

University of Melbourne-backed startup develops Australia's first fully integrated bionic arm

July 28, 2026 | News

To improve the quality of life for people with upper limb loss



A University of Melbourne startup is developing cutting-edge bionic prosthetics, designed to be lighter, easier to fit and more reliable to control than many conventional systems. Almost 24 million people globally live with upper-limb loss, yet access to effective prosthetic arms remains limited.

In high-income countries, only around half of people with upper-limb loss have ever trialled a prosthesis, and 35-40 percent of users ultimately abandon their device, with rejection rates highest among children. In low-income countries, the access gap is even greater, with only 10 percent of people estimated to trial a prosthetic device.

Senior Research Engineer Dr Alireza Mohammadi and his team interviewed 60 amputees, clinicians and suppliers to identify the limitations associated with current prosthetic devices.

The research team subsequently founded 'Meablex' to address these technological limitations and improve the quality of life for people with upper limb loss.

Most commercially available forearm sockets that connect a residual limb to a bionic hand, are not designed to be adjustable. This can create challenges when a person's limb changes shape due to growth, exercise, temperature, activity levels or natural changes in limb volume throughout the day.

Meablex has addressed this issue by designing adaptable sockets, enabling the user to manually adjust their prosthetic arm in real time. Current prosthetic arms operate using ElectroMyoGraphy (EMG) sensors that detect electrical activity generated when the user contracts muscles in their residual forearm.

Clinical trials are slated to get underway later this year, with a commercial launch planned for early 2027, following clinical validation and regulatory approval.

Dean of the Faculty of Engineering and Information Technology (FEIT) Professor Thas Nirmalathas said the project exemplified engineering as a critical tool to improving health and wellbeing through new innovations in bionic prosthetics.

Meablex was recently awarded \$470,000 through Australia's Economic Accelerator (AEA) Ignite programme to support the next stage of development, clinical validation and commercialisation.