Polymeric Light-Emitting Diodes: Effect of Polymer Structure

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Polymeric light-emitting diodes (PLEDs) have the potential for significant commercial applications in the display industry. While scientists have been able to increase the efficiencies and lifetimes of these devices, there is still a lack of fundamental knowledge about the relationship between polymeric structure and device performance. We will discuss some of our recent findings in this area. Particular emphasis will be placed on the roles that chain separation and chain architecture play in determining device performance. We will also discuss the effect that the solubilizing side chain plays in determining the photoluminescent and electroluminescent efficiency.