

WHEN IT GETS BLOODY, SHELLFISH TO THE RESCUE

Bengaluru-based startup innovated an award-winning hemostatic, used by the general public and military

● **Brinda Das**

When Leo Mavely was in college, he saw a man bleeding profusely after a bike accident. People rushed in to help but there was no way to stem the loss of blood immediately.

This left a lasting impression on his mind and led him to invent a product, Axiostat - the smart band, which is a hemostatic. Today, the band is being used by the general public and the Indian Armed Forces and the paramilitary. In 2014, the Axiostat band was used in the Russia-Ukraine conflict.

Its website features varied testimonials on its use - from dentists for tooth extraction and senior cardiologists for stopping arterial bleeding to a medical officers with Border Security Force for treating victims of IED blasts and gunshot wounds.



Axiostat is a sponge-like biomaterial dressing that stops moderate to severe bleeding within minutes. This product is manufactured by the Bengaluru-based startup Axio Biosolutions, which is Leo's brainchild and was established in 2008.

The band is made using chitosan, a natural biomaterial.

Biomaterials are engineered substances that interact with human systems to achieve a medical end. Chitosan, which is extracted from shellfish, is highly purified and processed to make this device.

The band carries positively charged components, which when comes in contact with the negatively charged blood

cells, form a binding seal.

"The moment Axiostat is applied to an open wound, it reacts with the blood and becomes a very sticky substance that clots blood and stops the bleeding," says Leo. "The band can be left on the wound for 48 hours. Once the patient has been taken to the Hospital and given medical attention,

Axiostat can be removed by applying water on it. It absorbs the water to become a gel-like substance that can be peeled off."

Hospitals that use the band include Fortis, AIIMS, Manipal, Breach Candy and Columbia Asia.

The smart band received European Union - CE approval in



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2013 and Axiostat Biosolutions was named the best emerging startup by BioAsia in 2016. Axiostat, which opened in India, is now also in Middle East, Africa and Europe.