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Exploring the optical and mechanical properties of $AgCl_xBr_{1-x}$, $Ag_{1-x}Tl_xBr_{1-x}I_x$, $Ag_{1-x}Tl_xCl_yI_zBr_{1-y-z}$ crystals and IR fibers based on them

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Abstract

We investigated the physical and chemical properties of new crystals and IR fibers on their basis: chemical composition, impurities content, refractive index, spectral transmission and optical losses, light stability, far-field distribution of the modes effluent from the fiber's end, Poisson's ratio, Young's modulus and rigidity one, as well as rapture strength of the IR fibers. In order to explore the characteristics above, we designed the corresponding setups.