Influence of Wavelengths on Photosensitivity of Copper Phthalocyanine Based Photodetectors

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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 SiO₂ layer on silicon wafer act as a substrate. The critical parameters, such as photosensitivity, responsivity and detectivity, are comparatively high and were 3.09, $0.98AW^{-1}$ and 4.86×10^{10} Jones, respectively, under a bias of 5 V and a monochromatic illumination intensity of 4mW cm⁻². 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

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