OPTICAL PROPERTIES OF ION-IMPLANTED SYSTEMS 'THIN MOLYBDENUM FILM – LITHIUM NIOBATE“

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S u m m a r y

The optical properties of the system 'thin molybdenum film – lithium niobate" (with film thickness d = 15, 20, 30, and 40 nm) before and after the implantation by Ar^+ ions with energies of 50, 100, and 150 keV and doses of $5 \cdot 10^{15} – 10^{16}$ ion/cm^2 are researched. It is shown that the spectra of transmission $T(\lambda)$, reflectance $R(\lambda)$, and absorption $A(\lambda)$ of this system are slowly changed owing to the implantation, but these changes are increased up to 20% in some cases. A keen increase of the adhesion of the molybdenum film to the substrate is observed as a result of the implantation of argon ions. It is detected that the specularly smooth surface of the molybdenum film is covered by bubbles after the implantation, and a nonuniformity on the interface 'molybdenum film – lithium niobate“ is decreased, which indicates a decrease of the reflectance $R(\lambda)$ of the samples. The usage of such systems as a sensitive element of pyroelectric detectors, whose characteristics don’t yield to the characteristics of detectors of a similar type, is proposed.