

PC I -3

VERY EFFICIENT ELECTROGENERATED  
CHEMILUMINESCENCE FROM CYCLOMETALATED  
IRIDIUM(III) COMPLEXES

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Very efficient electrogenerated chemiluminescence (ECL) phenomena were realized by deliberately tuning electron transfer reactions more preferable from electrochemically generated electron donor to metal complex radical cations. By controlling the relative positions of HOMO and LUMO levels (oxidation potential and reduction potential) of Ir(III) complexes, we could obtain 77 times higher ECL from iridium(III) complexes in the presence of TPA than that of Ru(bpy)<sub>3</sub><sup>2+</sup>/TPA system. This high ECL efficiency of new Ir(III) complexes can be used in many interesting applications such as sensors and luminescent devices.