UNIVERSITEIT GENT

imec

PHOTONICS RESEARCH GROUP

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Summary

MEMS-based steerable grating couplers

- New structures arrived – post-processing completed
- Lateral movement now clearly demonstrated (+/-1um)
- Axial movement : not yet

Electrically injected silicon-quantum dot amplifiers

- Delay in processing
- To start next week

Optimization of SiN-etching process

- To be combined with embedded quantum dots

Characterization of 1D photonic crystal structures (Silicon)

- Next step: combine with quantum dots

SiN etching

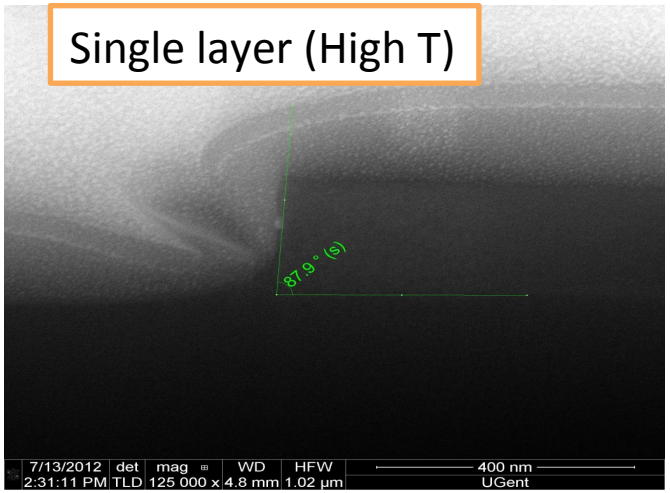
Double SiN layer with embedded QDOTS

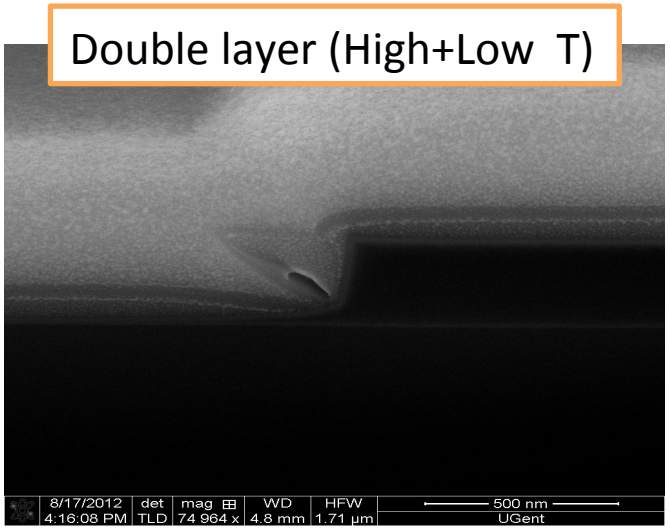
- High Temperature first
- Then Qdots
- The Low temperature

Issue: low temperature layer etches very different

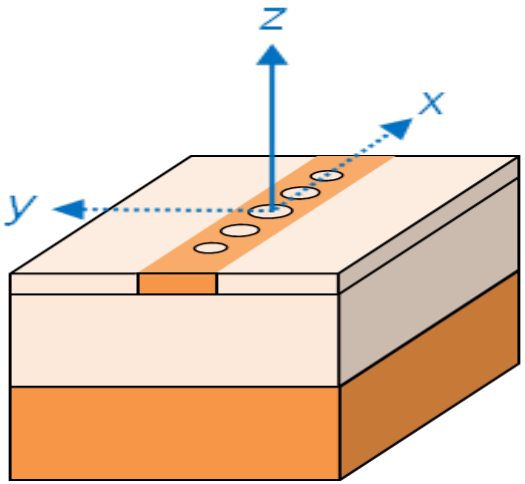
Initially: Step of > 500nm

Optimized process: no step !!!





1D Photonic Crystal cavities



Fabrication using 193nm DUV

Quality factor >50.000

(Oxide embedded !!)

Next step: QDots on top