Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

New Applications of Portable Raman Spectroscopy in Agri-Bio-Photonics DMITRI VORONINE, ROB SCULLY, VIRGIL SANDERS, Texas A&M University — Modern optical techniques based on Raman spectroscopy are being used to monitor and analyze the health of cattle, crops and their natural environment. These optical tools are now available to perform fast, noninvasive analysis of live animals and plants *in situ*. We will report new applications of a portable handheld Raman spectroscopy to identification and taxonomy of plants. In addition, detection of organic food residues will be demonstrated. Advantages and limitations of current portable instruments will be discussed with suggestions for improved performance by applying enhanced Raman spectroscopic schemes.

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Date submitted: 15 Nov 2013 Electronic form version 1.4