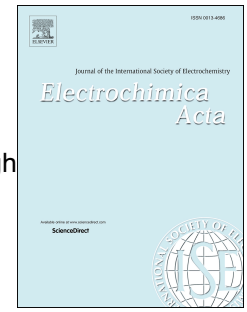
Accepted Manuscript



Highly stable and fast blue color/fluorescence dual-switching polymer realized through the introduction of ether linkage between tetraphenylethylene and triphenylamine units

Ningwei Sun, Xuzhou Tian, Lihua Hong, Kaixin Su, Ziwei Zhou, Sizuo Jin, Daming Wang, Xiaogang Zhao, Hongwei Zhou, Chunhai Chen

PII: S0013-4686(18)31726-2

DOI: 10.1016/j.electacta.2018.07.208

Reference: EA 32405

To appear in: *Electrochimica Acta*

Received Date: 26 May 2018

Revised Date: 14 July 2018

Accepted Date: 28 July 2018

Please cite this article as: N. Sun, X. Tian, L. Hong, K. Su, Z. Zhou, S. Jin, D. Wang, X. Zhao, H. Zhou, C. Chen, Highly stable and fast blue color/fluorescence dual-switching polymer realized through the introduction of ether linkage between tetraphenylethylene and triphenylamine units, *Electrochimica Acta* (2018), doi: 10.1016/j.electacta.2018.07.208.

Highly stable and fast blue color/fluorescence dual-switching polymer realized through the introduction of ether linkage between tetraphenylethylene and triphenylamine units

Ningwei Sun,[a] Xuzhou Tian,[a] Lihua Hong,[b] Kaixin Su,[a] Ziwei Zhou,[c] Sizuo Jin,[a] Daming Wang,*[a] Xiaogang Zhao,[a] Hongwei Zhou[a] and Chunhai Chen*[a]

Corresponding author: Daming Wang; Chuanhai Chen

Email address: wangdaming@jlu.edu.cn; cch@jlu.edu.cn

[a] Key Laboratory of High Performance Plastics (Jilin University), Ministry of Education, National & Local Joint Engineering Laboratory for Synthesis Technology of High Performance Polymer, College of Chemistry, Jilin University, Changchun 130012, PR China

[b] Department of Endodontics and Operative Dentistry, School and Hospital of Stomatology, Jilin University, Changchun 130012, P.R. China

[c] Leibniz Institut für Polymerforschung Dresden e.V, Institute of Physical Chemistry and Polymer Physics, Hohe Str. 6, D-01005, Dresden, Germany

Abstract

A novel electroactive/AIE-active polymer with tetraphenylethylene (TPE) and triphenylamine (TPA) units was prepared from a newly synthesized diamine, 4-tetraphenylethyleneoxy-4',4''-diaminotriphenylamine, and cyclohexanedicarboxylic acid. By ingenious introduction of ether linkage between TPE and TPA units, the obtained polymer simultaneously exhibited high solid-state fluorescence, colorless neutral state, excellent electrochemistry stability, rapid responsive rate and long-term blue (one of the three primary colors) electrochromic/electrofluorochromic dual-switching, demonstrating great potential in optoelectronic applications