



PROSTHESIS BENCH TEST

Walking simulator for prosthetic device testing

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What we are looking for

We are looking for a suitable partner to enter into license deal/co-development partnership

What it is needed for?

The object of the patent is a walking simulator capable of reproducing the kinematics and kinetics of the leg during a wide variety of gait-related tasks (level/inclined/stairs walking...) and walking conditions (uneven/wet/muddy terrains...), with the purpose of collecting meaningful data in a safe, ethic repeatable, controllable and quantitative manner.

The design exploits the biomechanics of walking to minimize the actuation requirements while ensuring optimal performances in terms of simulated gait fidelity, leading to an overall relatively low cost of the hardware.

The integration of sensors and software provides an automatic and in-depth biomechanical analysis of the prosthetic device tested.

Moreover, this walking simulator can be optionally integrated with active and/or sensorized prosthesis to unlock further control and analysis potentials.

Advantages

- High kinematic and kinetic fidelity of the *in-vitro* walking simulation
- No need to test with human subjects (safety and ethicality issues)
- Repeatable, controllable and quantitative test procedures
- Optimized design, which allows to use relative low cost hardware
- Automatic and in-depth biomechanical analysis
- Possibilitiy to integrate the walking simulator with active and/or sensorized ankle-foot prostheses

Applications

- Highly meaningful testing of lower limb prosthetic devices for both structural and functional evaluations
- Quantitative evaluation of footwear under controllable conditions

TRL scale

