

V. Conclusion

The sensor design consists of a two dimensional square lattice photonic crystal structure with a line defect. It is simulated and analysed for detecting different liquids in air and water. Visibly distinct shift in both wavelength and frequency are observed, proving the sensor to be sensitive to even a smallest change in the input liquid. Photonic crystal structure with line defect provides better sensitivity as compared to other photonic crystal design or other optical fiber sensor design. The sensor has sensitivity of the order of 0.000288 /RIU and the spectrum shows distinct shifts in both frequency and wavelength. The design meets the fabrication requirements as the quality factor obtained is 134837.

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