

Fall 2018 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Sep 20, Thursday, 4-5 PM in Science Building 127

(coffee and cookies will be served at 3:50 PM)

Condensed matter physics

Surface Plasmon Resonance

: A Simplistic View of Basic Physics and Applications

Dr. Suresh C Sharma

University of Texas at Arlington



Professor Sharma holds a Ph. D. degree (1976) in Physics from Brandeis University, Waltham, Massachusetts, USA. He received BS (1965, Agra University, India) and MS (1967, Meerut University, India) degrees. Over the years, Dr. Sharma's research has spanned variety of areas, including defects in materials by using low-energy positron-electron annihilation, deposition and characterization of diamond thin films, electro-optical properties of liquid-crystalline materials, and surface plasmon excitations. Professor Sharma has

supervised more than 30 PhD/ MS graduate students, numerous undergraduates, and postdoctoral associates. He is recipient of SPS's Professor of the Year and Distinguished Service Award by the Texas Section of the American Physical Society.

More information about Dr. Sharma can be found at

<https://mentis.uta.edu/explore/profile/dr-suresh-sharma>

Abstract

The surface plasmon resonance is an intriguing optical phenomenon. It involves electromagnetic waves travelling along an appropriate metal/dielectric interface and having evanescent fields that decay exponentially normal to the interface. The underlying mechanism is sensitive to changes in the refractive index of the material at the metal/dielectric interface and has led to the development of variety of sensors for applications in physics, chemistry, biotechnology, etc. A simple view of the basic physics, selected techniques, and applications will be presented.