Revised Summary

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We designed a deep-trench-isolation (DTI) tilt 0.9 µm CMOS Image Sensor (CIS). The incident light is a plane wave that is oblique by . Therefore, we shift Over Coat & Micro Lens and Color Filter (CF) each as d1 [nm] and d2 [nm], and tilt DTI as . We Simulate the DTI tilt 0.9 µm CIS by Finite-Difference Time Domain (FDTD) program from Lumerical Inc. with 416 CPU Cluster. The optimum setting is d1 = 510 nm, d2 = 230 nm, and . The DTI tilt 0.9 µm CIS has 3% higher Quantum Efficiency (QE) than a shift 0.9 µm CIS. Crosstalk (X-talk) increase, but it is < 0.1%. In the result, the DTI tilt 0.9 µm CIS can get clearer image than the shift 0.9 µm CIS in oblique incidence light.