

**Some aspects of efficient use of A<sup>3</sup>B<sup>5</sup> materials-based concentrators for photovoltaic cells of solar energy converters.** / T. I. Khachidze, I. M. Avaliani, D. M. Shalamberidze. / Nano Studies. – 2015. – # 12. – pp. 133-138. – geo.

The main goal of the study is the development of effective lens-concentrators for A<sup>3</sup>B<sup>5</sup>-type photovoltaic cells. The effectiveness refers to the fact that during photovoltaic conversion of the solar energy, which falls on the lens-concentrators, transmits through it with minimal losses and is transferred to solar cells. Spherical and Fresnel lenses, which are used as concentrators, are characterized with quite high optical losses because of chromatic and monochromatic aberrations. Surface reflection and large concentration of focused light (when large sized lenses are used) size exceeds the dimensions of a solar cell and it is not used to the full extent. In order to reduce chromatic and monochromatic aberrations, and the size of the focused light it is decided to develop and manufacture aspheric lens concentrators, while antireflective coating is used to reduce the light reflection. Fig. 3, Tab. 2, Ref. 3.

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