|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | Surface Plasmon Resonance Biosensor in Healthcare Application Using Kretschsmann & Otto Configuration | | |
| **Author(s) Name:** | Nusrat Alim, Mohammad Nasir Uddin, “ | | |
| **Contact Email(s):** | drnasir@aiub.edu | | |
| **Published Journal Name:** | AIUB Journal of Science and Engineering (AJSE) | | |
| **Type of Publication:** | Journal | | |
| **Volume:** | 17 | Issue | 1 |
| **Publisher:** | ORP-AIUB | | |
| **Publication Date:** | 31st March 2018 | | |
| **ISSN:** | p-ISSN 1608-3679, e-ISSN 2520-4890 | | |
| **DOI:** | 10.53799/ajse.v17i1.1 | | |
| **URL:** | https://doi.org/10.53799/ajse.v17i1.1 | | |
| **Other Related Info.:** | Page 1-6 | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| In this study, a planar D-shape optical fiber sensor based on Surface Plasmon Resonance phenomenon using two different excitation methods has been demonstrated. The proposed bio-sensor uses Amplitude-Wavelength hybrid detection technique to determine the change in urine refractive index that depends on resonance parameters. The analysis employs finite element method to investigate the optical properties of the proposed sensor. From the results it can be evident that Otto configuration offers greater amount of reflected light intensity dip for a particular urine refractive index in comparison with Kretschmann configuration. For an example, for Otto configuration the dip of reflected light intensity measured in terms of reflectance which attains a value 0.5 for ns (urine refractive index) of 1.489 while Kretschmann configuration provides a dip of 0.65 for the same value of ns. Results also show that the sharpness of reflectance is comparatively higher for the sensor using Otto configuration in comparison with Kretschmann configuration in case of wavelength interrogation. Thus, Otto configuration offers better performance in comparison with Kretschmann configuration. | |