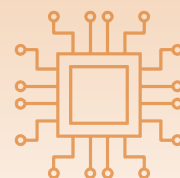


Nano in Physics

Narrowband organic photodetectors towards miniaturized, spectroscopic sensing

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Abstract

Modern innovations such as heartbeat and blood-oxygen measurements in lightweight smart watches, food quality monitoring and automated industrial production are driven by novel sensor technologies. In this regard, organic photodetectors promise great advances due to their beneficial properties and low-cost production. Recent research has led to rapid improvement in all performance parameters of OPDs, which are now on par or even better than their inorganic counterparts, such as silicon or indium gallium arsenide photodetectors, in several aspects. In particular, it is possible to directly design organic photodetectors for specific wavelengths. This makes expensive and bulky optical filters obsolete and allows for miniature detector devices. In this presentation, recent advances in the field of narrowband organic photodetectors are shown, with the focus on how to further improve the spectral photoresponse utilizing photomultiplication processes. Additionally, it is shown how an advanced device architecture allows for highly integrated and application-specific sensors systems.

Introductory talk by Juliana de Fátima Giarola

Surface Plasmon Resonance Biosensor for Parkinson's Disease Diagnosis

Specialist Technician , NanoBiosensors and Bioanalytical Applications group, ICN2

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