

NIT Rourkela's StopBleed® receives CDSCO approval as Class C medical device

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Advancing from laboratory innovation to real-world trauma care



In its effort to bring innovations from the lab to the real world, National Institute of Technology Rourkela (NIT Rourkela) spun out Startup Miraqules MedSolutions has received regulatory approval for commercial manufacturing and clinical deployment of its patented technology, a rapid nano-biopolymer hemostat, to transform emergency hemorrhage control.

StopBleed®, the technology developed at NIT Rourkela, has received approval from the Central Drugs Standard Control Organisation (CDSCO) as a Class C medical device, marking a significant step in translating academic research into real-life-saving medical technology.

The product facilitates for rapid control of severe bleeding arising from road accidents, gunshot wounds, blast injuries, industrial accidents, deep stab wounds, and other critical or life-threatening trauma situations.

The developed innovation is an advanced bleeding control solution available in powder and pellet forms, designed to be used in trauma situations such as road accidents, military injuries, and emergency first-aid situations. With a shelf life of three years (at room temperature), it can be easily used by medical professionals and non-medical first-aid responders, making it suitable for emergency cases, which could lead to saving lives.

Developed using nanofibrous aggregate technology, the product rapidly absorbs blood plasma while trapping blood cells within a high-surface-area fibrous mesh. This helps in accelerating the body's natural clotting mechanisms and forms a strong

hydrogel seal at the wound.

This technology was originally patented by the Institute and developed in the Department of Biotechnology and Medical Engineering by Professor Devendra Verma and his research graduate, Sabir Hussain. Subsequently, the technology was transferred to the startup Miraques MedSolutions, led by Hussain, for manufacturing, distribution, and field deployment.