

# Analytical & Materials Seminar

THURSDAY

MARCH 22

12:15 PM

1315

CHEMISTRY

PROFESSOR  
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## *“NONLINEAR SPECTROSCOPY OF ORGANIC ELECTRONIC INTERFACES”*

In electronic devices, the molecular structures at material interfaces are important for determining their overall performance. However, these interfaces are often difficult to characterize due to their relatively low degree of order, exceedingly thin pathlengths, and buried locations. In this work, I will describe work that my group has been performing that utilizes nonlinear spectroscopic approaches to extract information about molecular structure from these challenging locations in organic field-effect transistors. Specifically, vibrational sum frequency generation is applied to molecular vibrations that reside at the buried interfaces in these layered organic systems. The measurements are carried out on operational devices while they are being activated, and as a function of various surface treatments incorporated during the assembly process. Ultimately, we show that we are able to connect some of the microscopic origins of macroscopic device behavior with this approach.