## ACOUSTICS2008/2515 Photothermal and photoacoustic imaging by ultrafast optical sampling

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We describe a new ultrafast imaging technique based on the use of two new generation Ytterbium lasers emitting at 1030 nm at 50 MHz repletion rate. Ultrafast acquisition is achieved by slightly shifting the repetition rate of the "pump" and the "probe" beams. In that conditions a single shot response is acquired in 1ms that allows sweeping the surface of the device or the material and obtain movies of the reflectivity field of the surface. This technique allows filming the reflectance changes of a material at very high speed typically 1 Tera frame per second during 20ns. We will show applications of this technique in acoustic imaging of surface waves and non destructive evaluation of microelectronic materials