

Supporting Information

Metal-free C-N bond formations: One-pot Synthesis of pyrido[2',1':2,3]imidazo[4,5-c]cinnolines, benzo[4',5']thiazolo- and thiazolo[2',3':2,3]imidazo[4,5-c]cinnolines

Satheeshkumar Reddy Kandimalla,^{a,b} Gowravaram Sabitha^{a,b*}

^aNatural Products Chemistry Division, CSIR-Indian Institute of Chemical Technology,
Hyderabad 500007, India.

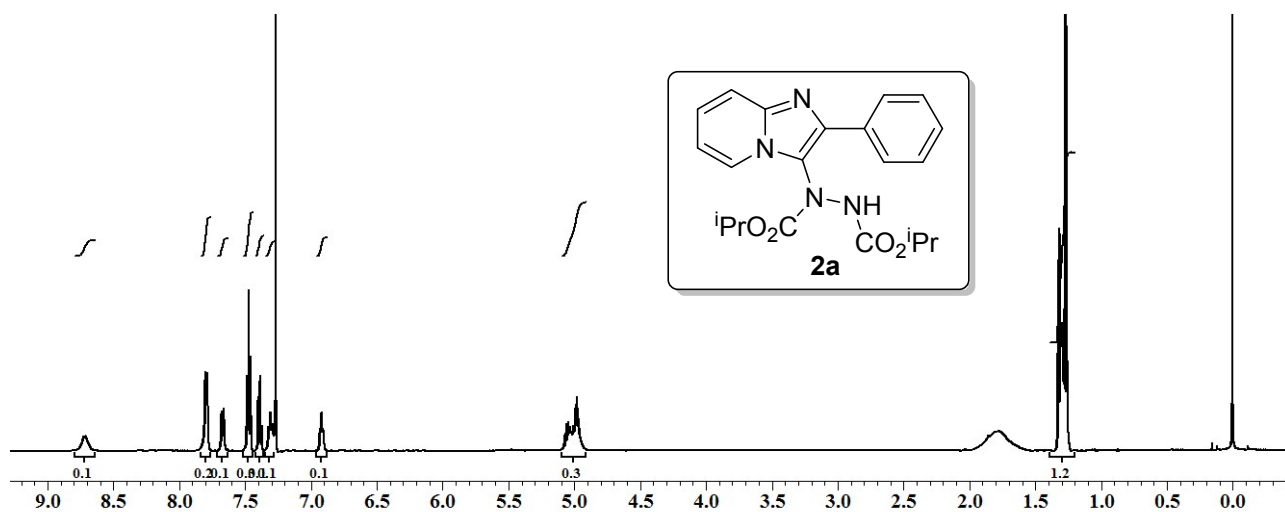
^bAcademy of Scientific and Innovative
Research (AcSIR), New Delhi, India

E-mail: gowravaramsr@yahoo.com, sabitha@iict.res.in; Fax: +91-40-27160512

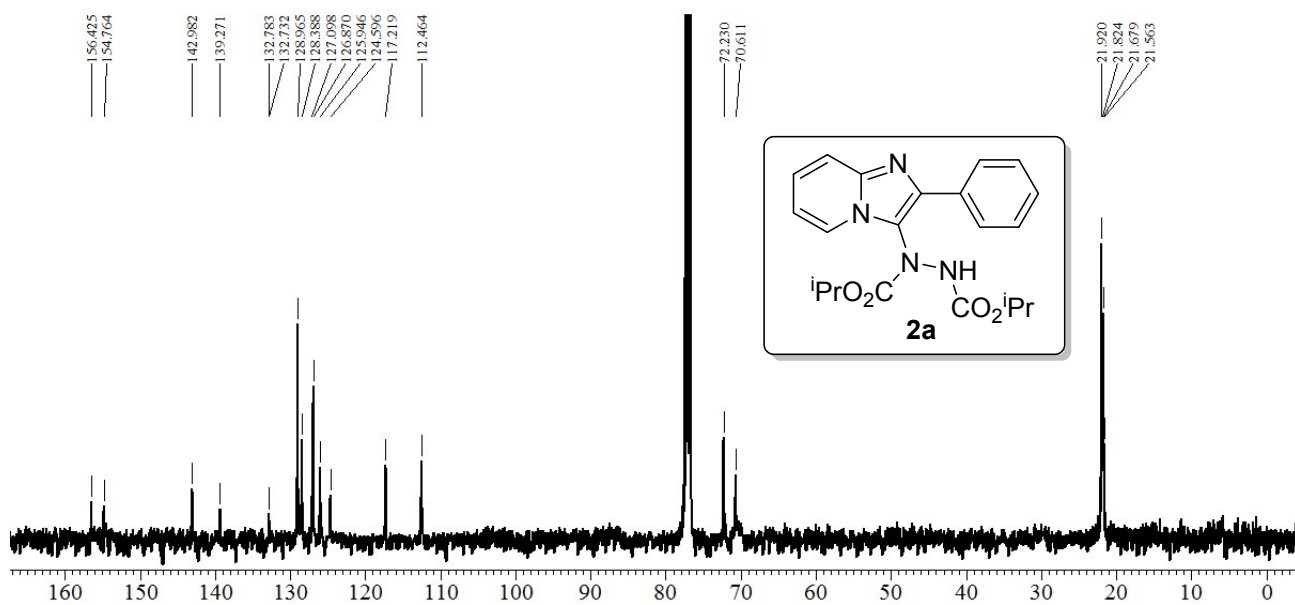
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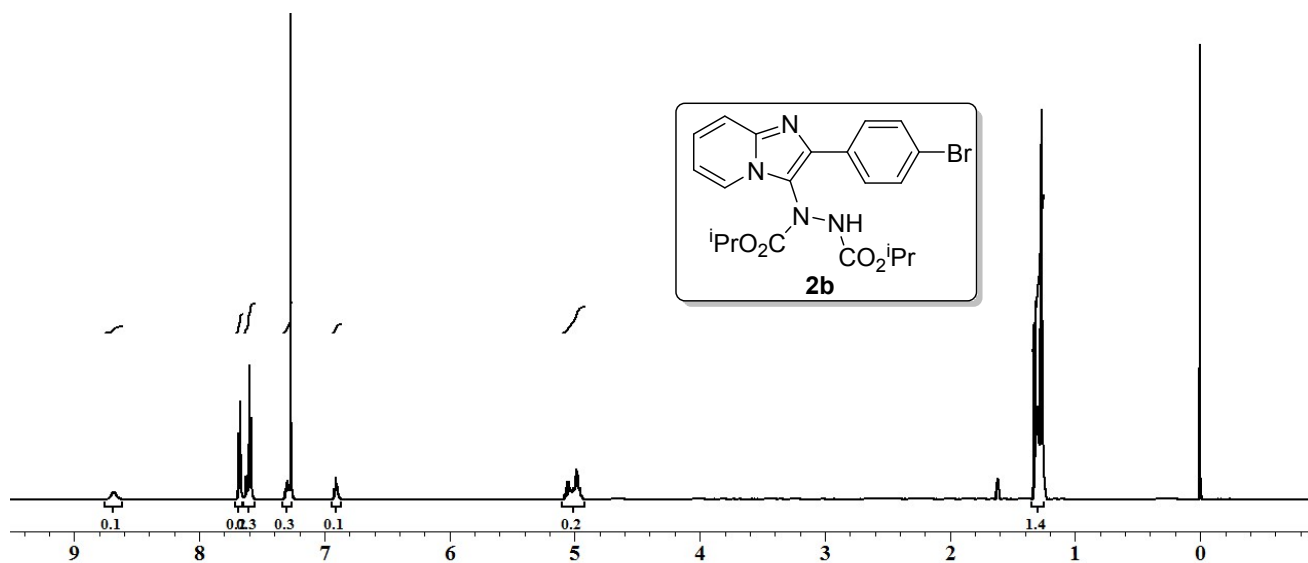
I. Copies of ^1H and ^{13}C NMR spectra of 2a-2c



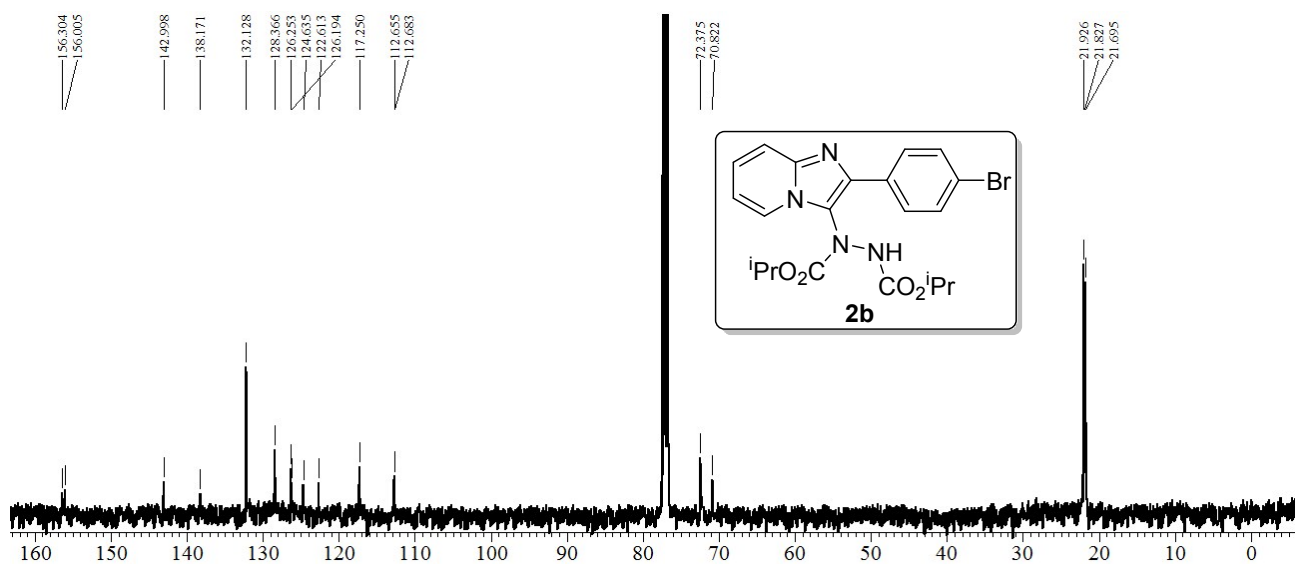
^1H NMR of 2a (500 MHz, CDCl_3)



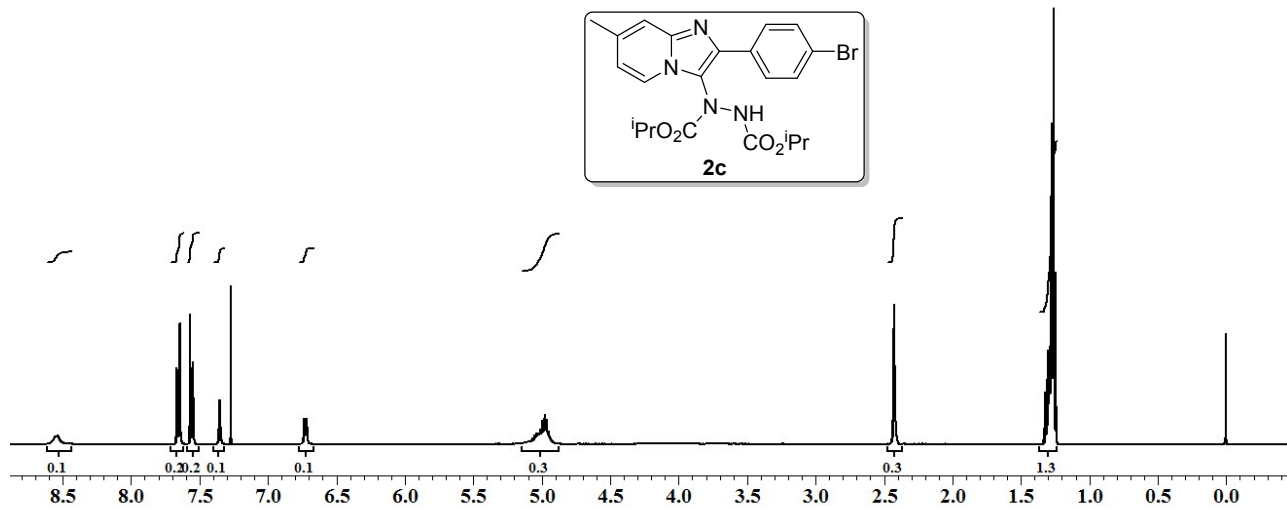
^{13}C NMR of 2a (100 MHz, CDCl_3)



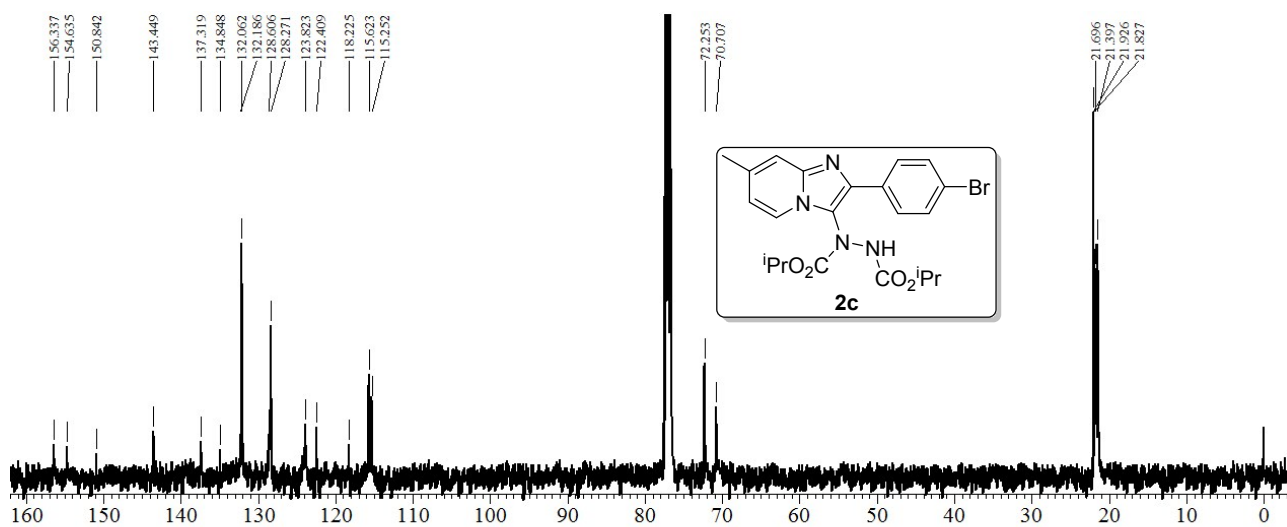
¹H NMR of **2b** (500 MHz, CDCl₃)



¹³C NMR of **2b** (100 MHz, CDCl₃)

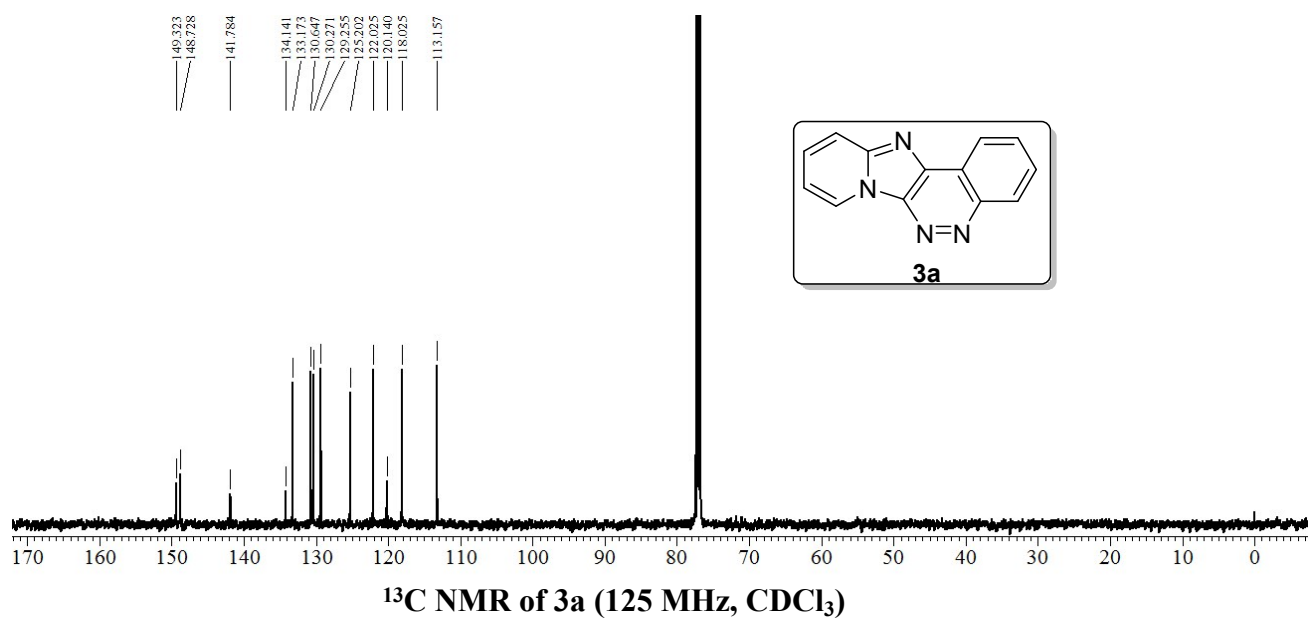
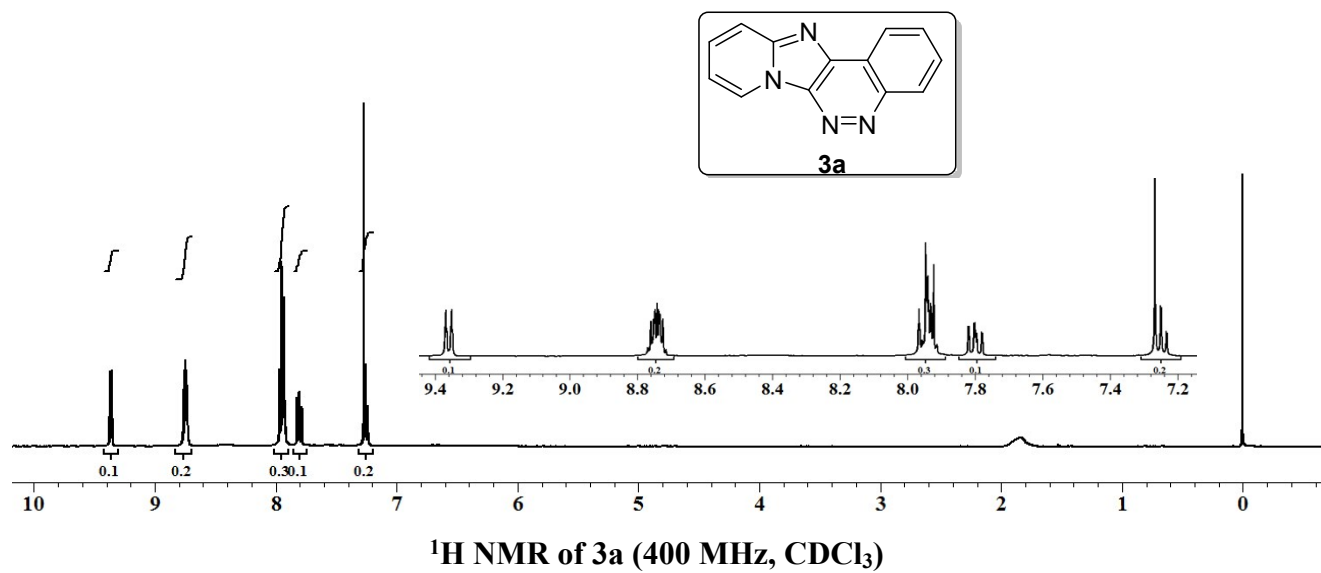


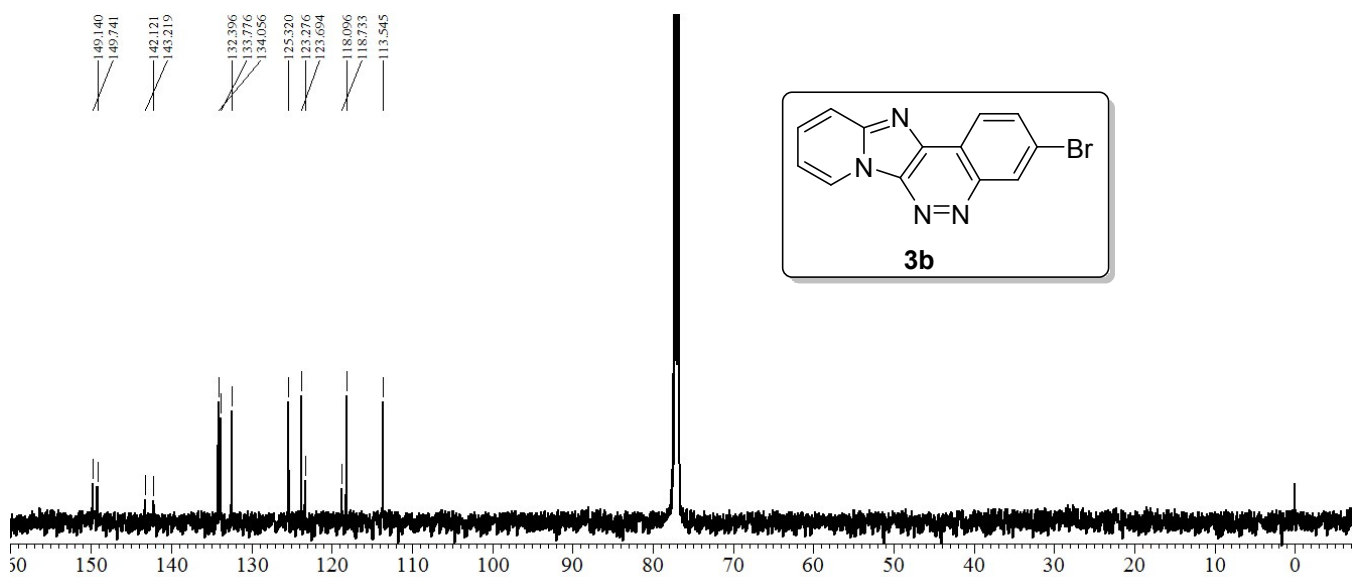
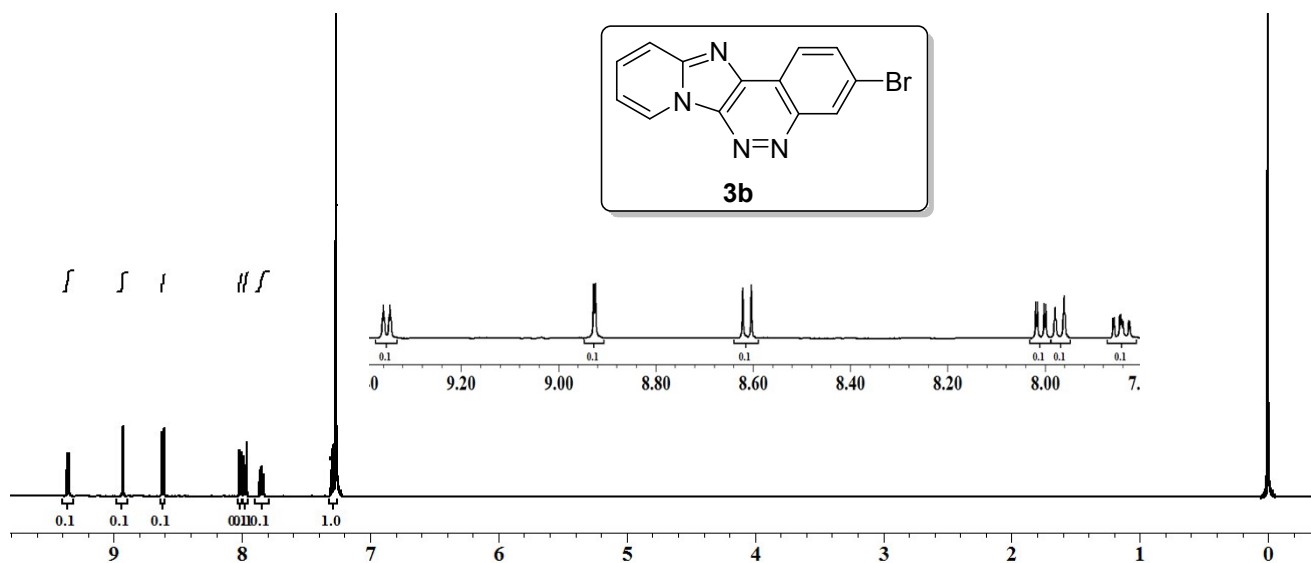
¹H NMR of 2c (500 MHz, CDCl₃)

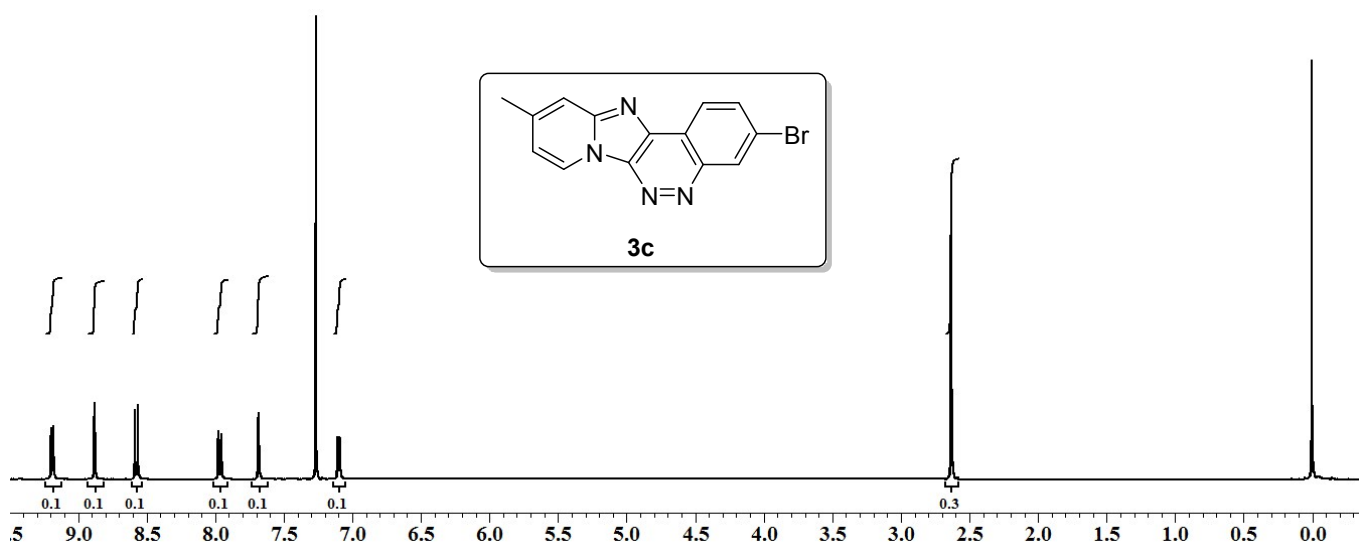


¹³C NMR of 2c (100 MHz, CDCl₃)

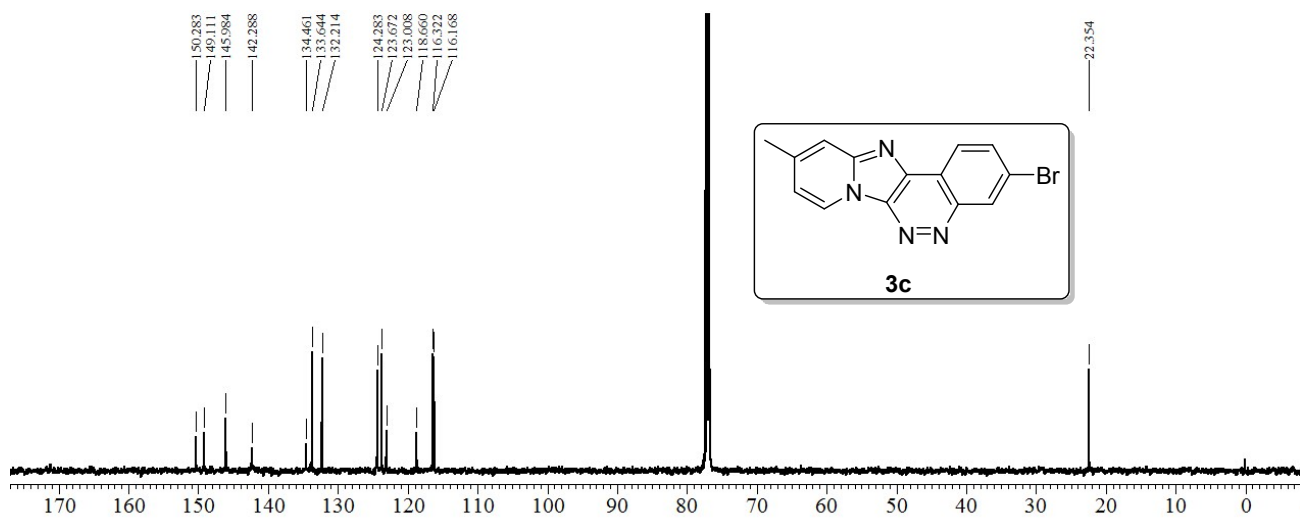
II. Copies of ^1H and ^{13}C NMR spectra of 3a-3s



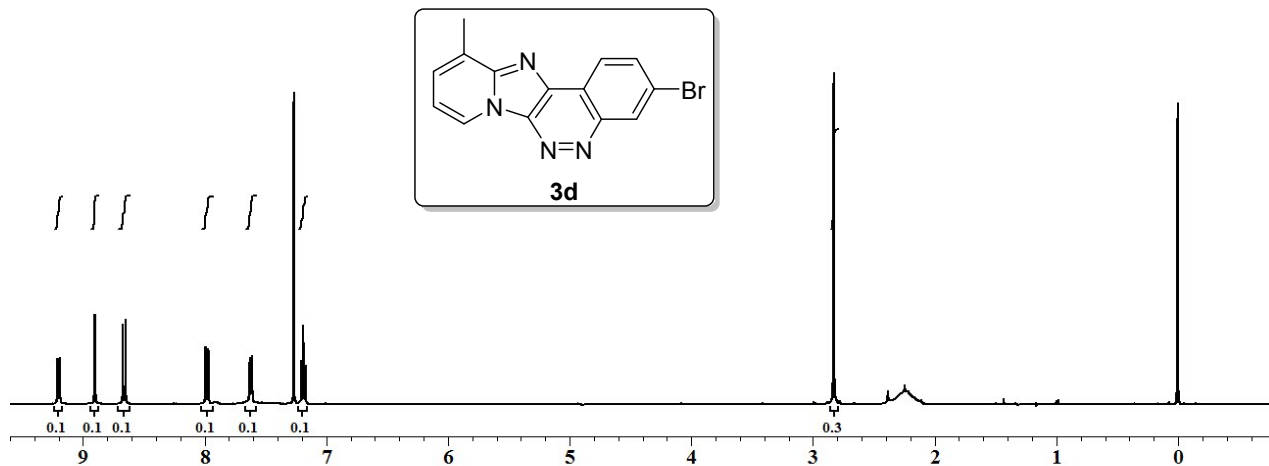




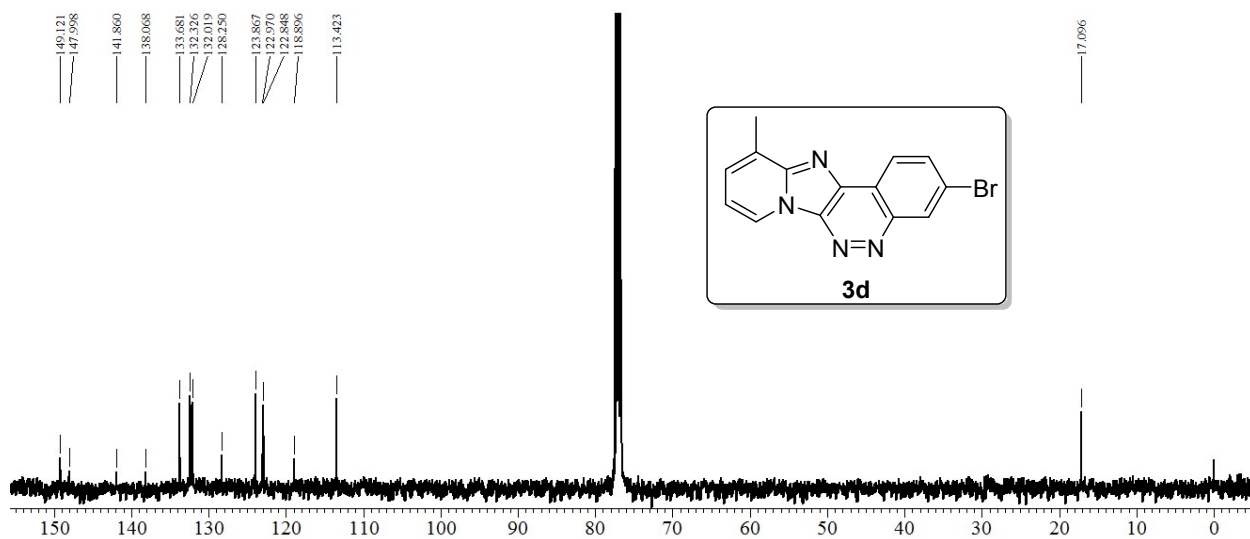
^1H NMR of **3c** (500 MHz, CDCl_3)



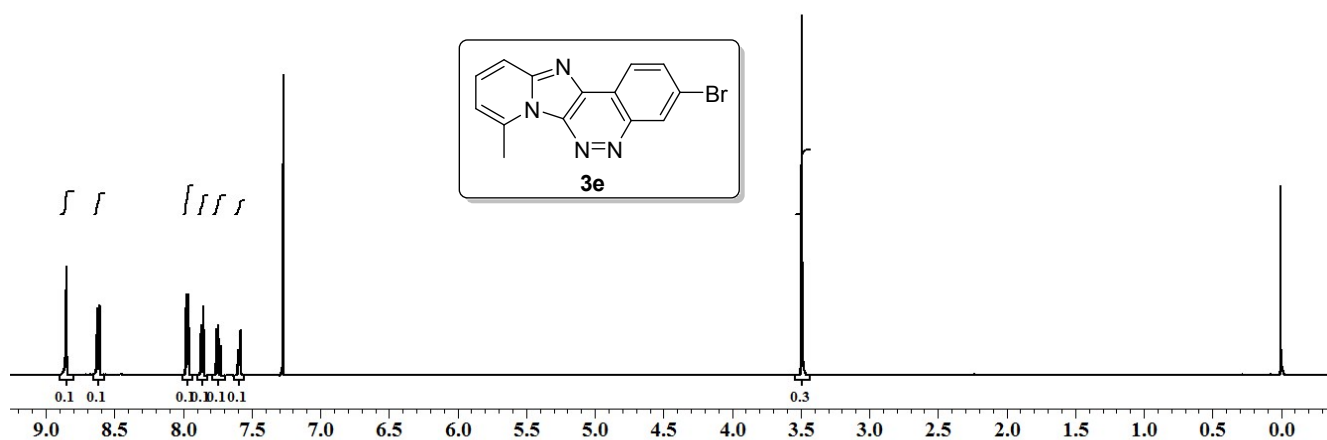
^{13}C NMR of **3c** (125 MHz, CDCl_3)



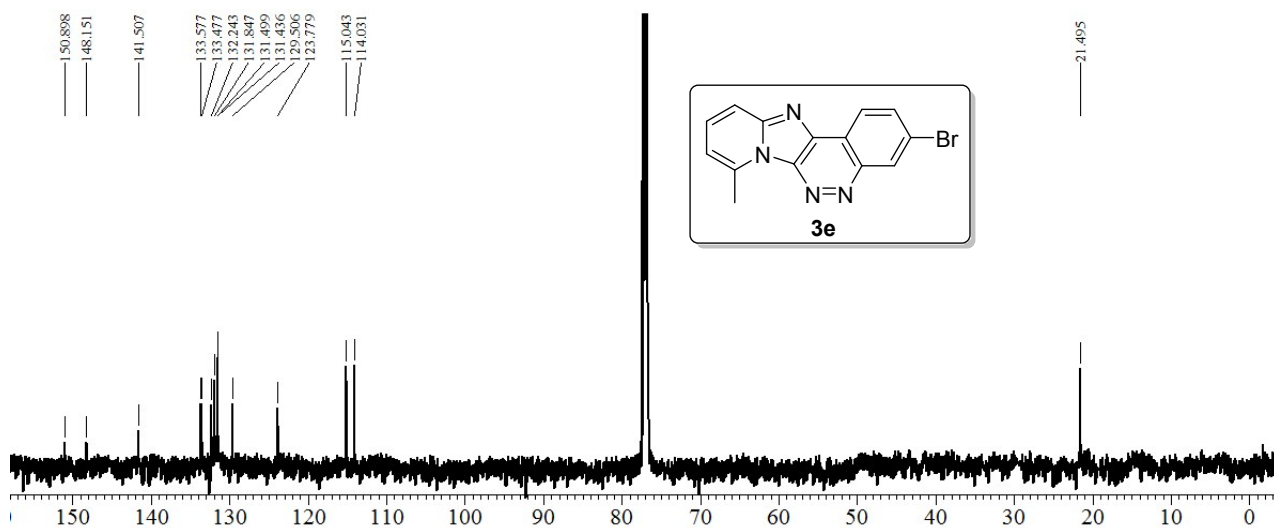
$^1\text{H NMR}$ of **3d** (400 MHz, CDCl_3)



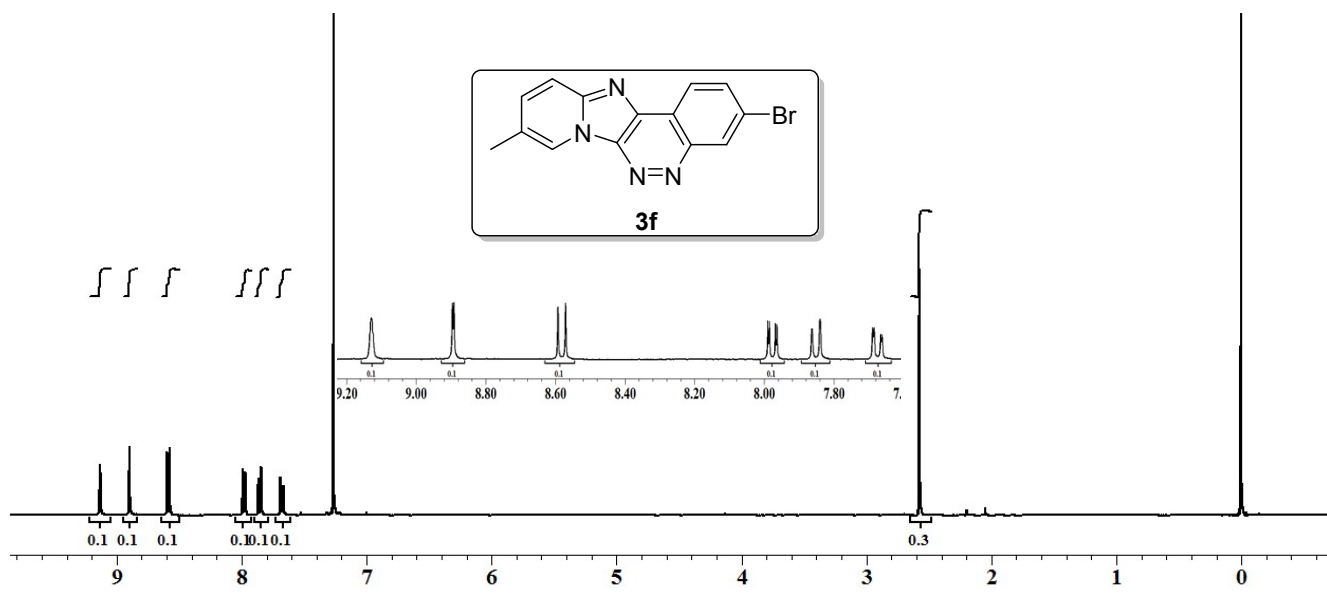
$^{13}\text{C NMR}$ of **3d** (100 MHz, CDCl_3)



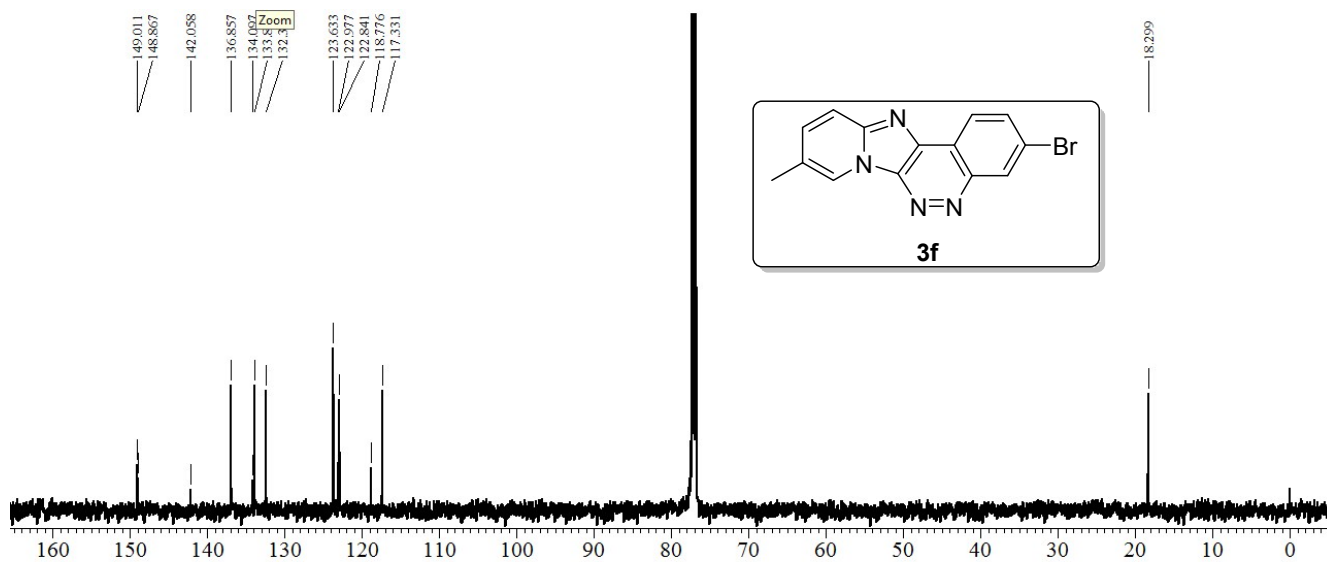
¹H NMR of **3e** (500 MHz, CDCl₃)



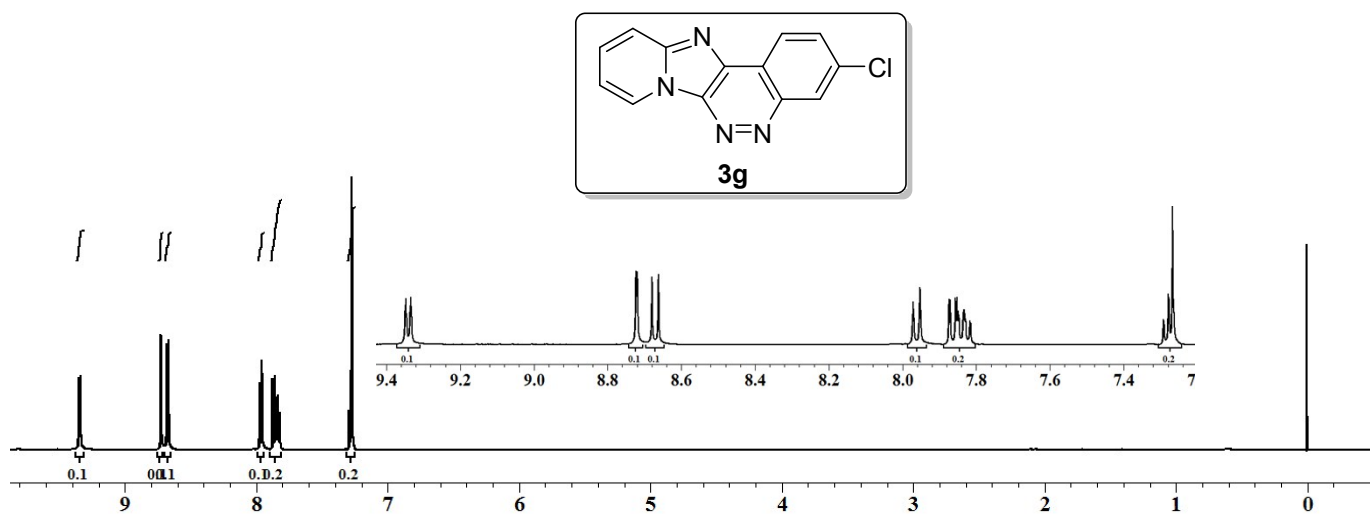
¹³C NMR of **3e** (125 MHz, CDCl₃)



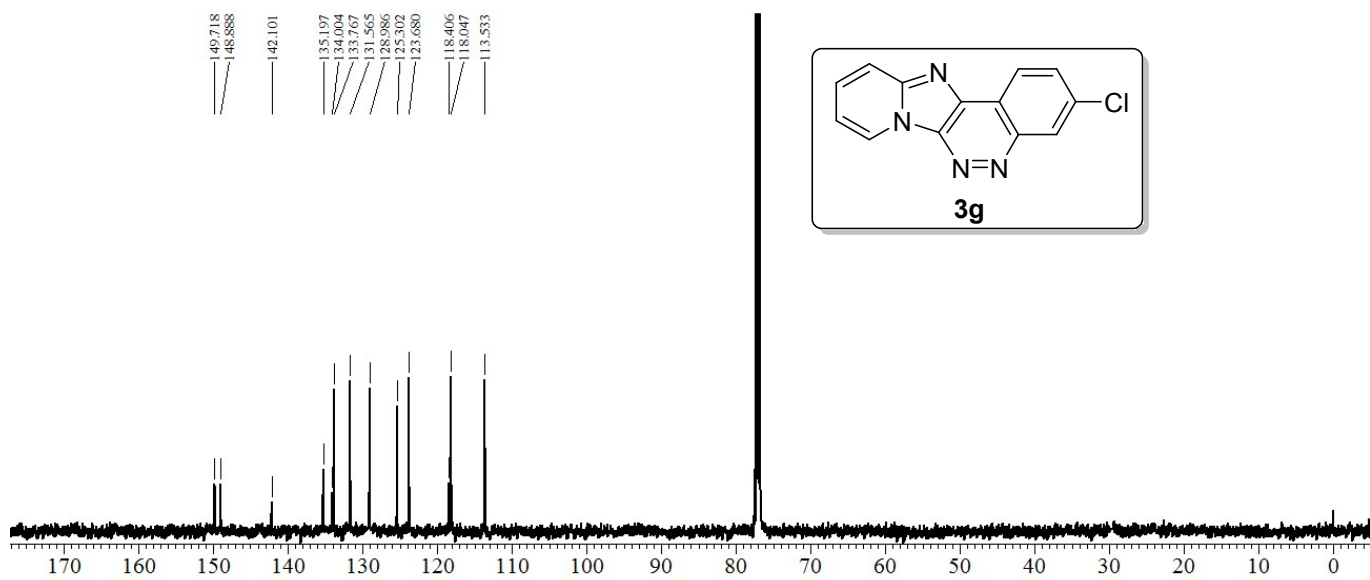
¹H NMR of **3f** (400 MHz, CDCl₃)



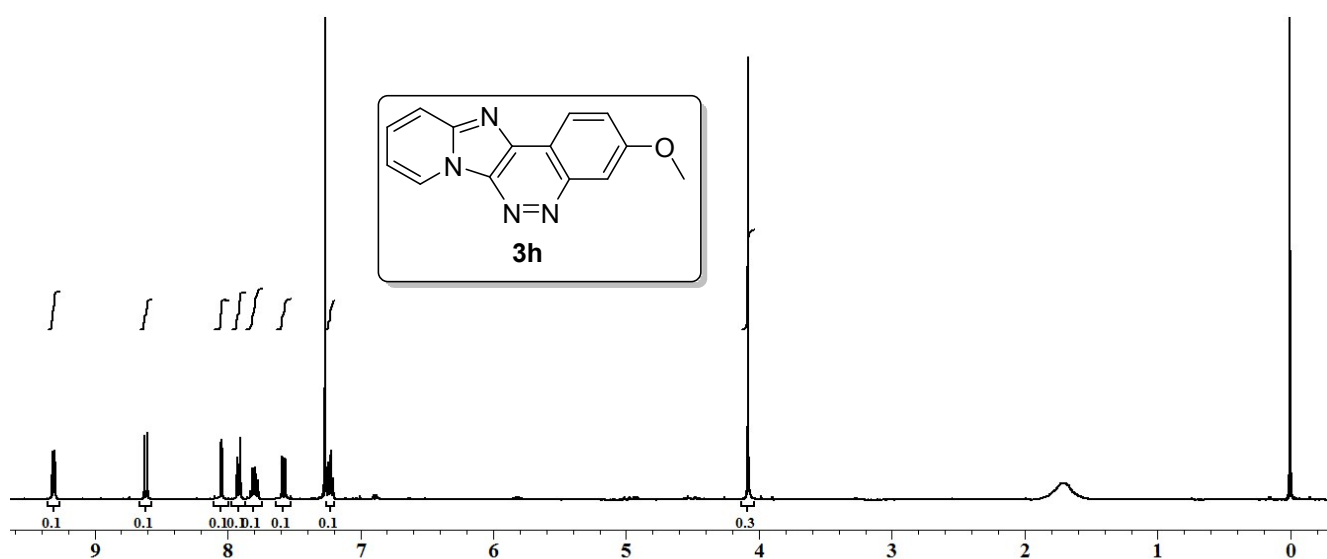
¹³C NMR of **3f** (125 MHz, CDCl₃)



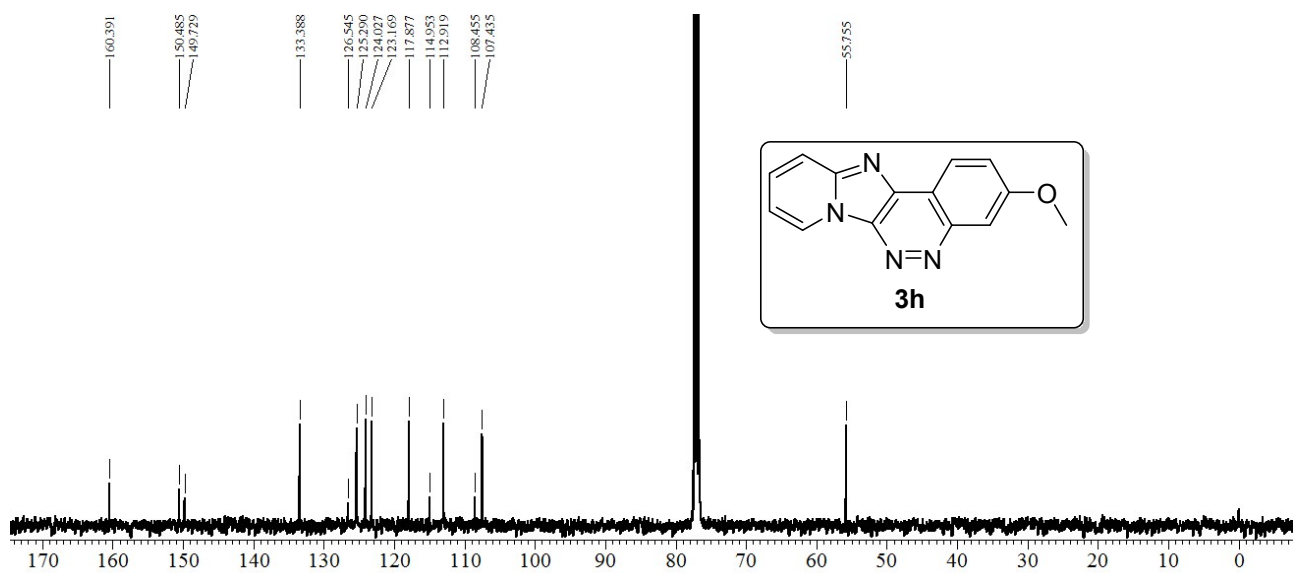
¹H NMR of 3g (500 MHz, CDCl₃)



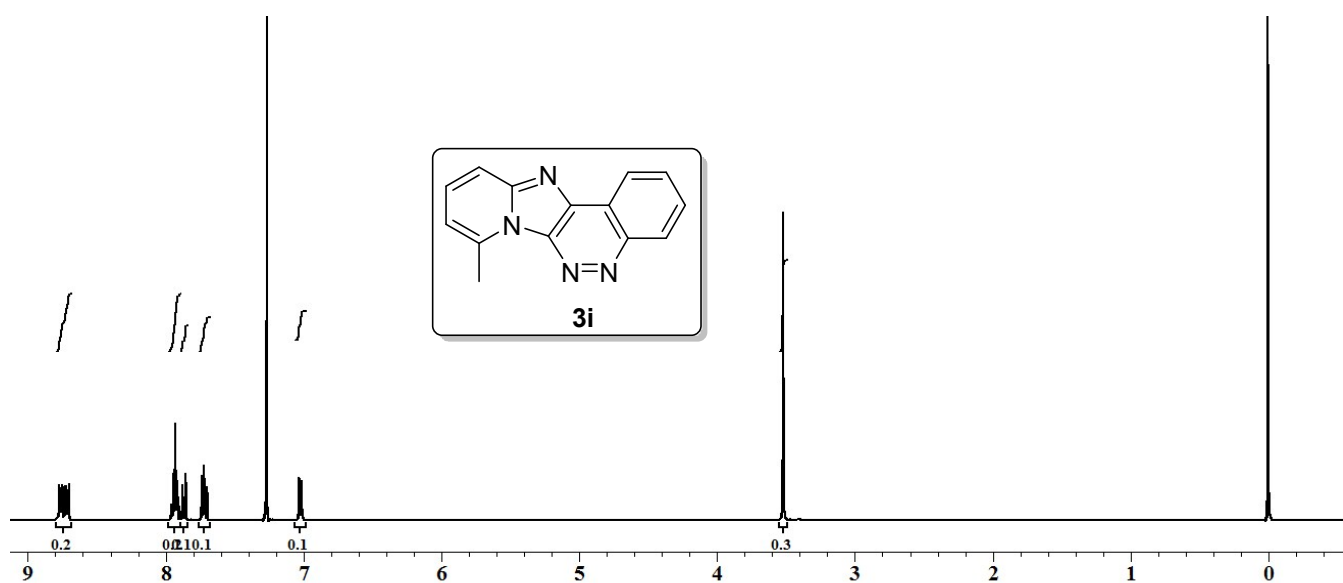
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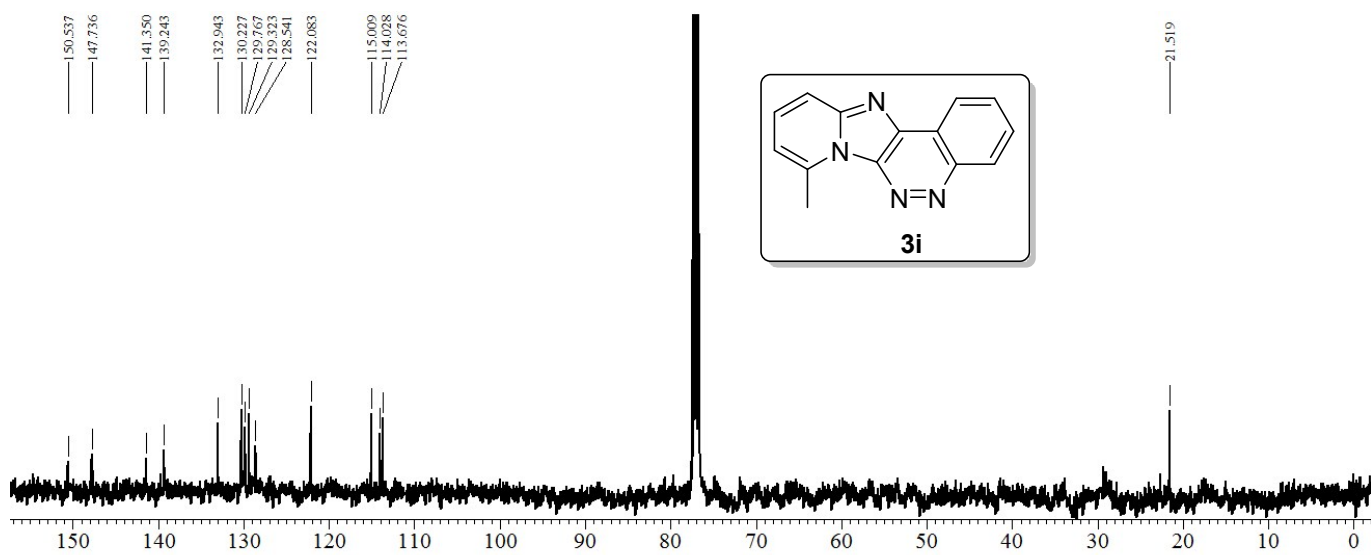
¹H NMR of **3h** (400 MHz, CDCl₃)



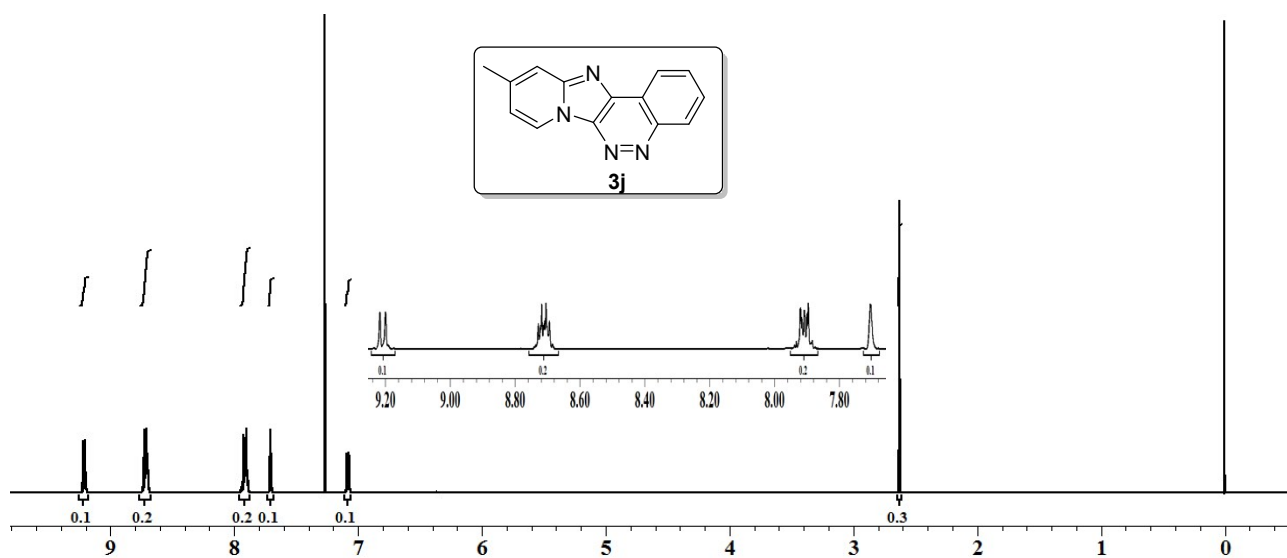
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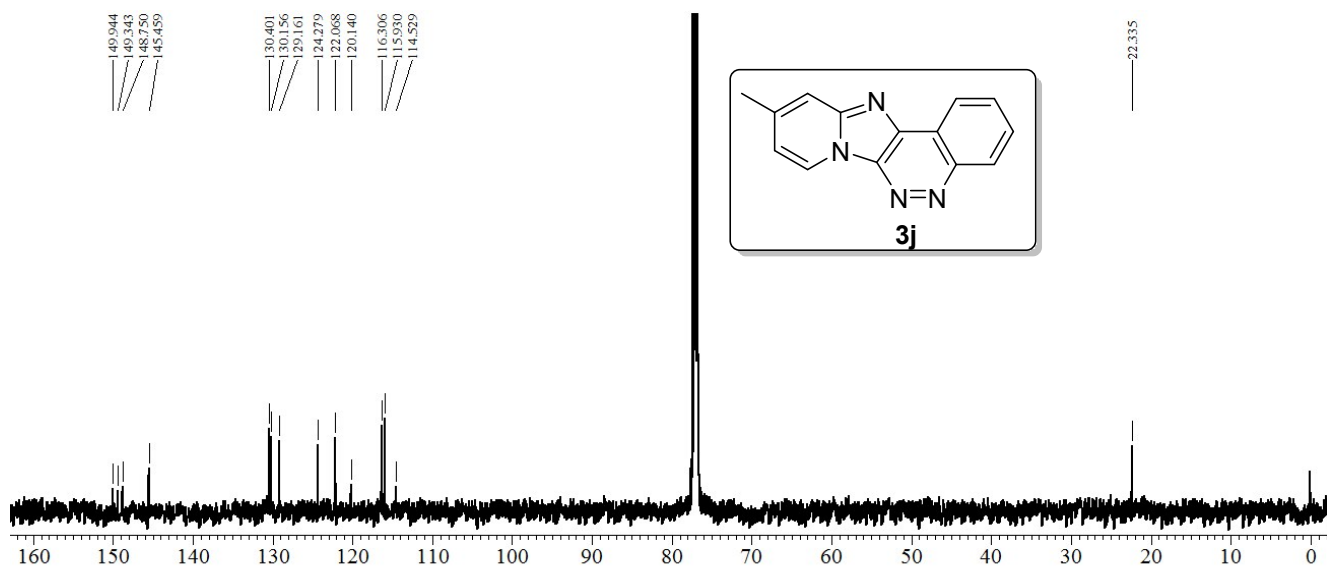
¹H NMR of 3i (400 MHz, CDCl₃)



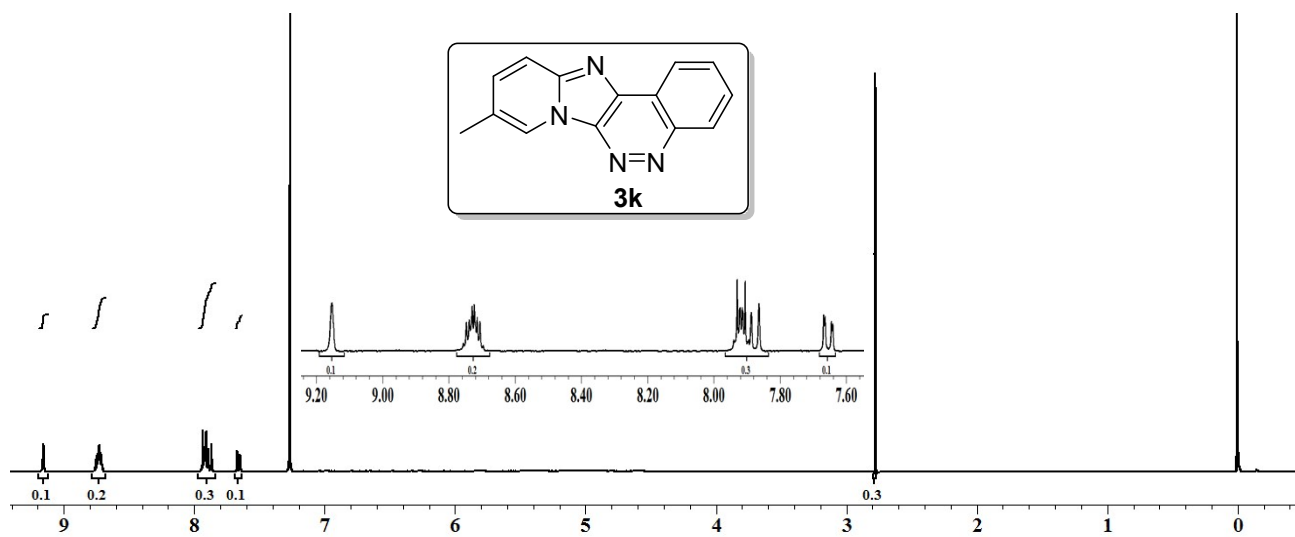
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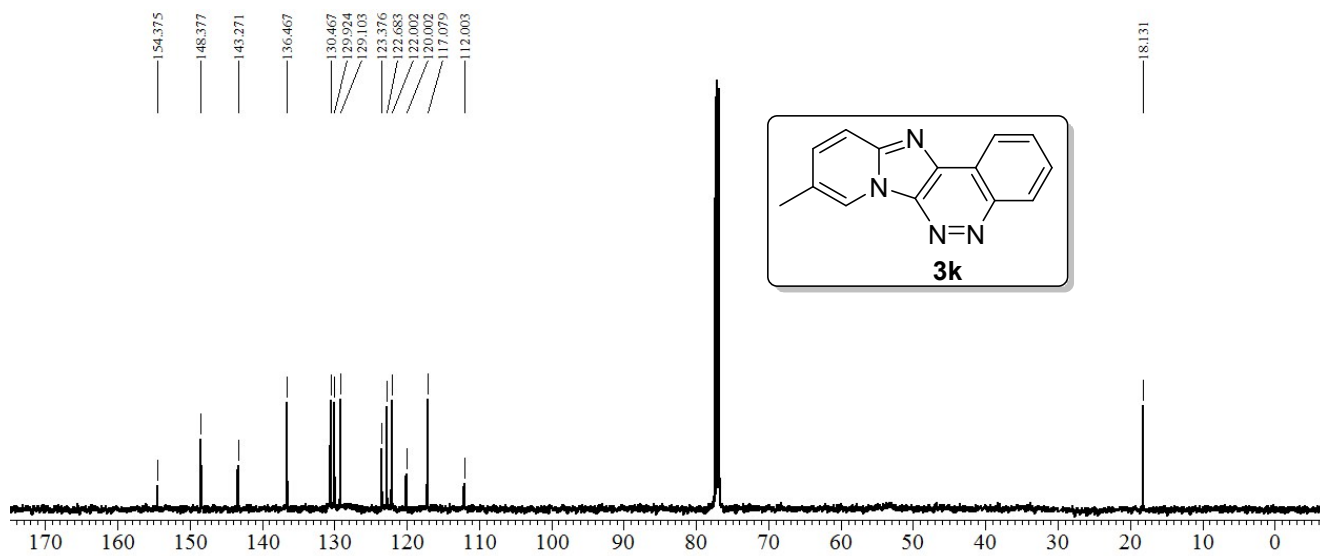
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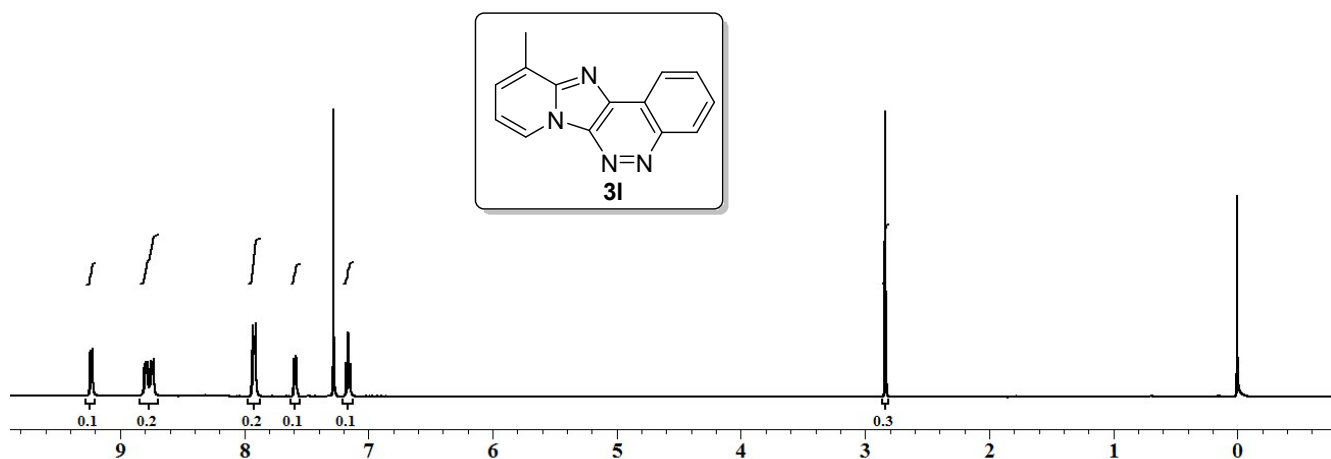
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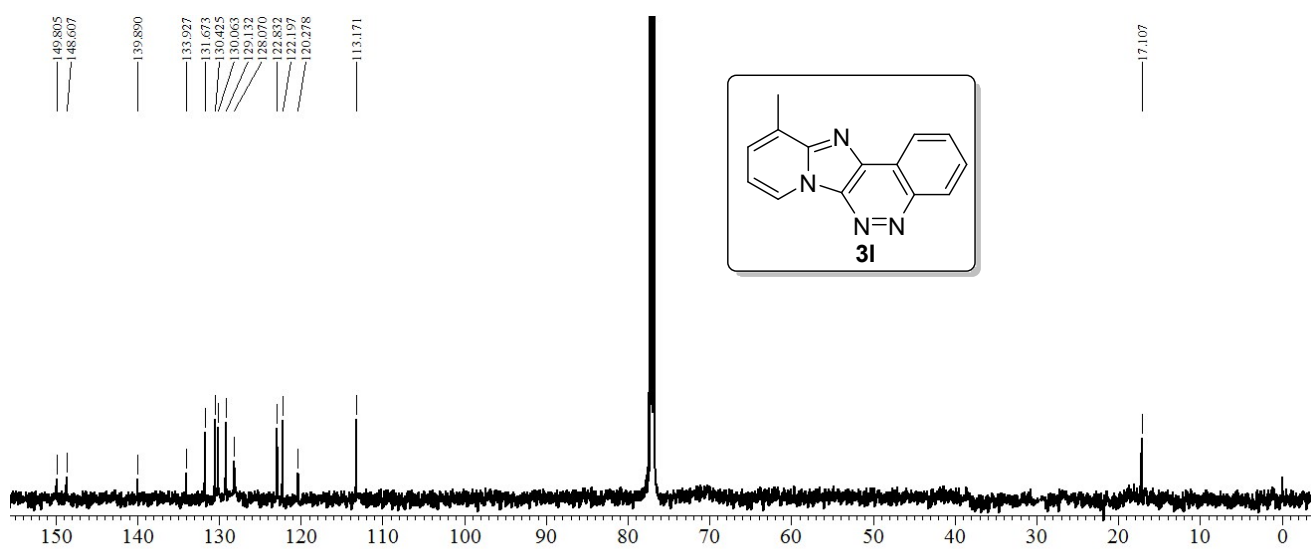
¹H NMR of **3k** (400 MHz, CDCl₃)



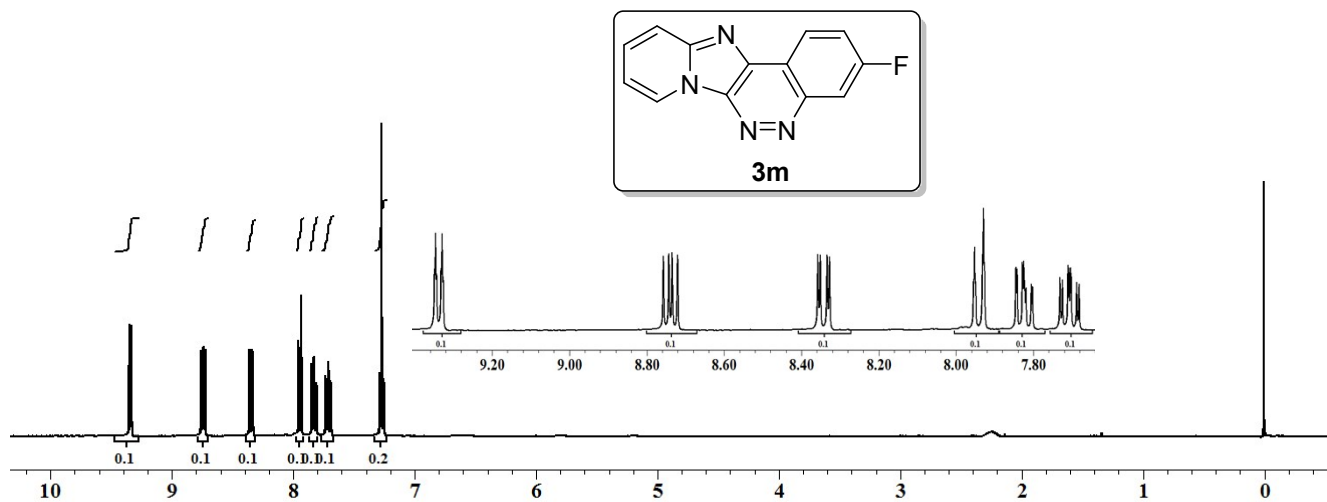
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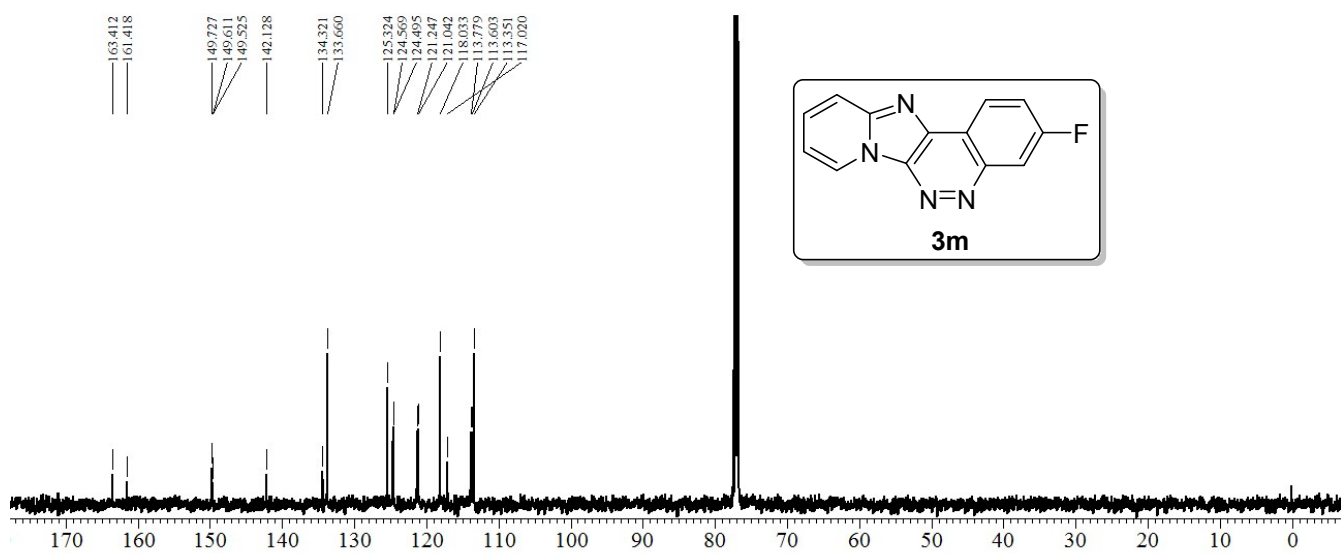
¹H NMR of 3I (400 MHz, CDCl₃)



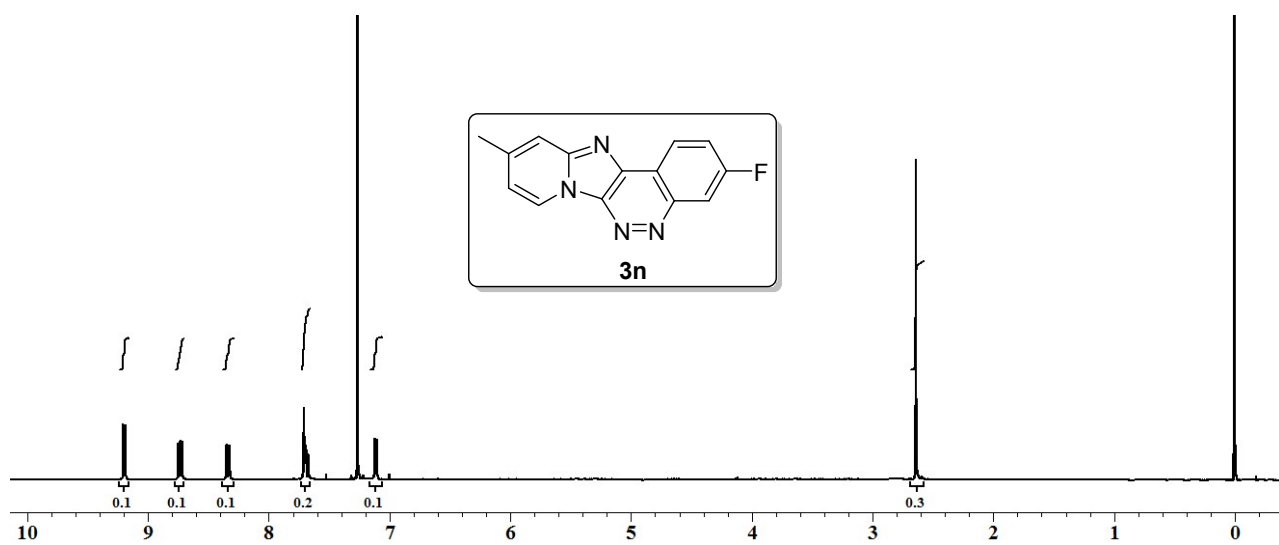
¹³C NMR of 3I (125 MHz, CDCl₃)



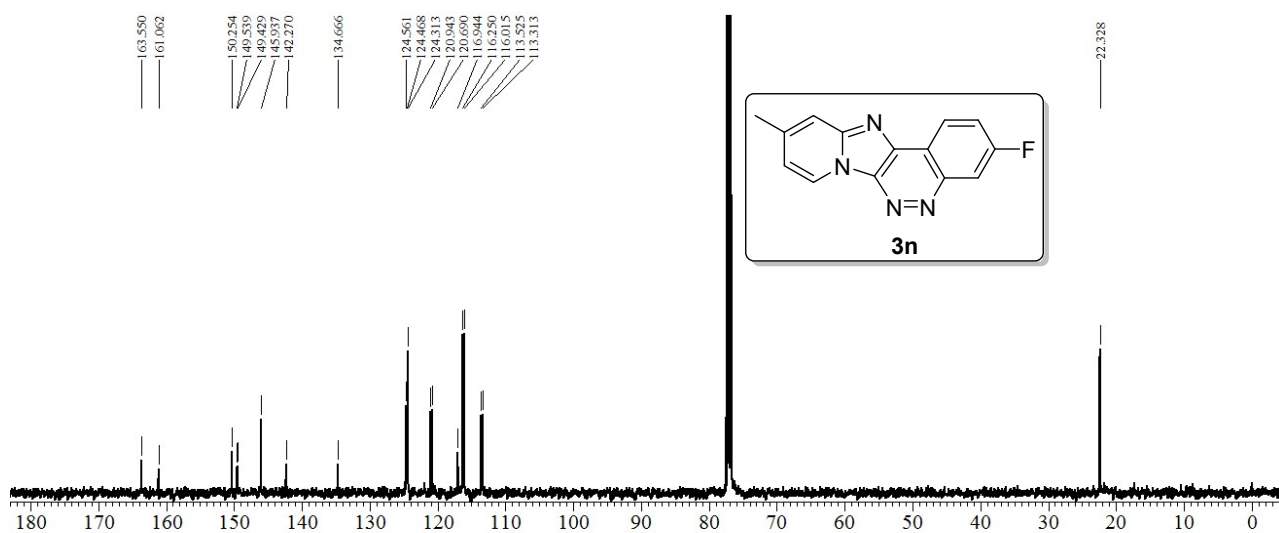
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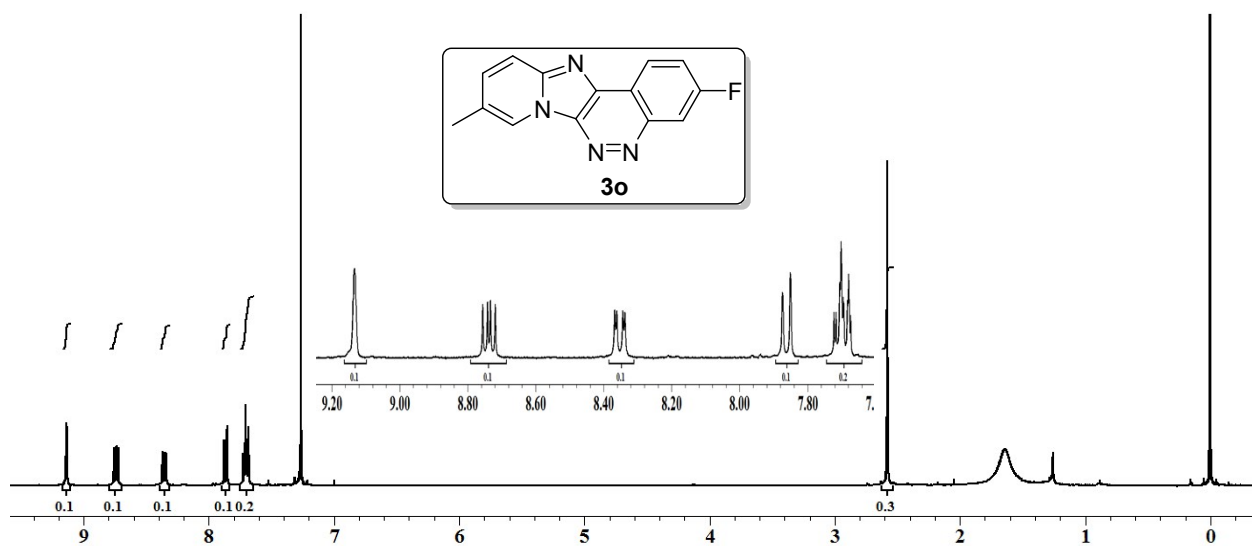
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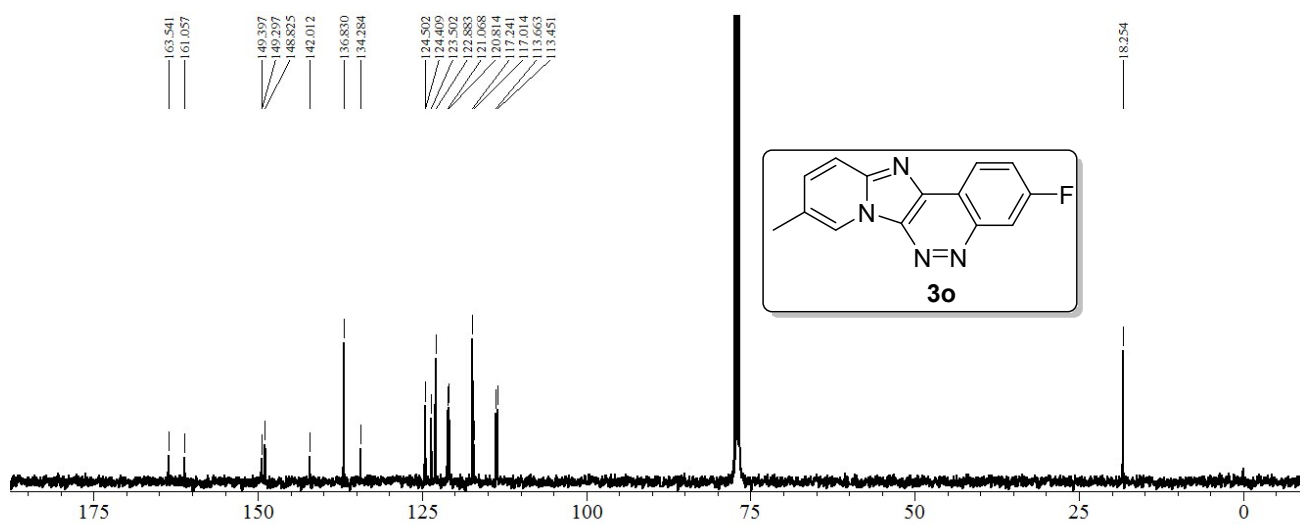
¹H NMR of **3n** (400 MHz, CDCl₃)



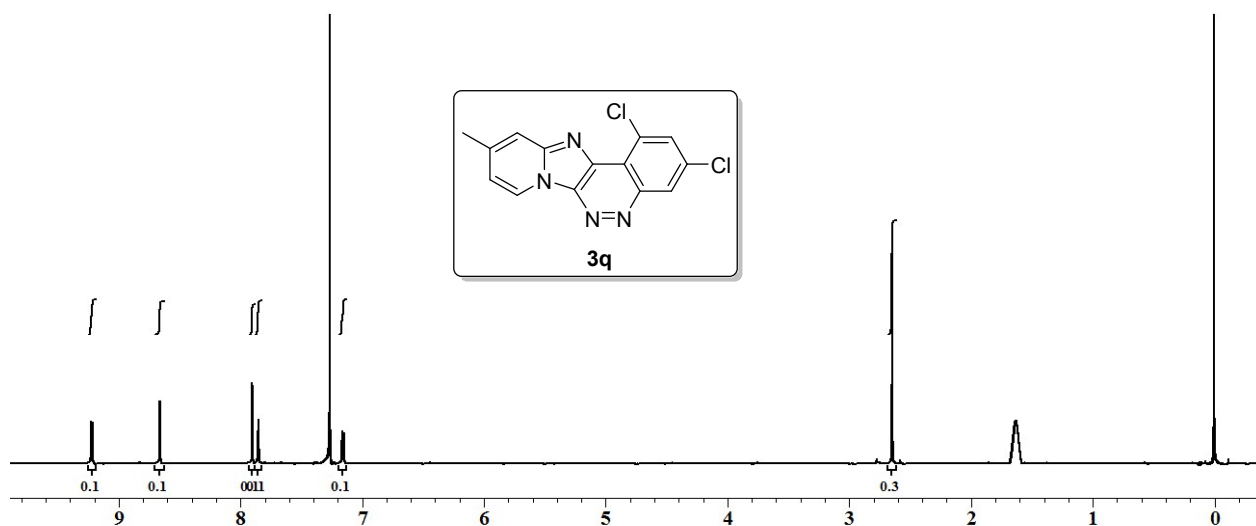
¹³C NMR of **3n** (125 MHz, CDCl₃)



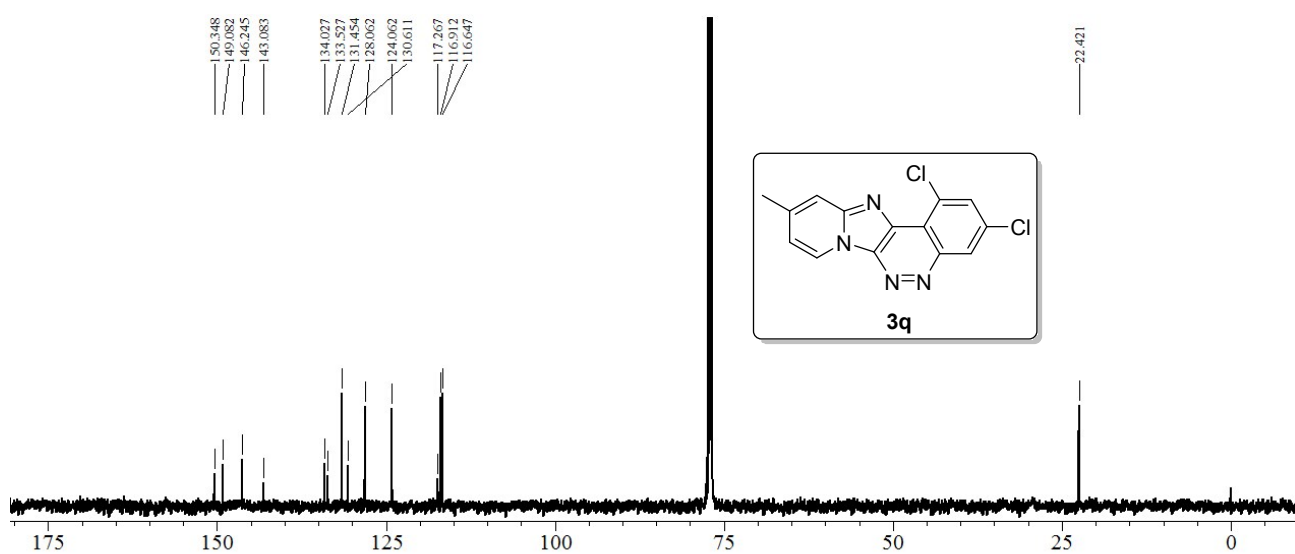
^1H NMR of 3o (400 MHz, CDCl_3)



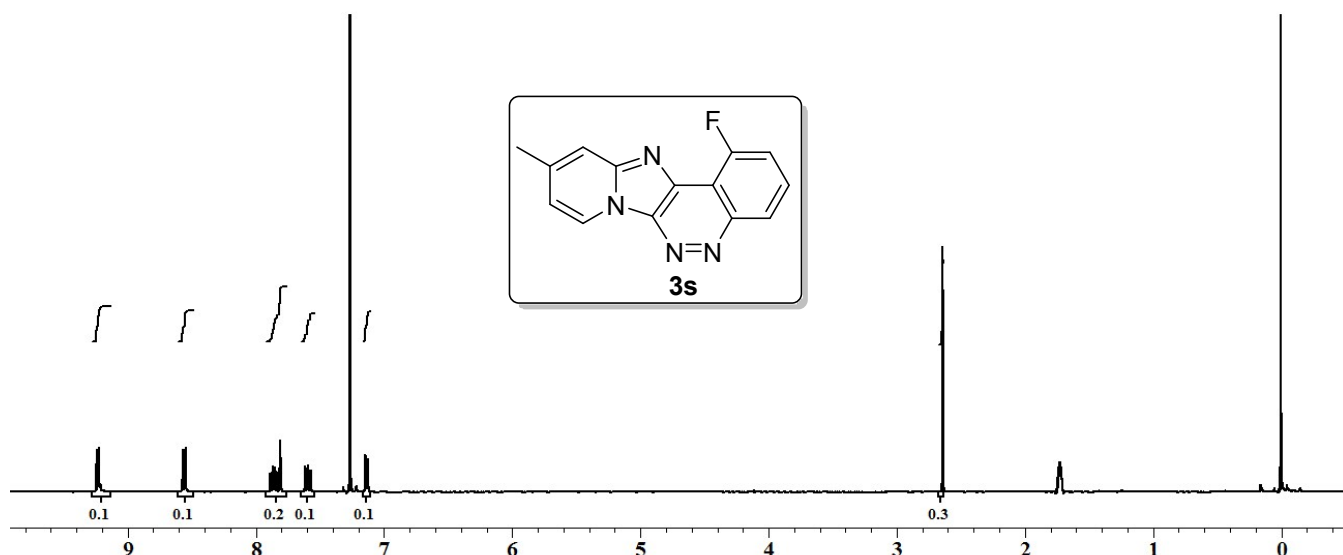
^{13}C NMR of 3o (125 MHz, CDCl_3)



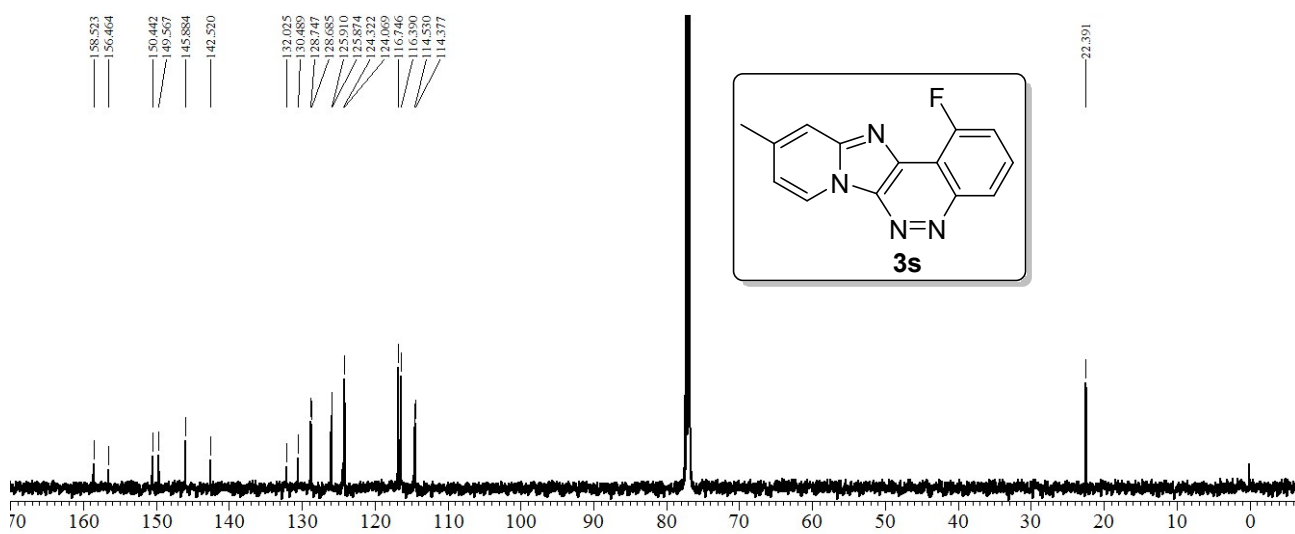
¹H NMR of **3q** (500 MHz, CDCl₃)



¹³C NMR of **3q** (125 MHz, CDCl₃)

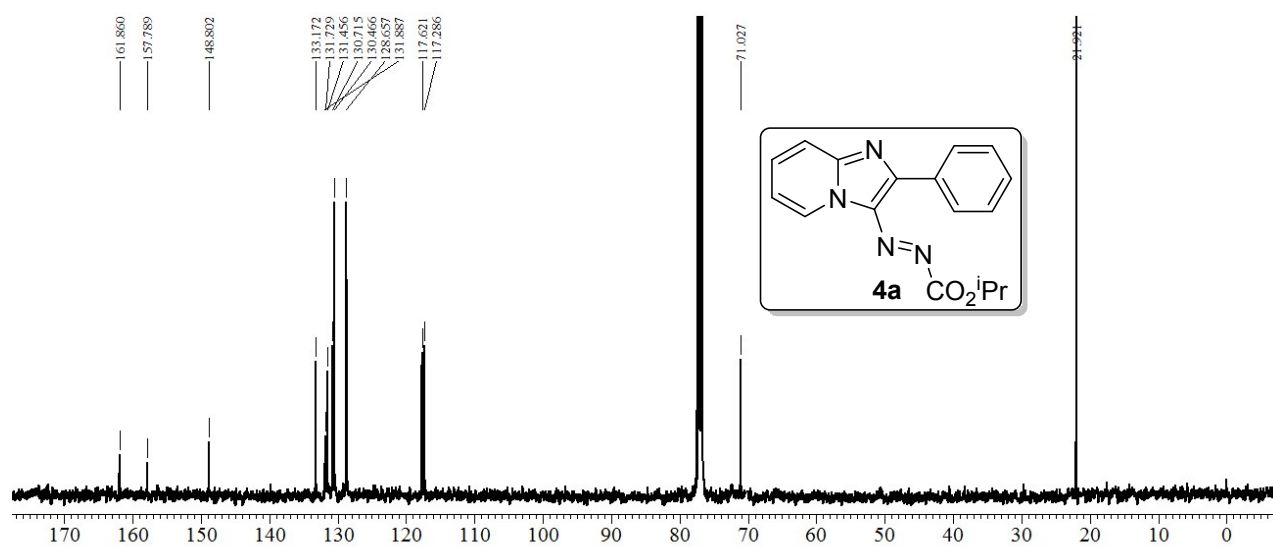
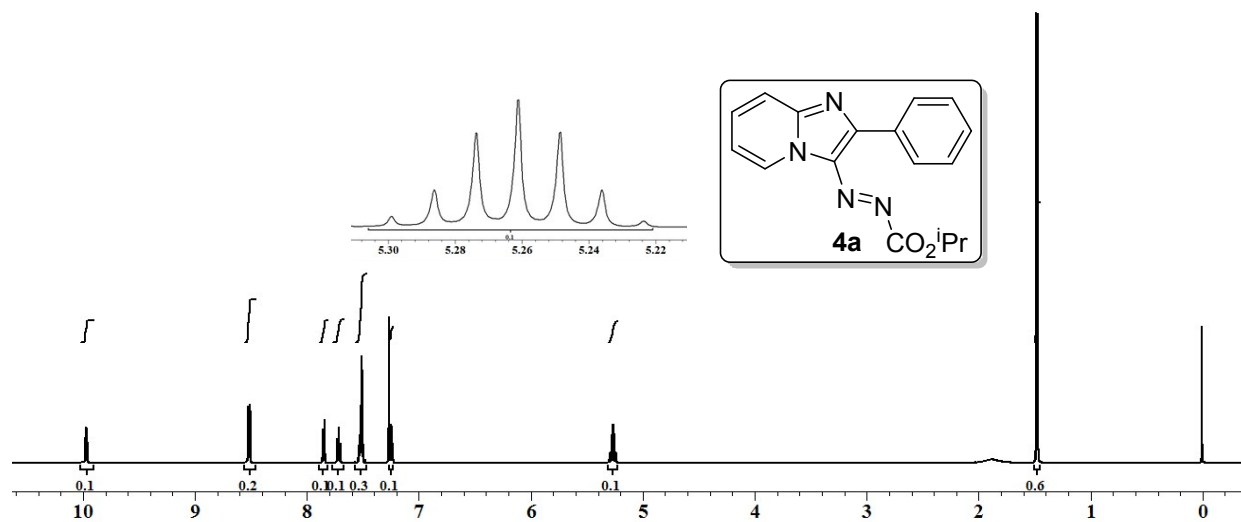


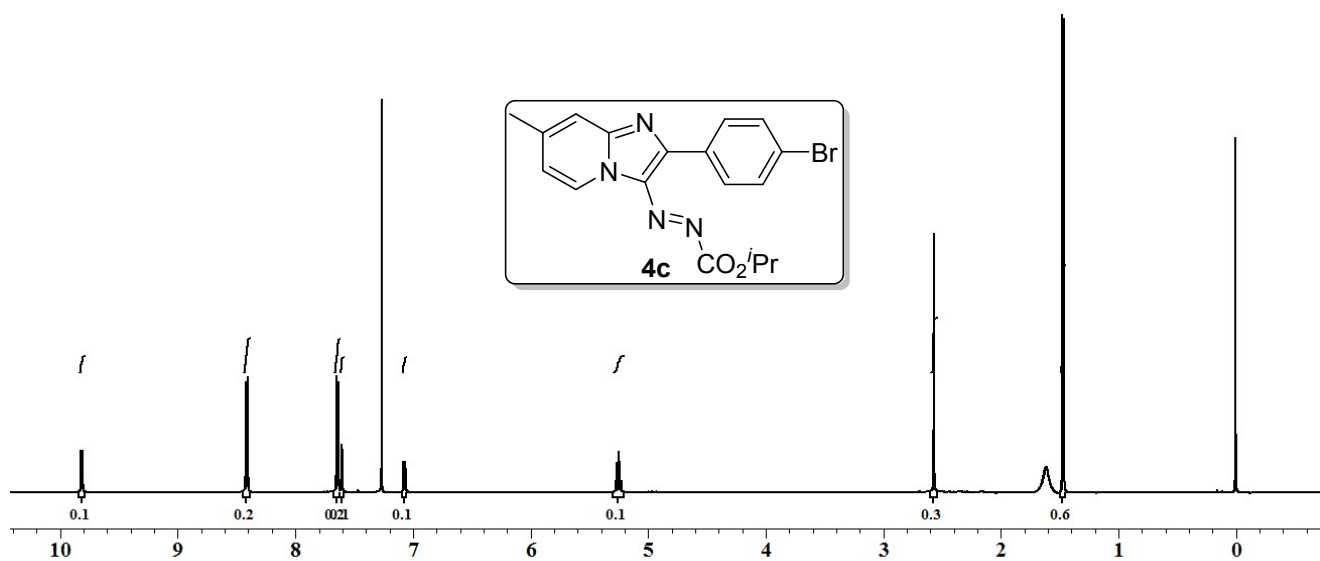
¹H NMR of 3s (400 MHz, CDCl₃)



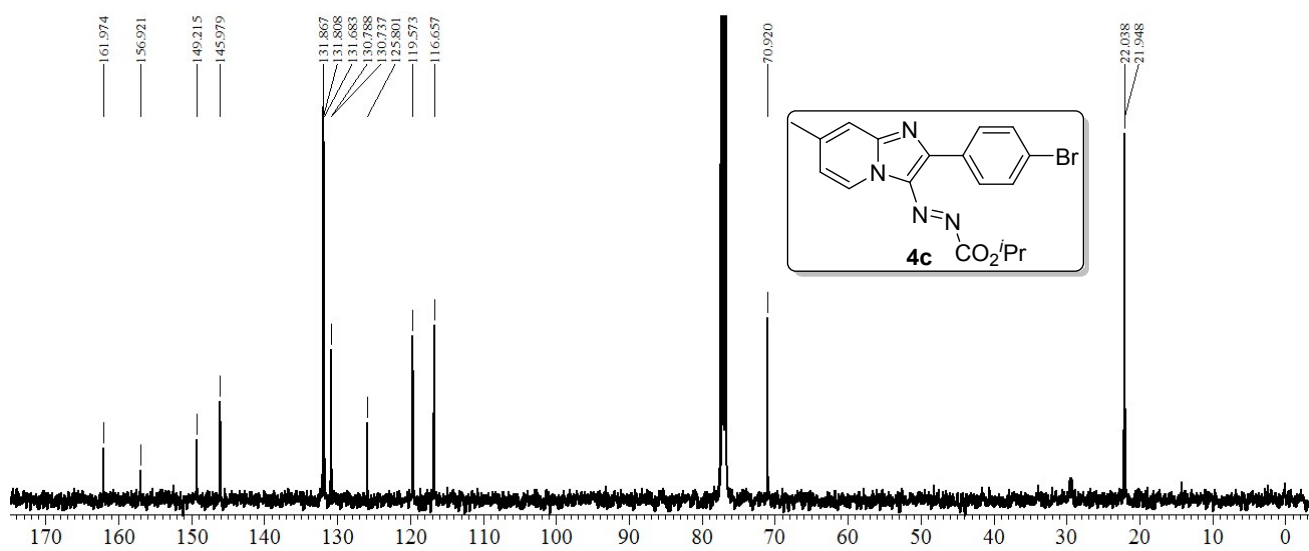
¹³C NMR of 3s (125 MHz, CDCl₃)

III .Copies of ^1H and ^{13}C NMR spectra of 4a, 4c, 4f & 4h.

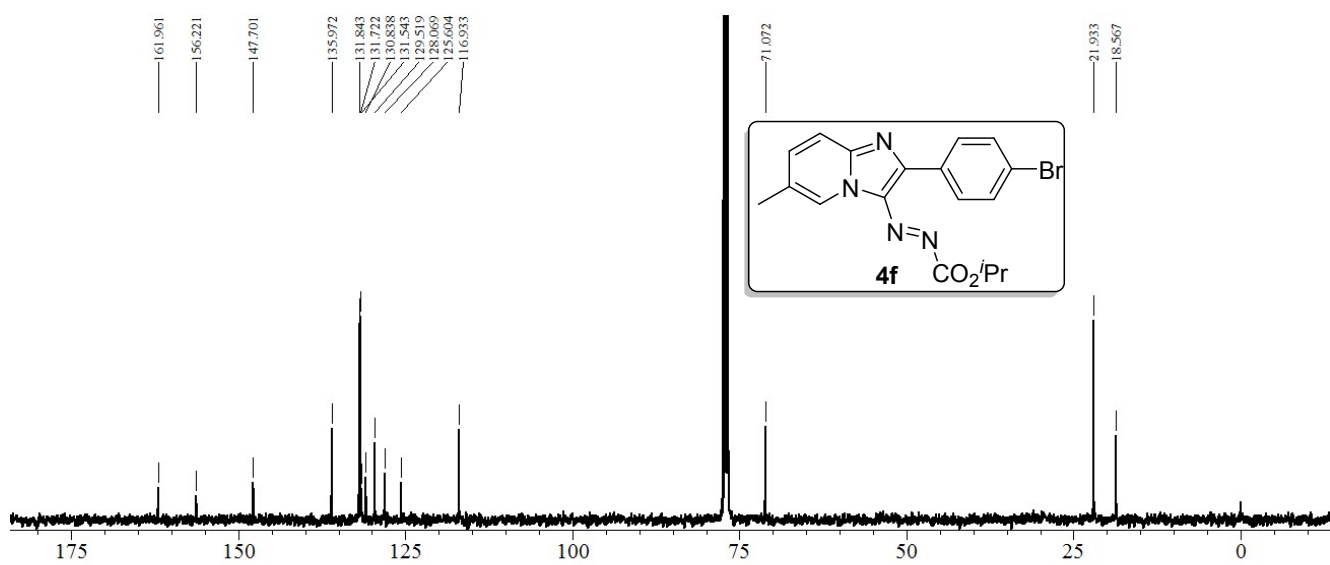
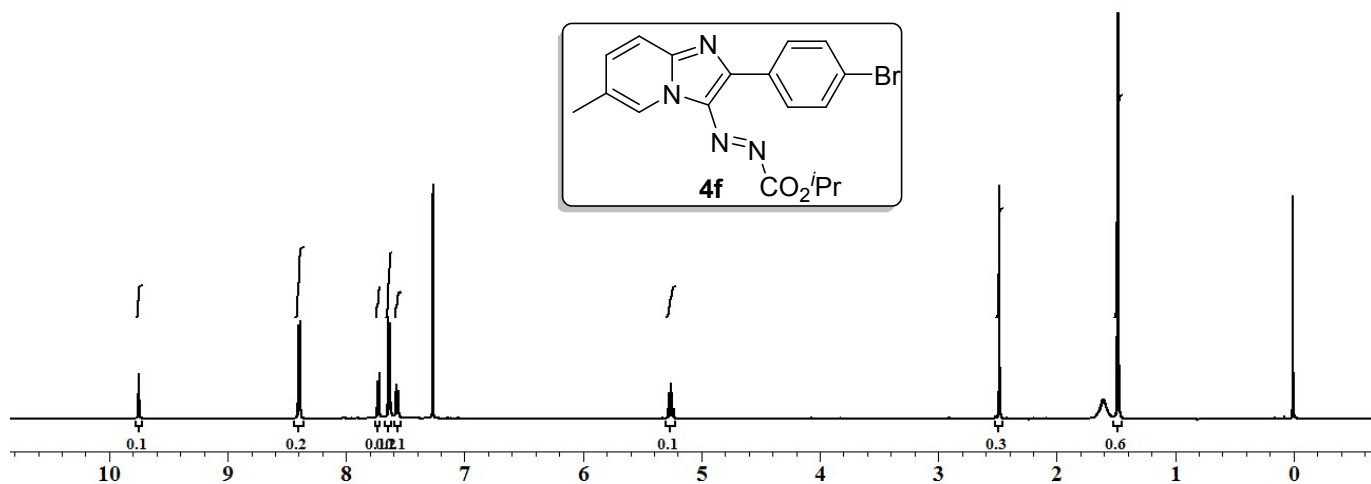


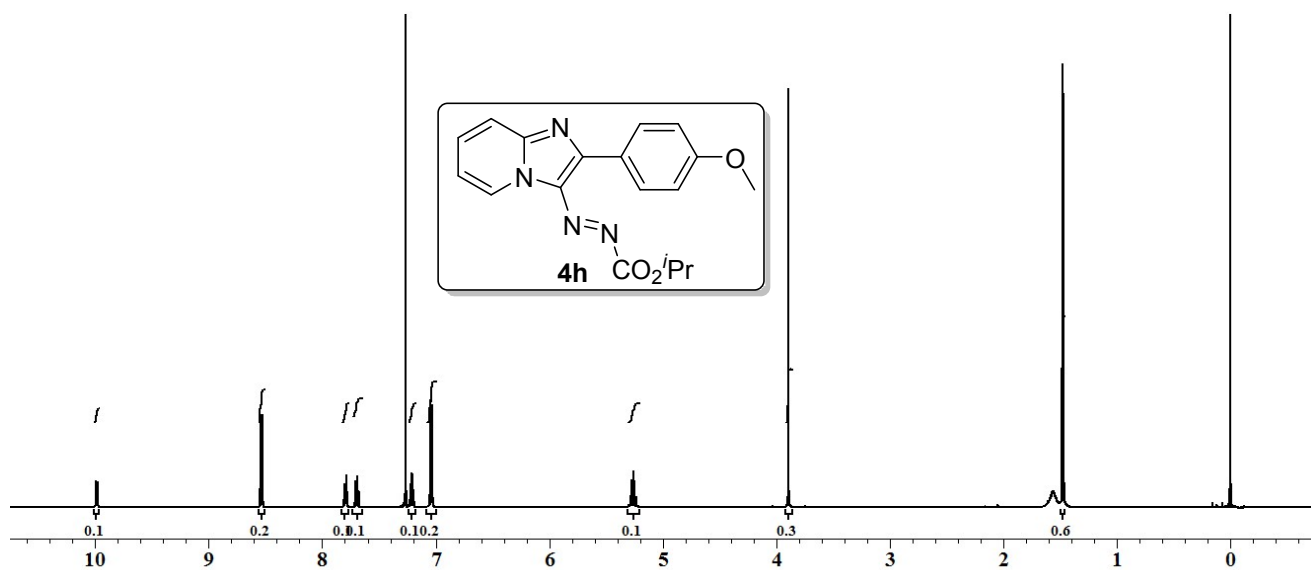


¹H NMR of 4c (500 MHz, CDCl₃)

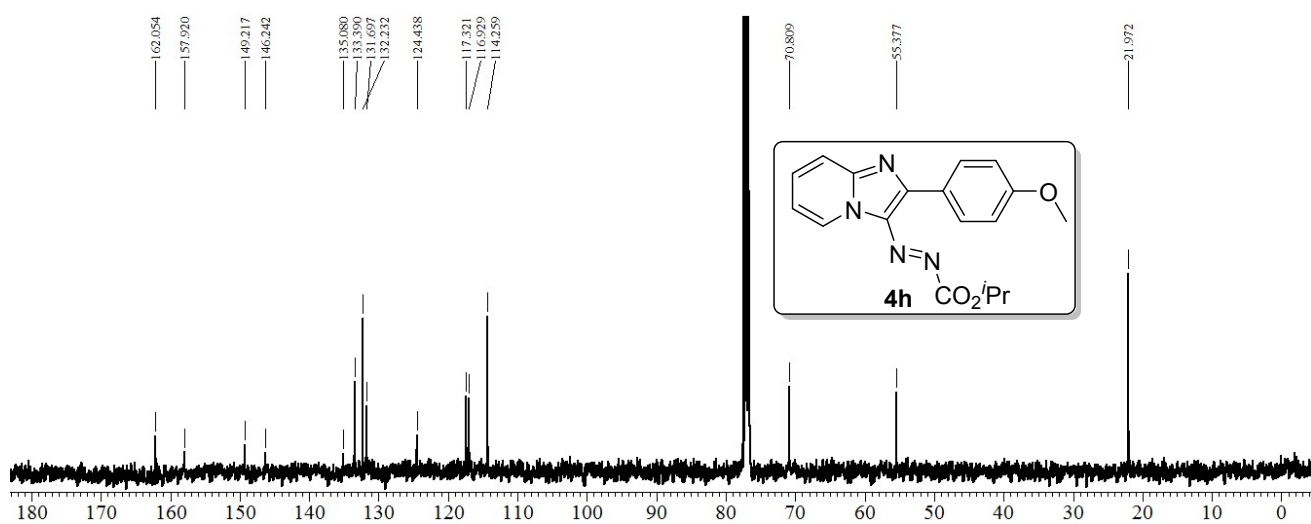


¹³C NMR of 4c (100 MHz, CDCl₃)



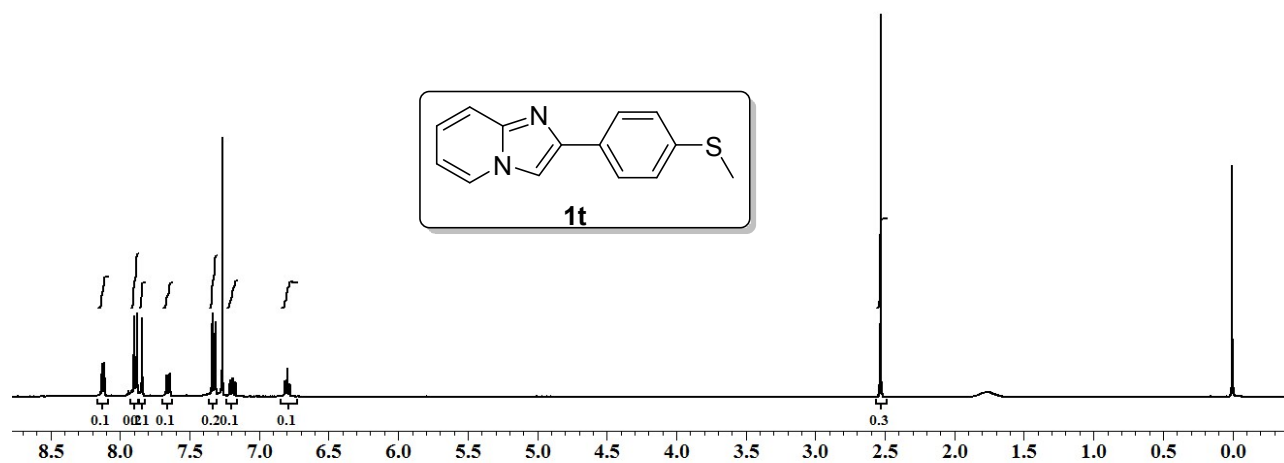


¹H NMR of 4h (500 MHz, CDCl₃)

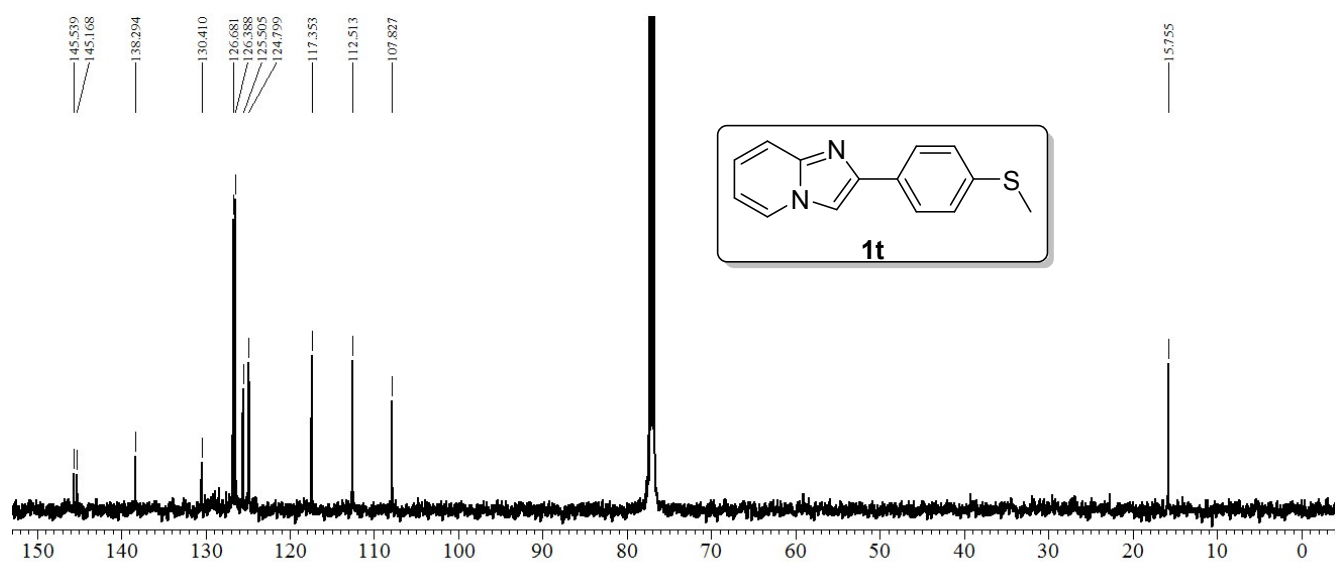


¹³C NMR of 4h (100 MHz, CDCl₃)

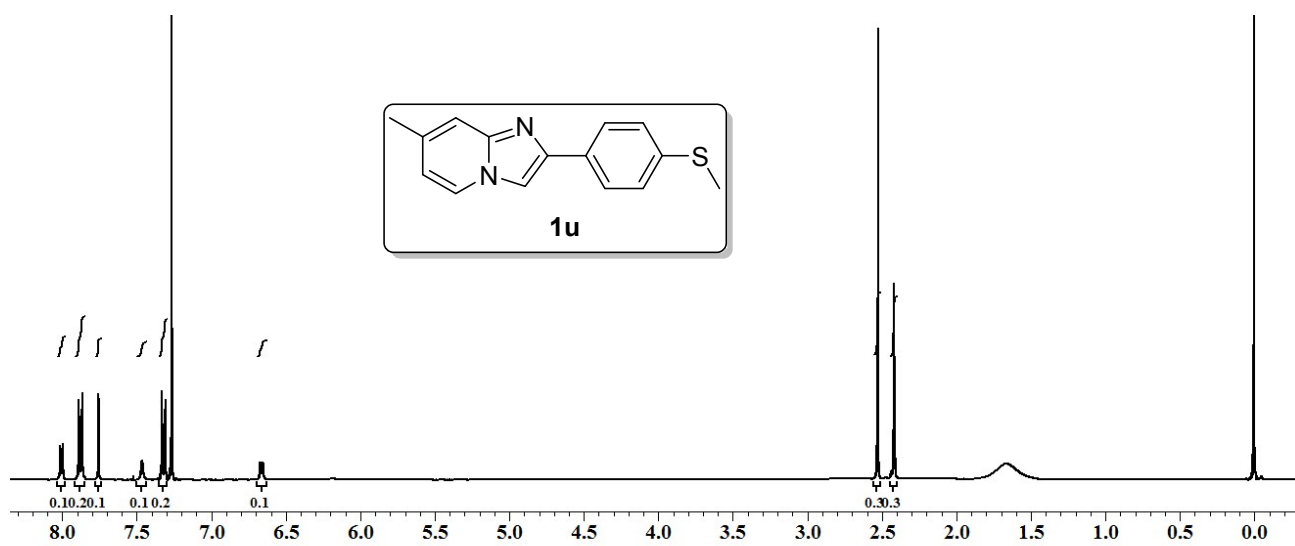
IV. Copies of ^1H and ^{13}C NMR spectra of scheme2 compounds (1t, 1u, 4t, 4u, 3t & 3u)



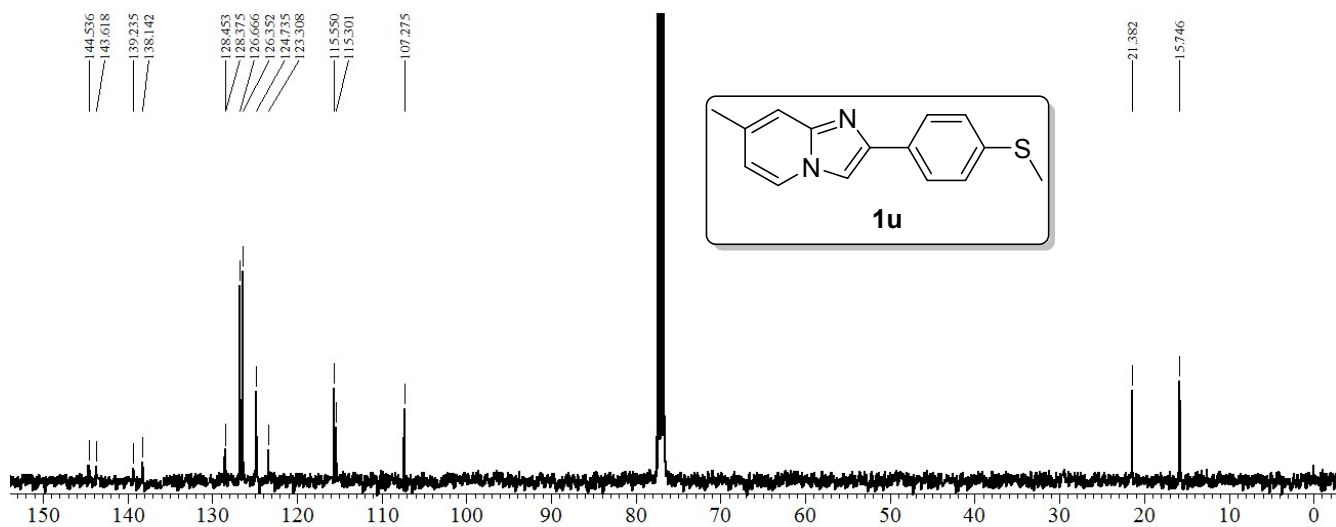
^1H NMR of 1t (400 MHz, CDCl_3)



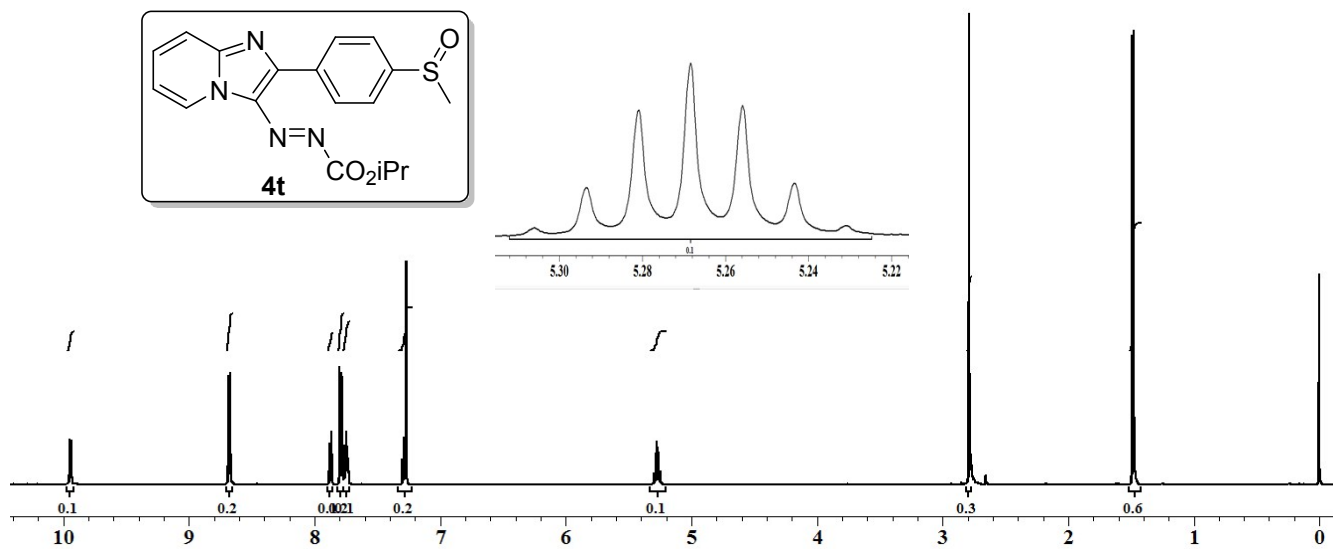
^{13}C NMR of 1t (125 MHz, CDCl_3)



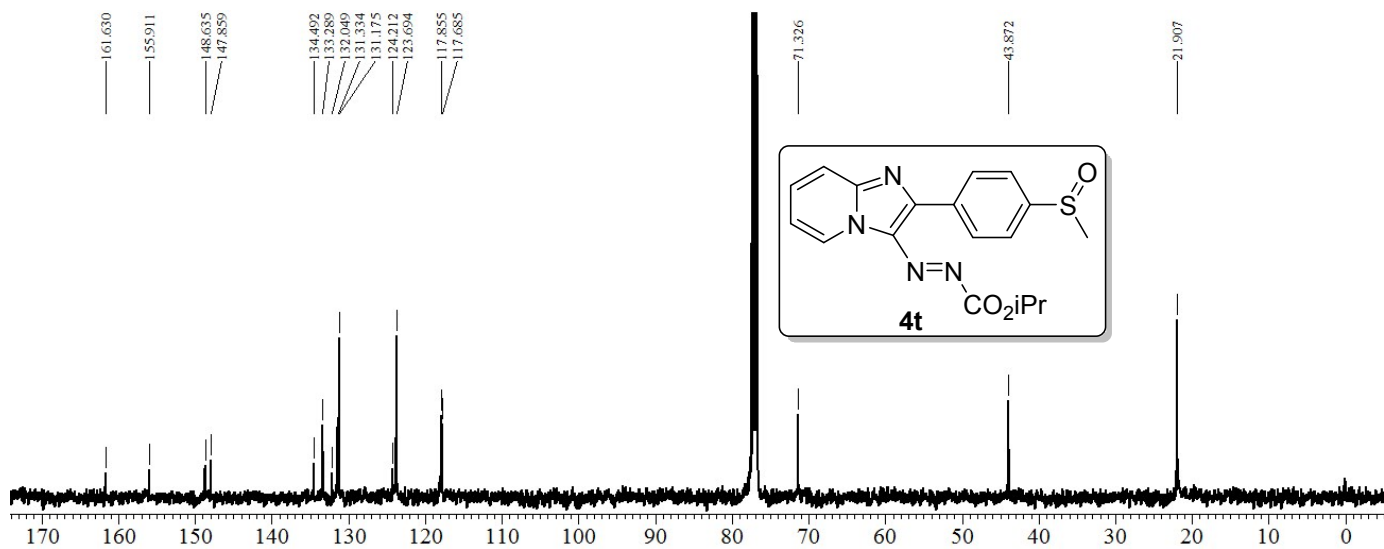
¹H NMR of **1u** (400 MHz, CDCl₃)



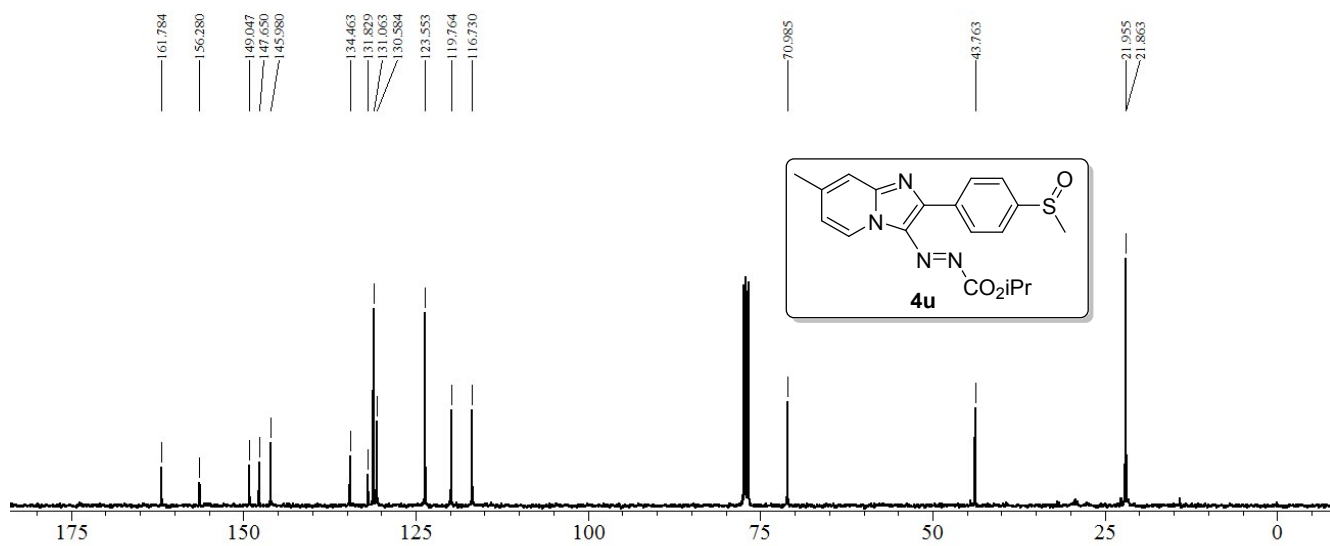
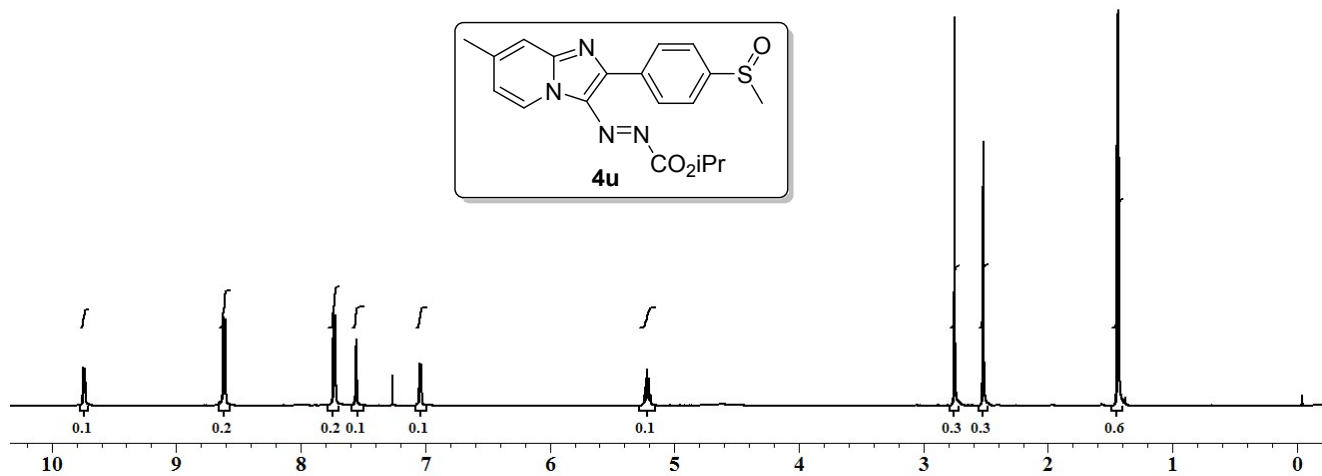
¹³C NMR of **1u** (125 MHz, CDCl₃)

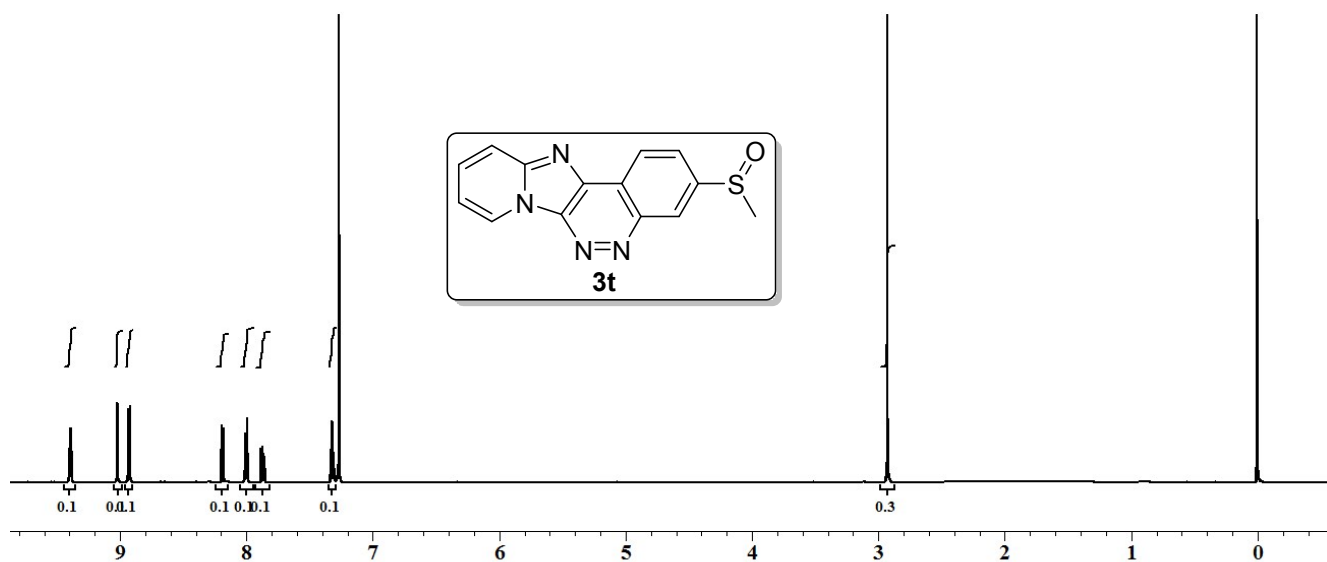


¹H NMR of **4t** (500 MHz, CDCl₃)

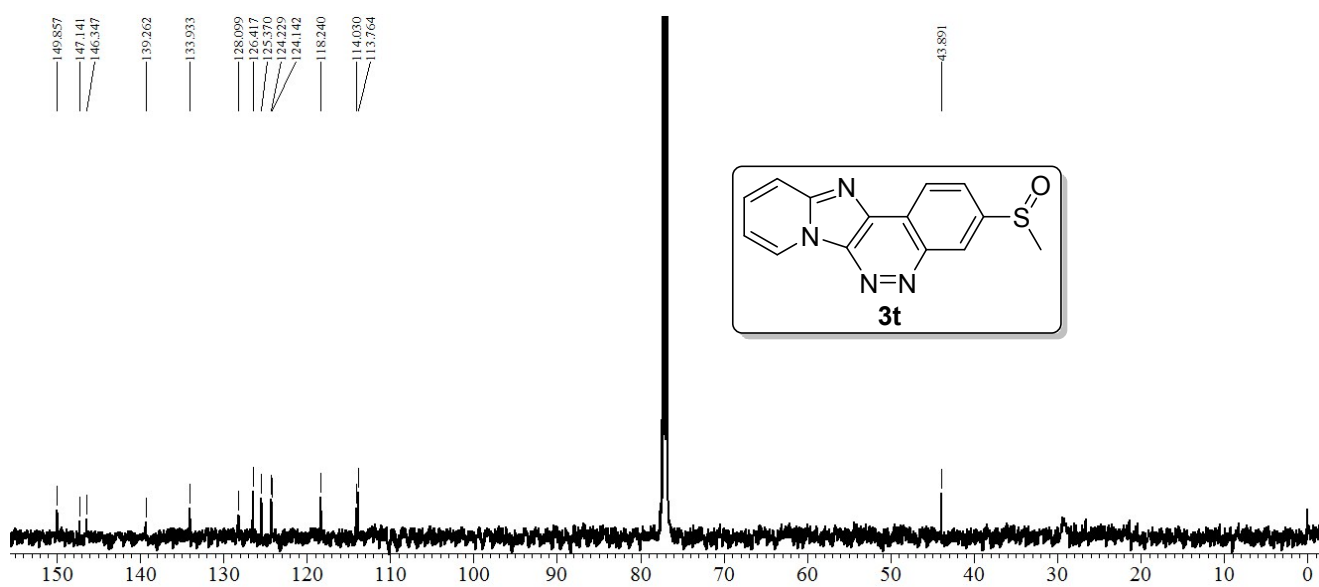


¹³C NMR of **4t** (100 MHz, CDCl₃)

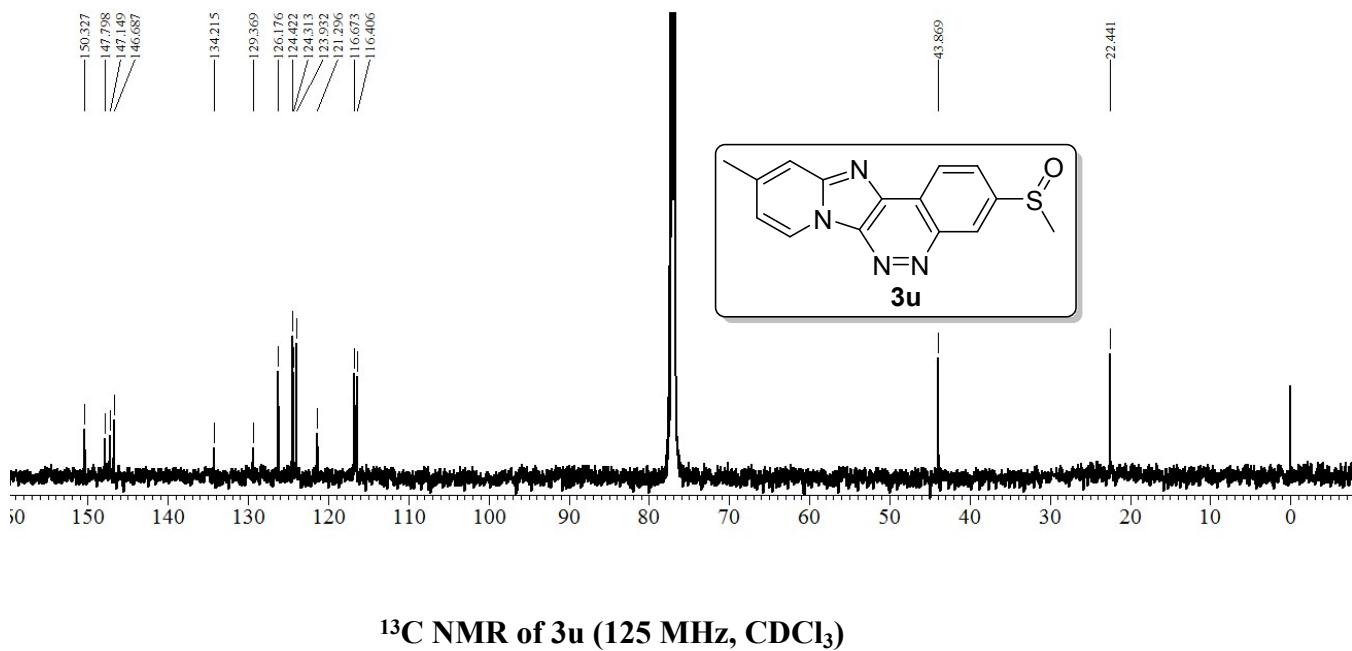
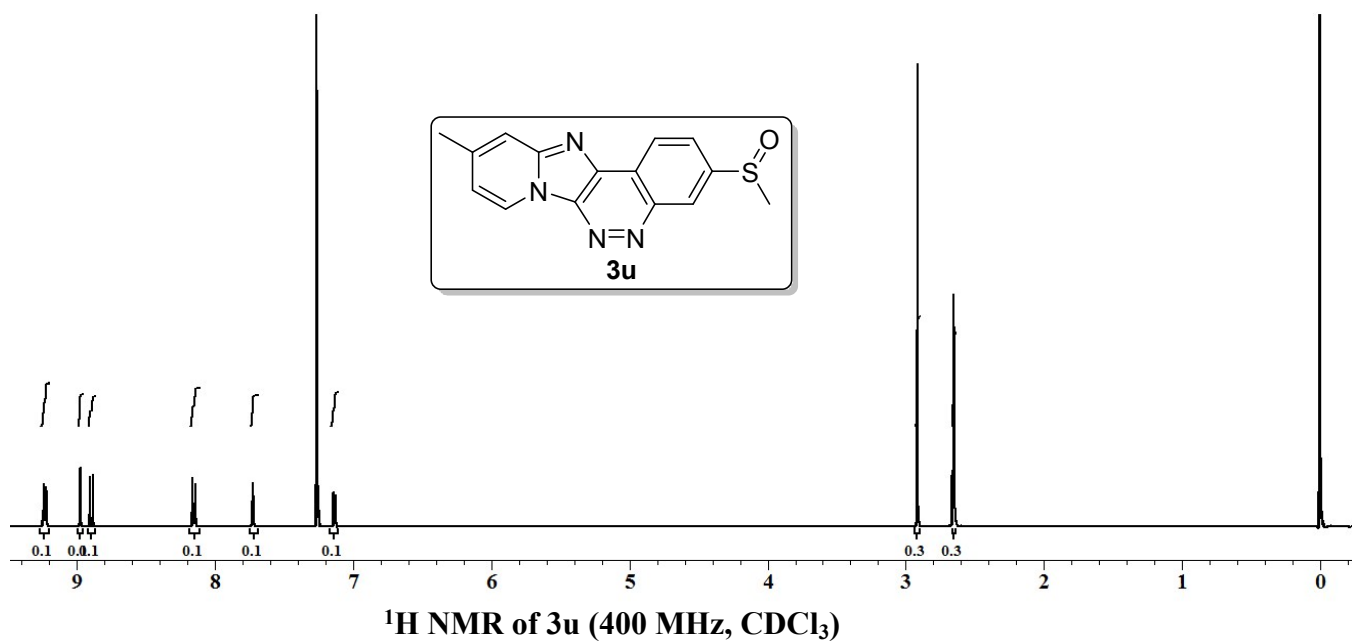




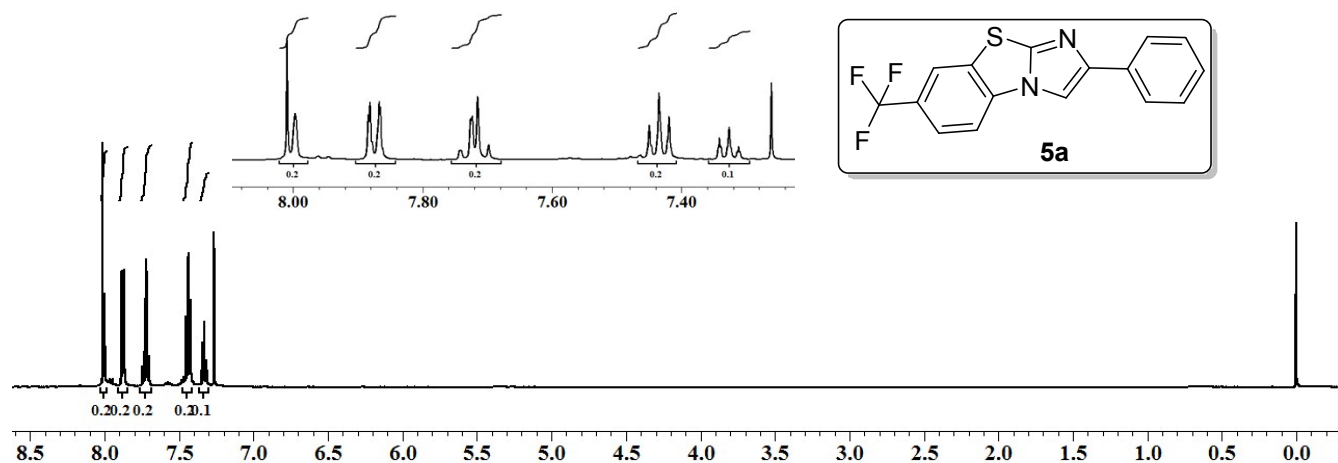
¹H NMR of **3t** (500 MHz, CDCl₃)



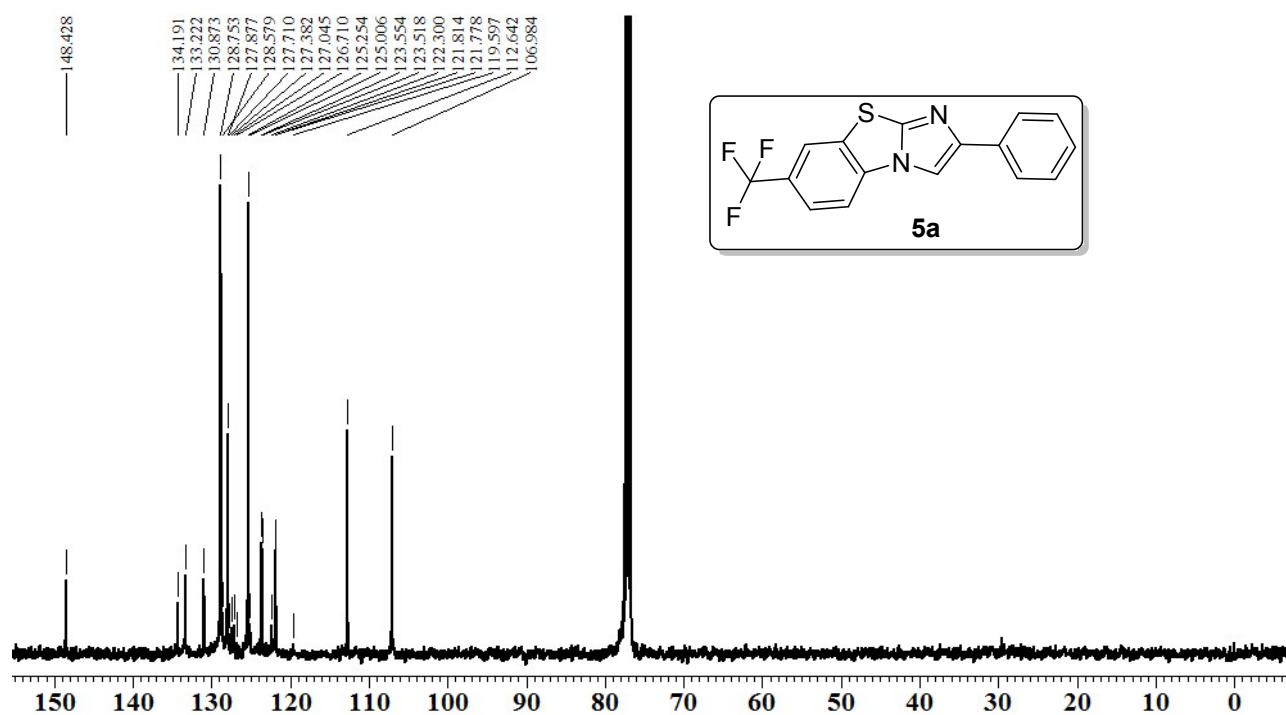
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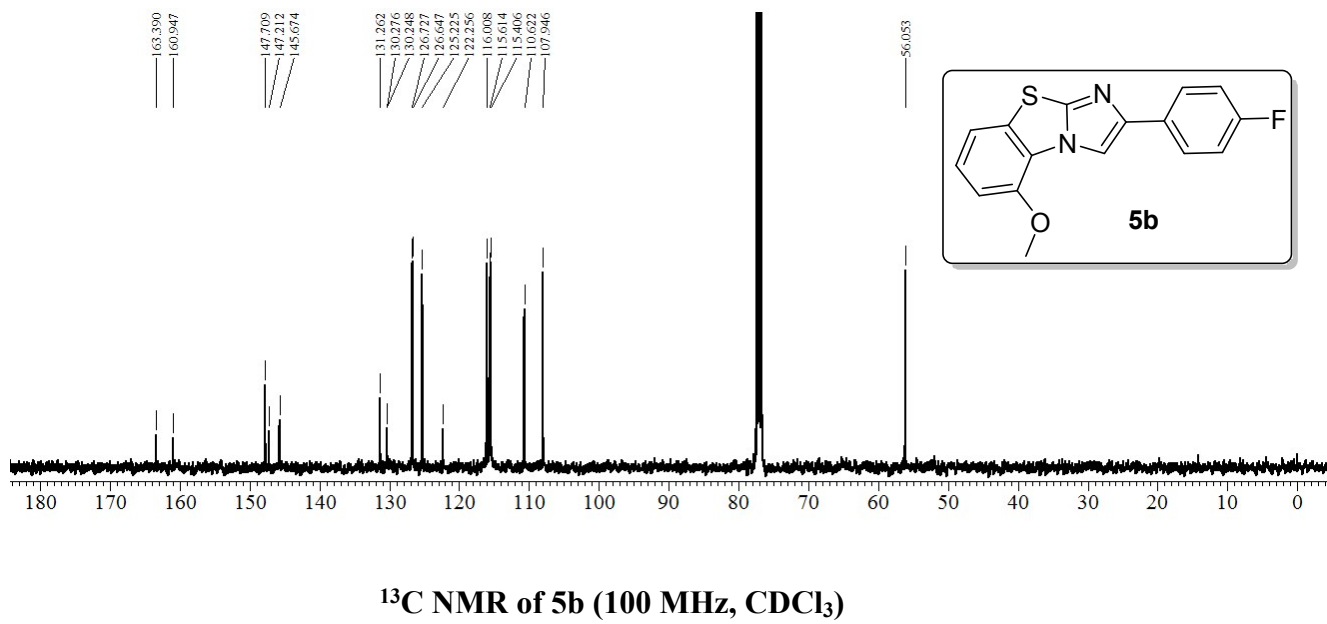
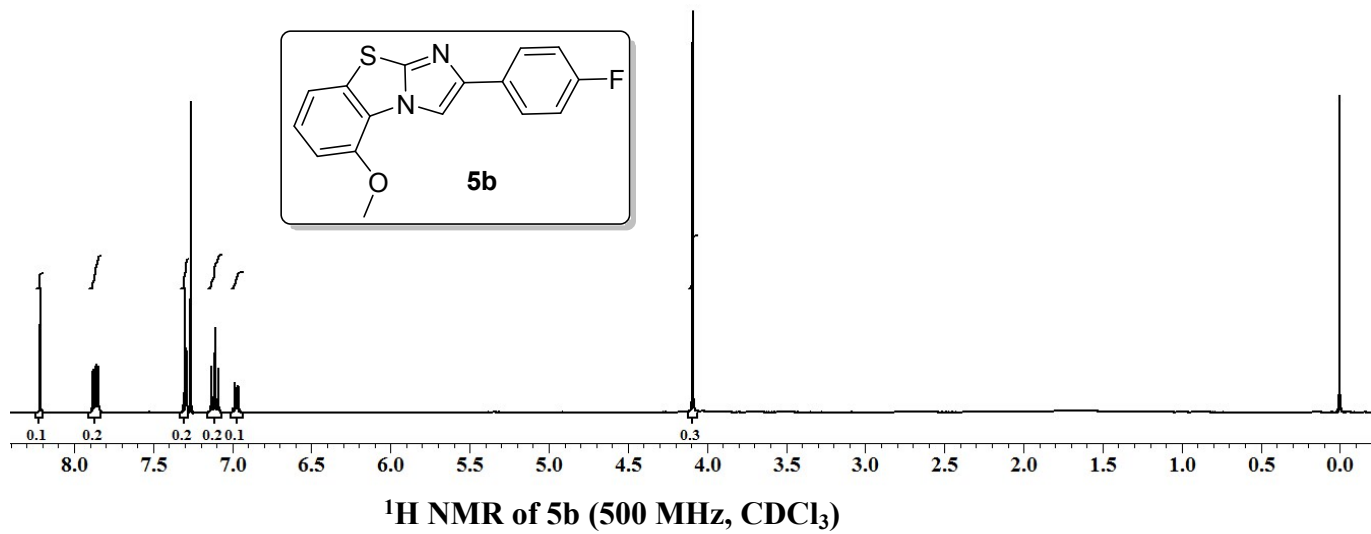
V. Copies of ^1H and ^{13}C NMR spectra of 5a-5e

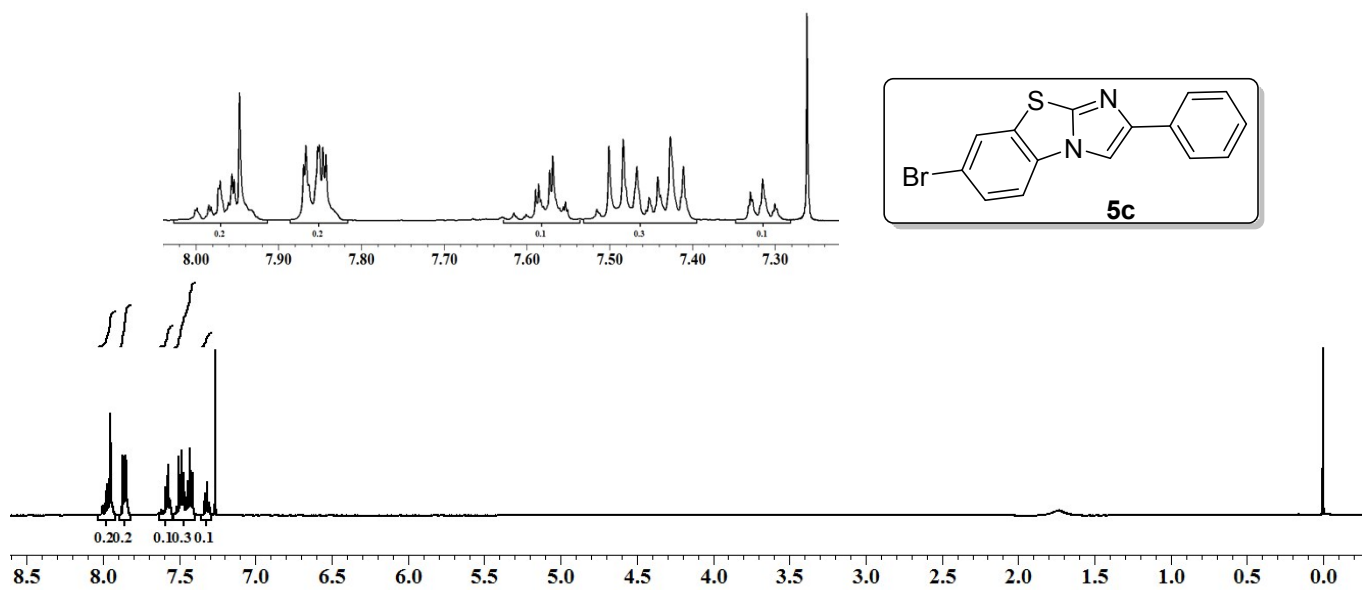


^1H NMR of 5a (500 MHz, CDCl_3)

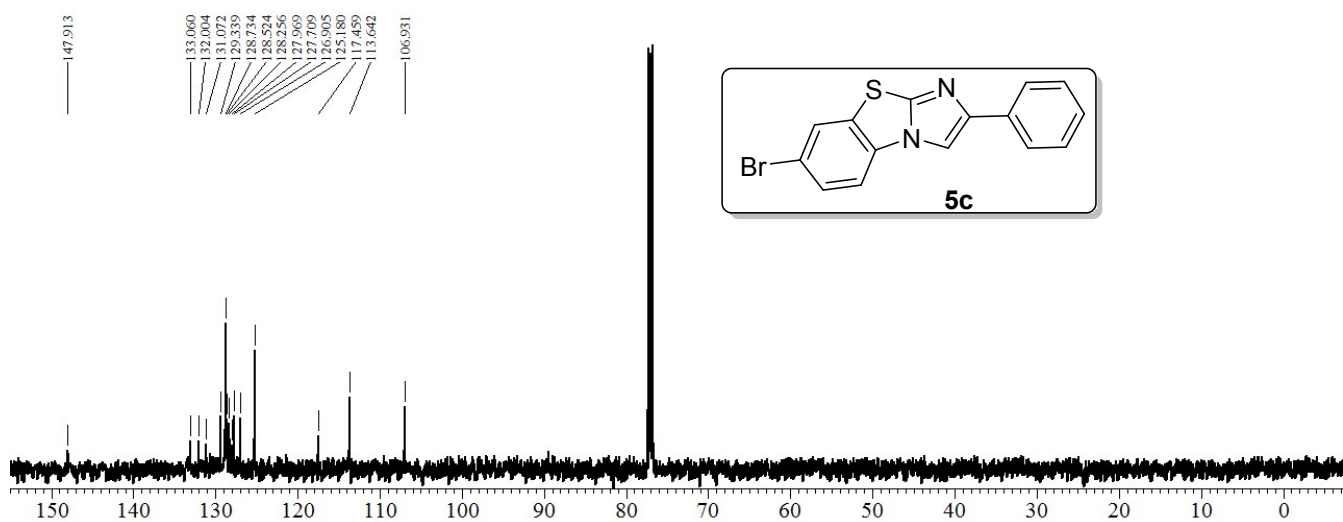


^{13}C NMR of 5a (100 MHz, CDCl_3)

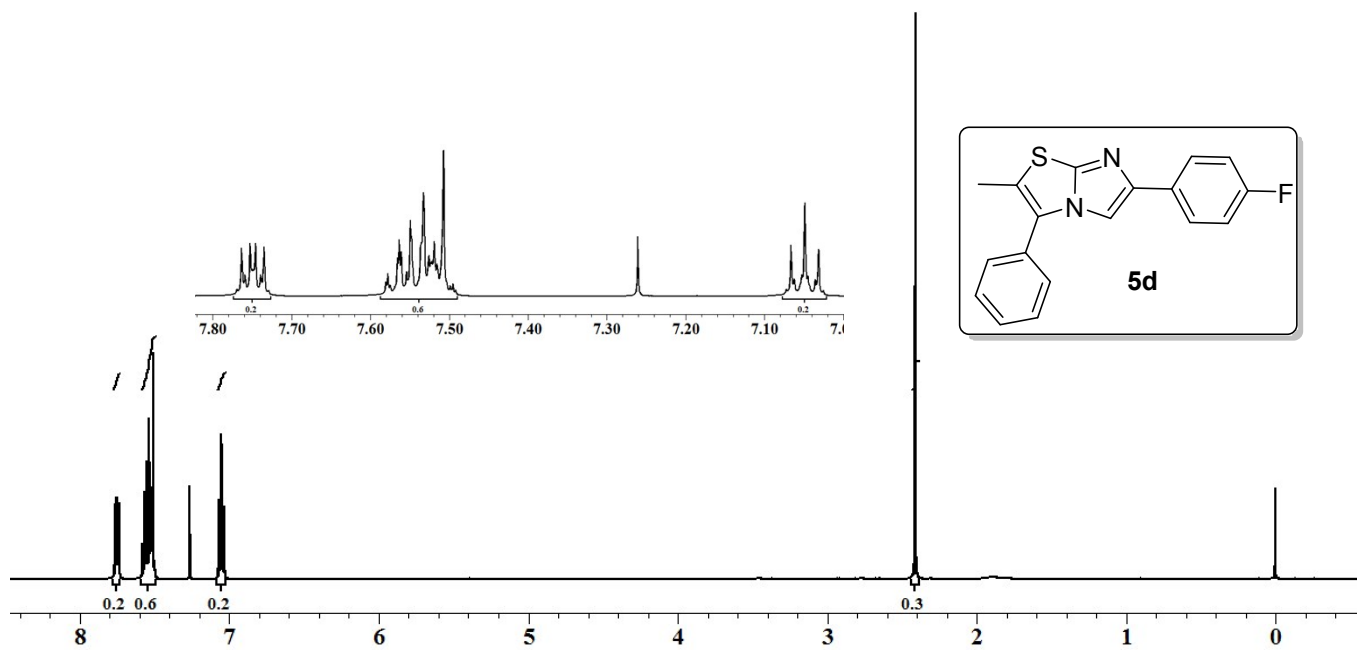




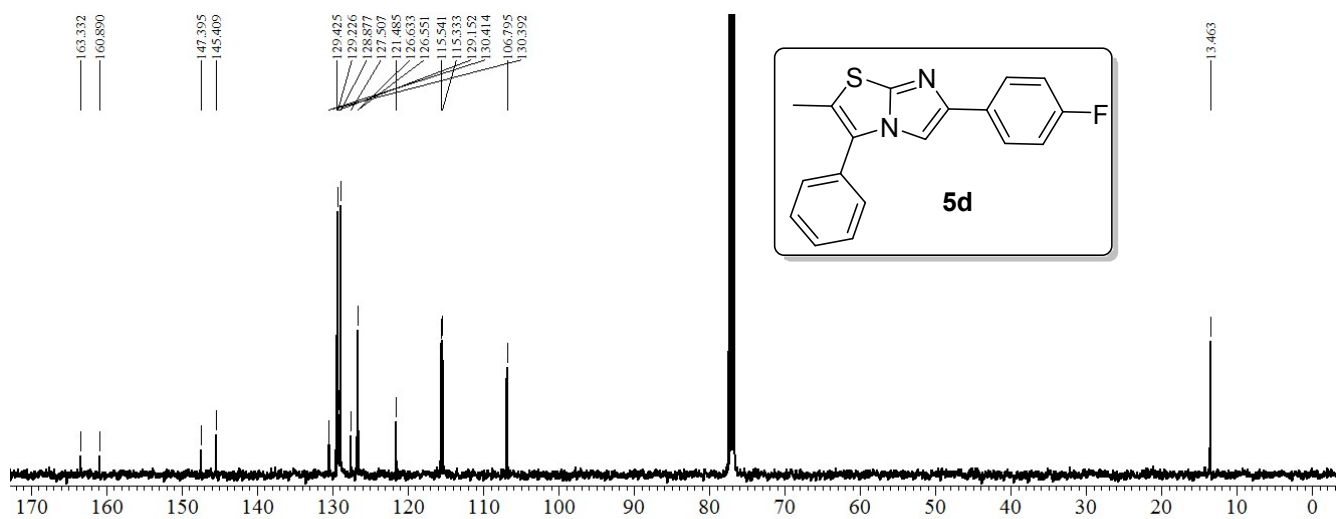
¹H NMR of **5c** (500 MHz, CDCl₃)



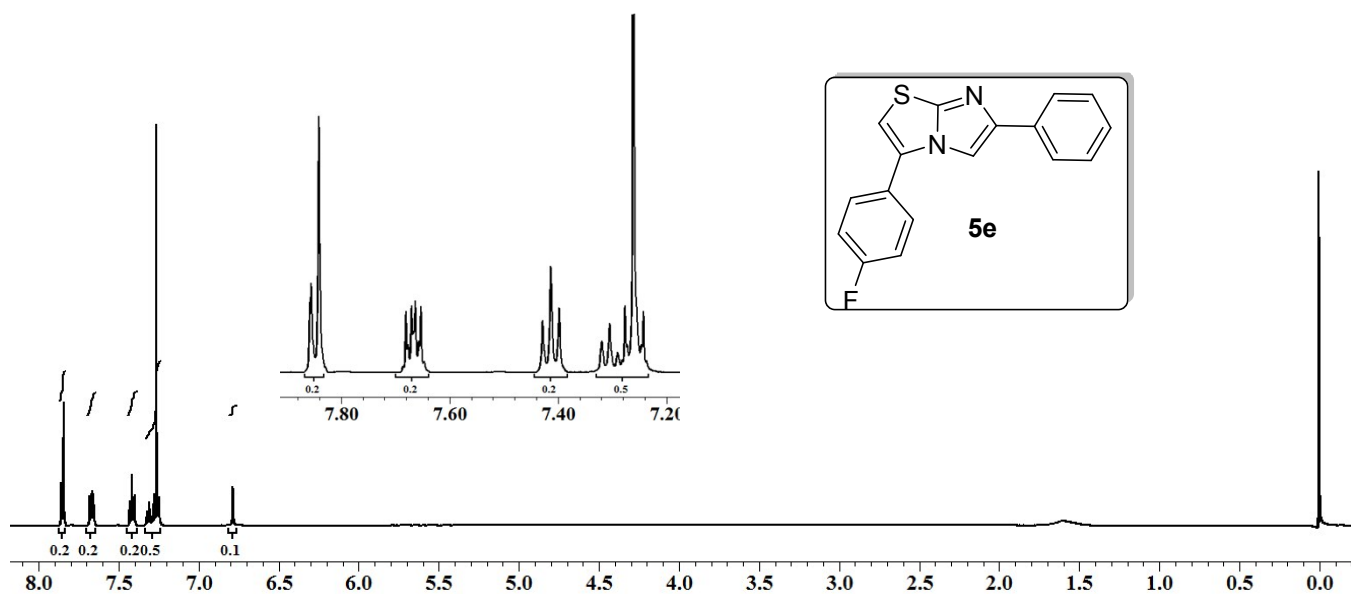
¹³C NMR of **5c** (125 MHz, CDCl₃)



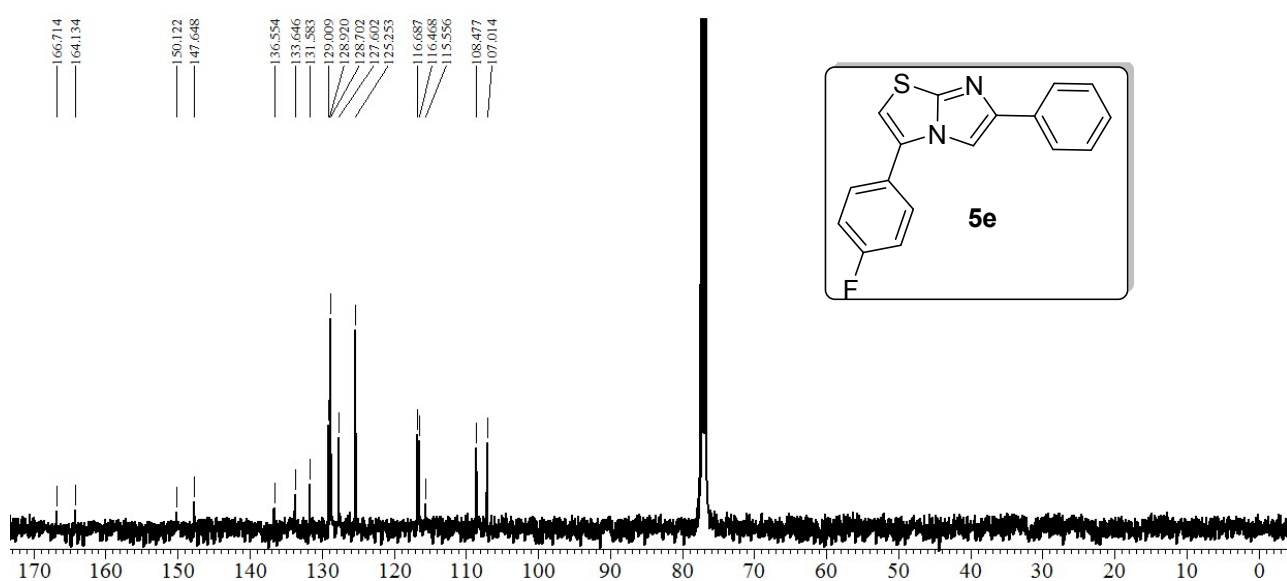
¹H NMR of 5d (500 MHz, CDCl₃)



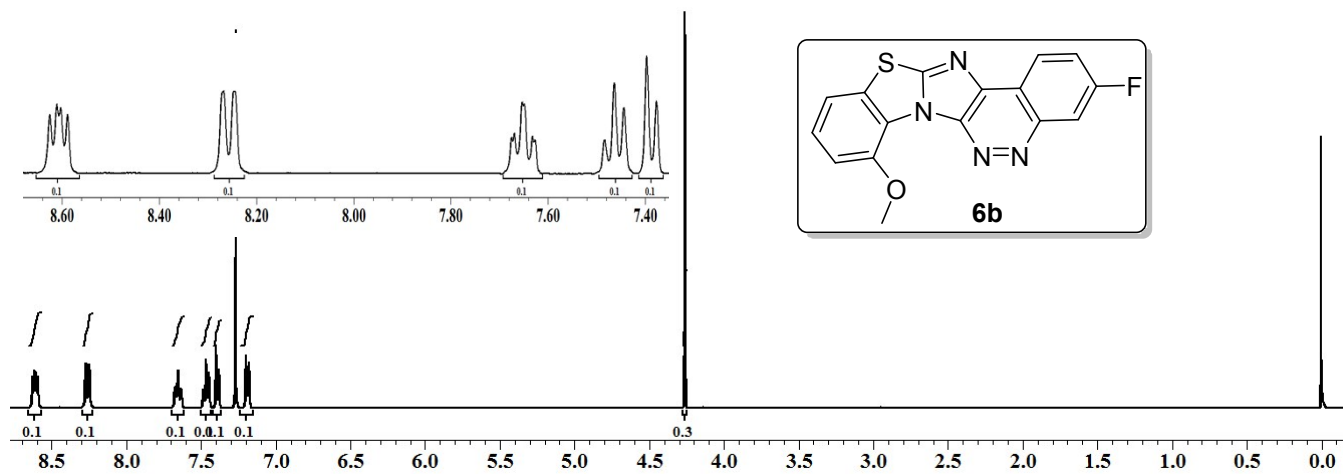
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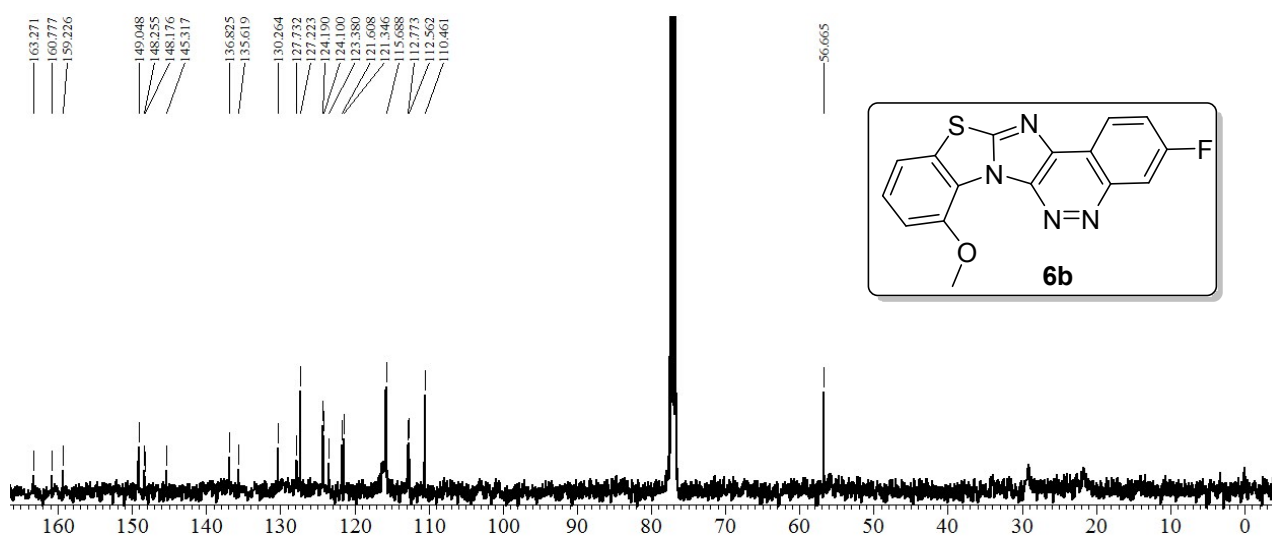
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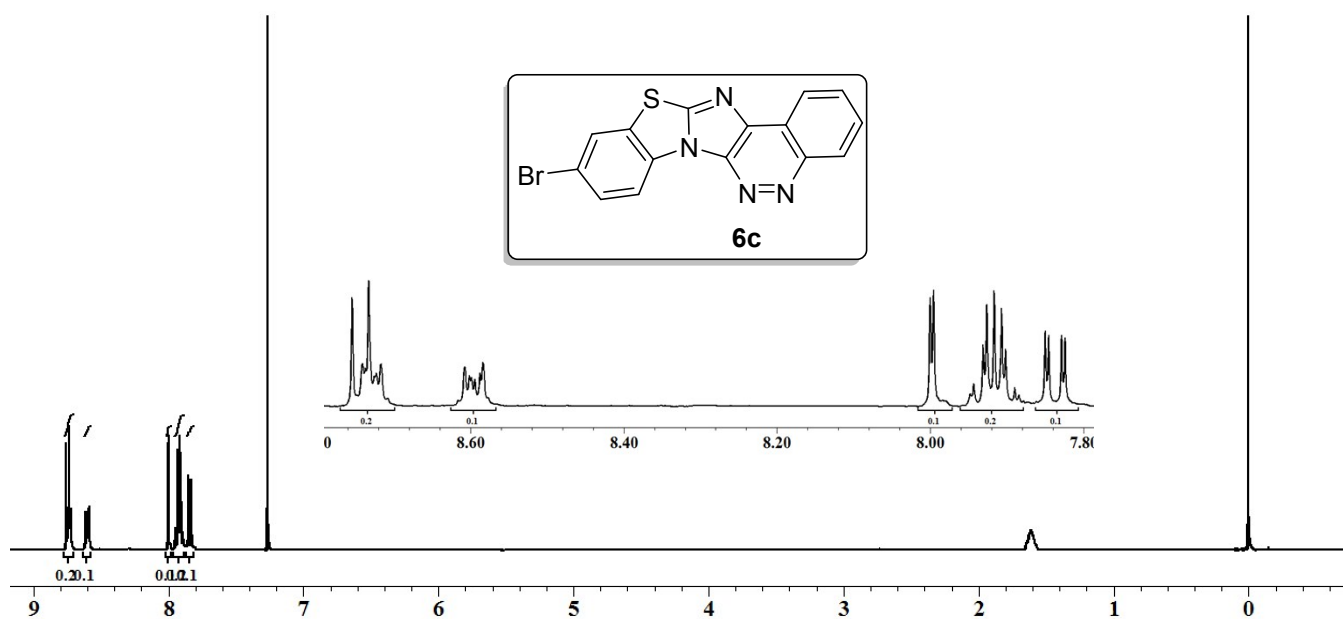
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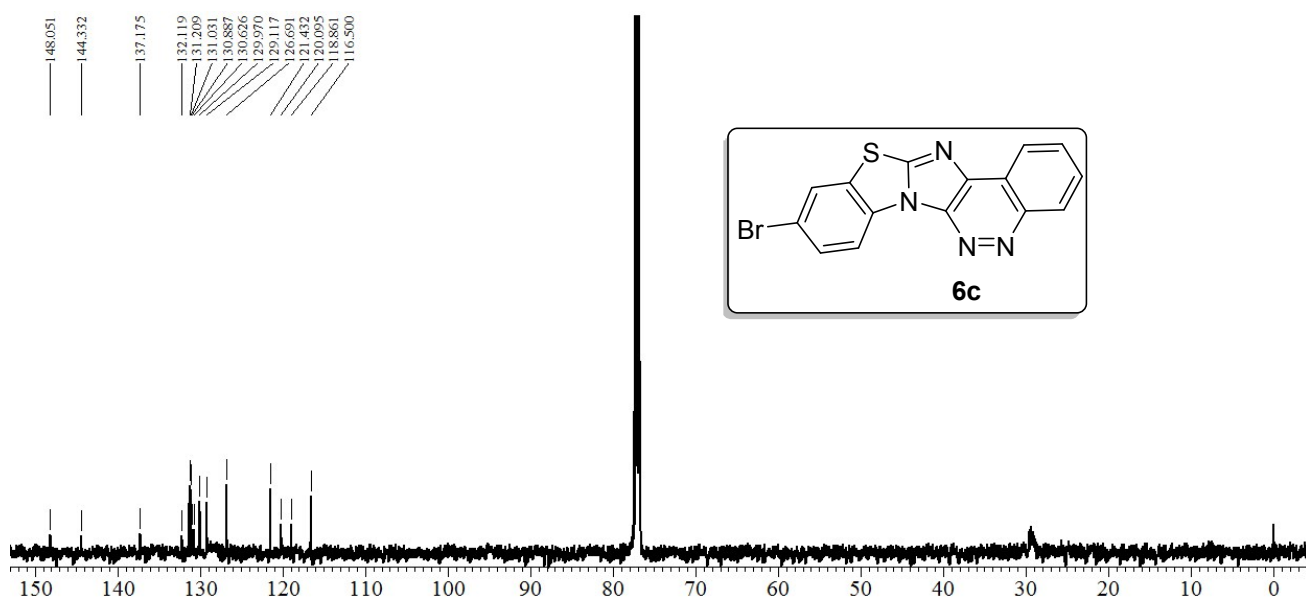
¹H NMR of **6b** (400 MHz, CDCl₃)



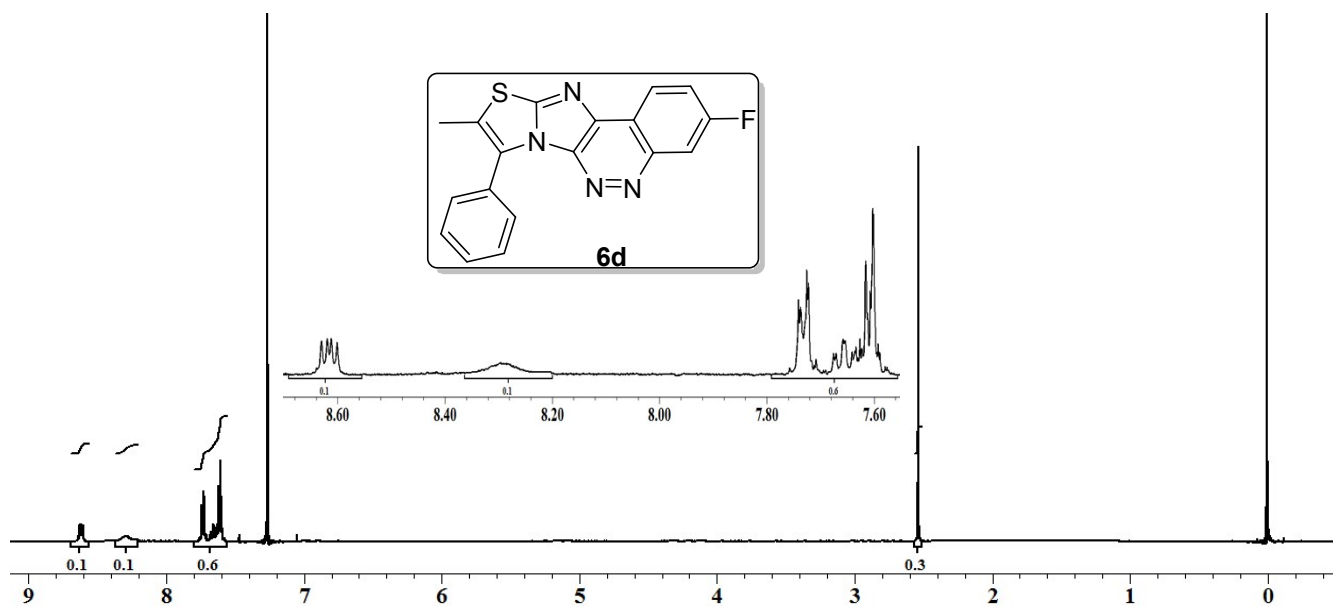
¹³C NMR of **6b** (100 MHz, CDCl₃)



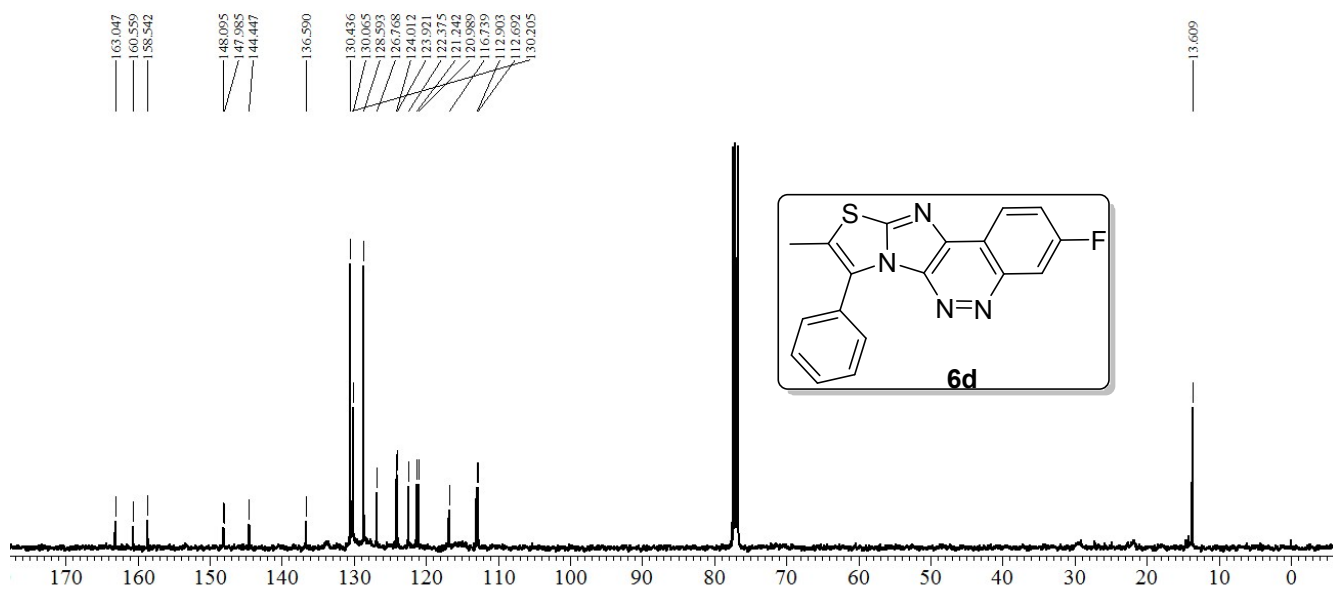
^1H NMR of **6c** (400 MHz, CDCl_3)



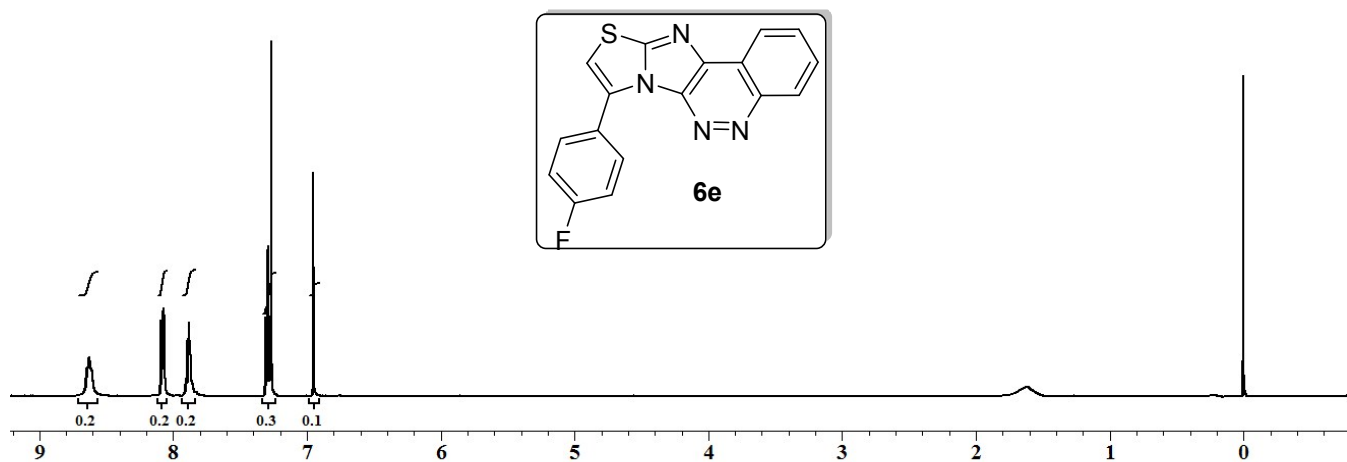
^{13}C NMR of **6c** (125 MHz, CDCl_3)



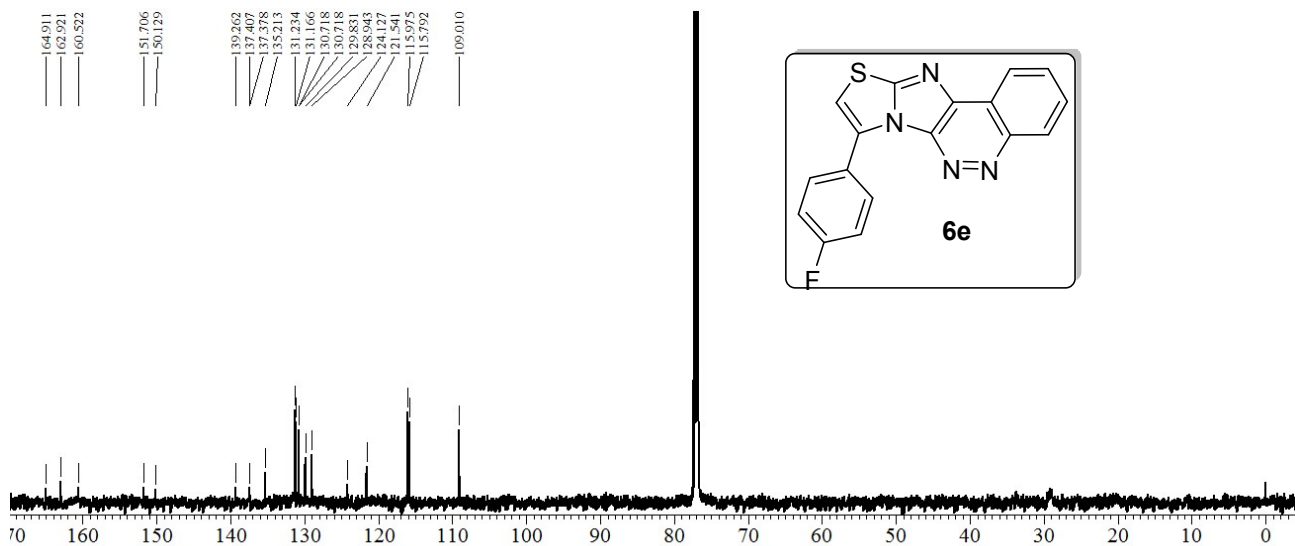
¹H NMR of **6d** (500 MHz, CDCl₃)



¹³C NMR of **6d** (100 MHz, CDCl₃)



¹H NMR of **6e** (500 MHz, CDCl₃)



¹³C NMR of **6e** (125 MHz, CDCl₃)