

## Supplementary Information

### Ionophore silica-coated magnetite nanoparticles as a recyclable heterogeneous catalyst for one-pot green synthesis of 2,4,5-trisubstituted imidazoles

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#### Copy of <sup>1</sup>H NMR, <sup>13</sup>C NMR & FT IR spectrums of the synthesized compounds:

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2,4,5-triphenyl-1H-imidazole (**2a**)

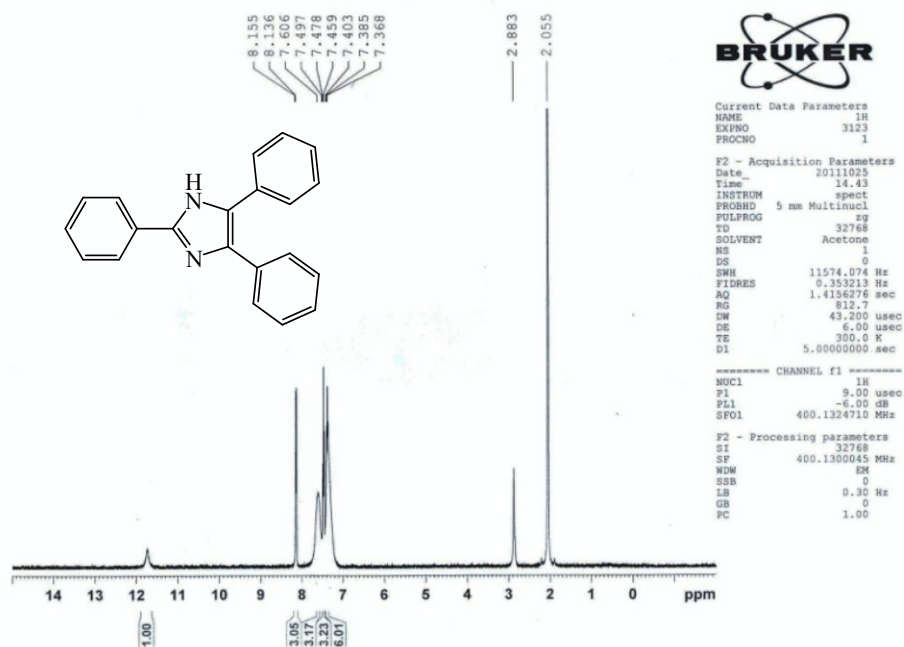


Figure 1. <sup>1</sup>H NMR spectrum of **2a**

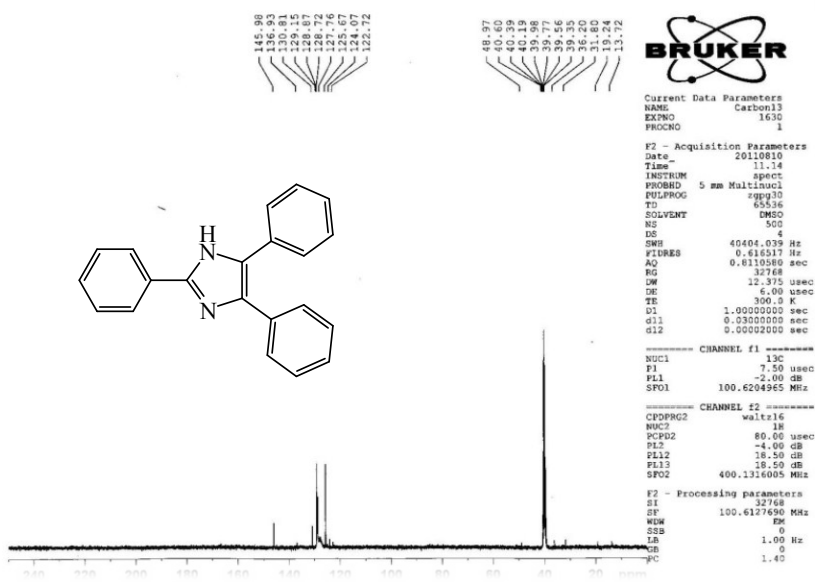


Figure 2. <sup>13</sup>C NMR spectrum of **2a**

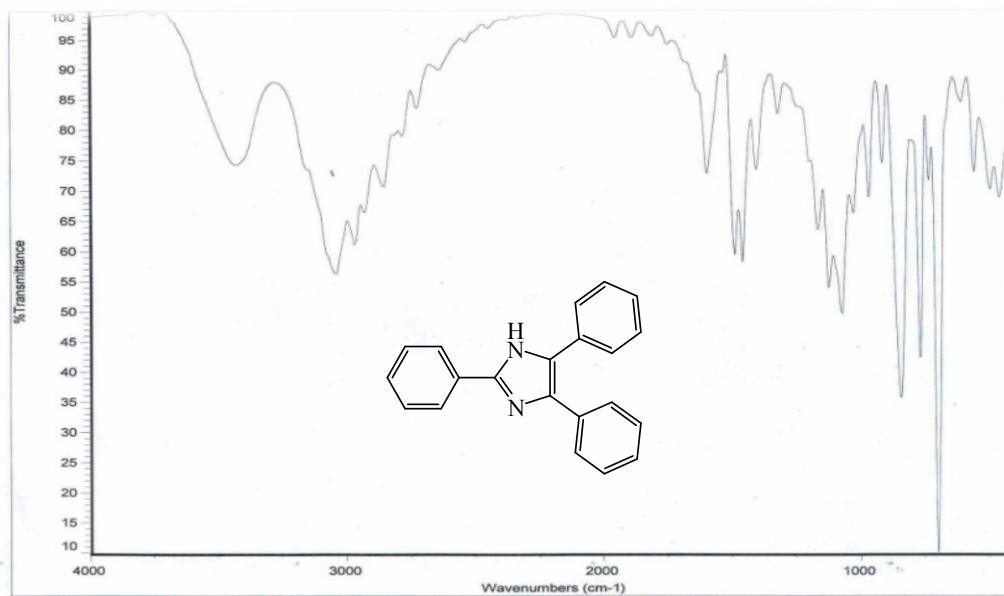


Figure 3. FT-IR spectrum of 2a

2-(3-methoxy phenyl)-4,5-di phenyl-1H-imidazole (**2b**)

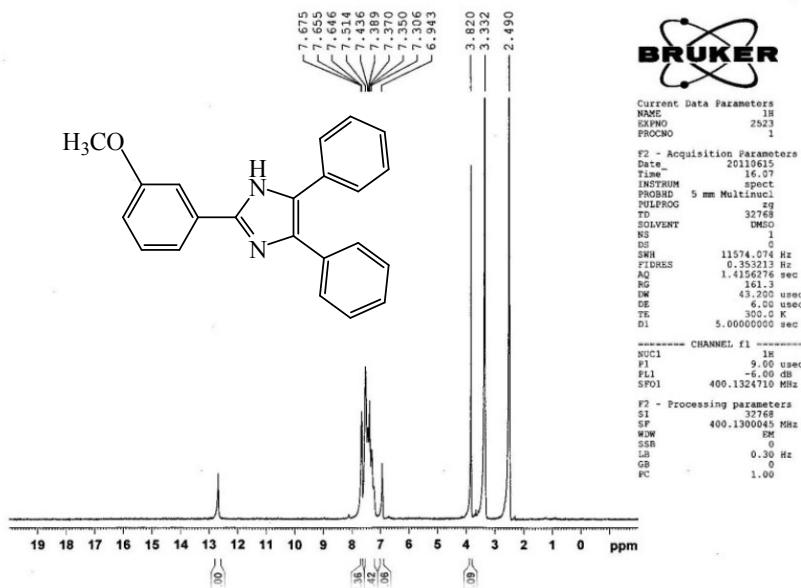


Figure 4. <sup>1</sup>H NMR spectrum of 2b

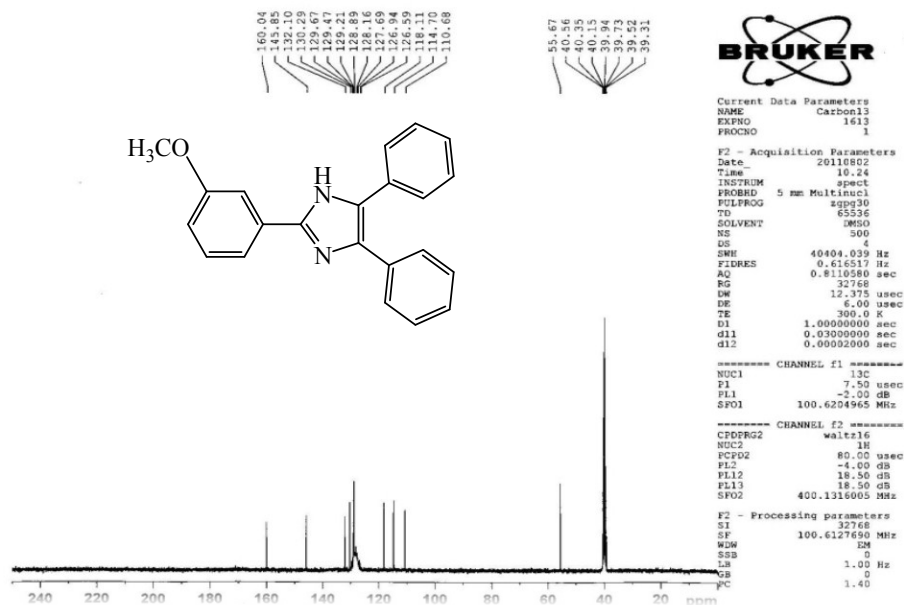


Figure 5. <sup>13</sup>C NMR spectrum of 2b

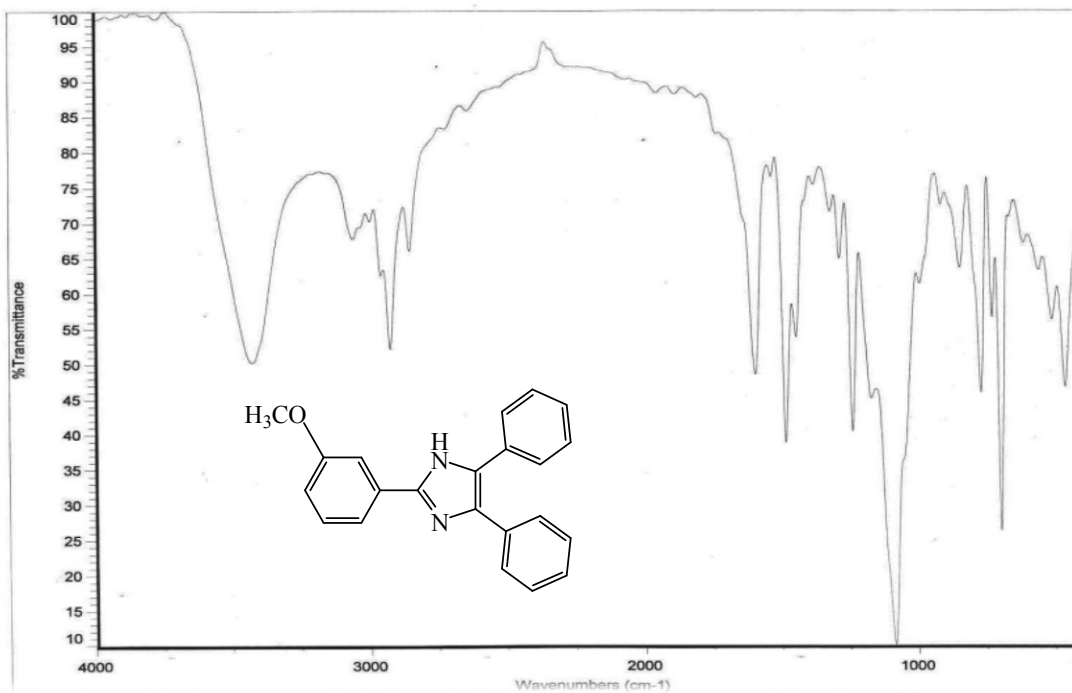


Figure 6. FT-IR spectrum of 2b

2-(3,4-dimethoxyphenyl)-4,5-diphenyl-1H-imidazole (**2c**)

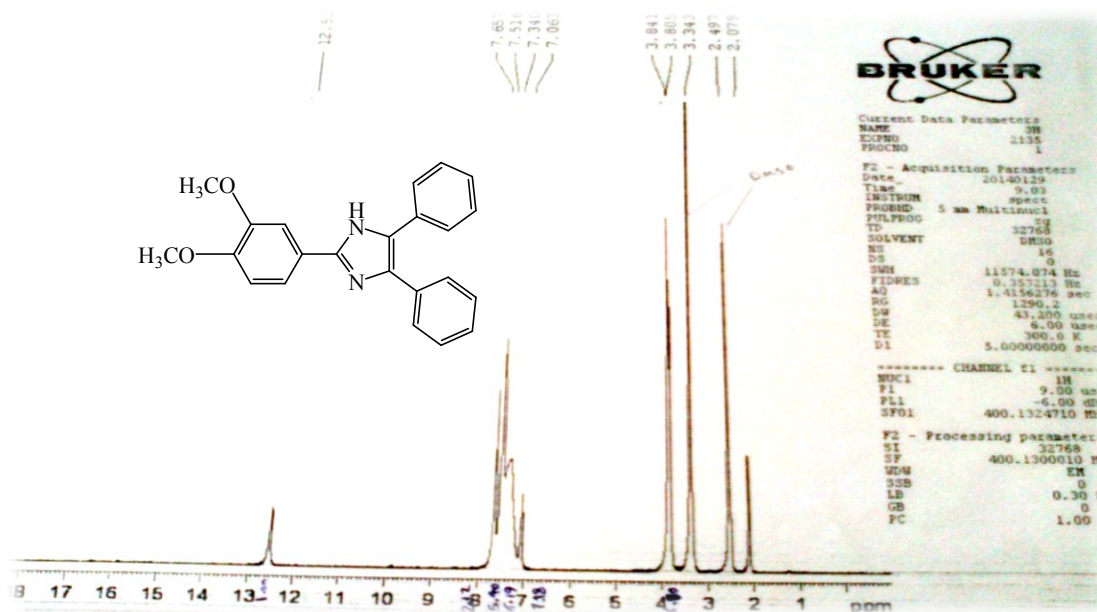


Figure 7. <sup>1</sup>H NMR spectrum of **2c**

2-(4-methoxy phenyl)-4,5-diphenyl-1H-imidazole (**2d**)

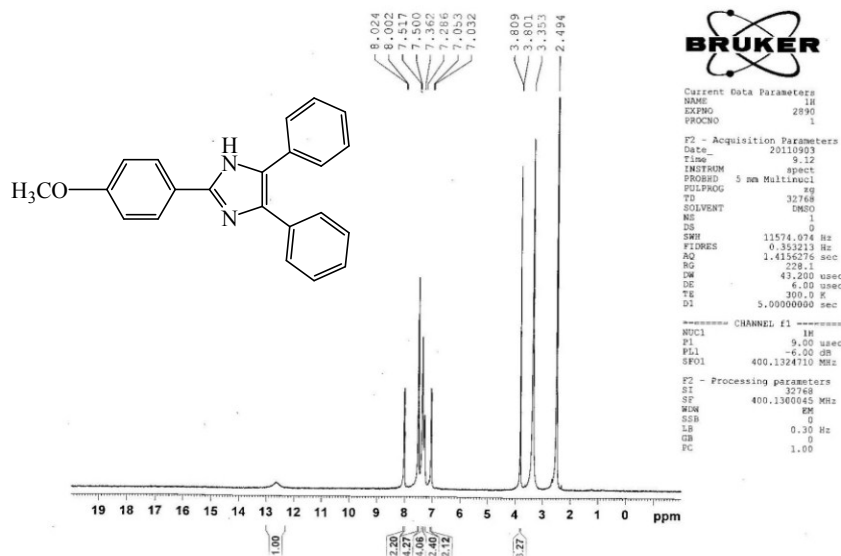


Figure 8. <sup>1</sup>H NMR spectrum of **2d**

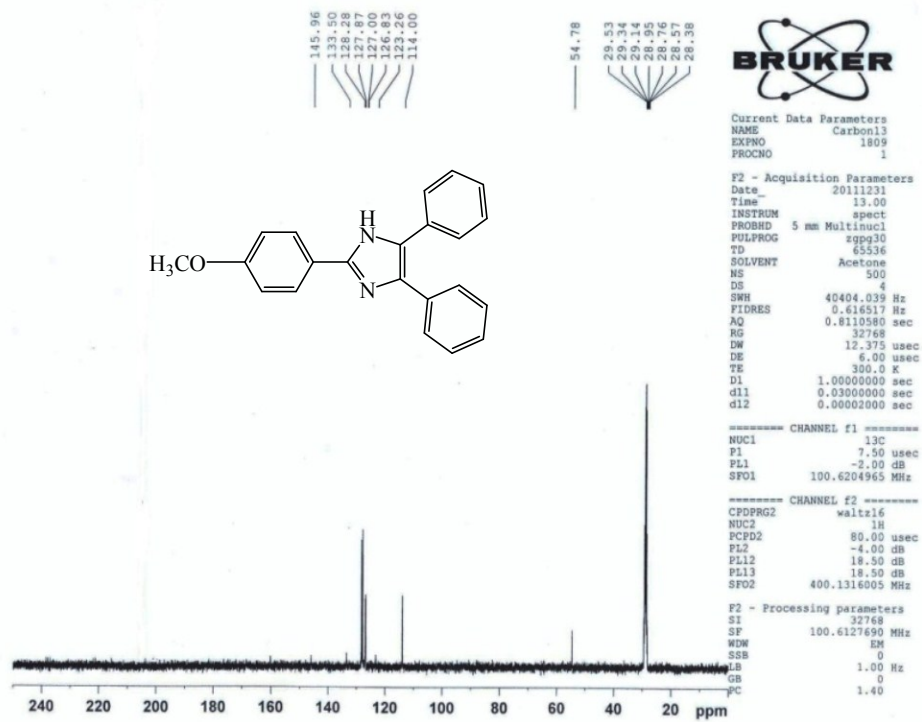


Figure 9. <sup>13</sup>CNMR of 2d

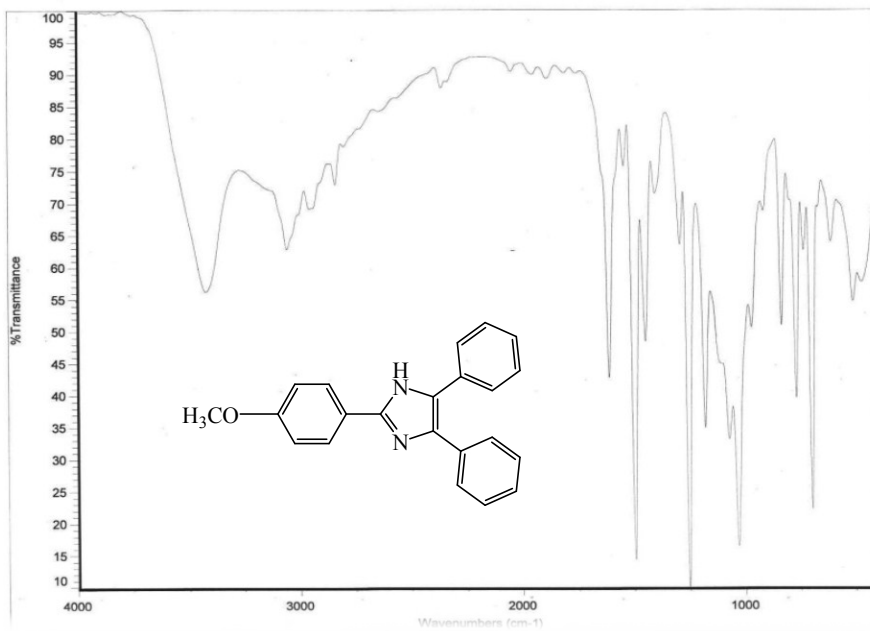


Figure 10. FT IR spectrum of 2d

2-(2,3-dimethoxyphenyl)-4,5-diphenyl-1H-imidazole (2e)

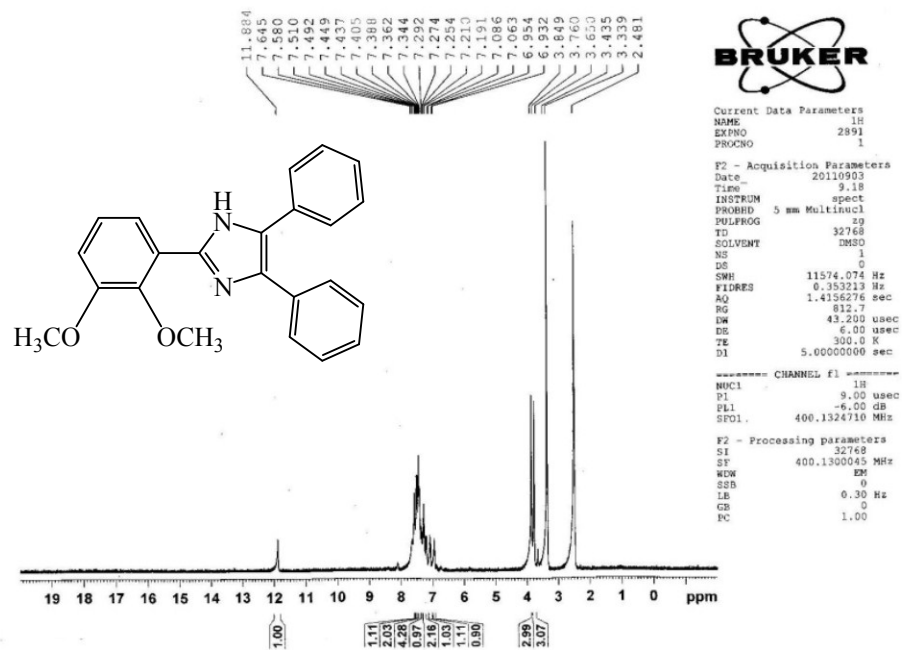


Figure 11. <sup>1</sup>H NMR spectrum of 2e

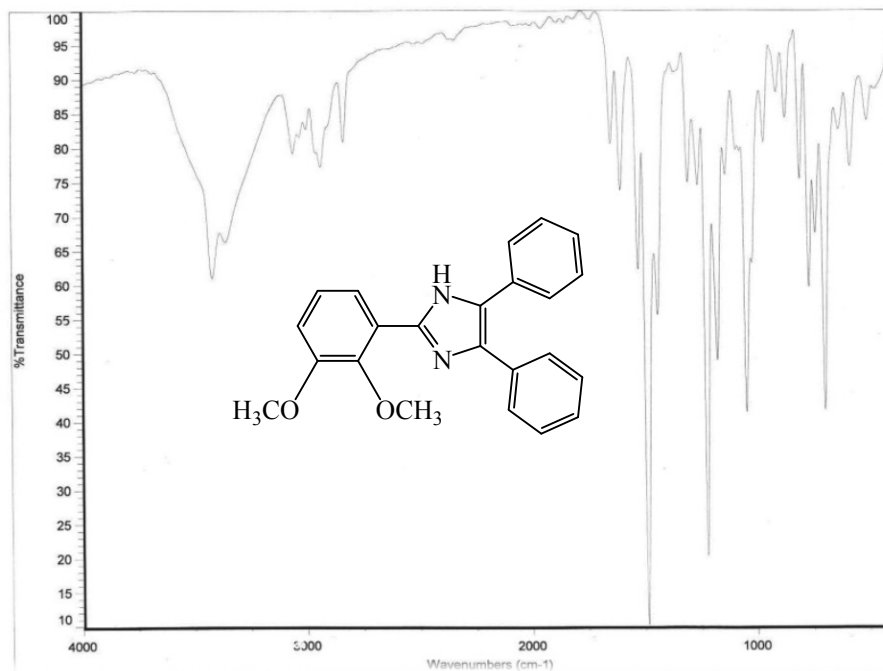


Figure 12. FT IR spectrum of 2e

2-(4-methylphenyl)-4,5-diphenyl-1H-imidazole (2f)

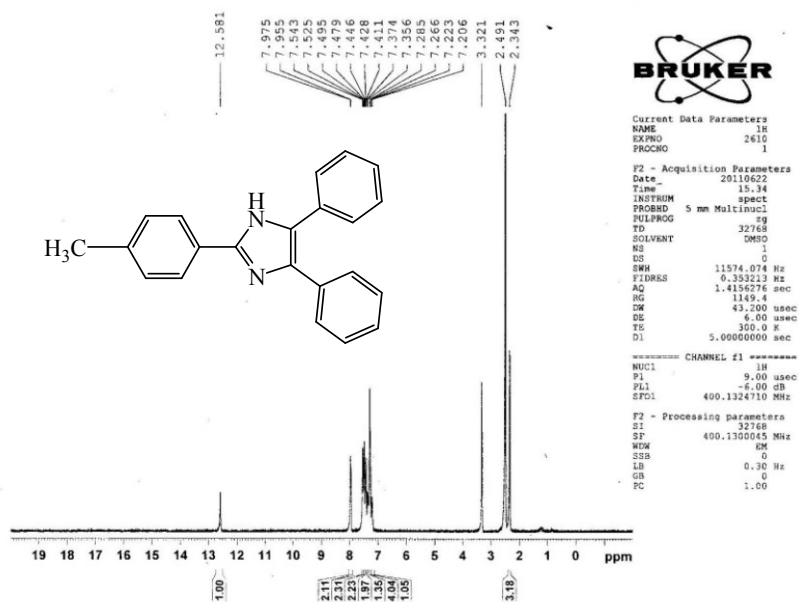


Figure 13. <sup>1</sup>H NMR spectrum of 2f

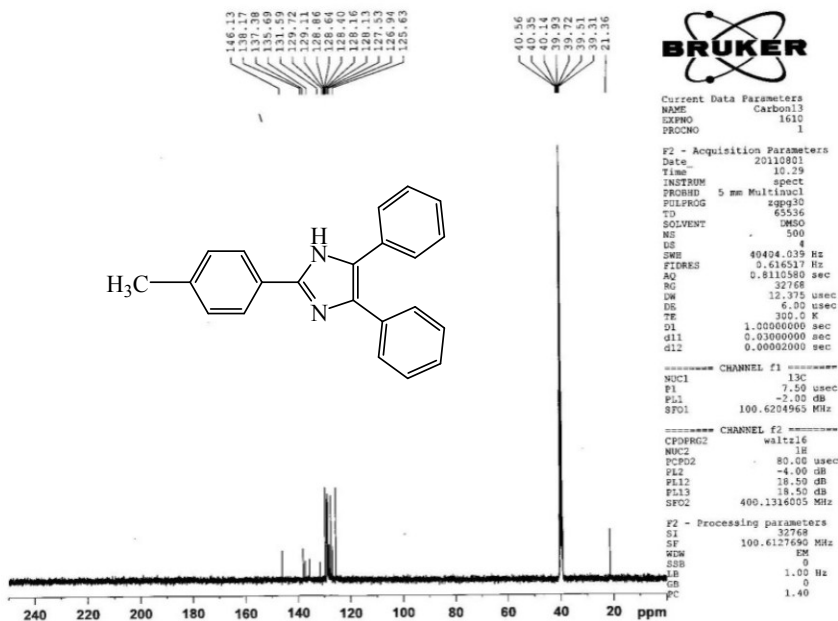


Figure 14. <sup>13</sup>C NMR of 2f



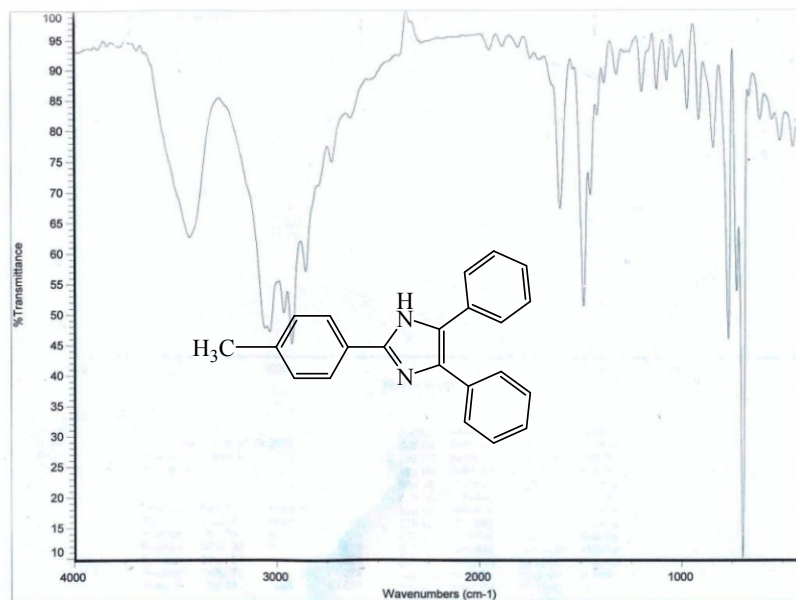


Figure 15. FT IR spectrum of 2f

2-(4,5-diphenyl-1H-imidazole-2-yl) phenol (**2g**)

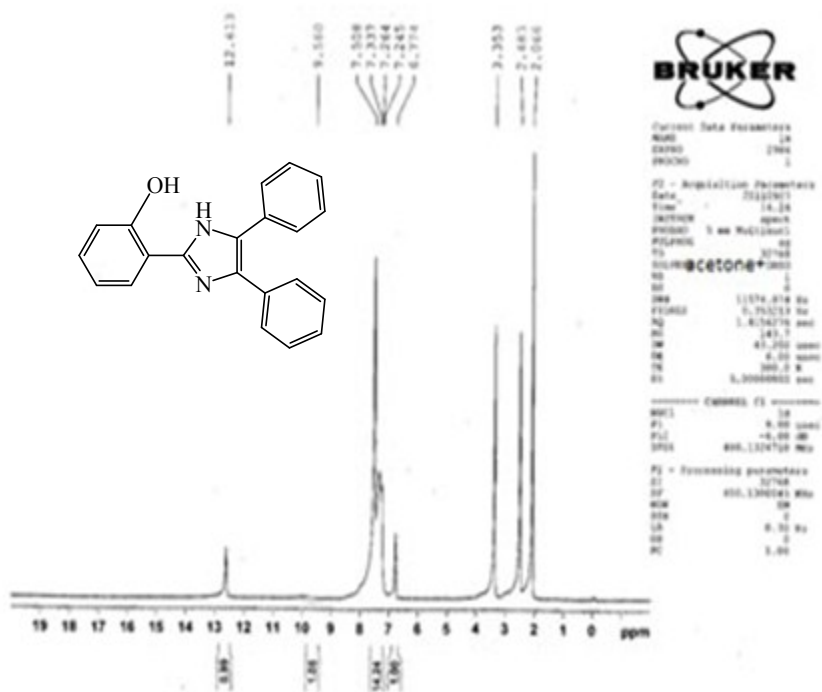


Figure 16. <sup>1</sup>H NMR spectrum of 2g

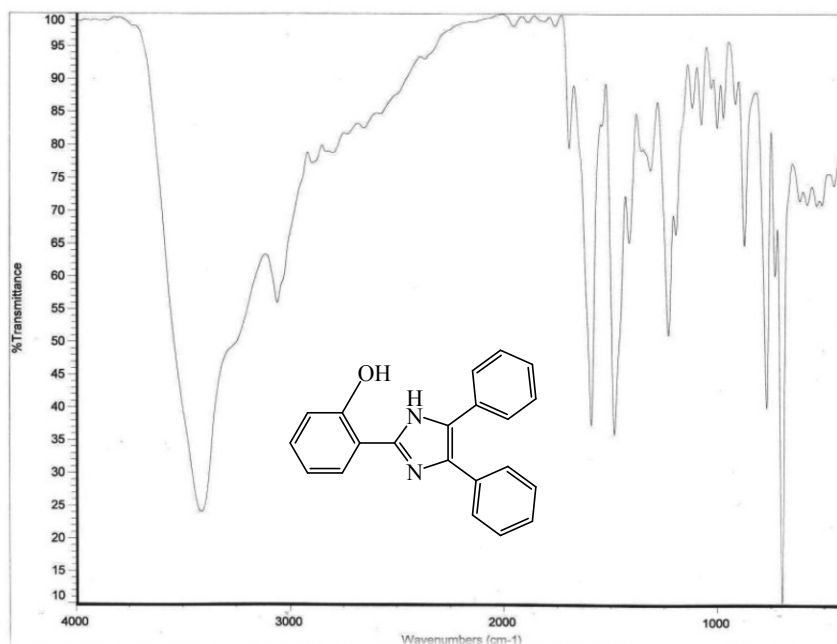


Figure 17. FT IR spectrum of 2g

4-(4,5-diphenyl-1H-imidazole-2-yl) phenol (**2h**)

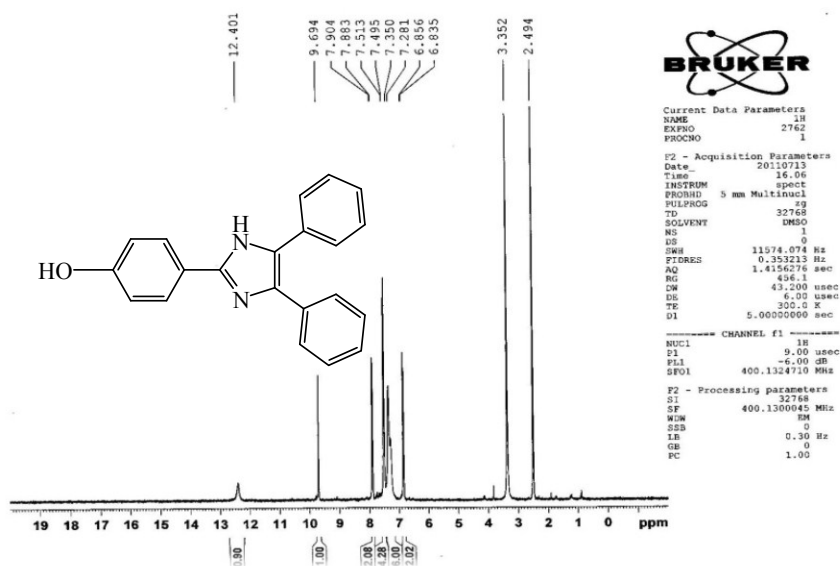


Figure 18. <sup>1</sup>H NMR spectrum of 2h

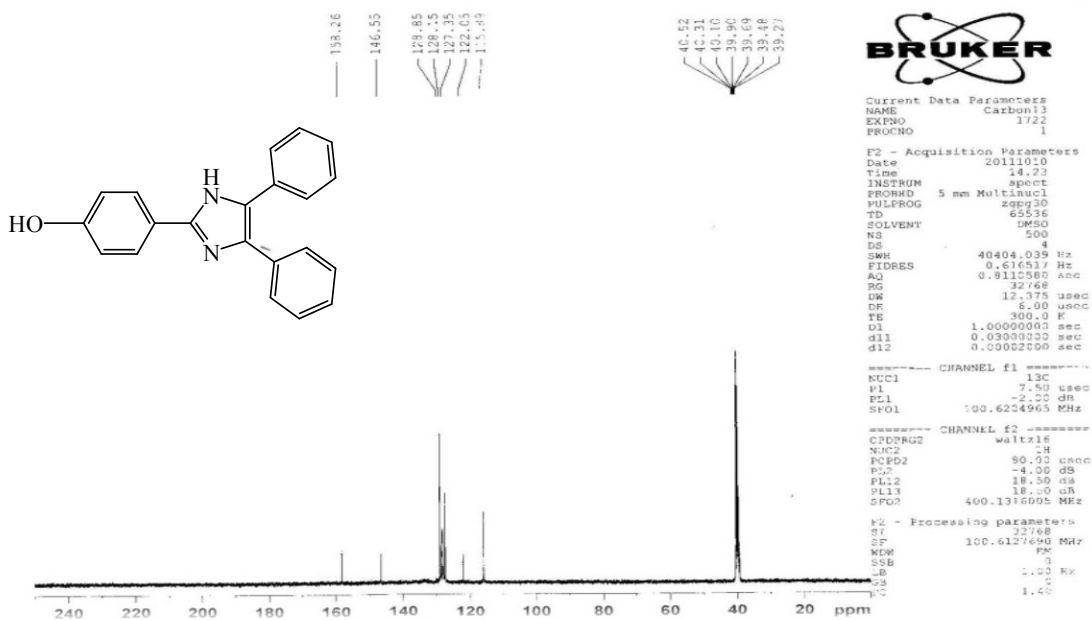


Figure 19. <sup>13</sup>CNMR spectrum of 2h

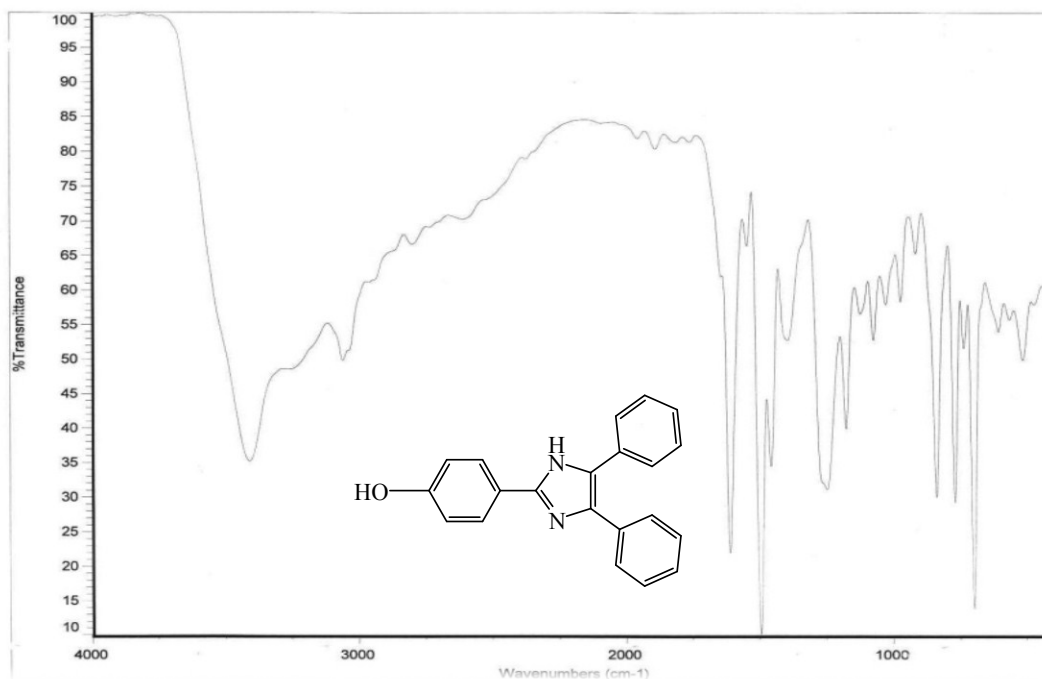


Figure 20. IR spectrum of 2h



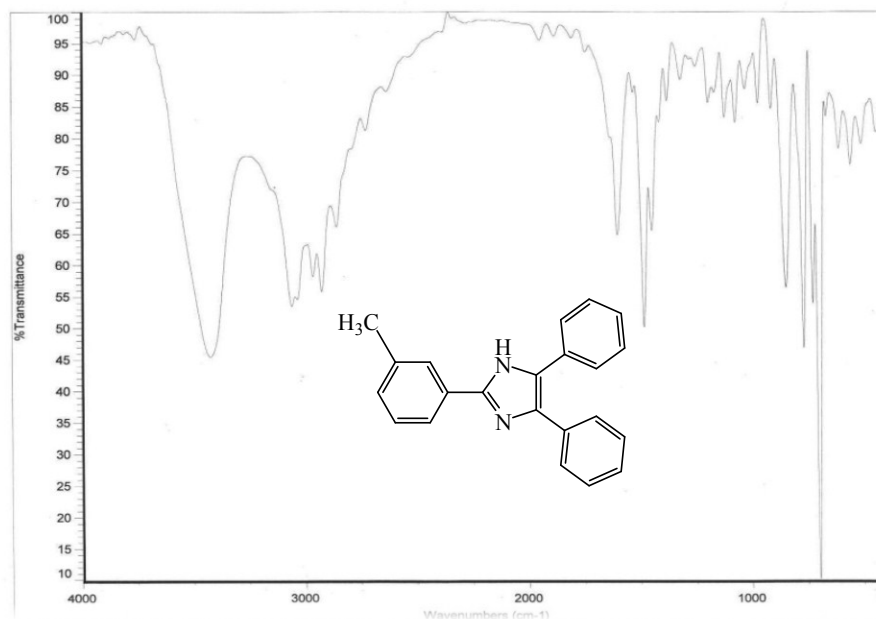


Figure 23. FT IR spectrum of 2i

2-(4-isopropyl phenyl)-4,5-diphenyl-1H-imidazole (2j)

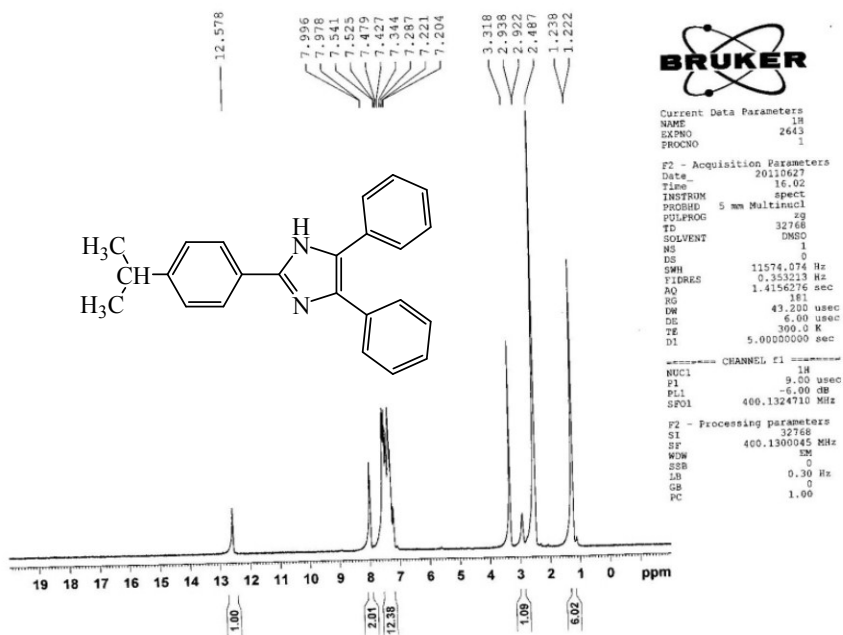


Figure 24. <sup>1</sup>H NMR spectrum of 2j

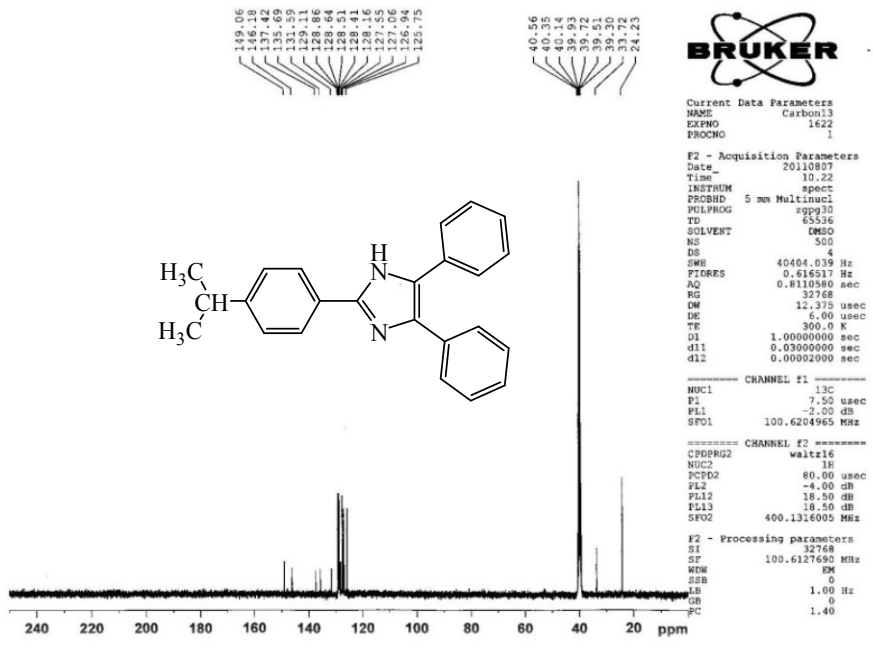


Figure 25. <sup>13</sup>CNMR spectrum of 2j

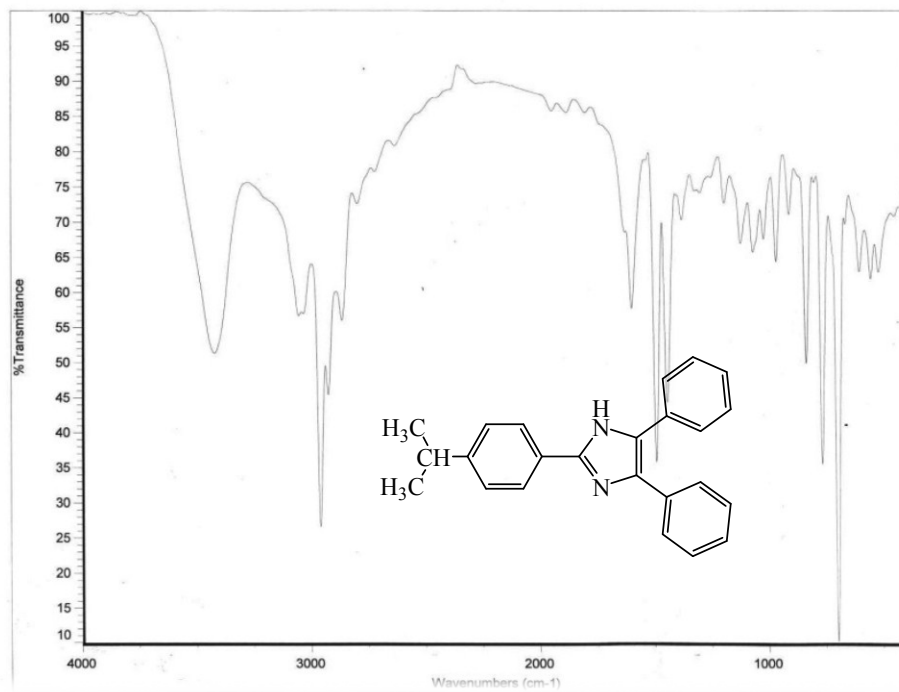


Figure 26. FT IR spectrum of 2j

2-(2-chlorophenyl)-4,5-diphenyl-1H-imidazole (2k)

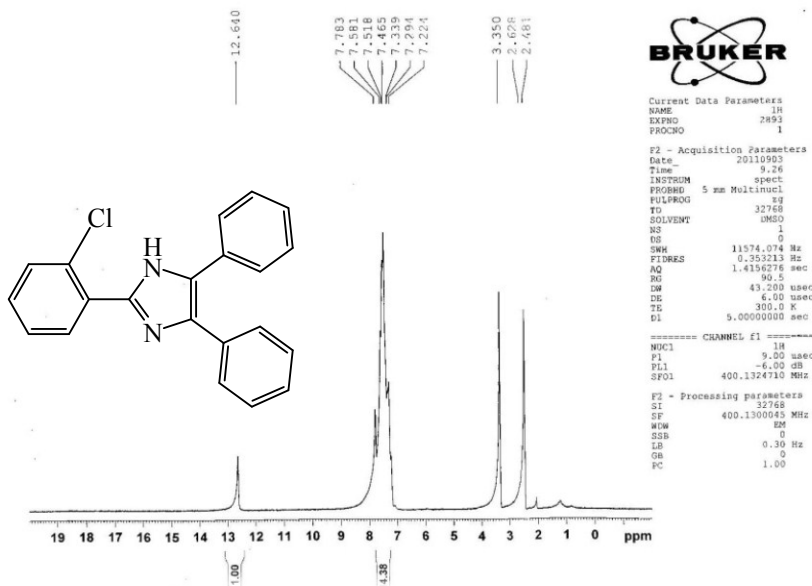


Figure 27. <sup>1</sup>H NMR spectrum of 2k

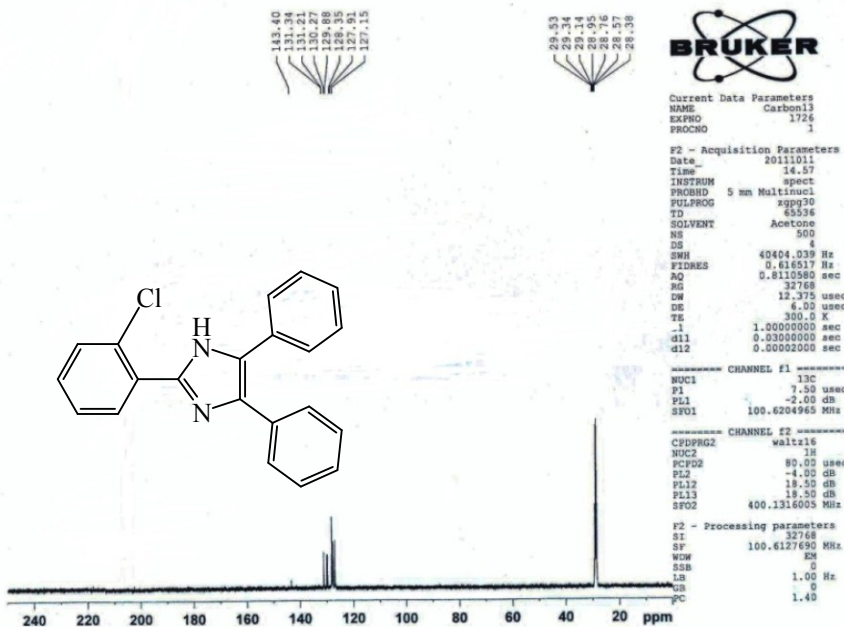


Figure 28. <sup>13</sup>C NMR spectrum of 2k

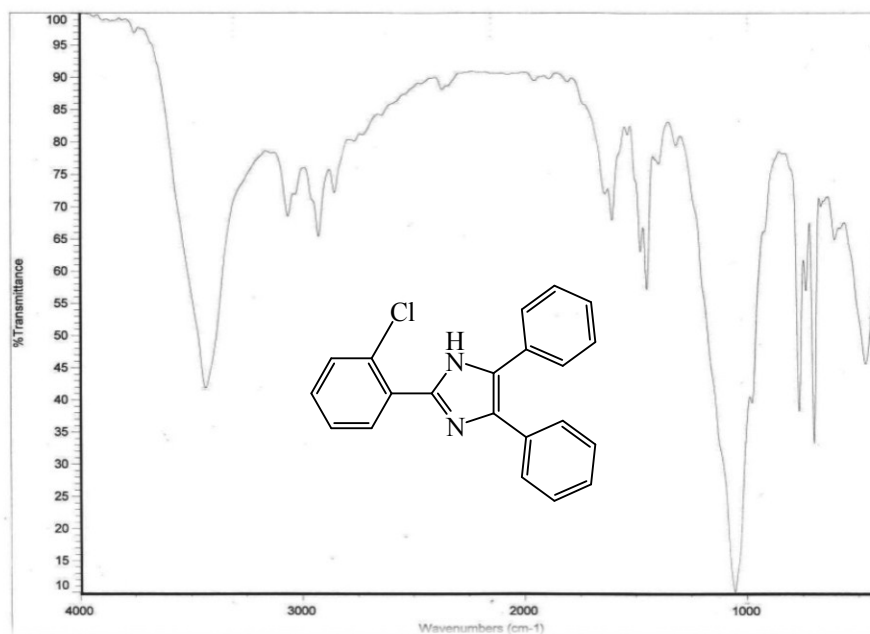


Figure 29. FT IR spectrum of 2k

2-(2,3-dichlorophenyl)-4,5-diphenyl-1H-imidazole (2l)

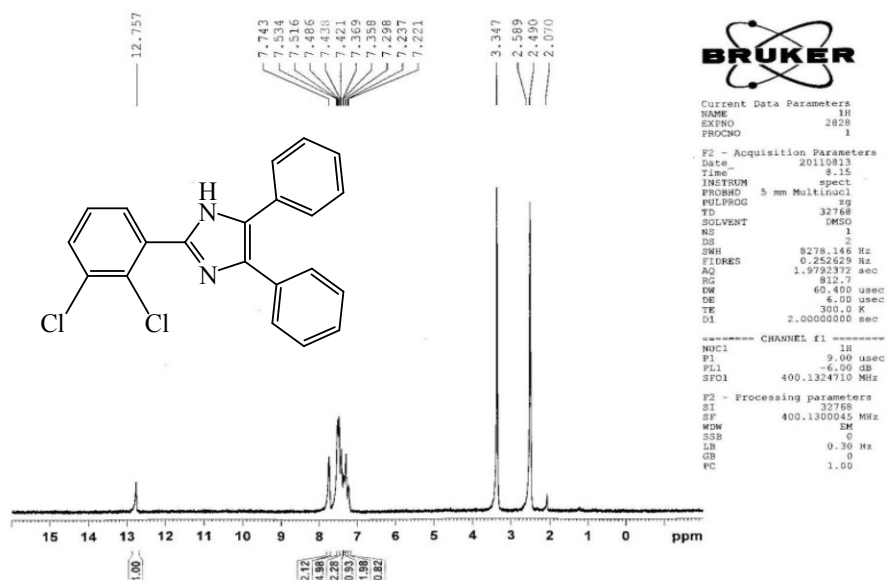


Figure 30. <sup>1</sup>H NMR spectrum of 2l



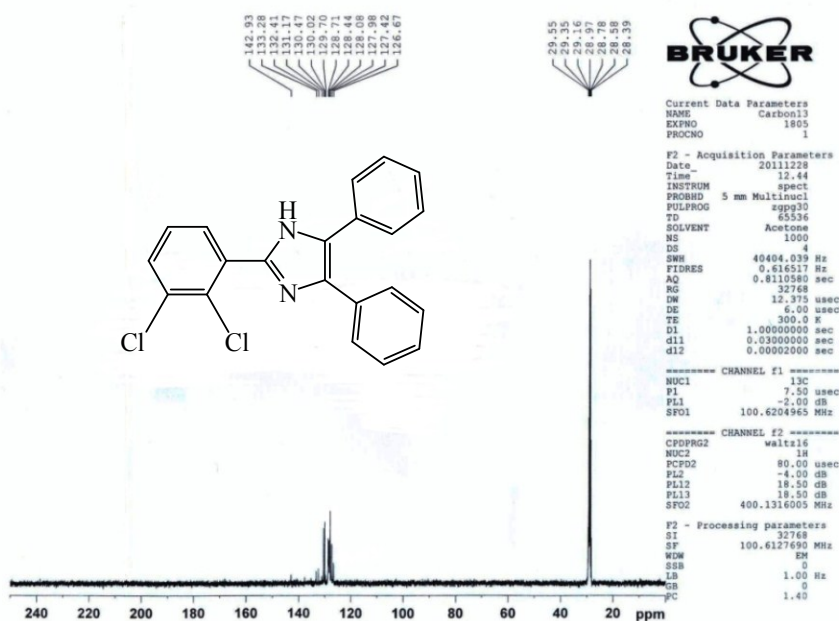


Figure 31. <sup>13</sup>CNMR spectrum of 2I

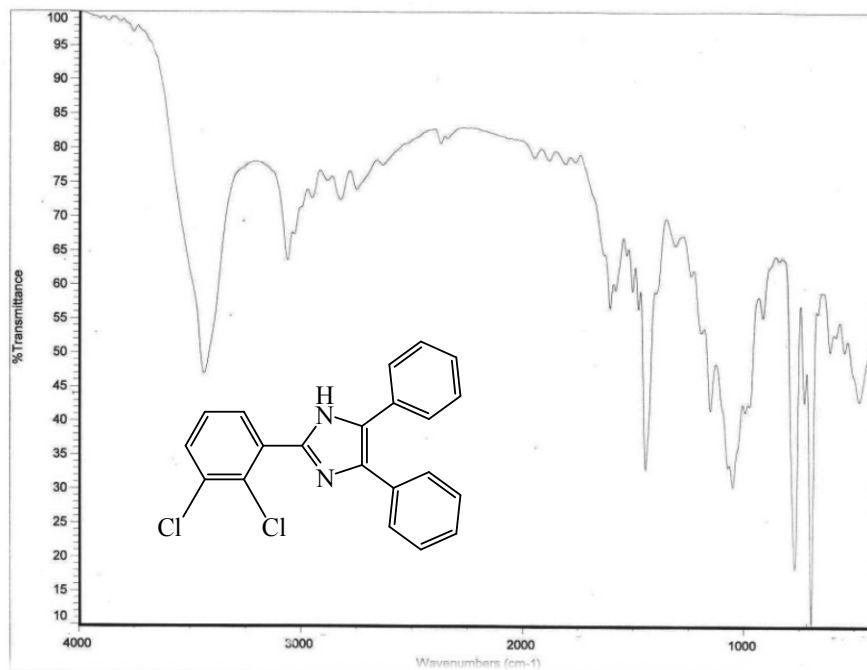


Figure 32. FT IR spectrum of 2I

2-(4-chlorophenyl)-4,5-diphenyl-1H-imidazole (**2m**)

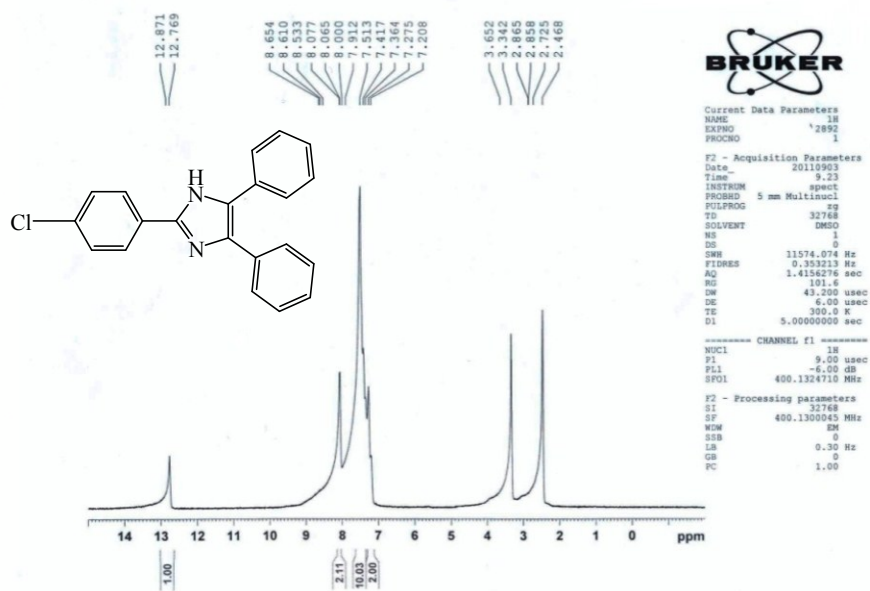


Figure 33. <sup>1</sup>H NMR spectrum of **2m**

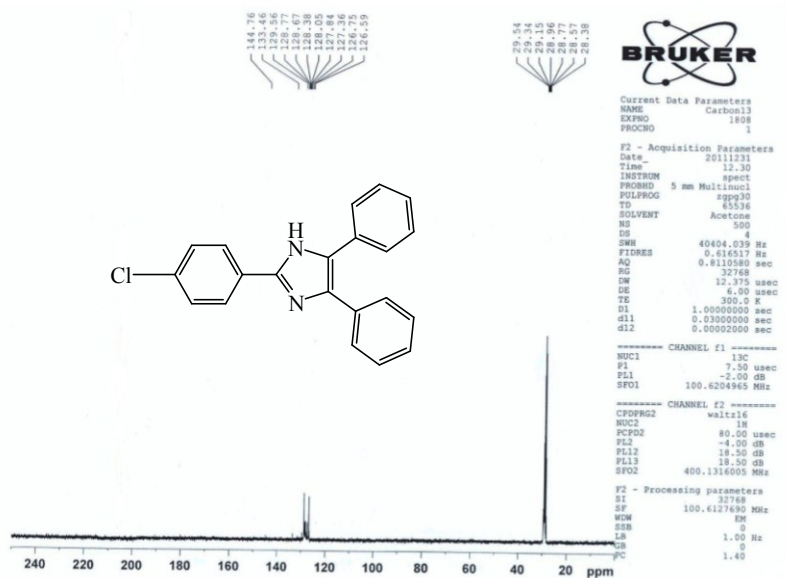


Figure 34. <sup>13</sup>C NMR spectrum of **2m**

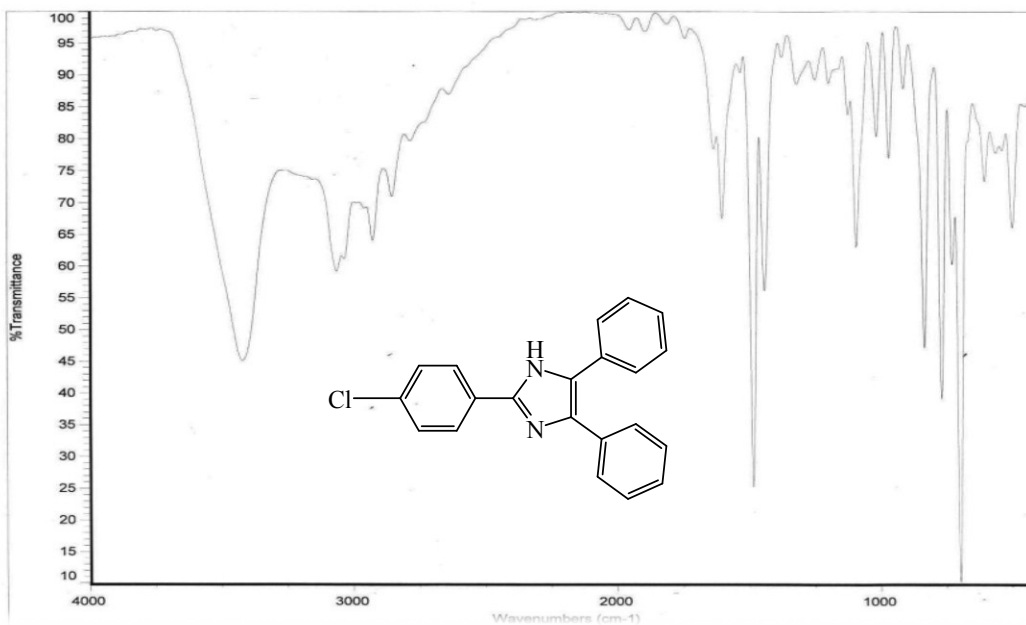


Figure 35. FT-IR spectrum of 2m

2-(2,4-dichlorophenyl)-4,5-diphenyl-1H-imidazole (2n)

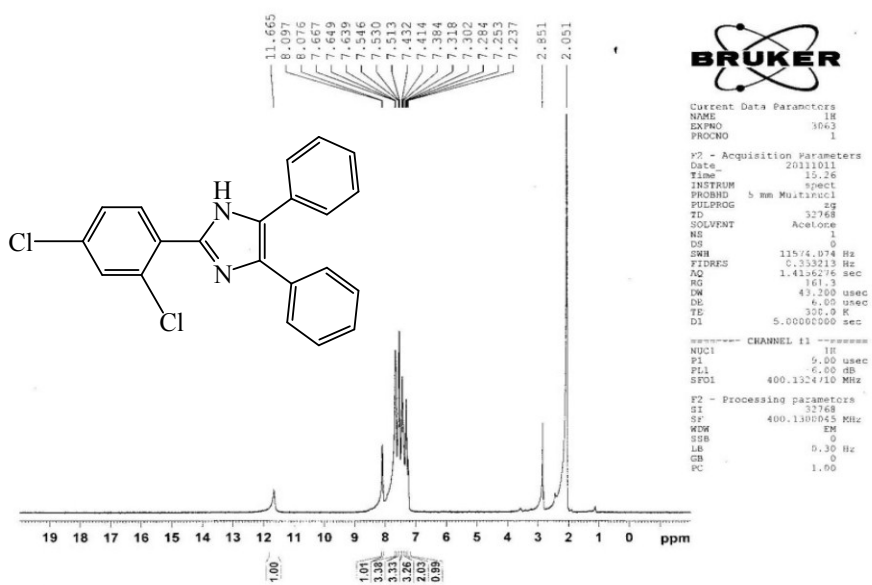


Figure 36. <sup>1</sup>H NMR spectrum of 2n