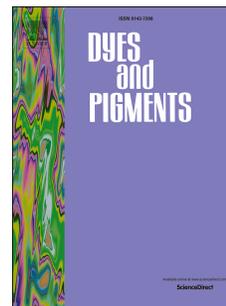


Accepted Manuscript

Development of dimeric triarylmethine derivatives with improved thermal and photo stability for color filters

Nam Sik Kong, Hyocheol Jung, Beomjin Kim, Chan Kyu Lee, Hoyoul Kong, Kun Jun, Jin Chul Kim, Seung Man Noh, In Woo Cheong, Jongwook Park, Young I.L. Park



PII: S0143-7208(17)30692-7

DOI: [10.1016/j.dyepig.2017.05.035](https://doi.org/10.1016/j.dyepig.2017.05.035)

Reference: DYPI 5997

To appear in: *Dyes and Pigments*

Received Date: 4 April 2017

Revised Date: 16 May 2017

Accepted Date: 16 May 2017

Please cite this article as: Kong NS, Jung H, Kim B, Lee CK, Kong H, Jun K, Kim JC, Noh SM, Cheong IW, Park J, Park YIL, Development of dimeric triarylmethine derivatives with improved thermal and photo stability for color filters, *Dyes and Pigments* (2017), doi: 10.1016/j.dyepig.2017.05.035.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Submitted to Dye and Pigment

Development of Dimeric Triarylmethine Derivatives with Improved Thermal and Photo Stability for Color Filters

Nam Sik Kong^{1,3}, Hyocheol Jung², Beomjin Kim¹, Chan Kyu Lee¹, Hoyoul Kong¹, Kun Jun¹, Jin Chul Kim¹, Seung Man Noh¹, In Woo Cheong^{3*}, Jongwook Park^{2*}, Young IL Park^{1*}

¹Research Center for Green Fine Chemicals, Korea Research Institute Technology, Jongga-ro, Jung-gu, Ulsan 44412, Republic of Korea

²Department of Chemical Engineering, Kyung Hee University, Gyeonggi-do 17104, Republic of Korea

³Department of Applied Chemistry and Department of Nano-Science and Technology, Graduate School, Kyungpook National University, 80 Daehakro, Bukgu, Daegu 41566, Republic of Korea

*Nam Sik Kong and Hyocheol Jung contributed equally to this work as the first coauthor.

Abstract

Five novel triarylmethine derivatives containing a two chromophore moiety within the molecule have been designed, synthesised and investigated as potential color filter dyes. These new “dimer-type” triarylmethines showed increased photostability and thermal stability compared to the Victoria Blue BO unit and notably manipulation of the dye counter ion also led to increased thermal stability. To evaluate the dyes in color filters, filters were fabricated and the photo- and thermo- stability was determined after heat treatment (230 °C for 30 min). The fabricated color filters showed approximately 80 % transmittance at 450 nm and the ΔE_{ab} values were in the range 3.03 - 9.26. These results indicate that the synthesized dimer-type triarylmethine derivatives have the potential for application as color filters for blue dyes.

Keywords: Triarylmethine, Blue Dye, Color Filter, Thermal Stability, Photo Stability, Victoria Blue BO

Download English Version:

<https://daneshyari.com/en/article/4765851>

Download Persian Version:

<https://daneshyari.com/article/4765851>

[Daneshyari.com](https://daneshyari.com)