

Physics of extreme states of matter in the works of V. E. Fortov and his school

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The works in the field of physics of extreme states of matter by academician V. E. Fortov and his scientific school in Chernogolovka at the Federal Research Center for Problems of Chemical Physics and Medicinal Chemistry of the Russian Academy of Sciences (formerly the Institute of Problems of Chemical Physics of the Russian Academy of Sciences) are considered from a historical perspective. The results of the 1970s, which laid the foundation for the direction of dynamic methods for studying non-ideal plasma, are presented. The development and current state of the problem of thermodynamic and transport properties of gaseous media is discussed. The results of measurements of the properties of condensed materials under compression by powerful shock waves are presented in a fundamental way. The results of calculations based on modern models of equations of state are presented. The issues of numerical modeling of processes under extreme conditions and databases on material properties are considered.