

Optical characterisation of PZT thin films for waveguide applications

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In order to develop an electro-optic waveguide, $\text{Pb}(\text{ZrTi})\text{O}_3$ ceramic ferroelectric thin films were elaborated by a modified sol-gel process on glass substrate.

In the aim to study the optical properties of the PZT films, an accurate refractive index and thickness measurement apparatus was set-up, which is called M-lines device. An evaluation of experimental uncertainty and calculation of the precision of the refractive index and thickness were developed on PZT layers.

Two different processes of PZT elaboration were made and studied with this apparatus. The reproducibility of one fabrication process was tested and results are presented in this paper.