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BOOK OF ABSTRACTS



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Generation of shear waves in a soft medium by 2.1 μm light source based on periodically poled ferroelectric crystal

Wednesday, 3rd October @ 13:30: Poster Session (HALL & ROOM 3) - Poster - Abstract ID: 464

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Optical coherence tomography (OCT) is a noninvasive technique capable of imaging tissue microstructure at high spatial resolution. PhS-OCT is an OCT based technique which can be used to detect surface acoustic waves propagating on skin and cornea surfaces, leading to quantification of the elasticity of underlying tissues. For generating shear waves propagating within a soft medium a piezoelectric actuator is used. Because tissue presents high absorption for electromagnetic waves at $\sim 2 \mu\text{m}$ wavelength, in this work we propose a simple device that emits nanosecond pulses at a wavelength of 2.1 μm as an alternative for shear waves generation. This device is based on a periodically poled ferroelectric crystal pumped with a Nd:YAG pulsed laser source to obtain the emission. The conversion from 1.06 to 2.1 μm was achieved by optical parametric generation (OPG) at degeneracy point where signal wave with 2128 nm wavelength was generated.