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Title: Hypervelocity Impact and Penetration Research at the Institute for Advanced Technology's Hypervelocity Effects Division

Abstract:

The Hypervelocity Effects Division at the Institute for Advanced Technology is primarily concerned with the design of advanced hypervelocity penetrators. Testing is performed against heavy, medium, and light vehicle armor types that include energetic reactive armor and advanced target materials. MOUT targets have also been of recent interest. The primary experimental research tool that the Division uses is a two-stage light gas gun. This launcher can fire launch packages of 1 kg to 2.2 km/s or 50 grams to 7 km/s. The primary research areas being investigated include: novel kinetic energy penetrator design and development, target characterization from the impact of hypervelocity penetrators, the generation and analysis of behind armor debris, hypervelocity impact effects on double reinforced concrete walls, and study of transparent armors.