

Abstract Submitted  
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**X-Ray Diffraction Studies of the Structures of Dynamically Compressed Be, Al, LiF, KCl and SiO<sub>2</sub>** LEONID EGOROV, VICTORIA MOKHOVA, ALEXSEY BARENBOYM, ALEXSEY SAMOILOV, Russian Federal Nuclear Center All-Russia Scientific Research Institute of Experimental Physics, Savor, Russia — The first x-ray diffraction data for restructuring process of dynamically compressed crystals have been obtained and photographs of the diffraction patterns are presented. The recorded diffraction patterns demonstrate the universal process of structural material reorganization. The diffraction patterns imply that a relaxation process of substance restructuring connects changes of the crystal's electronic structures, forming new chemical bonds. Within the framework of the interpretation one discusses the results of the measurements displaying the time rise of the quantity of an ultradispersion diamonds inside the detonating HE charge the results of the measurements of the liquid deuterium Hugoniot obtained by the group of physicists from LLNL.

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