**SUPPORTING INFORMATION**

Cyclometallated platinum(II) complexes containing NHC ligands; synthesis, characterization, photophysics and their application as emitters in OLEDs.

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Complex 1. Selected bond distances (Å): Pt1–C11 2.001(7), Pt1–C12 1.951(7), Pt1–N1 2.093(5), Pt1–Br1 2.469(1). Selected angles (˚): C11–Pt1–Br1 175.7(2), C12–Pt1–Br1 90.4(2), C11–Pt1–C12 93.7(3), N1–Pt1–Br1 94.1(2), C11–Pt1–N1 81.8(3), C11–Pt1–C12–N3 73.6(6).

Complex 2. Selected bond distances (Å): Pt1–C11 1.976(4), Pt1–C12 1.963(5), Pt1–N1 2.075(3), Pt1–Cl1 2.389(1). Selected angles (˚): C11–Pt1–Cl1 173.9(1), C12–Pt1–Cl1 90.6(1), C11–Pt1–C12 94.6(2), N1–Pt1–Cl1 94.0(1), C11–Pt1–N1 80.8(2), C11–Pt1–C12–N3 72.8(4).

Complex 5. Selected bond distances (Å): Pt1–C11 1.976(3), Pt1–C12 1.960(3), Pt1–N1 2.074(3), Pt1–Cl1 2.3960(7). Selected angles (˚): C11–Pt1–Cl1 176.45(9), C12–Pt1–Cl1 89.29(8), C11–Pt1–C12 94.2(1), N1–Pt1–Cl1 95.11(7), C11–Pt1–N1 81.4(1), C11–Pt1–C12–N3 79.7(3).

Complex 6. Selected bond distances (Å): Pt1–C11 1.991(3), Pt1–C12 1.970(4), Pt1–N1 2.069(3), Pt1–Cl1 2.4047(9). Selected angles (˚): C11–Pt1–Cl1 174.5(1), C12–Pt1–Cl1 90.0(1), C11–Pt1–C12 94.4(2), N1–Pt1–Cl1 94.74(9), C11–Pt1–N1 80.8(1), C11–Pt1–C12–N3 66.5(4).

Figure S1. Solid state structure of complexes 1, 2, 5 and 6.
Figure S2. $^1$H NMR spectrum of 1 (CDCl$_3$, 298 K).

Figure S3. $^1$H-$^1$H COSY NMR spectrum (aromatic region) of 1 ((CD$_3$)$_2$CO, 298 K).
Figure S4. $^1$H NMR spectrum of 2 (CDCl$_3$, 298 K).

Figure S5. $^1$H NMR spectrum of 3 (CDCl$_3$, 298 K).
Figure S6. $^1$H NMR spectrum of 4 (CDCl$_3$, 298 K).

Figure S7. $^1$H-$^1$H COSY NMR spectrum (aromatic region) of 4 (CDCl$_3$, 298 K).
Figure S8. $^1$H NMR spectrum of 5 (CDCl$_3$, 298 K).

Figure S9. $^1$H NMR spectrum of 6 (CDCl$_3$, 298 K).
Figure S10. $^1$H-$^1$H COSY NMR spectrum (aromatic region) of 6 (CDCl$_3$, 298 K).
Figure S11. ESI-MS of complex 1.

Figure S12. ESI-MS of complex 2.
Figure S13. ESI-MS of complex 3.

Figure S14. ESI-MS of complex 4.
Figure S15. ESI-MS of complex 5.

Figure S16. ESI-MS of complex 6.
Figure S17. Excitation spectra of complexes 1-6 in solution CH$_2$Cl$_2$. Emission wavelength 480 nm.

Figure S18. Emission spectra of complexes 1-6 in solid state. Excitation wavelength 390 nm.
Figure S19. Excitation spectra of complexes 1-6 in solid state. Emission wavelength 515 nm.

Figure S20. Correlation between Pt-C\textsubscript{(N^C)} distance and quantum yield (left), lifetime (right) of emission for the orthometallated phenyl-pyridine platinum complexes (1-3, 5, 6) in degassed dichloromethane. Pearson correlation coefficients are -0.88 and -0.82, respectively. The compound 4 (benzoquinoline complex) is given for comparison.

Table S1. Pt-C\textsubscript{(N^C)} distance in solid state, quantum yield and lifetime of emission in degassed dichloromethane.

<table>
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<th>Pt-C\textsubscript{(N^C)}, Å</th>
<th>τ\textsubscript{deg}, µs</th>
<th>Φ\textsubscript{deg}, %</th>
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<tr>
<td>1</td>
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<tr>
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<td>1.00</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>6</td>
<td>1.991(3)</td>
<td>1.22</td>
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Figure S21. Emission spectrum of complexes 1-6 in solid state (solid lines) and solution (dashed lines). Excitation wavelengths 390 nm and 385 nm respectively.
Figure S22. Emission spectrum of complexes 1-6 in solid state and in tablets KBr. Excitation wavelengths 390 nm.
Figure S23. CIE 1931 chromaticity diagram of devices A-F.

Figure S24. Current efficiency for OLED devices A-F.
Figure S25. Power efficiency for OLED devices A-F.