

Synthesis and Optical Properties of Dimeric Salen–Al Luminophores

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A number of luminescent organometallic complexes based on group 13 metals have been studied extensively as prominent optoelectronic materials in organic light-emitting diodes (OLEDs) and organic photovoltaic cells (OPVs) because of their excellent electronic and photophysical properties. In particular, aluminum (Al) complexes with ligands based on the tetradentate Schiff base N,N-bis-(salicylidene)ethylenediamine (salen) have received growing attention as multicolor fluorophores as well as promising electronic materials. They have showed interesting photophysical properties such as emission color tuning and enhancement of quantum efficiency by introducing various functional groups. In the continuous effort to search for a novel class of luminophores, we investigated dimeric salen–Al complexes exhibiting enhanced quantum efficiency compared to monomeric species. The detailed synthesis, characterization, and photophysical properties of a series of dimeric salen–Al complexes will be discussed.