

Synthesis, Characterization, Photophysical and Electrochemical Properties of an ionic small molecule for solid state light-emitting electrochemical Cell

kanagaraj shanmugasundaram, 고슬기, 최영선<sup>†</sup>

부산대학교

(choe@pusan.ac.kr<sup>†</sup>)

Light-emitting electrochemical cells are the future generation of display and solid state lighting sources. Compared to conventional solid state lighting device such as organic light-emitting diode (OLED), light-emitting electrochemical cell (LECs) possess simple device architecture and air stable electrodes makes LECs more impressive. Currently much research have been focused on cationic iridium complexes due to the phosphorescent, color tuning and an ionic nature of Ir-ITMCs. Recently non-ionic small molecule light-emitting electrochemical cell containg the device structure as same as the p-LEC were reported by Tang et al. The molecule which is an ionic apart from Ir-ITMCs have great attentions. We designed and synthesized an ionic fluorene derivative in multi-step synthetic procedure having strong luminescence and good charge transporting capabilities. A complete structural, photophysical, electrochemical and electroluminescent properties were investigated. Deep blue light- emissions were achieved by applying the target compound in a LEC device configuration at around 7.5 V.