



SFG Study on Molecular Structures of Polymer/Metal Interface



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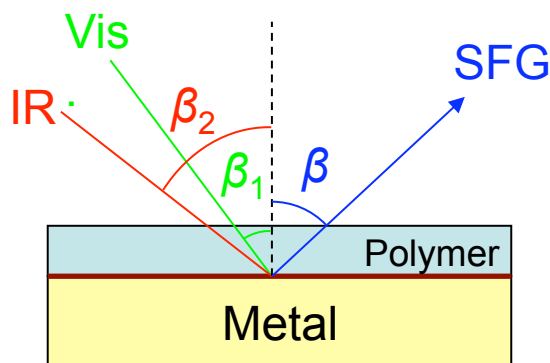
Background

Polymer/metal interfaces are important for next generation computer chips and anti-corrosive coatings, but study of such interfaces is difficult. Traditionally, it requires to break each interface into two surfaces to study. This may alter the structure of the interface.

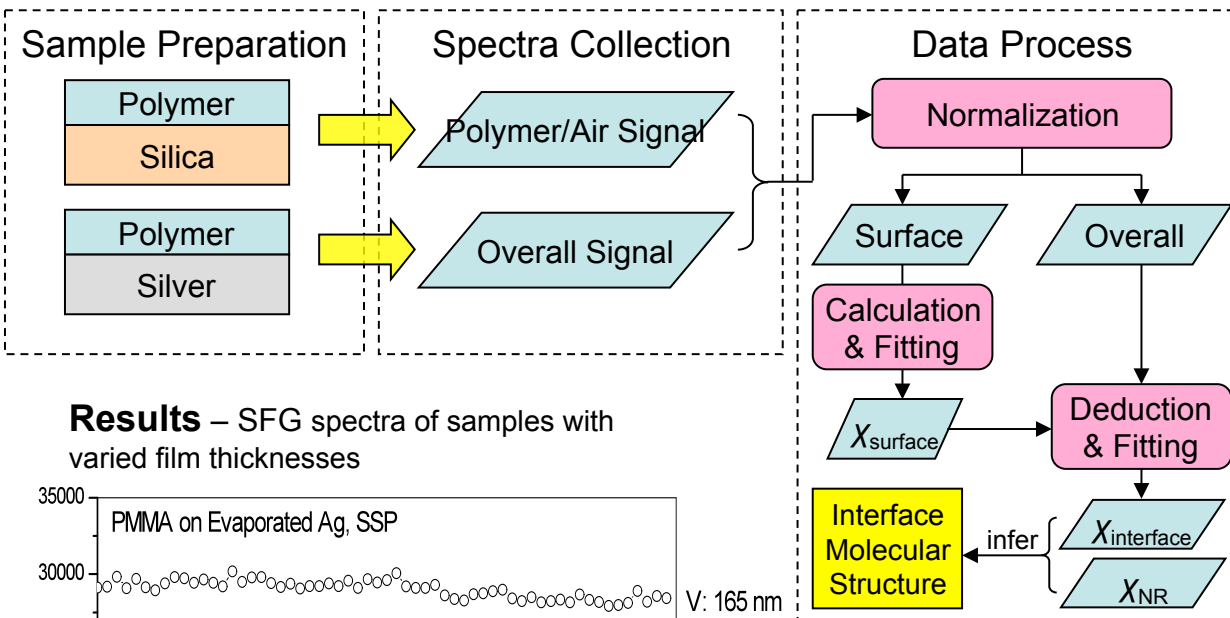
Method

Sum Frequency Generation (SFG) Vibrational Spectroscopy is a second-order non-linear optical technique, with two input beams of a visible and an infrared and one output beam of sum-frequency light.

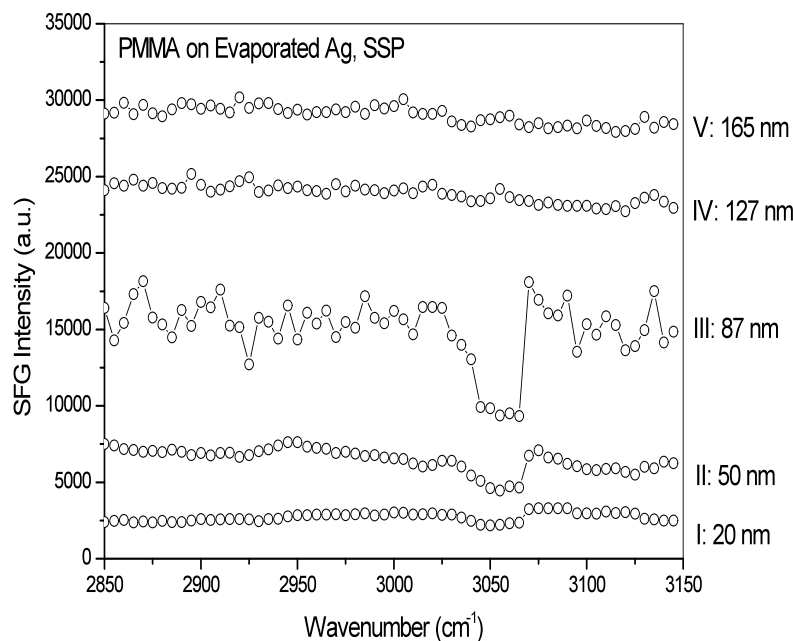
SFG is interface sensitive and can be used to directly probe a buried polymer/metal interface *in situ*.



Procedures



Results – SFG spectra of samples with varied film thicknesses



Future Work

- Fit the PS/silver spectra
- Deduce molecular structure at the PS/silver interface
- Calculate Fresnel Coefficients

Acknowledgements

The Chen Research Group

