Tip-enhanced Raman spectroscopy (TERS) is a powerful tool to study chemical reactions since it provides chemical information on the nanometer length scale. In fact, it can “see” one single molecule at a time, this was carried out by studying the vibrational signature of two rhodamine isotopologues.

The combination of spatially resolved chemical information with its outstanding sensitivity makes TERS a unique technique for fundamental research but also for sensing applications.

**Left:** Scheme of experimental set-up.

**Right:** TER spectra for different isotopologues, analogous to a unique fingerprint that allows molecule identification.