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## **Supporting information**

## Comparative studies on OLED performances of chloro and

## fluoro substituted Zn (II) 8-hydroxyquinolinates

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<sup>1</sup>H NMR of **1** 



-75 -80 -85 -90 -95 -100 -105 -110 -115 -120 -125 -130 -135 -140 -145 -150 -155 -160 -165 -170 -175 -180 -185 -190 f1 (ppm)

<sup>1</sup>H NMR of **3** 



<sup>19</sup>F NMR of **3** 





<sup>13</sup>C NMR of **3** 







<sup>1</sup>H NMR of **4** 





ESI-MS of 1







ESI-MS of 5



ESI-MS of **6** 



The energy levels of **5** and **6** have been calculated by TD-DFT in Gaussian 03.The results were similar to the energy levels of **5** and **6** calculated by using the DFT(density functional theory) model of a DMol3 package in Materials Studio

(version 5.5). The LUMO energy levels of the complexes **5** and **6** are calculated to be -3.095 and -3.312 eV, respectively. The HOMO energy levels of the complexes **5** and **6** are calculated to be -4.279 and -4.364 eV, respectively. The calculated HOMO–LUMO energy gaps ( $E_g$ ) obtained from TD-DFT calculations were 1.184 and 1.052 eV, respectively, for complexes **5** and **6**.



**5** HOMO (-4.279 eV)



**5** LUMO (-3.095 eV)



6 HOMO (-4.364 eV)



**6** LUMO (-3.312 eV)