

Stepovich M. A., Seregina E. V., Turtin D. V.* (Kaluga, Ivanovo*, Russia) — **On some aspects of correctness and stochastic features of mathematical models of diffusion and cathodoluminescence in semiconductors.**

Earlier [1, 2], approximate–analytical projection methods were developed for solving the problems of the diffusion of nonequilibrium minority charge carriers (MCC) generated in homogeneous semiconductor materials by electron or light beams. Such an approach makes it relatively easy to find the statistical characteristics (mathematical expectation and auto-correlation function) of the distribution of the MCC after their diffusion, taking into account random changes in the electrophysical parameters of the semiconductor. The developed methods can be considered fairly universal, since their application is not limited to the hypothesis about the normality of the distribution law of the electrophysical parameters of a semiconductor. This approach can be extended to any valid boundary value problem for any linear partial differential equation. In this connection, the problem of proving the correctness of previously developed mathematical models (see, for example, [3]) is very relevant. In this paper, we consider some aspects of the correctness of such mathematical models for estimating the stochastic features of the diffusion of a MCC and their subsequent radiative recombination.

REFERENCES

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