

Supporting Information

N-Heterocyclic Carbene Assisted, Bis(phosphine)nickel Catalyzed Cross-Couplings of Diarylborinic Acids with Aryl Chlorides, Tosylates, and Sulfamates

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East China University of Science & Technology

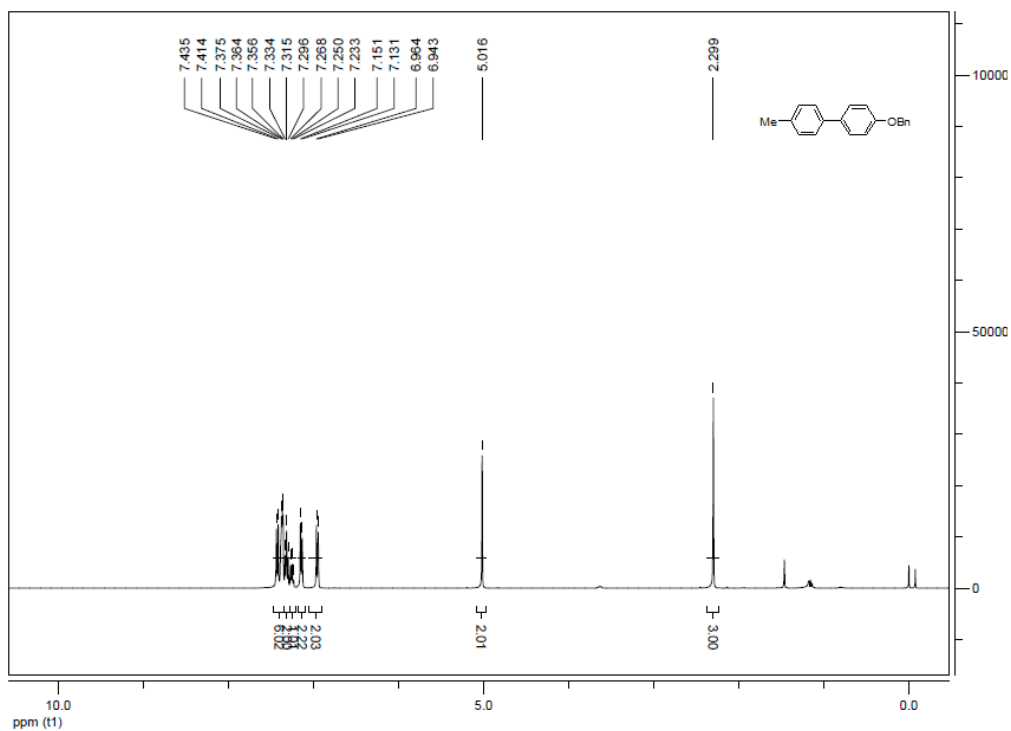
130 Meilong Rd, Shanghai, China

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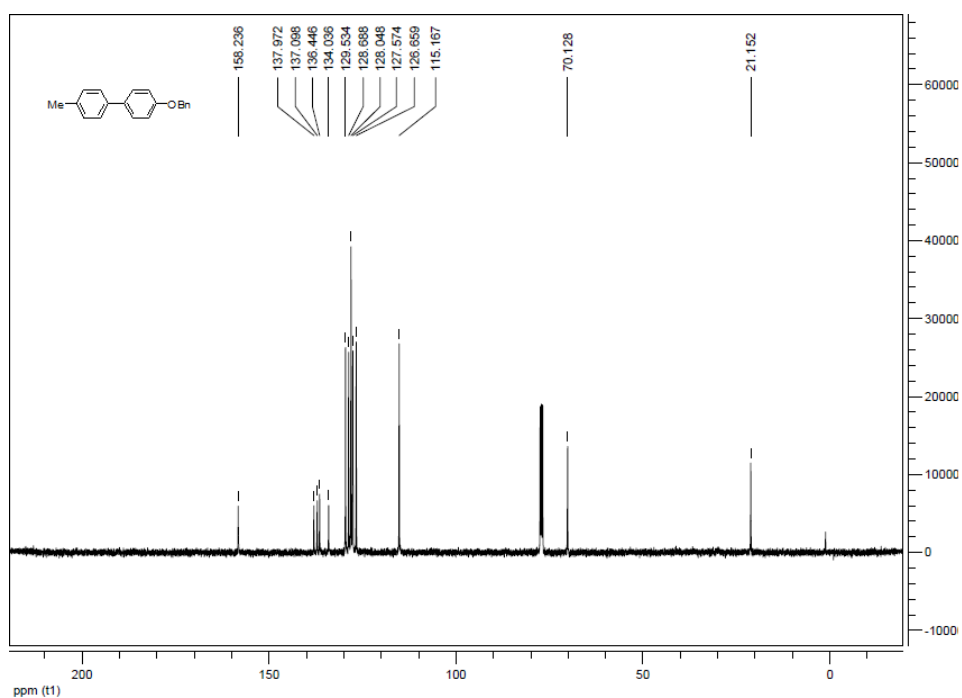
NMR spectra of compounds

4-Benzyloxy-4'-methylbiphenyl (3aa)

^1H NMR

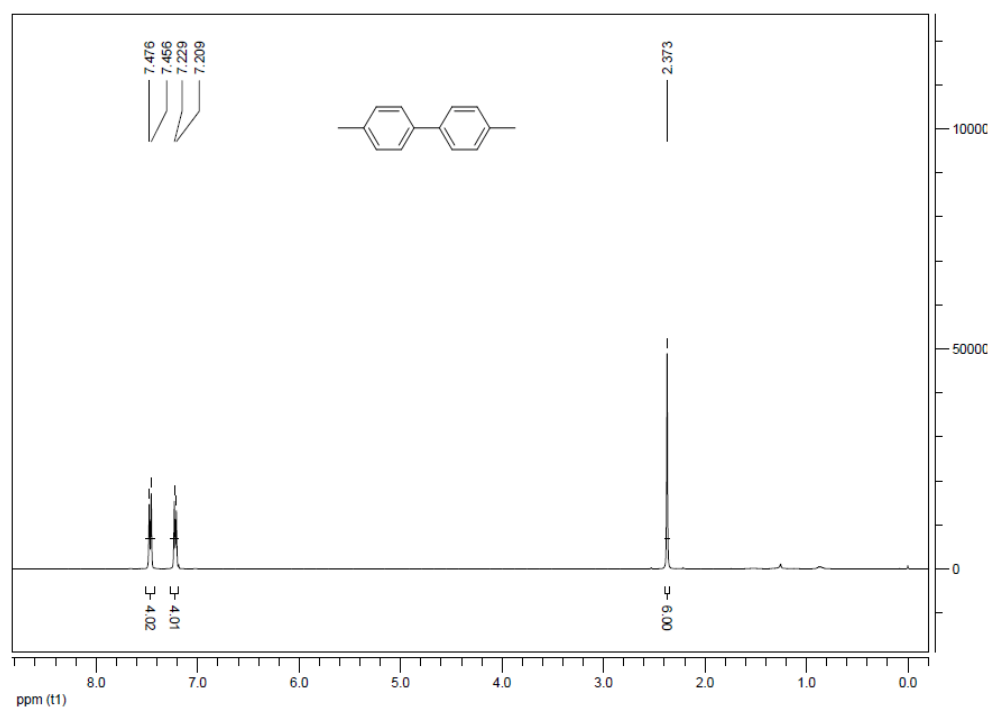


^{13}C NMR

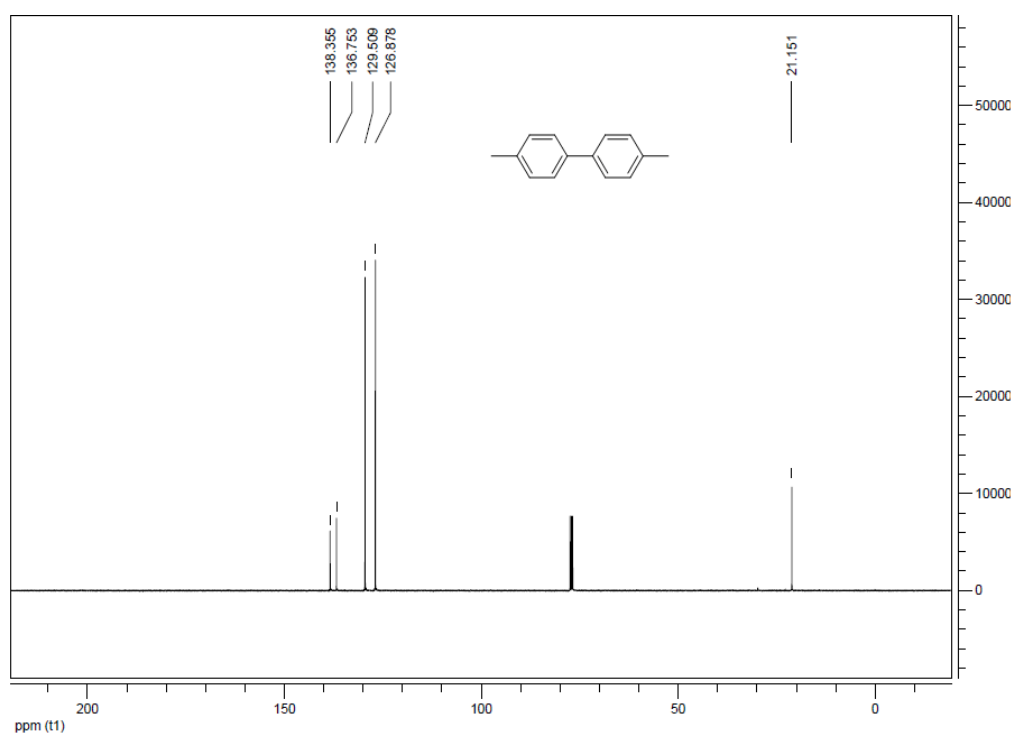


4,4'-Dimethylbiphenyl (3ab)

^1H NMR

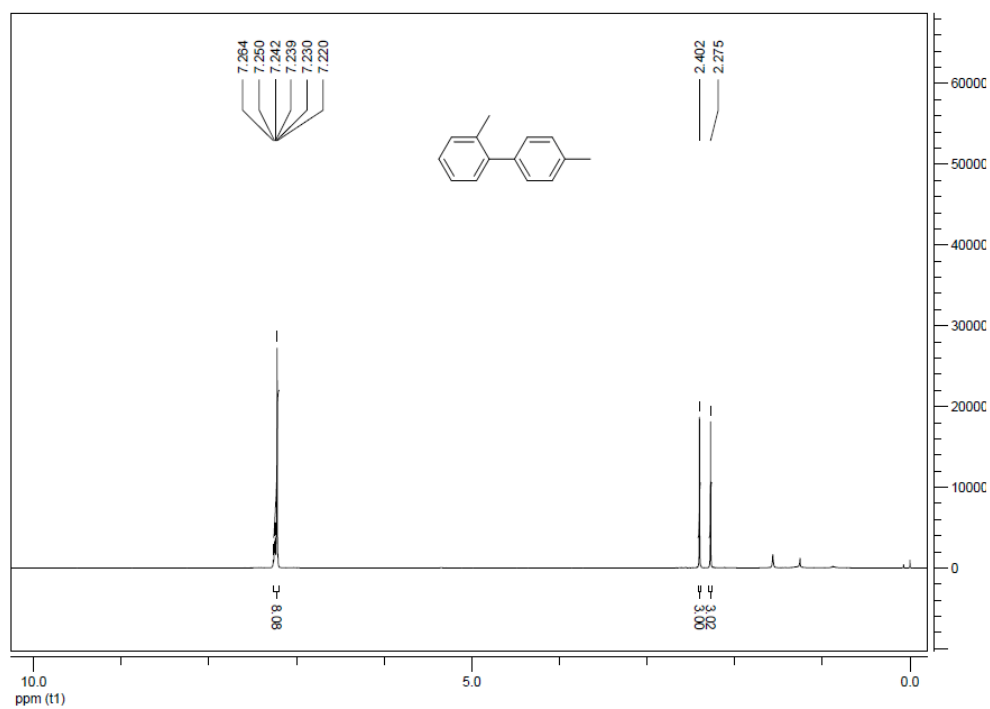


^{13}C NMR

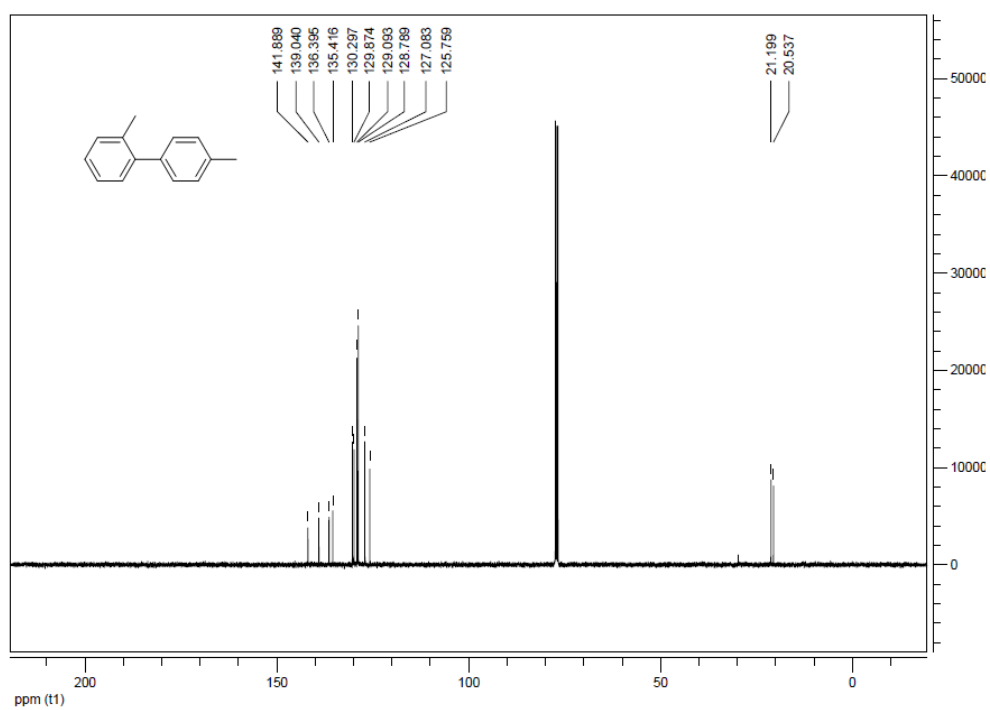


2,4'-Dimethylbiphenyl (3ac)

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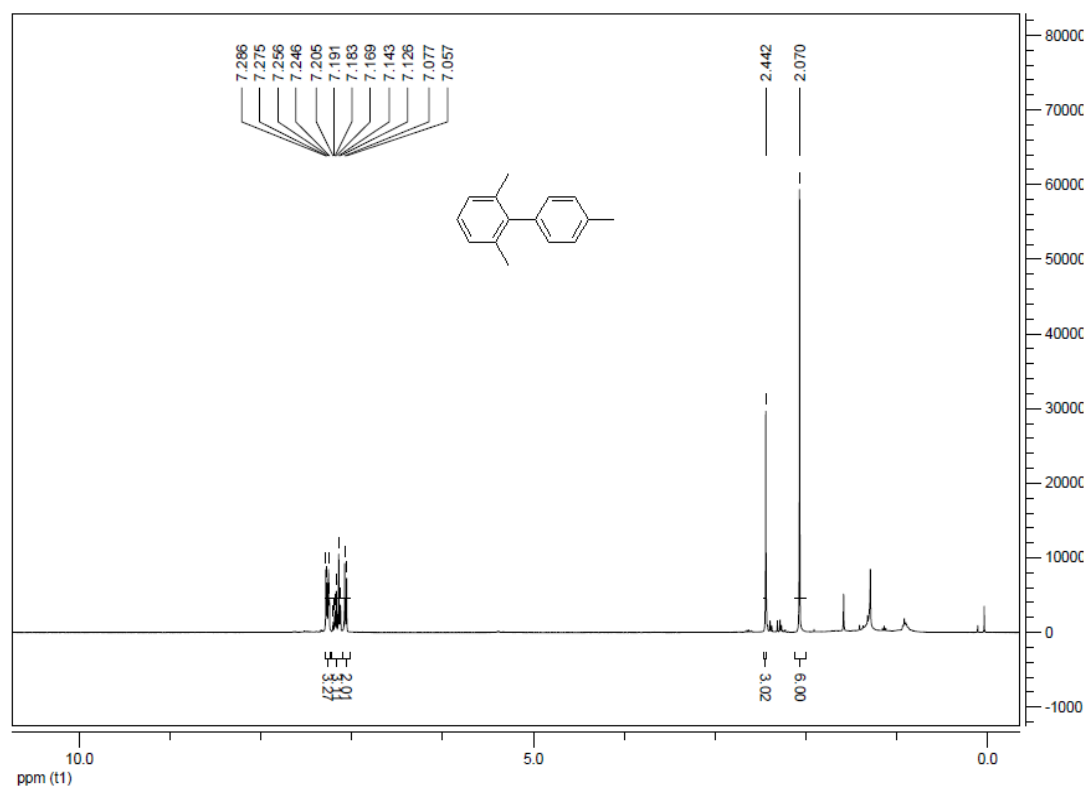


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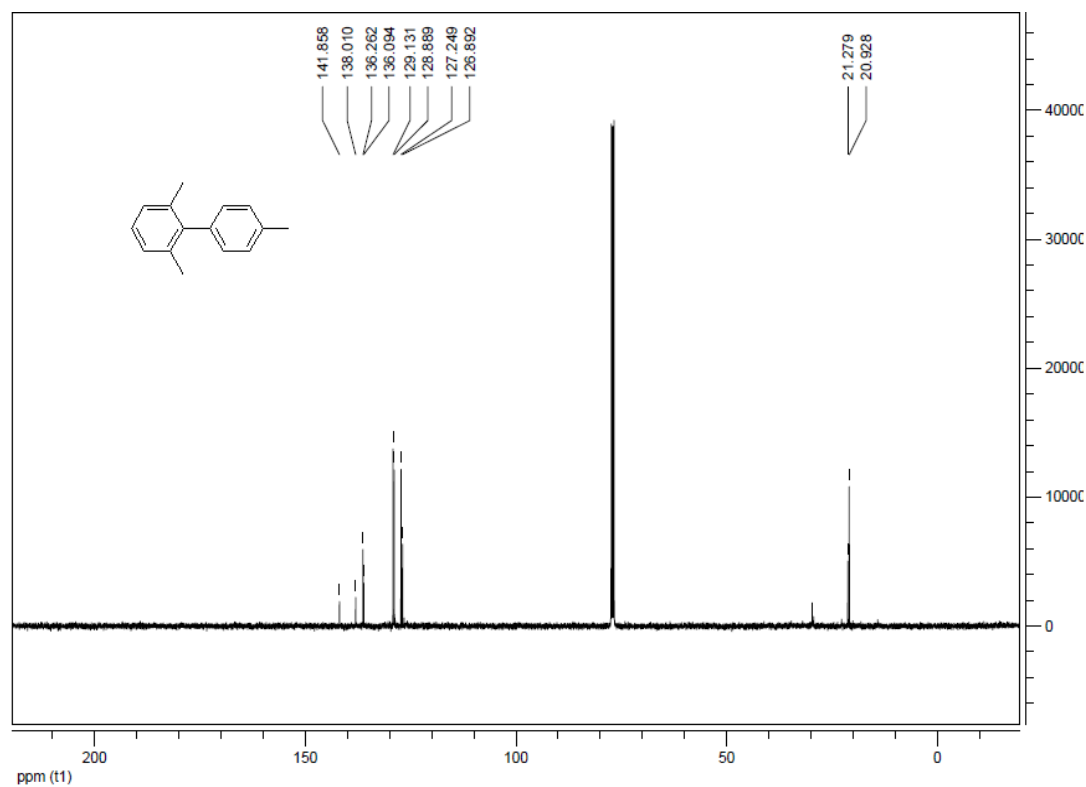


2,6,4'-Trimethylbiphenyl (3ad)

^1H NMR

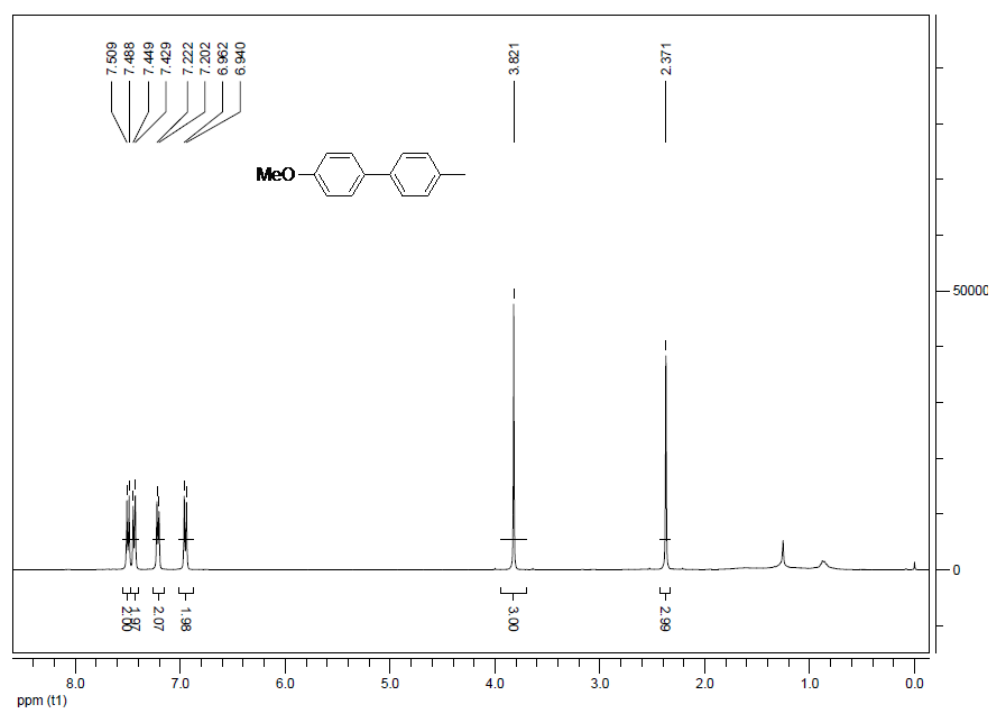


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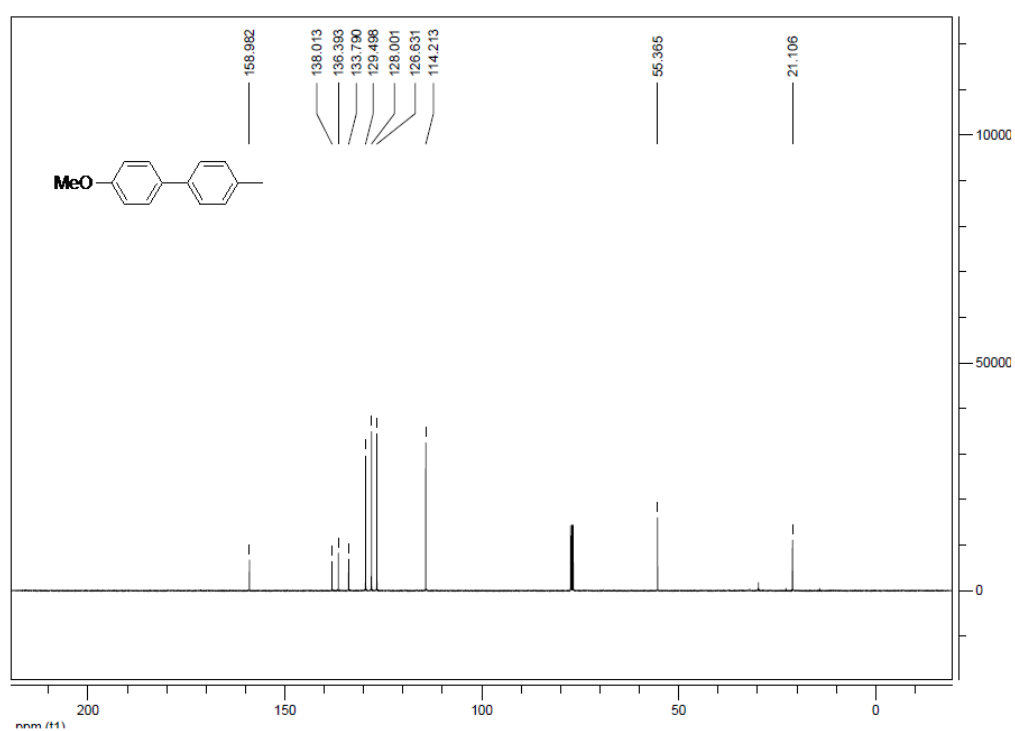


4-Methoxy-4'-methylbiphenyl (3ae)

¹H NMR

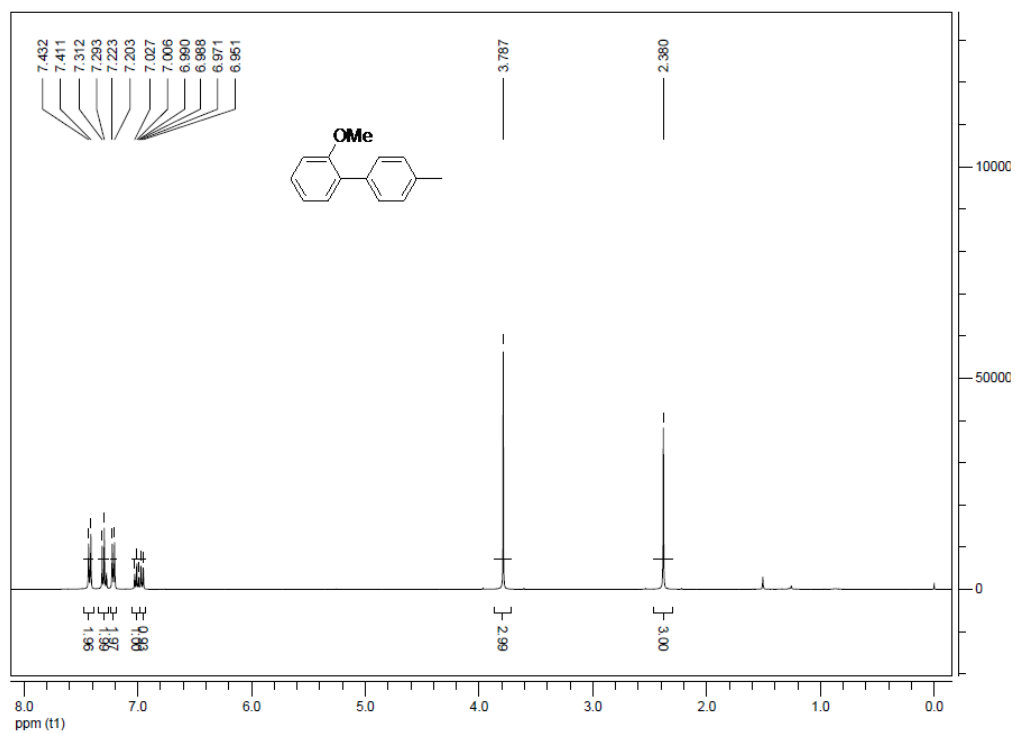


¹³C NMR

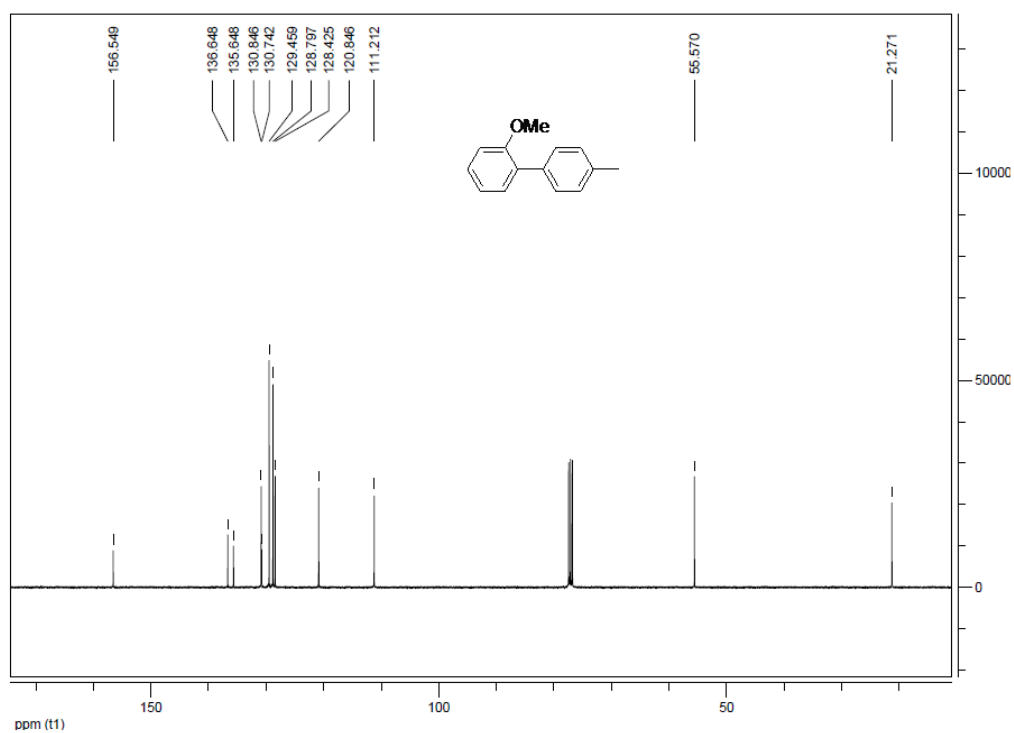


2-Methoxy-4'-methylbiphenyl (3af)

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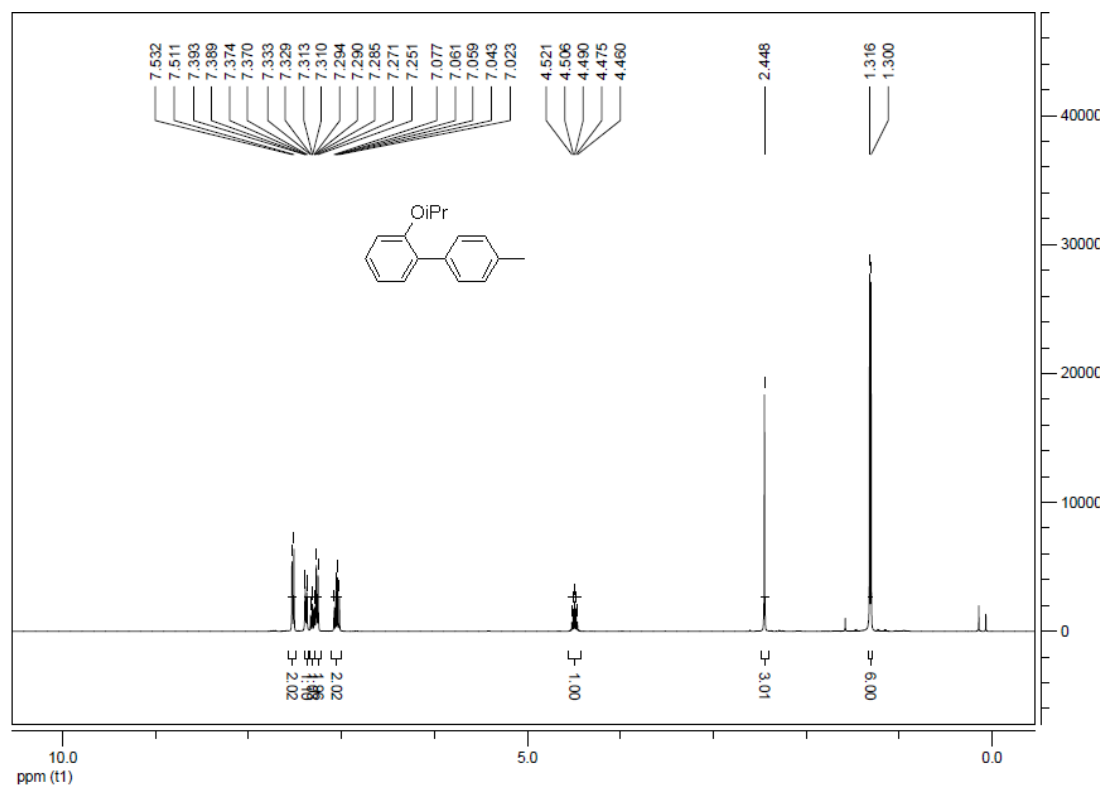


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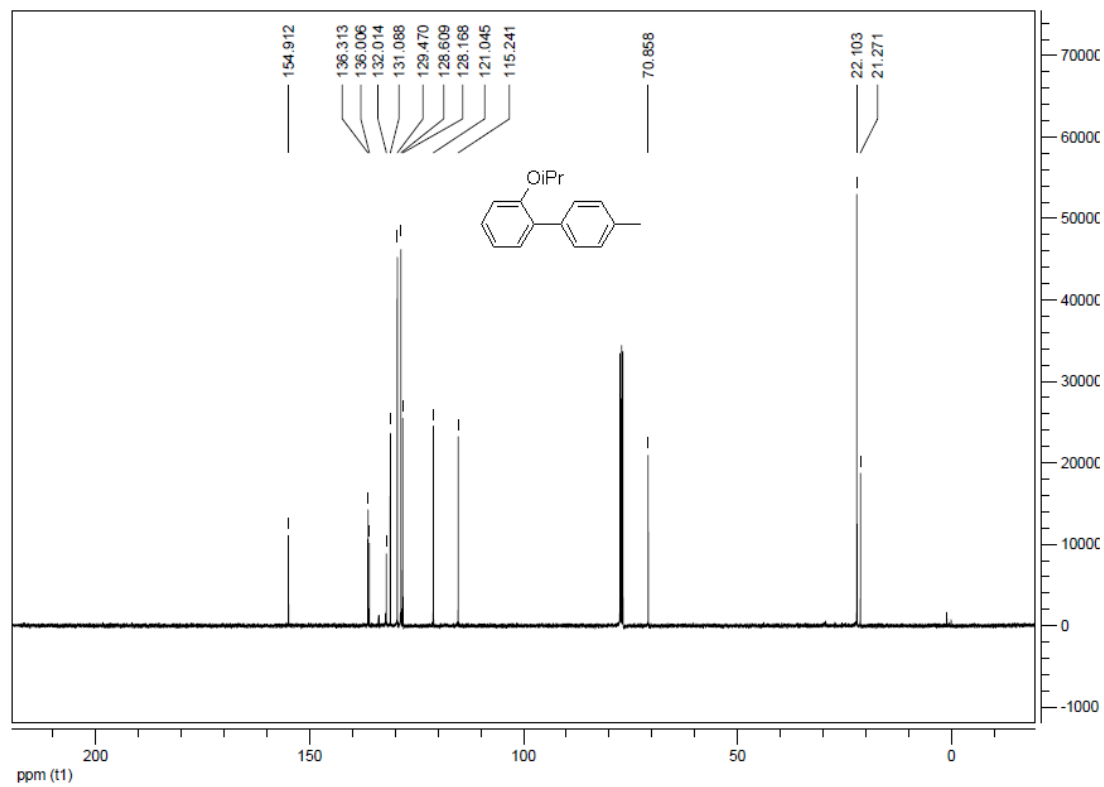


2-Isopropoxy-4'-methylbiphenyl (3ag)

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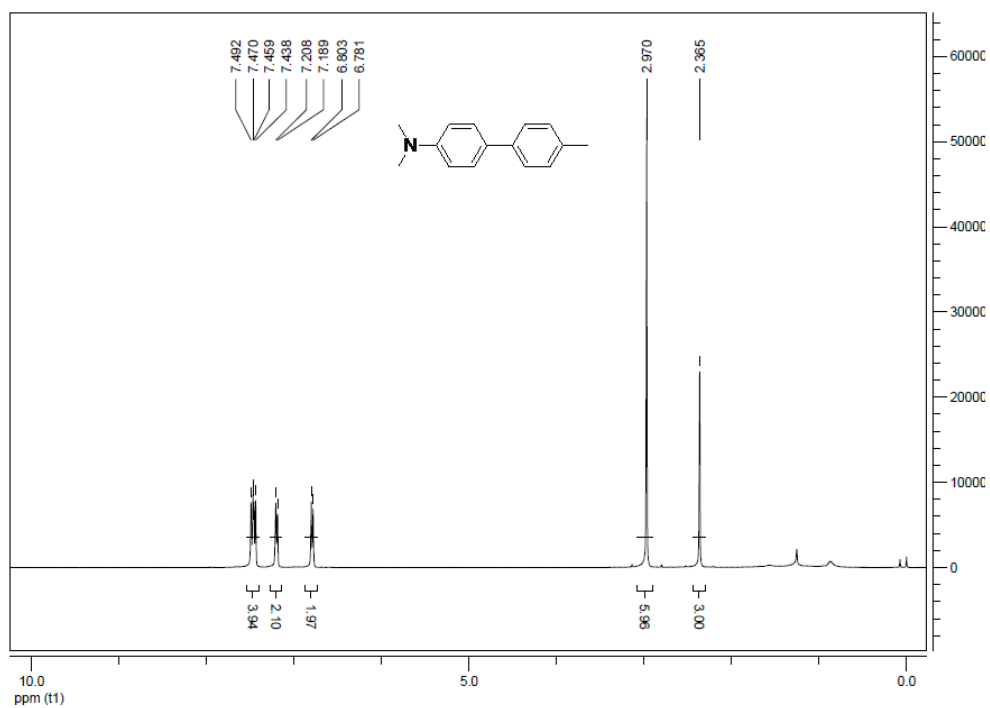


^{13}C NMR

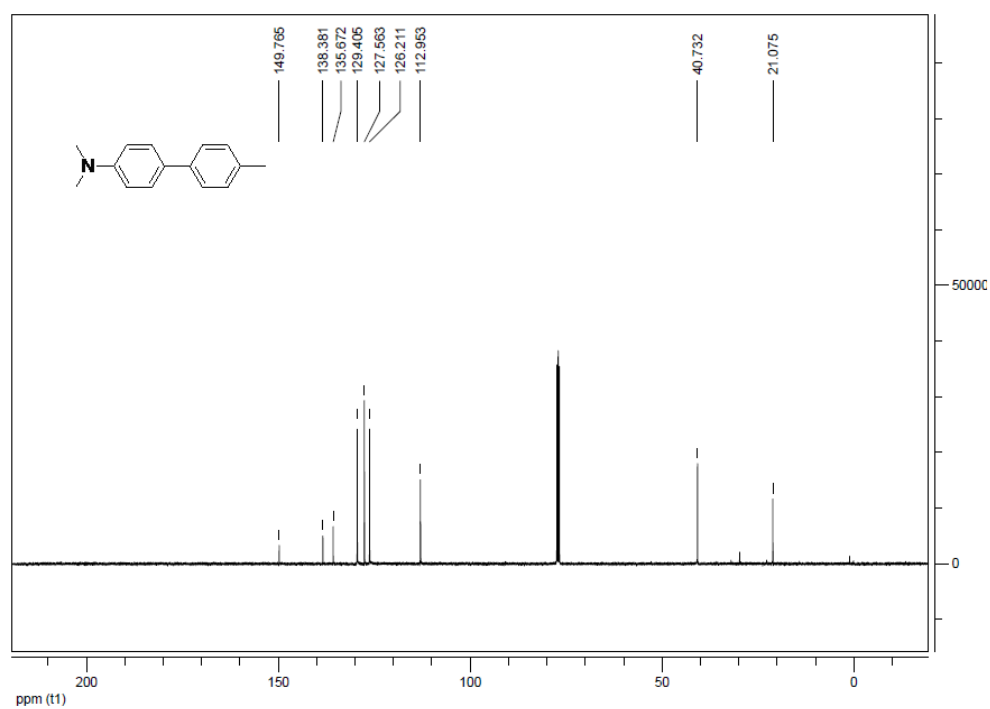


N,N,4'-Trimethylbiphenyl-4-amine (3ah)

¹H NMR

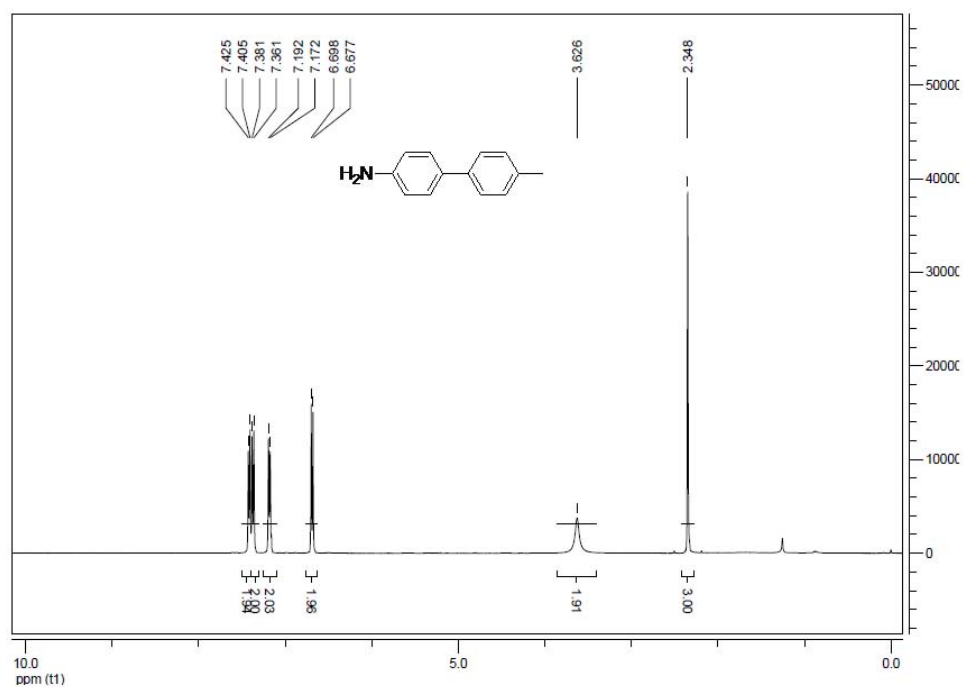


¹³C NMR

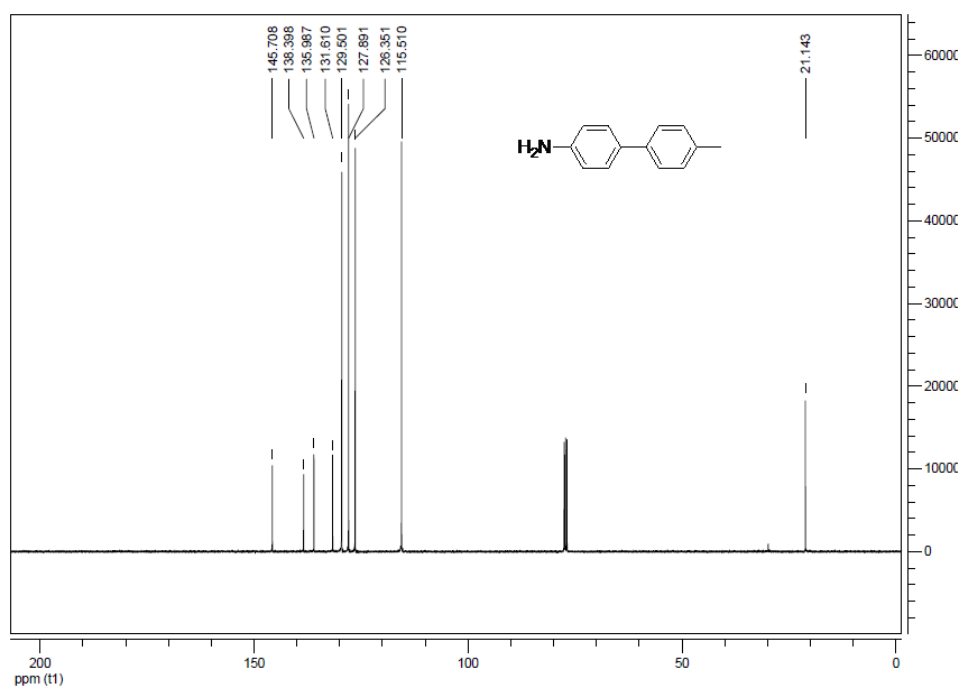


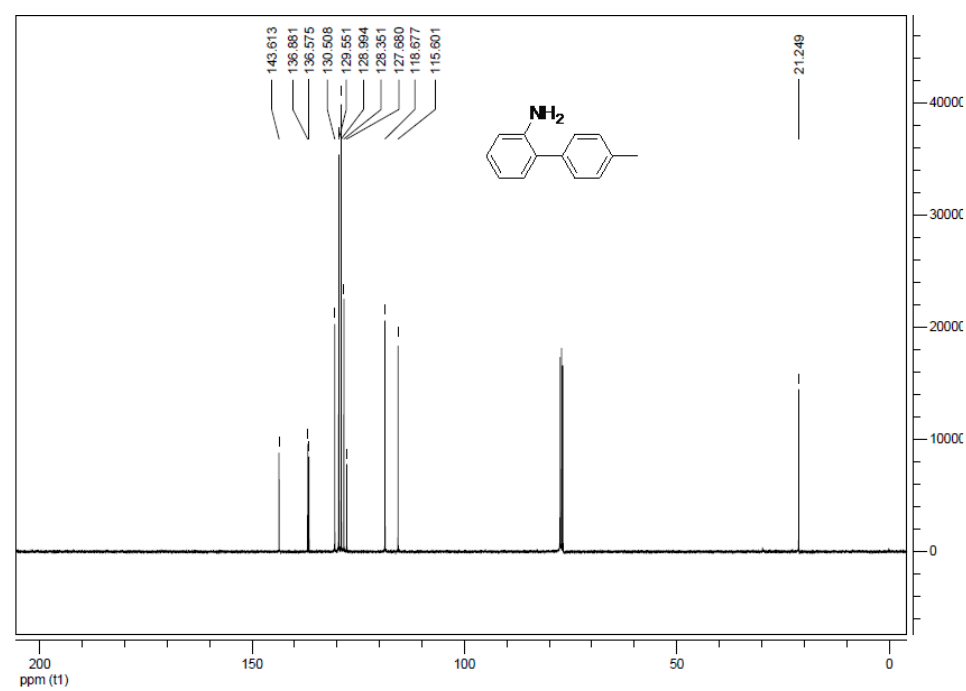
4-Methyl-4'-aminobiphenyl (3ai)

^1H NMR



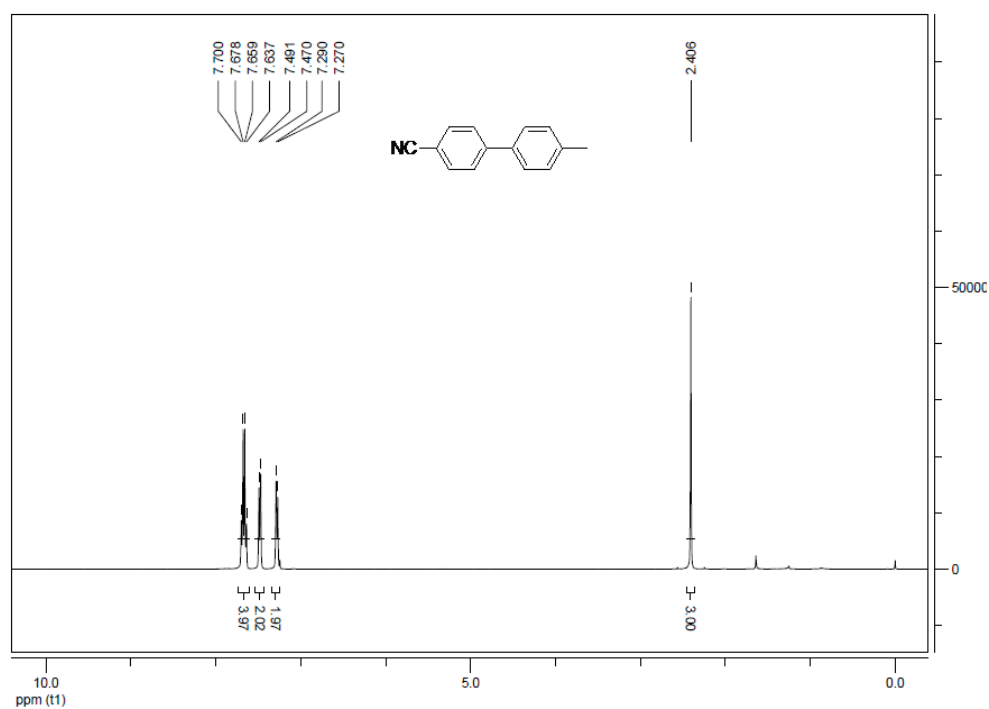
^{13}C NMR



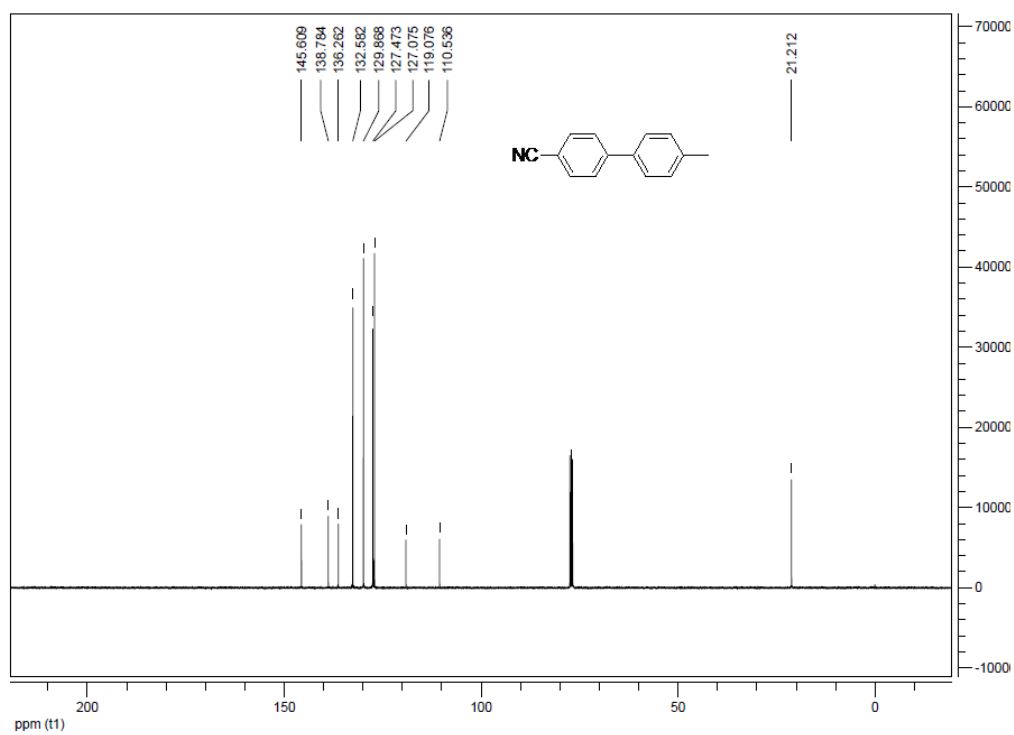
¹H NMR

4-Cyano-4'-methylbiphenyl (3ak)

^1H NMR

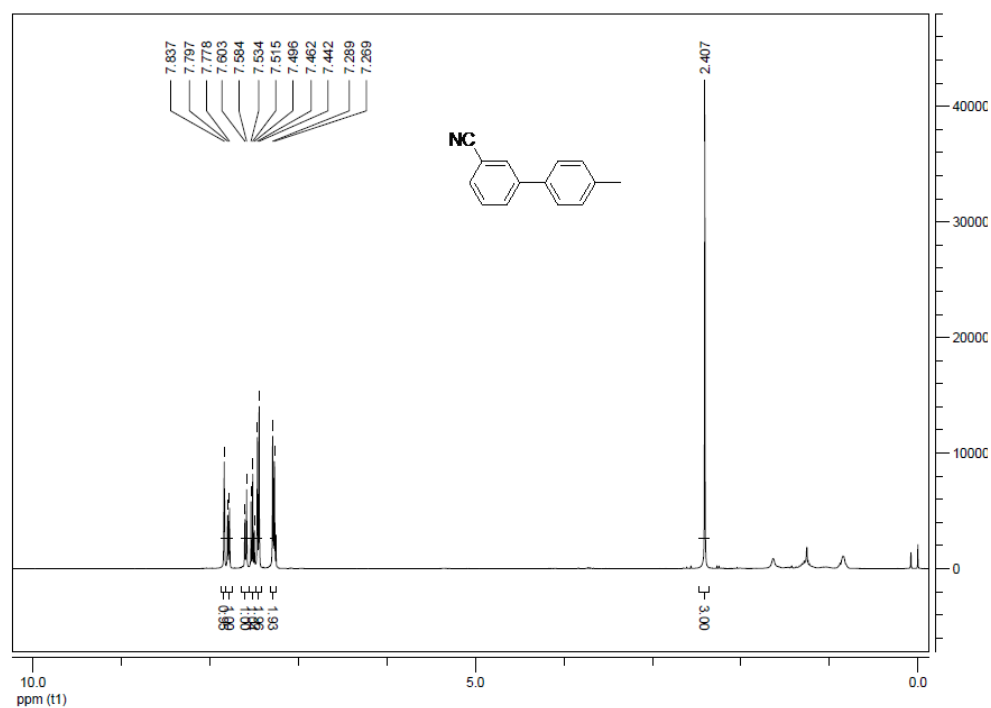


^{13}C NMR

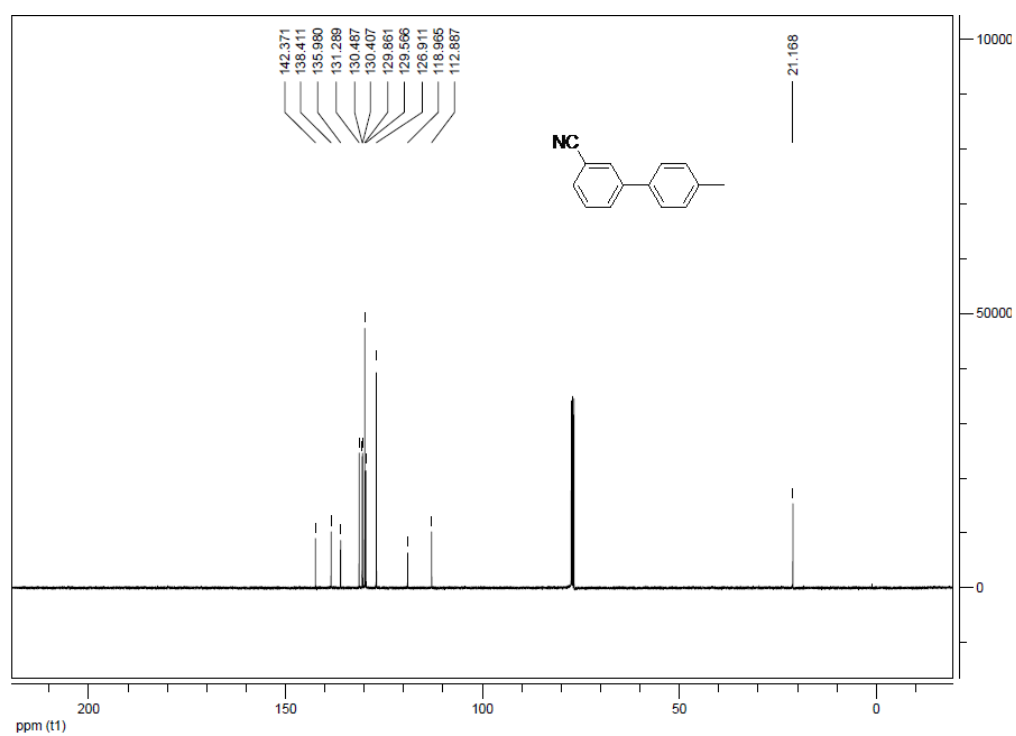


3-Cyano-4'-methylbiphenyl (3al)

^1H NMR

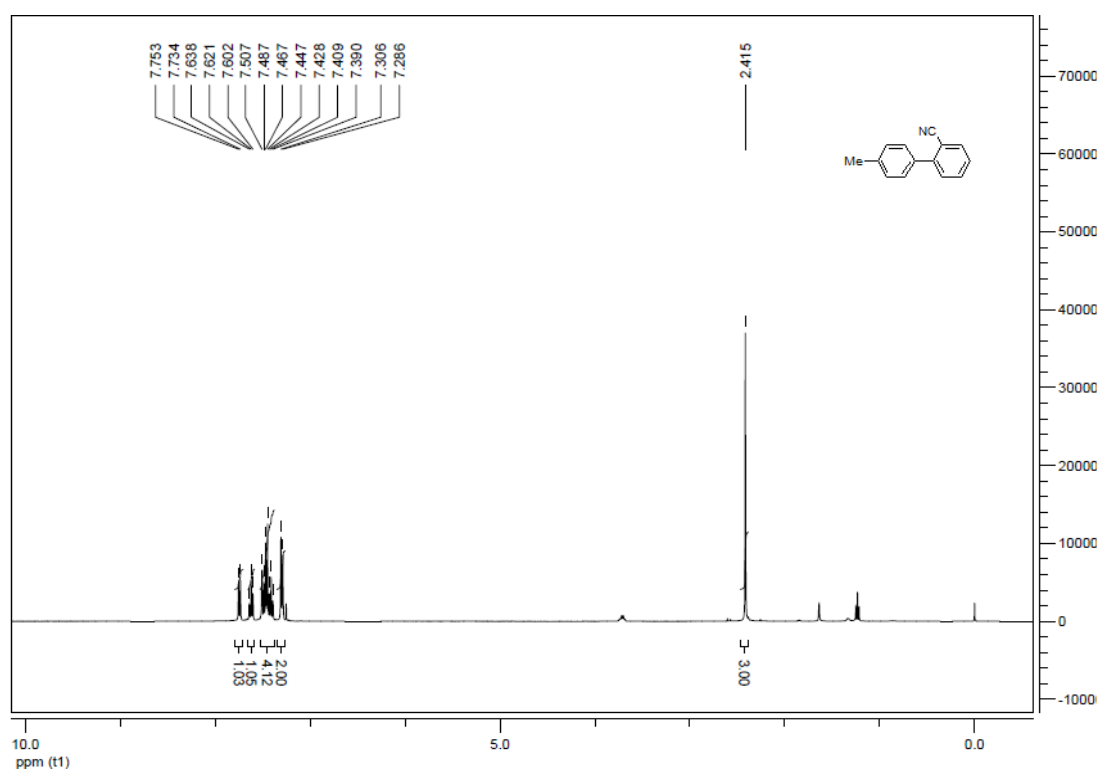


^{13}C NMR

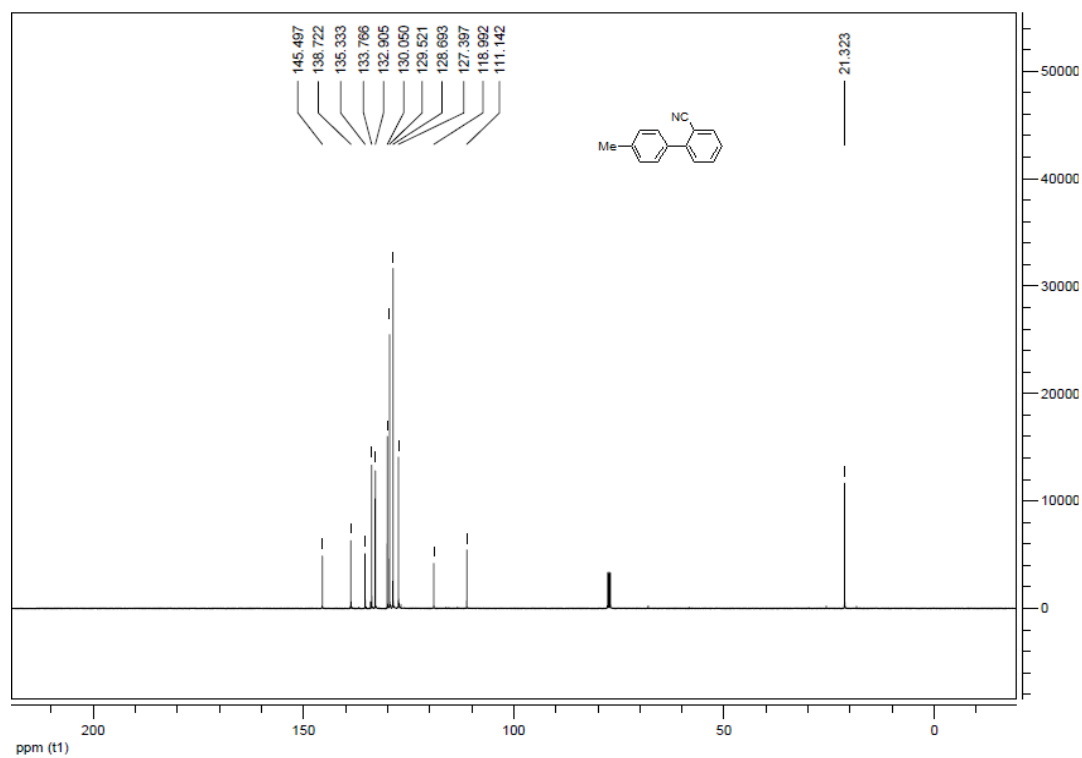


2-Cyano-4'-methylbiphenyl (3am)

^1H NMR

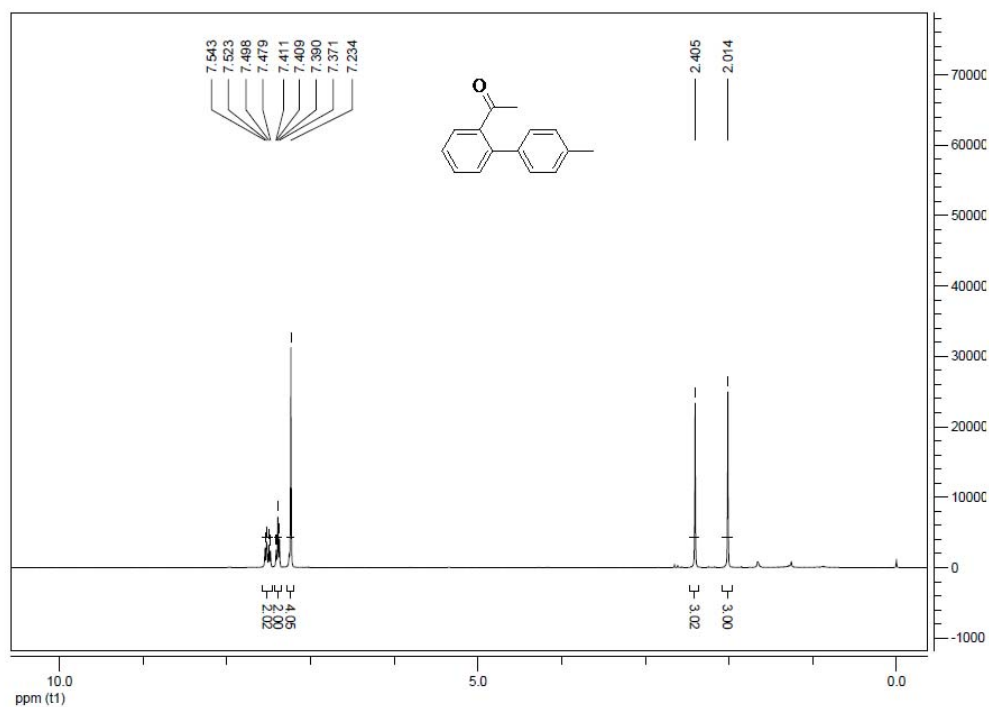


^{13}C NMR

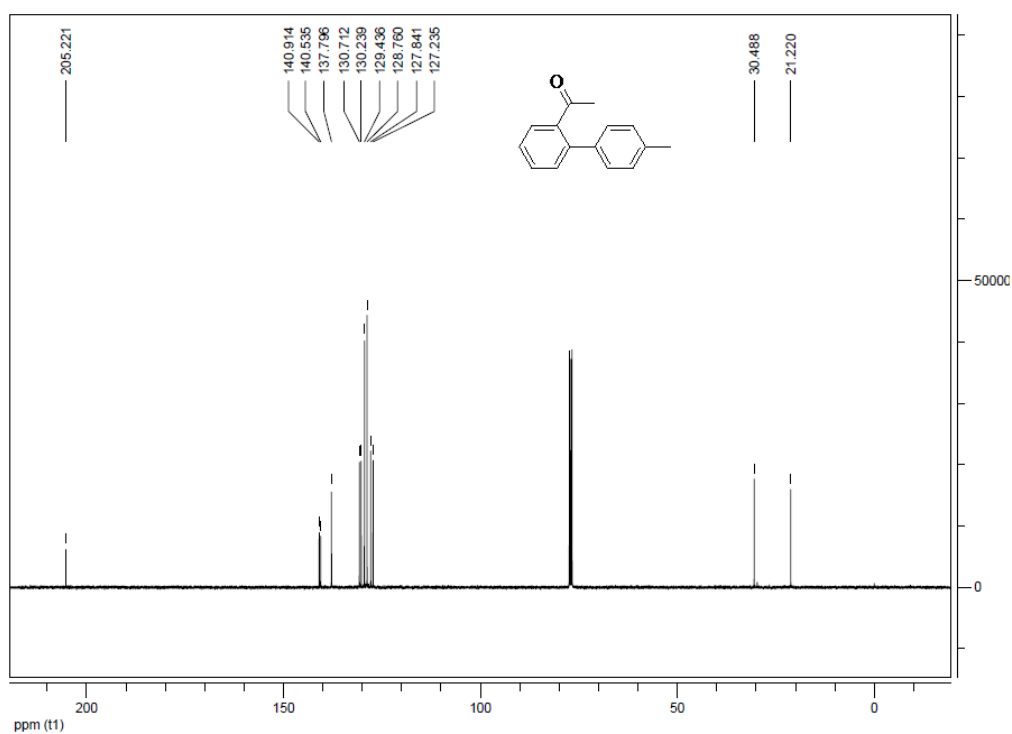


1-(4'-Methylbiphenyl-2-yl)ethanone (3an)

¹H NMR

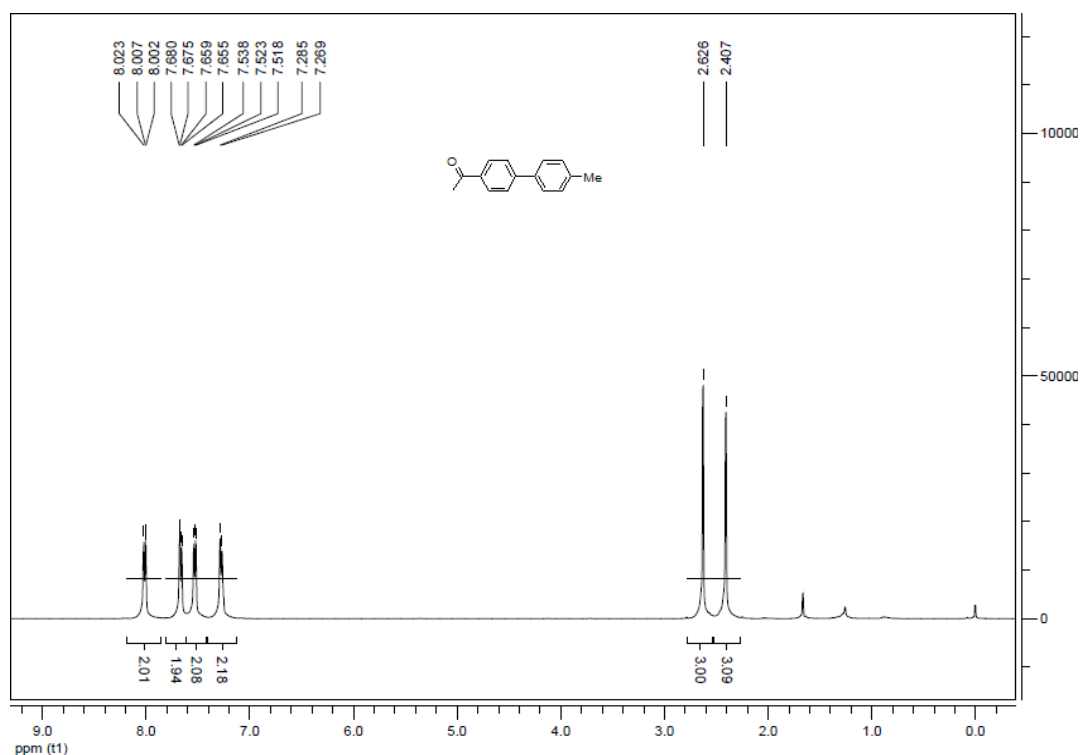


¹³C NMR

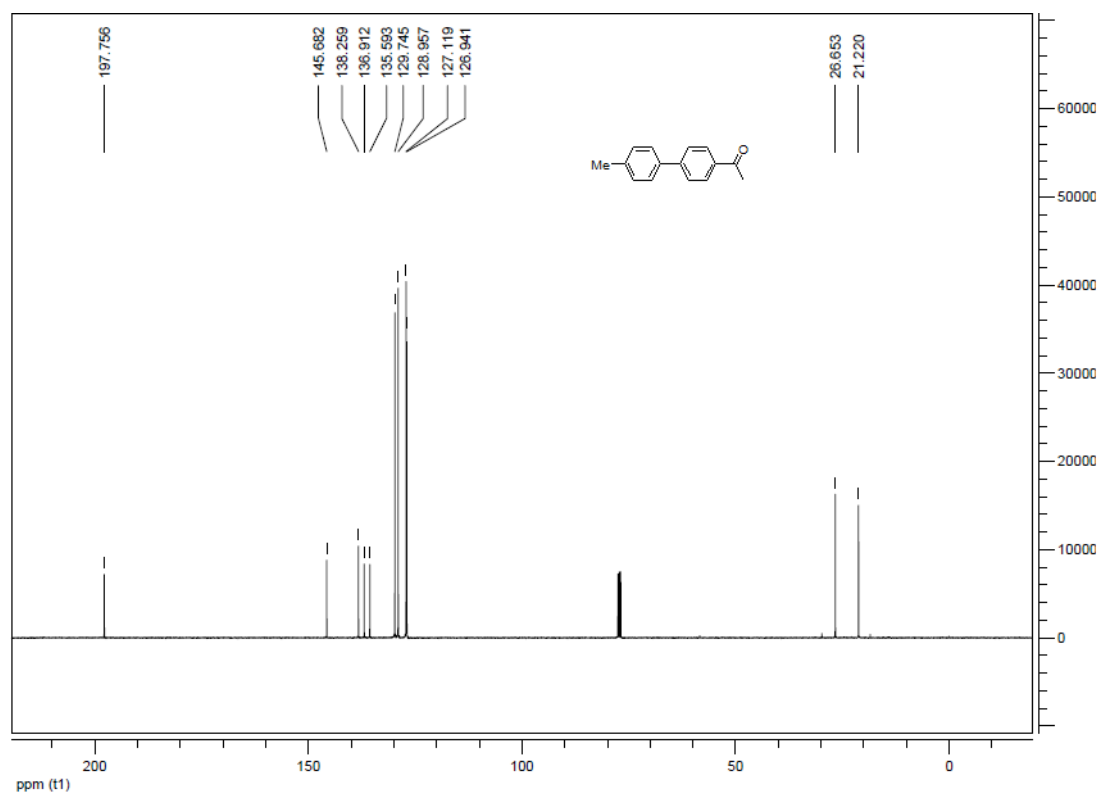


1-(4'-Methylbiphenyl-4-yl)ethanone (3ao)

¹H NMR

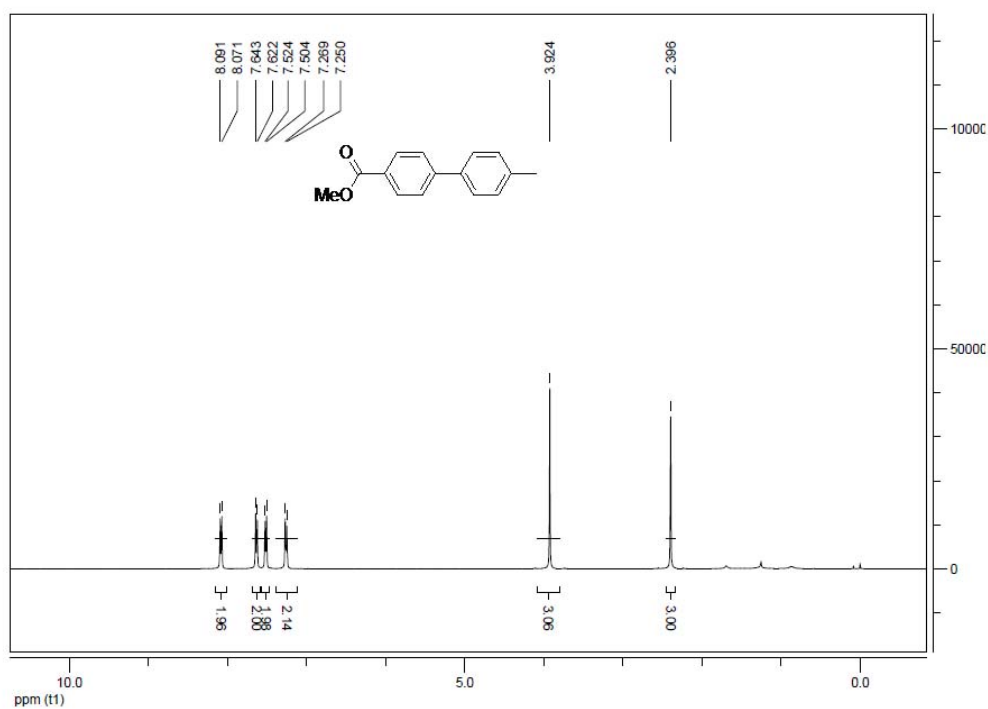


¹³C NMR

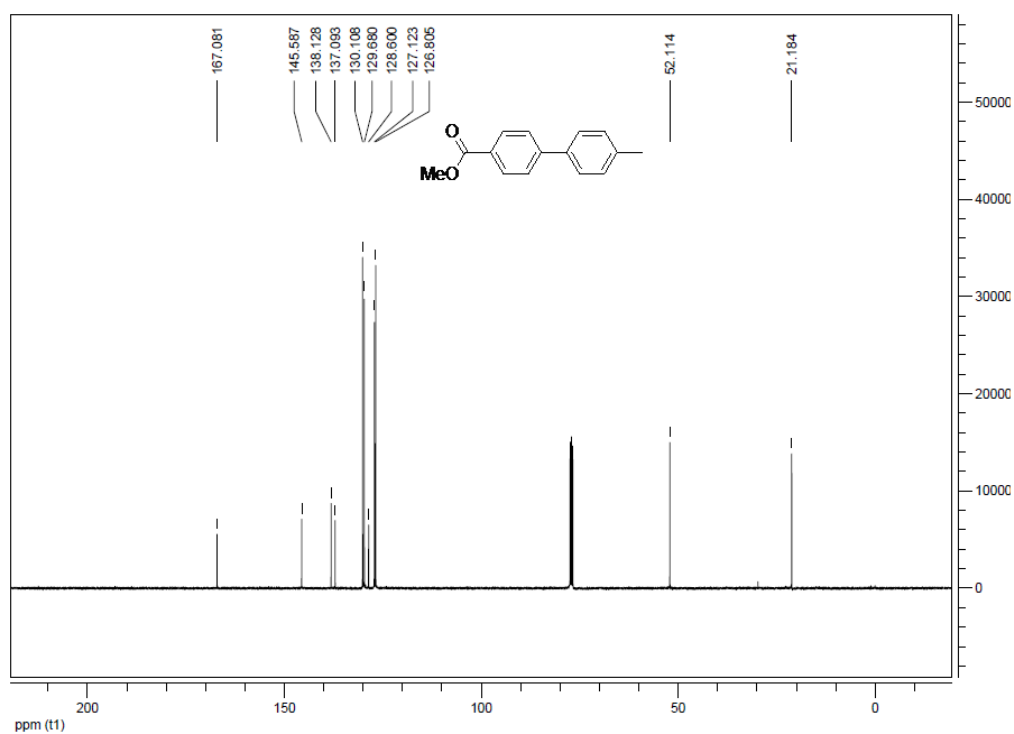


Methyl 4'-methylbiphenyl-4-carboxylate (3ap)

^1H NMR

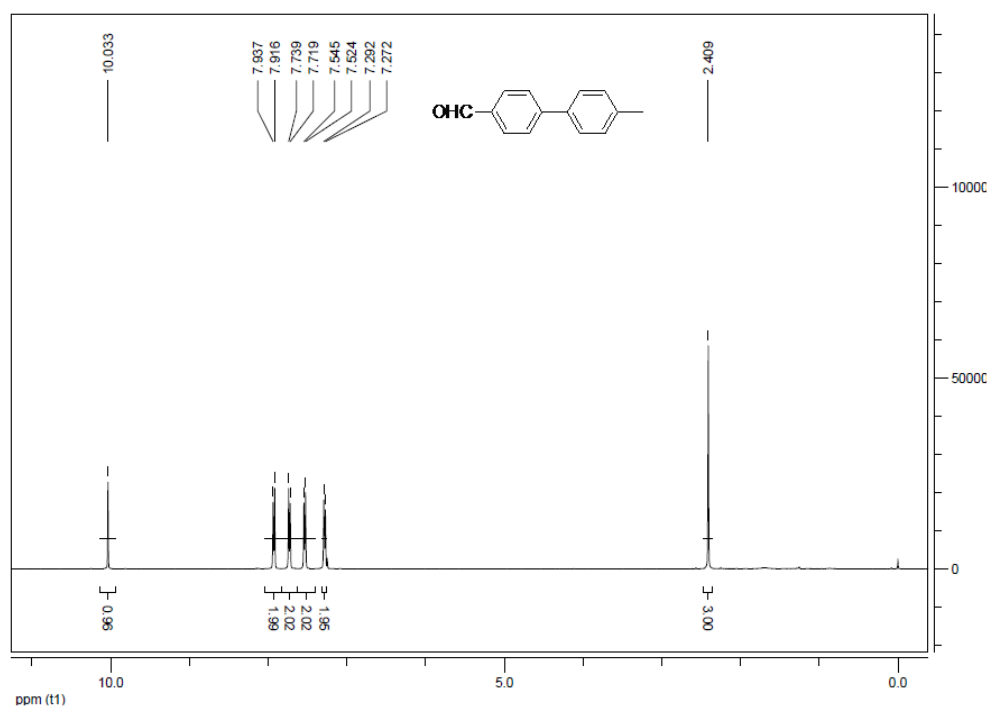


^{13}C NMR

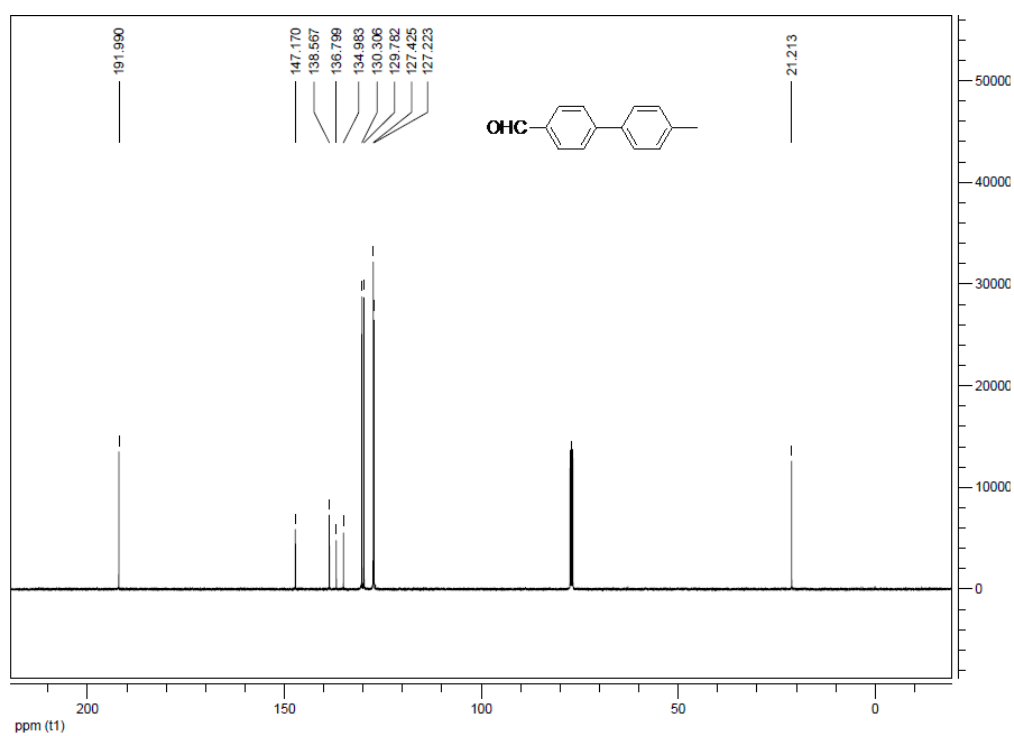


4-Methylbiphenyl-4'-carboxaldehyde (3aq)

¹H NMR



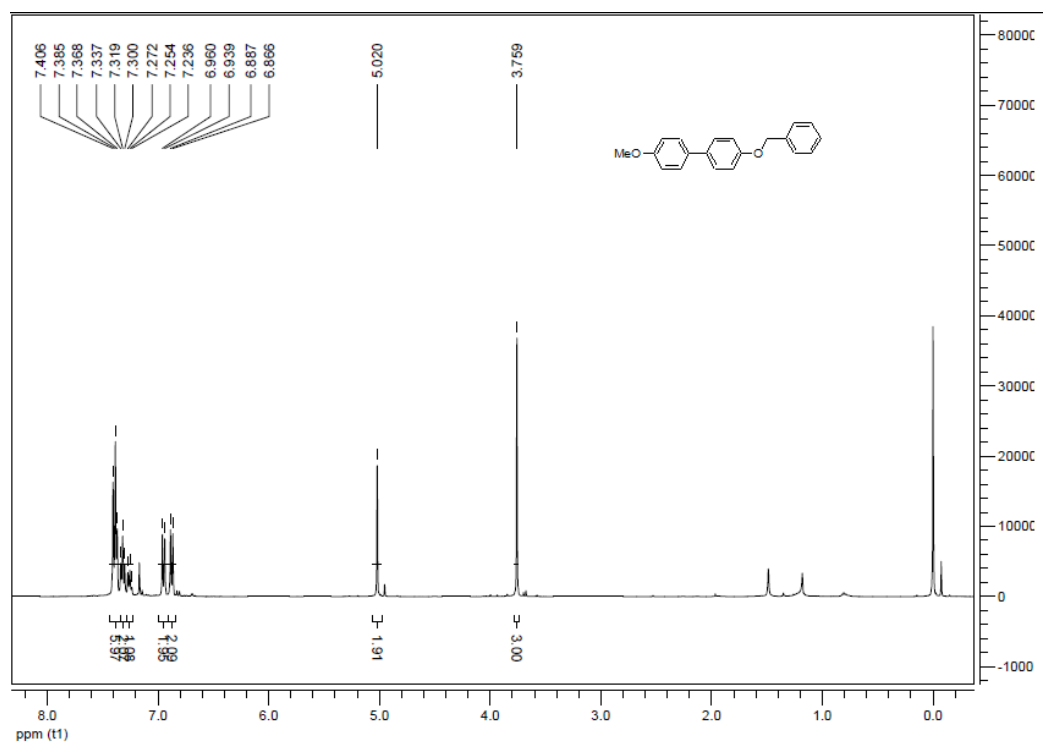
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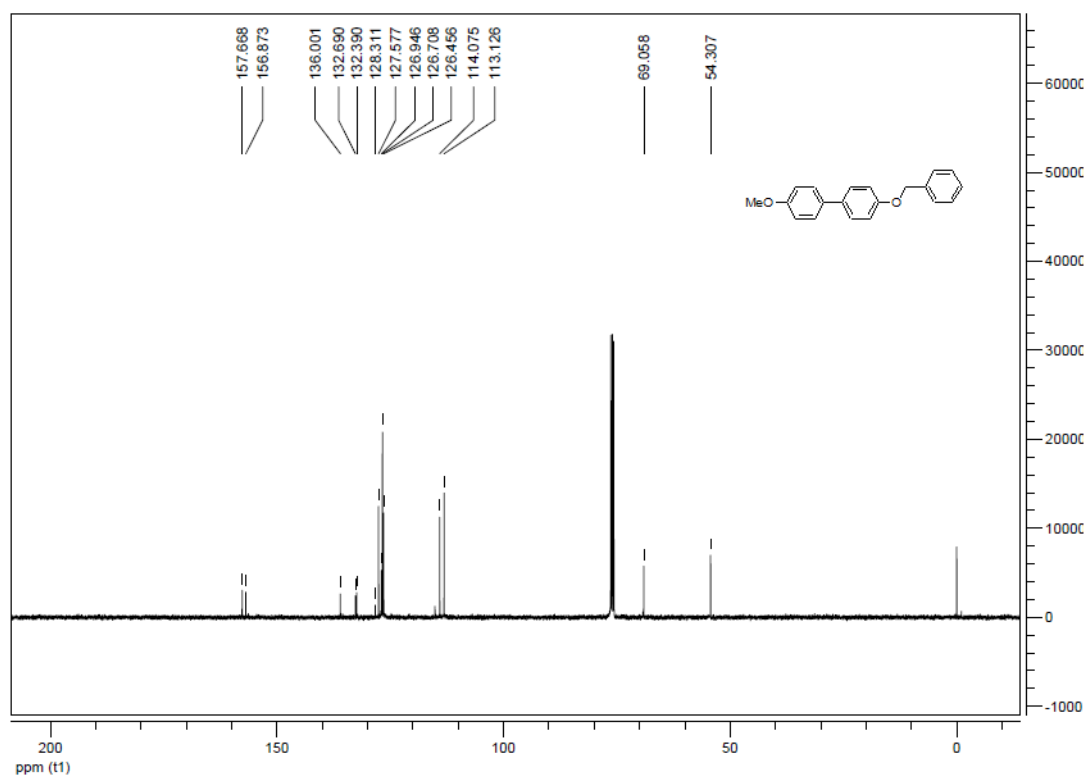
¹H NMR

4-Benzyloxy-4'-methoxybiphenyl (3ca)

¹H NMR



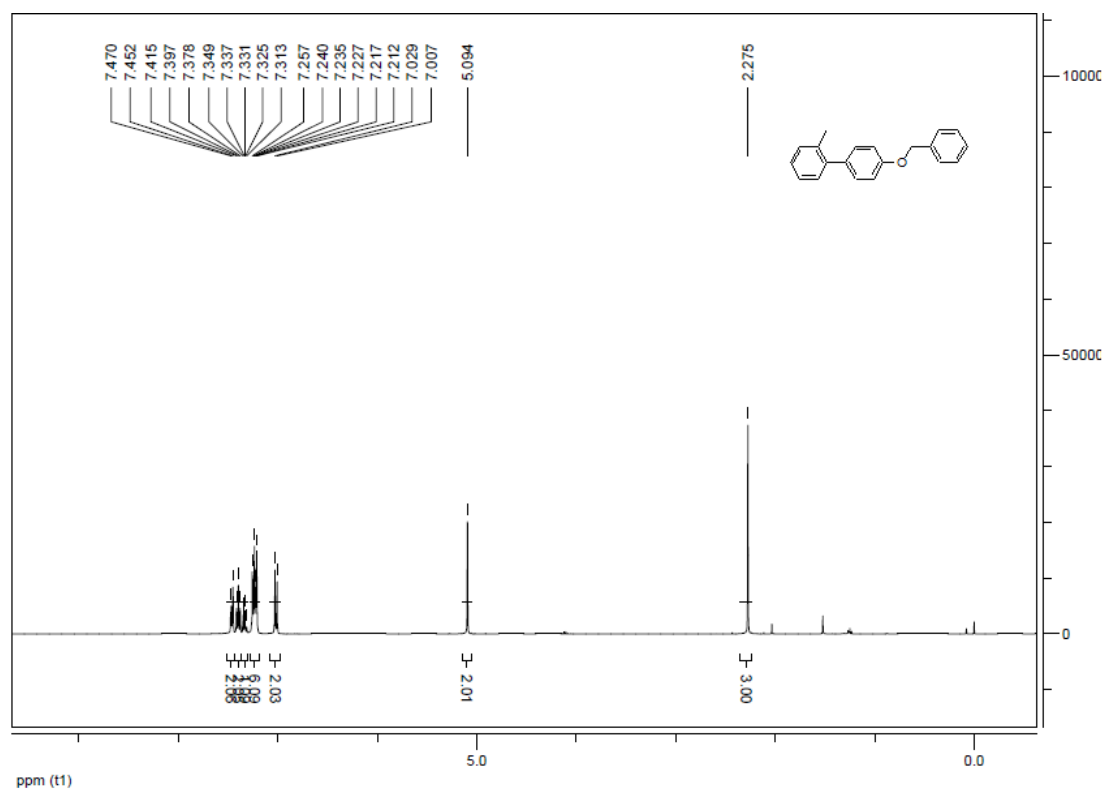
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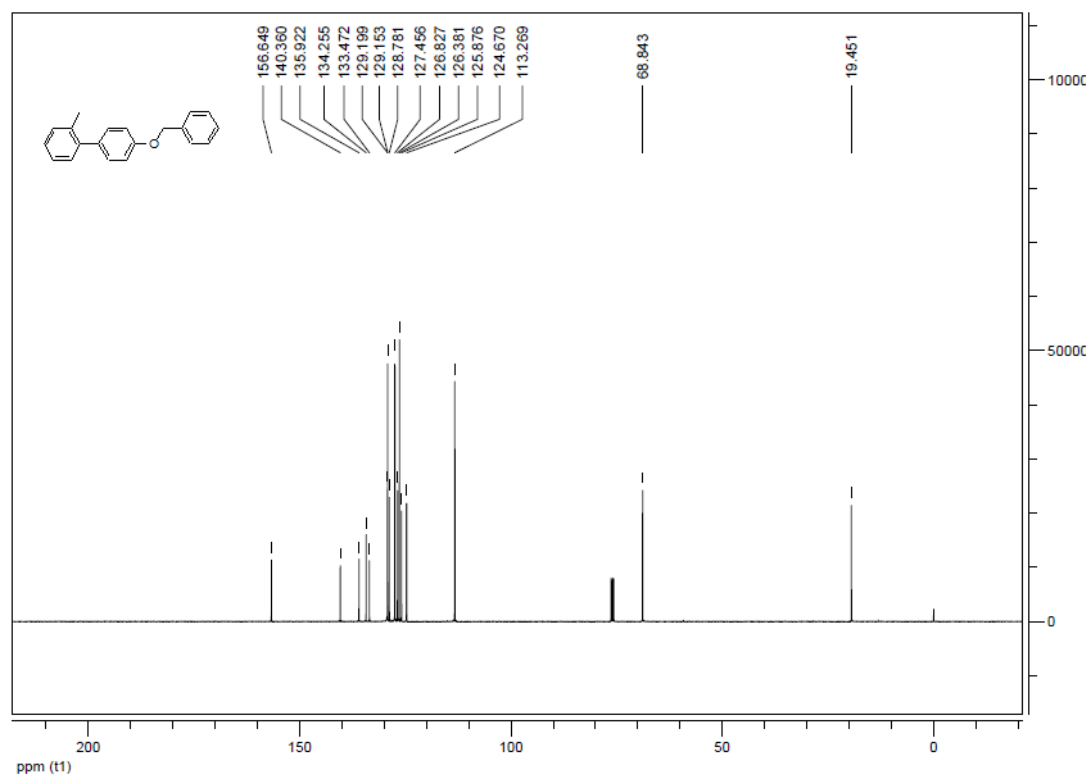
¹H NMR

4-Benzyloxy-2'-methylbiphenyl (3ea)

¹H NMR

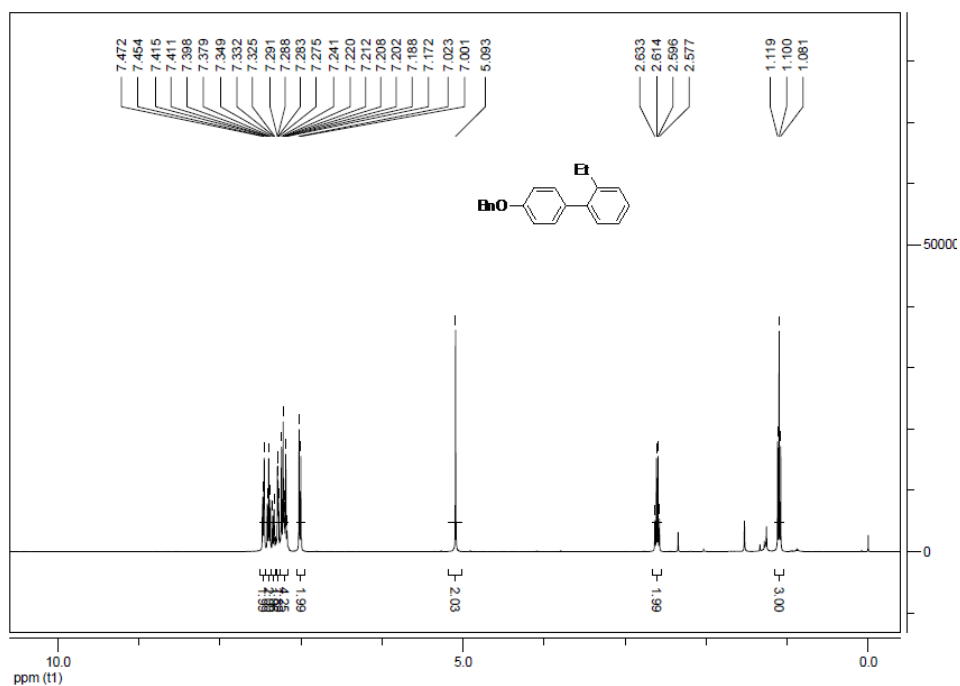


¹³C NMR

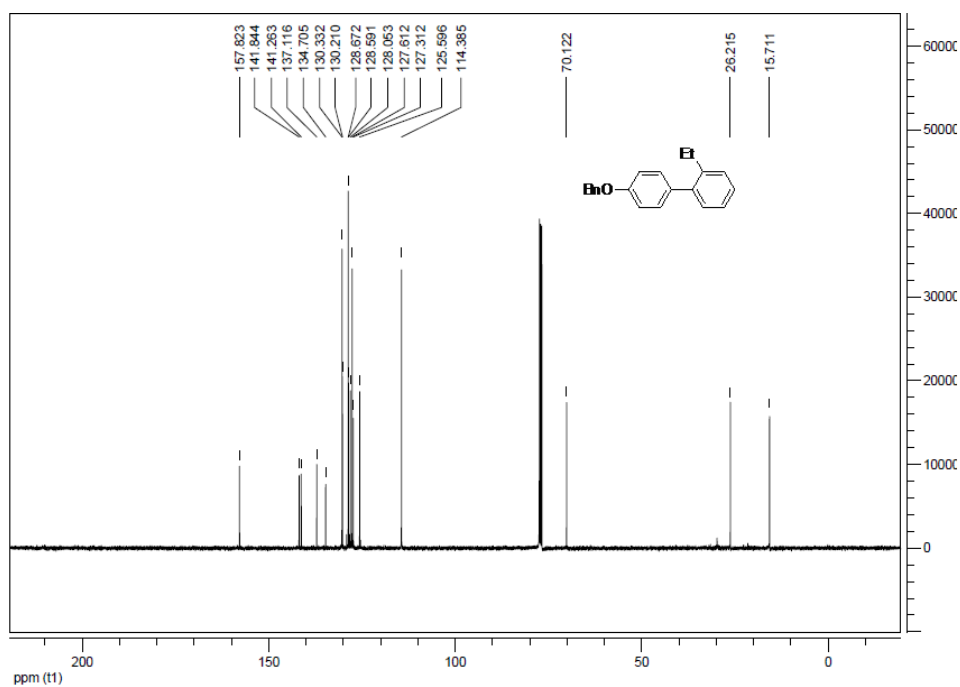


4-Benzyloxy-2'-ethylbiphenyl (3fa)

¹H NMR



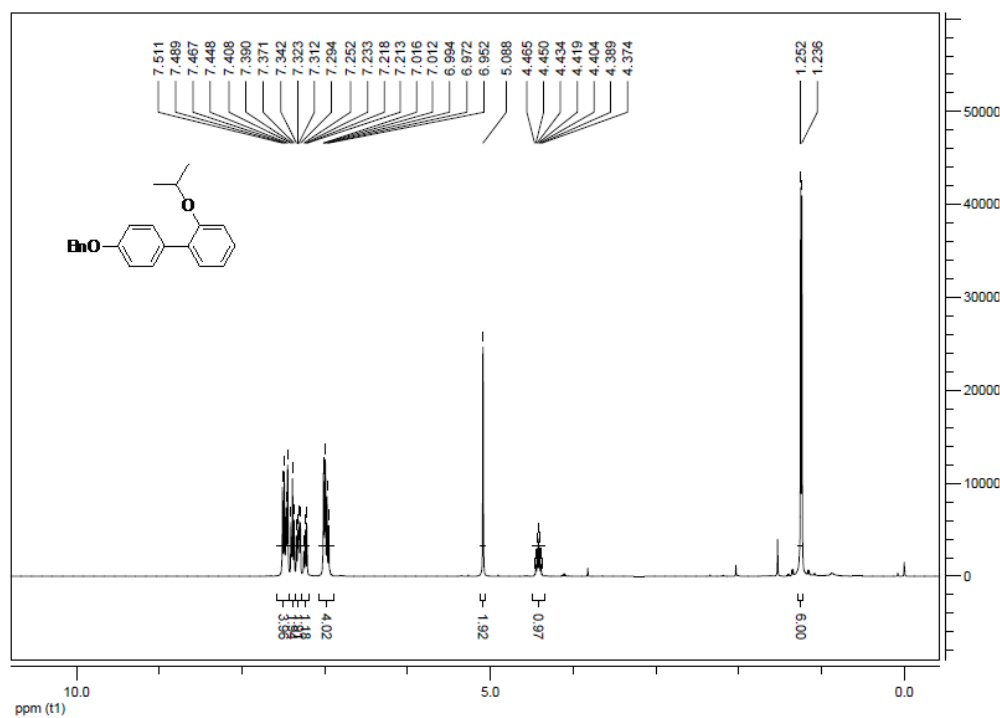
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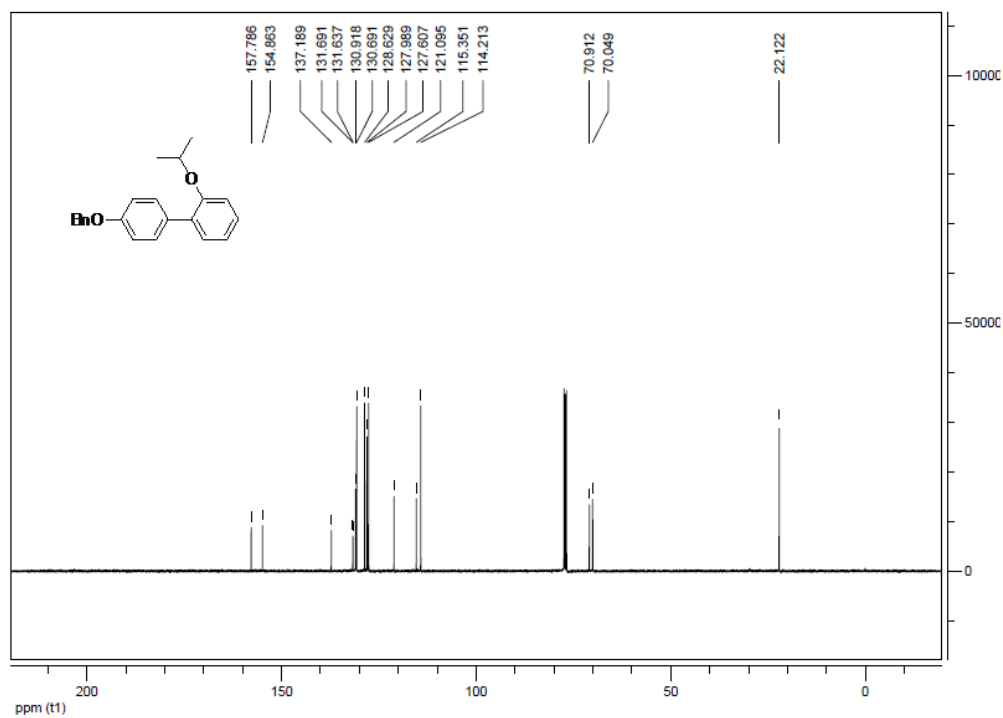
¹H NMR

4-Benzyloxy-2'-isopropoxybiphenyl (3ha)

¹H NMR

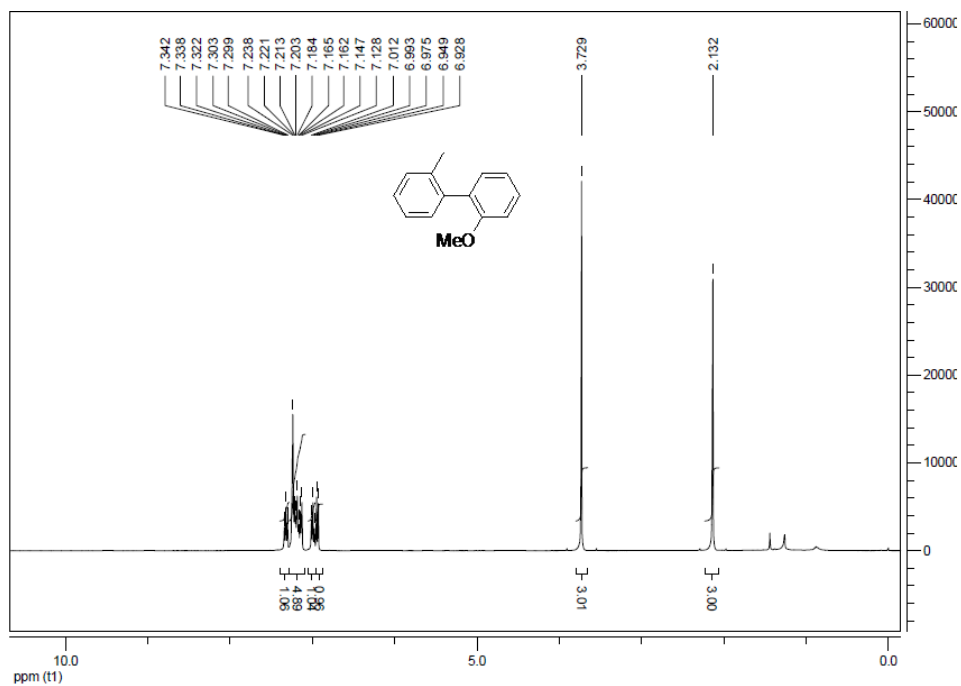


¹³C NMR

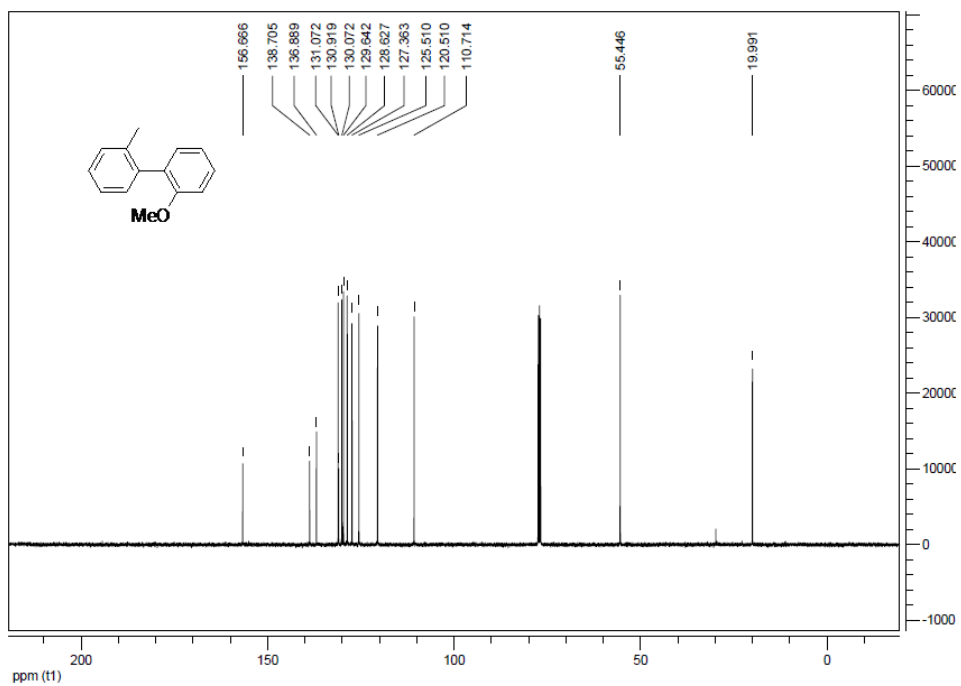


2-Methoxy-2'-methylbiphenyl (3ef)

^1H NMR

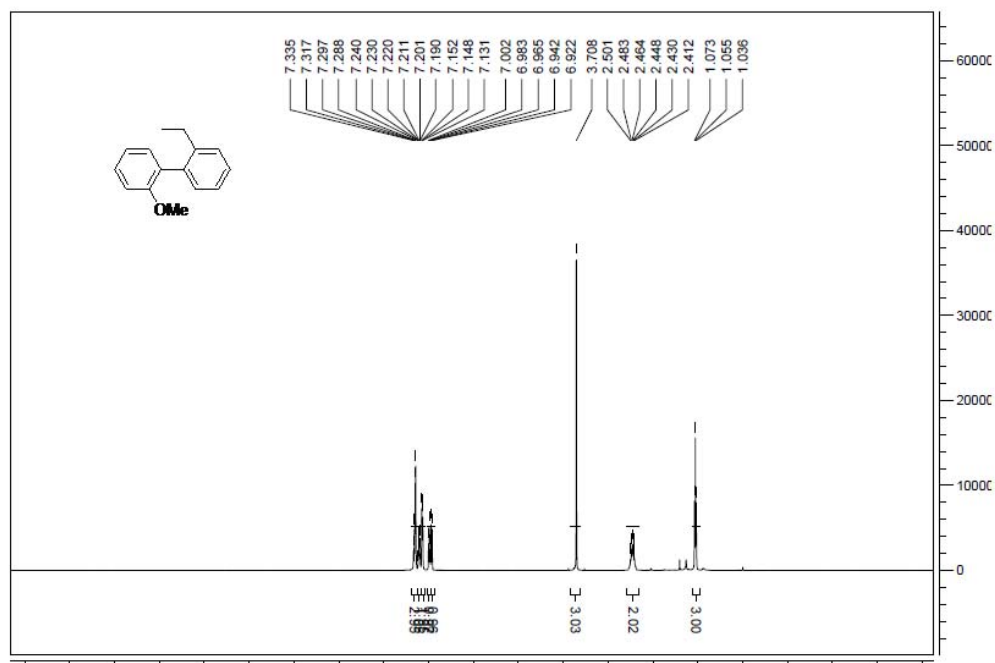


^{13}C NMR

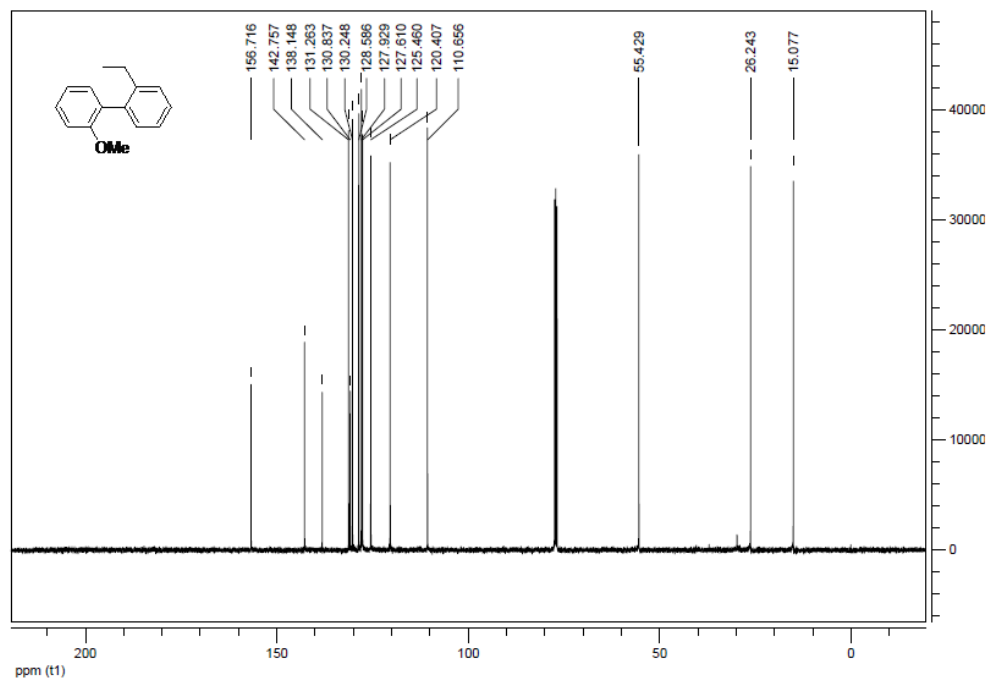


2-Methoxy-2'-ethylbiphenyl (3ff)

^1H NMR

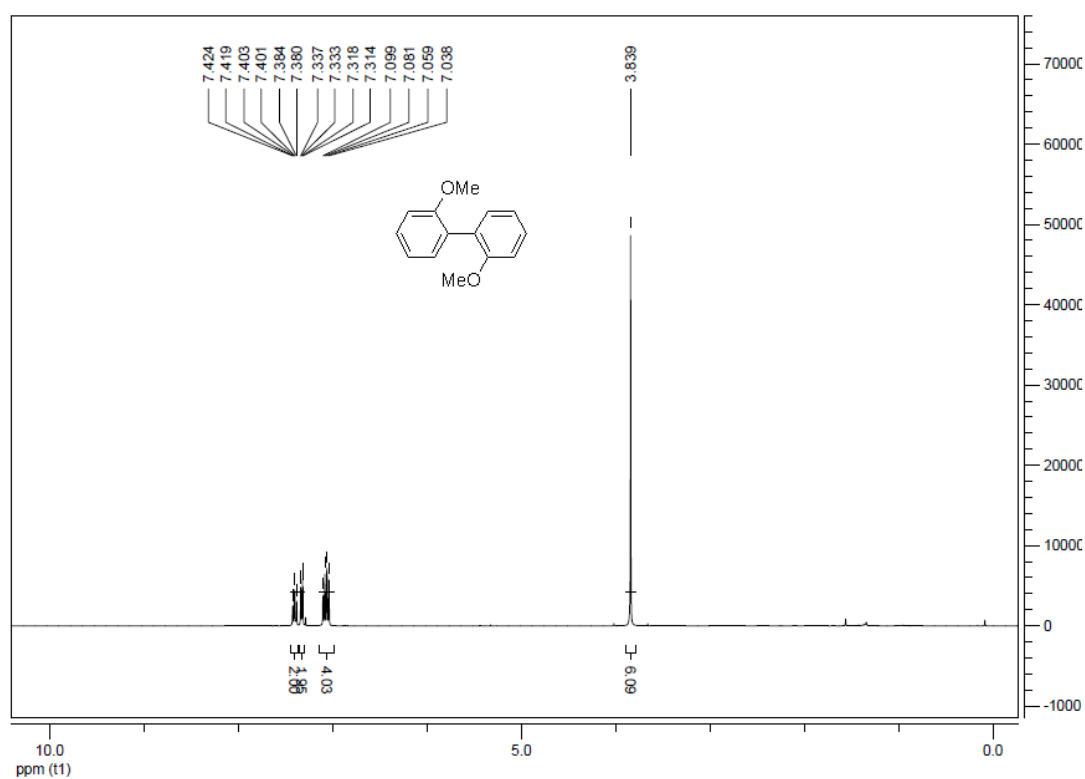


^{13}C NMR

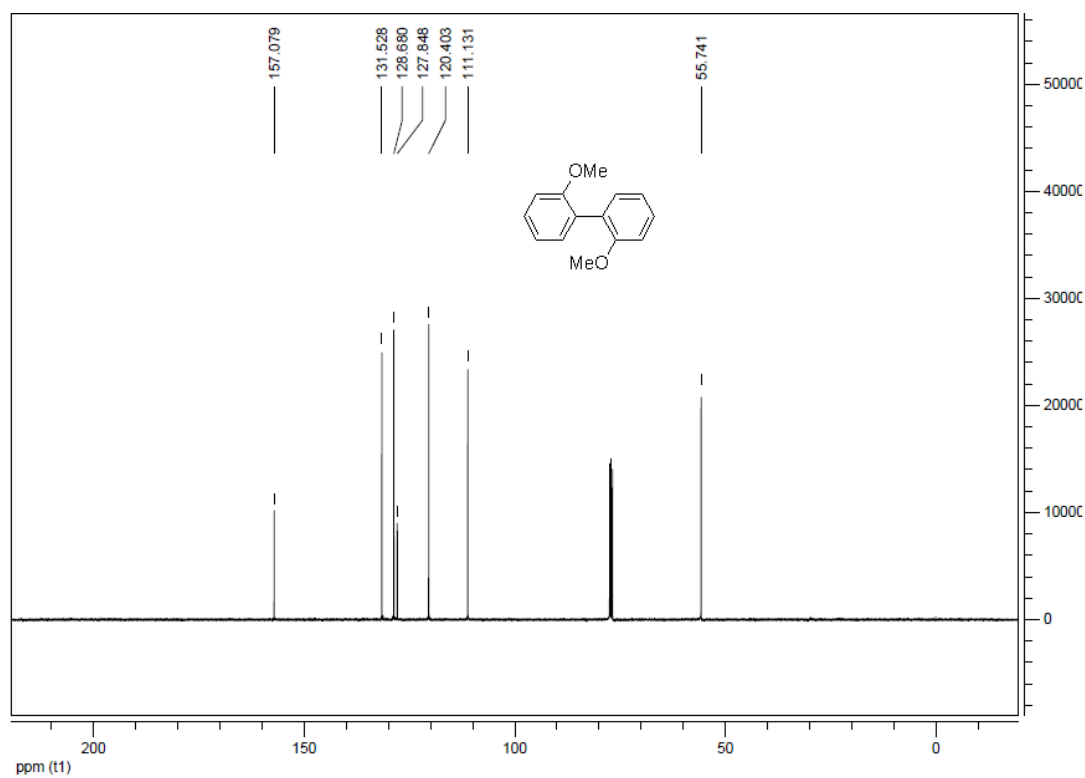


2,2'-Dimethoxybiphenyl (3gf)

^1H NMR

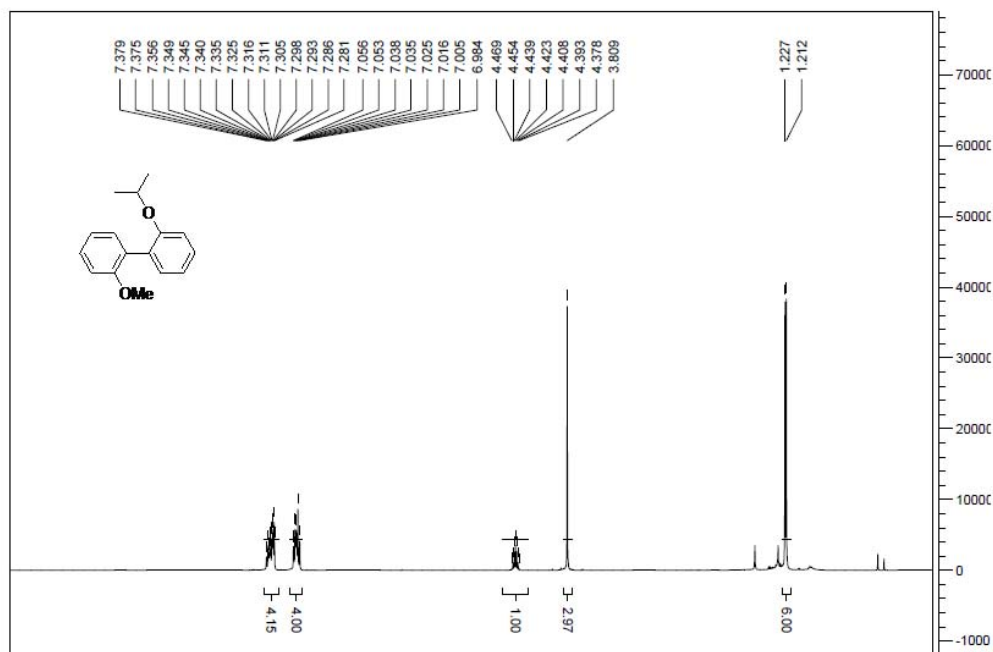


^{13}C NMR

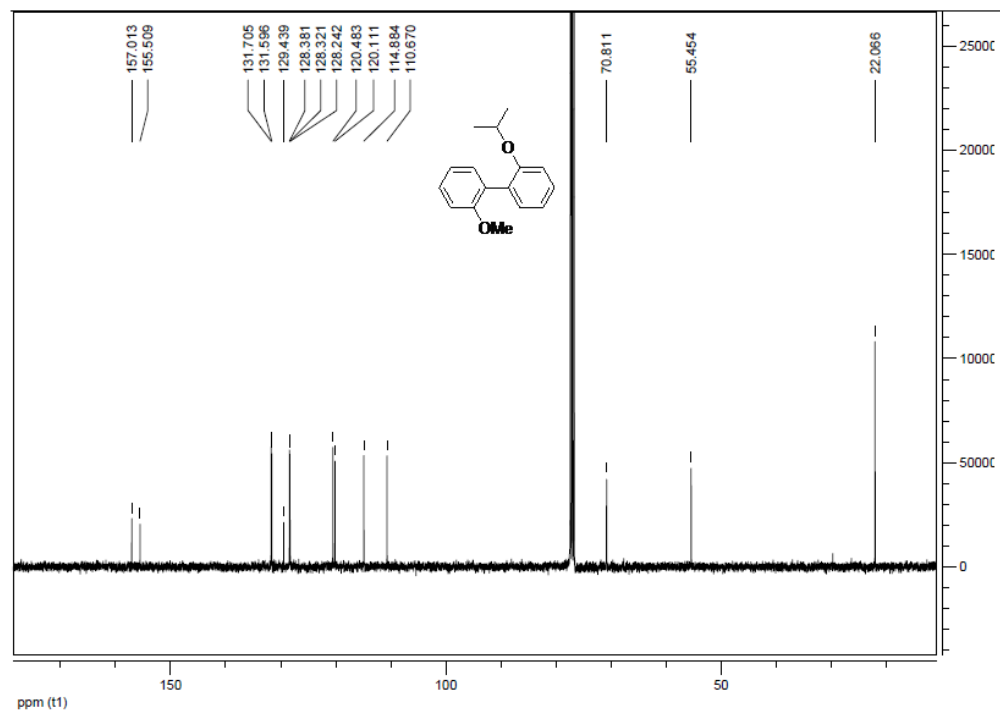


2-Methoxy-2'-isopropoxybiphenyl (3hf)

^1H NMR

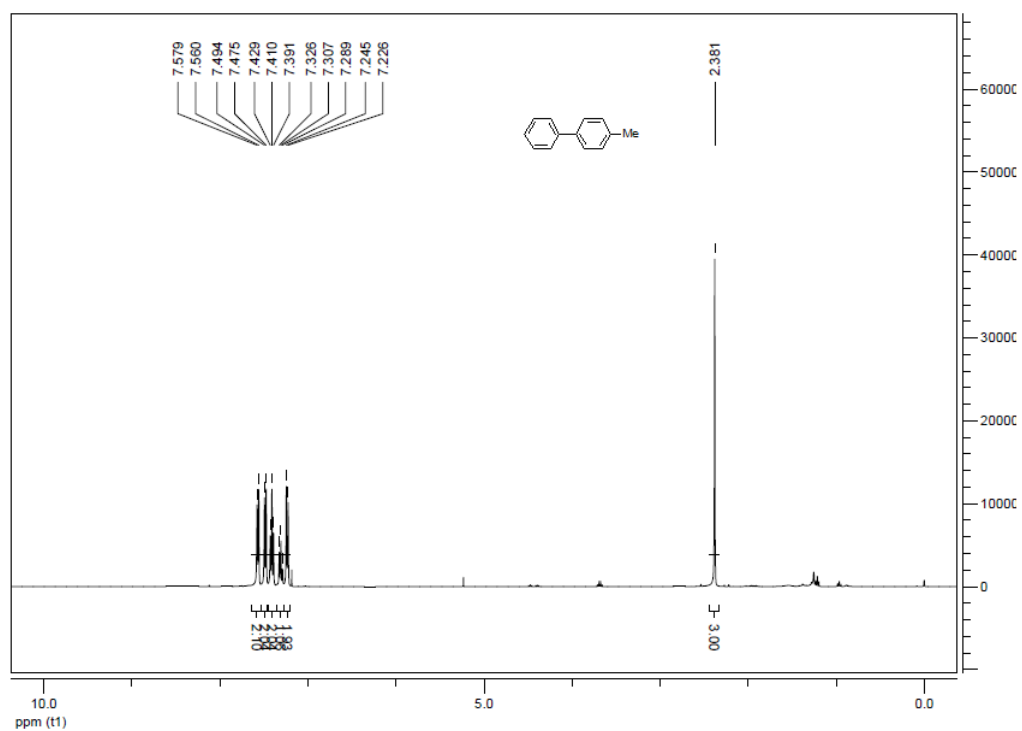


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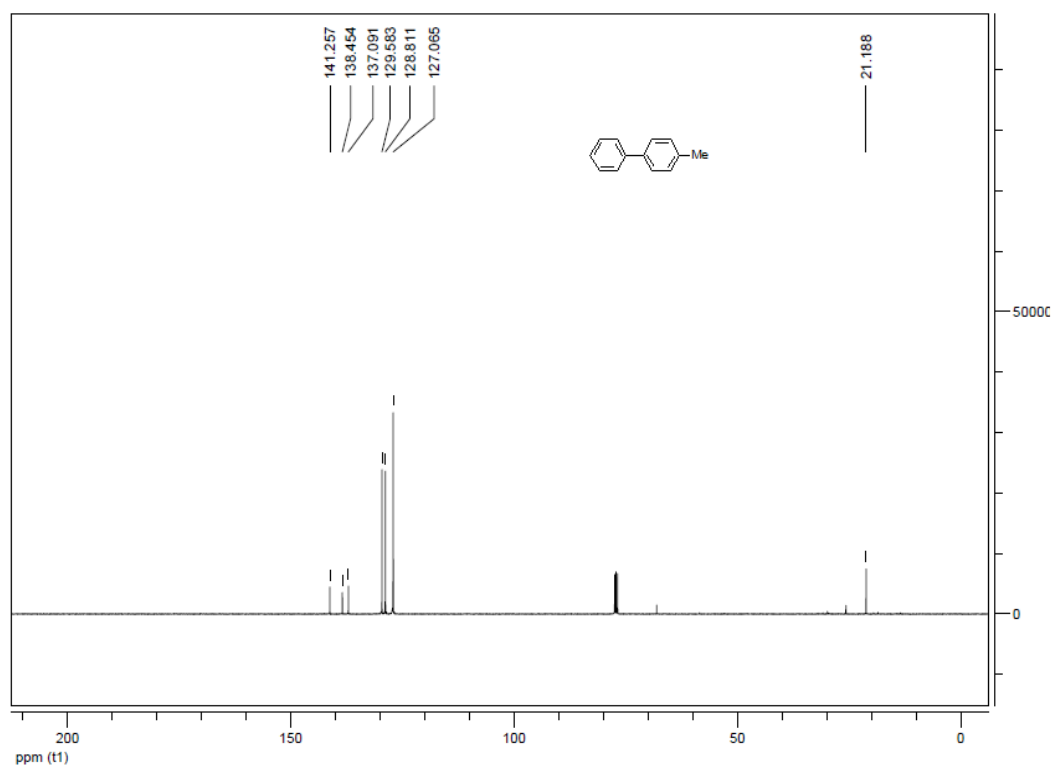


4-Methylbiphenyl (6ac)

^1H NMR

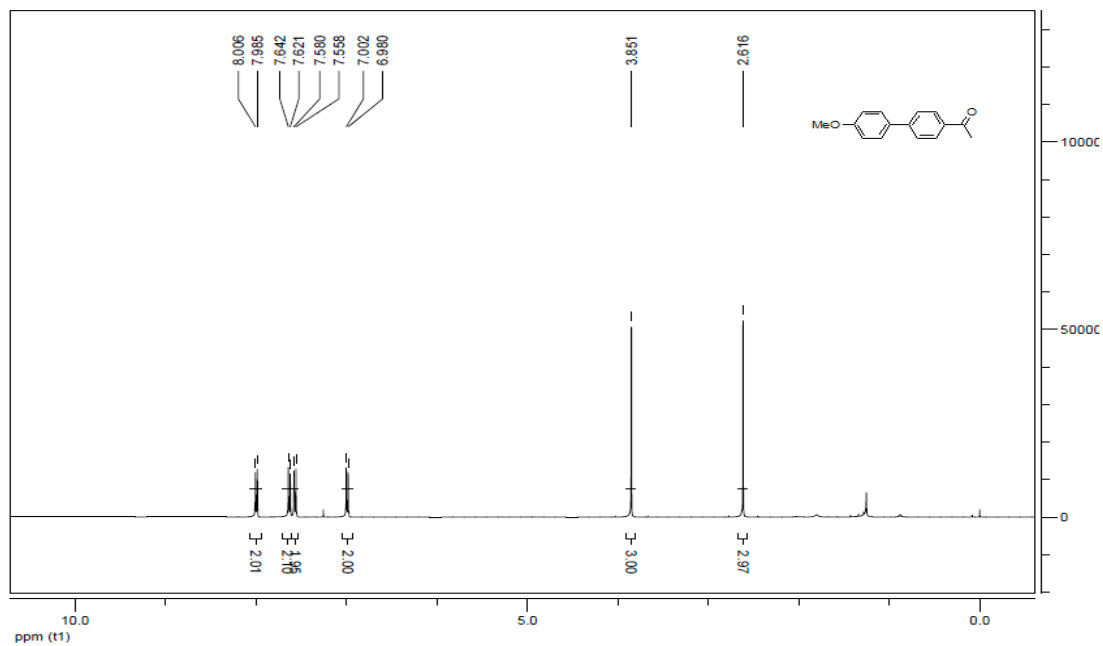


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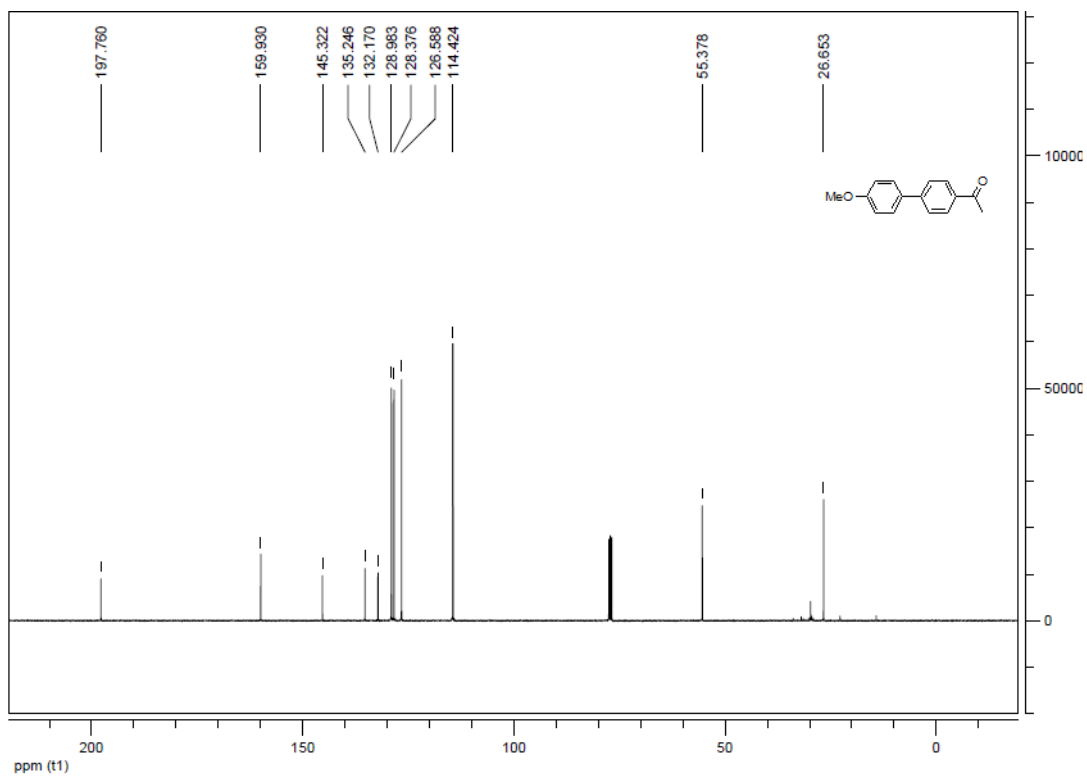


1-(4'-Methoxybiphenyl-4-yl)ethanone (6cf)

¹H NMR

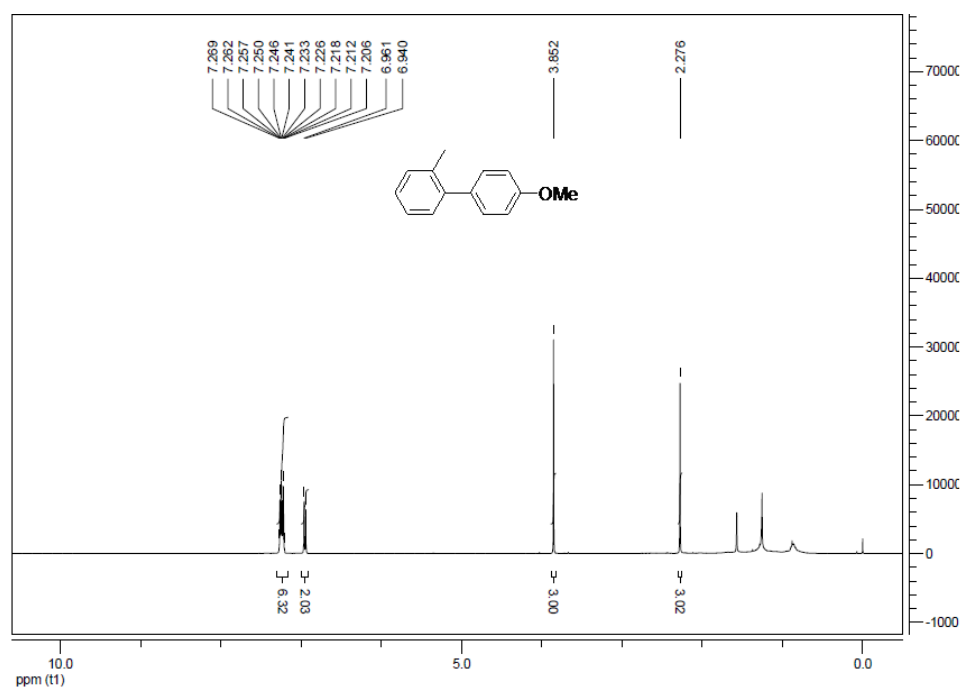


¹³C NMR

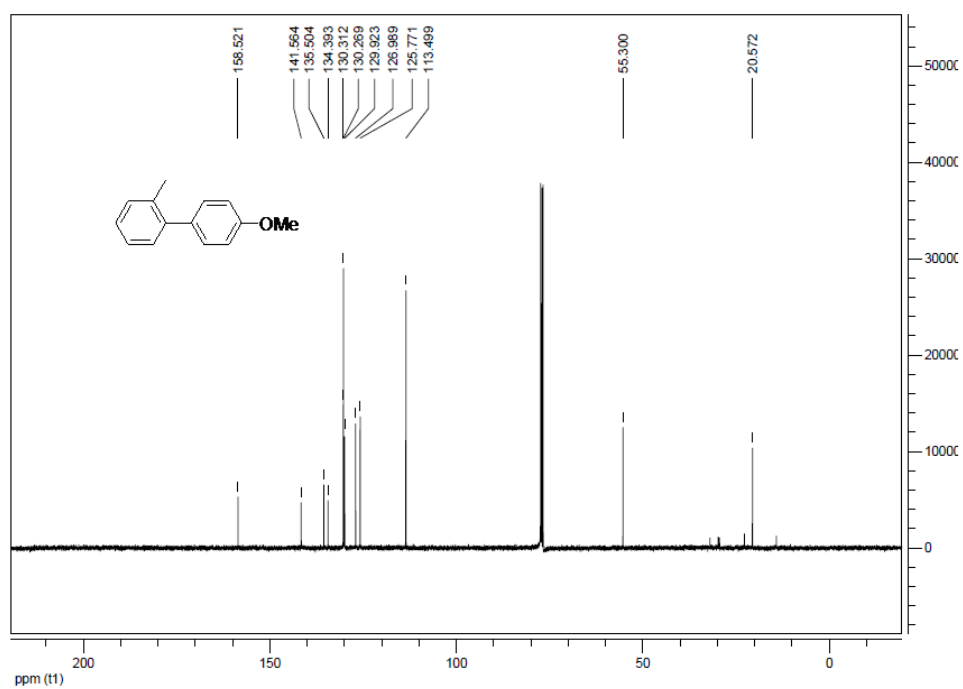


4-Methoxy-2'-methylbiphenyl (6ea)

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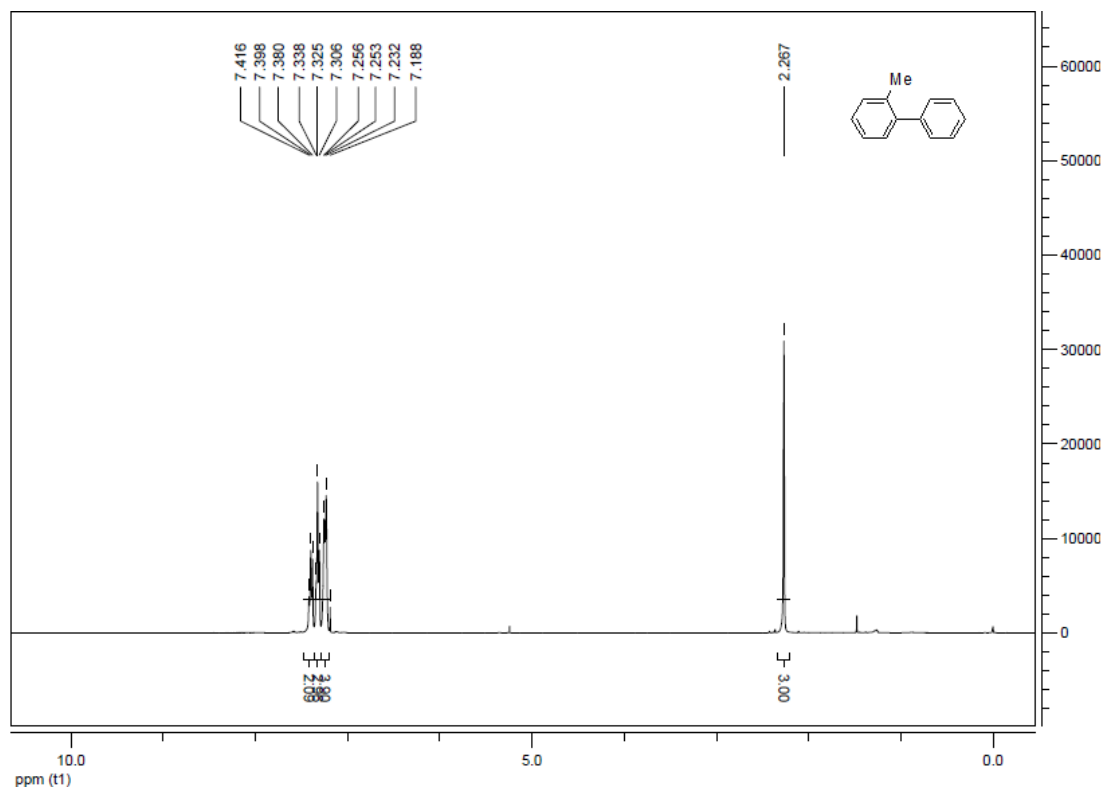


^{13}C NMR

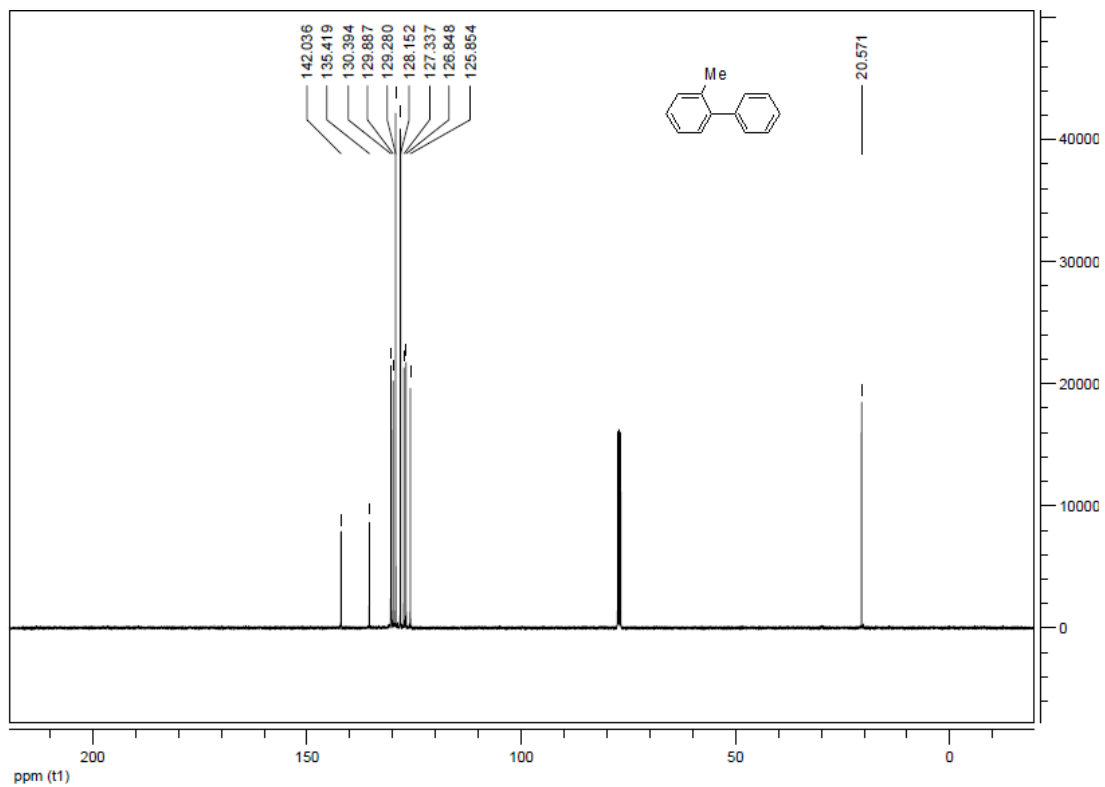


2-Methylbiphenyl (6ec)

^1H NMR

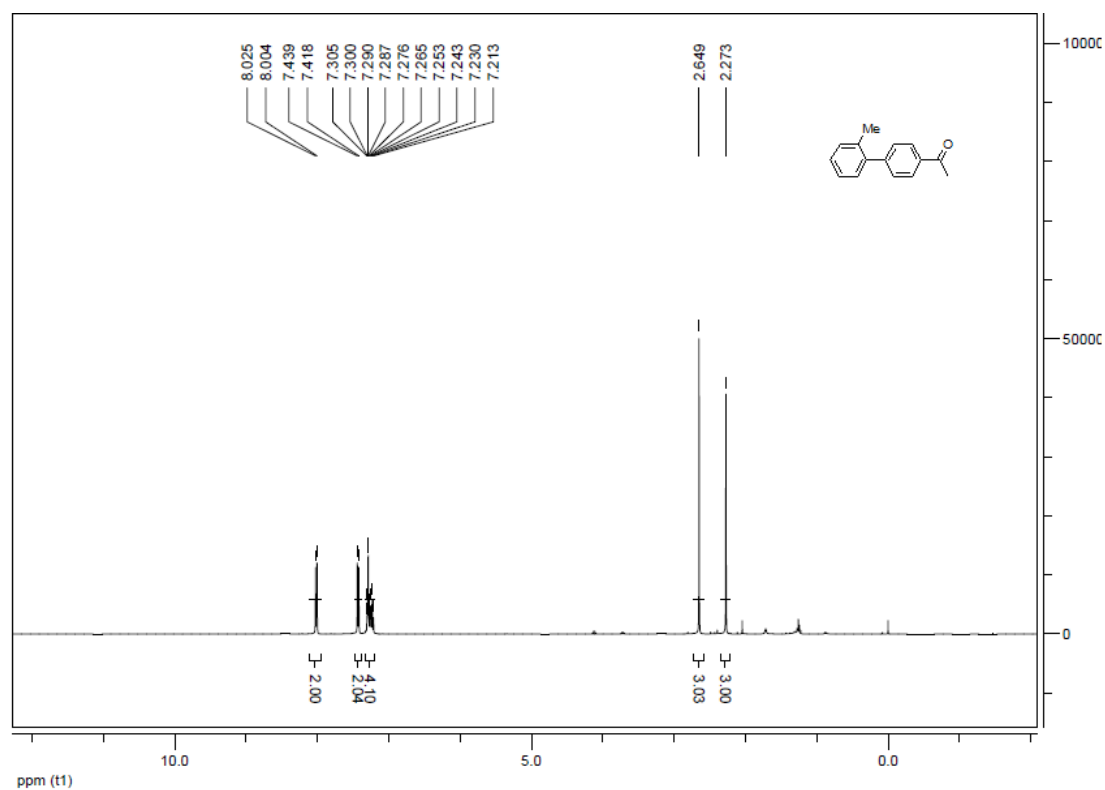


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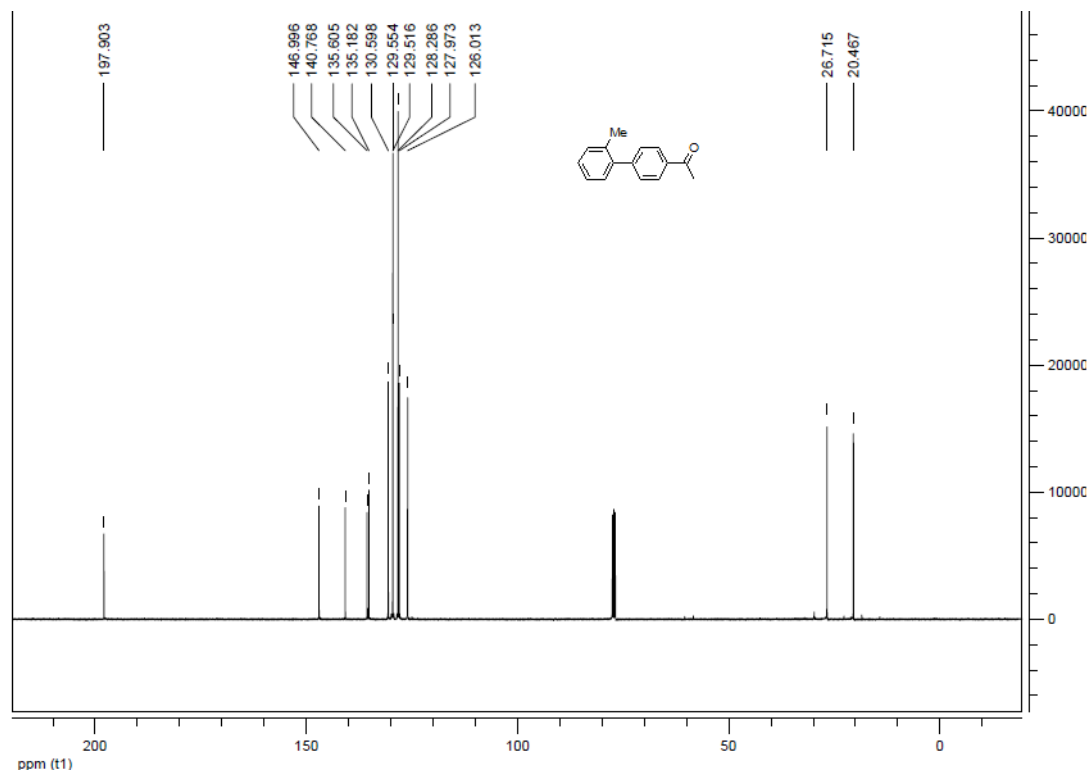


1-(2'-Methylbiphenyl-4-yl)ethanone (6ef)

¹H NMR

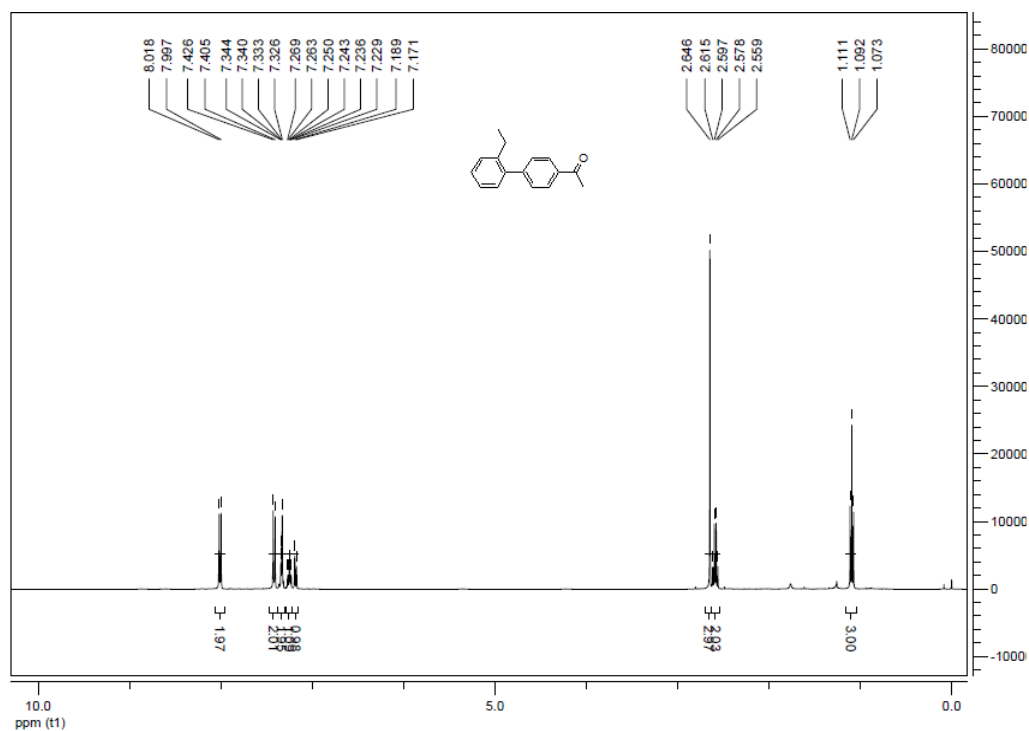


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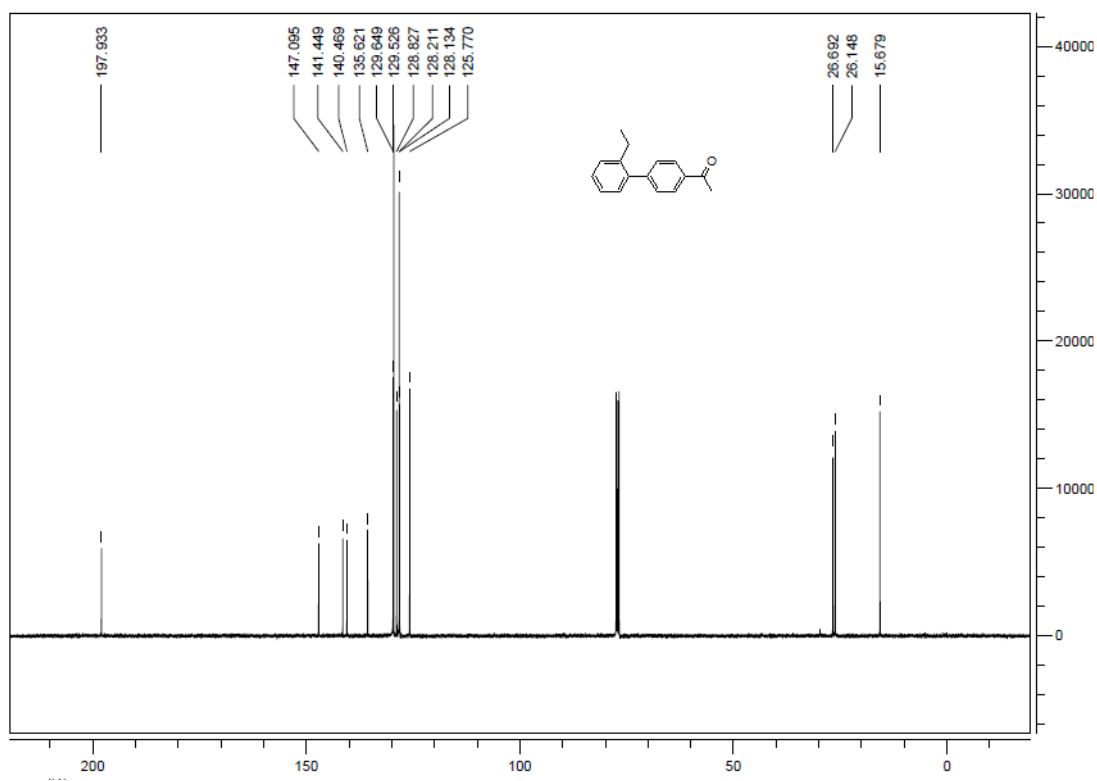


1-(2'-Ethylbiphenyl-4-yl)ethanone (6ff)

¹H NMR

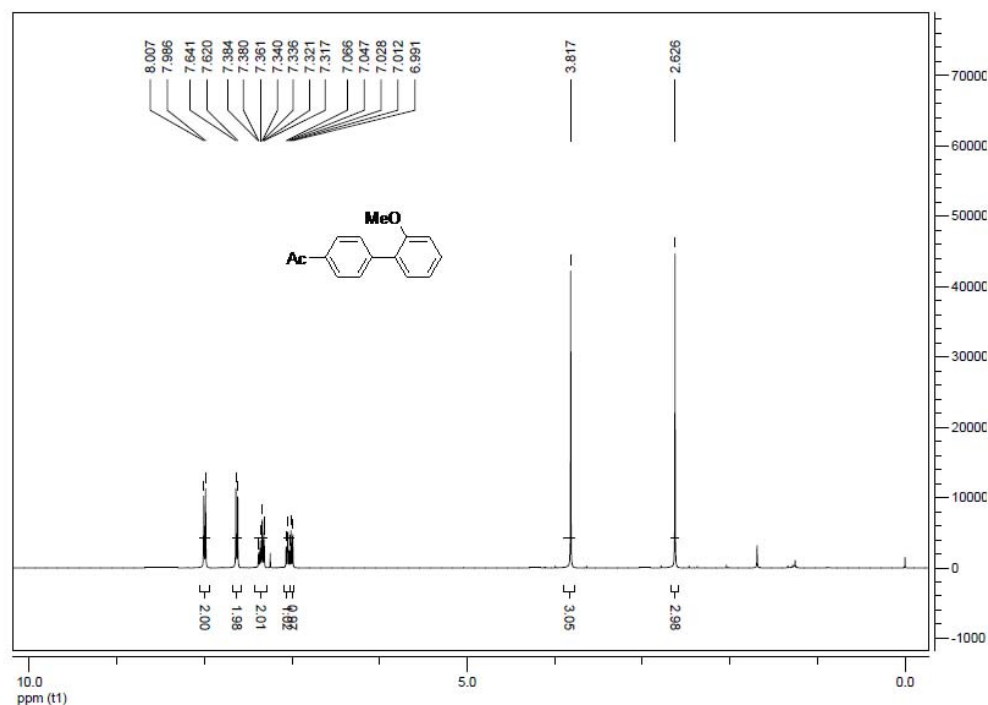


¹³C NMR

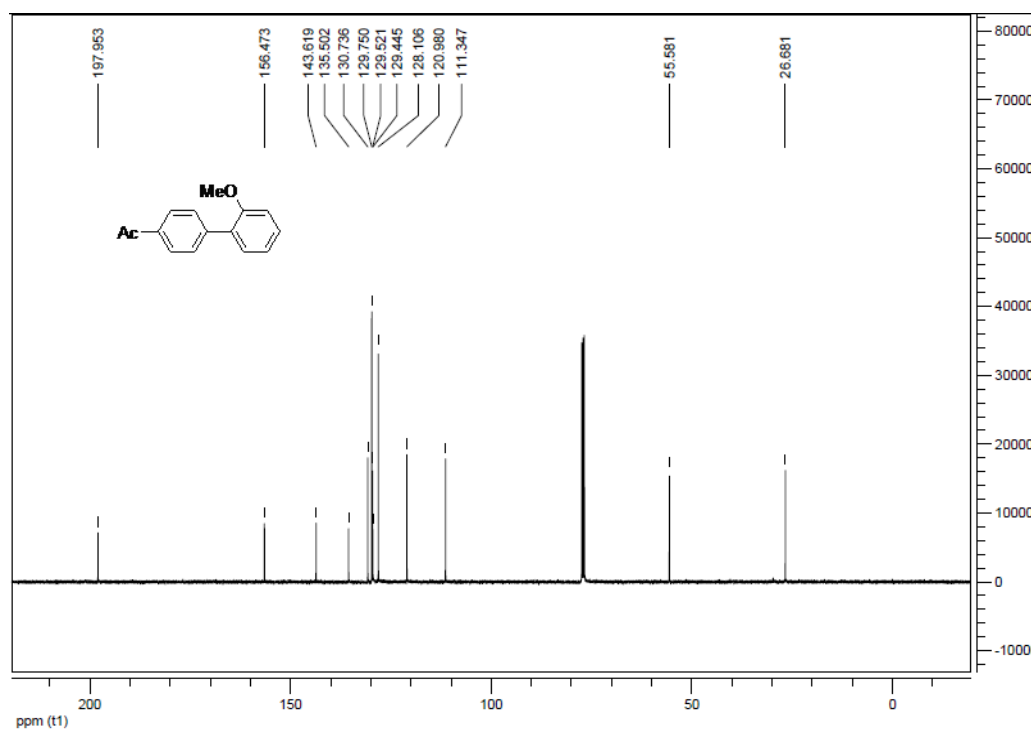


4-Acetyl-2'-methoxybiphenyl (6gf)

¹H NMR

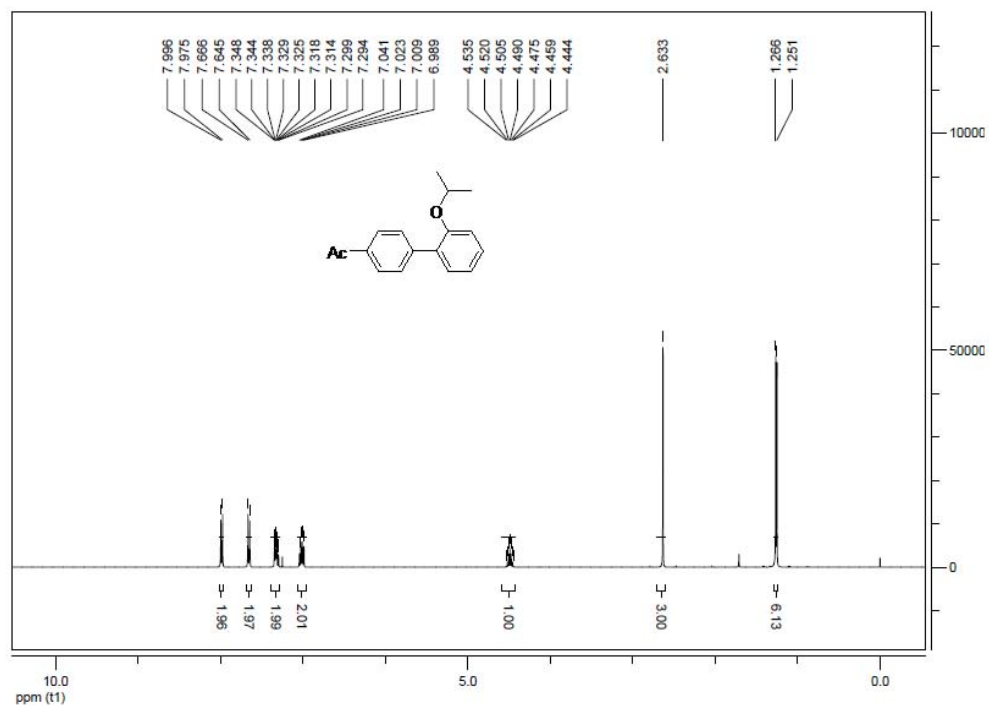


¹³C NMR

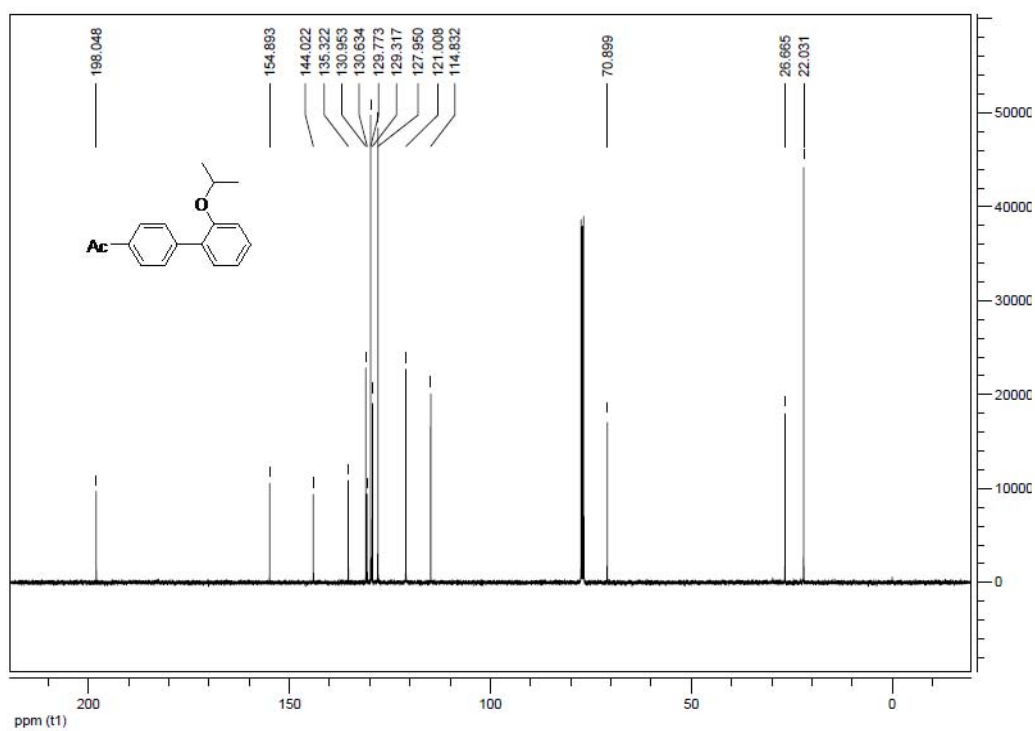


4-Acetyl-2'-isopropoxybiphenyl (6hf)

¹H NMR

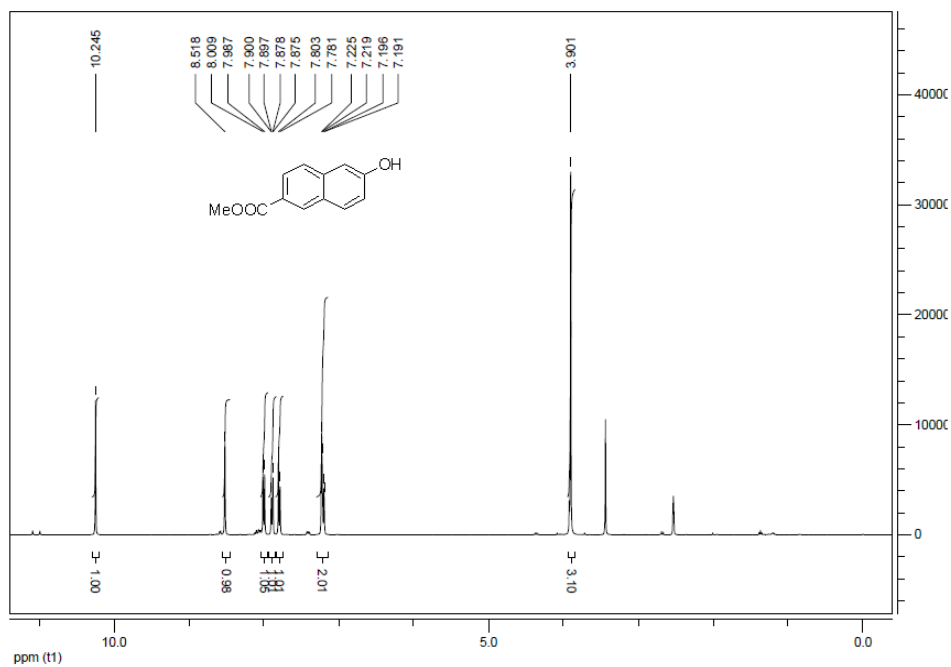


¹³C NMR

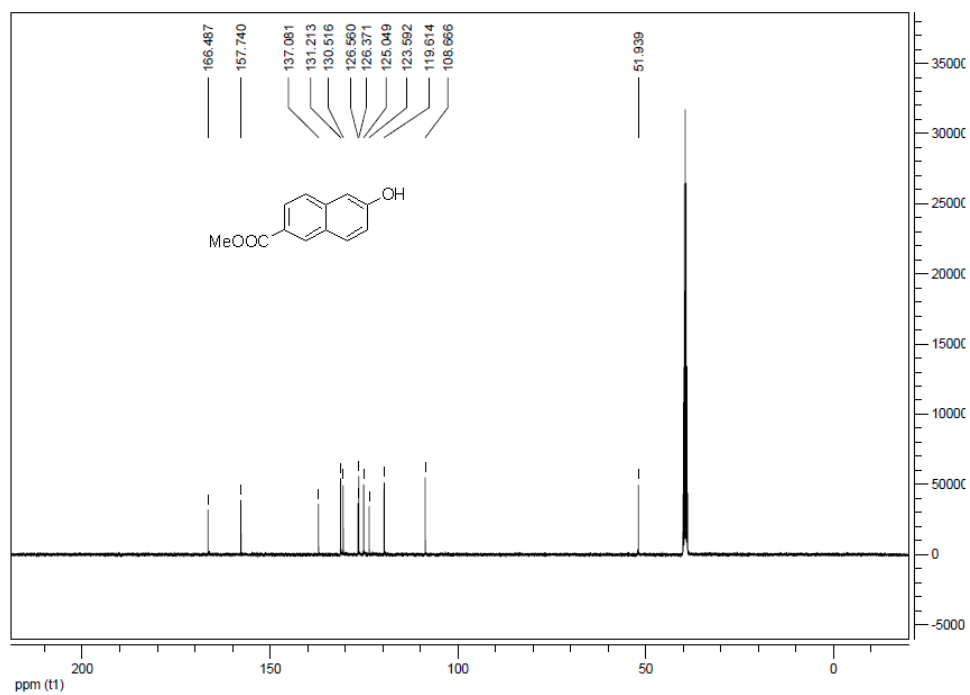


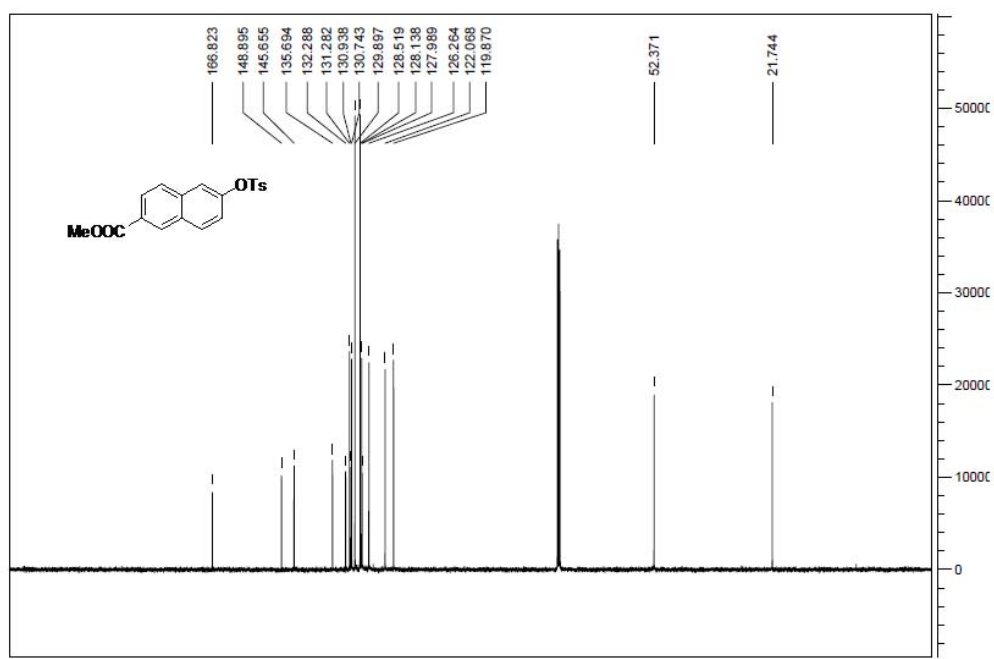
Methyl 6-hydroxy-2-naphthoate (7)

^1H NMR



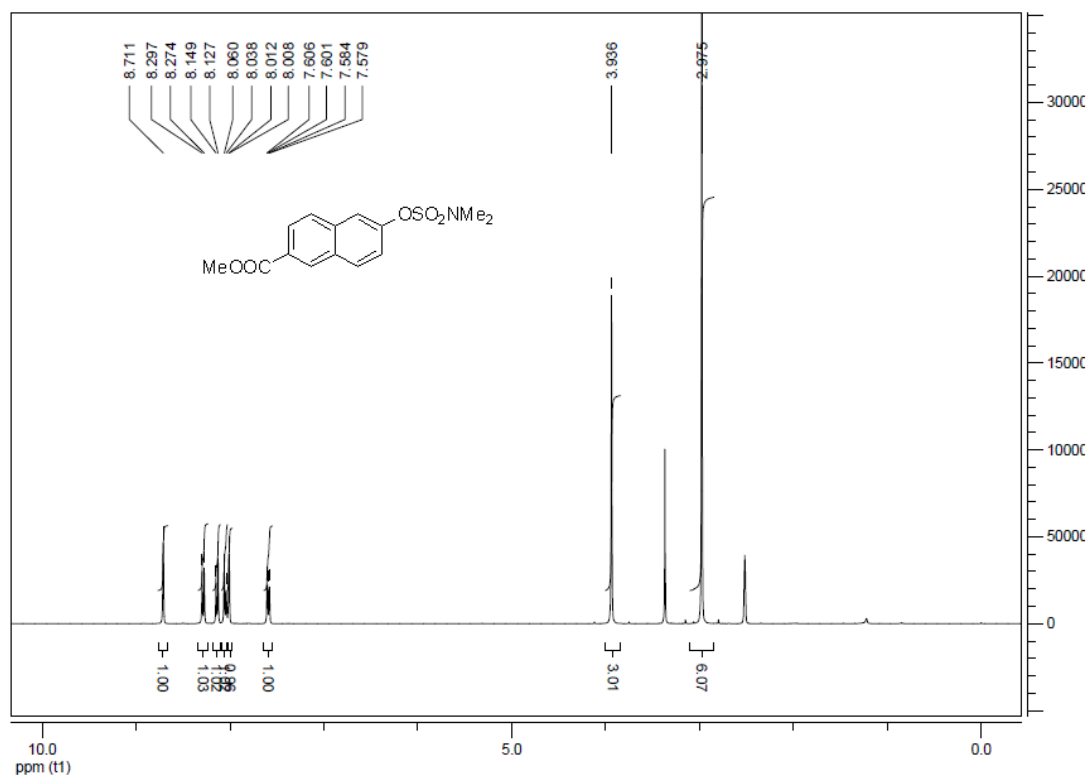
^{13}C NMR



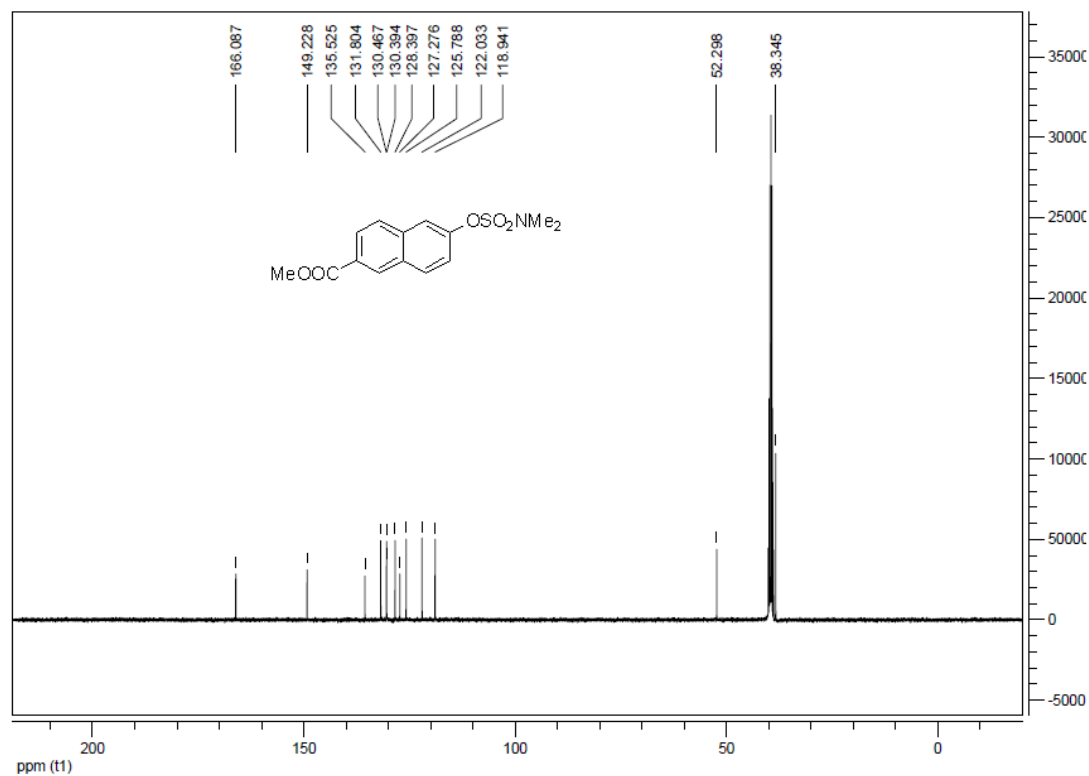
¹H NMR

Methyl 6-(dimethylsulfamoyl)oxy-2-naphthoate (9)

¹H NMR

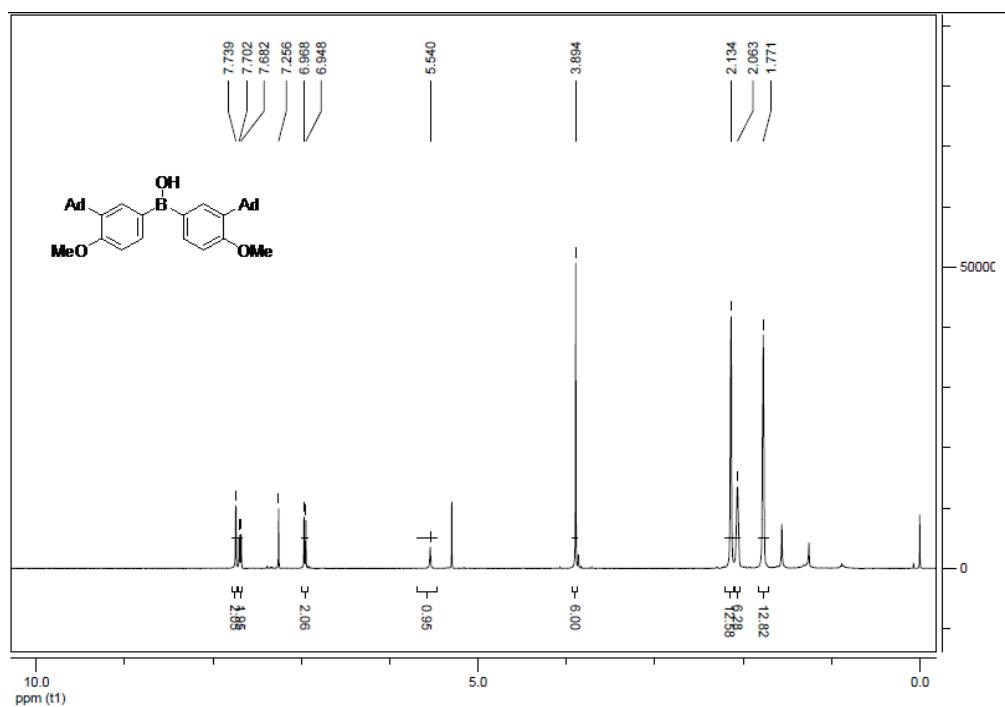


¹³C NMR



Di(3-(1-adamantyl)-4-methoxyphenyl)borinic acid (10)

¹H NMR



¹H NMR

¹H NMR