



# RESONANT GRATING FILTERS

*Device insensitive at the polarization and tunable in wavelength.*

## Technological benefits

### Flexibility

Independent filter of the polarization.  
Tunable wavelength.  
Can be adapted to other wavelengths.  
Very compact.  
Important fineness (very low spectral width).

### Efficiency

Tunable over a large spectral range.  
Signals twice as strong (no polarizer).  
Optimized treatment.  
Thin.  
Achievable with microelectronics type technologies.

## Invention overview

Existing filters are very sensitive to the polarization. The invention proposes a tunable solution and polarization insensitive. It allows to obtain a good quality of metrology. This filter improves performances of spectrometer's optical chain. It can replace existing parts of the processing chain (thin film filter, diffraction grating).

## Potential applications

Spectroscopy

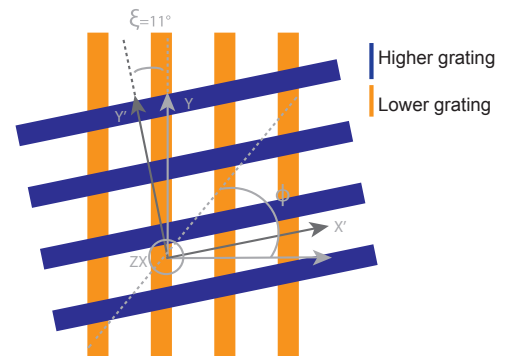
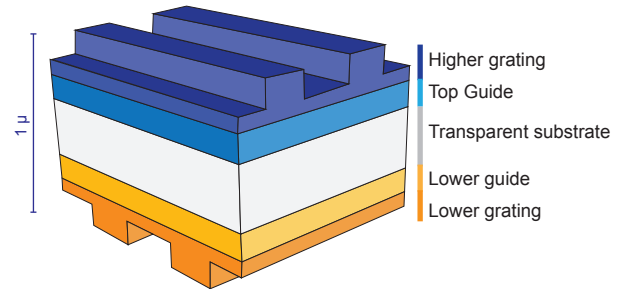
Metrology

Laser Safety

Deposit filters on detectors

Chemistry

Filter's structure



## Commercial benefits

### Custom made

Filters can be designed as needs.  
Adaptable wavelength and spectral width (fineness of a factor 100 to 1000)

### Economic

May be included in conventional microelectronic's process.  
Possible integration on sensors.  
Technology transfer.  
Existing parts.

**TRL : 3**

*Invention available under license.*