

Accepted Manuscript

Development of bright and low angle dependence structural colors from order-disorder hierarchical photonic structure

Gaowen Chen, Bo Yi, Yiyang Huang, Qianmin Liang, Huifang Shen



PII: S0143-7208(18)31653-X

DOI: [10.1016/j.dyepig.2018.09.039](https://doi.org/10.1016/j.dyepig.2018.09.039)

Reference: DYPI 7021

To appear in: *Dyes and Pigments*

Received Date: 27 July 2018

Revised Date: 17 September 2018

Accepted Date: 17 September 2018

Please cite this article as: Chen G, Yi B, Huang Y, Liang Q, Shen H, Development of bright and low angle dependence structural colors from order-disorder hierarchical photonic structure, *Dyes and Pigments* (2018), doi: <https://doi.org/10.1016/j.dyepig.2018.09.039>.

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.

Development of bright and low angle dependence structural colors from order-disorder hierarchical photonic structure

Gaowen Chen, Bo Yi, Yiyang Huang, Qianmin Liang and Huifang Shen*

School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, P. R. China.

Corresponding author: Huifang Shen, cehfshen@scut.edu.cn

Abstract

Structural colors derived from photonic crystals are usually bright and iridescent. But the angle dependence property of structural colors greatly restricts their application in some fields such as displays and sensors. Meantime, the non-iridescent structural colors from amorphous photonic structures are pale and faded. In this work, an order-disorder hierarchical photonic structure (HPS) film material was fabricated by a single step co-assembly of polyurethane dispersions (PUD) and polydopamine coated polystyrene nanoparticles (PS@PDA NPs) owing to the strong Brownian motion under a heating condition. This hierarchical photonic structure material displays bright and low angle dependence structural color. The SEM images confirm the order-disorder hierarchical photonic structure of as-prepared films.

Download English Version:

<https://daneshyari.com/en/article/11024423>

Download Persian Version:

<https://daneshyari.com/article/11024423>

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