

# Nonlinear Temperature Dependence of Etched Fiber Bragg Gratings

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## Abstract

In this work, we experimentally study the thermal sensitivity of etched fiber Bragg gratings immersed in surrounding media with high refractive index (1.444). The fiber diameter was reduced at four different values 15, 10, 9, and 8  $\mu\text{m}$ . A nonlinear behavior is observed, due two combined effects: the Silica thermo-optic effect that causes a red shift and the surrounding thermo-optic effect that causes a blue shift.

## Index Terms

**Inspe**

**Controlled Indexing**

Not Available

**Non-controlled Indexing**

Not Available

**Author Keywords**

[Etched fiber](#) [fiber Bragg grating](#) [refractive index](#) [temperature](#)