

SC697 - TERAHERTZ TECHNIQUES IN MEDICAL IMAGING AND SPECTROSCOPY

8:30AM-12:30PM, 26 Jan 2005, Photonics West 2005, San Jose, CA

This course will introduce the basic techniques in terahertz technology for medical imaging and spectroscopy. The course reviews the progress of the technology in the medical and pharmaceutical industry, and discusses the current advantages and disadvantages of the technology compared to other optical imaging and spectroscopy techniques. The methods required for the successful imaging and spectroscopy of biological samples will be discussed, in addition to good working practices. The student will receive an understanding of the challenges and potential of terahertz technology for medical imaging and spectroscopy.

LEARNING OUTCOMES

This course will enable you to:

- Explain the molecular signatures observed in the terahertz region and associated merits for time or frequency domain analysis
- Describe the current progress of terahertz technology in the medical and pharmaceutical industry
- Compare and contrast the technology with other optical imaging and spectroscopy techniques
- Understand the current limitations of terahertz technology for medical imaging and spectroscopy
- Identify problems associated with image generation and spectroscopy
- Formulate the appropriate experiments and procedures for the successful imaging and spectroscopy of samples
- Conclude the biomedical areas where terahertz technology has potential

INTENDED AUDIENCE

This material is directed at scientists, researchers, managers and clinicians interested in terahertz technology for medical or pharmaceutical imaging and spectroscopy. Those currently in the field of terahertz technology or wishing to enter and explore this field will find this course valuable.

COURSE LEVEL

Beginner

COURSE LENGTH

Half day

INSTRUCTOR

Ruth M. Woodward is director and founder of HT Consultants Ltd., a specialist consultancy firm in terahertz technology. She has been involved in the application of terahertz pulsed imaging and spectroscopy to the medical industry since its foundation in 1999. During her PhD research on 'Terahertz pulsed imaging and spectroscopy applied to dermatology', she identified a terahertz contrast between diseased and normal tissue in basal cell carcinoma, the most common form of skin cancer, which led to an explosion of interest in the application of terahertz technology to the medical industry, and the subsequent commercialization of terahertz imaging systems in this area. She also takes an active interest in the role of terahertz technology in security and defense.

For price details and to book this course please contact SPIE directly. A link to Photonics West 2005 is found at <http://spie.org/Conferences/calls/05/pw/>