

Systematic study of polarized luminescence in nanostructured organic films

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State-of-the-art organic light-emitting devices allow to efficiently produce stable bright light with adjustable color [1]. Still, a lot of research efforts are put into solving existing problems such as aging/degradation and achieve better performance for specific applications. One direction that attracts significant interest is related to organic structures with polarized emission. In this work, we further develop our recent studies on organic thin films with polarized luminescence [2].

1-pentyl-2,3-difluoro-3-methyl-4-octyl-p-quinquephenyl molecules were thermally deposited in vacuum on optical glass plates that are transparent from 300 nm and above (up to near-infrared wavelength). Detailed analysis of the experimental polarized photoluminescence spectra and luminescence excitation spectra of prepared nanostructured films will be presented. Complementary morphological studies based on atomic force microscope images will be included. An attempt to achieve light induced molecular orientation by using polarized laser emission will be discussed.

1. *Shinar J. (Ed.). Organic Light-Emitting Devices. A Survey // Springer-Verlag New York. - 309 p.*

2. Karbovnyk I., Olenych I., Kukhta I., Lugovskii A., Sasnouski G., Chutora T., Luhechko A., Khalakhan I., Kukhta A. Electric Field Oriented Nanostructured Organic Thin Films with Polarized Luminescence // *Nanoscale Research Letters*. - 2017. - **12**, P. 166.