Anis Rahman, J Biosens Bioelectron 2018, Volume 9
DOI: 10.4172/2155-6210-C2-038

10th International Conference and Exhibition on
BIOSENSORS & BIOELECTRONICS
September 21-22, 2018 | Dallas, USA

Anis Rahman

Applied Research & Photonics, Inc., USA

Screening a cancerous cell with terahertz multispectral imaging

Recently terahertz multispectral reconstructive imaging has attracted tremendous attention for soft tissue imaging because of the non-ionizing nature of the T-ray that does not impart any radiation damage like X-ray. Here, examples of human skin tissue imaging are presented. Reconstructive imaging utilizes the technique of rasterizing a specimen over a given volume. The resulting three-dimensional matrix, termed as the Beer-Lambert reflection (BLR) matrix, is utilized to compute a 3D lattice for the image generation. ARP's instrument allows the T-ray beam to be focused on a given layer under the surface; therefore, a 3D volume may be rasterized on a layer by layer basis. The algorithm used for image generation is capable of accurate representation of the measured object similar to a charged couple device as has been explained elsewhere. Here we present images of human skin under different diseased conditions as compared to healthy skin samples. Fig. 1 exhibits terahertz reconstructive 3D image of a skin sample where regular cellular pattern is visible. However, some cell has started deforming because of the onset of disease attack. As outlined, a combination of presence or absence of regular cellular structure, terahertz spectral comparison and lack or presence or layering information is expected to serve as a fool proof diagnostic tool for different kind of skin cancers.

Biography

Anis Rahman is an acclaimed scientist in the field of nanotechnology. He is a winner of many scientific awards including NASA Nanotech Brief's "Nano-50" award twice; CLEO/Laser Focus World's "Innovation award." He is the founder of a terahertz company in Harrisburg, Pennsylvania (see http://arphotonics.net). He is a recognized scientific leader and member of professional organizations including the American Chemical Society (ACS), The Optical Society of America (senior member) and the SPIE. He is the current chair of the Small Chemical Businesses Division of the ACS (www.acs-schb.org). He has been an author and co-author of more than 135 papers in peer-reviewed journals and conference proceedings.

a.rahman@arphotonics.net

Notes: