33－39 High pressure using multi-layer metal plates accelerated by high explosives for material synthesis

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A new method was devised to generate an ultra-high dynamic pressure for materials synthesis and phase transformation by using the cylindrical explosion. Unlike the ordinary cylindrical method, the specimen is not directly packed into the metal tube but sandwiched between the metal films that are rolled into a cylindrical geometry. For distinguishable point of view, we term it as 'rolled-film' method. The numerical simulation demonstrates that this method can produce higher shock pressure than the ordinary cylindrical method. The practical experiment for boron nitride phase transformation also indicates that a higher shock pressure is able to be achievable.

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