

Video Rate THz Imaging

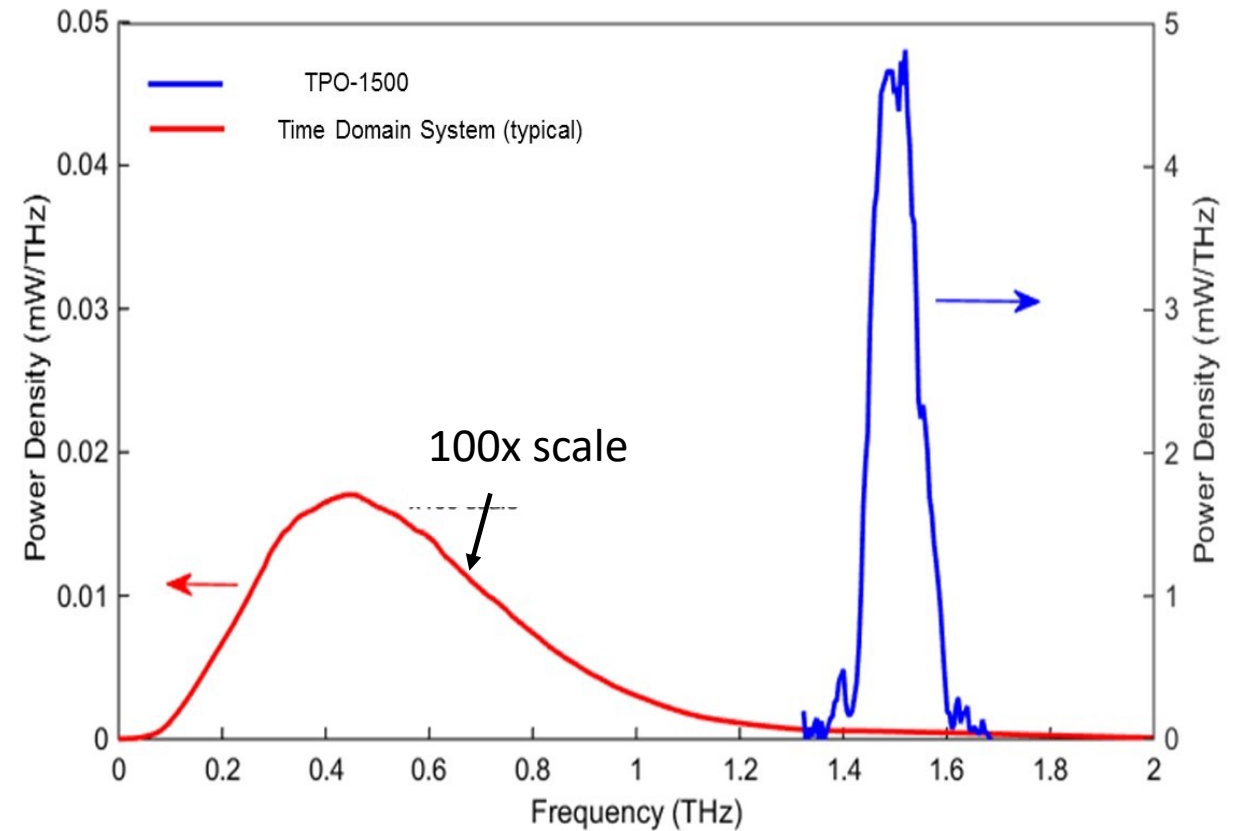
MICROTECH INSTRUMENTS, INC.

DR. VLADIMIR G. KOZLOV

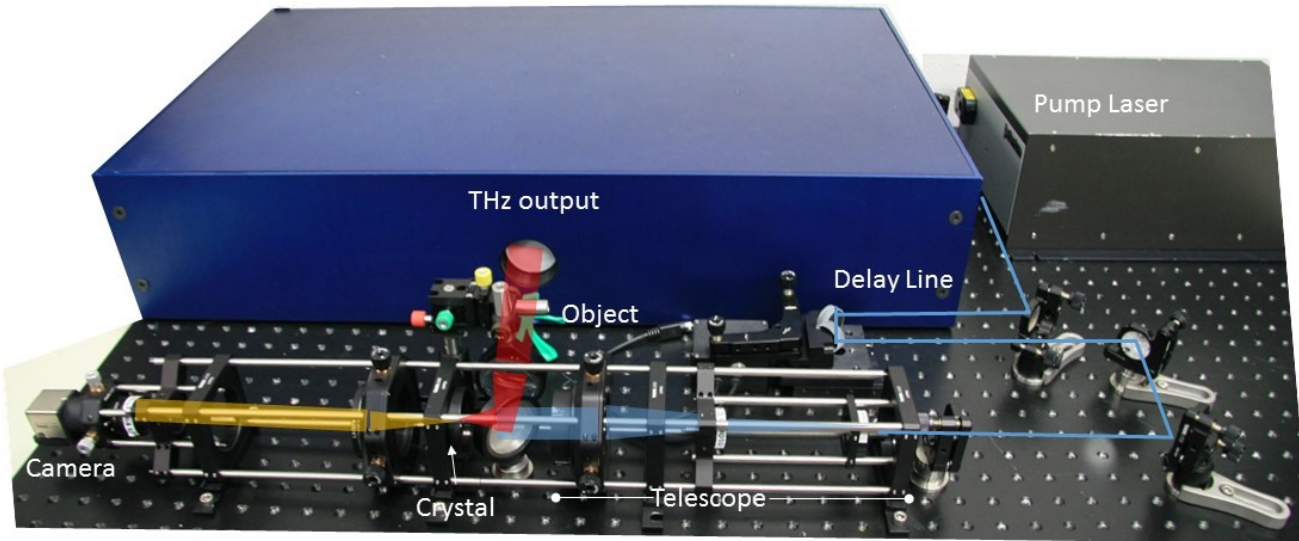
Terahertz Parametric Oscillator TPO-1500



Center Frequency	<i>1.5 THz</i>
Bandwidth	<i>100 GHz</i>
Average Power	<i>1 mW</i>
Pulse Width	<i>8 ps</i>

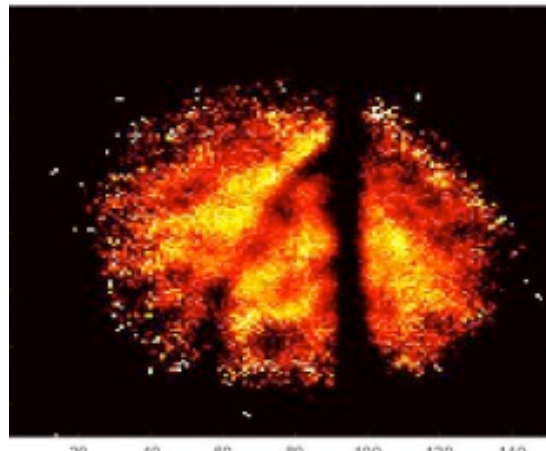


Video Rate Imaging using TPO-1500

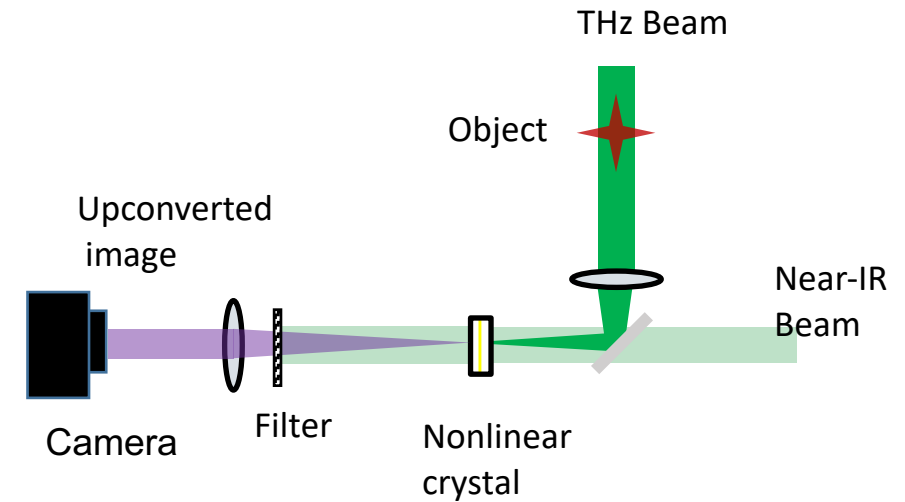
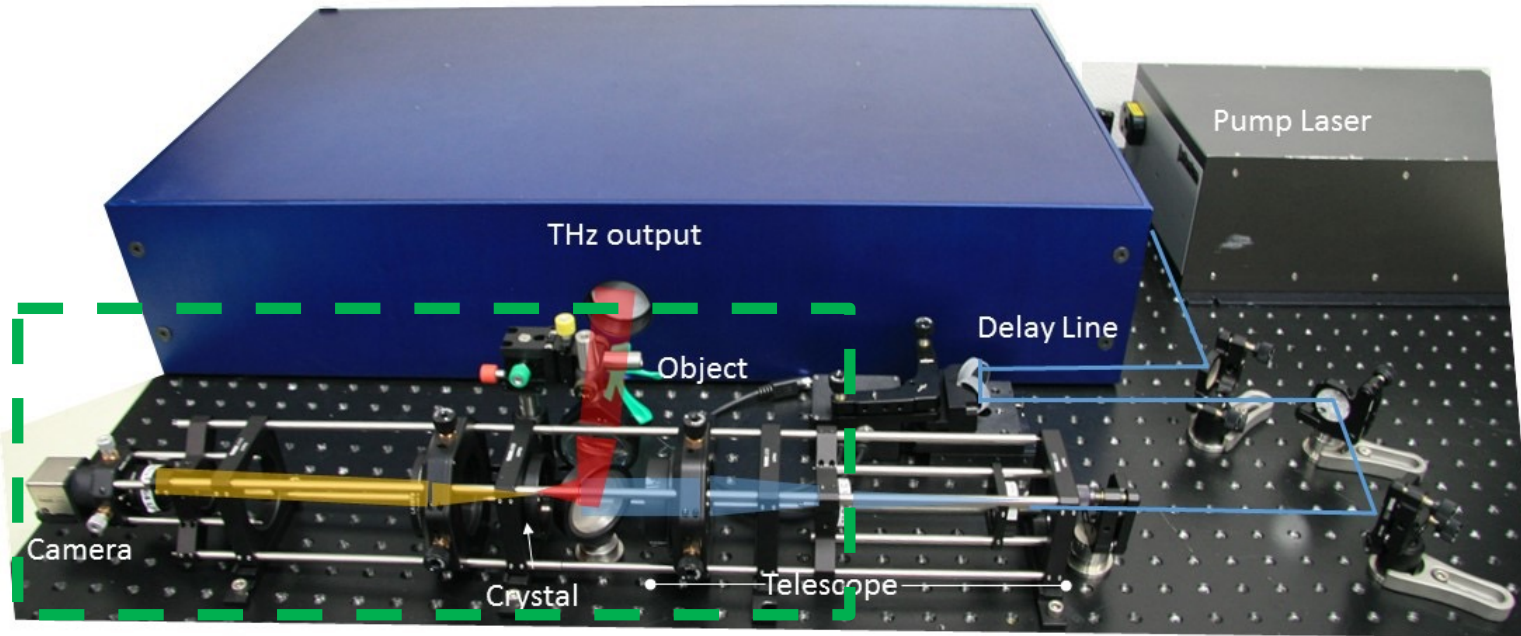


T-Vision imaging system is the solution for imaging applications that require high frame rates.

- All-in-one system, integrating our TPO Generator with imaging optics.
- Based on a nonlinear process where THz image is mixed with a near-IR pulse to generate an upconverted near-IR image that is detected with a CMOS camera.
- This system can be customized to suit your application!

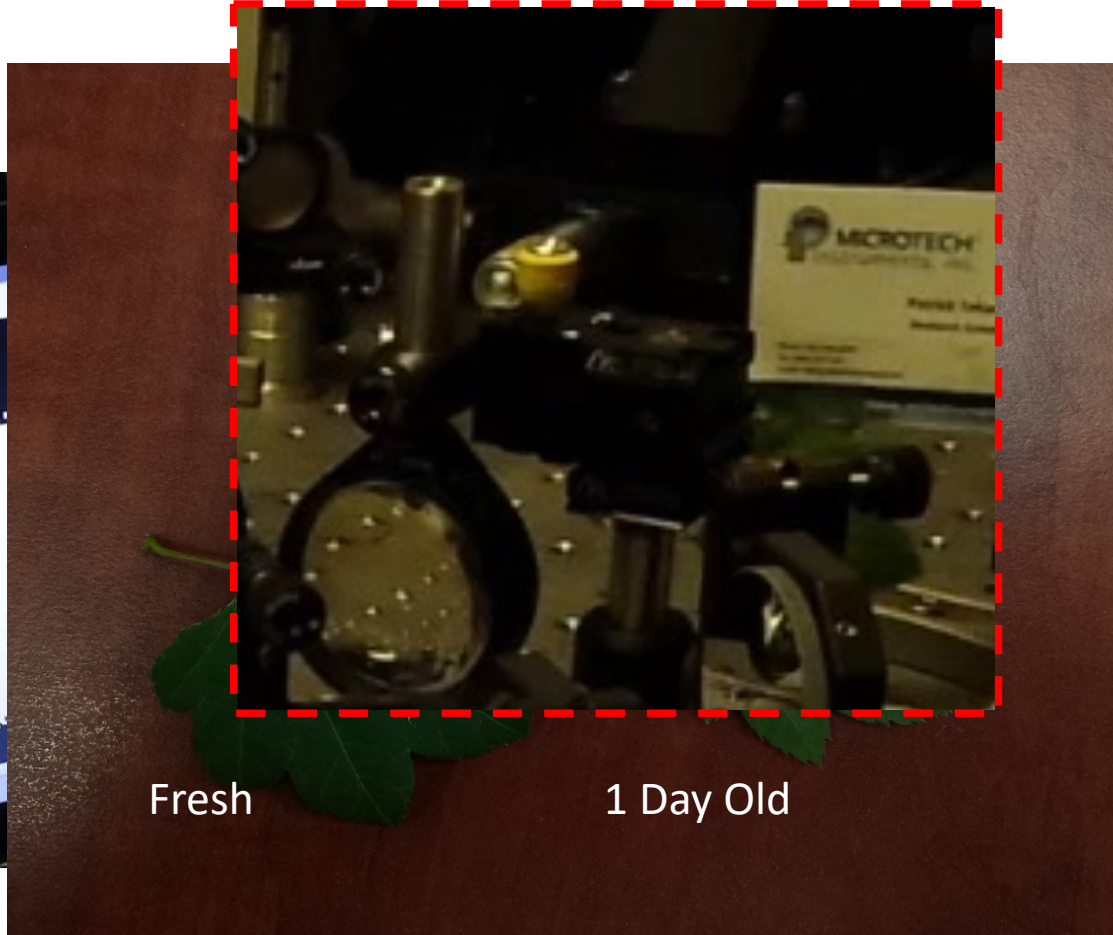


T-Vision – Video Rate Imaging System

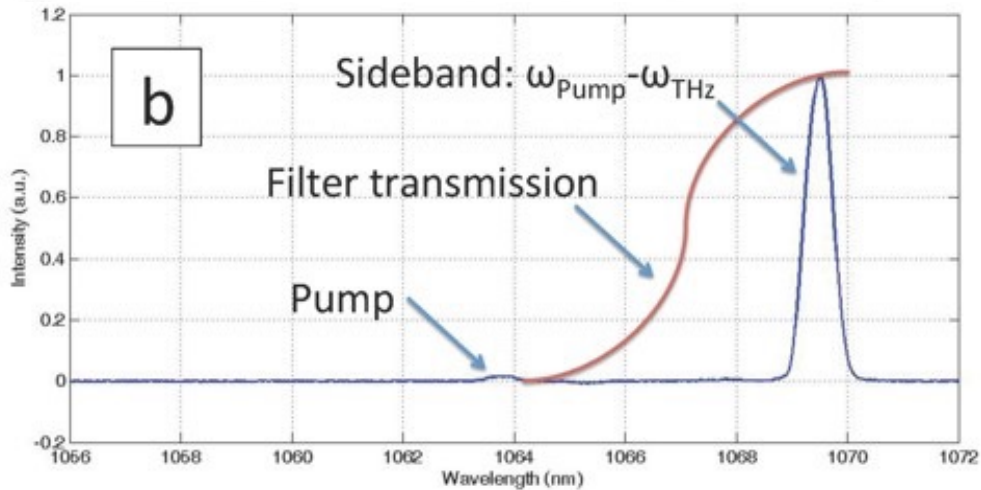
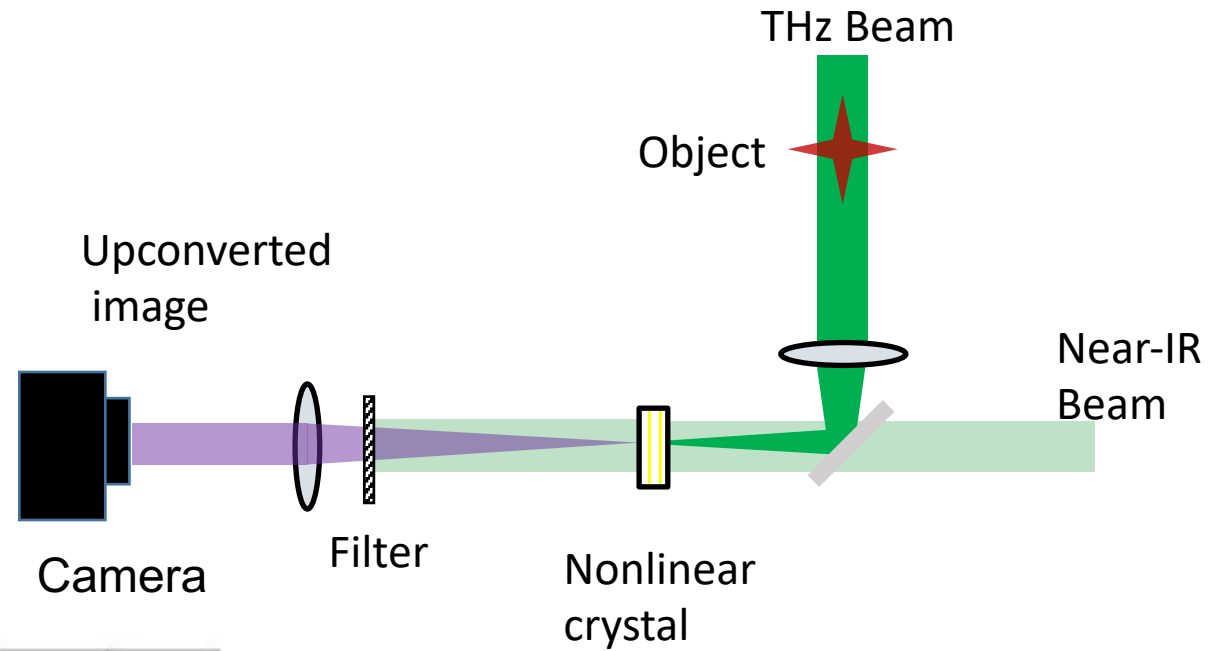


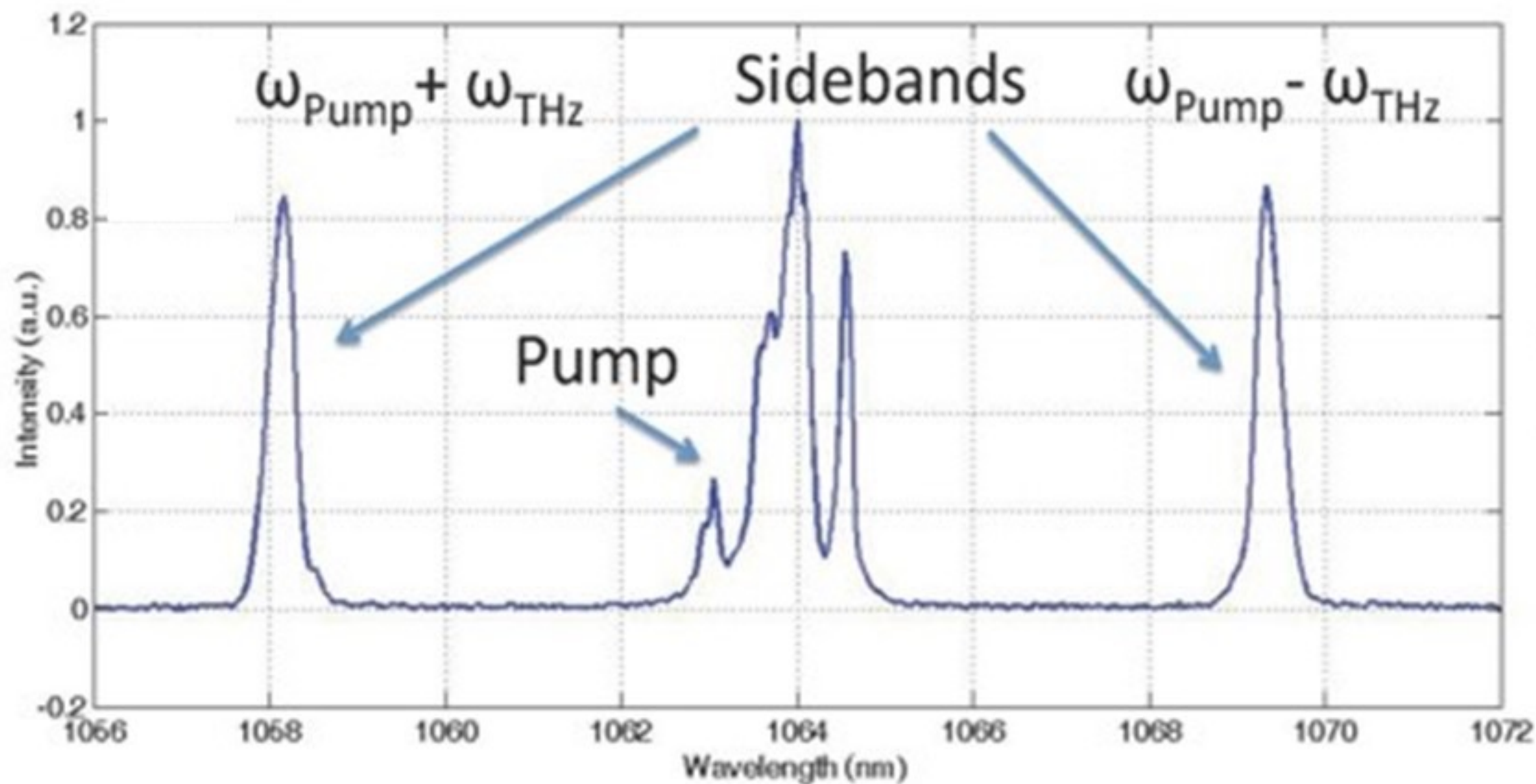
T-Vision

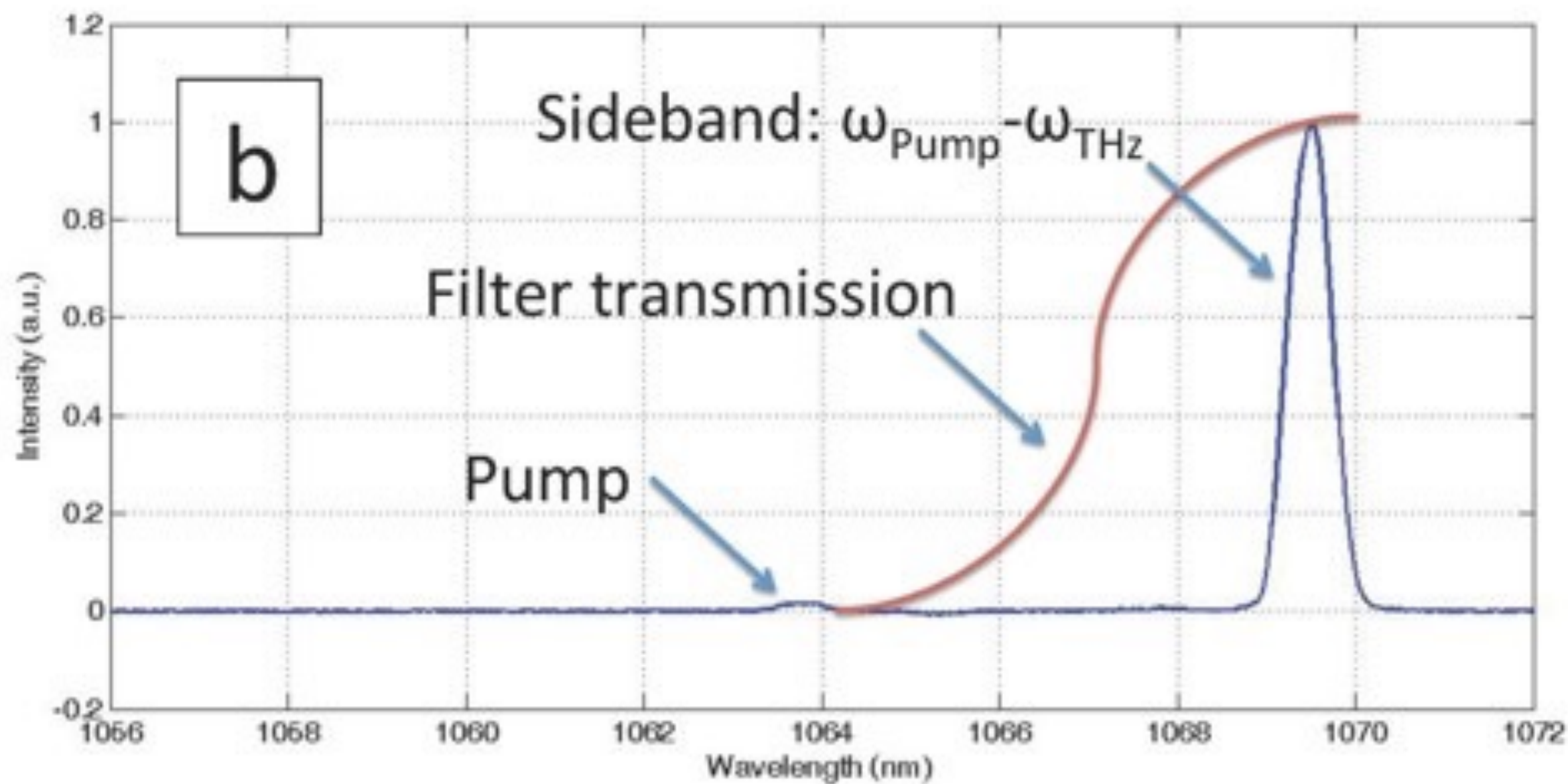
Real Time Imaging: Leaf Hydration Comparison

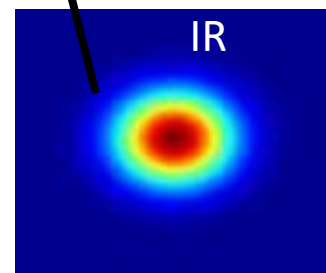
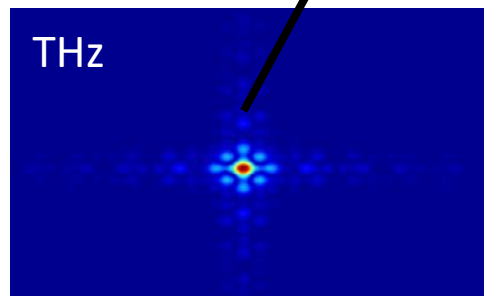
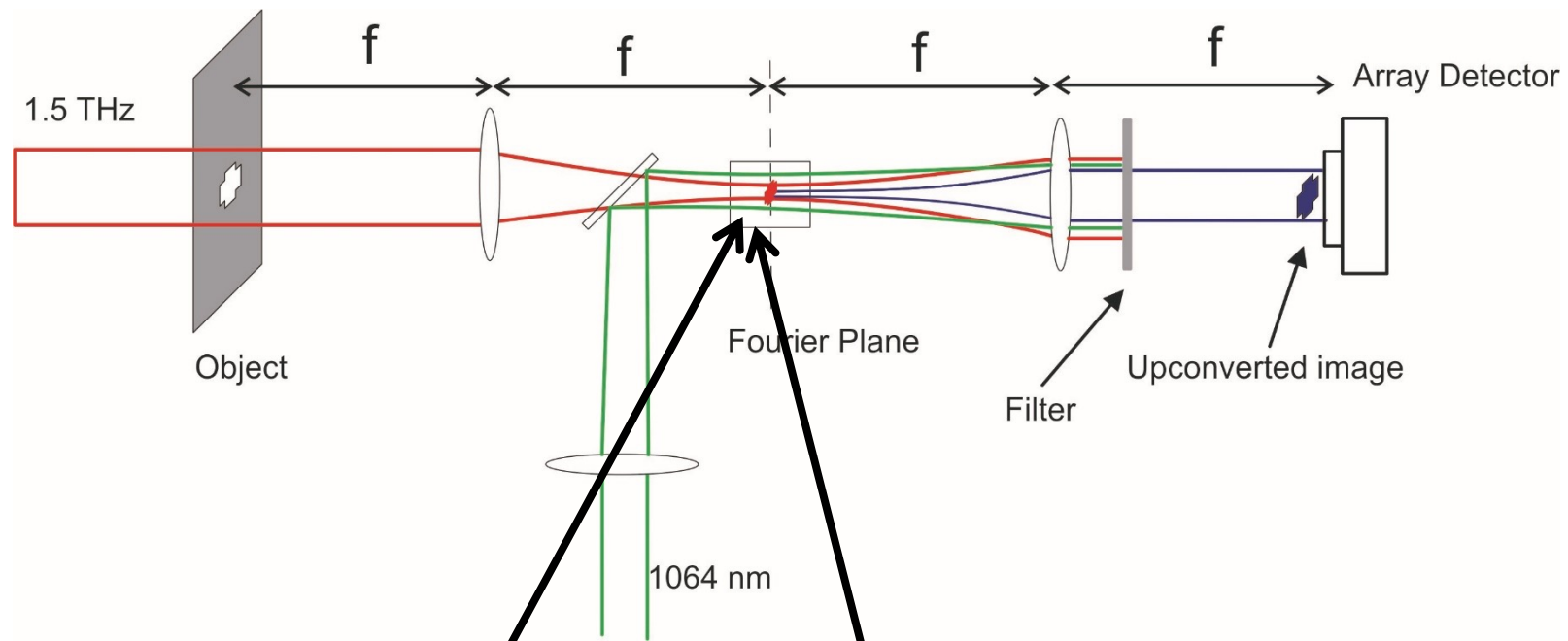


THz Up-Conversion Imaging









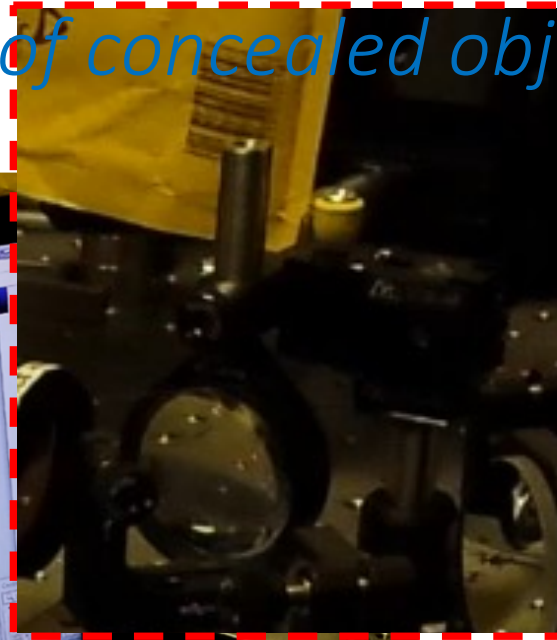
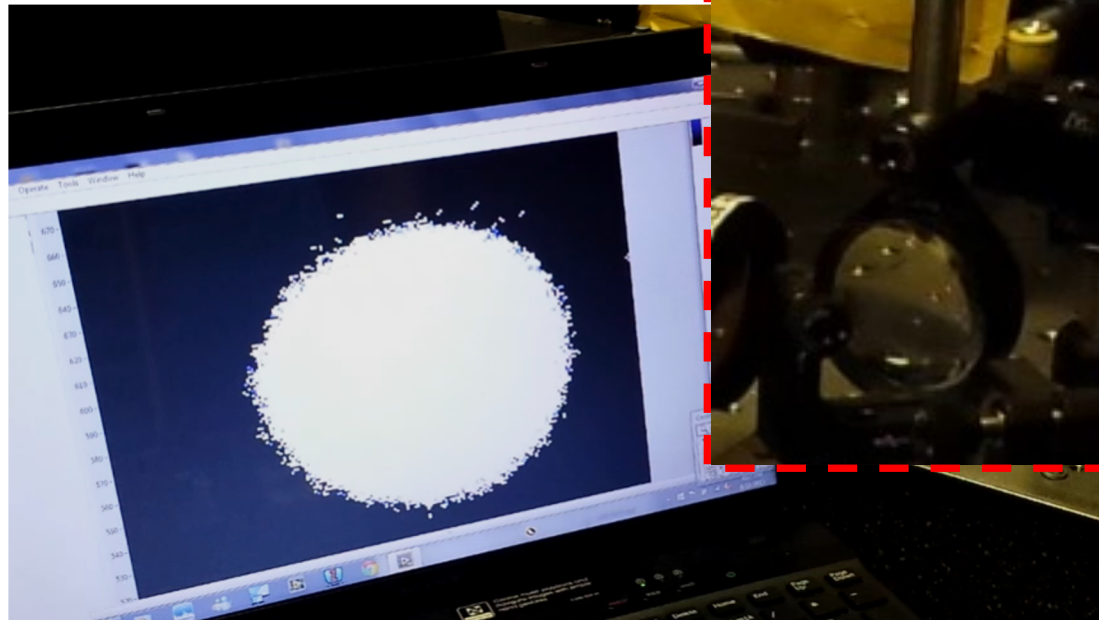
Large Pump \rightarrow More detail

Scaling factor:

$$M = \frac{\lambda_{up} f_2}{\lambda_{THz} f_1} \sim 1/100$$

T-Vision

Real Time Imaging of concealed objects



T-Vision

Real Time Imaging: Internal defect in plastic

