



Structure, nonlinear properties, and photosensitivity of (GeSe₂)_{100-x}(Sb₂Se₃)_x glasses

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Auteur	Olivier, M. [1], Tchahame, J.C. [2], Nemeč, P. [3], Chauvet, Mathieu [4], Besse, Valentin [5], Cassagne, Christophe [6], Boudebs, Georges [7], Renversez, G. [8], Boidin, R. [9], Baudet, E. [10], Nazabal, Virginie [11]
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Résumé en anglais	<p>Chalcogenide glasses from (GeSe₂)_{100-x}(Sb₂Se₃)_x system were synthesized, with x varying from 5 to 70, in order to evaluate the influence of antimony selenide addition on non linear optical properties and photosensitivity. Nonlinear refractive index and two photon absorption coefficients were measured both at 1064 nm in picosecond regime using the Z-scan technique and at 1.55 μm in femtosecond regime using an original method based on direct analysis of beam profile change while propagating in the chalcogenide glasses. The study of their photosensitivity at 1.55 μm revealed highly glass composition dependent behavior and quasi-photostable compositions have been identified in femtosecond regime. To better understand these characteristics, the evolution of the glass transition temperature, density and structure with the chemical composition were determined.</p>
Résumé en français	
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Titre abrégé	Opt. Mater. Express

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