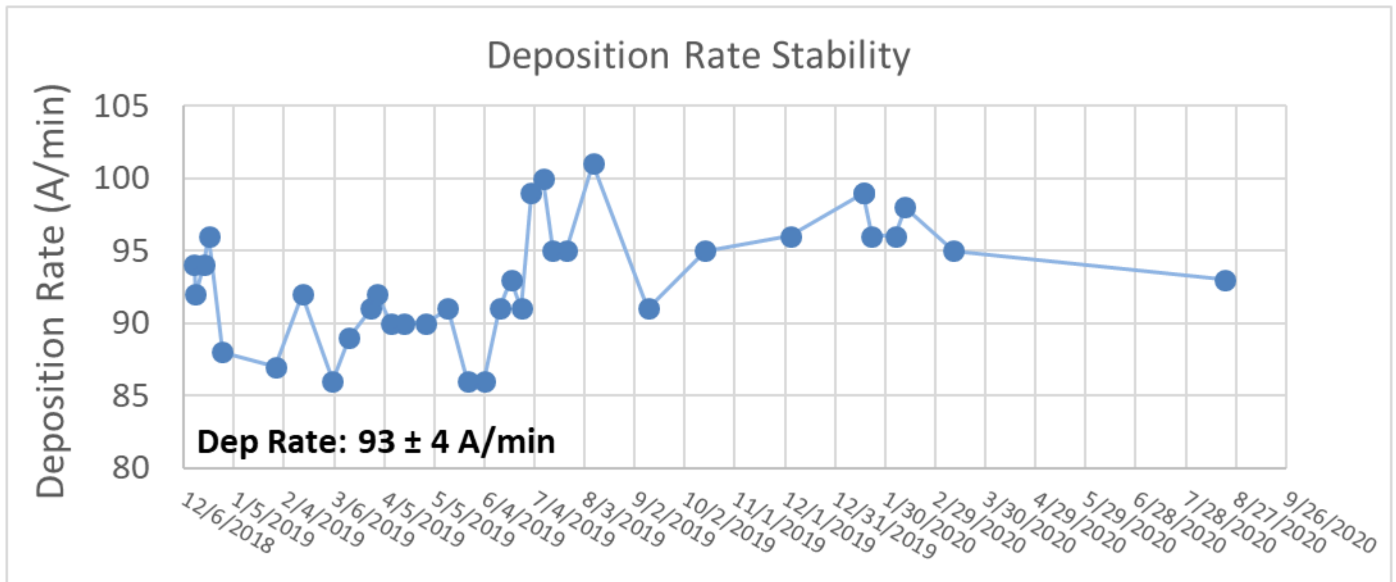
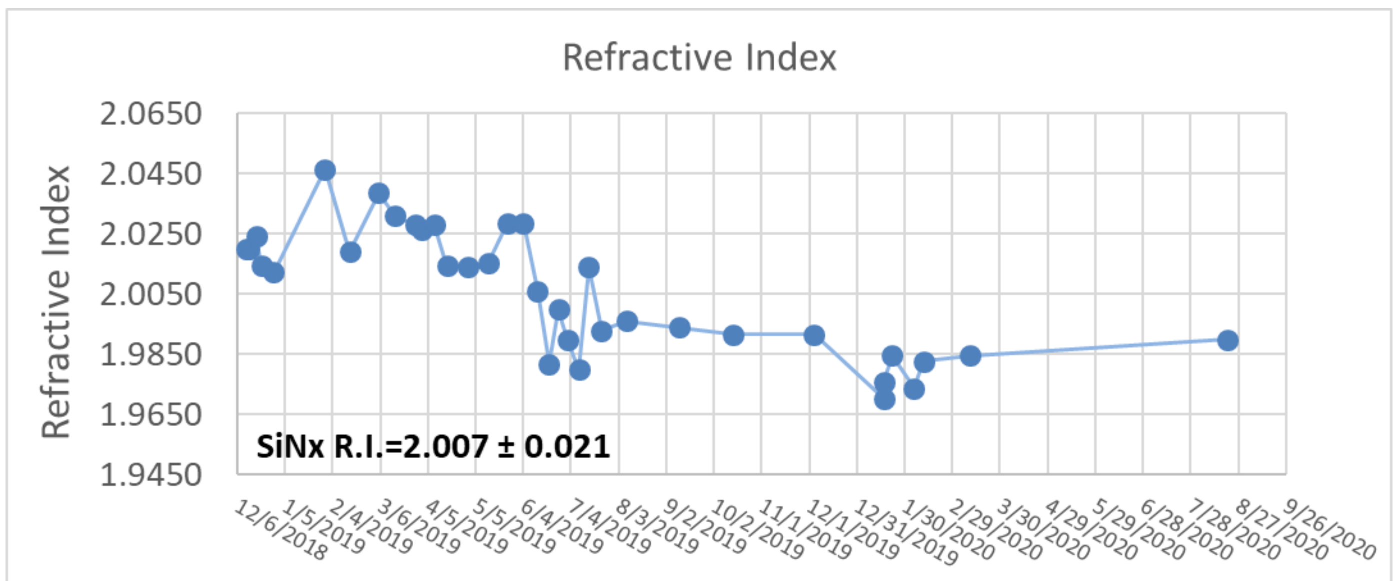
Oxford ICP-CVD SiNx @ 250 ˚C – Recipe: OPT SiN @ 250 – 9 nm/min – Process Check

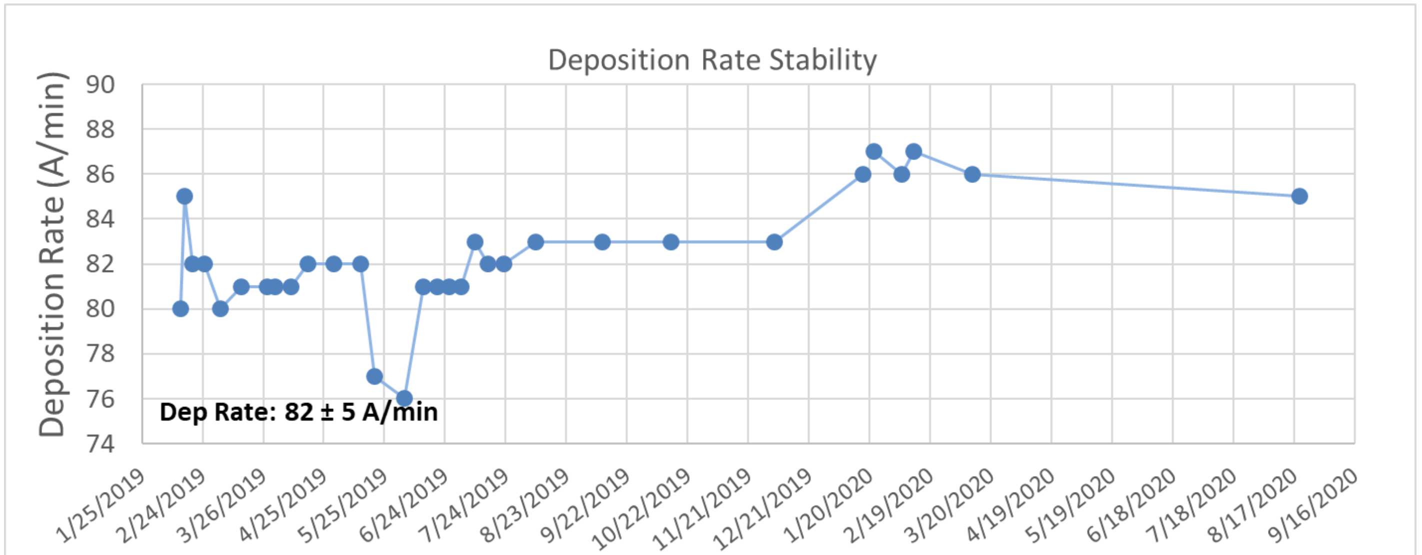
4% SiH4/Ar	N_2	Pressure	ICP	RF	Temp.	Time	Thx. Non-uniformity	Avg R.I.	BOE 10:1 Etch Rate	Stress (Average)
sccm	sccm	mTorr	W	W	ºC	mm:ss	±%		Å/sec	MPa
290	**5.7**	**12**	**1500**	**0**	**250**	**10:00**	**< 3.0**	**2.01**	**15**	**-340**

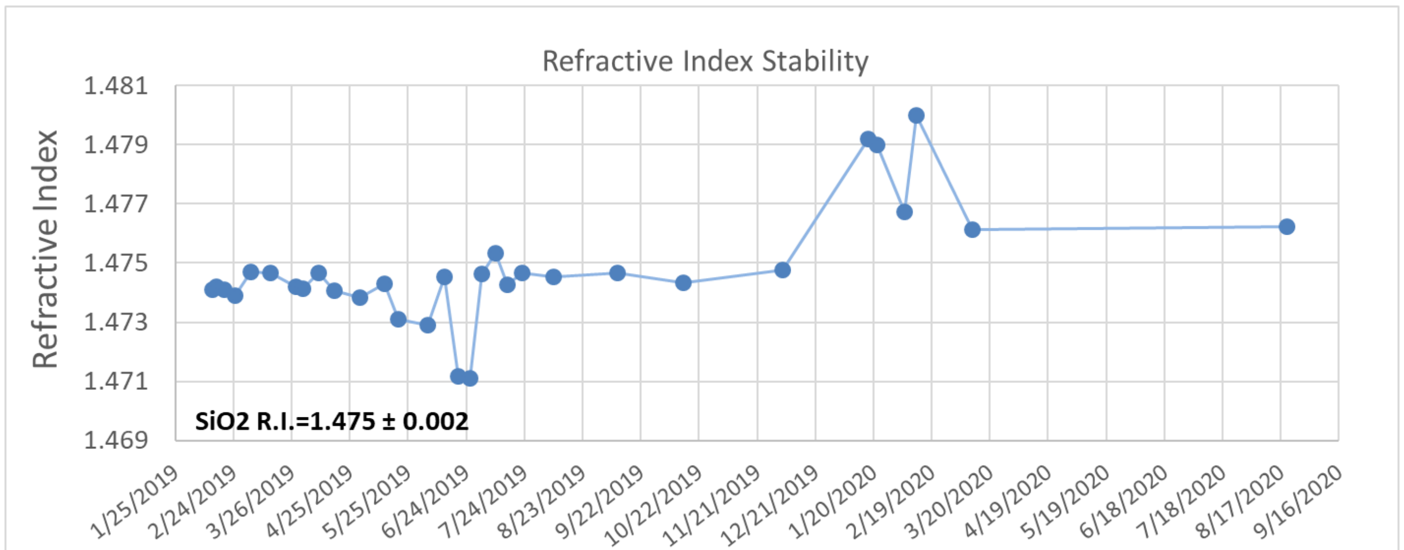




Oxford ICP-CVD SiO2 @ 250 ˚C – Recipe: OPT SiO2 @ 250 – 8 nm/min – Process Check

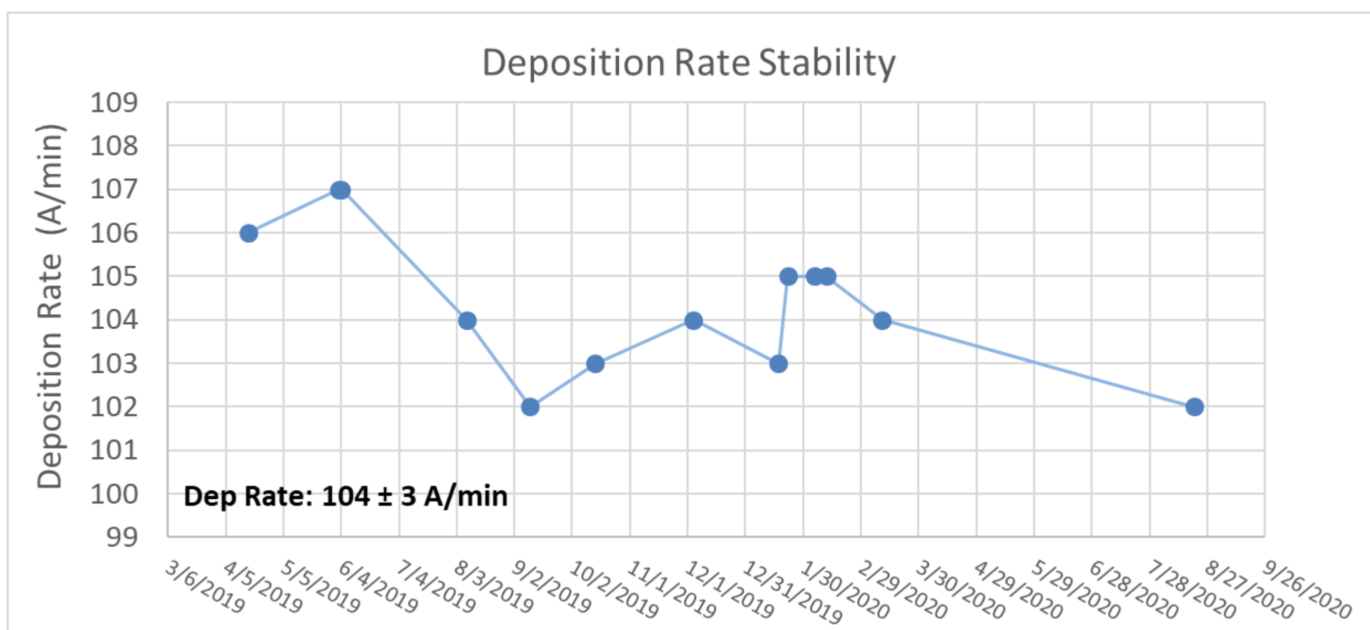
4% SiH4/Ar	N_2O	Pressure	ICP	RF	Temp.	Time	Thx. Non-uniformity	Avg R.I.	BOE 10:1 Etch Rate	Stress (Average)
sccm	sccm	mTorr	W	W	ºC	mm:ss	±%		Å/sec	MPa
100	**70**	**12**	**1000**	**20**	**250**	**15:00**	**< 3.0**	**1.475**	**12**	**-350**

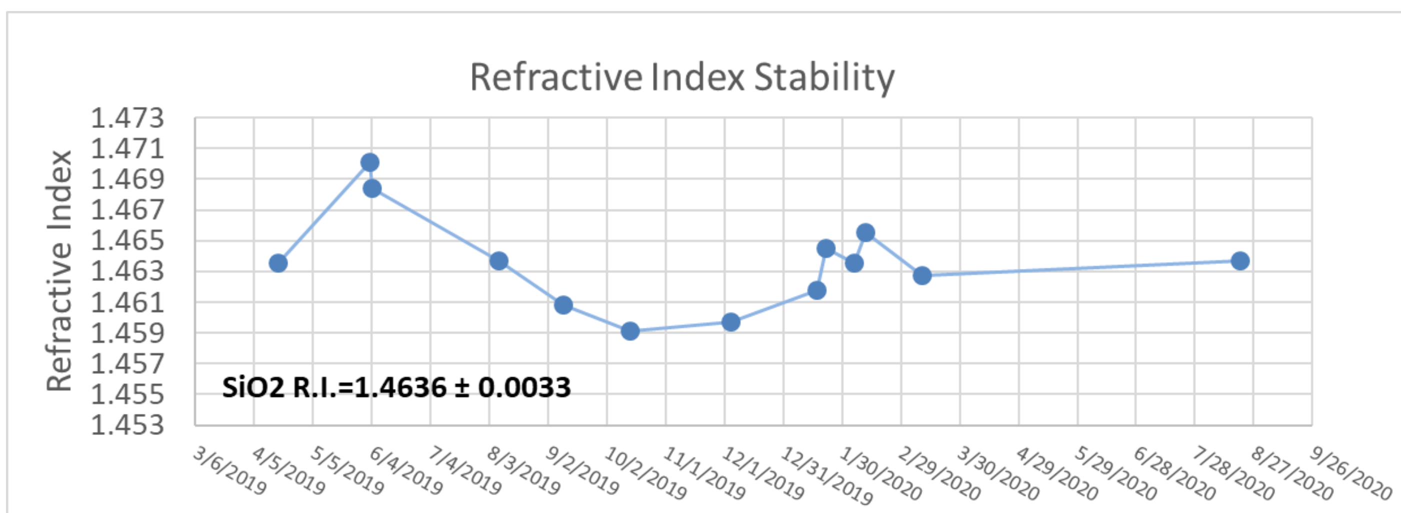




Oxford ICP-CVD SiO2 @ 250 ˚C – Recipe: OPT SiO2-O2 @ 250 – 10 nm/min – Process Check

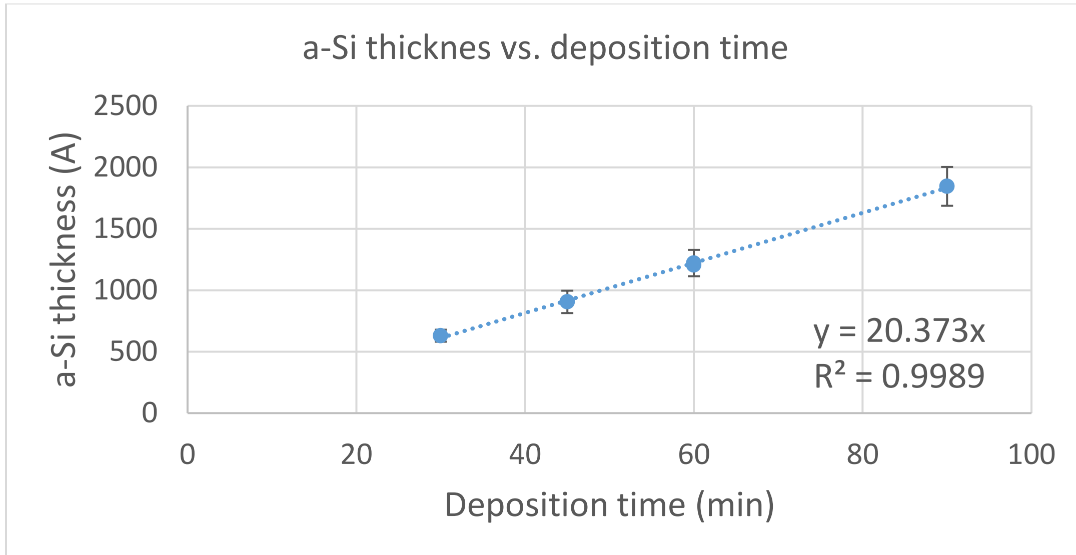
4% SiH4/Ar	O_2	Pressure	ICP	RF	Temp.	Time	Thx. Non-uniformity	Avg R.I.	BOE 10:1 Etch Rate	Stress (Average)
sccm	sccm	mTorr	W	W	ºC	mm:ss	±%		Å/sec	MPa
100	**15**	**8**	**1300**	**0**	**250**	**12:00**	**< 3.0**	**1.464**	**22**	**-120**

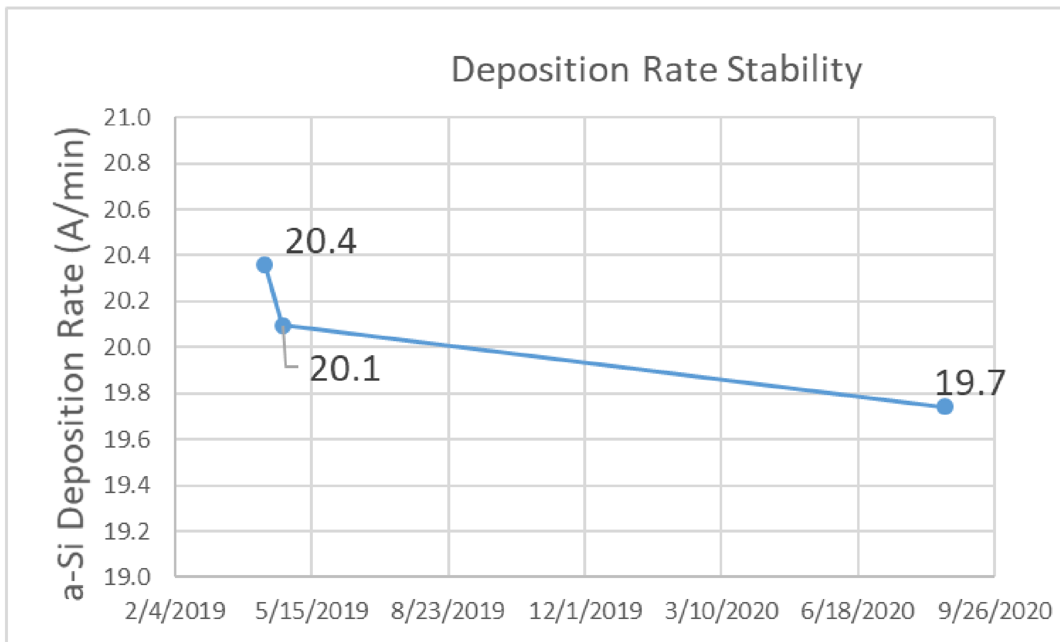




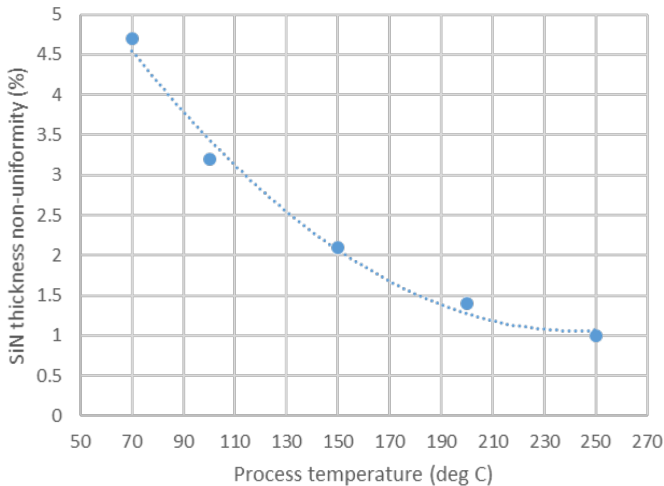
Oxford ICP-CVD a-Si @ 250 ˚C – Recipe: OPT a-Si @ 250 – 2 nm/min – Process Check

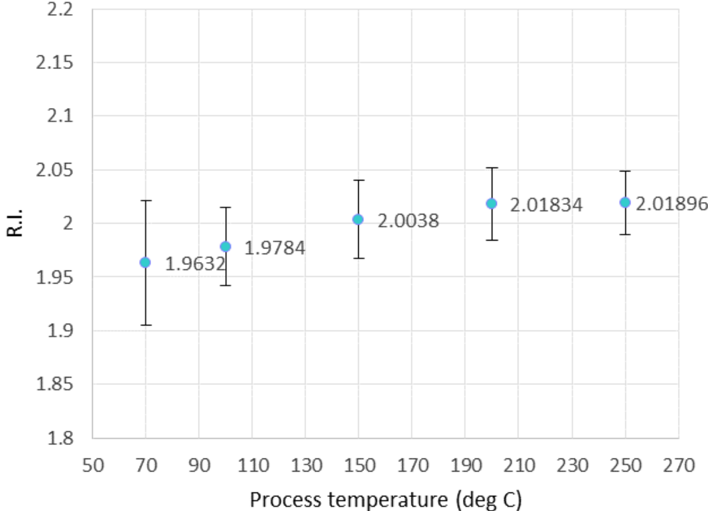
4% SiH4/Ar	Pressure	ICP	RF	Temp.	Thx. Non-uniformity
sccm	mTorr	W	W	ºC	±%
400	**15**	**500**	**0**	**250**	**~ 10.0**

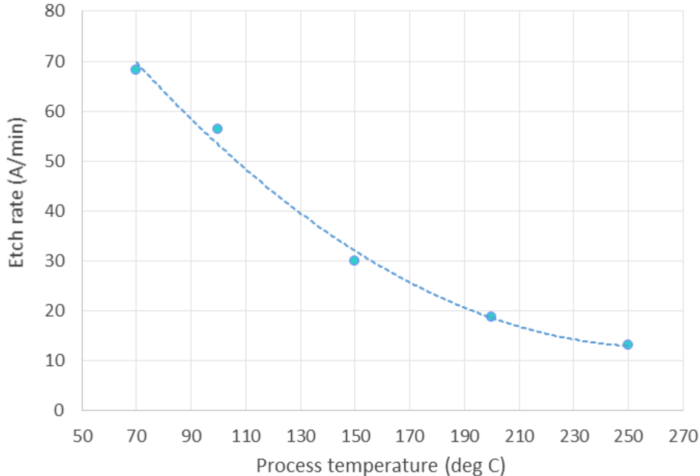




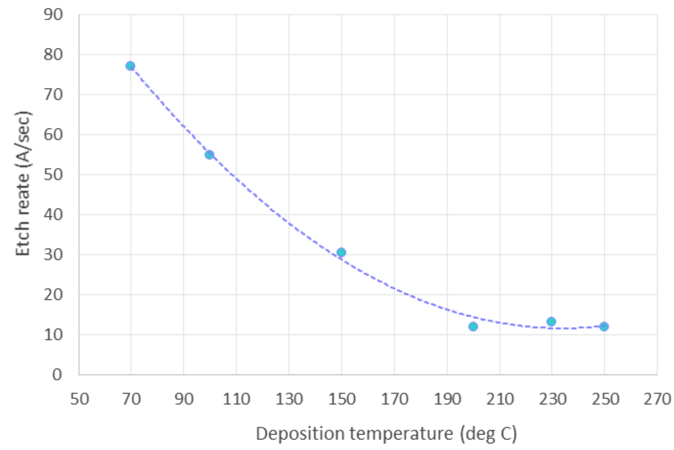
Effect of deposition temperature on OPT SiN @ 250 – 9 nm/min film properties

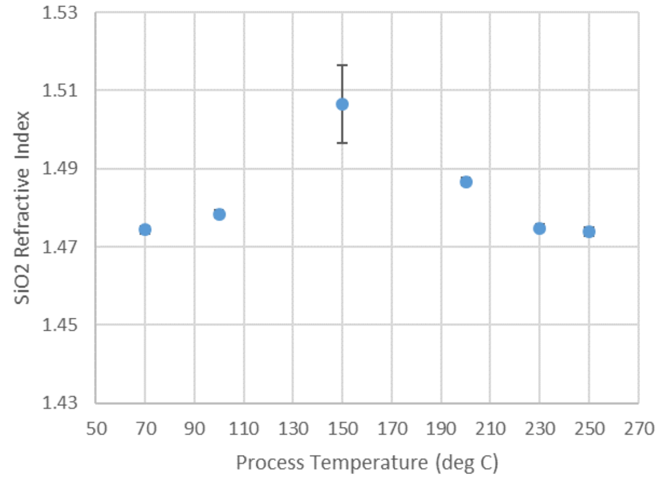


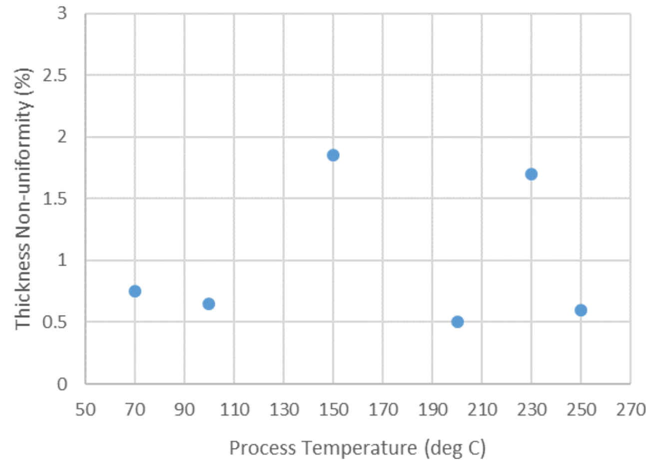


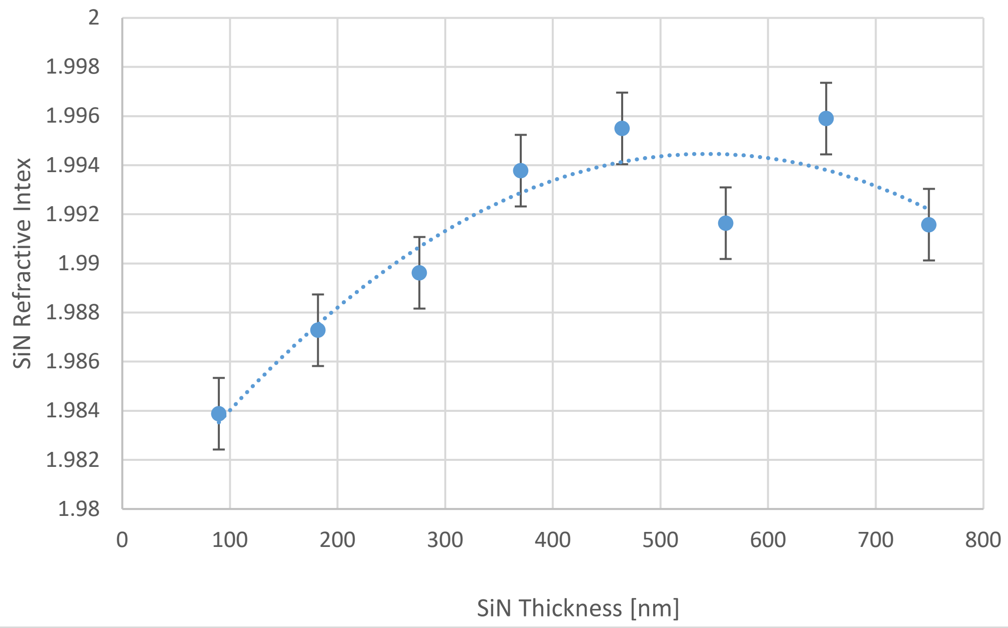


Effect of deposition temperature on OPT SiN @ 250 – 9 nm/min film properties








SiN Thickness Chamber Conditioning vs. R.I.
SiN Refractive Intex
2
1.998
1.996
1.994
1.992
1.99
1.988
1.986
1.984
1.982
1.98
0
100
200
300
400
500
600
700
800
SiN Thickness [nm]