

## Influence of Wavelengths on Photosensitivity of Copper Phthalocyanine Based Photodetectors

**Authors :** Lekshmi Vijayan, K. Shreekrishna Kumar

**Abstract :** We demonstrated an organic field effect transistor based photodetector using phthalocyanine as the active material that exhibited high photosensitivity under varying light wavelengths. The thermally grown SiO<sub>2</sub> layer on silicon wafer act as a substrate. The critical parameters, such as photosensitivity, responsivity and detectivity, are comparatively high and were 3.09, 0.98AW<sup>-1</sup> and 4.86 × 10<sup>10</sup> Jones, respectively, under a bias of 5 V and a monochromatic illumination intensity of 4mW cm<sup>-2</sup>. The photodetector has a linear I-V curve with a low dark current. On comparing photoresponse of copper phthalocyanine at four different wavelengths, 560 nm shows better photoresponse and the highest value of photosensitivity is also obtained.

**Keywords :** photodetector, responsivity, photosensitivity, detectivity

**Conference Title :** ICMHN 2018 : International Conference on Multifunctional, Hybrid and Nanomaterials

**Conference Location :** Mumbai, India

**Conference Dates :** February 22-23, 2018