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Stunning new technology allows parents to hold a life-size model of their unborn child

By [Daily Mail Reporter](#)

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It's a defining moment in a parent's life: Seeing their unborn child's image on an ultrasound for the first time. Now pregnant women could have the chance to hold a life-size model of their unborn baby.

The startling new medical technology is the result of a Royal College of Art design student's PhD.



© Royal College of Art London

Your baby at 12 weeks old: A life-size model of a foetus created using imaging from an ultrasound scan



A 32-week-old foetus is modelled from scanned images

Brazilian student Jorge Lopes has pioneered the conversion of data from ultrasound and MRI scans into life-size plaster models of living embryos using a method called rapid prototyping.

'It's amazing to see the faces of the mothers. They can see the full scale of their baby, really understand the size of it,' said Dr Lopes.

'The technology can be also be used as an emotional tool for parents whose foetus might be deformed or

need treatment,' added Hilary French, who heads the School of Architecture and Design Products.

A good way of understanding how rapid prototyping works is to imagine a printer that prints plastic powder instead of ink.

Then as it prints layer up layer it slowly builds up a 3D model.

Aine Duffy from the RCA said: 'It's stunning technology - here at the RCA we use it for everything from new medical devices, to car components, to jewellery, to architectural models.'





A fetus at 21 weeks





And a foetus at 18 weeks

Dr Lopes' work will be displayed at an exhibition opening at the RCA in London today. The technology is currently being trialled at a clinic in Rio de Janeiro.

His supervisor, King's College head of obstetrics Stuart Campbell, called the invention 'absolutely unique' and 'a fantastic development'.

Professor Campbell, who pioneered the use of ultrasound in the 1980s, also hoped the technology would help mothers - blind mothers in particular - to bond with their babies.

'I don't know whether I am looking at science or I am looking at art', commented an external examiner reviewing the student's PhD viva.



Dr Lopes also modelled conjoined twins, above, and separated twins, below, from a CT scan and MRI



Dr Lopes, who is sponsored at the college by the Brazilian government, had begun his research by looking at how model-making had been used in practical ways over the centuries, Ms French said.

He started with mummies, then moved on to dinosaurs, then fetuses - leaving friends joking he had gone from 'mummies to mummies'.

His work uses the latest computer techniques first exhibited by Ron Arad at an exhibition at the V&A at the turn of the century entitled Not Made By Hand, Not Made in China.

Arad, one of the most famous designers in the world and the head of design products at the RCA, called Dr Lopes' work a 'ground-breaking new field of world importance'.

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