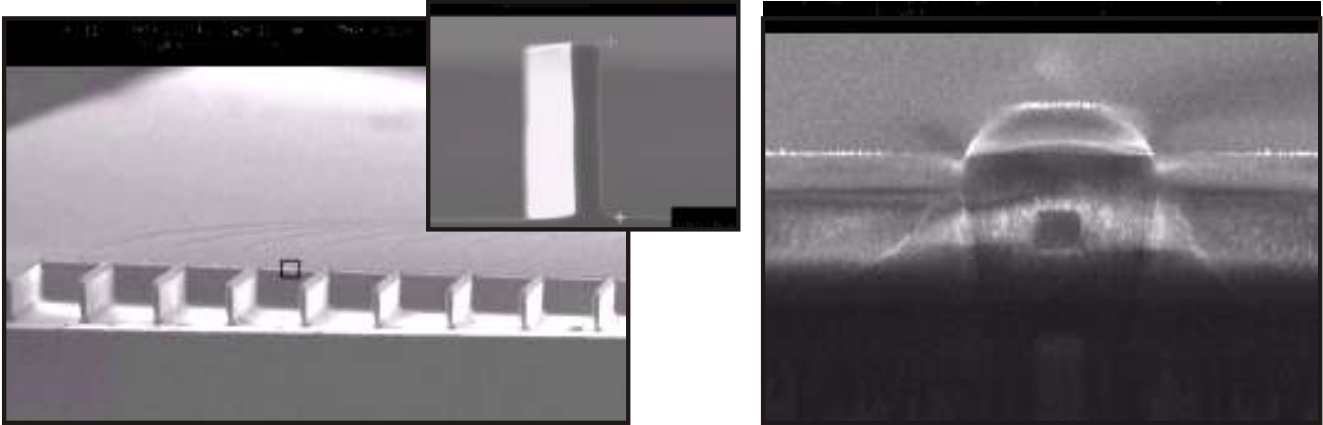


# Plasmalab Data

## SiO<sub>2</sub> PECVD and Si ICP RIE for DWDM



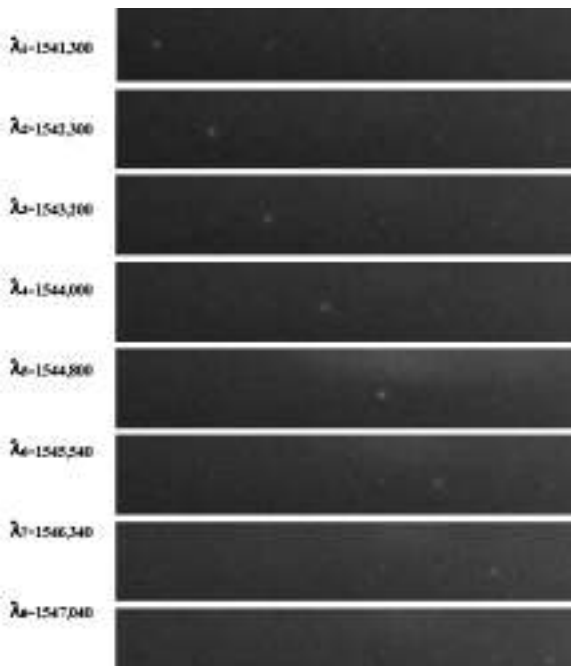
80 μm deep Si etching (ICP65)  
 The etch groove shape is smooth and adapted for inserting fibers into DWDM chips.  
 low temperature process at - 110°C  
 etch rate: 5 μm/ min  
 selectivity Si/SiO<sub>2</sub> 55 : 1  
 uniformity: +/- 4 % across wafer

**Plasmalab System 100**  
**Plasmalab System 133**



The waveguide structure:  
 lower cladding 5 μm SiO<sub>2</sub>  
 core SiON: d=2.5 μm  
 RI difference 1.5 %  
 upper cladding 5 μm SiO<sub>2</sub>  
 deposition rate: 70 nm/min  
 RI uniformity: <+/- 0.05 %  
 (measured applying prism coupling)  
 thickness uniformity: <+/-1.0 %

### Plasmalab 80 Plus



Infrared camera images of 8-channel DWDM outputs  
 Crosstalks: -10dB

The **Plasmalab 80 Plus** PECVD system is used for depositing SiO<sub>2</sub> – SiON waveguide films.

The **Plasmalab 80 Plus** etching system is used for anisotropic etching of such films in RIE mode, while the ICP mode is preferred for Si deep etching with shaped walls.

with kind permission of:  
 Optolink Zelenograd  
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