BioSpect
the business of Bi
24 years of leveraging the business of Bio
www.biospectrumindia.co

IIT Ropar designs patented mechanical knee rehab device

11 November 2024 | News

Revolutionising post-surgical therapy with affordable, off-grid solution



In a significant breakthrough for post-surgical knee rehabilitation, researchers at the Indian Institute of Technology (IIT) Ropar have unveiled an innovative solution to make continuous passive motion (CPM) therapy more accessible and affordable. The team at IIT Ropar has developed a Completely Mechanical Passive Motion Machine for Knee Rehabilitation that has been awarded a patent.

Unlike traditional motorised CPM machines, which are expensive and depend on electricity, the newly developed device is entirely mechanical. It utilises a piston and pulley system, which stores air as the user pulls a handle, enabling smooth and controlled motion to aid in knee rehabilitation. This simple yet effective design eliminates the need for electricity, batteries, or motors, making it both lightweight and portable.

The mechanical CPM machine offers a promising alternative to costly electric machines that are often out of reach for many patients, especially in rural areas with unreliable electricity supply. By reducing the reliance on electricity, it makes continuous passive motion therapy feasible even in off-grid locations.

Additionally, its portability allows for patients to use it in the comfort of their homes, reducing the need for prolonged hospital stays and rehabilitation visits.

“This device has the potential to revolutionise knee rehabilitation in India, where access to advanced medical technology can be limited, particularly in rural areas,” said Dr Abhishek Tiwari, the lead researcher, along with his team comprising Suraj Bhan Mundotiya and Dr Samir C. Roy. “It’s designed to be a low-cost, sustainable solution that not only aids in recovery but also helps reduce the environmental impact associated with motorised devices”, he added.