Abstract Submitted
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Semi-hemispherical lens optical system for surface plasmon resonance measurements—an undergraduate research project FACUNDO SORIA, DOUGLAS ZINN, SURESH SHARMA, UT Arlington — We discuss the design and setup of a semi hemispherical lens based optical system for carrying out surface plasmon resonance (SPR) measurements. Because of extremely high sensitivity of SPR to changes in the refractive index, the technique is used widely for applications in physics, chemistry, and biotechnology. Often the Kretschmann or Otto configuration optical systems are used. In one type of application, the relative intensity of reflected beam is measured as a function of the incidence angle around the resonance angle, which shifts with the refractive index of the material.....[1] The focus of this undergraduate research project was to design, setup, and study the performance of a semi-hemispherical lens based system, which uses high resolution digital microscope to collect reflectivity data over a wide range of angles in *one-shot* without the need for angle scans. This minimizes the time and effort for carrying out SPR measurements.....[2]

1. S. C. Sharma, in Advances in Sensors; http://www.sensorsportal.com/HTML/BOOKSTORE/Advances in Sensors Reviews Vol 5.pdf, IFSA Publishing, Barcelona, Spain 2019

2. Dehmel et al., Appl. Phys. Lettes., 111, 201102 (2017)

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