

***FlexBurst™* for picosecond micro-machining lasers**

Zurich (Switzerland), 31st July 2009: Time-Bandwidth Products introduces the *FlexBurst™* technology for its 10W Duetto and 50W Fuego lasers, enabling new processing possibilities in picosecond micromachining.

The term “burst” refers to a group of 10 ps pulses with a temporal spacing on the order of tens of nanoseconds. Recent demonstrations have shown that such bursts have the potential to improve material processing speed as well as quality. The leading pulses pre-condition the material such that trailing pulses hit the material in a different state, which can benefit the process performance.

In current picosecond micro-machining lasers offering multi-MHz-bursts, the pulse energy distribution within the burst can not be controlled by the user. The pulse energy decreases due to gain depletion in the amplifier. Such a distribution is typically not ideal for material processing applications.

The *FlexBurst™* technique allows for the generation of bursts with full user control of the pulse energy distribution to better match the process requirements. As the energy of each pulse can be arbitrarily set, it is possible to equalize pulse energies, obtain controlled increasing or decreasing pulse energies, blank intra-burst pulses, etc., with virtually no restrictions.

The repetition rate of the bursts can be set in the range 50 kHz – multi-MHz, with burst energies to more than 200 μ J.

