

## Supporting Information

### Synthesis of dihydroindeno[1,2-*c*]isochromene *via* cascade cyclization and Friedel-Crafts reaction

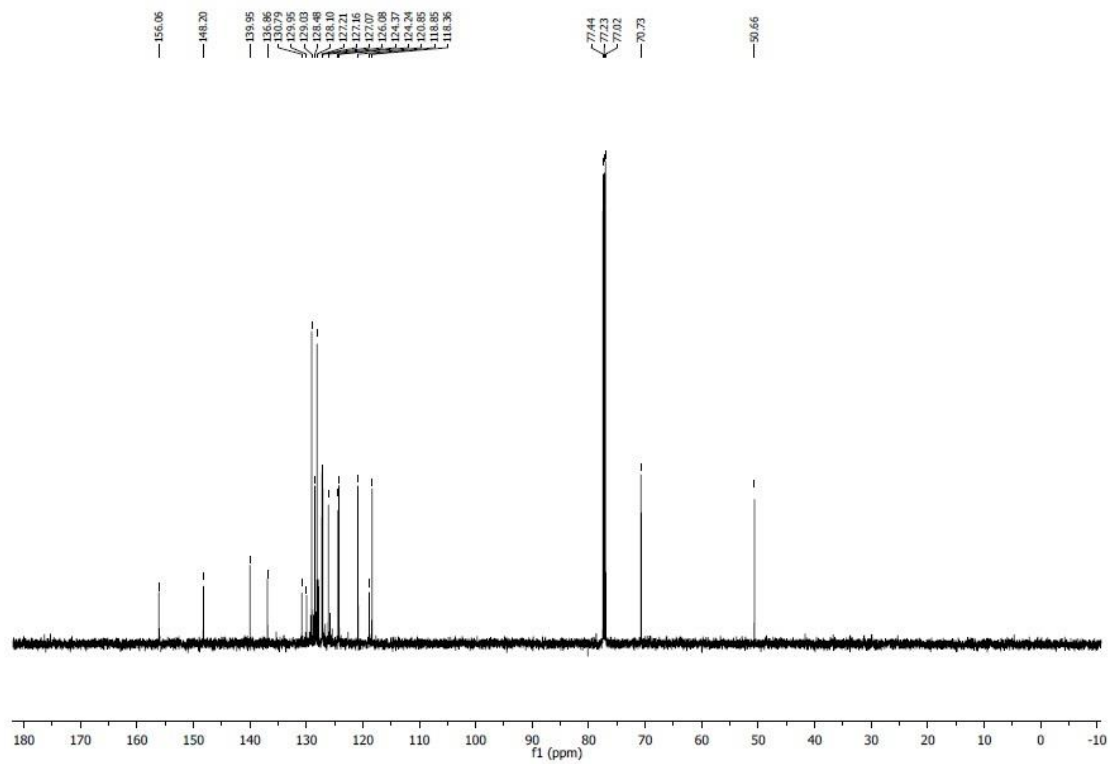
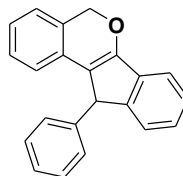
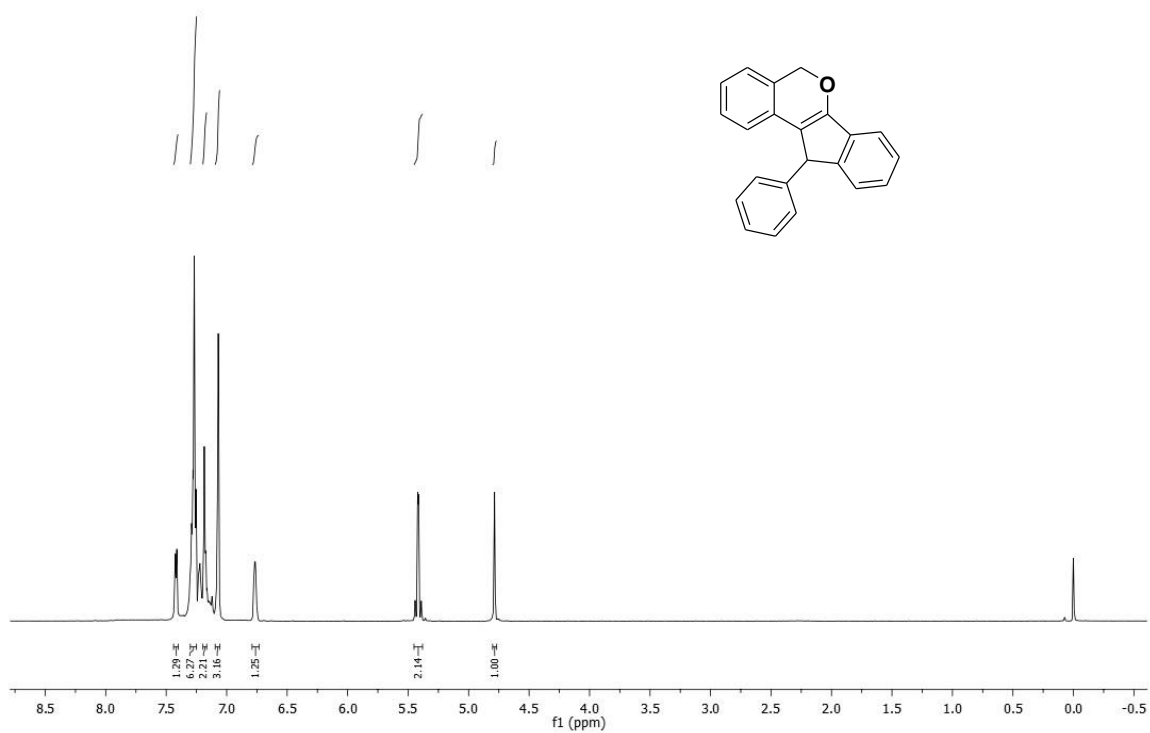
Anil Kumar Saikia,\* Priya Ghosh, Manash J. Deka, and Madhurjya Borah

Department of Chemistry, Indian Institute of Technology Guwahati, Assam-781039, India

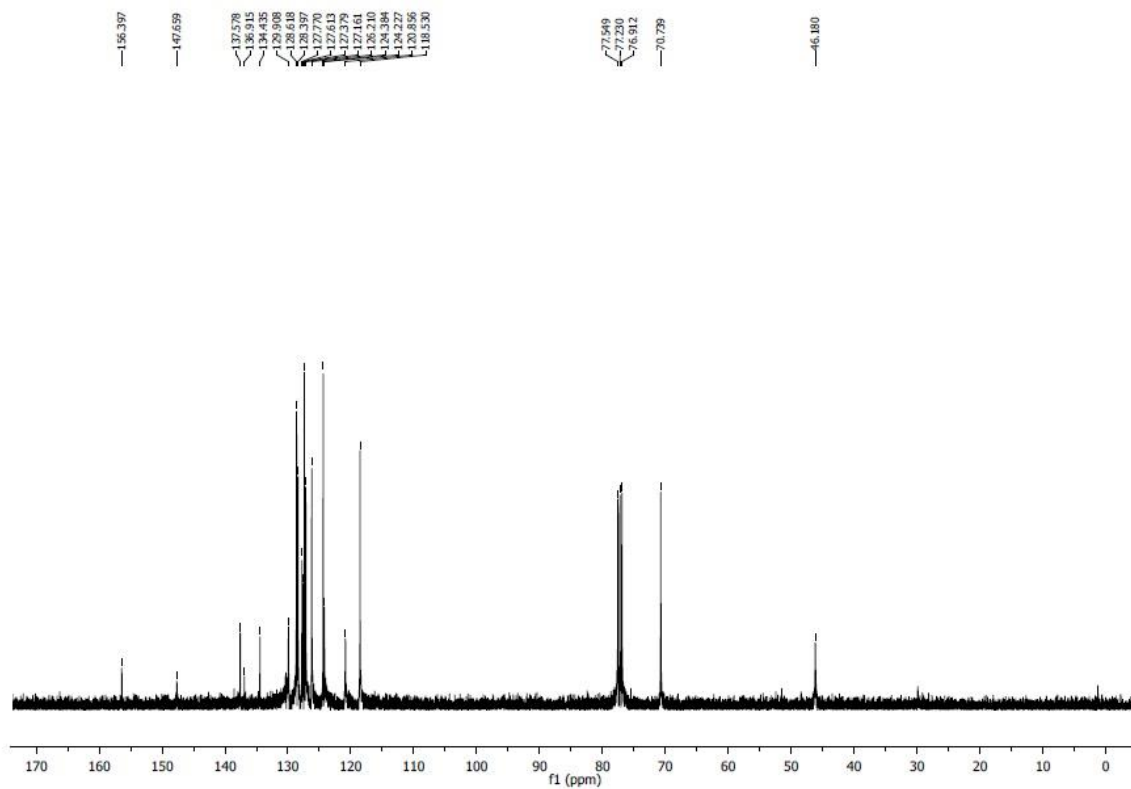
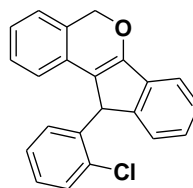
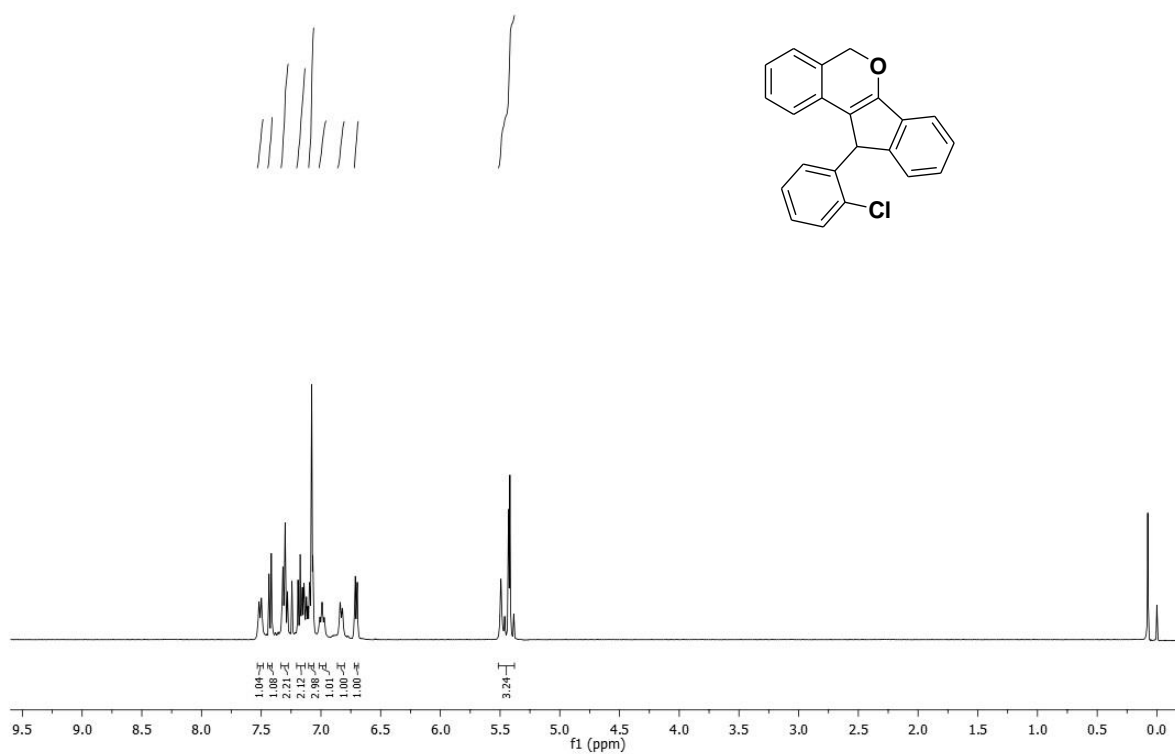
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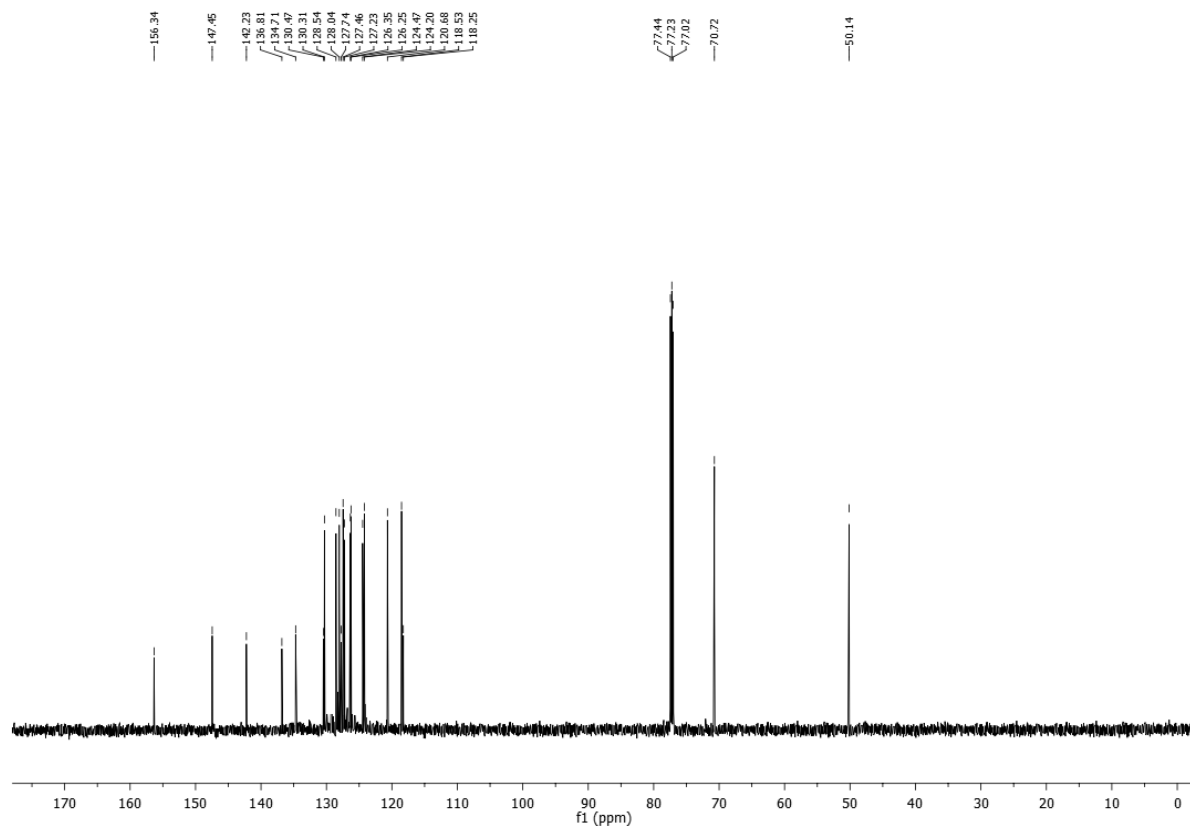
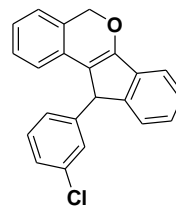
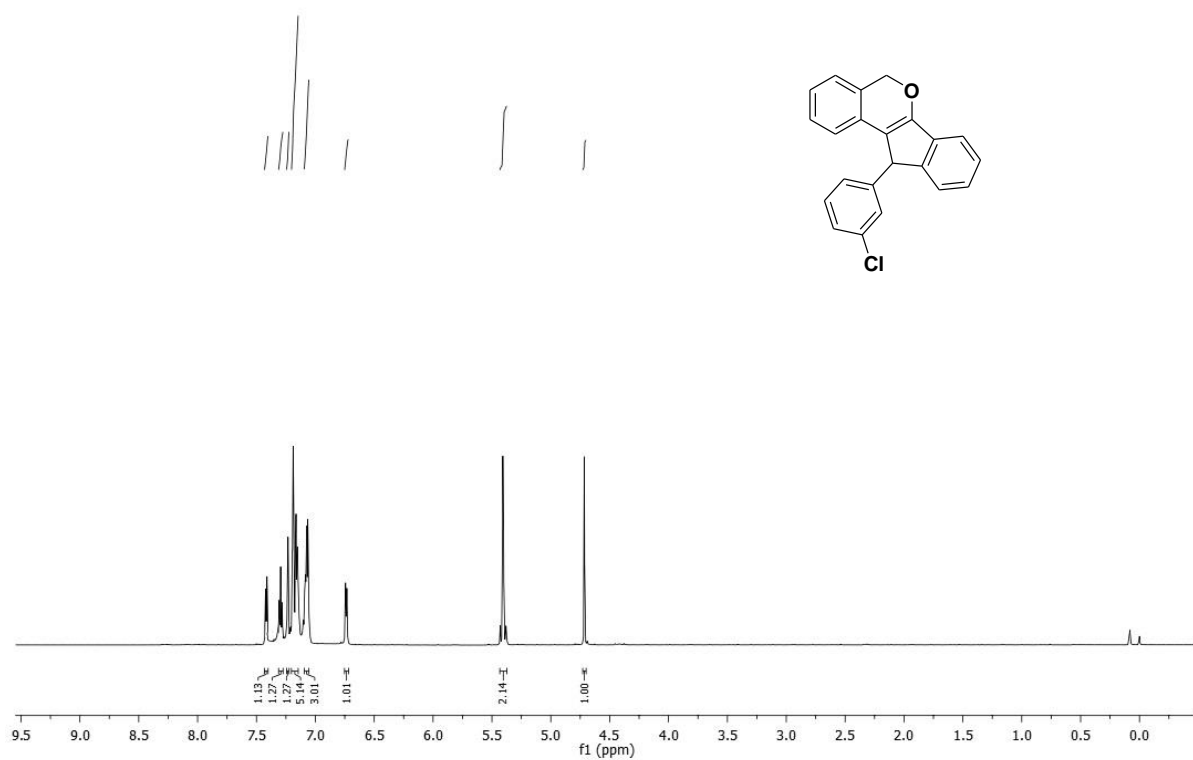
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3a



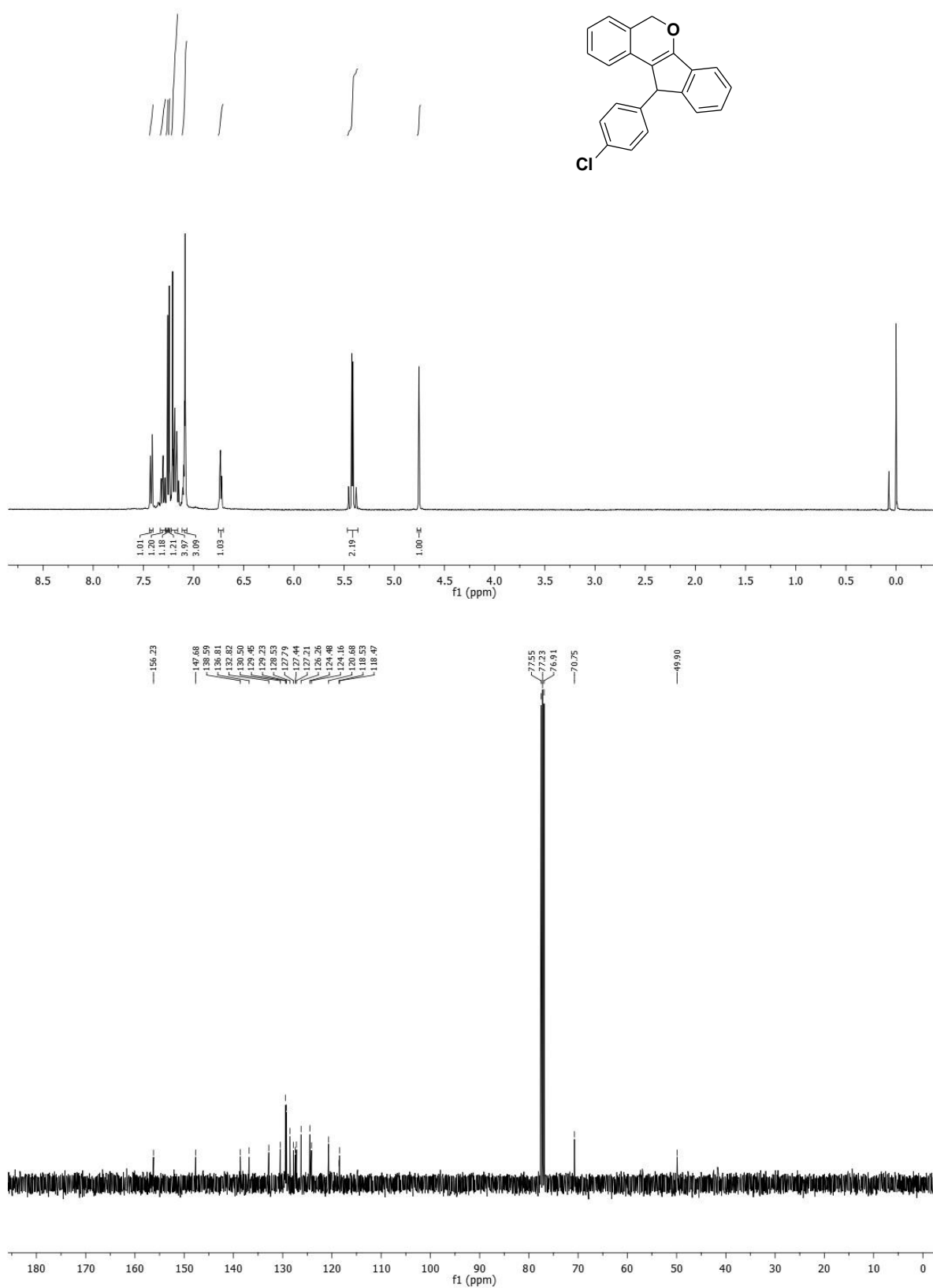
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3b



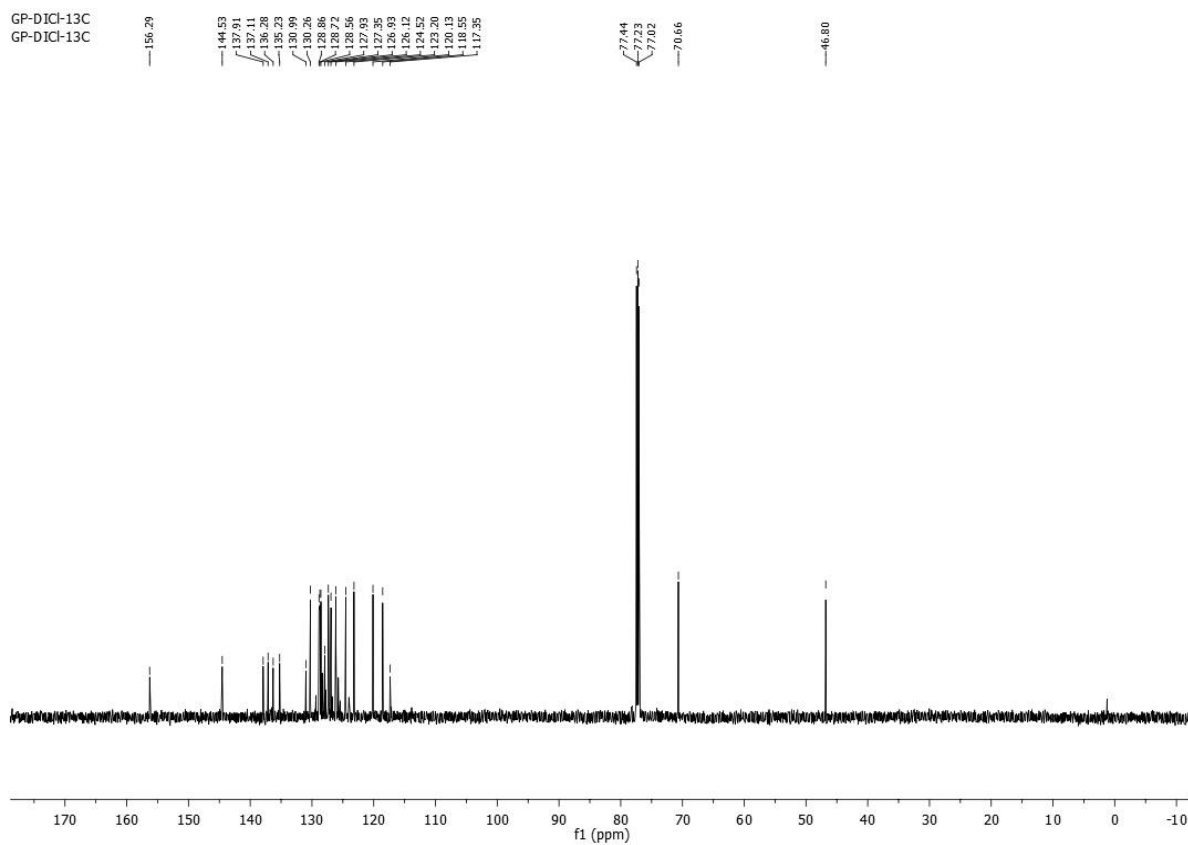
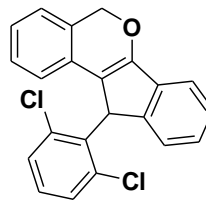
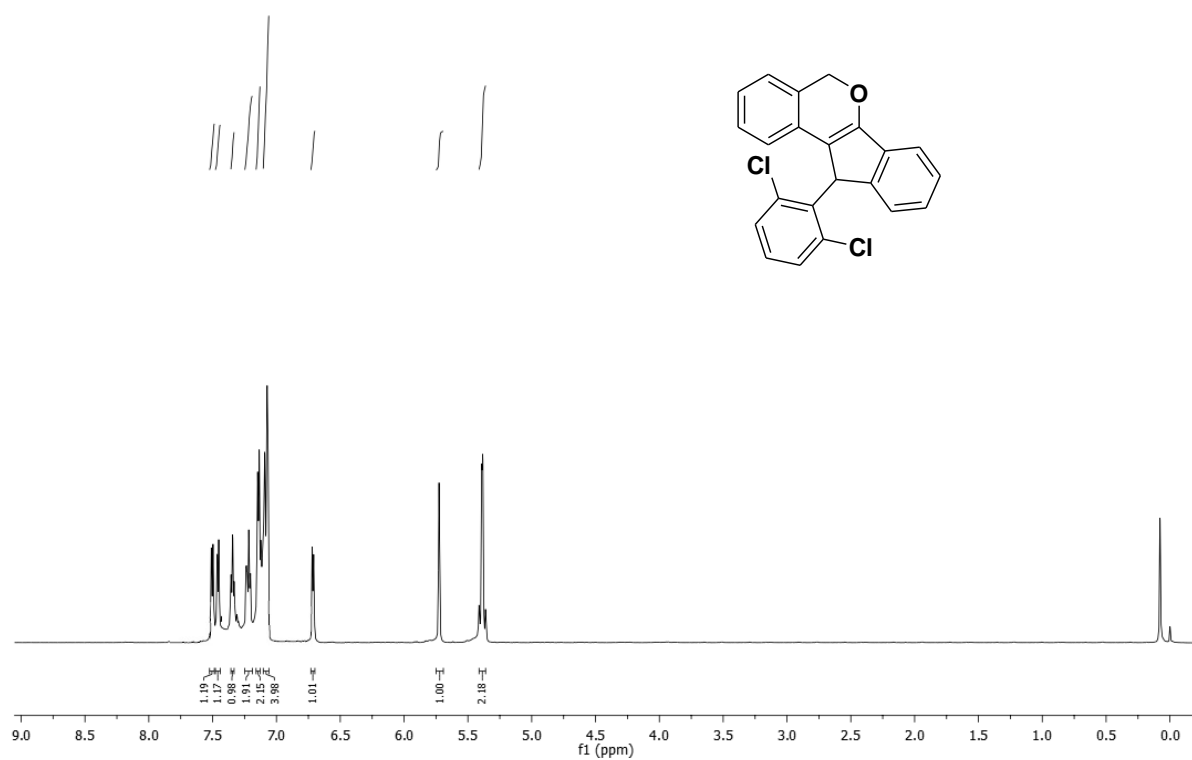
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3c



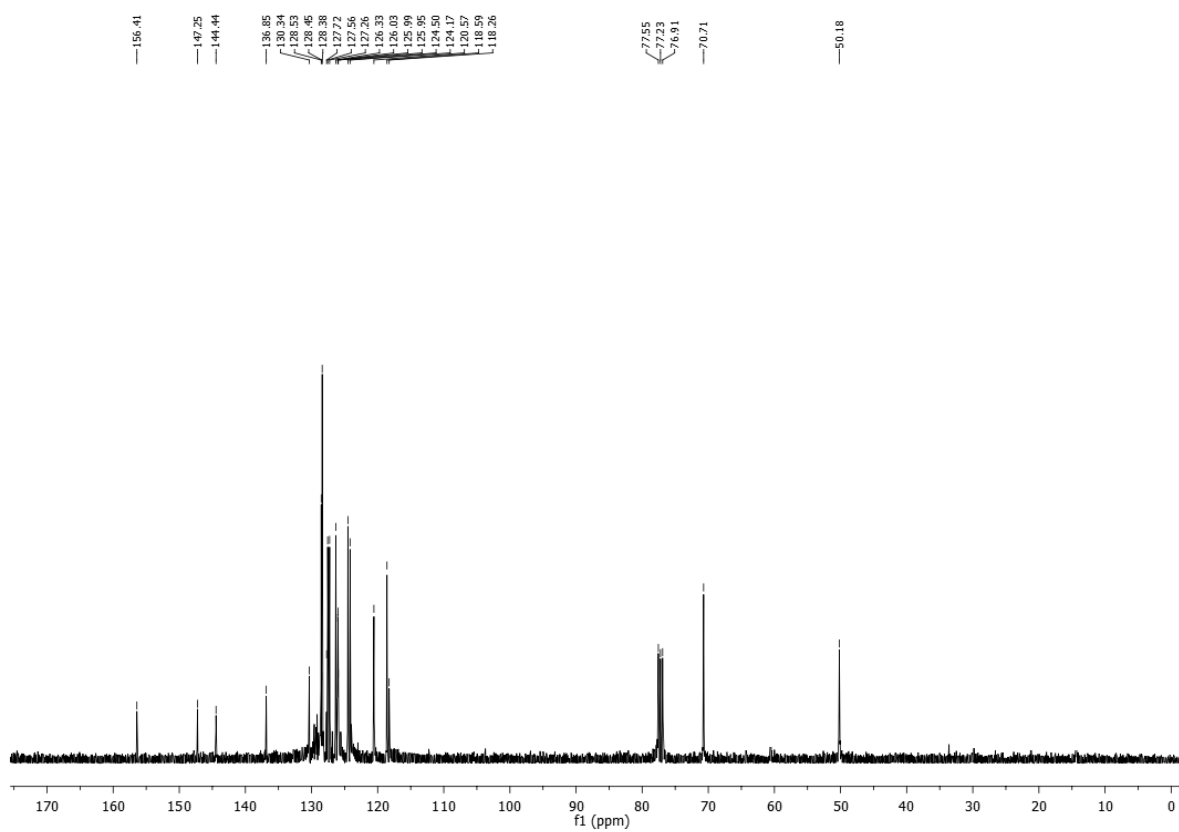
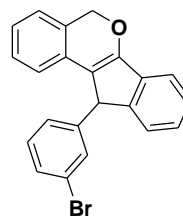
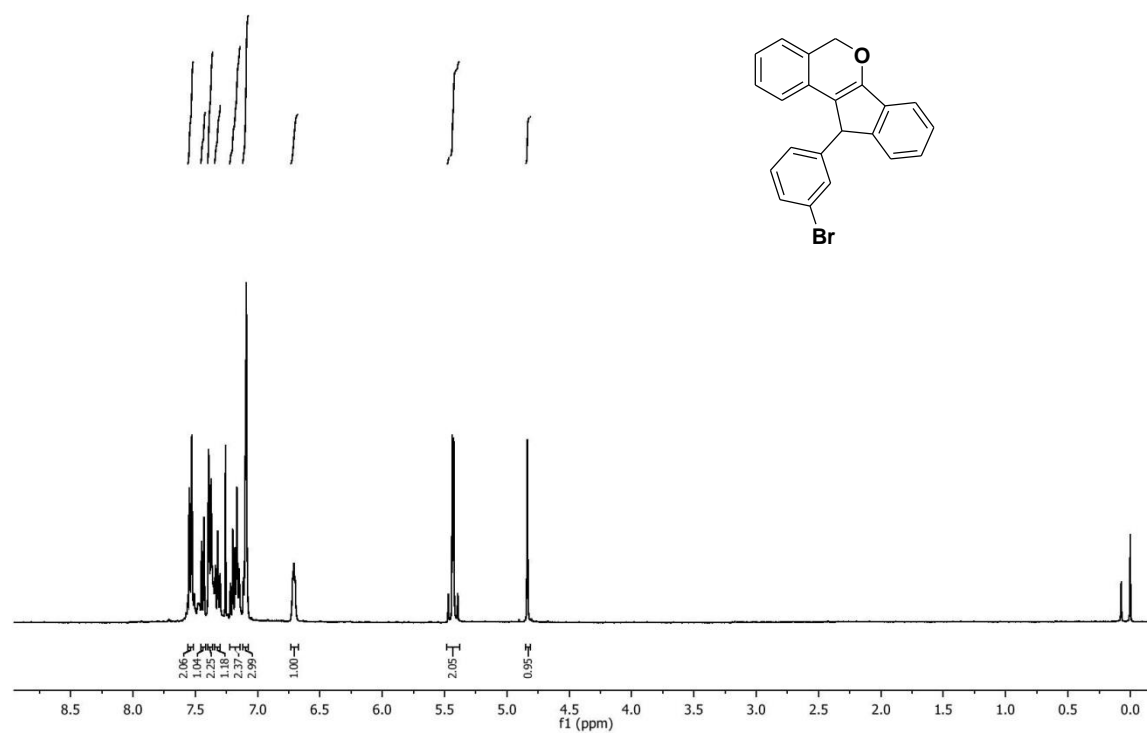
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3d



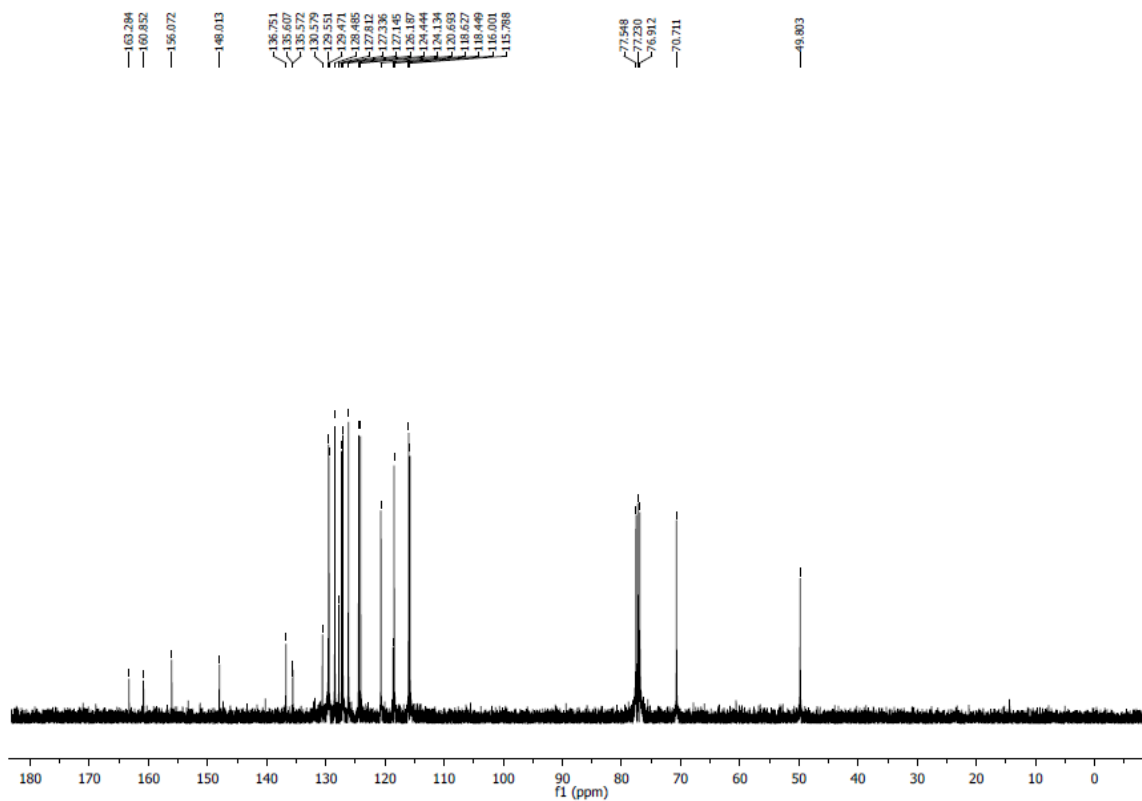
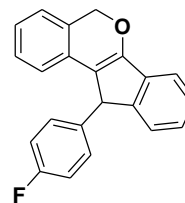
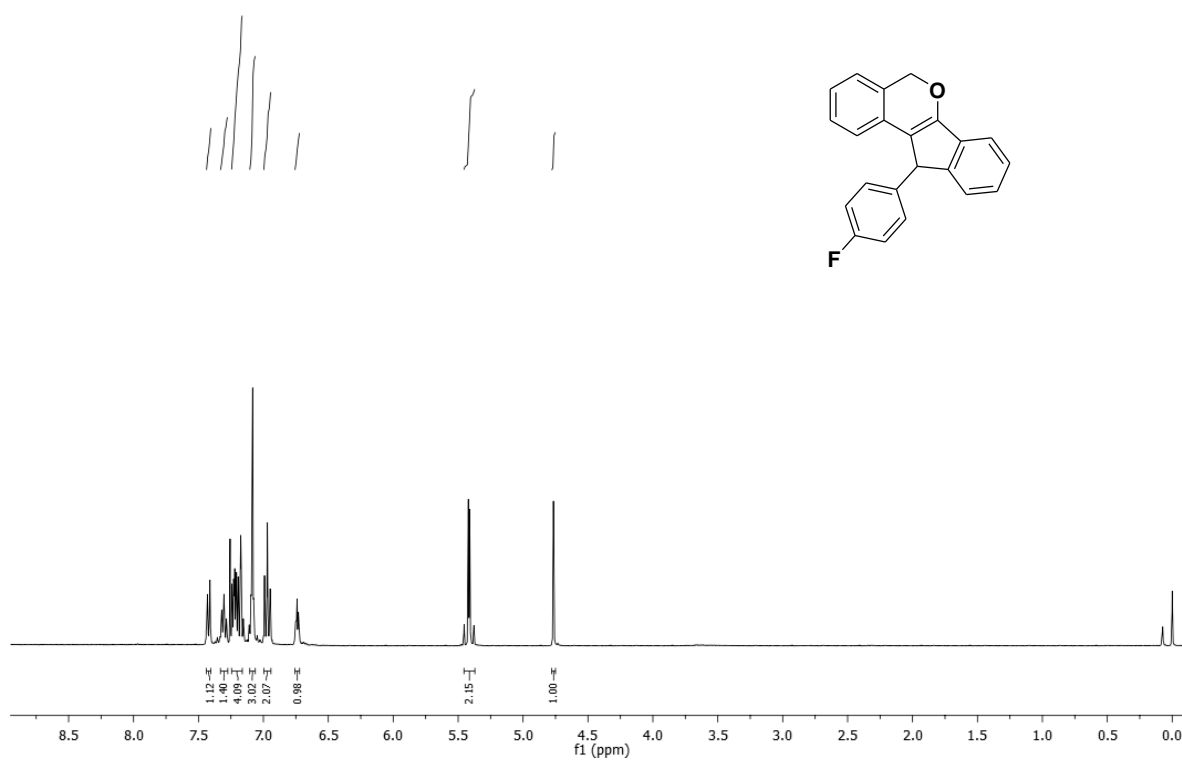
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3e



# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3f

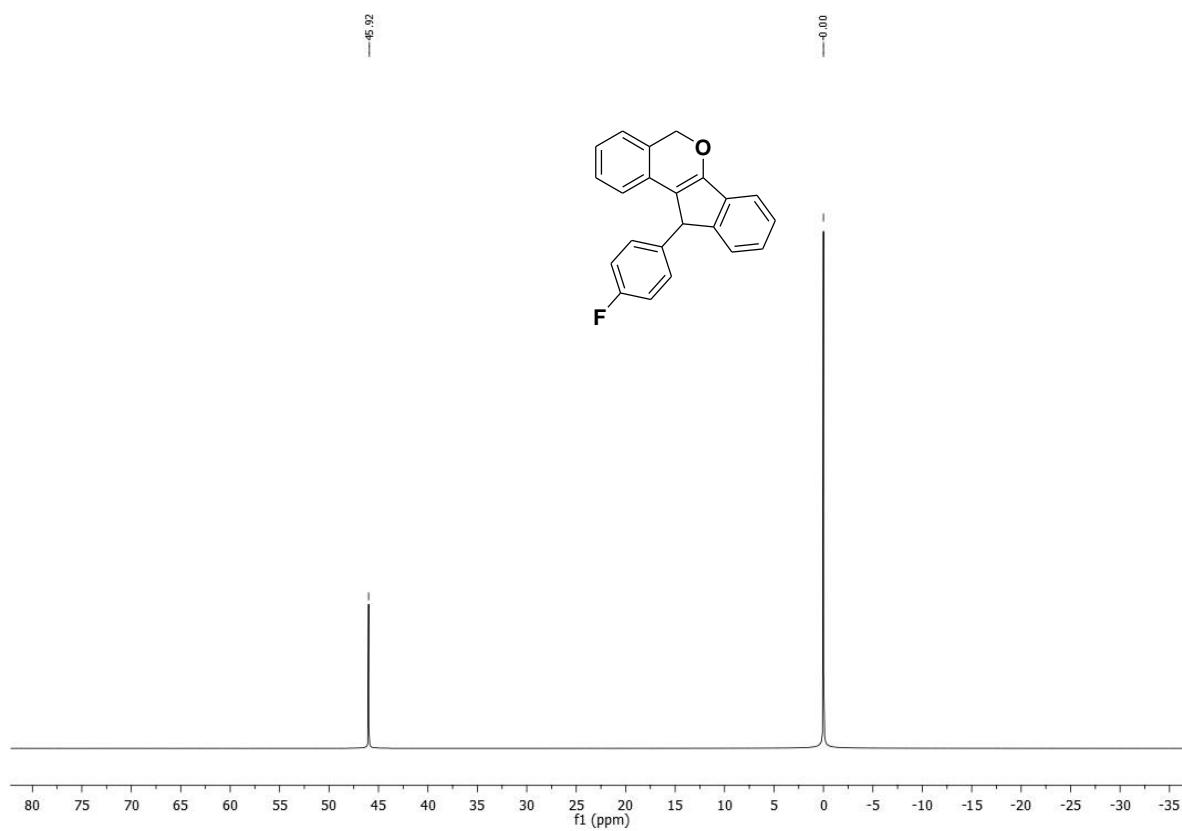


# <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound 3g

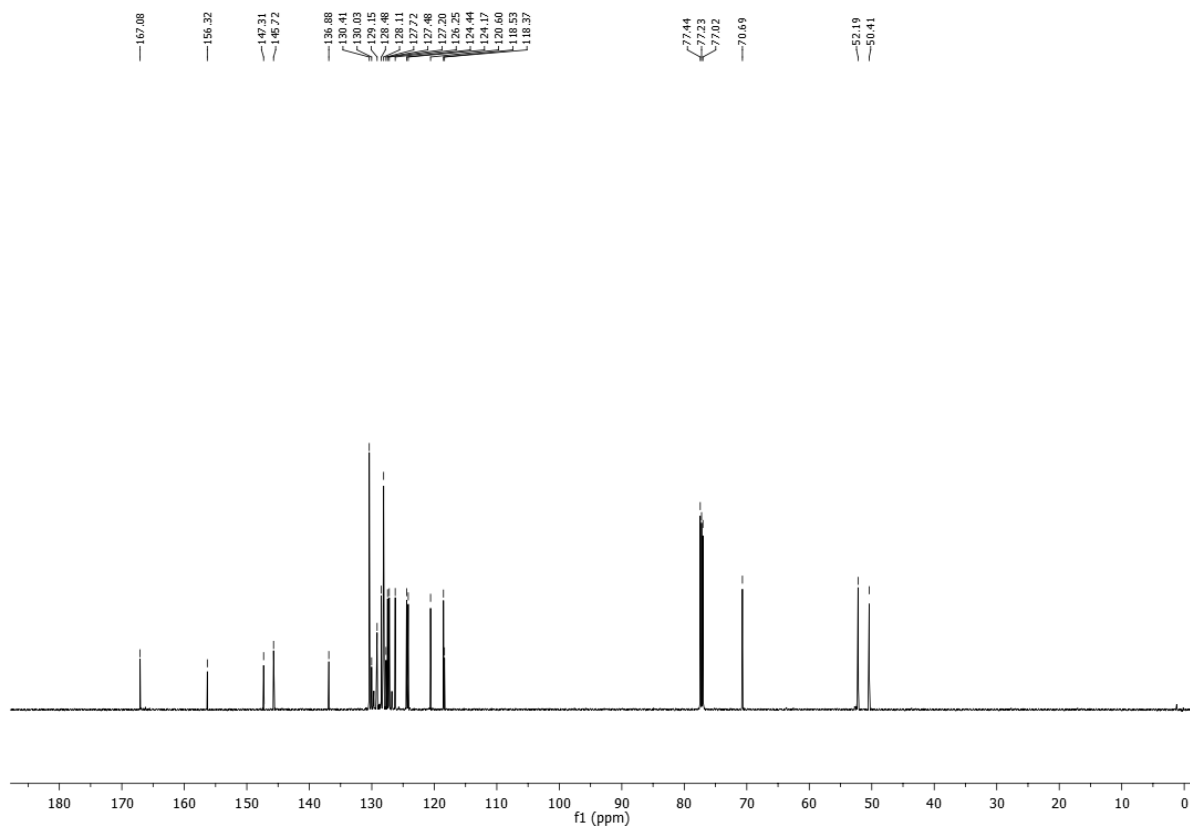
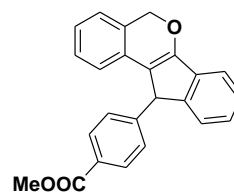
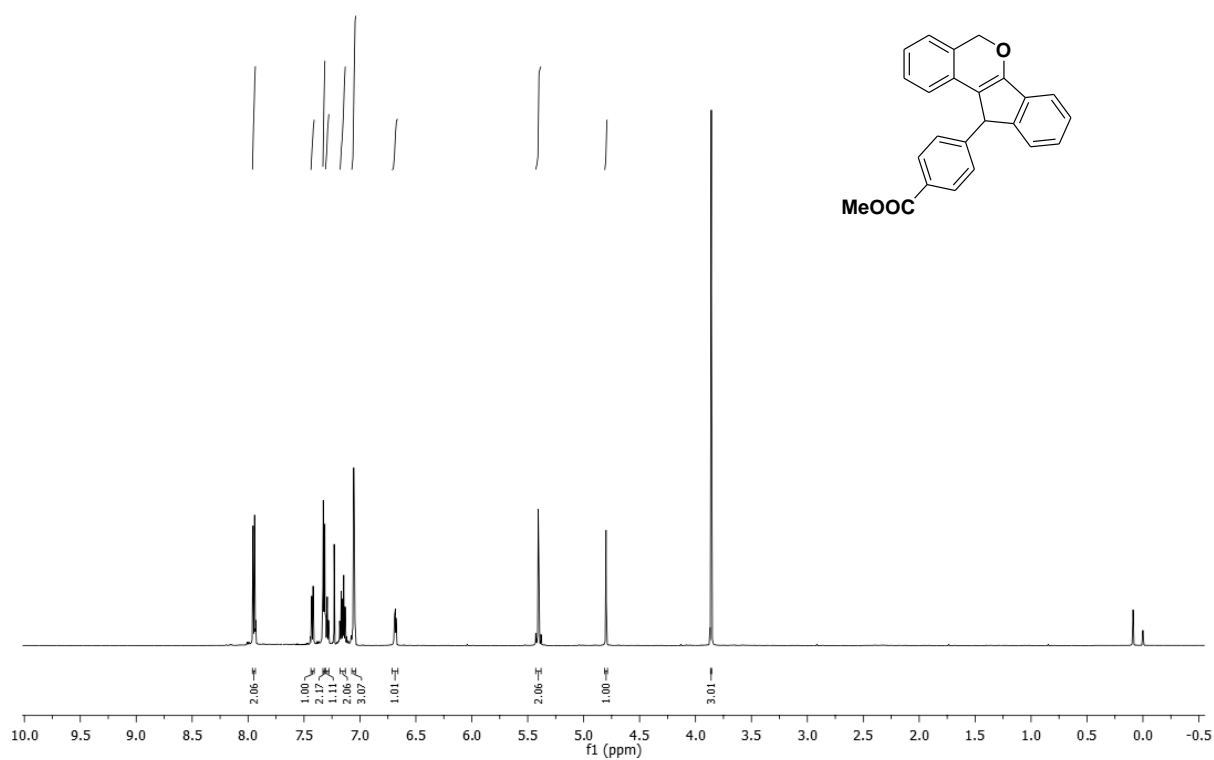




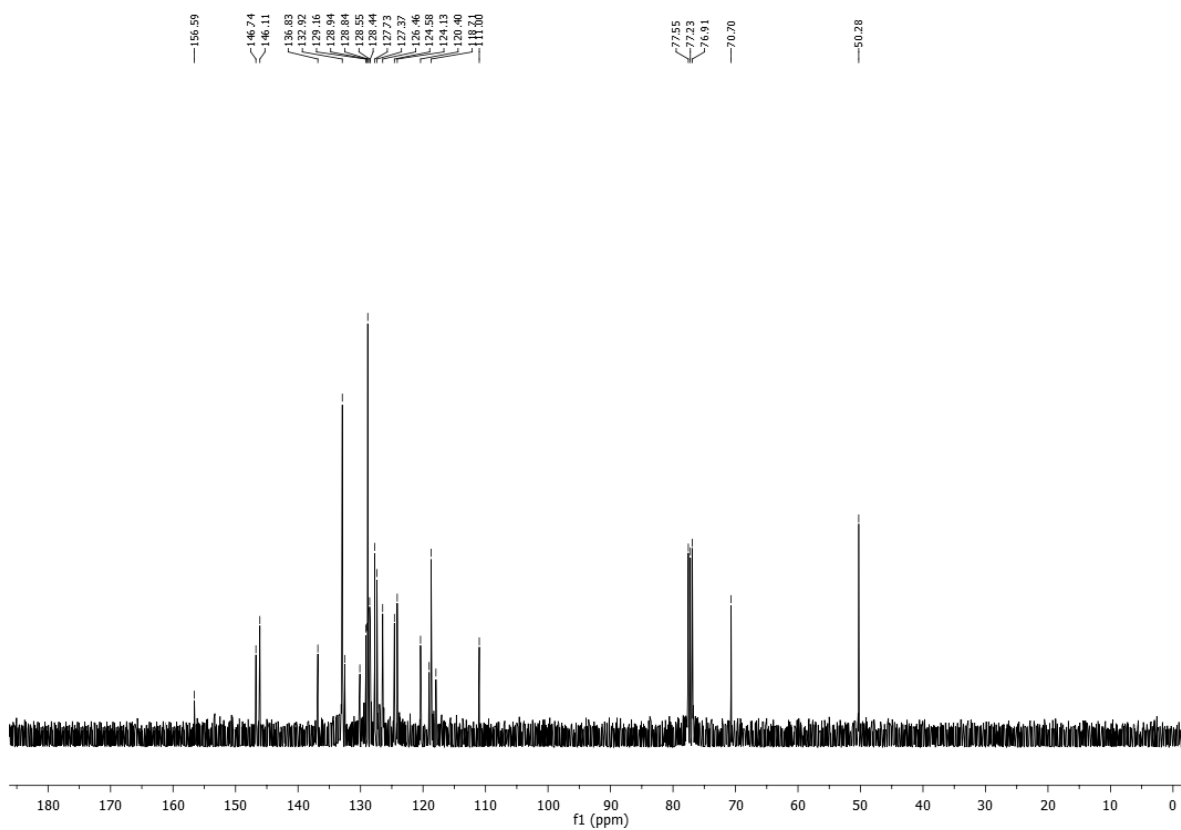
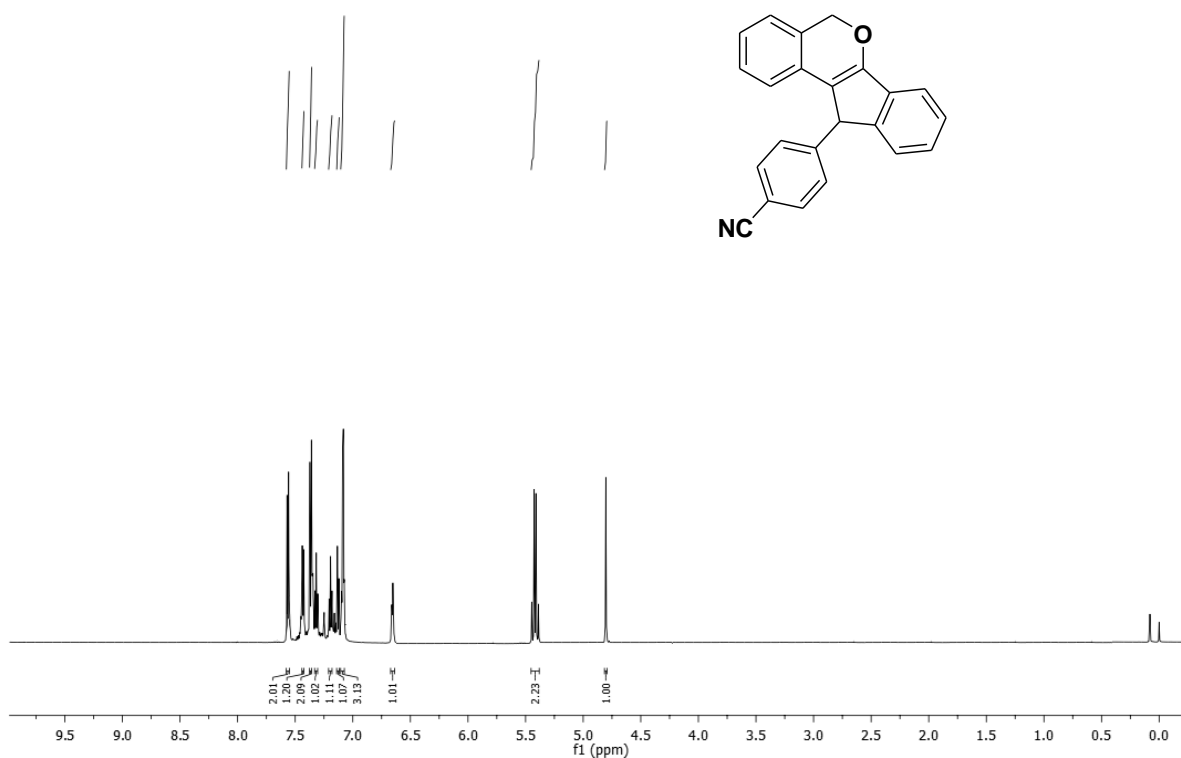
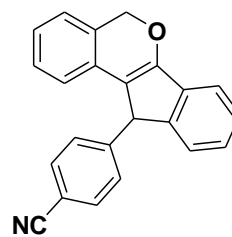
# <sup>19</sup>F NMR spectrum of compound 3g



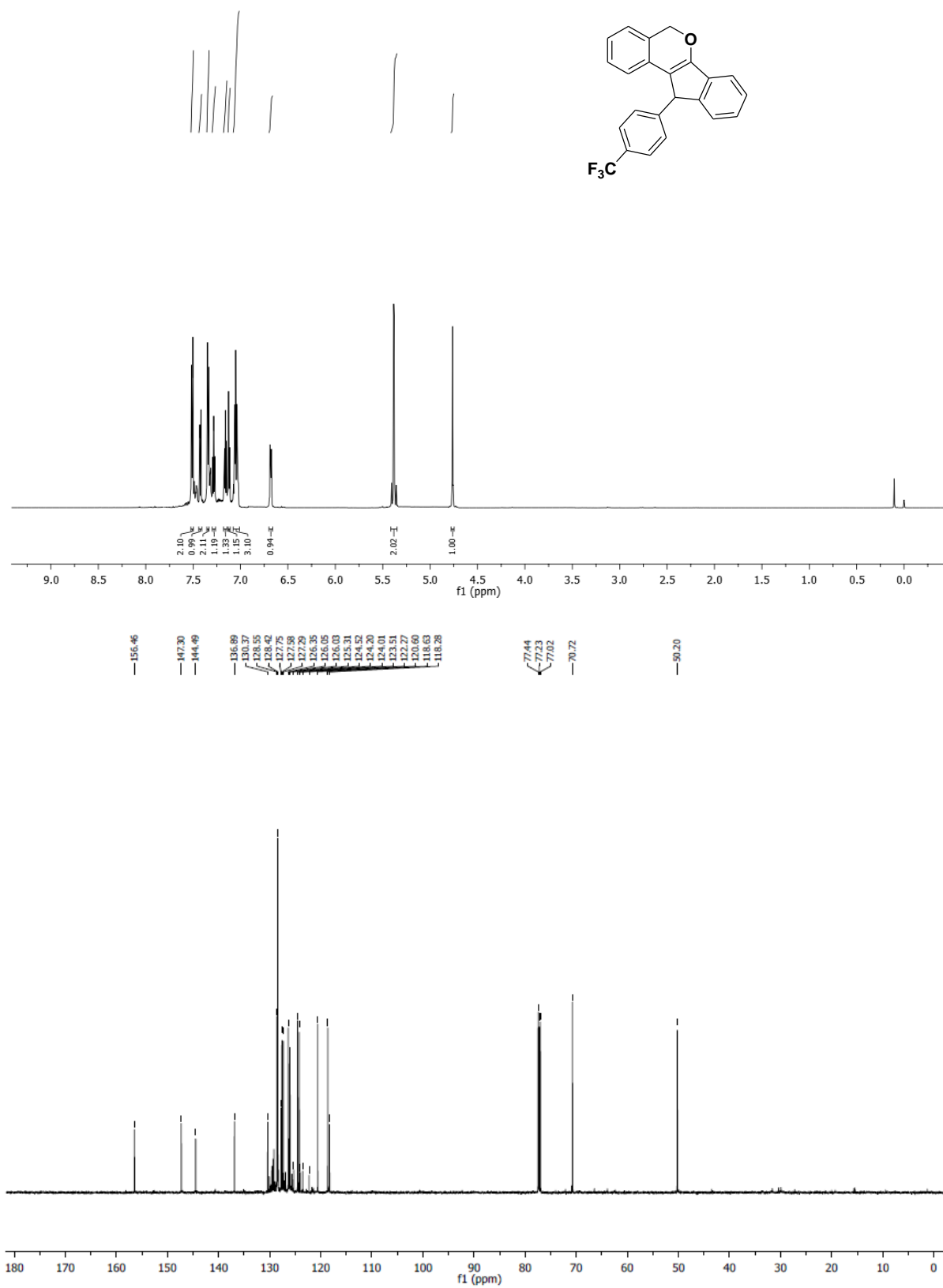
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3h



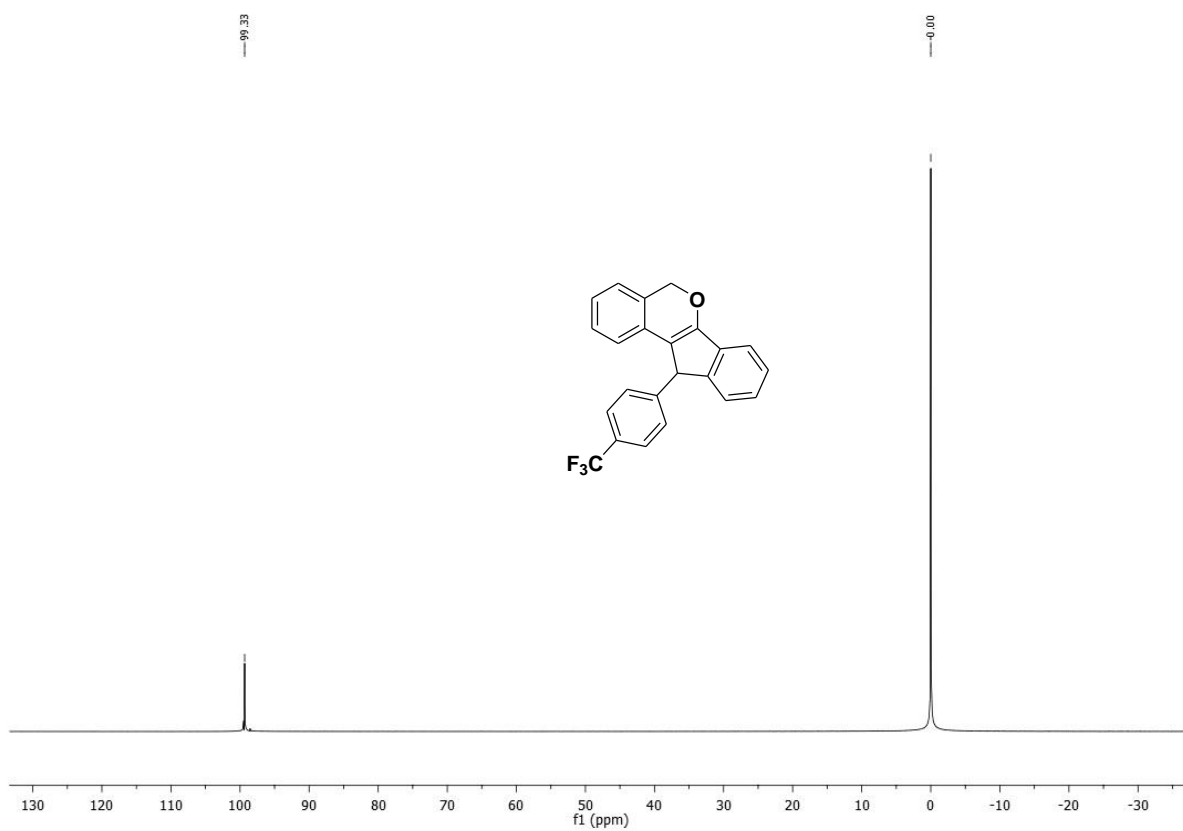
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3i



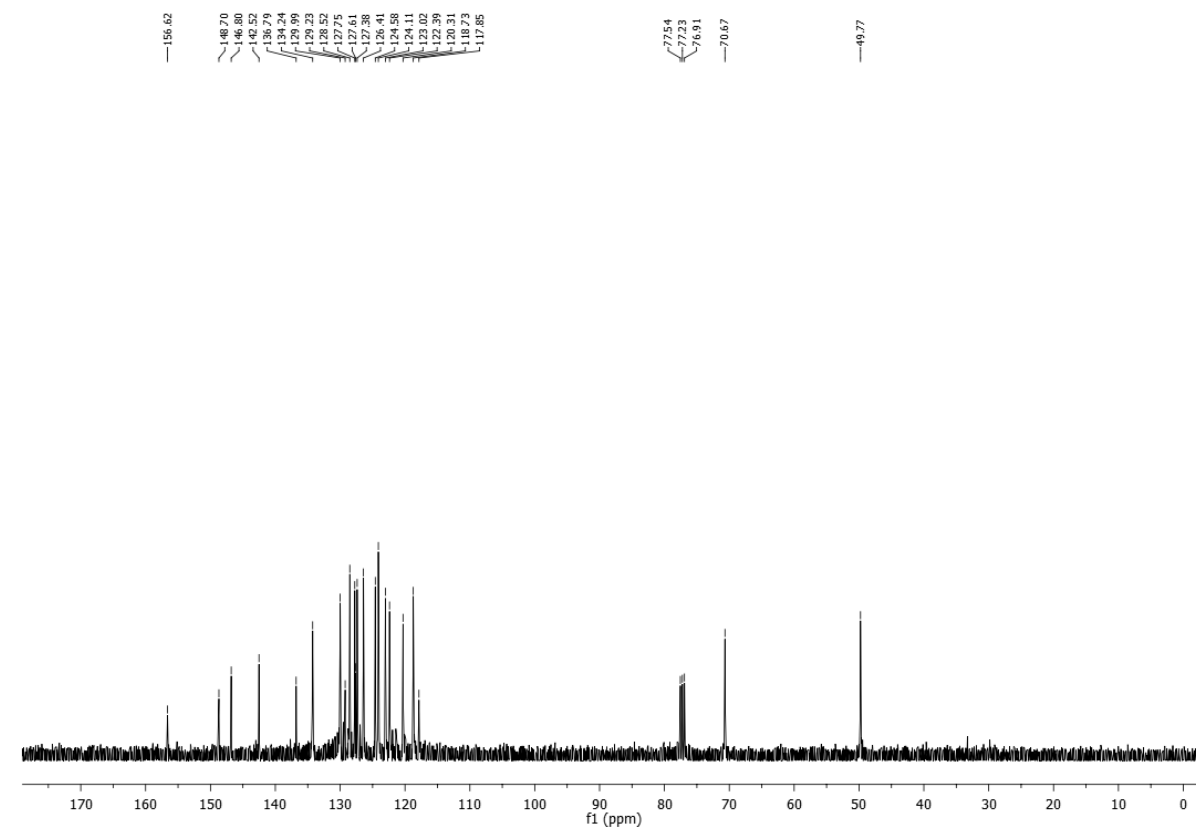
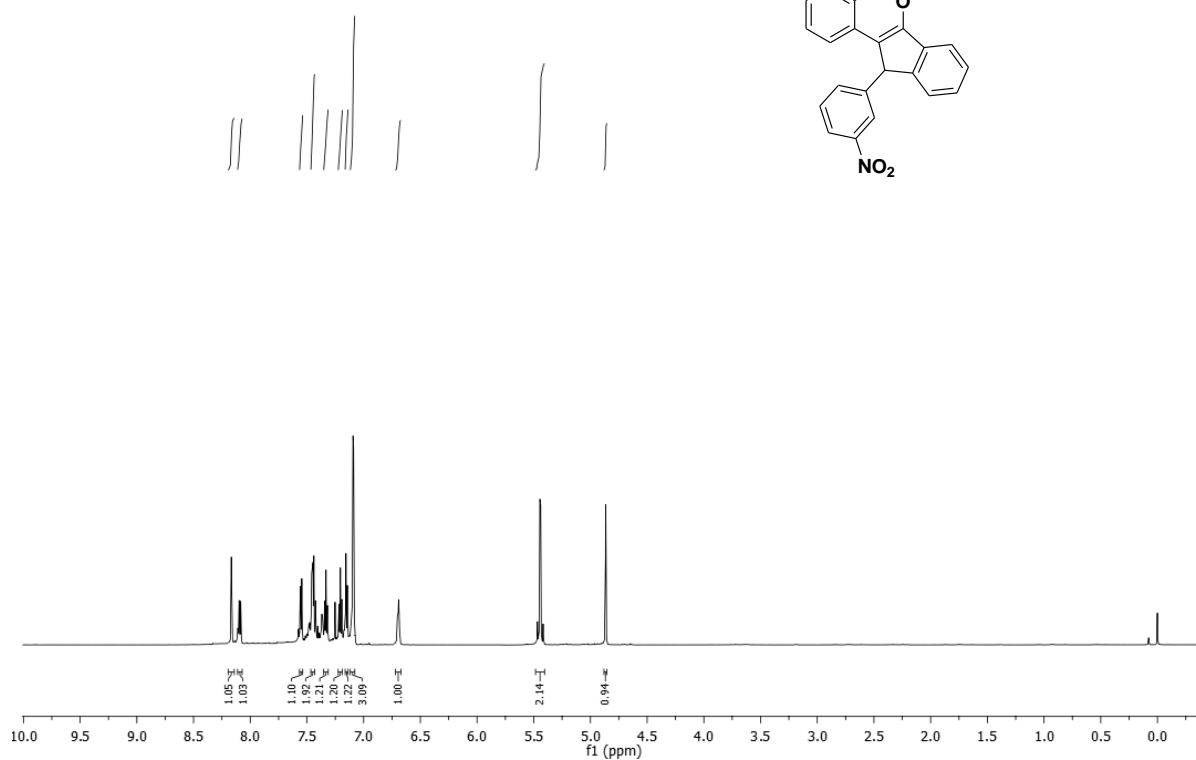
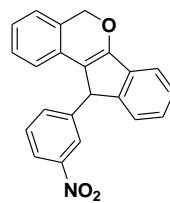
# <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound 3j



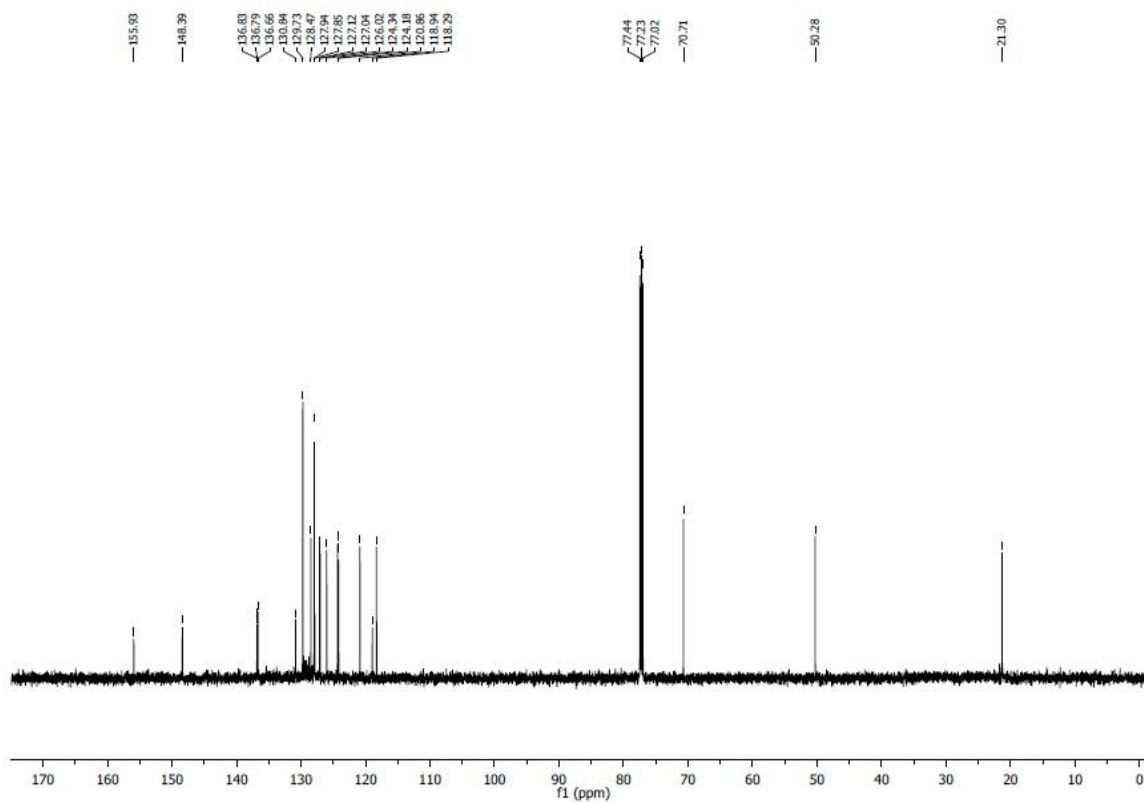
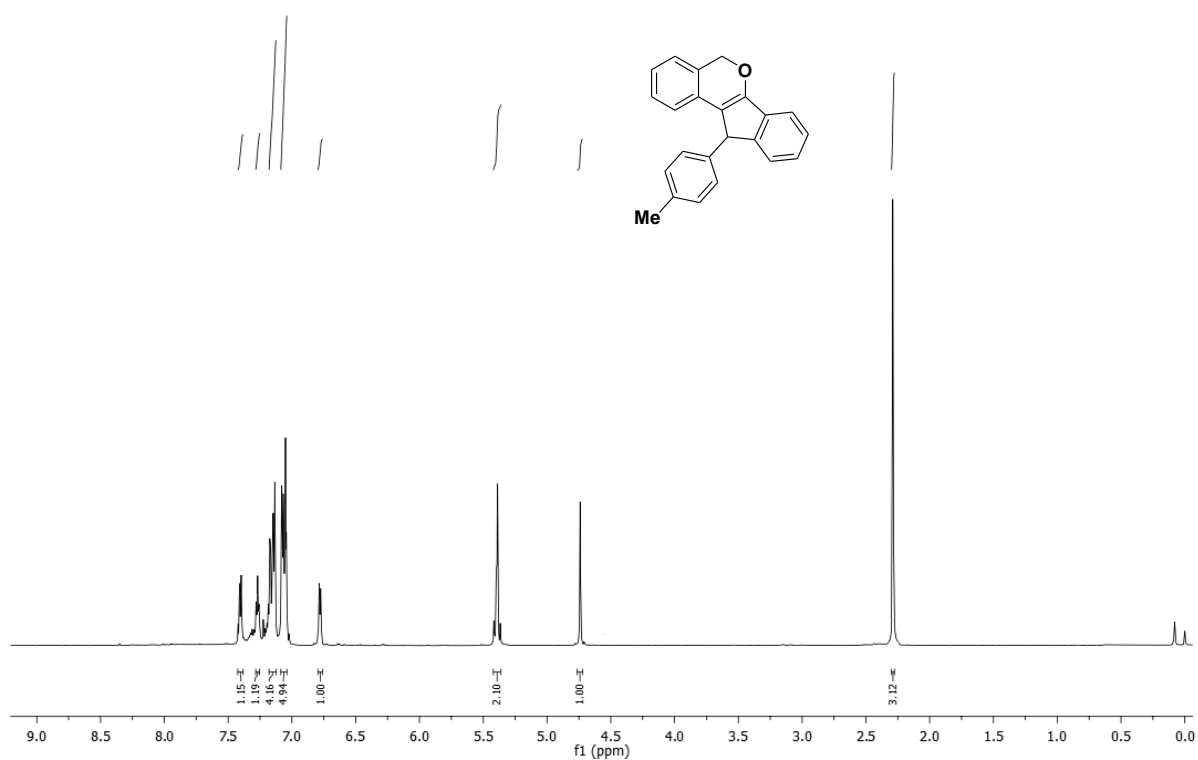
# <sup>19</sup>F NMR spectrum of compound 3j



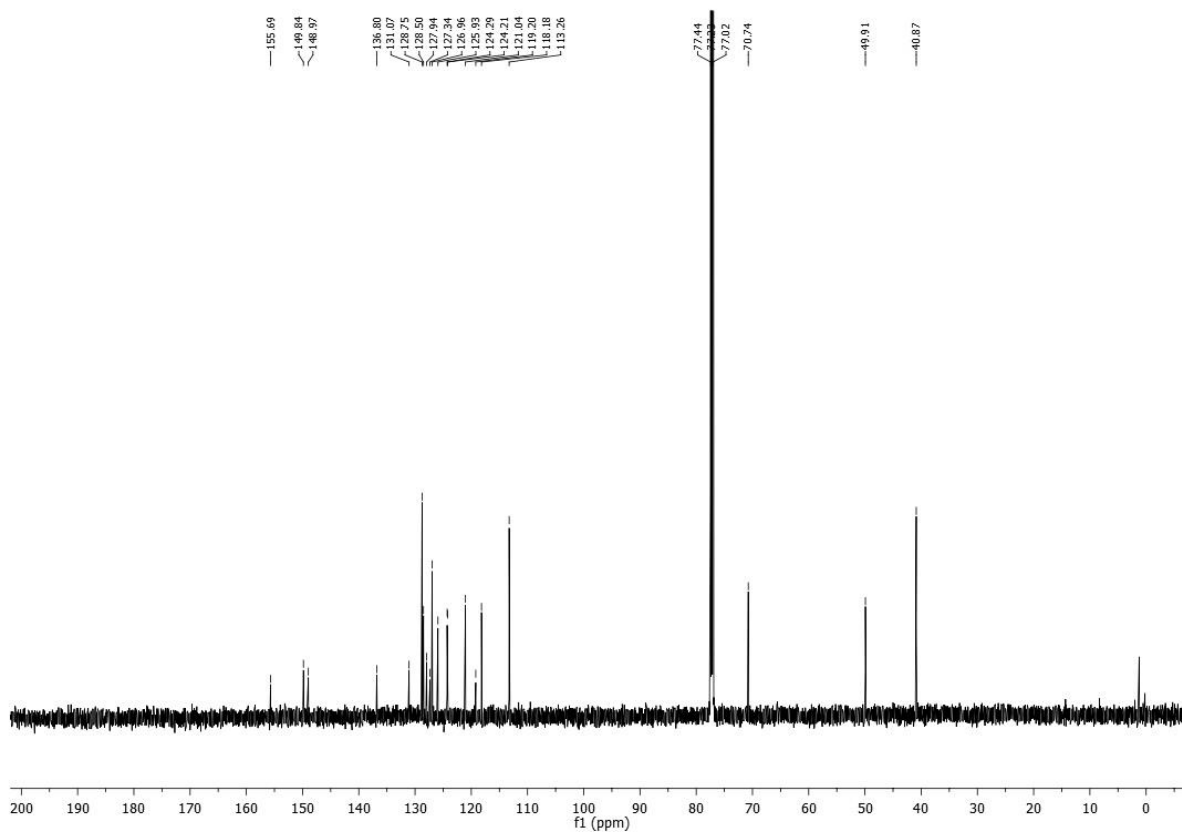
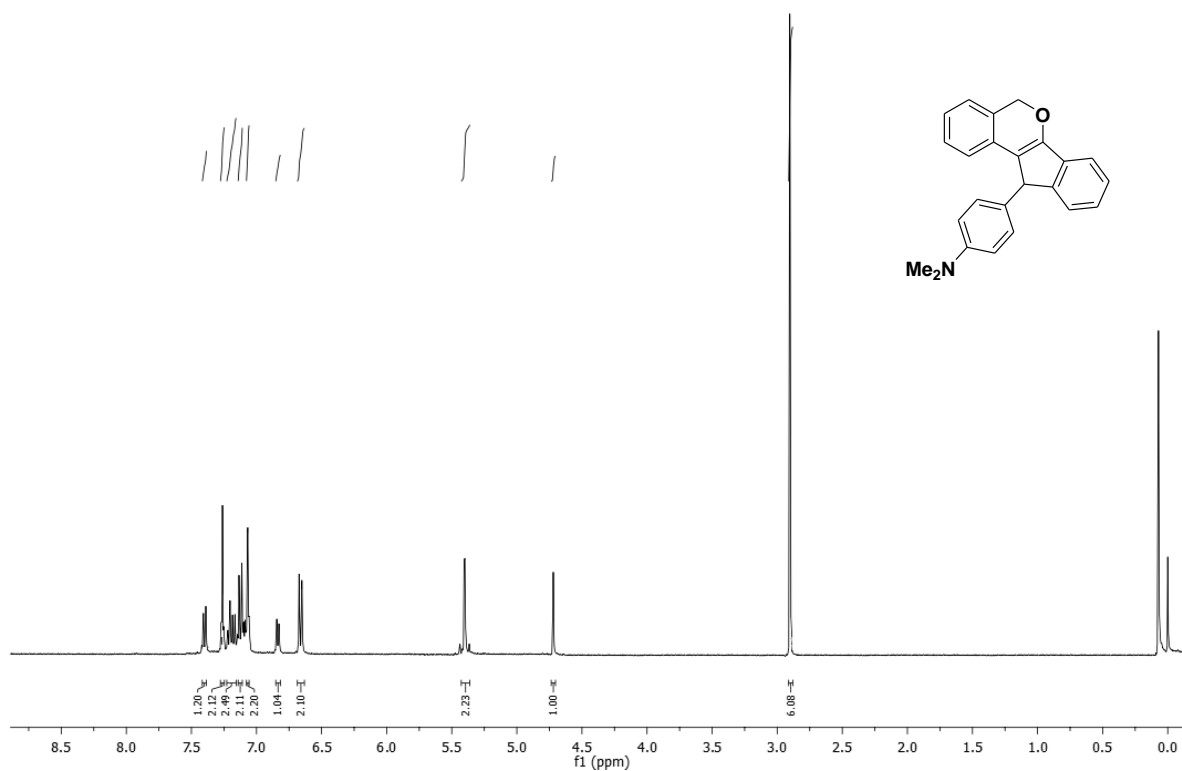
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3k



# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 31

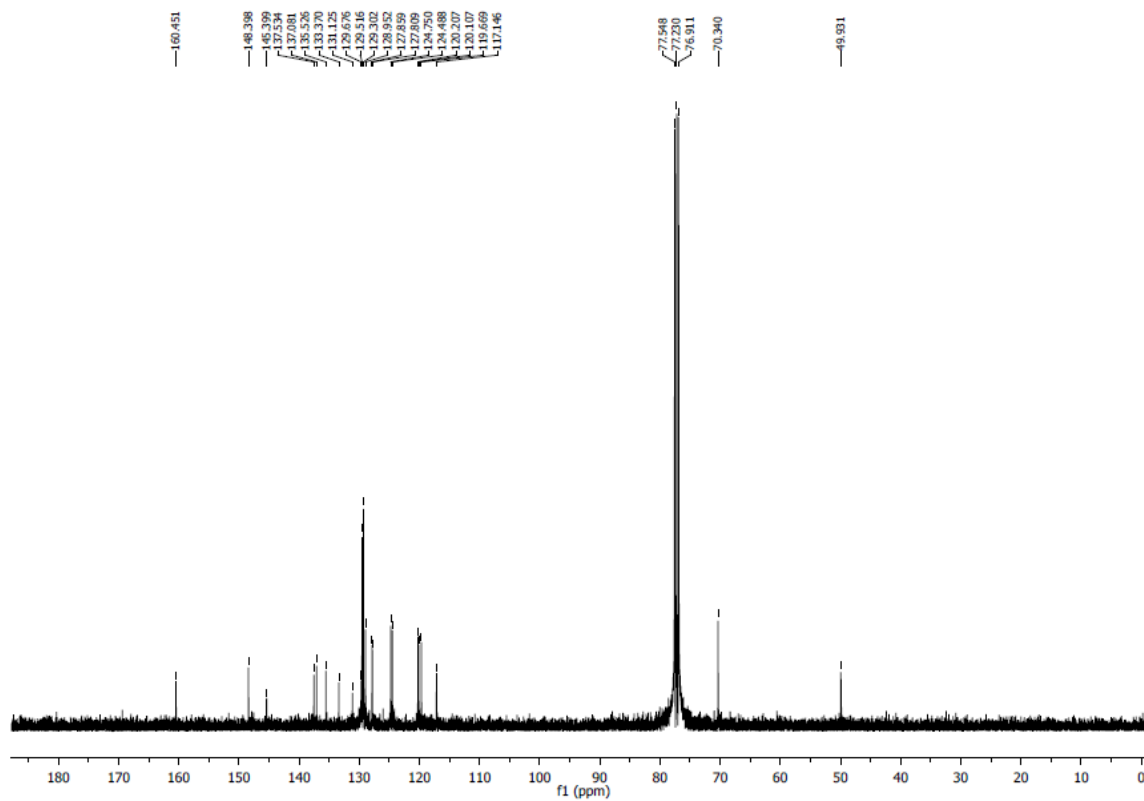
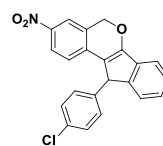
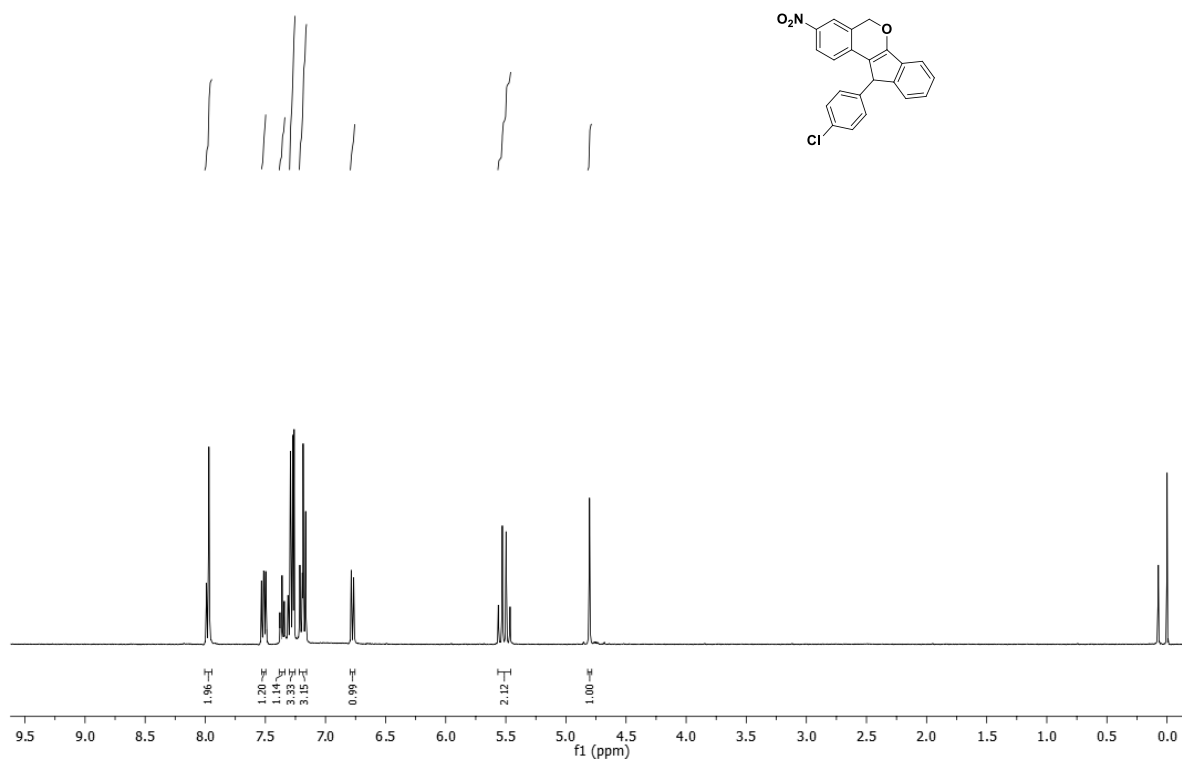


# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3m

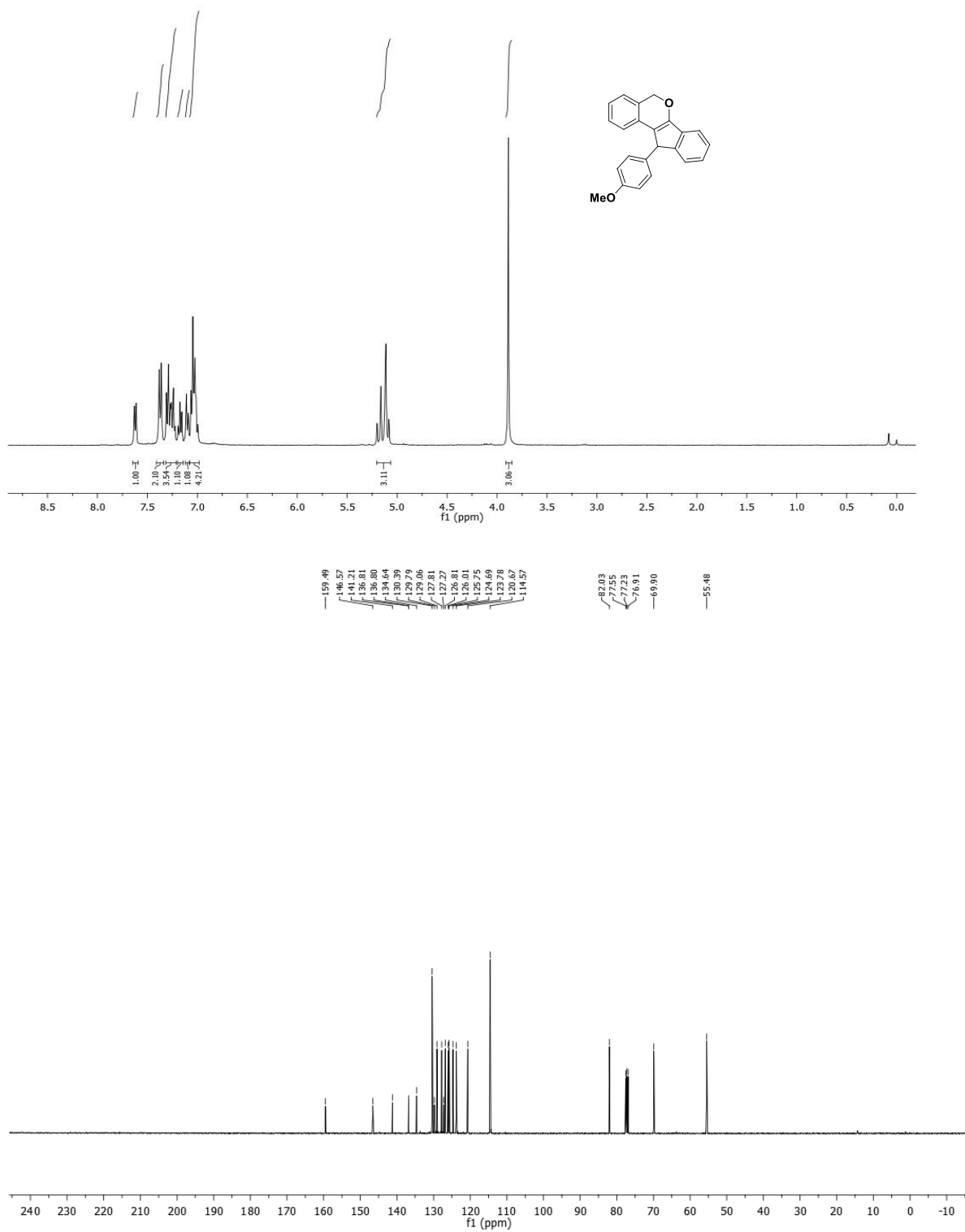




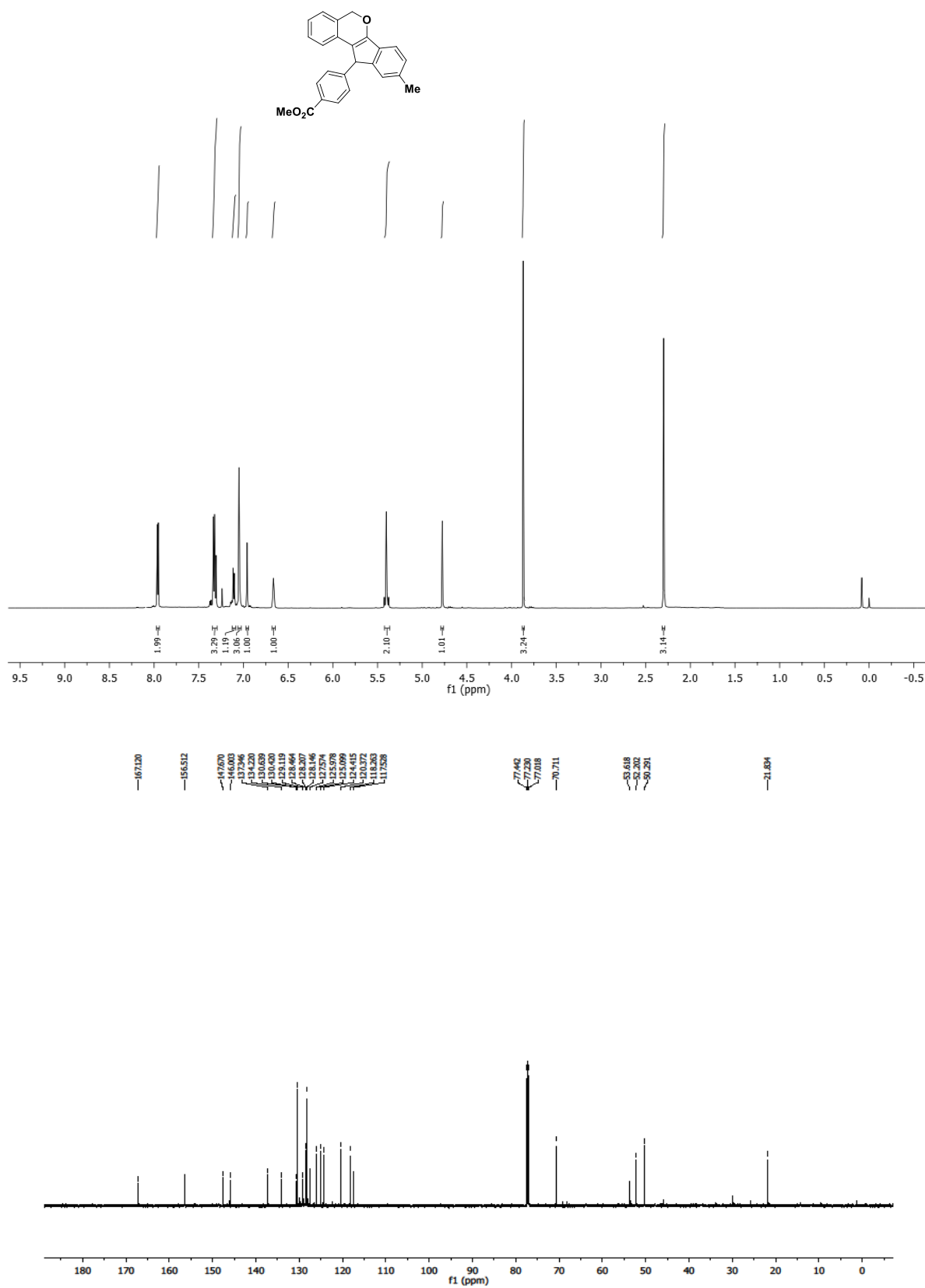
# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3n



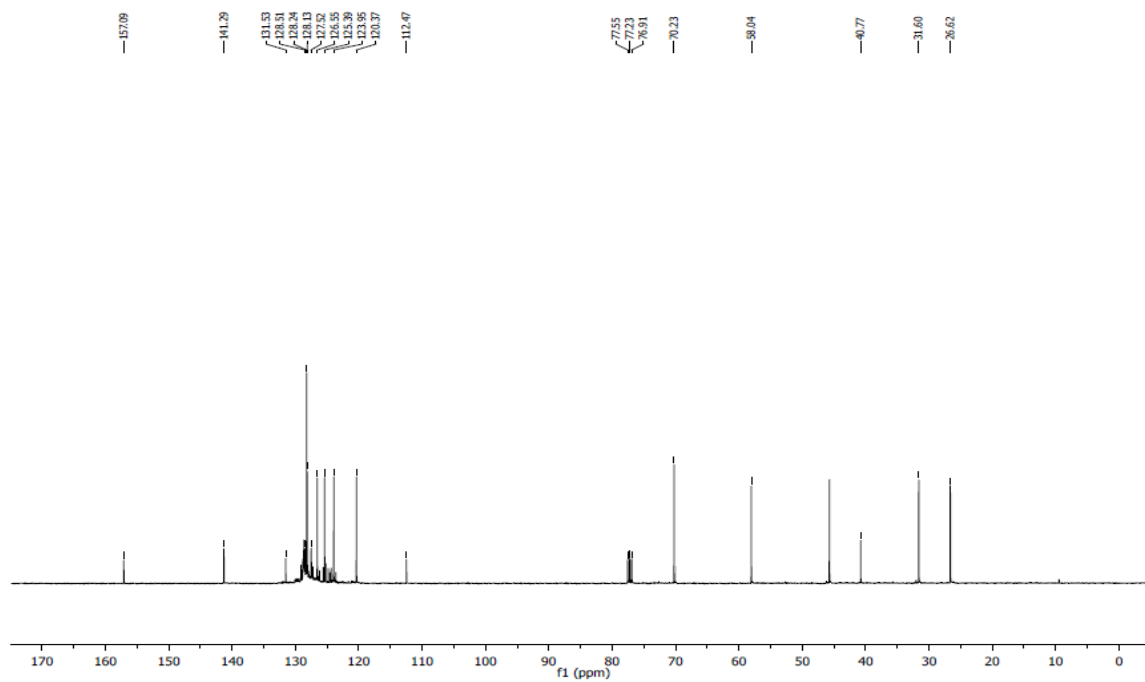
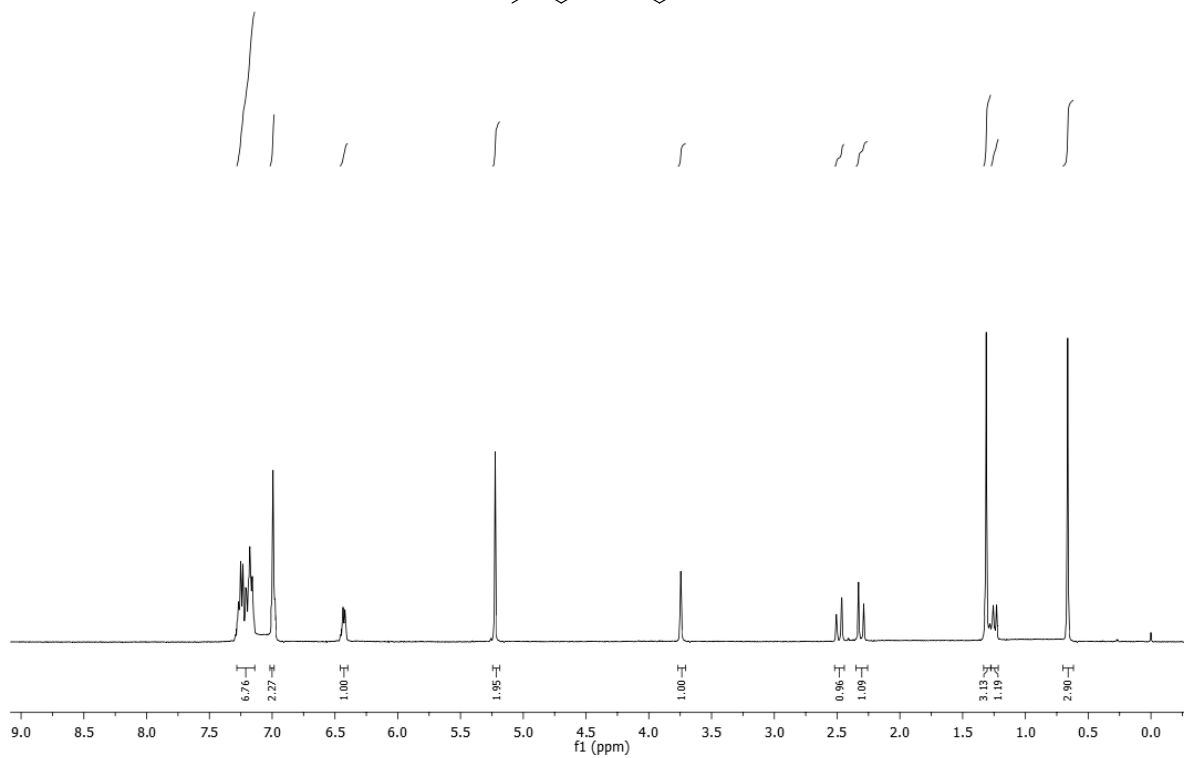
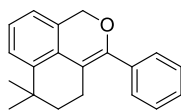
# <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound 3o



# $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of compound 3p

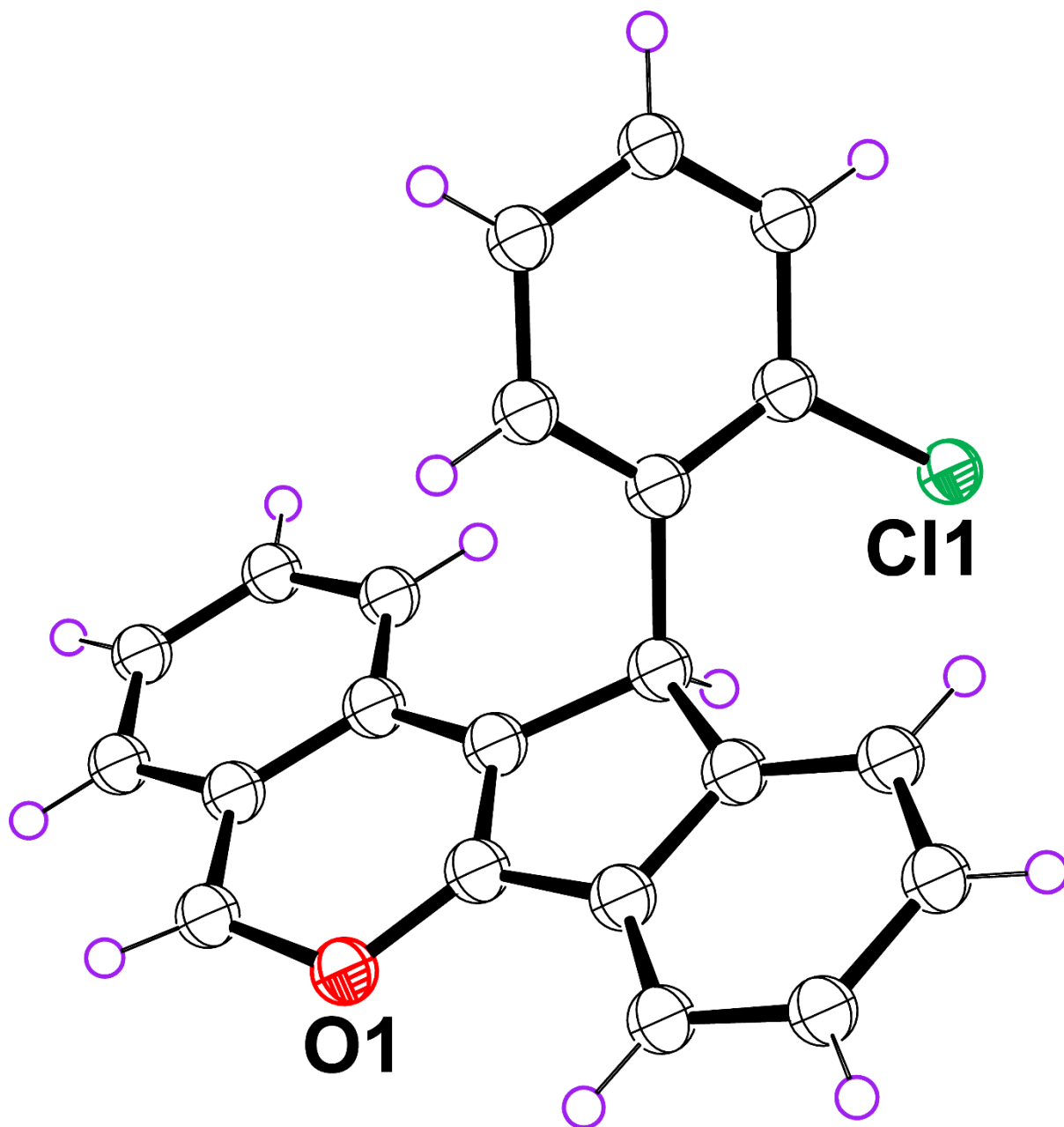


# <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra of compound 3r



**The crystal parameters of compound 3b**

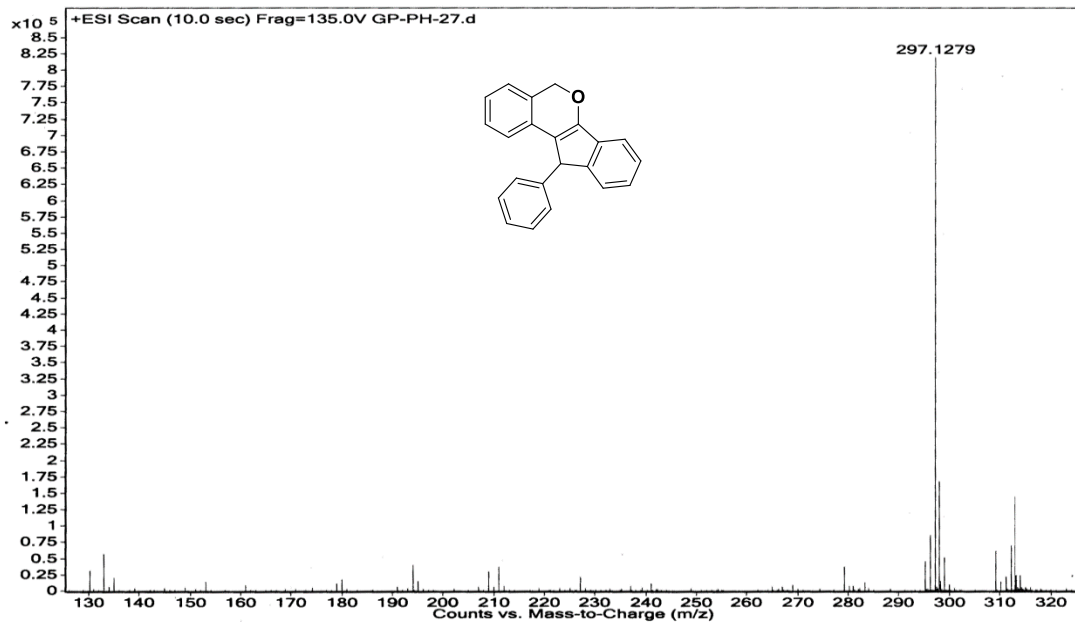
	CCDC 1483531
Formula	C <sub>22</sub> H <sub>14</sub> ClO
Formula weight	329.78
<i>T</i> /K	296(2)
Crystal system	Monoclinic
Space group	P21/c
<i>a</i> /Å	17.382(19)
<i>b</i> /Å	6.286(7)
<i>c</i> /Å	17.040(18)
$\alpha$ /°	90.00
$\beta$ /°	117.003(18)
$\gamma$ /°	90.00
<i>V</i> /Å <sup>3</sup>	1659(3)
<i>Z</i>	4
Abs. Coeff./mm <sup>-1</sup>	0.234
Abs. Correction	multi-scan
GOF on <i>F</i> <sup>2</sup>	1.016
Final <i>R</i> indices [ <i>I</i> > 2σ( <i>I</i> )]	<i>R</i> 1 = 0.0683 <i>wR</i> 2 = 0.1508
<i>R</i> indices [all data]	<i>R</i> 1 = 0.0915 <i>wR</i> 2 = 0.1664



ORTEP diagram of compound **3b**, thermal ellipsoids are drawn on 50% probability level

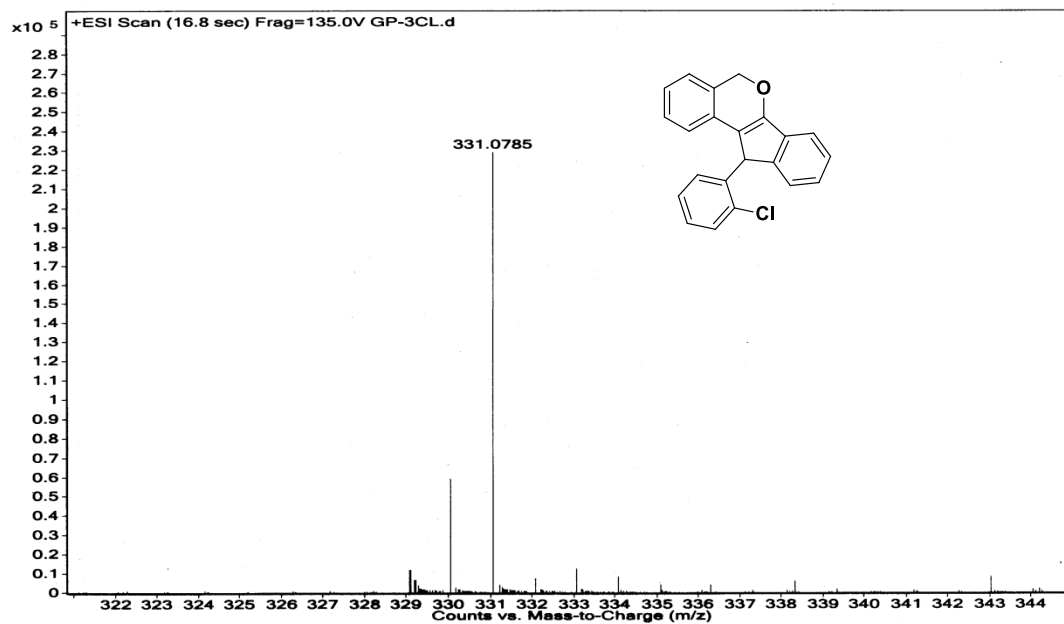
## HRMS spectrum of compound 3a

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Data Filename	GP-PH-27.d	ACQ Method		Comment		Acquired Time	6/27/2016 3:49:42 PM



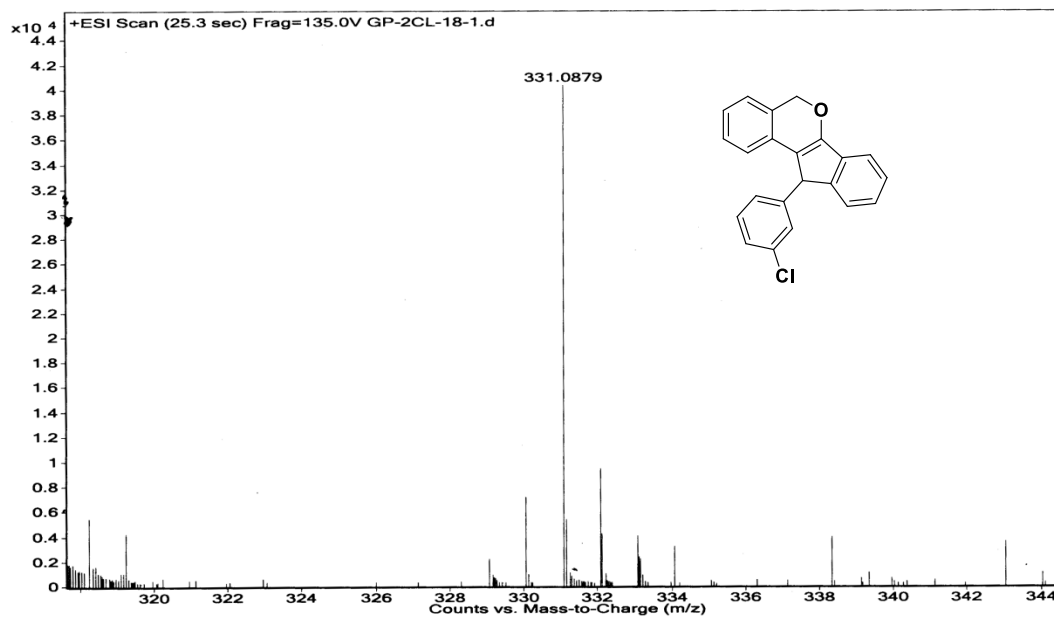
## HRMS spectrum of compound 3b

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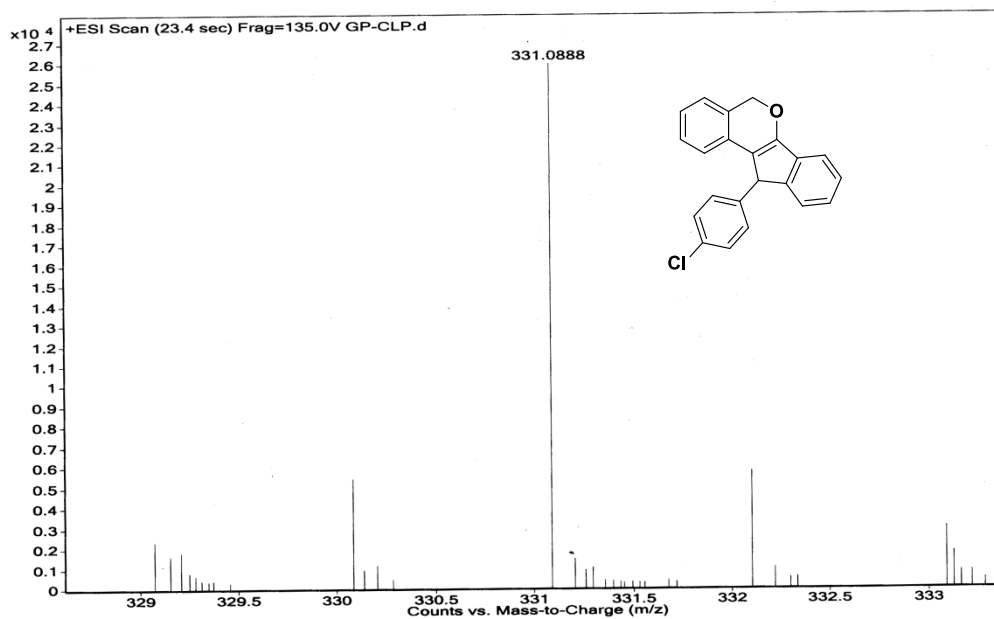
## HRMS spectrum of compound 3c

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## HRMS spectrum of compound 3d

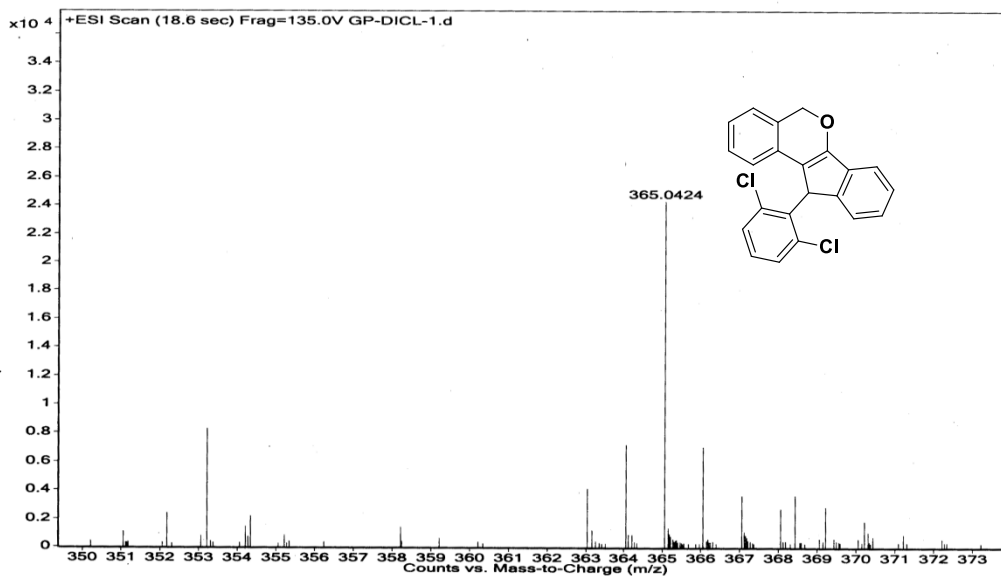
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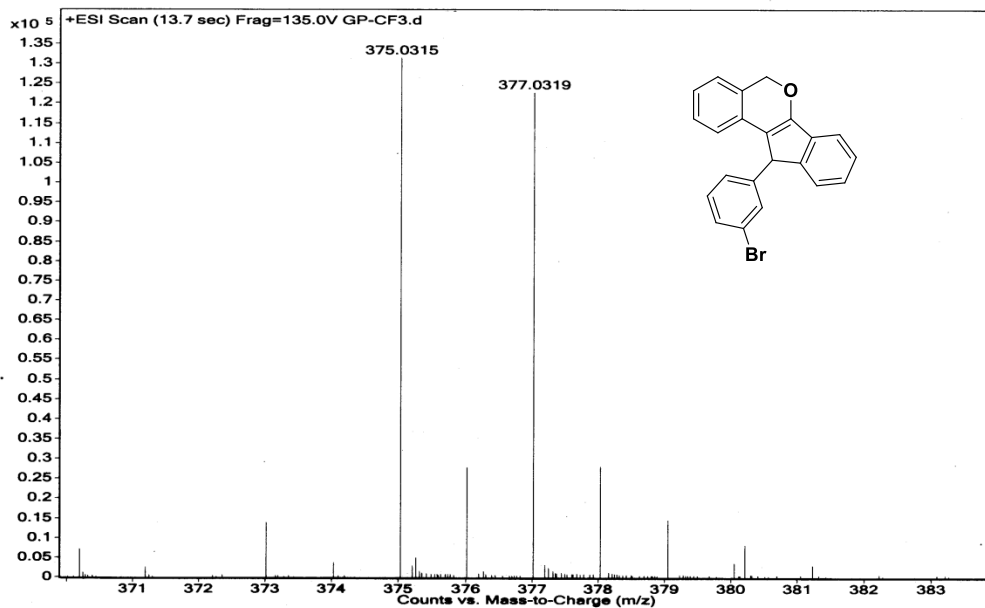
## HRMS spectrum of compound 3e

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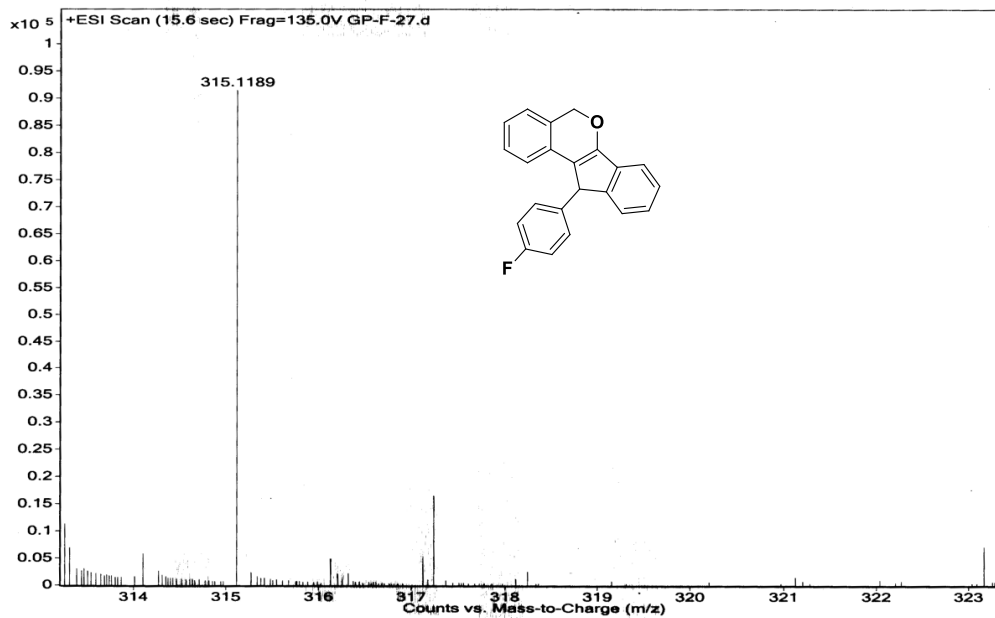
## HRMS spectrum of compound 3f

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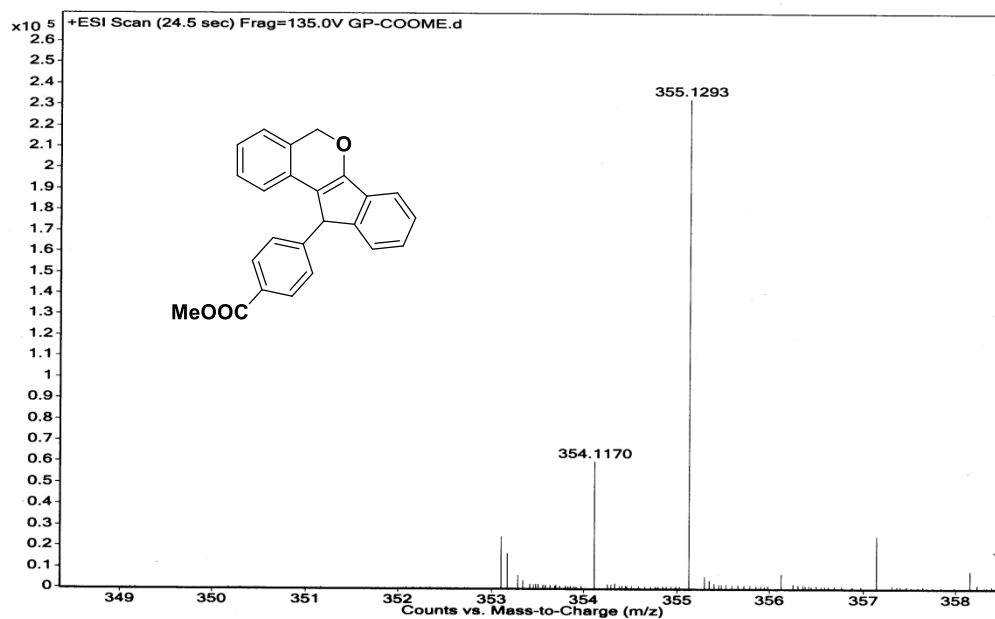
## HRMS spectrum of compound 3g

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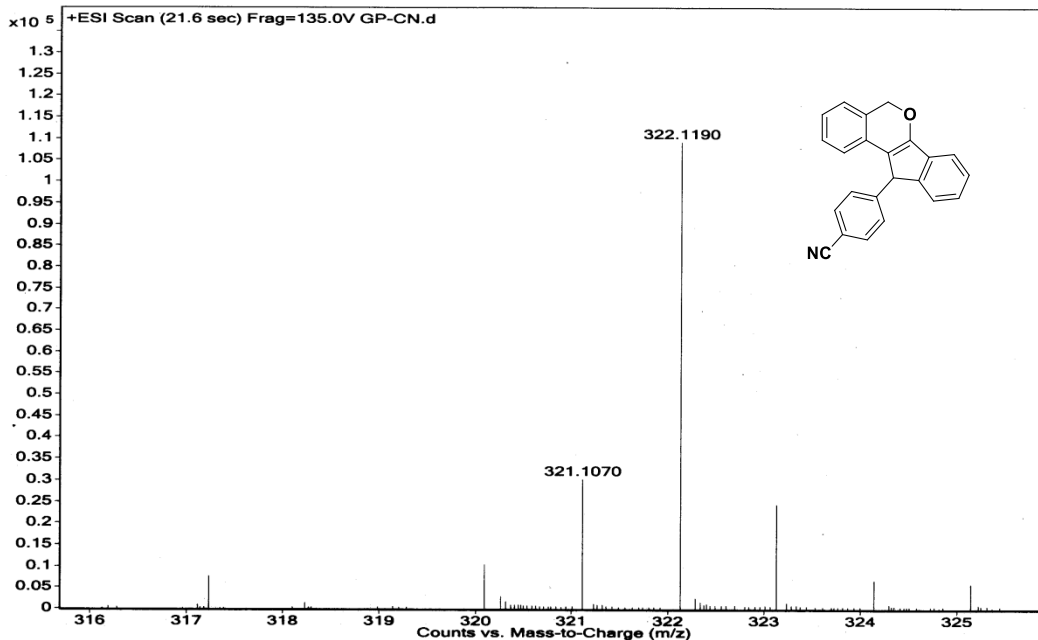
## HRMS spectrum of compound 3h

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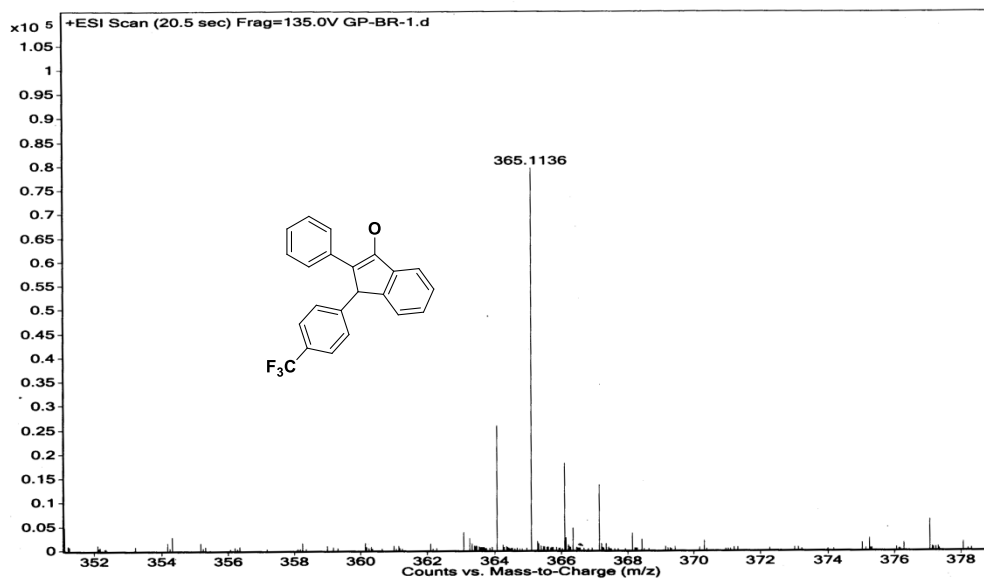
## HRMS spectrum of compound 3i

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## HRMS spectrum of compound 3j

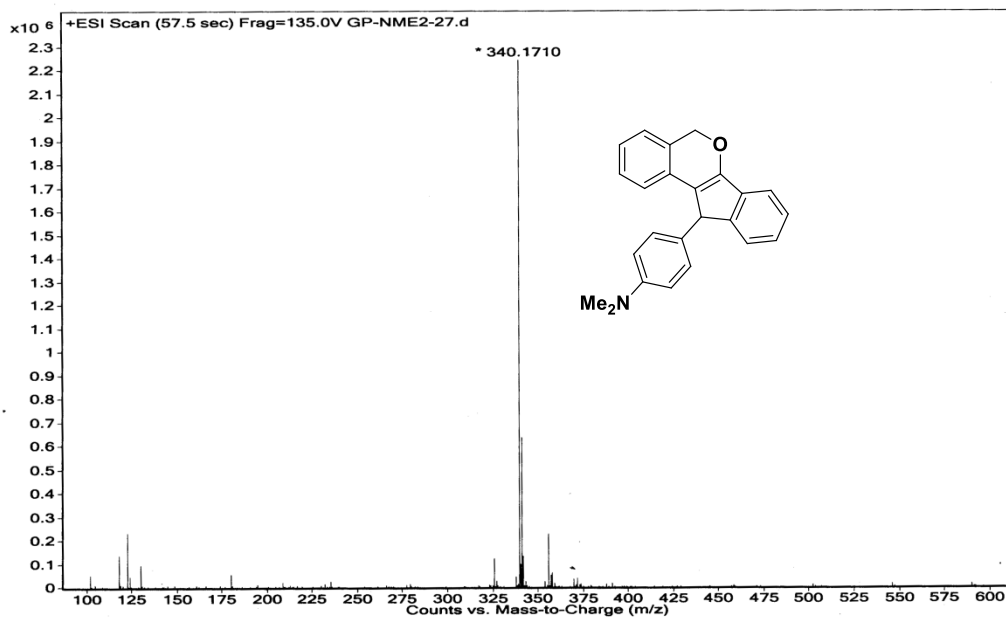
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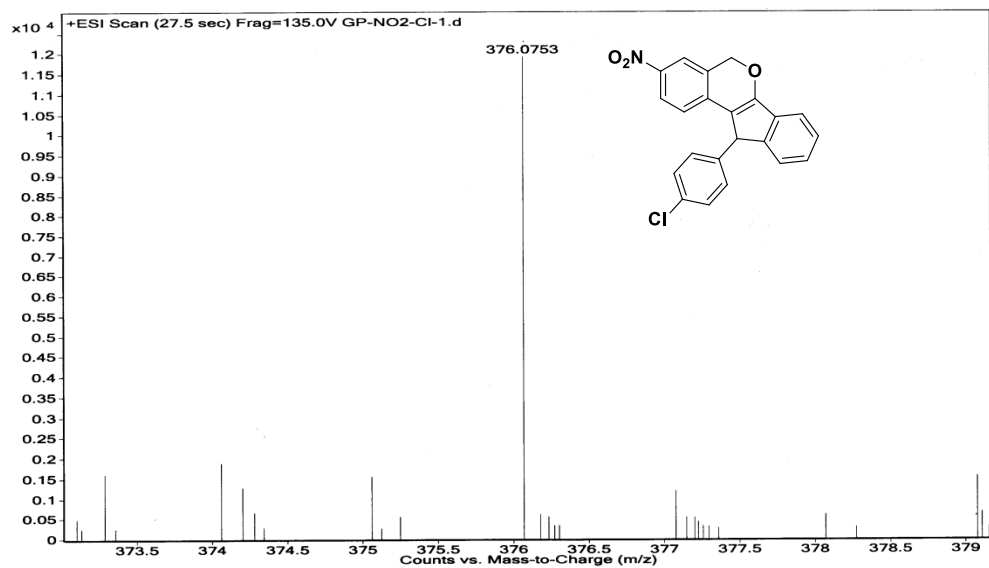
## HRMS spectrum of compound 3m

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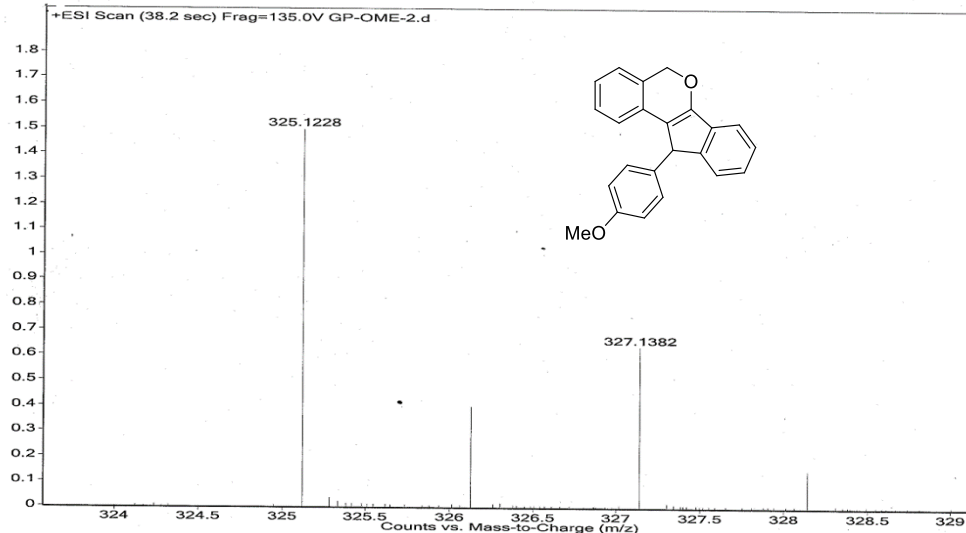
## HRMS spectrum of compound 3n

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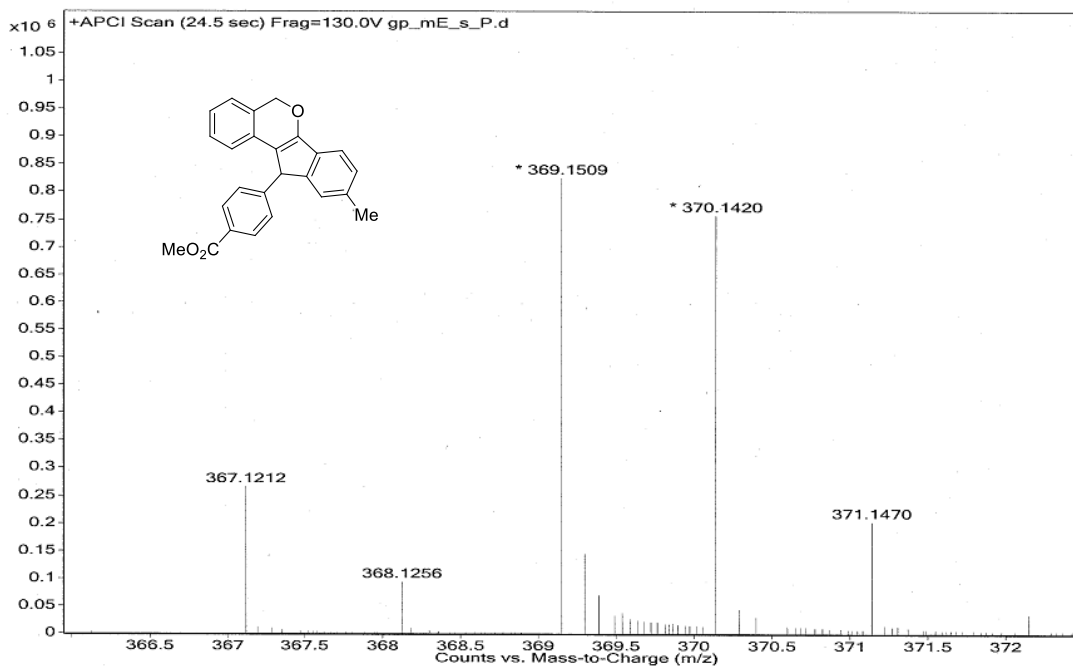
## HRMS spectrum of compound 3o

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## HRMS spectrum of compound 3p

Sample Name	gp_mE_s_P	Position	Vial 1	Instrument Name	Instrument 1	User Name	
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Data Filename	gp_mE_s_P.d	ACQ Method		Comment		Acquired Time	10/6/2016 11:17:07 AM



# HRMS spectrum of compound 3r

Sample Name	GP-ISOVAL	Position	Vial 1	Instrument Name	Instrument 1	User Name	
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