

STRUCTURAL AND OPTICAL STUDIES OF MEH-PPV USING TWO DIFFERENT SOLVENTS PREPARED BY SPIN COATING TECHNIQUE

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ABSTRACT

Spin coating technique is commonly used to obtain uniform thin films. Conducting unsaturated polymer of red colour poly [2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene] (MEH-PPV), can be easily dissolved in non-aromatic and aromatic solvents to exhibit different optical and structural properties. The MEH-PPV solutions in the two type of solvents were prepared at concentration of 8mgml⁻¹. They were then spin coated onto glass and calcium difluoride (CaF₂) substrates at 4krpm for 10 seconds. The spun films of MEH-PPV on glass substrates were used for investigating the optical properties by using UV-Visible-NIR (UV-VIS-NIR) and Photoluminescence (PL) spectroscopy. The structural properties of the films were investigated by Fourier Transform Infrared (FTIR) spectroscopy. The structural transformations of the films when annealed at 76°C and 140°C were also studied by analysing and comparing the FTIR spectra of the films at that specific temperature

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REFERENCES

- [1]. Guo, Tzung-Fang, Y. Yang, (2002); *Applied Physics Letter*, **80** (1), 148.
- [2]. Sha-Yu, Li, Xiong, et al., (2004); *Chinese Journal of Chemistry*, **22**, 80.
- [3]. Kang, Bonan, Yang, Yong, et al. (2004); *Displays*, **22**, 151.
- [4]. Ram, Manoj Ku, Sarkar, Nabin, et al. (2001); *Synthetic Metals*, **122**, 369.
- [5]. Kim, Kyungkon, Lee, Dong Won et al; (2000) *Synthetic Metals*, **114**, 49.
- [6]. Zhang, Hairong, et al. (2001); *J. of Photochem and Photobiology A: Chem*, **147**, 43.
- [7]. Nguyen, Thuc-Quyen, et al. (1999); *J. of Chem. Physics*, **110** (8), 4068.
- [8]. Shi, Y., Liu, J. and Yang, Y., (2000); *Journal of Applied Physics*, **87**(9), 4254.
- [9]. Vij, D.R., (2004); *Handbook of Electroluminescence Material*, IOP, Chapter 4. pp 531.