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Peculiarities of Surface Relief Grating Formation in Nanomultilayer Structures Based on As_2S_3-Se Chalcogenide Glasses

A. Meshalkin[1], O. Paiuk[2], E. Achimova[1,] A. Stronski[2], V. Abaskin[1], A. Prisacar[1], G. Triduh[1], A. Korchovyi[2], and P. Oleksenko[2]
[1]*Institute of Applied Physics, 5 Academiei str., Chisinau, Moldova*
[2]*V.Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*

Chalcogenide glasses nanomultilayer structures based on As_2S_3-Se were used for direct surface relief grating (SRG) formation by holographic recording. Grating recording process in As_2S_3-Se nanomultilayer structure for different grating period and long recording time was performed. Simulated diffraction efficiency kinetics curves showed good agreement with the experimental results Analyses of diffraction efficiency kinetics and AFM images of recorded SRG showed that grating period increasing led to the SRG depth increasing in linear way. It was revealed that SRG recording rate was characterized by non-linear behavior, while modulation depth remained approximately the same value for all gratings.