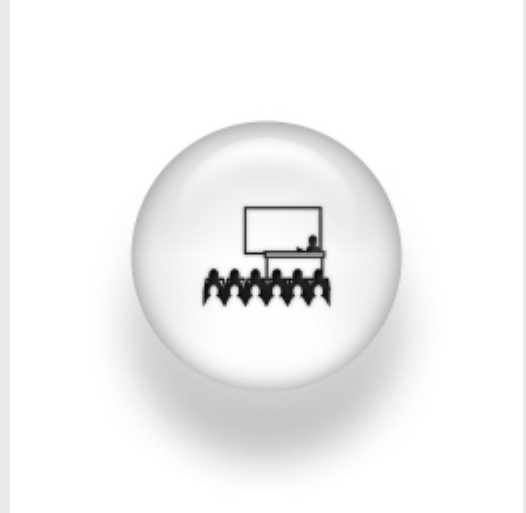


Non Linear processes in structured solid state lasers

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ABSTRACT:

In this presentation we will show how to exploit the characteristics offered by ferroelectric materials, as host matrices for optically active rare earth ions, to increase the multi-functionality of solid state lasers. We will focus on two-dimensional anti-ferroelectric micro-domain structures from which novel frequency conversion processes can be obtained. Examples of compact devices acting as solid state lasers with the added functions of self-multiwavelength and multidirectional frequency conversion, nonlinear prisms and non reciprocal second harmonic generation will be given.