Conclusion

EE, 20182327

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We designed a deep-trench-isolation (DTI) tilt 0.9-µm CMOS Image Sensor (CIS). Therefore, we shift Over Coat & Micro Lens (OC&ML) by d1 and Color Filter (CF) by d2, and tilt DTI by . We Simulate the tilted DTI CIS by Finite-Difference Time Domain (FDTD) program ( Lumerical Inc.) with 416 CPU Cluster. The optimum setting is d1 = 510 nm, d2 = 230 nm, and . The tilted DTI CIS has 3%p higher Quantum Efficiency (QE) than the shifted CIS. Also, crosstalk (X-talk) decreased, but it is less (< 0.2%) than amount we want. The tilted DTI CIS can get clearer images than the shifted CIS in oblique incidence light.