



GAVIN CONFERENCES

# International Conference on Advances in Biotechnology

July 10-12, 2017 Dubai, UAE

## Photonic-Bandgap effect of a Ti:LiNbO<sub>3</sub> (Zut-Cut) Fabry-Perot resonator-based biosensor

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One of the numerous biosensor facilities has been established within our laboratory (FEMTO-ST Institute). In real terms, it is a platform for the biomolecules detection based on micro and nanotechnology, made up especially of a Ti:LiNbO<sub>3</sub> (Z-Cut) Fabry-Perot cavity. The interaction between the specific analyte and the sensitive grafted layer on this platform was fairly consistent to achieve the variation in the spectral response. However, there are many technological factors that goes into making this platform enough complex to elicit the desired response. In this work, we will expose the spectral response obtained after reaction in a specific way with the targeted biological entity. Knowing that our system is structured to exhibit a photonic band gap effect, we have observed, after detection, an enlargement and a shift of about 27 nm of this band gap and also an attenuation of the transmitted signal up to 5.7 dB.

### Biography

Chafia Benmouhoub received her engineering and M. Sc degrees in Optics and Precision Mechanics from Setif University, Algeria, in 1994 and 2005. Her Ph.D. was received from Franche-Comte University, Besancon, France, in 2014. Her current research interests include integrated optics, MOEMS and biosensors applications. Dr. Benmouhoub is actually member of Growth and Characterization of New Semiconductors Laboratory, Electronics Department, Setif University, Algeria.