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Ultrashort channel length quantum-dot photodetectors FERRY PRINS, Kavli Institute of Nanoscience, Delft University of Technology — We present an efficient photodetector based on a one-dimensional array of parallel contacted PbSe quantum dots. In this device-architecture, the electrodes act as optical nano-antennae which concentrate incident light into the nanoparticle junction where they are converted into electron-hole pairs. The excitons are extracted with high efficiency due to the fact that the quantum dots are in direct contact with both source and drain electrodes, in contrast to previous studies which employed assemblies of quantum dots.

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