Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Terahertz spectroscopy of human skin constituents in suspension
CECIL JOSEPH, Submillimeter-Wave Technology Laboratory, University of Massachusetts Lowell, ANNA YAROSLAVSKY, MUNIR AL-ARASHI, Harvard Medical School, Massachusetts General Hospital, ANDREW GATESMAN, THOMAS GOYETTE, ROBERT GILES, Submillimeter-Wave Technology Laboratory, University of Massachusetts Lowell — Continuous wave terahertz imaging has the potential to offer a non-invasive medical imaging modality for detecting different types of human cancers. The aim of this study was to identify frequencies of interest for continuous wave terahertz imaging of skin cancer. The absorption characteristics of water, collagen, and elastin were studied in the range between 20 and 100cm^{-1}. In addition, we have recorded and analyzed the teraherz absorption spectra of several substances that are present in human skin (i.e. tryptophan, tyrosine, melanin, urocanic acid, keratin) and their water suspensions with the goal of using them as biomarkers for skin cancer detection.

Cecil Joseph
Submillimeter-Wave Technology Laboratory, University of Massachusetts Lowell

Date submitted: 27 Nov 2007 Electronic form version 1.4