

Low-cost 'helping hand' for Third World amputees created by designer

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Product Design student Matt Thompson with the Myo prosthetic hand.

A hi-tech artificial hand costing just £200 has been designed by a University of Derby student hoping to help lower arm amputees in the Third World.

The 'Myo' low-cost prosthesis is one of a range of new products created by the University's final year students, which will be on display at the New Designers 2014 exhibition, at London's Business Design Centre, from tomorrow (Thursday July 3) until Saturday (July 5).

The annual graduate design show features more than 3,000 talented, newly-graduated designers from the UK's leading universities.

Matt Thompson, 24, who has just completed a BSc (Hons) Product Design Engineering degree course at Derby, designed his Myo [hand](#) with developing and Third World countries in mind.

He said: "Disease and war unfortunately means there's a lot of demand for prosthetic limbs in poorer countries. Researching the subject, I found out that upper limb prostheses are more complicated and expensive than lower limb ones, and also that good ones are beyond the financial reach of most people living in those countries.

"It cost me about £200 in materials to build the Myo hand. It's made of a tough nylon resin called Zytel with non-slip grips for the fingers. The fingers are fully articulated and what will really bring the cost of the hand's electronics down is that I replaced the many individual motors for different actions, with just two, which will work off a rotating disc in the Myo's wrist."



The arm would be controlled through the use of electromyography, a system used for many [artificial limbs](#). Three electrodes will run from the Myo hand to the real upper arm of the amputee, who would be taught to control the prosthetic hand using the upper arm's individual muscle movements.

Matt will be showing models of the Myo at the New Designers Exhibition and will shortly be producing a fully-functioning prototype.

"I don't think anyone else has managed to create a low-cost artificial hand where, effectively, one control disc could make all of the hand's fingers move independently. I'm hoping the Myo can be refined and mass marketed, to bring its costs down even further.

"I believe it could make life a lot easier for many upper limb amputees in poorer parts of the world," added Matt, who is originally from Ipswich.

Having just completed his degree course, Matt has already secured a designer role with the 3form Design company, based in Andover, Hampshire.

Dan Garner, Programme Leader for BSc (Hons) Product Design Engineering at the University of Derby, said: "The Myo is an amazing and innovative piece of work by Matt, with a real chance of making a big social impact. It is the kind of ingenuity and enterprise we encourage on the University's Product Design courses."

Provided by University of Derby

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