

## عنوان مقاله:

Ultra-compact photonic crystal based water pressure sensor

## محل انتشار:

همایش ملی الکترونیک‌های دستاوردهای نوین در علوم مهندسی و پایه (سال: 1393)

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## خلاصه مقاله:

In this article we have designed an ultra-compact water pressure sensor by using photonic crystal technology on InP substrate at 1.55 $\mu$ m wavelength window. The photonic crystal is consisted of rods in hexagonal lattice and PMMA background. By using plane wave expansion (PWE) method, the lattice constant and radius of rods is obtained 520nm and 80.6nm, respectively. With a nanocavity placed in the waveguide, a spectral shift of peak wavelength is observed. Any change of the pressure inside the nanocavity results in the shift of the resonance wavelength. Our simulation shows a shift of about 10nm for a pressure change of 1200bars. The varied resonance wavelength as a linear relation of water pressure was observed.

## کلمات کلیدی:

sensor, water pressure, InP material, photonic crystal

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/303901>

