

RECENT TRENDS IN RESEARCH AND DEVELOPMENT OF POLYMER LIGHT-EMITTING MATERIALS

Hyun-Nam Cho

Polymer Materials Lab., KIST, Seoul, 130-650, Korea.

It is well known that light-emitting diodes (LEDs) based on polymers have been extensively studied since in 1990 poly (p-phenylenevinylene) was introduced as an electroluminescent (EL) material [1]. The most important advantage of using polymers as light-emitting materials in LEDs is to synthesize the well-defined polymers as designed for specific purpose[2-4]. Conjugated organic semiconducting polymers in particular have been widely used as the emitting layers in LEDs. A few polymers have been recently proved to be suitable for fabricating mono- and full-color prototypes of LEDs which emit blue, green, orange, or red color. The polymers have showed good processibility, quite high quantum efficiency, and relatively long lives of shelf and stress except blue materials right now.

In this symposium, Recent progress in polymer light-emitting materials, especially, the fluorene-based polymers as well as PPV derivatives for polymer LEDs will be reviewed and also discussed.

References

- [1] J.H. Burroughes, D.D.C. Bradley, A.R. Brown, R.N. Marks, K. Mackay, R.H. Friend, P.L. Burn and A.B. Holmes, *Nature* **347**, 539 (1990),
- [2] A. Kent, A.C. Grimsdale and A.B. Holmes, *Angew. Chem. Int. Ed.* **37**, 402 (1998).
- [3] H.N. Cho, D.Y. Kim, Y.C. Kim, J.Y. Lee and C.Y. Kim, *Adv. Mater.*, **9**, 326 (1997).
- [4] D.Y. Kim, H N. Cho and C.Y. Kim, *Prog. Polym. Sci.*, **25**, 1089 (2000).