Supplementary Material

Synthesis of high purity pyridine-phenolic ligands for metal ion optical sensors

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1. Synthesis of Methoxyphenyl-pyridyl Derivatives from the Literature with Characterization Data

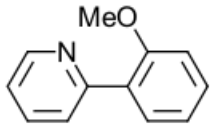
Nuclear Magnetic Resonance (NMR) spectra were measured at 300 MHz (^{1}H) and 75 MHz (^{13}C) on a Bruker Avance 300 Ultrashield spectrometer. All NMR spectra were recorded in deuterated solvents with reference to tetramethylsilane or residual protonated solvent. Signals are described in terms of chemical shifts, multiplicity, intensity, coupling constants and assignment. The following abbreviations have been used; s (singlet), d (doublet), t (triplet), q (quartet), m (multiplet), app (apparent) or b (broad). While coupling constants and COSY experiments were used to assign proton spectra.

Melting points were determined on a Mel-Temp-II apparatus and are uncorrected. Microanalyses was performed by the University of California, Berkely. Infrared spectra were recorded using ATR diamond cell with a Thermo Nicolet Avatar 360-FTIR spectrophotometer with absorption bands recorded in terms of frequency (ν_{max}) in cm^{-1}. Electronic spectra were recorded using a HP 8453 Diode Array spectrophotometer and are reported in terms of wavelength (λ) in nm.

A DryDisk® (https://www.biotage.com/sds) was used to dry organic fractions extracted from aqueous solutions.

The Table SI 1 below lists the synthetic papers that report, the preparation, isolation, with experimental and characterization data for (2'-hydroxyphenyl)-2-pyridine **8a**. In some papers, the compound was synthesized and reported without any experimental or characterization data. This is similar for the other compounds **7a-g** and **8a-g**. In some cases, there are significant variation between characterization that the authors have attempted to clarify by capturing information in the tables below.

Table SI 1. Summary of synthetic methods to 2-(2'-methoxyphenyl)pyridine **7a**



7a

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Clear colorless liquid, 5.49 g, 94 %	bp 160-2 °C/1 Torr, ^{1}H and ^{13}C NMR, IR and microanalysis	High Yield and Purity Ligand Synthesis
2019	Oliveira[1]	Yellow oil, 35.5 mg, 8%	^{1}H and ^{13}C NMR	Light driven chemical functionalization
2019	Cai[2]	White solid, 74.9 mg, 81%	^{1}H and ^{13}C NMR, GCMS	C-H Oxidation Transformations
2017	Haung[3]	Colorless oil, 11 mg, 30%	^{1}H NMR	C-H insertion Chemistry with Catalyst
2017	Ribas[4]	Colorless oil, 14.4 mg, 83%,	^{1}H and HRMS	C-H insertion/oxidation with catalyst
2015	Lei[5]	No mention of color, 41%	^{1}H and ^{13}C NMR	C-H Insertion Chemistry with catalyst

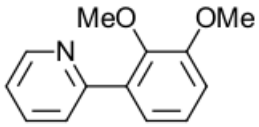
Table SI 1. Continued

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2014	Kuang[6]	Yellow oil, 53%	^{1}H NMR only	C-H Insertion Chemistry without catalyst
2014	Giri[7]	Pale yellow oil, 87.1 mg, 47%	^{1}H and ^{13}C NMR, HRMS	C-H Insertion Chemistry with catalyst
2014	Zhou[8]	Colorless oil, 85 mg, 92%	^{1}H NMR only	Coupling Chemistry
2013	Nicholas[9]	Clear liquid, 7.74 g, 77%	bp 105 °C, 0.15 mmHg, ^{1}H and ^{13}C NMR, MS	Biomedical Antagonist
2012	Nakamura[10]	Yellow liquid, 90%	^{1}H and ^{13}C NMR	Coupling Chemistry
2012	Ong[11]	No color, 60%	^{1}H and ^{13}C NMR, HRMS	Coupling Chemistry
2012	Burke[12]	Yellow oil, 142 mg, 75%	^{1}H and ^{13}C NMR, HRMS	Coupling Chemistry
2011	Langer[13]	Colorless viscous liquid,233 mg, 63%	^{1}H and ^{13}C NMR, IR, HRMS	Diels-Alder access to Heterocycles
2010	Luzung[14]	Yellow oil, 1823 mg, 97 %	^{1}H and ^{13}C NMR, HRMS	Coupling Chemistry
2010	Ackermann[15]	Colorless liquid, 144 mg, 78%	^{1}H and ^{13}C NMR, HRMS and MS	Coupling Chemistry
2010	Mongin[16]	Colorless liquid, 33%	^{1}H and ^{13}C NMR	Coupling Chemistry
2009	Mongin[17]	Colorless oil, 0.43 g 64%	^{1}H and ^{13}C NMR	Coupling Chemistry
2009	Gosmini[18]	No color, 71%	^{1}H and ^{13}C NMR, MS	Coupling Chemistry
2009	Hu[19]	Colorless, 45%	^{1}H and ^{13}C NMR	Coupling Chemistry
2006	Crich[20]	Colorless oil, 36%	^{1}H NMR	Coupling Chemistry
2006	Wan[21]	Yellowish oil, 550 mg, 99 %	^{1}H and ^{13}C NMR	Photochemistry
2002	Mongin[22]	No color, 79%	^{1}H, and ^{13}C NMR, IR, microanalysis	Coupling Chemistry
2002	Hofp[23]	No color, 5.27 g, 28%	^{1}H and ^{13}C NMR, MS	Synthesis of Novel Heterocycles
2001	Yonezawa[24]	Yellow oil, 4.38 g, 58%	Chromatography ^{1}H and ^{13}C NMR, IR	Chemical transformation for synthesis methodology
1998	Tanaka[25]	Light brown oil, 8.84 g, 100%, No ref	No chromatography ^{1}H NMR, IR, MS	Ligands for electroluminescent devices

Table SI 1. Continued

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
1994	Grabowska[26]	Colorless oil, 3.3 g, 89%	^{1}H NMR, MS, IR, microanalysis	Excited Internally Hydrogen-bonded Systems with One Proton Transfer Reaction Site
1992	Ward[27]	Colourless oil, ~4 g, ~80%, No ref	Chromatography ^{1}H NMR and MS, microanalysis	Ligands used to form co-ordination complexes with Ru
1986	Nilsson[28]	Colorless oil, 0.63 g, 76%	bp 96-99 °C, ^{1}H NMR and microanalysis	Aryl Coupling Chemistry
1985	Terashima[29]	Yellow needles 67%, No ref	mp 155.5-156 °C (picrate)	Chemical synthesis to make 2-aryl pyridine compounds
1983	Waser[30]	No color, 11,7 g, 3 1,7%),	bp 92-95 °C /0.01 Torr, ^{1}H NMR and IR	Metabolites for bio-inhibition studies

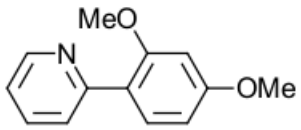
Table SI 2. Summary of synthetic methods to 2-(2',3'-dimethoxyphenyl)pyridine **7b**



7b

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Colorless clear liquid, which formed a white crystalline solid 2.72 g, 92%	bp 143-5 °C/1 Torr and then mp 60 °C, ^{1}H and ^{13}C NMR and microanalysis	High Yield and Purity Ligand Synthesis
2005	Misawa[31]	26 mg, 26%	MS, HRMS, ^{1}H and ^{13}C NMR	Bioderived Heterocyclic Diols
1985	Terashima[29]	Yellow needles, 33%	mp 156-159.5 °C, microanalysis	Chemical synthesis to make 2-aryl pyridine compounds

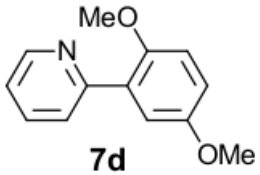
Table SI 3. Summary of synthetic methods to 2-(2',4'-dimethoxyphenyl)pyridine **7c**



7c

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Colorless clear liquid, 2.78 g, 93 %	bp 165-7 °C/1 Torr, ^{1}H and ^{13}C NMR and microanalysis	High Yield and Purity Ligand Synthesis
1998	Astles[32]	Chromatography, white solid, 28 g, 39%	mp 58-60 °C, ^{1}H NMR	Biomed antagonist
1985	Terashima[29]	Yellow needles, 24%, No ref	mp 147.5-148.5 °C	Chemical synthesis to make 2-aryl pyridine compounds

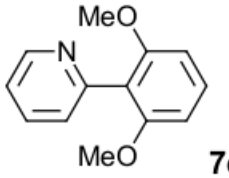
Table SI 4. Summary of synthetic methods to 2-(2',5'-dimethoxyphenyl)pyridine **7d**



7d

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Colorless clear liquid, 6.41 g, 93 %	bp 198-200 °C/1 Torr, ^{1}H and ^{13}C NMR and microanalysis	High Yield and Purity Ligand Synthesis
1985	Terashima[29]	Yellow needles, 33%	mp 156-158.5 °C	Chemical synthesis to make 2-aryl pyridine compounds

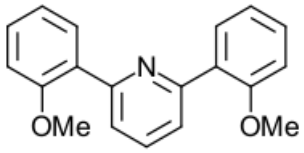
Table SI 5. Summary of synthetic methods to 2-(2',6'-dimethoxyphenyl)pyridine **7e**



7e

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Colorless clear liquid, 2.29 g, 58 %, which crystallized upon standing to give a white crystalline solid	mp 79-80 °C, ^{1}H and ^{13}C NMR, IR and microanalysis	High Yield and Purity Ligand Synthesis
2005	Benaglia[33]	White solid, 87%	mp 81-82 °C, ^{1}H and ^{13}C NMR, IR and microanalysis	C-H insertion catalysis
1985	Terashima[29]	Yellow needles, 28%, No ref	mp 141-142 °C	Chemical synthesis to make 2-aryl pyridine compounds

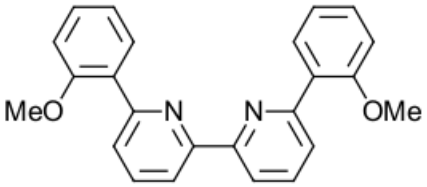
Table SI 6. Summary of synthetic methods to bis-2,6-di-(2'-methoxyphenyl)pyridine **7f**



7f

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Off-white microcrystalline needles, 3.89 g, 79%	mp 127 °C, ^{1}H and ^{13}C NMR	High Yield and Purity Ligand Synthesis
2021	Malakar[34]	White solid, 101 mg, 69%, chromatography	mp 122-123 °C, ^{1}H and ^{13}C NMR, and HRMS	Catalytic C-H Insertion Chemistry
2020	Malakar[35]	White solid, 98 mg, 68%	mp 120-121 °C, ^{1}H and ^{13}C NMR, and HRMS (actual NMR in SI)	Catalytic C-H Insertion Chemistry
2019	Malakar[36]	White solid, 50% yield	mp 122-124 °C, ^{1}H and ^{13}C NMR, and HRMS (actual NMR in SI)	Catalytic C-H Insertion Chemistry
2015	Chen[37]	White solid, 50% yield	mp 122-124 °C, ^{1}H and ^{13}C NMR, and HRMS (actual NMR in SI)	Catalytic C-H Insertion Chemistry
2013	Garribba[38]	Pale yellow powder, 1.73 g, 90%	Agrees with spectroscopic from Leblond, J. J. Am. Chem. Soc. 2010, 132, 8544−8545.	Ligand Design for Metal Complexes
2010	Leroux[39]	White solid, 1.28 g, 70%	mp 112 °C, ^{1}Hand ^{13}C NMR, HRMS and microanalysis	Molecular material
2010	Klein[40]	Pale yellow solid, 5.47g, 78%	mp 130 °C, ^{1}Hand ^{13}C NMR, and microanalysis	Coordination Chemistry
2004	Hegetschweiler[41]	White solid, 3.44 g, 60%	^{1}Hand ^{13}C NMR, and microanalysis	Coordination Chemistry
1997	Silva[42]	Pale yellow solid, 0.73 g, 63%	^{1}H and ^{13}C NMR, and microanalysis	Ligand Synthesis

Table SI 8 Summary of synthetic methods to bis-(2''-methoxyphenyl)-2,2'-bipyridine **7g**

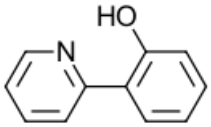


7g

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Faint yellow powder, 1.26 g, 54%	mp 170 °C, ^{1}H and ^{13}C NMR	High Yield and Purity Ligand Synthesis
2019	Pal[43]	Light yellow colored solid, 65 mg, 60%	MS, ^{1}H NMR	Catalysis
2017	Liu[44]	Reference 1 Ward, Polyhedron 1999, 18, 2633-2640	(see below)	Catalysis
2005	Claver[45]	Yellow solid, 0.11 g, 14%	^{1}H and ^{13}C NMR, microanalysis	Catalysis
2004	Peter[46]	Bright yellow crystals	^{1}H NMR	Catalysis
1999	Ward[47]	Solid recrystallized from DCM/Hexane, 80% yield	^{1}H NMR agreed with Maumy	Coordination Chemistry
1994	Maumy[48]	Very pale-yellow crystals, 50%	mp 175 °C, ^{1}H NMR, microanalysis	Coordination Chemistry Polymers

2. Synthesis of Hydroxyphenyl-pyridyl Derivatives from the Literature with Characterization Data

Table SI 9. Summary of synthetic methods to 2-(2'-hydroxyphenyl)pyridine **8a**



8a

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	Current work	Bright fluorescent colored liquid, 1.65 g, 91 %	Distillation bp 178-180 °C/1 Torr, then crystallization, mp 53-4 °C, ^{1}H and ^{13}C NMR	High Yield and Purity Ligand Synthesis
2022	Chirik[49]	Pale yellow oil, 0.18 g, 55%, material consistent with lit[27]	Small scale, chromatography	Ligand to form metal complex for catalysis
2021	Tanaka[50]	Yellow oil, 22.2 mg, 65%[51]	Small scale, ^{1}H and ^{13}C NMR, chromatography	C-H insertion borylation/oxidation with catalysis
2020	Sun[52]	Yellow oil, 36.96 mg, 72%	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography	C-H insertion/oxidation with catalyst
2020	Bode[53]	Yellow solid, 630 mg, 82%, agrees with spectral properties[54]	Chromatography, ^{1}H and ^{13}C NMR, HRMS, Microanalysis	Bio sensor application Precursor in multistep synthesis
2019	Murga[55]	Yellowish solid, 95 %, agrees with spectral properties[56]	Chromatography, mp 56–58 °C	Drug candidates for screening activity
2019	Huang[57]	Pale yellow oil, 19.2 mg, 56%[58-63]	Small scale, ^{1}H and ^{13}C NMR, chromatography	C-H insertion/oxidation with catalyst
2019	Wang[64]	Yellow solid, 28.1 mg, 82%	Small scale, ^{1}H and ^{13}C NMR, chromatography	C-H borylation/oxidation with catalyst
2019	Wagner[65]	No color mentioned, 3.76 g, 78%, agrees with analytical data[60]	No data	Ligands for metal ligand complexes for OLEDs
2018	Xu[51]	Yellow oil, 23 mg, 64%[66]	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography	C-H insertion/oxidation with catalyst

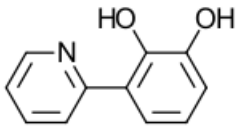
Table SI 9. Continued

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2018	Singh[67]	Yellow oil, 105 mg, 41%, agrees with spectra[66]	Small scale, ^{1}H and ^{13}C NMR, chromatography	C-H insertion/oxidation under visible light
2018	Lambert[68]	Light yellow solid, 18.3 mg, 53%[69]	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography and recrystallization	Rearrangement to form ligand - chemical transformation methodology
2018	Ding[70]	White solid, 102 mg, 60%[58]	Chromatography, ^{1}H and ^{13}C NMR	Chemical transformation product
2017	Singh[71]	Yellow oil, 70-75%, agrees with NMR data[66]	Chromatography, ^{1}H and ^{13}C NMR, HRMS	C-H insertion/oxidation with catalyst
2017	Kim[72]	Yellow oil, 80 mg, 93%, agrees with NMR data[66]	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography	C-H insertion/oxidation with catalyst
2017	Ribas[4]	Yellow oil, 14.4 mg, 42%, agrees with spectral data[58]	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography	C-H insertion/oxidation with catalyst
2016	Guin[61]	Light yellow liquid, 27.6 mg, 81%	Small scale, ^{1}H and ^{13}C NMR, HRMS	C-H insertion/oxidation with catalyst
2015	Sun[66]	Yellow oil, 36.96 mg, 72%[59]	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography, microanalysis	C-H insertion/oxidation with catalyst
2015	Itoh[60]	Yellow solid 32.9 mg, 64%[59]	Small scale, ^{1}H and ^{13}C NMR, chromatography	C-H insertion/oxidation with catalyst
2014	Templeton[73]	Pale yellow oil, 183 mg, 60%, agrees with spectral data[74]	Small scale, ^{1}H and ^{13}C NMR, chromatography	Ligand for metal complex catalyst studies with Iridium
2013	Jiao[59]	Yellow solid, 49.4 mg, 72%[58]	Small scale, ^{1}H and ^{13}C NMR, IR, MS, chromatography	C-H insertion/oxidation with catalyst
2012	Liu[74]	No color mentioned, 41 mg, 71%	Small scale, ^{1}H and ^{13}C NMR, HRMS, chromatography	C-H insertion/oxidation with catalyst
2009	Kido[75]	No color mentioned 3.4 g, 66% No ref	Chromatography ^{1}H NMR, MS, Microanalysis	Lithium phenoxide salts for blocking layer for OLEDs
2006	Yu[58]	Colorless oil, 34.4 mg, 67%	Chromatography, ^{1}H and ^{13}C NMR, IR, HRMS	C-H insertion/oxidation with catalyst

Table SI 9. Continued

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2006	Crich[76]	Colorless oil, 36%, agrees with spectral data[77]	^{1}H NMR only	Chemical methodology
2006	Wan[21]	No color mentioned, 100 mg, 20%[78, 79]	^{1}H and ^{13}C NMR	Excited State Intramolecular Proton Transfer studies
2002	Hofp[77]	No color mentioned, 63%[30]	^{1}H and ^{13}C NMR, MS	Precursor for synthesis of novel compounds
2002	Schmalz[80]	Yellow solid, 202 mg, 76%	Small scale, ^{1}H and ^{13}C NM chromatography HRMS, microanalysis mp 55-56 °C	Metal complexes for styrene hydroxylation
2002	Uemura[69]	Pale yellow liquid, 42%	Chromatography, ^{1}H and ^{13}C NMR, IR, HRMS	[3,3] Sigmatropy of (2-Acylcyclopropyl)vinylidene-Metal Intermediates
2001	Yonezawa[24]	No color mentioned, 47 mg, 97%	Chromatography, ^{1}H and ^{13}C NMR, IR	Chemical transformation for synthesis methodology
1998	Tanaka[25]	Light brown oil, 3.35 g, 41%	No chromatography, ^{1}H NMR, IR, MS	Ligands for electroluminescent devices
1994	Grabowska[26]	Colorless oil, 3.3 g, 89%	Chromatography, ^{1}H NMR, microanalysis MS, IR, mp 155-156 °C	Excited Internally Hydrogen-bonded Systems with One Proton Transfer Reaction Site
1992	Ward[27]	Yellow oil, 90%,	Chromatography, ^{1}H NMR, MS, Microanalysis	Ligands used to form co-ordination complexes with Ru
1990	Mamaev[81]	No color mentioned, 2 g, 73%	Recrystallization, mp 56 °C (lit.[82] 56 °C)	Heteroaromatic Chemistry Synthesis
1985	Terashima[29]	Yellow needles, 48%,	mp 177.179 °C, microanalysis	Chemical synthesis to make 2-aryl pyridine compounds
1984	Antkowiak[78]	No color mentioned, 47%	^{1}H NMR, mp 179.0-179.5 °C (lit.[78] 176-178 °C)	Chemical transformation for application to natural product
1983	Waser[30]	No color mentioned, 4 g, 86.1%	mp 56-57 °C, IR	Metabolites for bio-inhibition studies

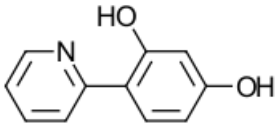
Table SI 10 Summary of synthetic methods to 2-(2',3'-dihydroxyphenyl)pyridine **8b**



8b

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Yellow needles, 1.55 g, 67%	mp 126-7 °C, ^{1}H and ^{13}C NMR and microanalysis	High Yield and Purity Ligand Synthesis
2005	Misawa[31]	26 mg, 26%	MS, HRMS, ^{1}H and ^{13}C NMR	Bioderived Heterocyclic Diols

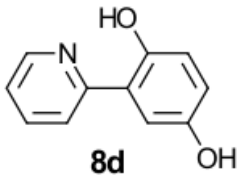
Table SI 11. Summary of synthetic methods to 2-(2',4'-dihydroxyphenyl)pyridine **8c**



8c

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Bright yellow crystals, 1.44 g, 63%	mp 171-2 °C, ^{1}H and ^{13}C NMR	High Yield and Purity Ligand Synthesis
1998	Astles[32]	Chromatography, white solid, 8 g, 66%	mp 170-172 °C, ^{1}H NMR	Biomedical antagonist

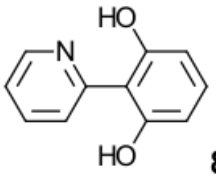
Table SI 12. Summary of synthetic methods to 2-(2',5'-dihydroxyphenyl)pyridine **8d**



8d

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Yellow solid, 1.39, 61%	mp 169 °C, ^{1}H and ^{13}C NMR, and microanalysis	High Yield and Purity Ligand Synthesis
1992	Gui[83]	Recrystallized, 96 mg, 1.5%	mp 169-172 °C, ^{1}H NMR	Electrochemistry surface modification

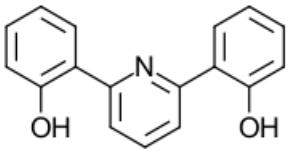
Table SI 13. Summary of synthetic methods to 2-(2',6'-dihydroxyphenyl)pyridine **8e**



8e

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Yellow microcrystalline solid, 1.32 g, 76%	mp 180-1 °C, ^{1}H and ^{13}C NMR, and microanalysis	High Yield and Purity Ligand Synthesis
2005	Benaglia[33]	White solid, 87%	mp 182 °C, ^{1}H and ^{13}C NMR, IR and microanalysis	Enantioselective allylation of aromatic aldehydes

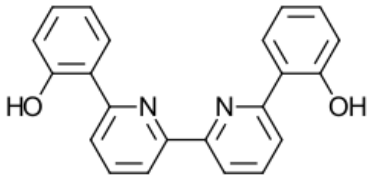
Table SI 14. Summary of synthetic methods to bis-(2'-hydroxyphenyl)-2,6-pyridine **8f**



8f

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Very pale-yellow flakes, 1.66 g, 92%	mp 143 °C, ^{1}H and ^{13}C NMR	High Yield and Purity Ligand Synthesis
2020	Malakar[35]	White solid, 98 mg, 68%, chromatography	mp 120-121 °C, ^{1}H and ^{13}C NMR, and HRMS (actual NMR in SI)	Catalytic C-H Insertion Chemistry
2019	Malakar[36]	White solid, 50% yield	mp 122-124 °C, ^{1}H and ^{13}C NMR, and HRMS (actual NMR in SI)	Catalytic C-H Insertion Chemistry
2015	Chen[37]	White solid, 50% yield	mp 122-124 °C, ^{1}H and ^{13}C NMR, and HRMS (actual NMR in SI)	Catalytic C-H Insertion Chemistry
2010	Klein[40]	Beige solid, 344 mg, 76%	mp 139 °C, ^{1}H and ^{13}C NMR, and microanalysis	Coordination Chemistry
2006	Wang[84]	White powder, 55%	^{1}H and ^{13}C NMR, and microanalysis	Coordination Chemistry
2004	Hegetschweiler[41]	White solid, 788 mg, 65%	^{1}H and ^{13}C NMR, and microanalysis	Coordination Chemistry
1997	Silva[42]	Beige solid, 0.86 g, 60%	Mp 117 °C, MS, ^{1}H and ^{13}C NMR, and microanalysis	Ligand Synthesis

Table SI 15 Summary of synthetic methods to bis-(2''-hydroxyphenyl)-2,2'-bipyridine **8g**



8g

Year	Reference	Color/Yield	Purity	Purpose / Synthesis Method
2023	This work	Fluffy yellow crystals, 1.03 g, 86%	mp 236-7 °C, ^{1}H and ^{13}C NMR	High Yield and Purity Ligand Synthesis
2019	Pal	Light yellow coloured solid, 65 mg, 60%	MS, ^{1}H NMR	Coordination Complex Catalyst
2005	Claver[45]	Yellow solid, 110 g, 14%	^{1}H and ^{13}C NMR, microanalysis	Coordination Chemistry
1999	Ward[47]	Orange solid, 79%	^{1}H NMR agreed with Maumy	Coordination Chemistry
1994	Maumy[48]	Very pale-yellow crystals, 518 mg, 80%	mp 238 °C, ^{1}H NMR microanalysis,	Coordination Chemistry
1946	Roberts[85]	Yellow needles, 6.8 g	mp 102.5-103.5 °C, microanalysis	Coordination Chemistry

3. Representative NMR Spectra of Compounds from Suzuki Coupling and Demethylation Reactions

Figure S1 400 MHz ^{1}H NMR spectrum of 6,6'-di-(2''-methoxyphenyl)-2,2'-pyridine **7g**

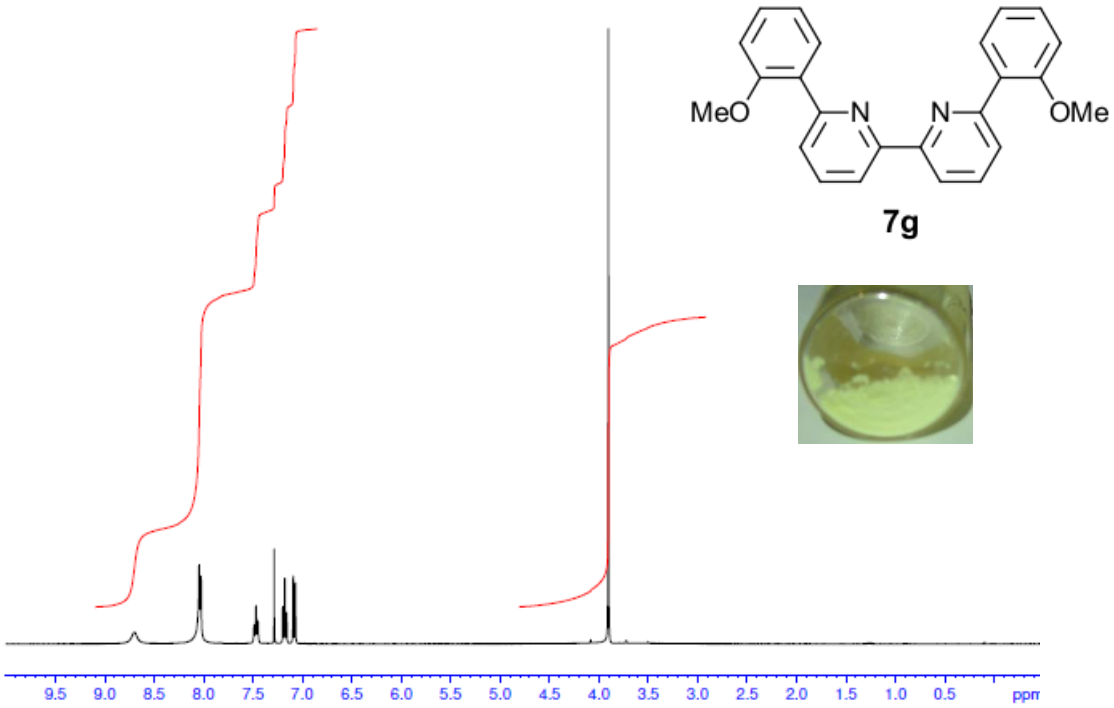


Figure S2 100 MHz ^{13}C NMR spectrum of 6,6'-di-(2''-methoxyphenyl)-2,2'-pyridine **7g**

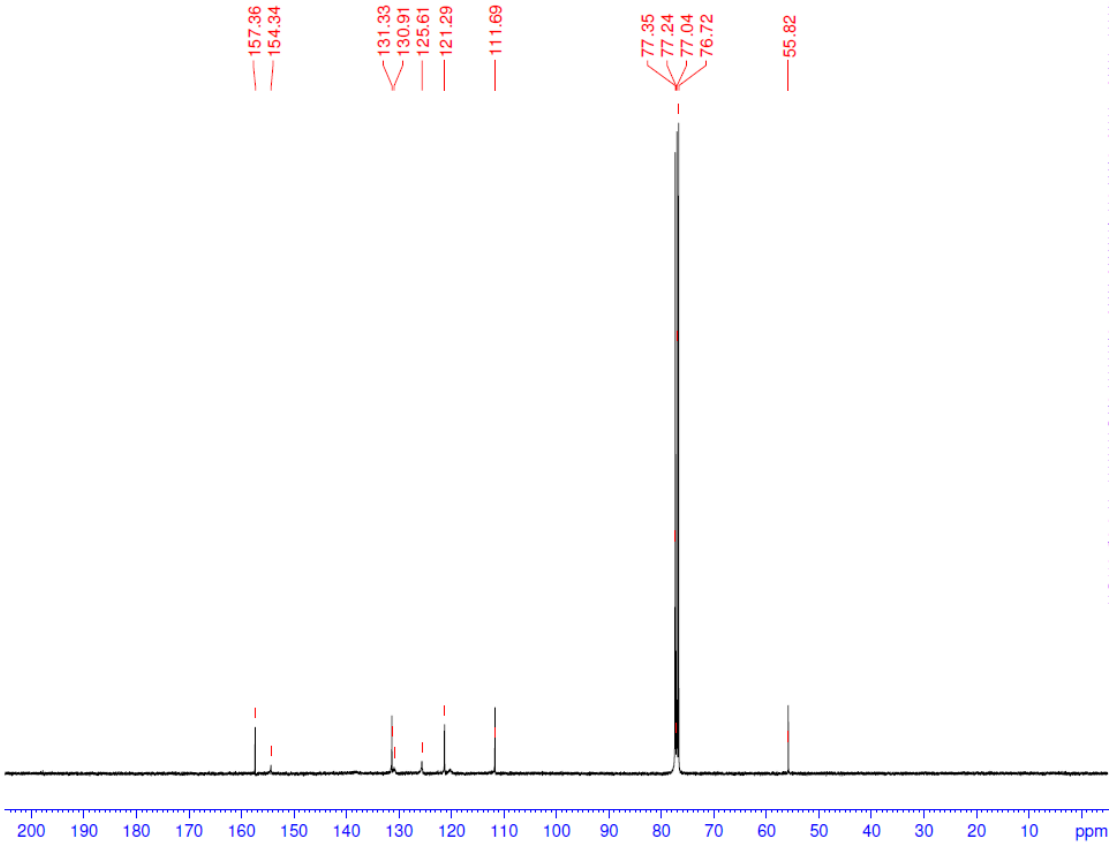


Figure S3 400 MHz ^{1}H NMR spectrum of 6,6'- Bis-(2''-hydroxyphenyl)-2,2'-pyridine **8g**

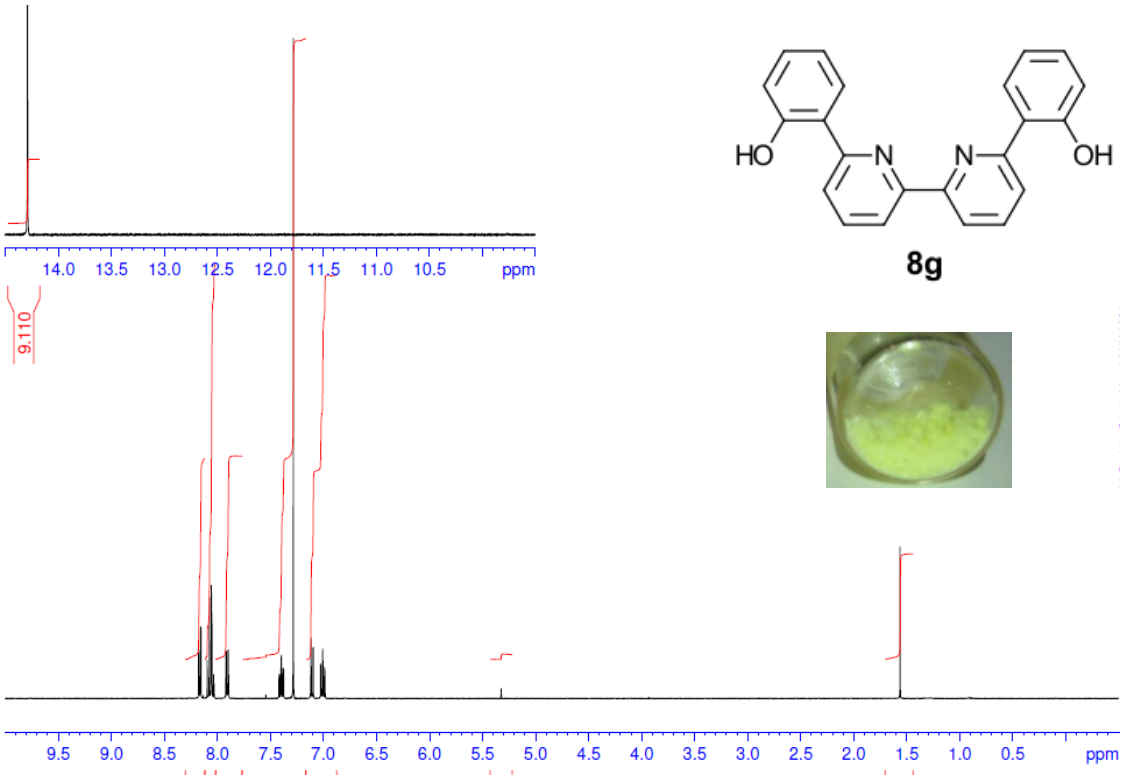
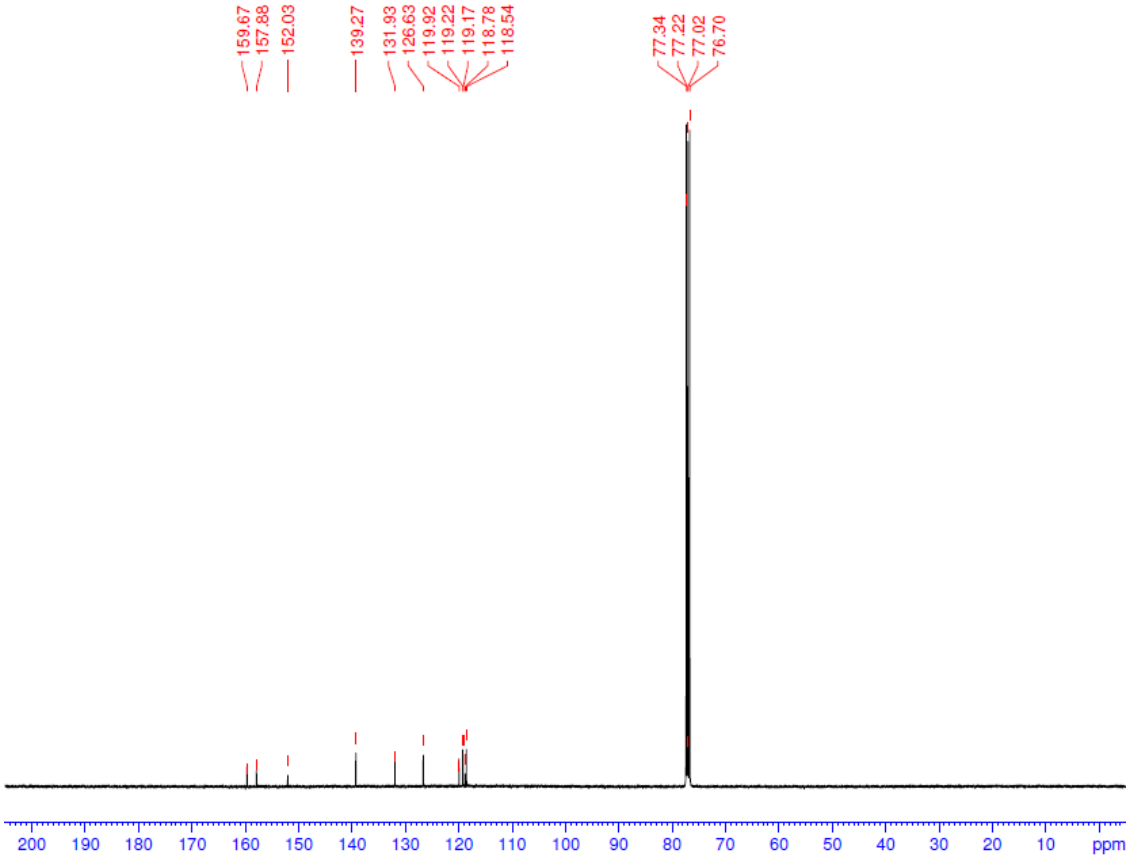


Figure S4 100 MHz ^{13}C NMR spectrum of 6,6'-bis-(2''-hydroxyphenyl)-2,2'-pyridine **8g**



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