BIMODAL FAILURE MECHANISM FOR BRITTLE BEHAVIOR OF SELF-REPAIRING OPTICAL WINDOW SYSTEMS

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Using an exact solution for transient state population of the three-stage absorbing Markov chain model the problem of describing the bimodal behavior of three window materials represented as some self-repairing optical systems prone to brittle failure is considered quantitatively [1]. It is shown that simulated maximum failure probability density distributions can well describe available experimental data of biaxial tests on OFG, CVD-ZnSe and a-plane sapphire ceramics. The conclusion is made that the competitive advantage of these materials grows in proportion to their distribution widths.

1. Kapitanchuk O. L., Teslenko V. I. *Mol. Cryst. Liq. Cryst.* 670 (1), 119-133 (2018)