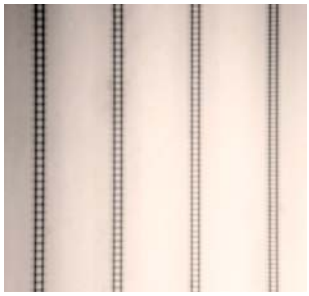
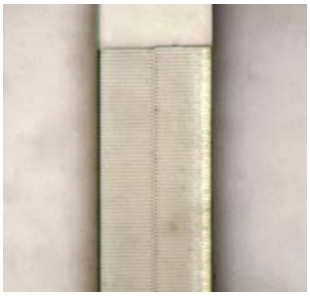
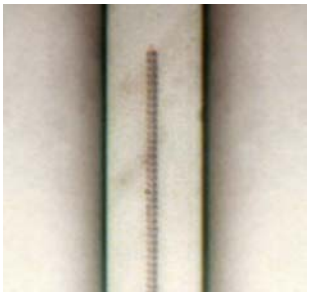
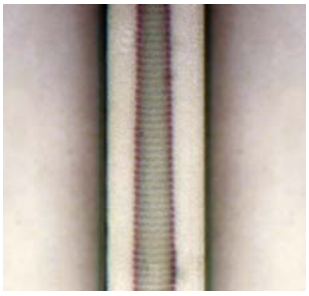
Channel-Waveguide Bragg Gratings

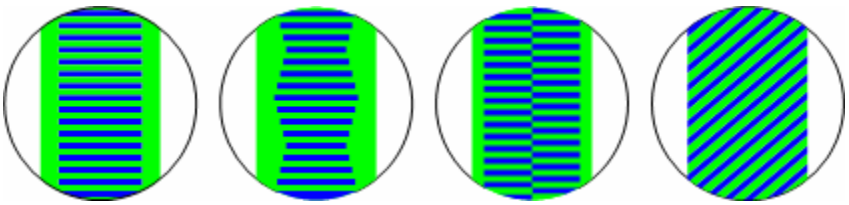
Crafting light for the Information Age

LightSmyth has extensive experience in the design and fabrication of silica-on-silicon channel-waveguide gratings rendered via DUV photolithography and etch. We produce integrated waveguide gratings with line-by-line customization of pitch, orientation, profile, and curvature – capability unheard of in UV-written gratings.

Features

- Minimum feature size 200 nm with placement accuracy <10 nm over 30 mm
- Refractive index contrast: from 0.8 % to 3 %
- Etch depth: up to 1000 nm with aspect ratio (depth/width) 5:1
- Arbitrary phase and amplitude apodization, arbitrary tilt angle
- Polarization dependent loss as low as 0.05 dB (application dependent)
- Coherence length up to 33 mm
- SMF 28 fiber coupling: 0.3 dB /interface (for optimized waveguide cross section)
- For resonance wavelengths > 1200 nm/M (M^{th}-order gratings in SiO_2)



Software-controlled shape of individual grating lines down to 200 nm pixel size

Applications

- Passband-Tailored Filters
- Integrated Cavities
- Integrated Polarizers
- CDMA Coders
- Grating-assisted Couplers
- Sensors
- Laser Locking
- Gain Equalizers
- Mode Converters
- Dispersion Compensators

Specialty Applications

Custom Designs

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