

5<sup>th</sup> International Conference and Exhibition on

# LASERS, OPTICS AND PHOTONICS

November 28-30, 2016 Atlanta, USA

## Laser terahertz emission microscope

**Masayoshi Tonouchi**

Osaka University, Japan

One can observe terahertz (THz) radiation from various kinds of materials, when excited with a femtosecond laser, owing to ultrafast current modulation. THz waves reflect various kinds of properties such as local electric field, particularly ultrafast transient phenomena, in their waveforms. The observation of the THz waveforms enables us to explore ultrafast nature of electronic materials and devices as a THz emission spectroscopy. When one excites the THz emission from a certain substance with the femtosecond optical pulses and visualizes the emission image by scanning the laser beam on it, the resolution of the image is limited by the laser beam diameter rather than THz wavelength. Thus, construction of a laser-THz emission microscope (LTEM) would provide a new tool for material/device science and application. We proposed and have been developing LTEM since 1997. In this talk, we will report the basics of LTEM, and applications for evaluation of solar cells and GaN wafers.

### Biography

Masayoshi Tonouchi has received the BS and MS and Dr. E degrees from Osaka University, Japan. He has worked at Osaka University, Kyushu Institute of Technology, Communications Research Laboratory. Currently, he is a Professor in Institute of Laser Engineering, Osaka University and a concurrent Professor of Nanjing University. He has published more than 250 papers, given over 100 invited talks and has been serving as an Associated Editor, *Journal of Applied Physics*, an international organization Committee Member of IRMMW, and Editorial Board Member of many journals. He chaired many international conferences such as OTST2013.

tonouchi@ile.osaka-u.ac.jp

Notes: