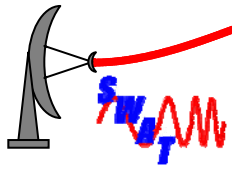


THz Detection of BC & SC Carcinoma (Caltech/Waterloo)



Program: Canadian Funded (pending) with David Peng (USC dept. of Dermatology), Warren Grundfest (UCLA dept. of surgery), Scott Fraser (Caltech), Daryoosh Saeedkia (Univ. of Waterloo)

Purpose: Develop THz imaging spectrometer for demarcation of Basal and Squamous cell carcinoma. Includes clinical trial at USC.

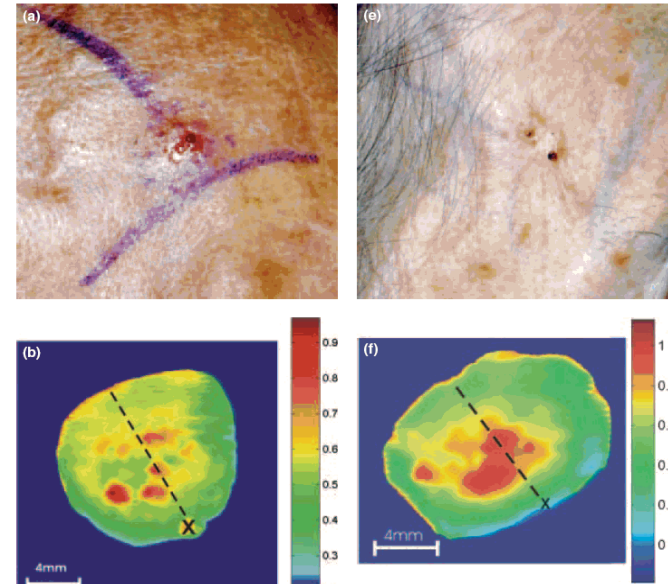
Underlying Technology: 2D THz pulsed time domain imager (under development)

State-of-the-Art: Two UK studies show strong efficacy in delineating tumor margins in vivo using single pixel TPI system.

This would be the first US study of this kind.

Accomplishments:

- Teaming with USC/UCLA physicians
- 2D TPI system in construction at JPL



THz images of excised BCC infected tissue from two patients in the UK TPI study. Ref.: V.P. Wallace, et.al., British J. of Derm., 151, 2004, pp. 424-432.

INSTRUMENT SPECS:

S/N: 1000
 Resolution: 1mm XY, 0.1mm Z
 Freq. Range: 200-2000 GHz
 Image Area: 25x19 mm
 Pixels/image: 1850
 Image Speed: 2 minutes

Erbium doped Fiber Laser
 <150 fs pulses

Block diagram of 2D TPI system being assembled for this program.

