

NANO-SIZE PHASE FORMATION  
AT ACOUSTICALLY STIMULATED  
ION BEAM SYNTHESIS

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S u m m a r y

The results of researches on the interaction of accelerated ions with a solid at the *in situ* ultrasonic treatment are reported. A proposed combined method of acoustically stimulated ion beam doping of solid-state targets allows one to efficiently control the redistribution of radiation-induced defects that emerge during the interaction of accelerated particles with the solid. This method makes it possible to affect the rate of quasichemical reactions in nano-sized structures, stimulate the acceleration or deceleration of mass transfer processes, and change conditions of formation, growth, and decay of phases in solid-state matrices.