

## SYNTHESIS AND PROPERTIES OF PHENANTHROIMIDAZOLE-BASED SELF-POLYMERIZABLE MONOMERS

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Blue organic light-emitting materials have attracted much attention because of their significant applications in flat-panel displays and solid-state lighting.<sup>1</sup> Recently, aryl-substituted phenanthroimidazoles (APIs) have attracted tremendous attention as efficient blue-emitting building blocks due to their simple synthesis, excellent thermal properties, high fluorescence quantum yields, and "bipolar" properties.<sup>2-7</sup>

In this presentation we report on the synthesis and properties of phenanthroimidazole-based self-polymerizable monomers. Structures of monomers **M1-M6** is outlined in Fig. 1.

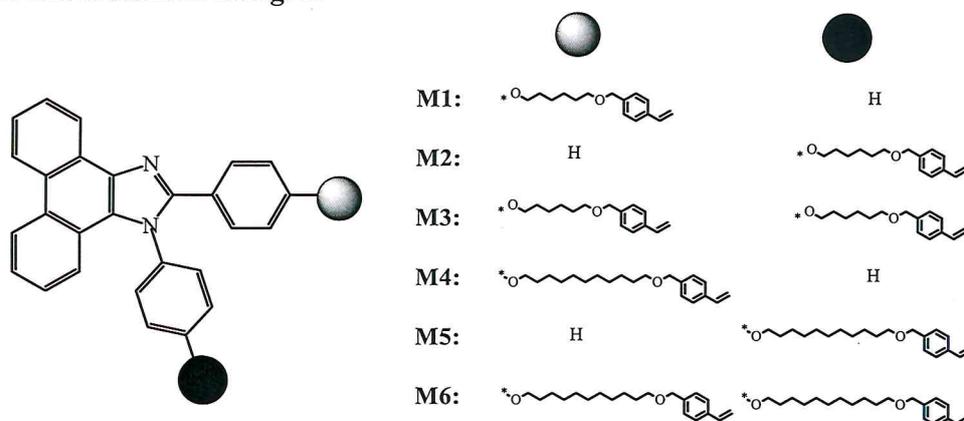


Fig. 1. Structures of phenanthroimidazole-based monomers

The structures of the synthesized monomers **M1-M6** were confirmed by <sup>1</sup>H NMR, <sup>13</sup>C NMR, IR spectroscopy and mass spectrometry. The thermal properties of monomer were investigated by the differential scanning calorimetry. Optical and photophysical properties were studied by UV and fluorescence spectroscopies. The polymerization kinetics was investigated by DSC and real time FT-IR technique.

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