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Engineers in Thailand develop cost-effective prosthetic feet to reduce imports

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Innovation currently being considered for government medical benefit schemes so that it may be accessible for people with disabilities



Thailand now has 39,647 people with disabilities, over 95% of whom are using poor-quality prosthetic feet which are heavy and do not have ankles.

The figures from the National Statistical Office of Thailand have inspired a research team from the Faculty of Engineering, Chulalongkorn University, Thailand to develop high-quality dynamic prosthetic feet which are flexible and bendable and can store energy with each step.

The prosthetic feet are made from carbon fibers, making them light weight but strong and durable. Users can walk in them on rough terrains, while exercising and during a light jog. The innovation has received the ISO 10328 strength standards from Germany and has been certified with the ISO 13485 for quality. It has also been registered as a medical device with the Food and Drug Administration (FDA), been granted a patent, and registered in Thai SME-GP. The prosthetic feet are currently in the process of being registered with Thai Innovation, requesting the Made in Thailand certificate, and requesting for the CE Marking.

Asst. Prof. Dr. Pairat Tangpornprasert from the Mechanical Engineering Department, Faculty of Engineering,Chulalongkorn University, said, "In comparison with the imported prosthetic feet now available in the market, the innovation has comparable qualities and efficiency but with a 5 times cheaper cost of production. This can then help reduce the high cost of prosthesis and orthosis imports. Moreover, commercial production of medical devices can expand the market overseas, leading to more generation of income, export opportunities, and the country's competitiveness."