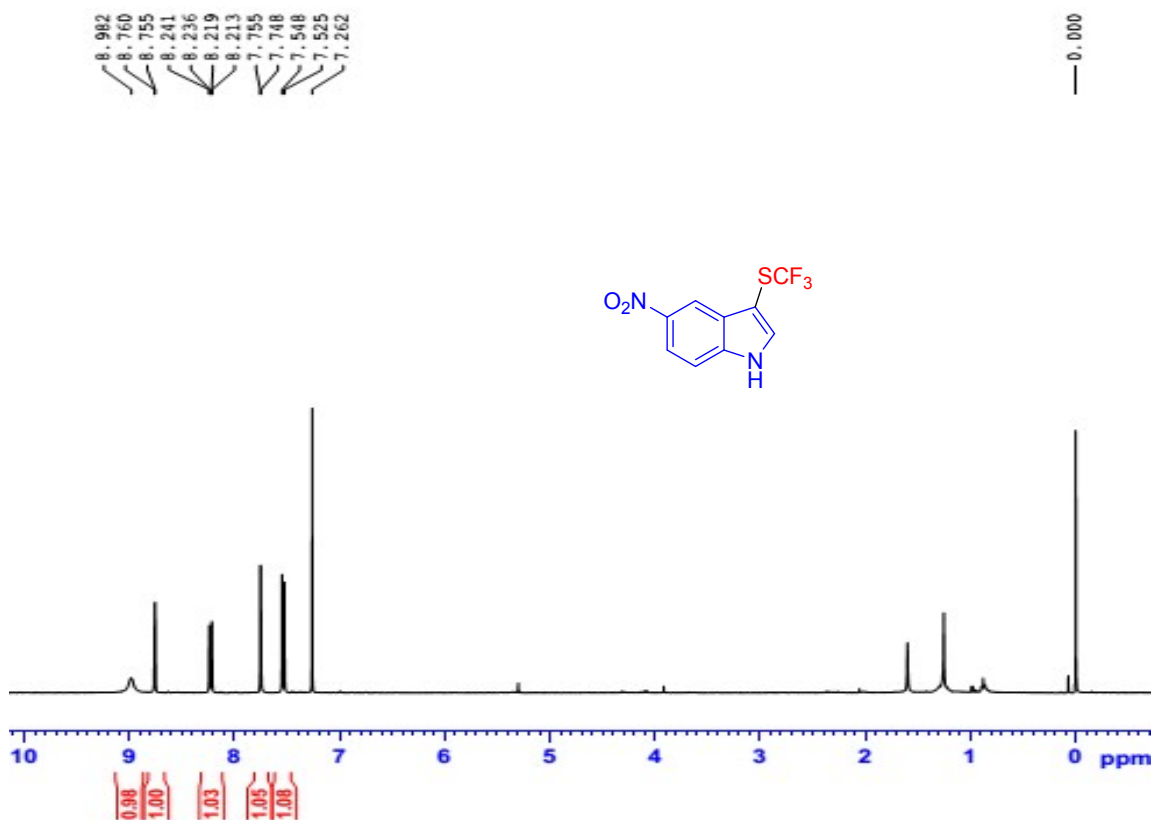


^{13}C NMR and ^{19}F NMR spectra of *methyl 3-((trifluoromethyl)thio)-1H-indole-5-carboxylate (11i)* in DMSO-d_6

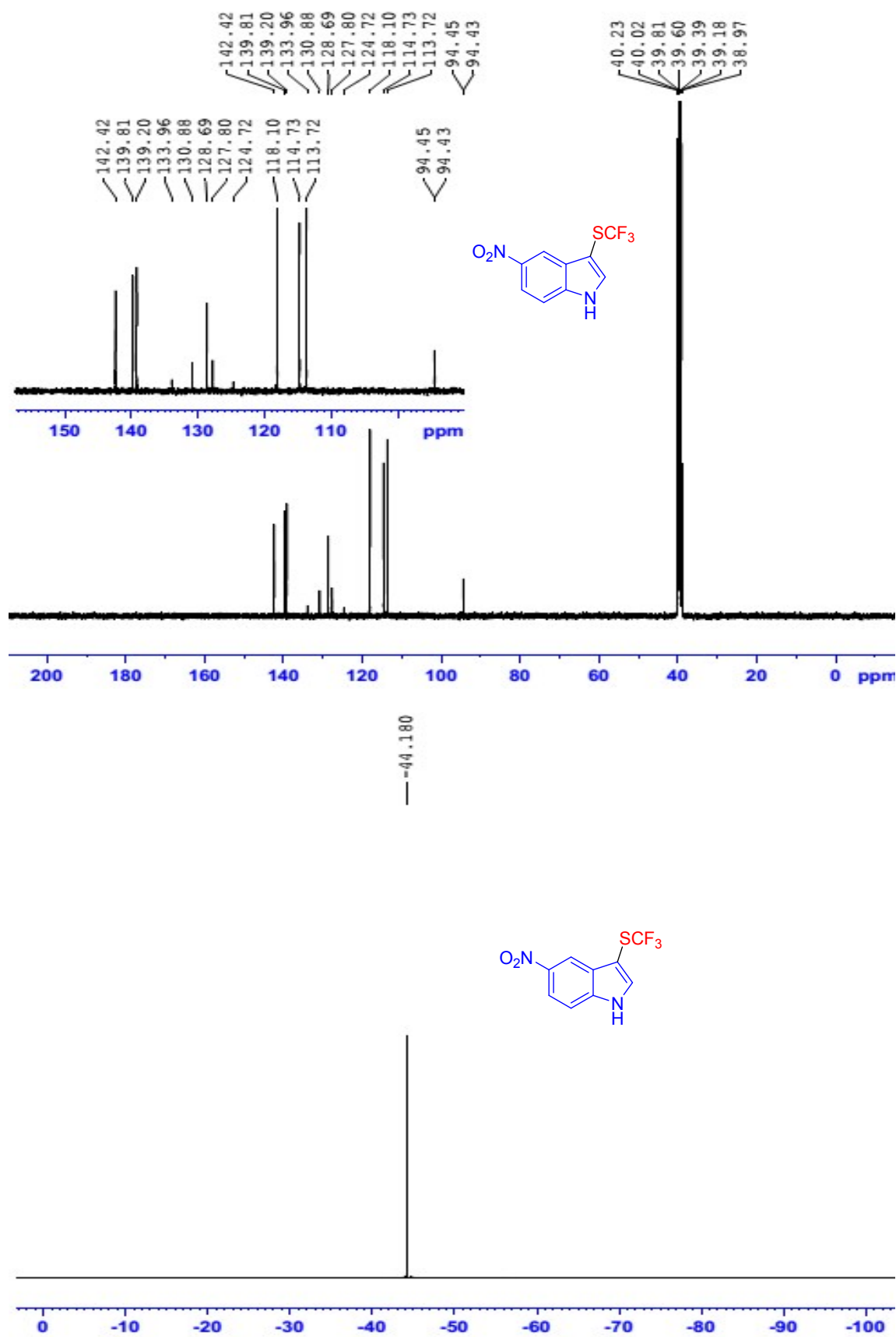




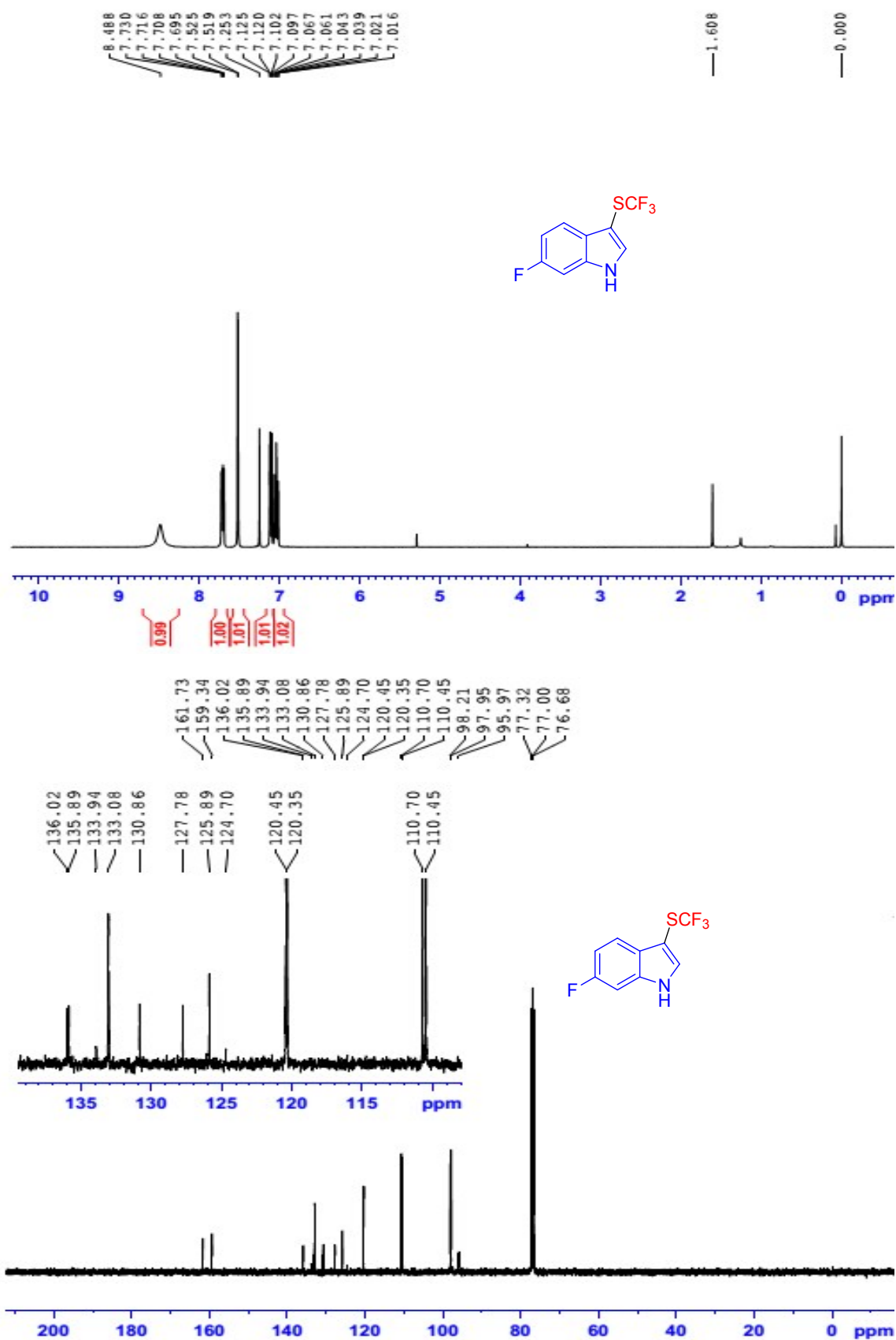
^1H NMR spectra of **5-nitro-3-((trifluoromethyl)thio)-1H-indole (11j)** in CDCl_3

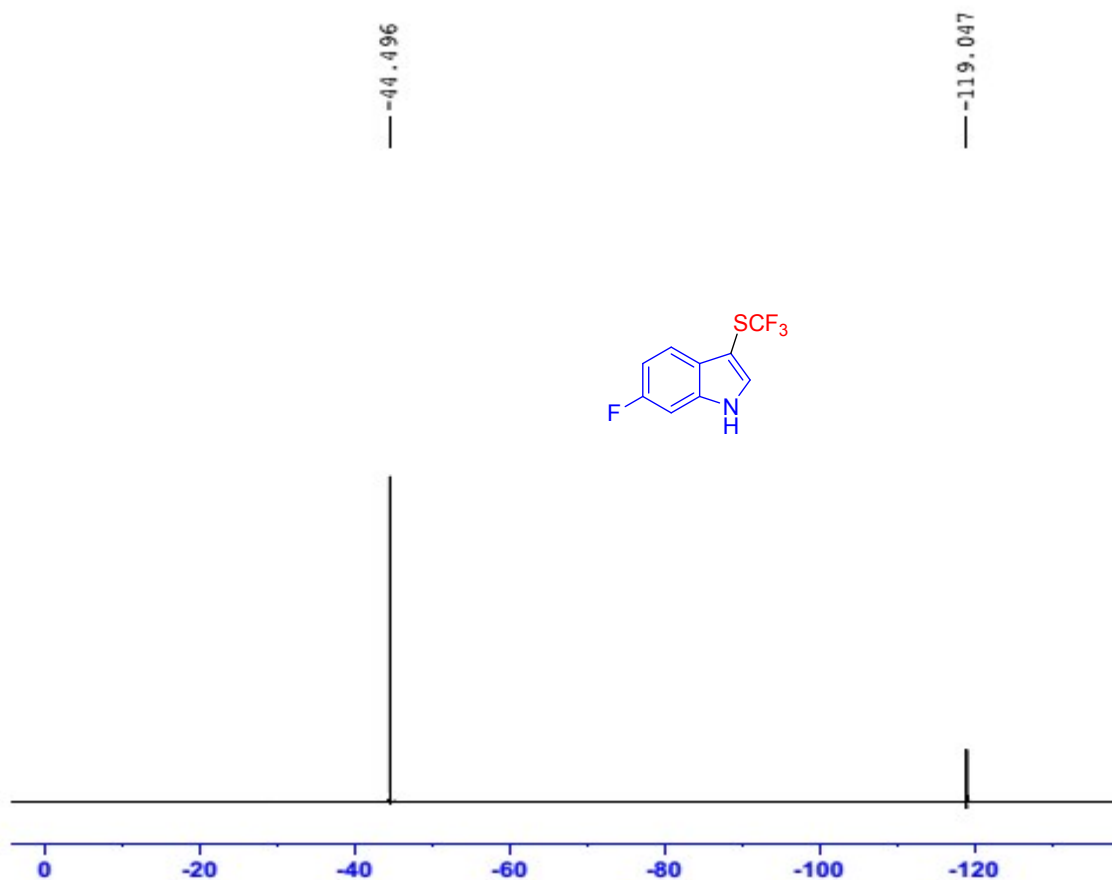


^{19}F and ^{13}C NMR spectra of *5-nitro-3-((trifluoromethyl)thio)-1H-indole (11j)* in DMSO-d_6

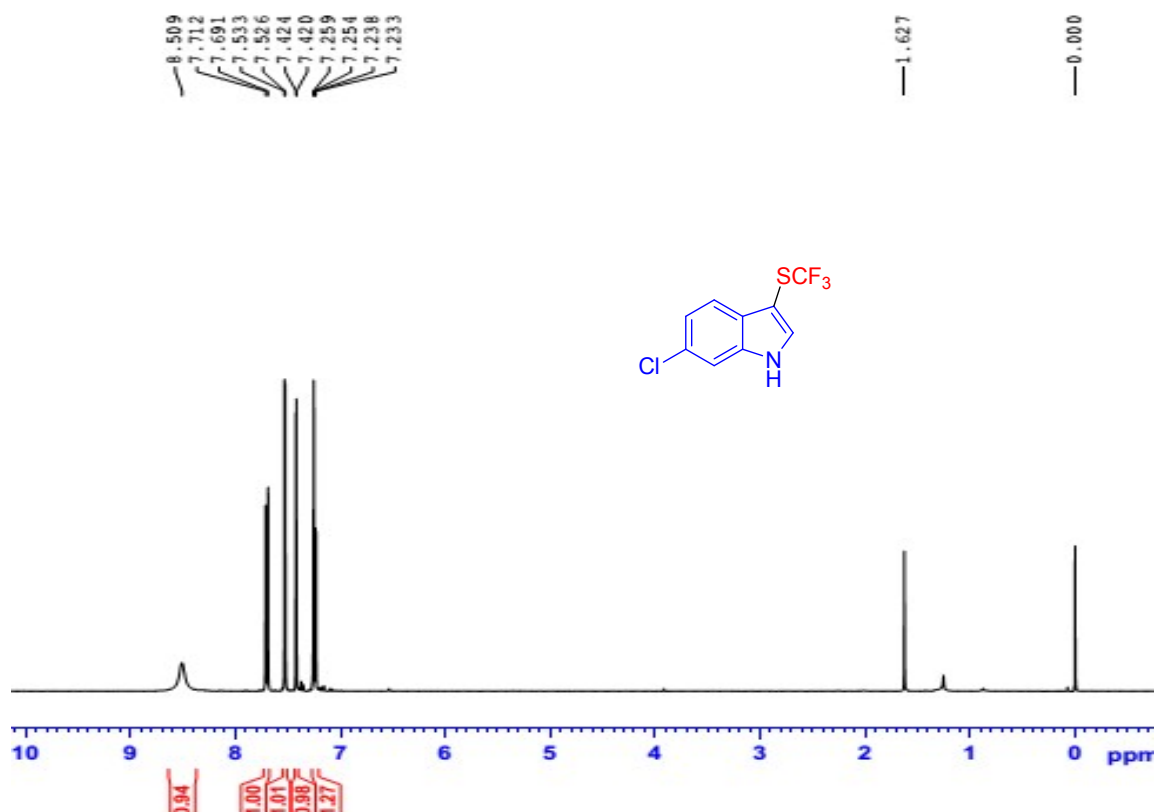


^1H , ^{19}F and ^{13}C NMR spectra of **6-fluoro-3-((trifluoromethyl)thio)-1H-indole (11k)** in CDCl_3

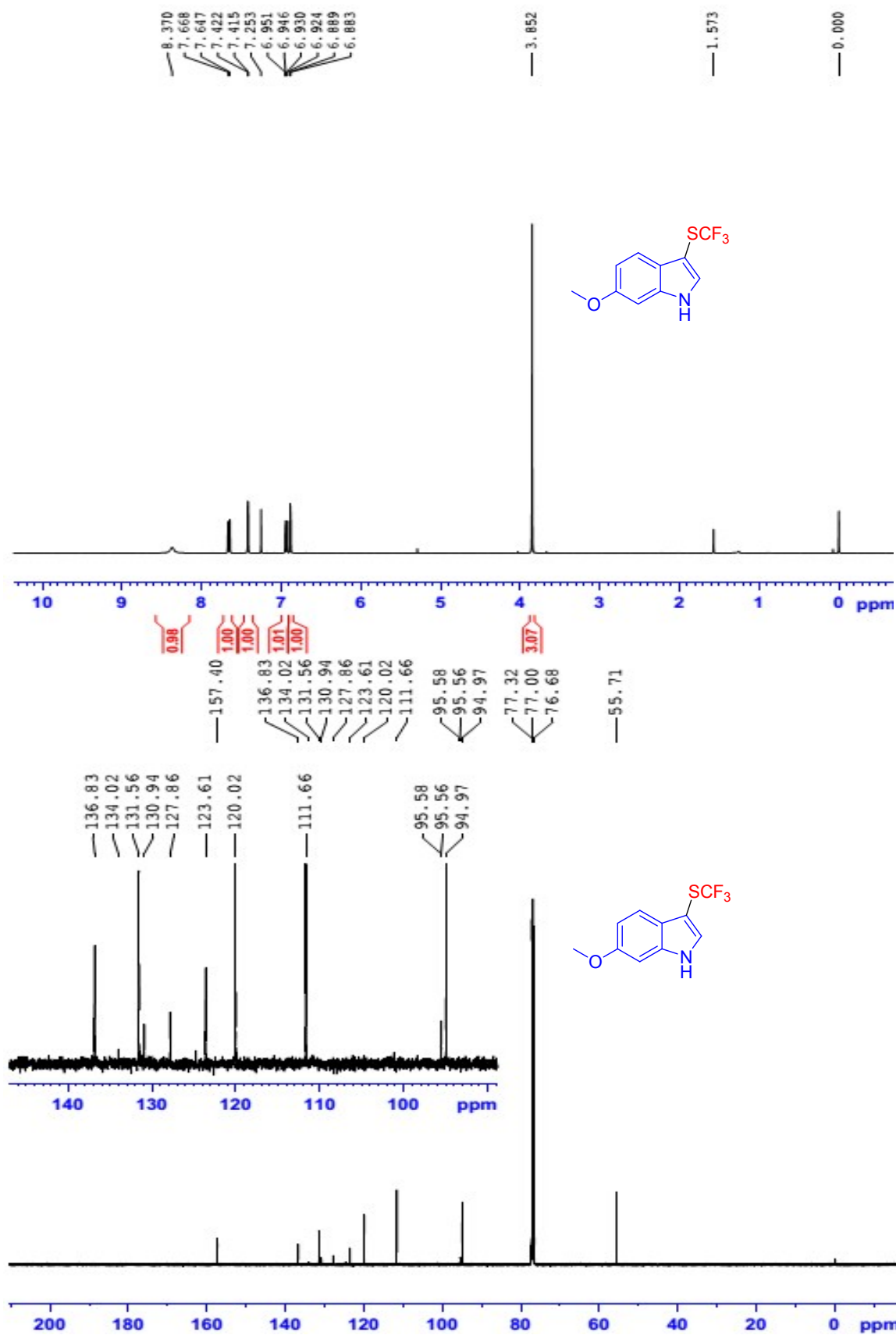


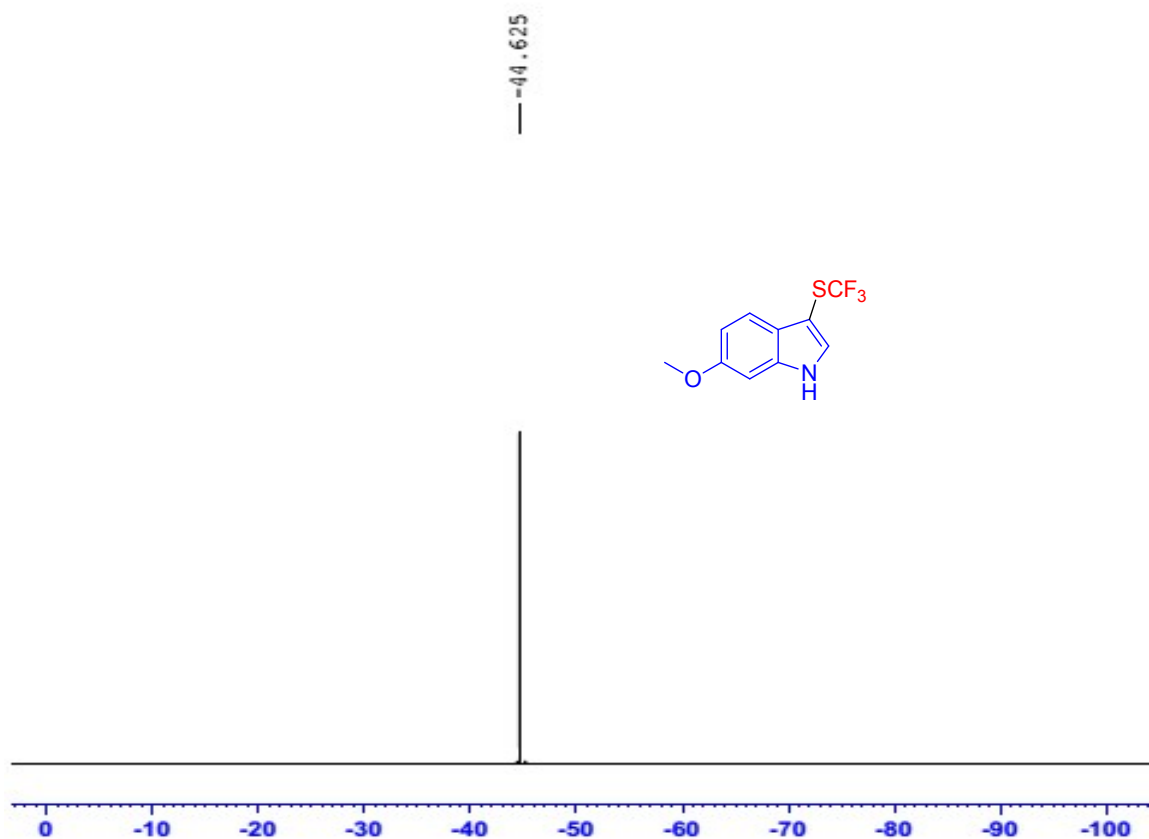


^1H , ^{19}F and ^{13}C NMR spectra of **6-chloro-3-((trifluoromethyl)thio)-1H-indole (11l)** in CDCl_3

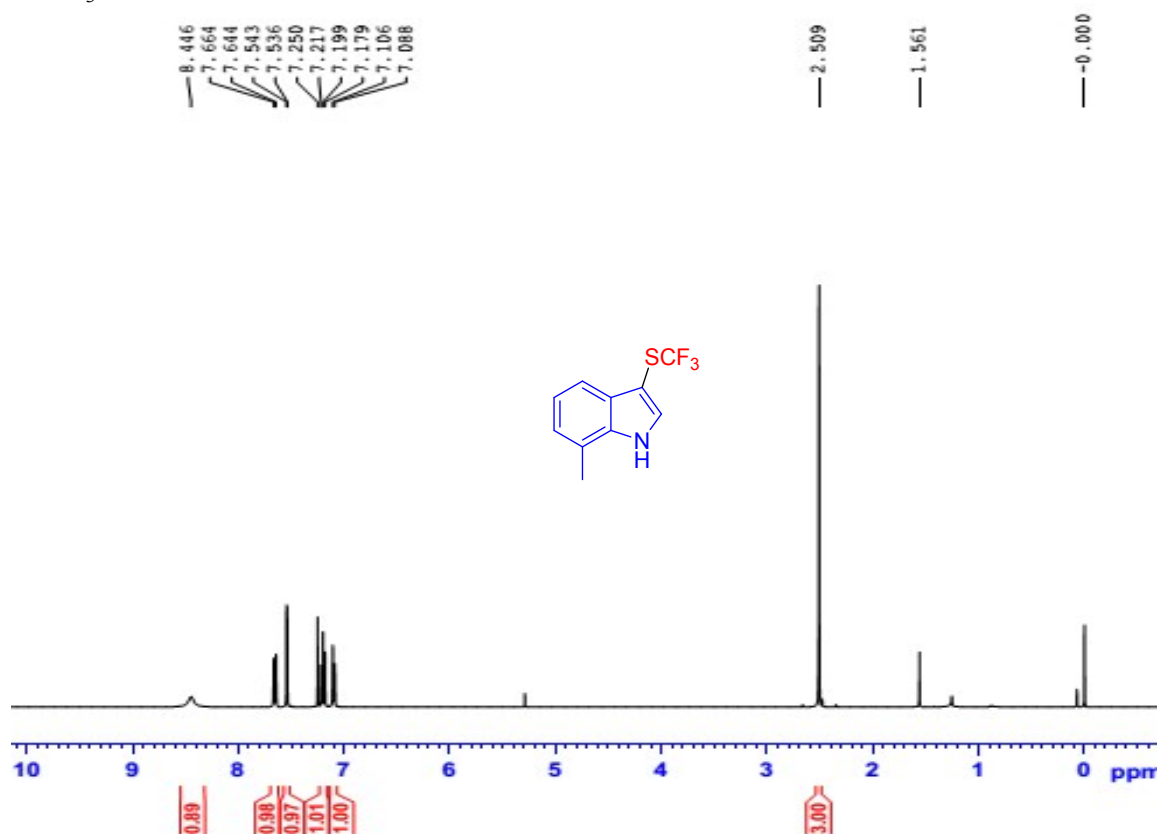


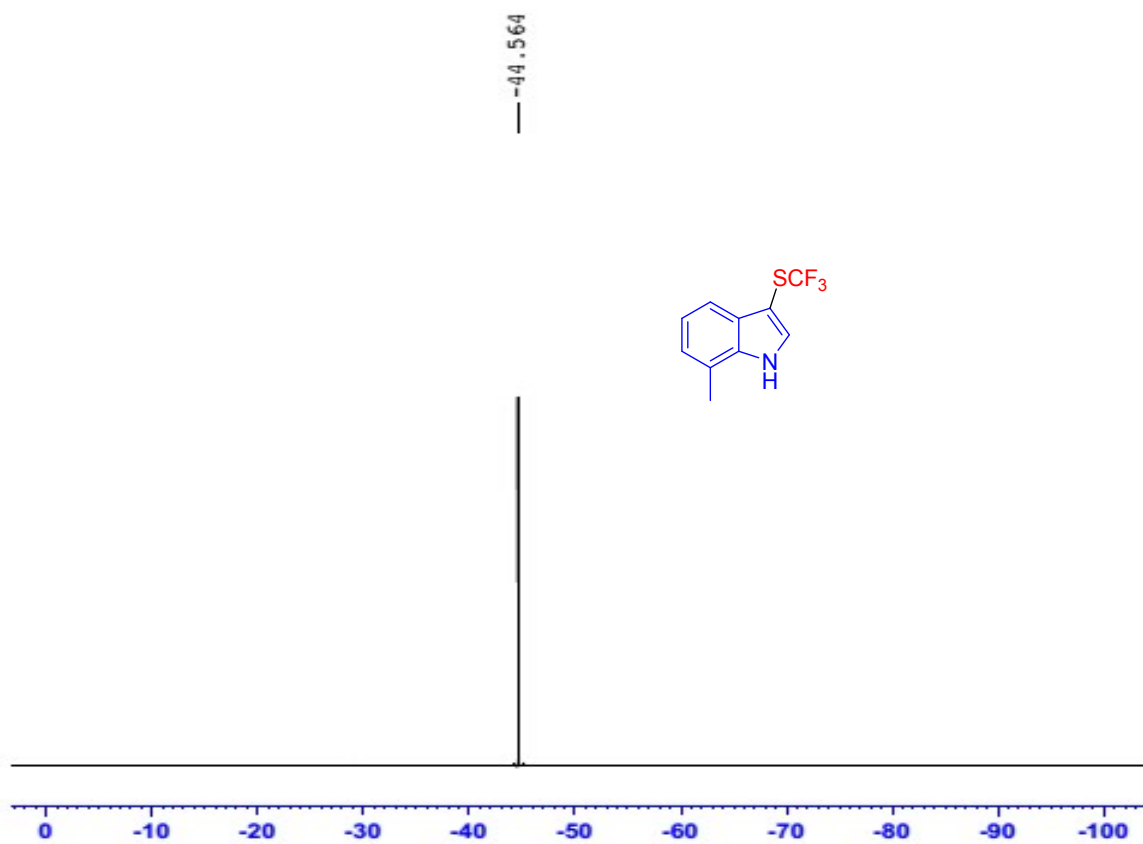
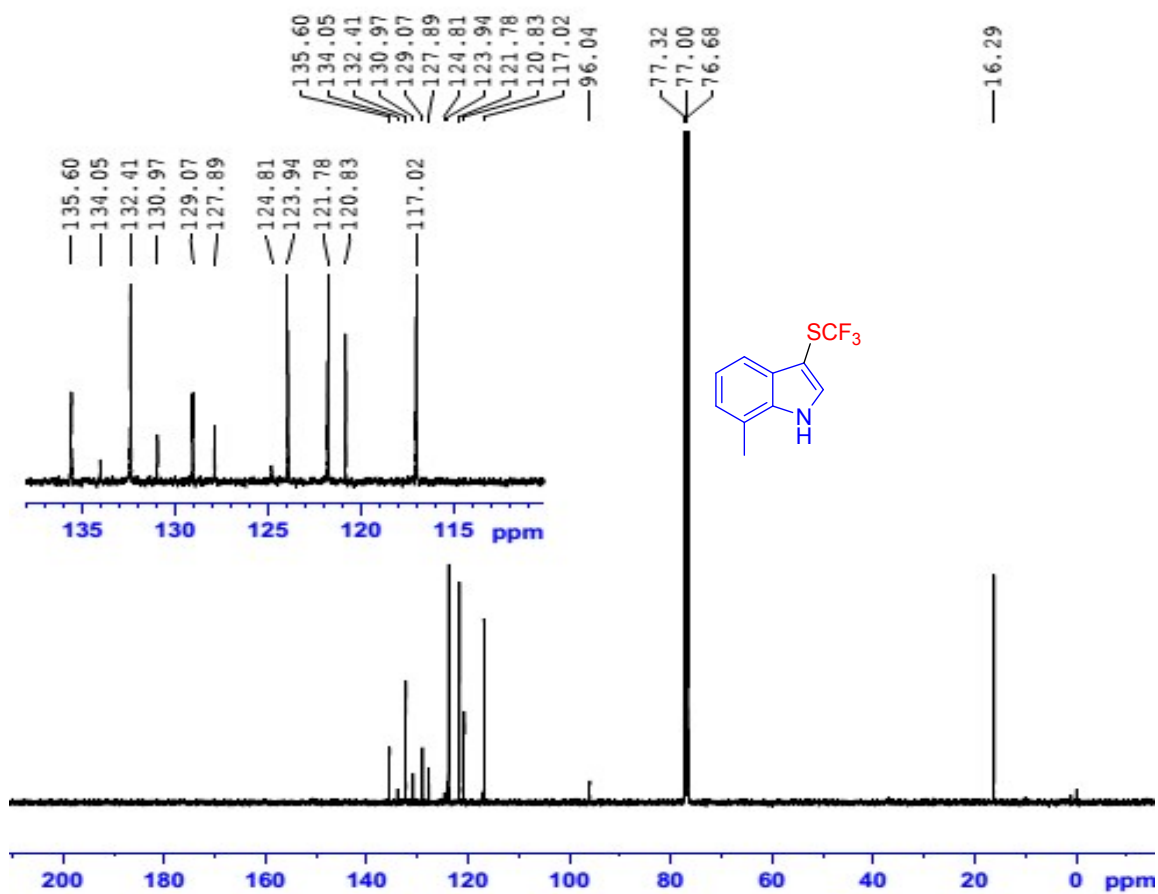
^1H , ^{19}F and ^{13}C NMR spectra of **6-methoxy-3-((trifluoromethyl)thio)-1H-indole (11m)** in CDCl_3



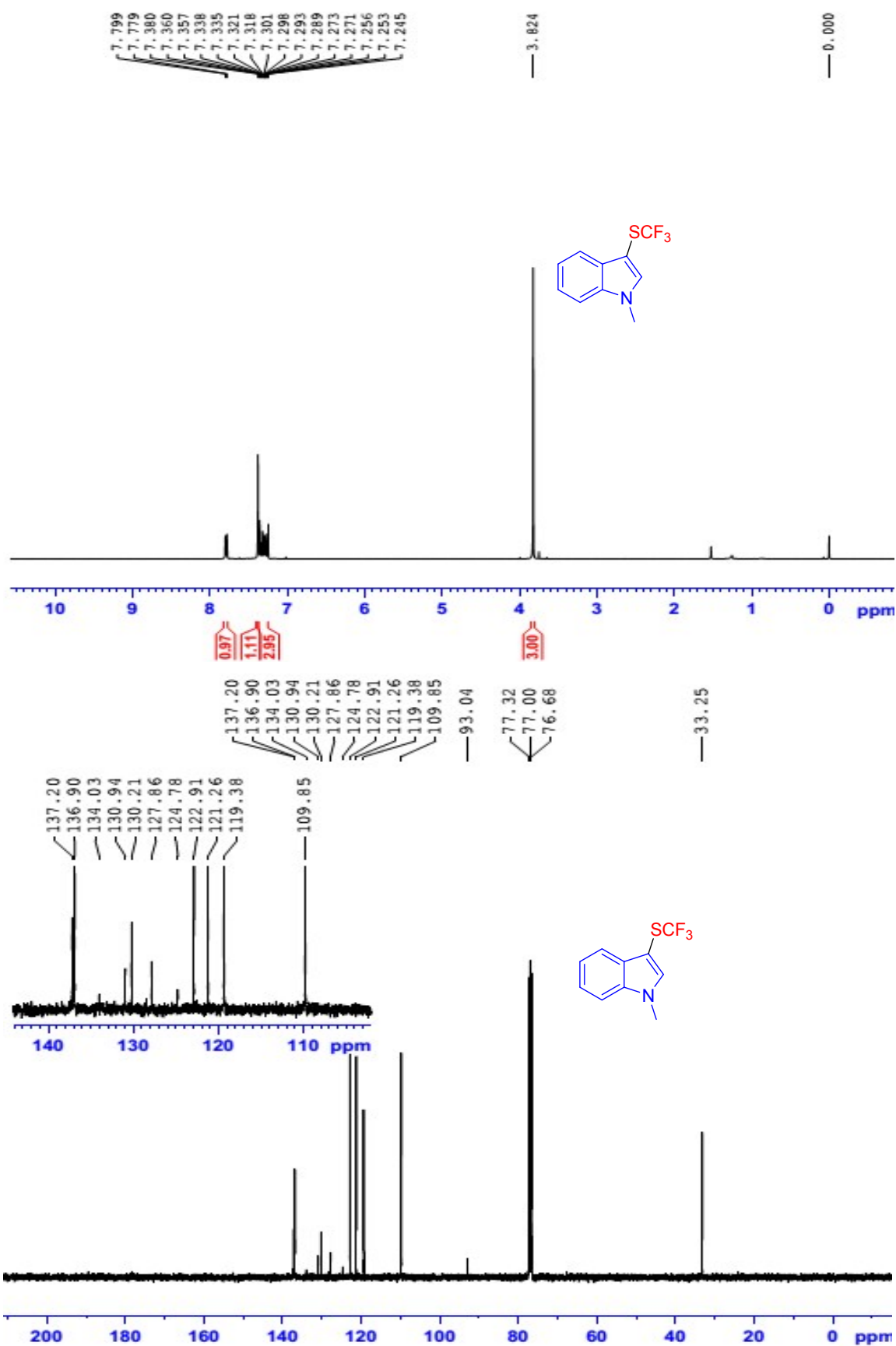


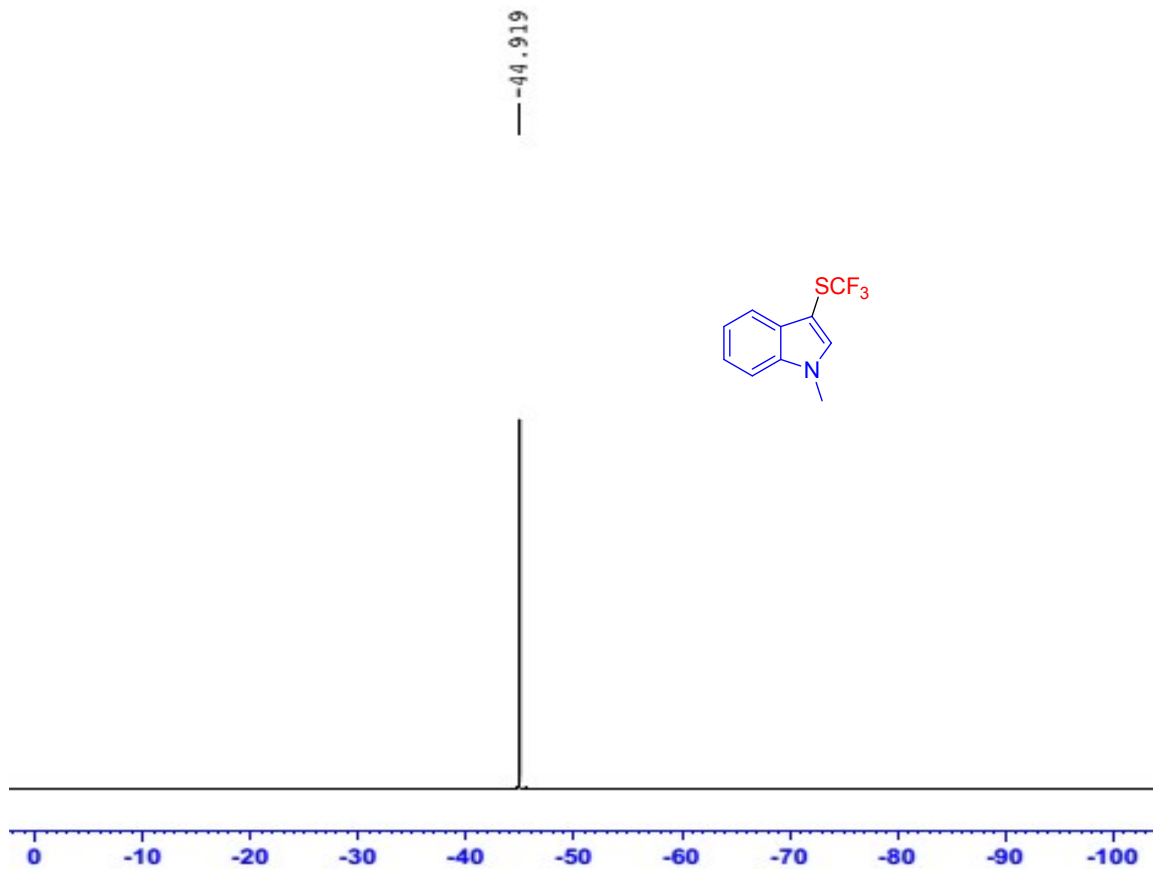
^1H , ^{19}F and ^{13}C NMR spectra of **7-methyl-3-((trifluoromethyl)thio)-1H-indole (11n)** in CDCl₃



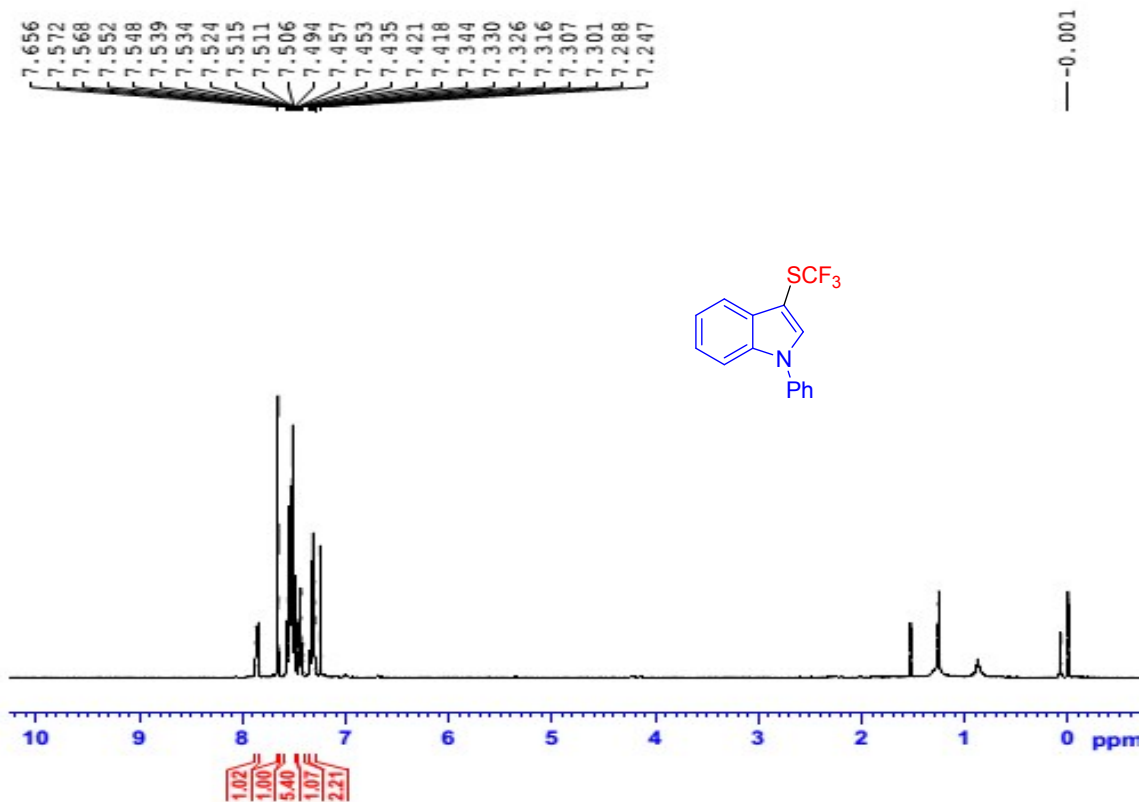


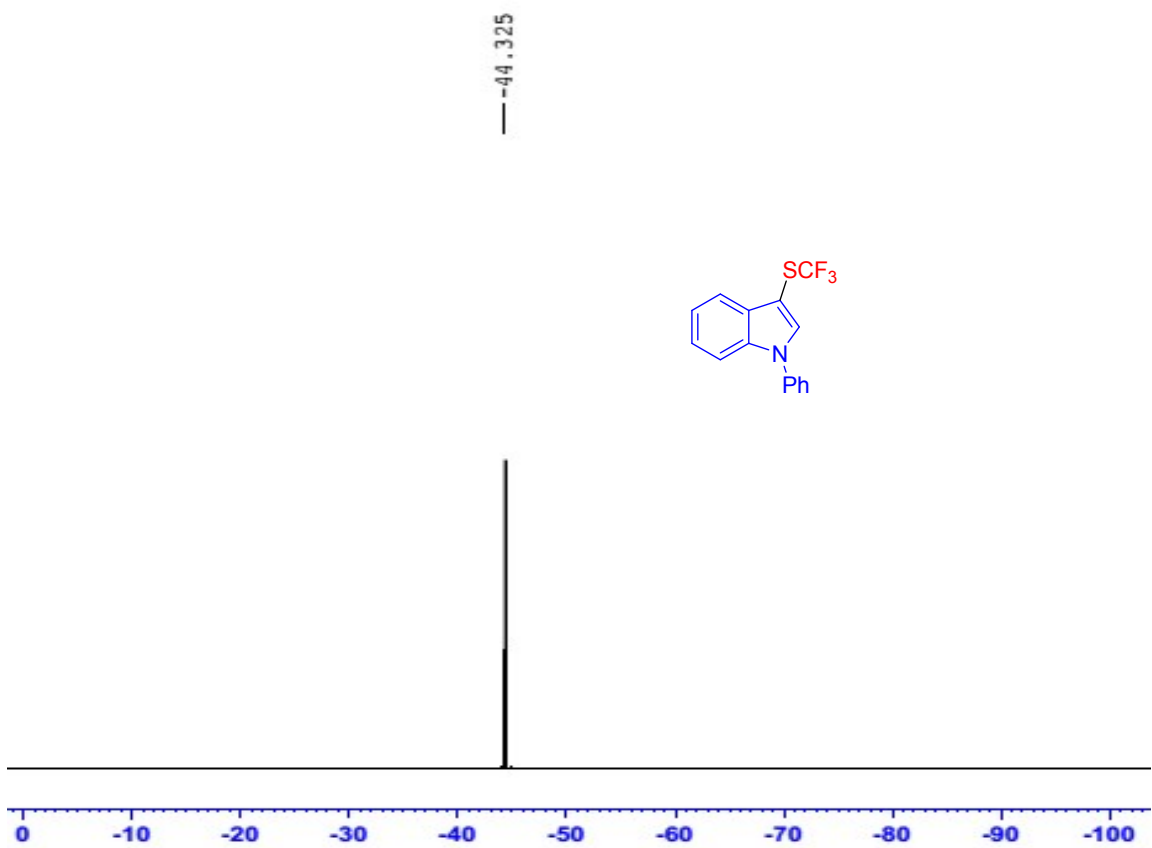
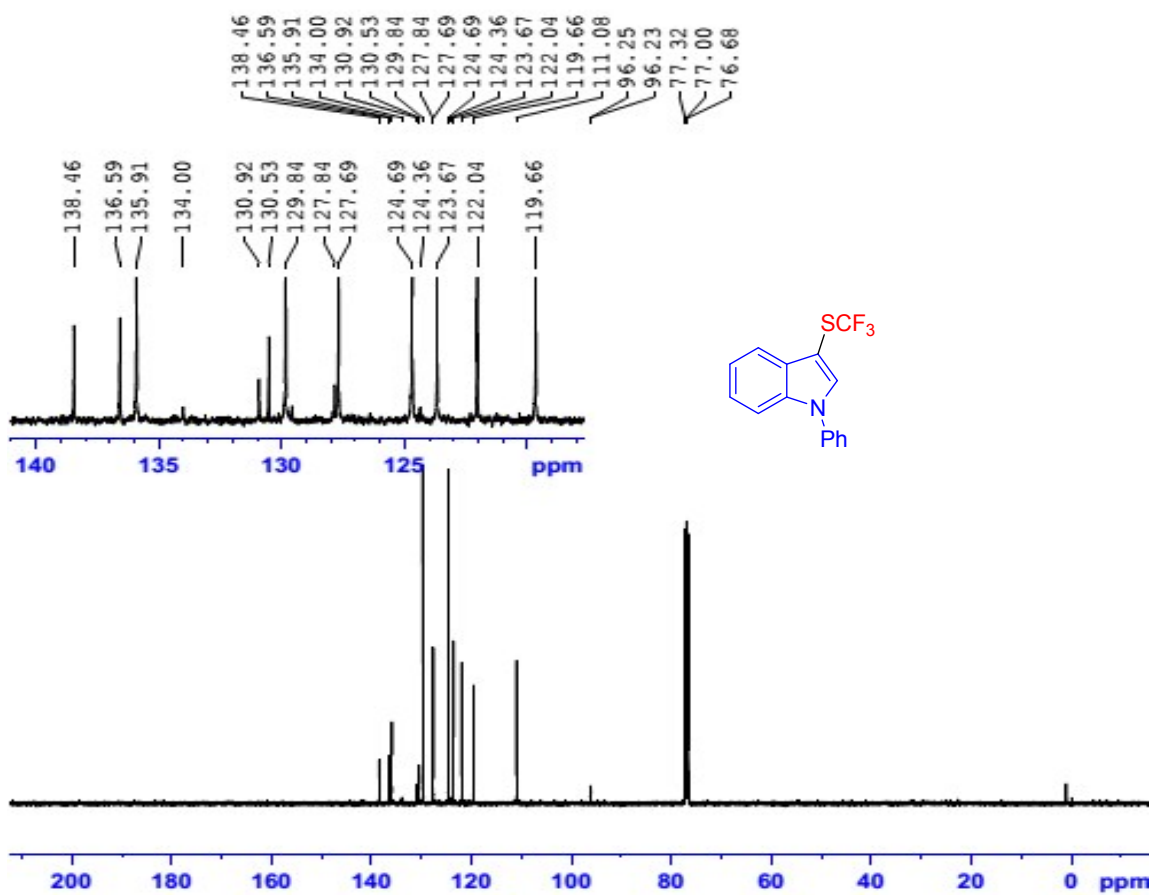
^1H , ^{19}F and ^{13}C NMR spectra of *1-methyl-3-((trifluoromethyl)thio)-1H-indole (11o)* in CDCl_3



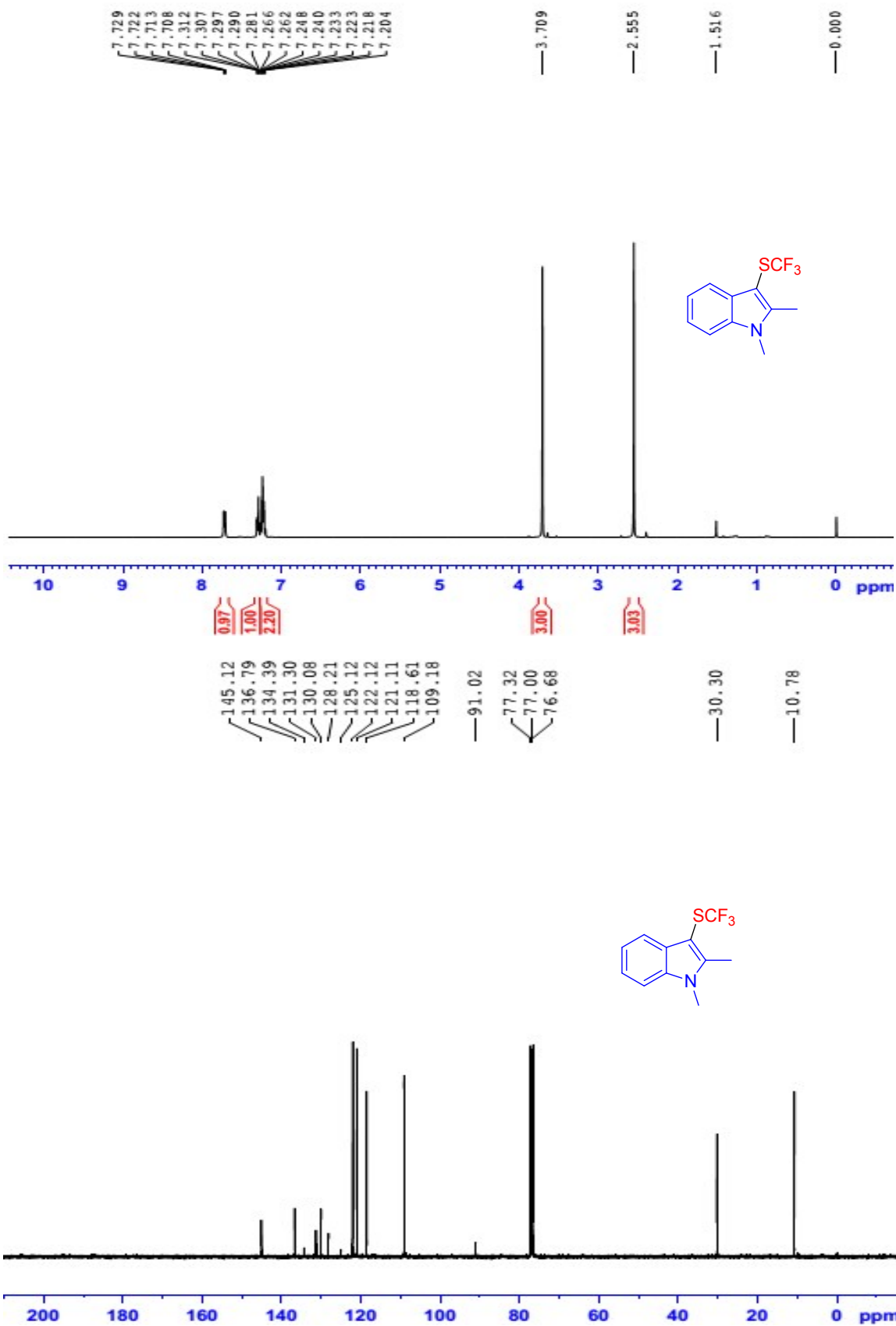


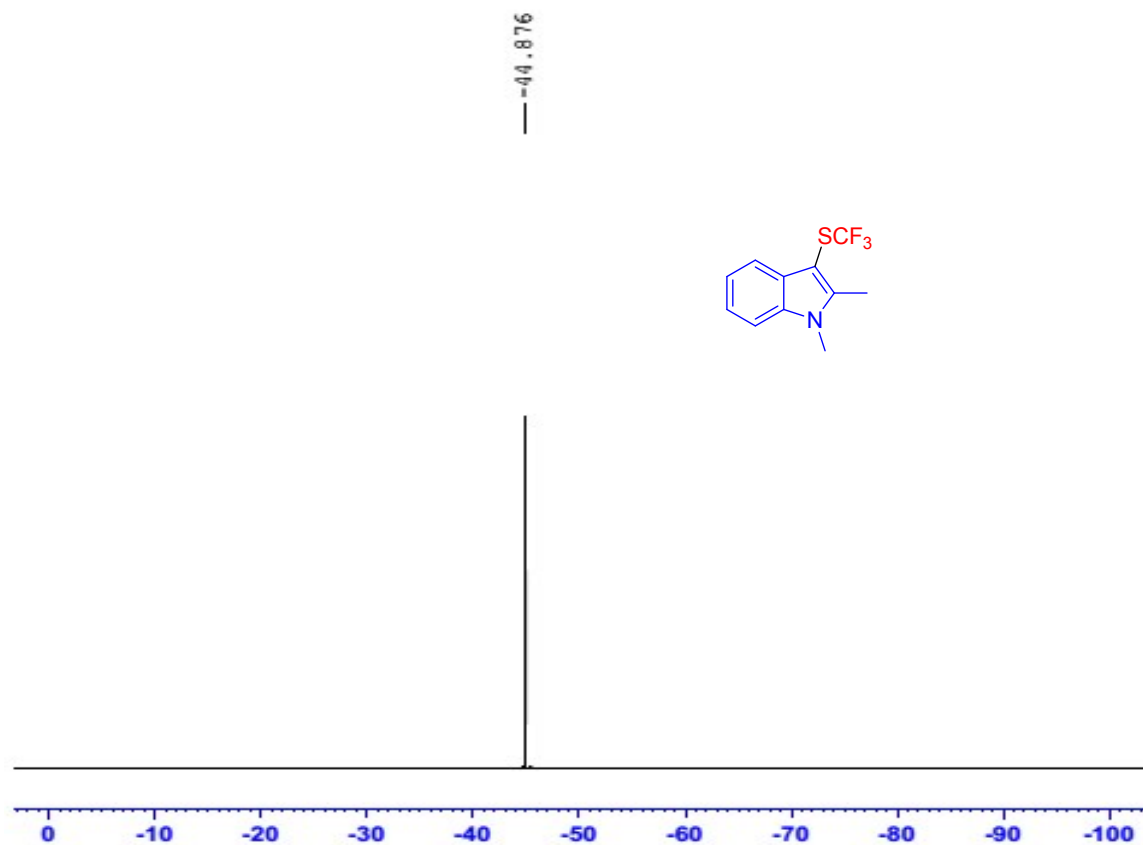
^1H , ^{19}F and ^{13}C NMR spectra of *1-phenyl-3-((trifluoromethyl)thio)-1H-indole (11p)* in CDCl_3



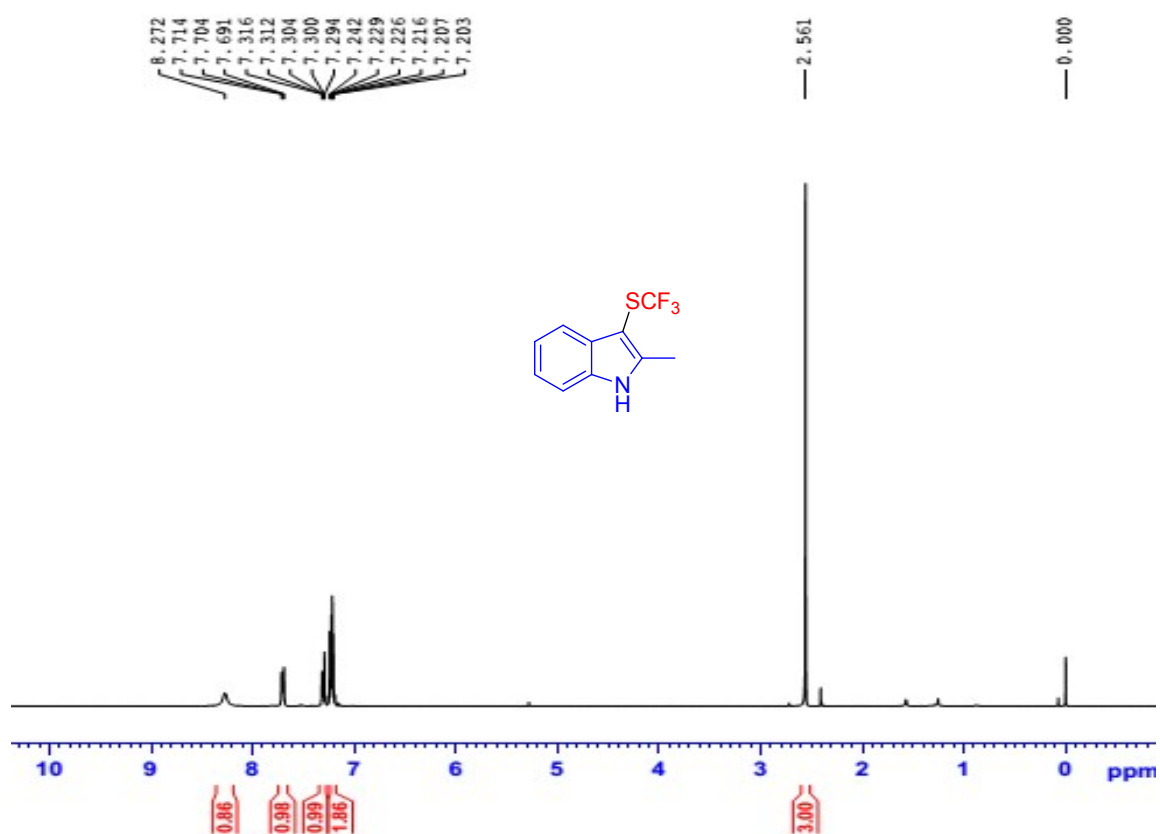


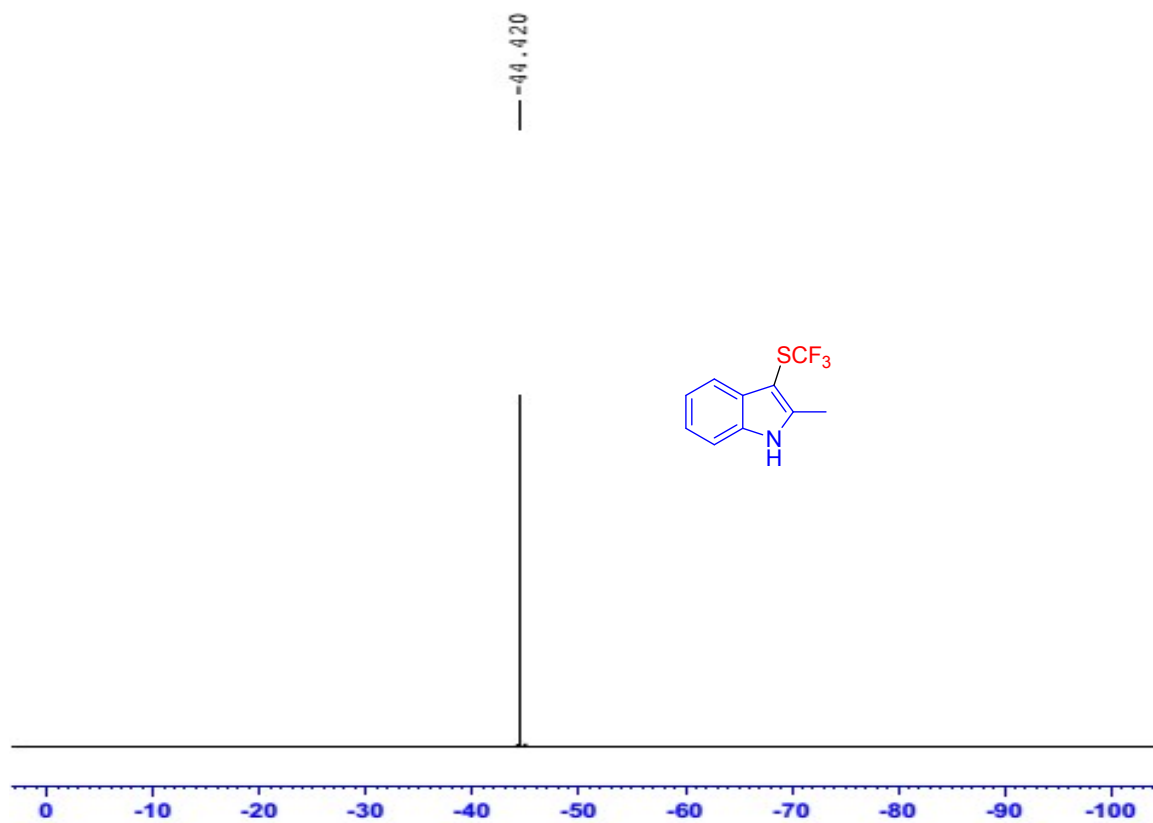
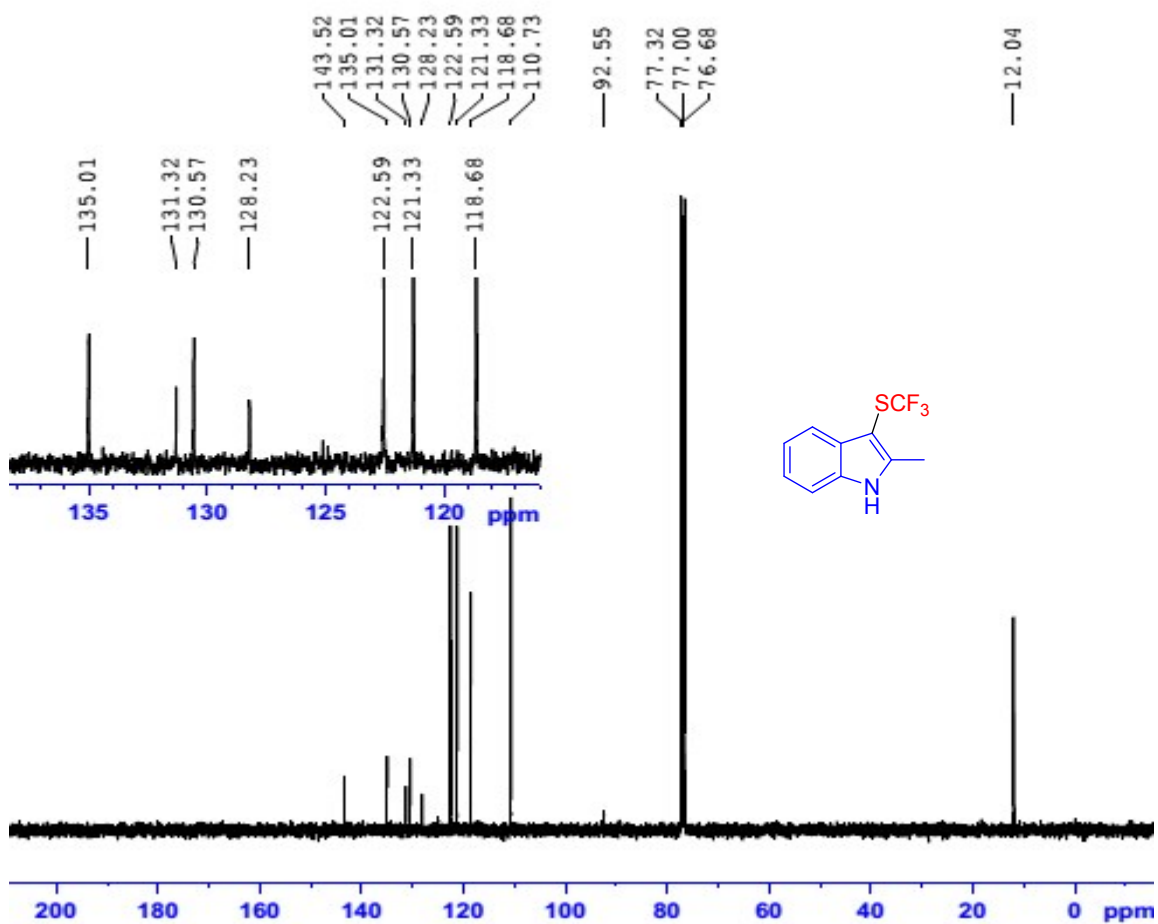
^1H , ^{19}F and ^{13}C NMR spectra of *1,2-dimethyl-3-((trifluoromethyl)thio)-1H-indole (11q)* in CDCl_3



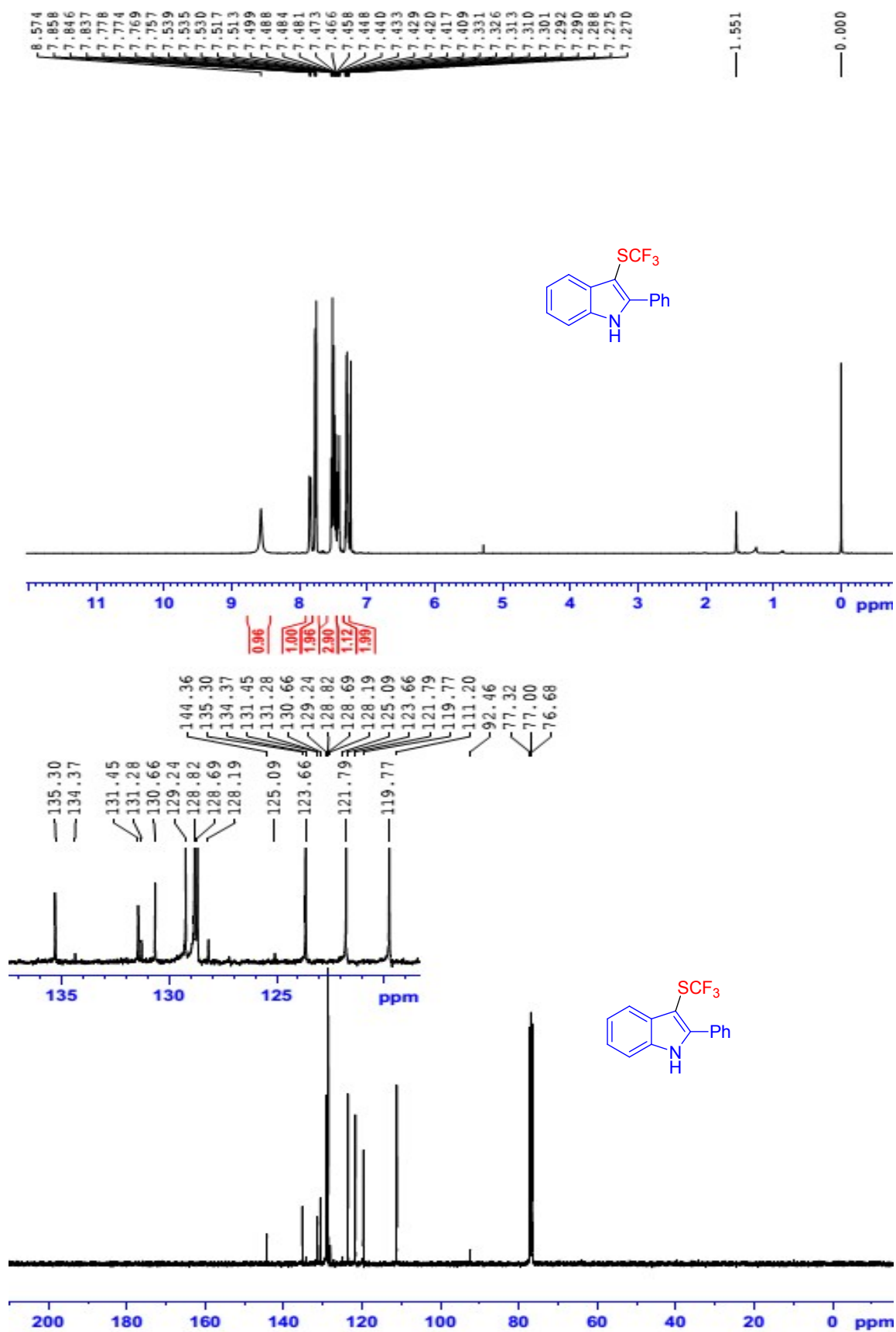


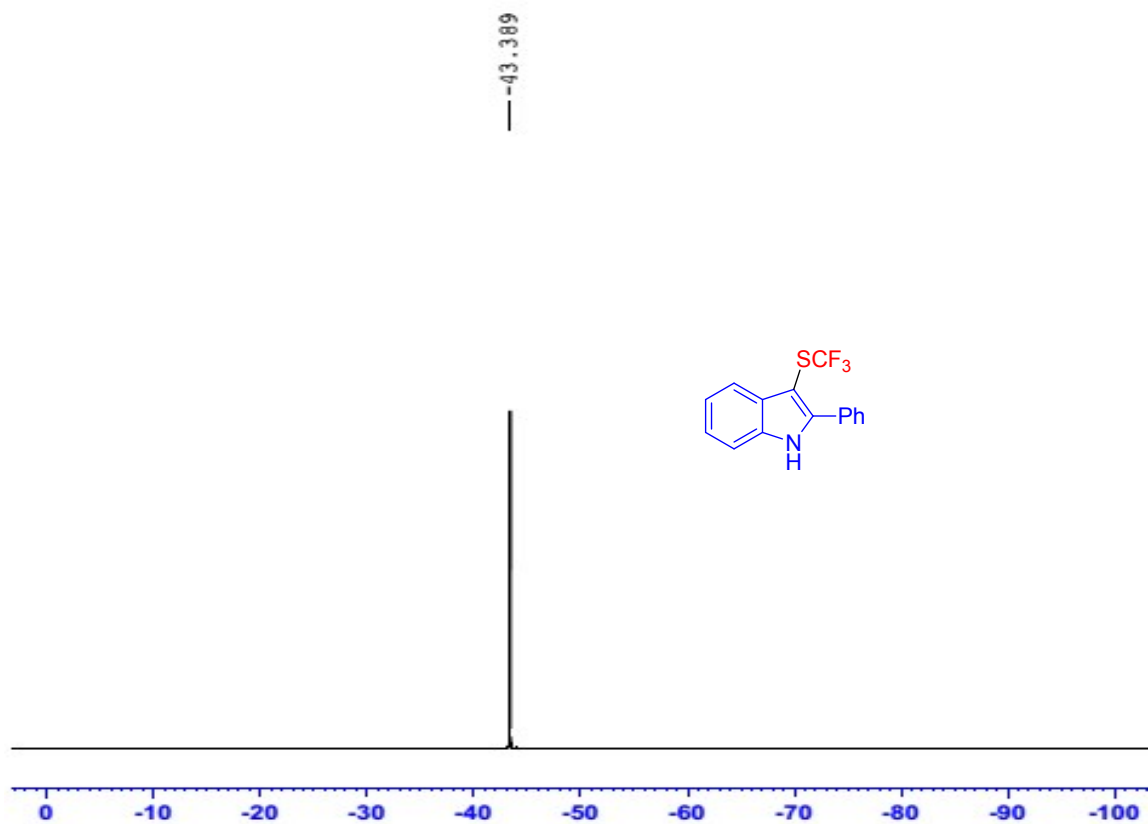
^1H , ^{19}F and ^{13}C NMR spectra of **2-methyl-3-((trifluoromethyl)thio)-1H-indole (11r)** in CDCl_3



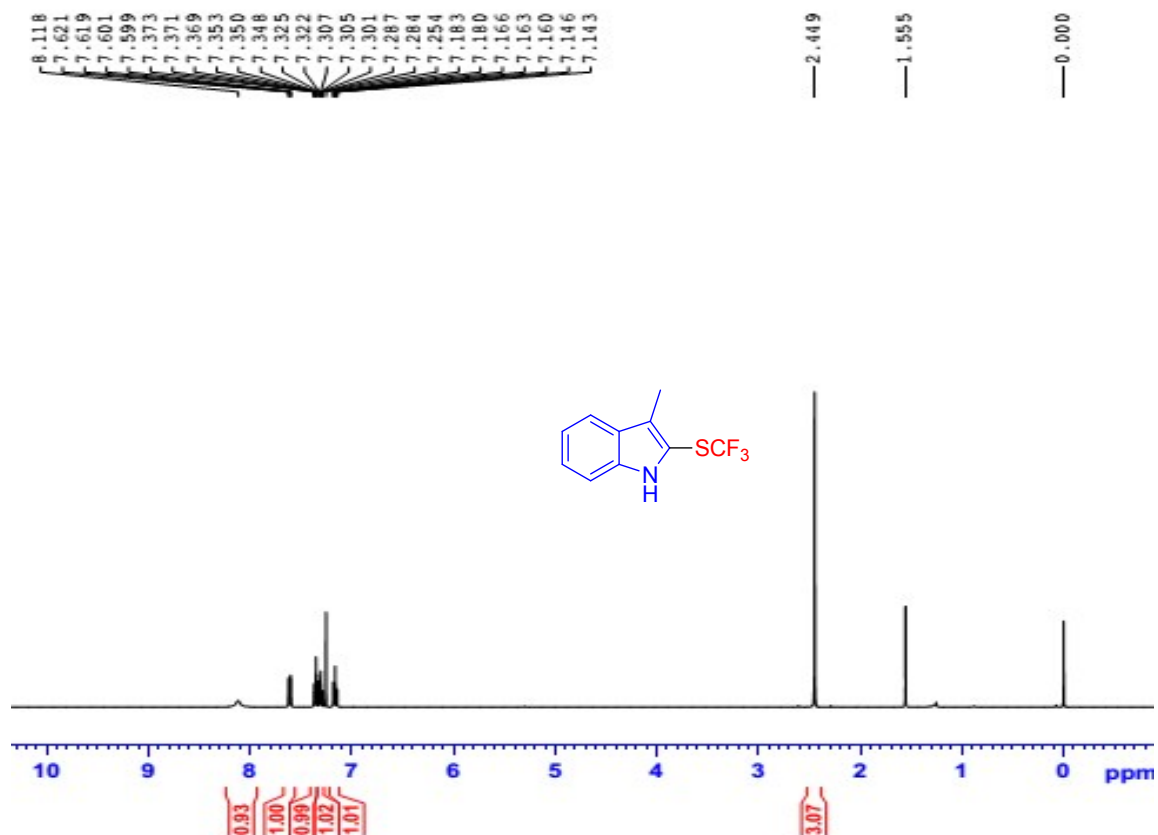


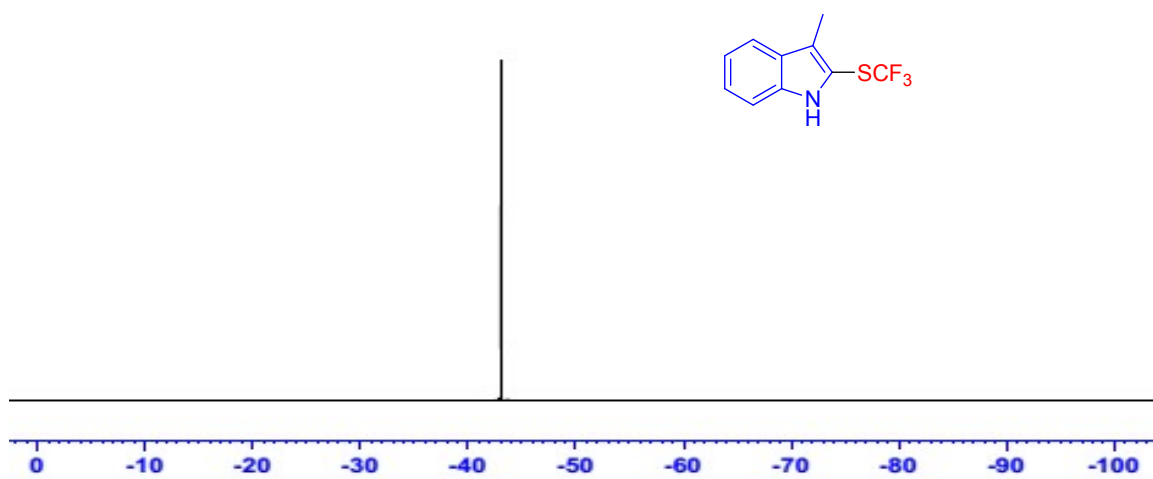
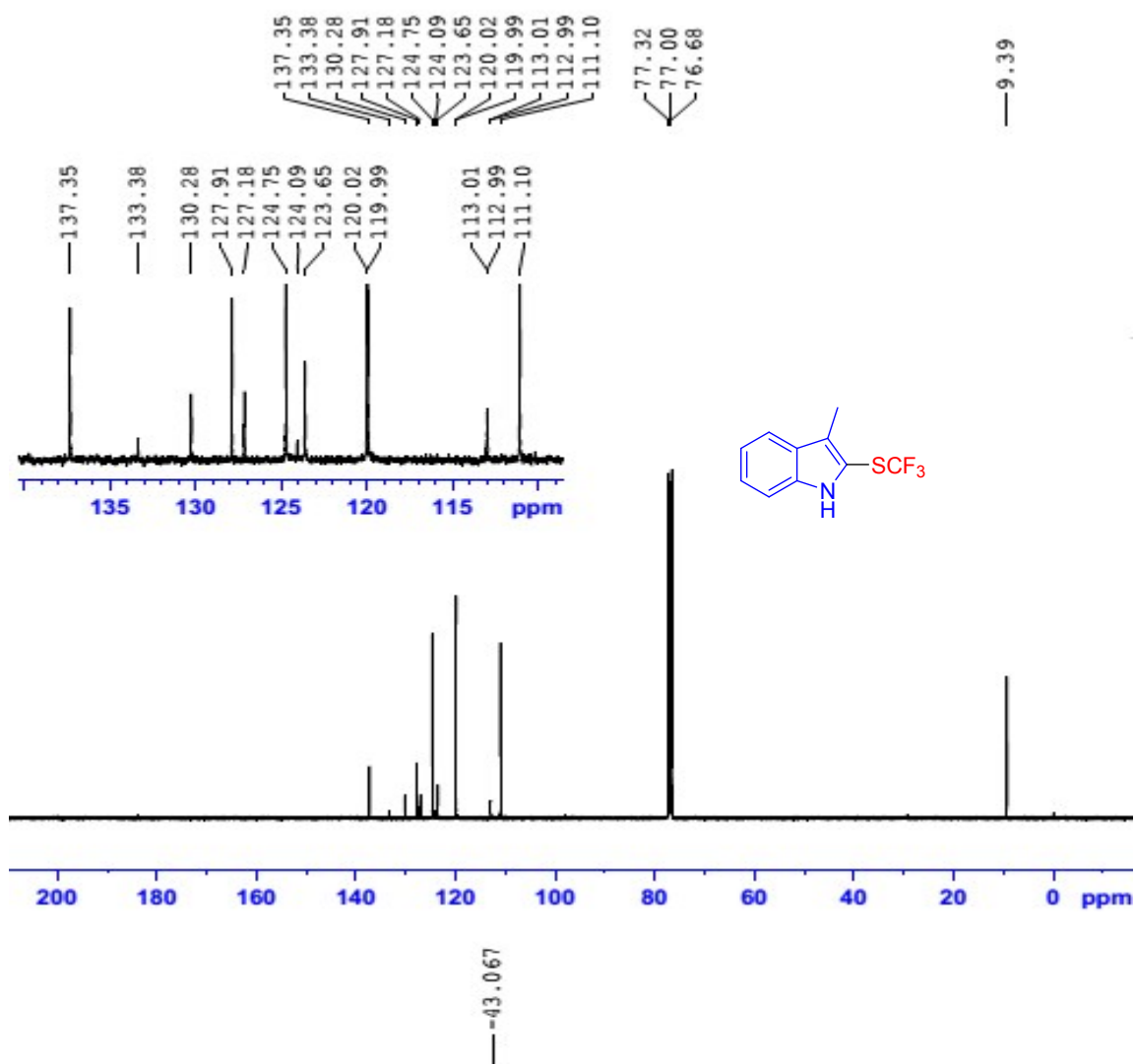
^1H , ^{19}F and ^{13}C NMR spectra of 2-phenyl-3-((trifluoromethyl)thio)-1H-indole (11s) in CDCl_3





^1H , ^{19}F and ^{13}C NMR spectra of 3-methyl-2-((trifluoromethyl)thio)-1H-indole (11t) in CDCl_3





^1H NMR ^{13}C NMR and ^{19}F NMR spectra of *S*-(trifluoromethyl) 1*H*-indole-3-sulfinothioate (**18a**) in DMSO- d_6

