Licensing Opportunity

Non-Invasive Tissue Characterization Utilizing Simultaneous Coherence Tomography and a Spectral Interferometry Colposcopy Probe

Advantages
- Offers non-invasive alternative to endoscopic procedures
- High-resolution 3D imaging
- Yields simultaneous low coherence tomography (imaging) and spectral interferometry (composition analysis)

Invention
A probe of cylindrical shape with a disposable outer plastic shield and internal rotating optical fiber bundle for coherent optical scatter data acquisition [U.S. Patents 5,921,926 & 6,141,577]

Background
Advances in medical devices have greatly improved medical imaging technologies, especially in the field of endoscopic procedures. The ability to non-invasively delve into the human body has enabled fast, safe and effective medical procedures that, in the past, would have left patients bed ridden for days or weeks. Optical Coherence Tomography (OCT) is the analysis of coherent light scattered from materials, such as biological tissues. OCT can image deep into a sample and obtain a micrometer resolution.

Classically, this imaging technique was used to image specimens externally, e.g. the human eye. Researchers at UCF have developed a new application for this concept that aims to add comfort and simplicity to the invasive, yet necessary, procedures of colposcopy, as well as pap smears and biopsies. This new technology involves an OCT probe inserted into the body to image internal structures, as well as collect spectral absorption data for diagnosis. The invention collects this data for simultaneous 3-D imaging with down to a 6 micron resolution, and spectroscopic analysis.

Application
This technology is designed as a replacement to current colposcopy techniques. It is also extremely useful for 3D imaging of any hard-to-access scattering material including optical memory readout in multilayer disks.

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