

**RESEARCH OF THE REFLECTIVITY OF  
SHOCK-COMPRESSED LIQUID XENON AND KRYPTON  
IN THE NEAR INFRARED REGION OF THE SPECTRUM**

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The need to obtain new data on the optical properties of a heated dense substance having extremely high thermodynamic parameters, which is provided by the use of powerful shock wave technology, is dictated by the development of a physical theory describing the behavior of media with strong particle interaction. The research methodology based on the analysis of the electromagnetic wave of moderate intensity reflected from the dynamic object under study occupies a special place among the numerous probing options, being, moreover, the only one possible under the conditions of many experiments.

The results of an experimental study of the reflectivity of strongly correlated plasma of liquid xenon and krypton are presented. The interaction of plasma with a probing electromagnetic wave is simulated using the constructed equation of state and calculated thermodynamic parameters of shock-compressed plasma of liquid krypton and xenon based on a quasi-chemical representation (chemical plasma model) [1, 2].

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1. Ebeling W. // Coulomb Interaction and Ionization Equilibrium in Partially Ionized Plasma *Physica* 1969. V. 43. P. 293.
  2. Gryaznov V.K., Iosilevskiy I.L. // *Contrib. Plasma Phys.* 2016. V. 56. No. 3-4. P. 352-360.