

# OPEN BIONICS

2015 Nominet Trust 100 Winner

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2015

## 3D-PRINTED BIONIC HANDS

Project URL: [openbionics.com](http://openbionics.com)

Project Twitter: [@openbionics](https://twitter.com/openbionics)

- Health
- Physical Computing

There are an estimated 2 million hand amputees worldwide, but a bionic limb can cost up to £80,000, which means that many amputees must make do without a working prosthesis. This is especially the case for children, as they would need a new robotic arm every few years to keep up with their growth.

Joel Gibbard at Open Bionics has developed a much more affordable bionic hand – cheaper because it is 3D-printed using thermoplastic elastomer, a flexible plastic. The user is 3D-scanned and a tailor-made bionic limb and socket are printed in a matter of days. The pieces can be assembled in two hours and the final fitting takes place in less than a week after the initial assessment, much quicker than the standard waiting time of up to three months or more.

The robotic hand responds to sensors that pick up muscle movements from the wearer's skin, allowing users to control the opening and closing of the hand. Sensors in the fingers relay back to the amputee to let them know the amount of force they are using. And all of this is available for a relatively low price of £2,000.

Bristol-based Open Bionics has worked with Disney's Tech Accelerator Program in Los Angeles, where Gibbard has developed a range of superhero-themed bionic hands for children. The range includes an Iron Man arm, a lightsaber-inspired Star Wars arm and from Disney's Frozen, a glittery snowflake-adorned arm.

Open Bionics won the prestigious James Dyson Award in 2015, and Gibbard was named Young Design Engineer of the Year at the British Engineering Excellence Awards in 2014.

For anyone interested, Open Bionics have some exciting investment opportunities coming up in 2016. Visit the website or email [hello@openbionics.com](mailto:hello@openbionics.com) for more information.

*Image 'burst my bubble' courtesy of amanda tipton.*

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