

# Fabrication of High-Aspect Ratio Yttrium Iron Garnet (YIG) Waveguides and Photonic Crystal Polarizers

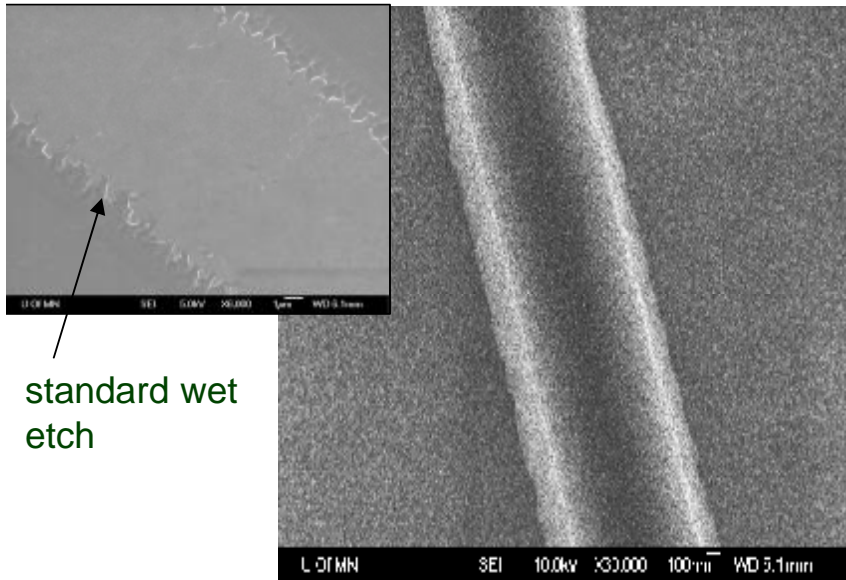
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## I Motivation: Integrated Optical Isolators

### 1) High-aspect ratio (Height :Width) ridge waveguide reduces birefringence

- Reactive Ion Etching (RIE): expensive and time-consuming;
- Standard wet etching: rough, poor optical quality;
- An innovative wet etch has been developed that gives smooth, high-aspect-ratio waveguides.



Ridge waveguide after annealing  
(Aspect Ratio ~ 1)

### 2) Focused Ion Beam Etching to produce photonic crystal polarizers.

