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## Beautiful Science

The mantis shrimp, native to the Indo-Pacific, is renowned for having club-like arms that can strike prey at speeds matching those reached by a 5.56mm rifle bullet. The impact can generate a force exceeding 50kg – hundreds of times the shrimp's weight.

Researchers at Nanyang Technological University have discovered that the shrimp's clubs are able to withstand strong blows because they have ceramic-like crystals – called fluorapatite – that move and rotate when struck, absorbing the impact.

Lead researcher Ali Miserez believes that this new knowledge can be used to create impact-resistant bioceramics for use as protective materials in, say, bullet-proof vests or anti-scratch cases for high-end watches.