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## NewsTrack - Science

# Research may make structures blast proof

[BUFFALO](#), N.Y., Dec. 18 (UPI) -- A U.S. theoretical physicist says he's created computer simulations to show how a shock-[absorption](#) system might make structures nearly blast-proof.

The work by University at Buffalo physics Professor Surajit Sen is an extension of his published 2001 research that demonstrated it might someday be possible to build bridges, buildings and other such blast-proof projects.

Sen said the findings could be applied to tanks, aircraft carriers and even bulletproof vests and other protective clothing.

The simulations allow researchers and [manufacturers](#) to see how a system might work without having to painstakingly construct the systems and spend thousands of dollars to conduct a single blast in a test facility.

In earlier University at Buffalo research, granular systems composed of individual spheres of gradually reduced size -- a "tapered" chain in a casing -- proved to be capable of efficiently absorbing much more than 80 percent of input [energy](#). The main findings of the current research are that it's possible to retain the scalability of the system, reduce its size by a factor of five and make it far more capable of absorbing shock.

The study is detailed in the October issue of Physical Review Letters.

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