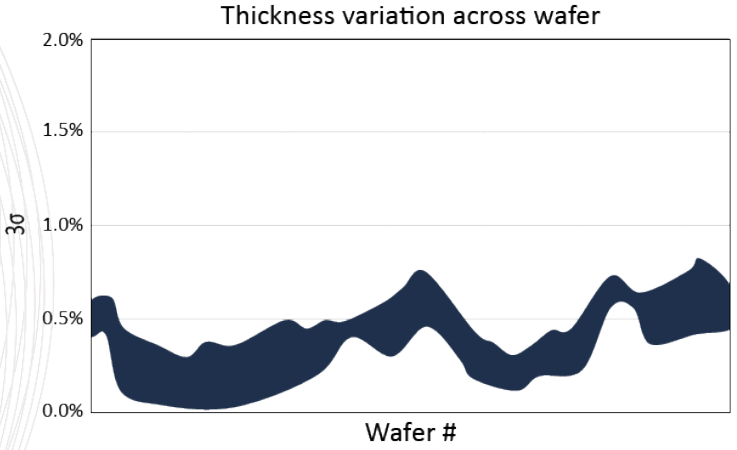
Production Processing of 300mm BTO Films on Silicon, for Photonic Applications

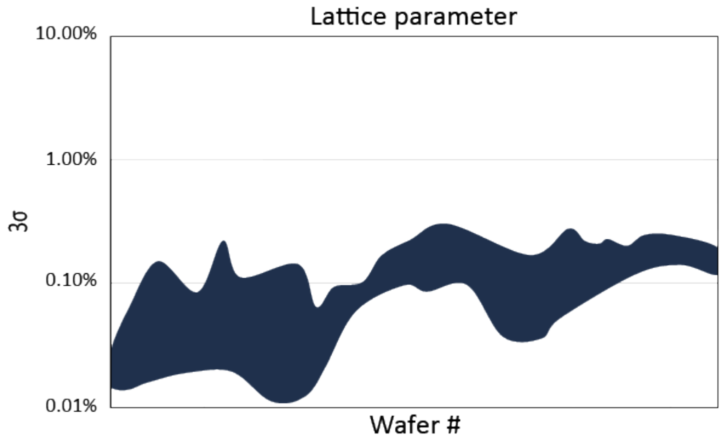
Table 1 **3-sigma average for > 100 wafers** with MBE-grown BTO on 300 mm Si wafer (DCA Instruments M1000 system).

Lattice parameter 3σ	0.1 %
Refractive index 3σ (λ = 1.55 µm) 2.25 < n < 2.35	0.2 %
Rocking curve FWHM 3σ (RC < 0.5°)	15 %
Thickness variation 3σ (Film thickness > 150 nm)	0.3 %

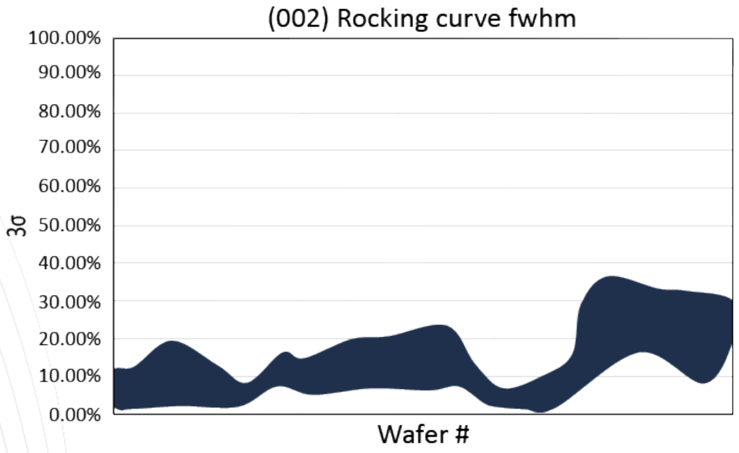
Excellent film uniformity!

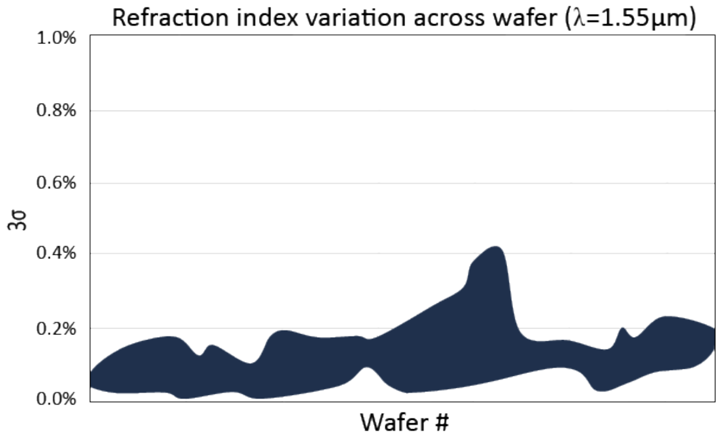

Thickness variation across wafer

SEMI-FAB reproducibility!


Lattice parameter

Outstanding quality!


(002) Rocking curve fwhm


Refraction index variation across wafer (λ=1.55µm)