UNIVERSITY OF Southampton
School of Electronics and Computer Science

PERu Showcase 2017- Light emitting textiles for fashion application

Electronics and Computer Science

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Outline

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- Motivation
- Methodology
- Science behind
- Outcome
- Post project

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Light emitting textiles




Electroluminescence (EL)

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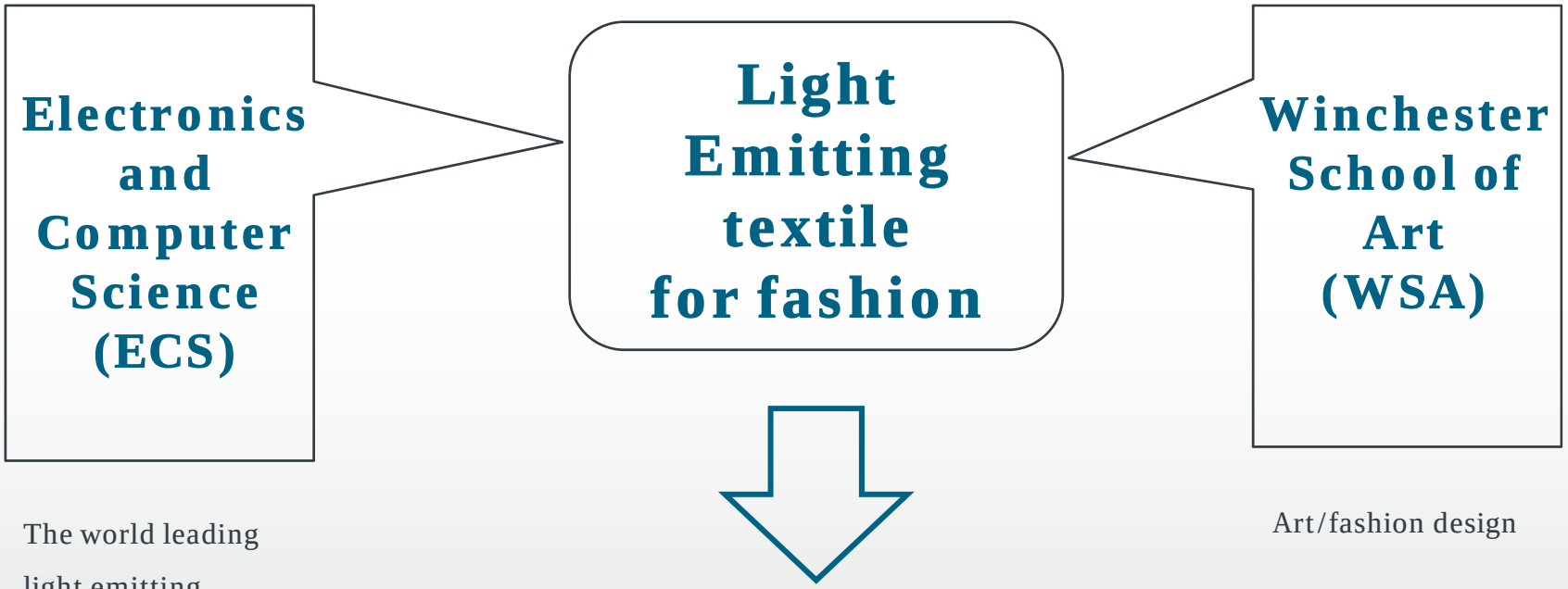
Motivation



The world leading light emitting electroluminescent (EL) textiles

Art/fashion design

Prototypes for the public engagement activities to maximise the university research impact

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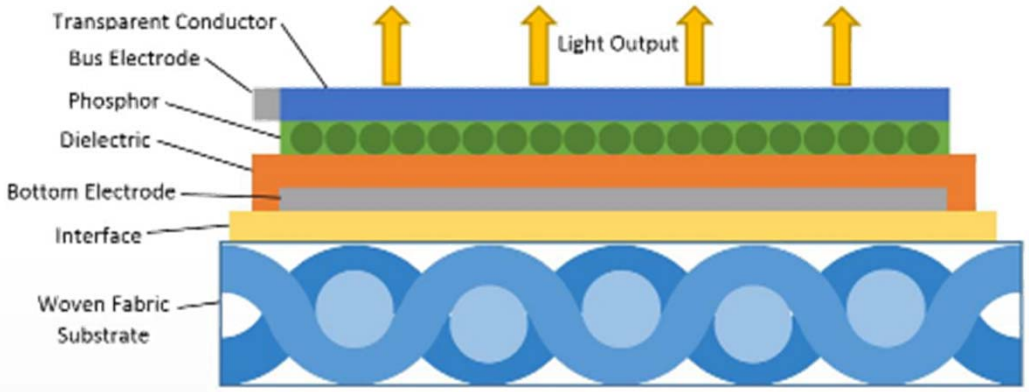
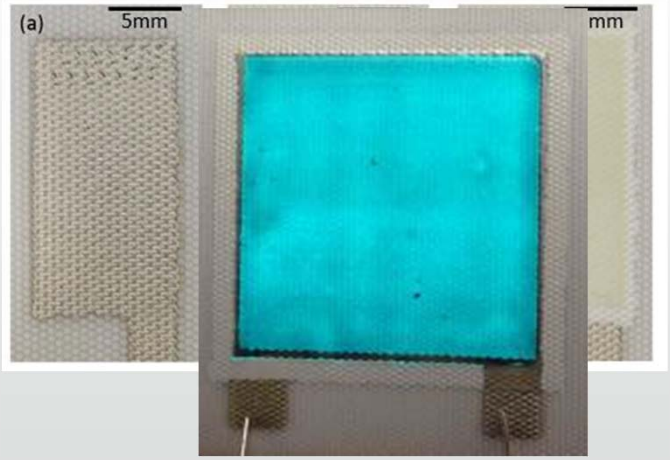
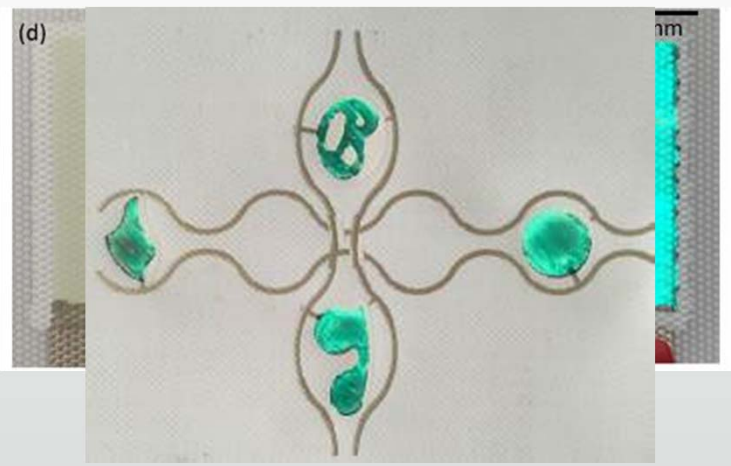
Science behind

Electroluminescence (EL)







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Methodology

FTD COMPETITION in collaboration **with the Department of Electronics and Computer Sciences.**

BRIEF: To design high tech garments using light emitting electroluminescent textiles.

Open to all Fashion and Textile Design students across Fashion, Knit, Print and Weave.

"Electronic textiles is an emerging technology with the potential to revolutionise the fashion industry. It creates new platforms for designer to express their creativity through new designs which can potentially translate to people's everyday life such as fashion clothing and interior decoration."

Electroluminescence (EL) is the generation of light resulting from the application of an electric field to a substance. The common colours are blue and green but other colours, such as red, white and purple, can be obtained. The EL is powered through ac circuit which induces around 300 voltage at 400 Hz and can be typically driven through either batteries or the main.

The aim of this project is to produce two EL garments or products where you can explore your imagination on the design you would like to display.

There are two approaches to achieve this project:

- The first one is to use commercial EL wires which you can sew or weave through the fabric or garments.
- The second approach is to screen print the EL design on to the garment directly.

Both approaches will achieve fantastic EL garment prototypes. Since the EL design is quite different than the normal garments as you have to consider how do you wire up your electronics and avoid short/open circuit, there will be a short briefing section on 11th January where you will be able to know the details of the design rule and ask the questions. The winning entries will be produced between WSA and ECS and the students will be able to see how does state of the art EL is printed in the ECS cleanroom at the Highfield campus.

Requirements: 1 x concept board

1 x design board

Minimum of 2 accompanying fabric swatches (prototypes)

You can submit work for one or both approaches (EL wire and Screen Print) but these must be applied to separate garments or products.

KEY DATES:

11TH JANUARY - Q&A Session at WSA (14:00 Clean Room 2041E WSA)

30th JANUARY – SUBMISSION DEADLINE

3RD FEBRUARY – Winners will be announced

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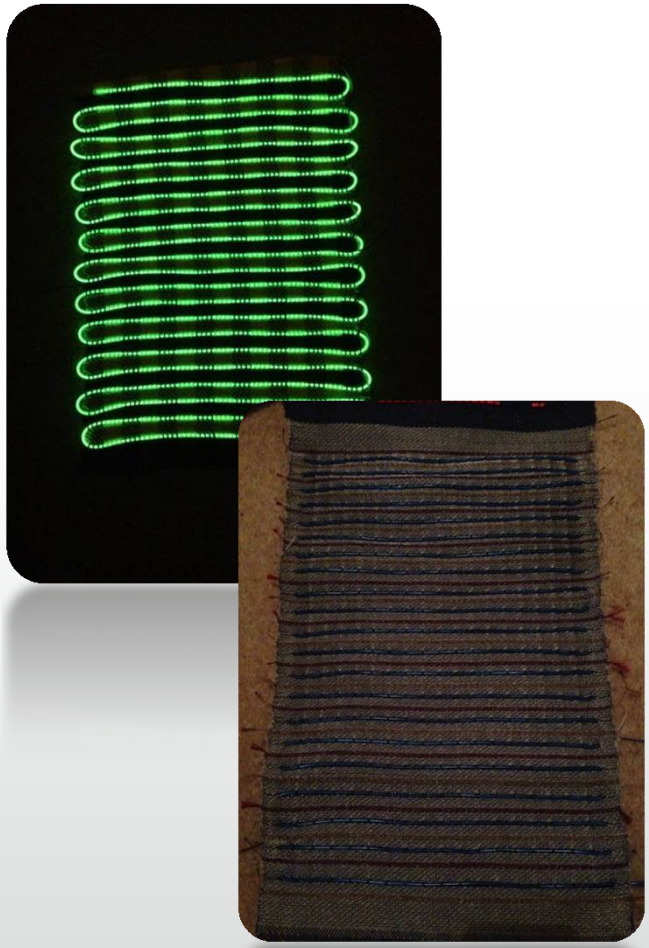
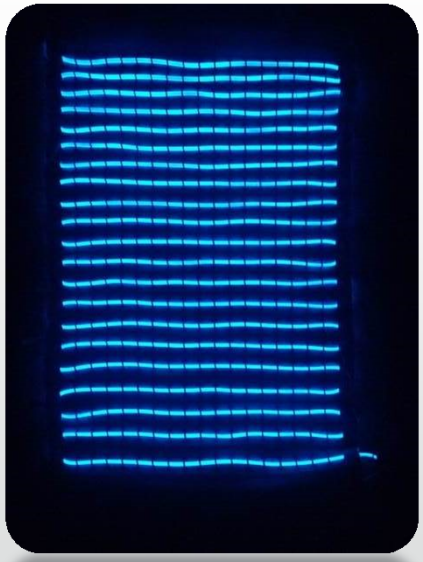
Outcome – Prototypes





Woven light emitting textile

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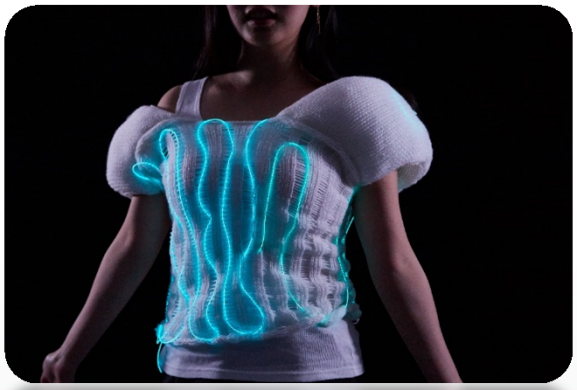
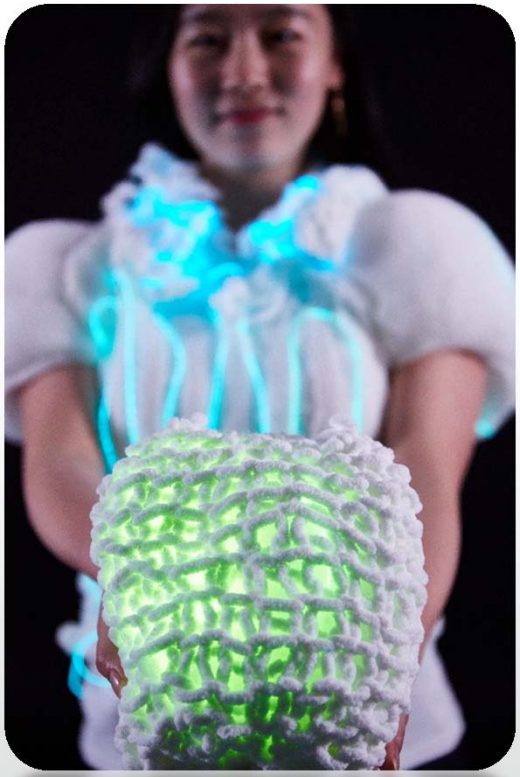
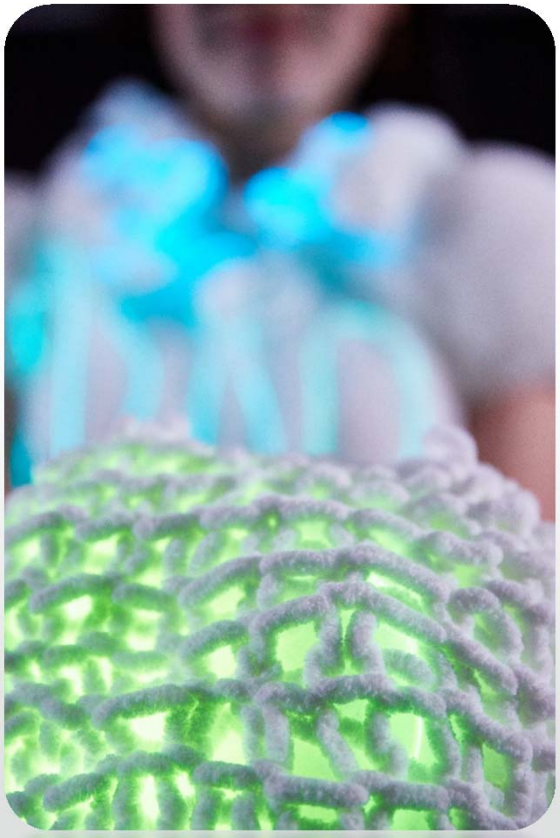
Outcome – Prototypes

knitting light emitting textile







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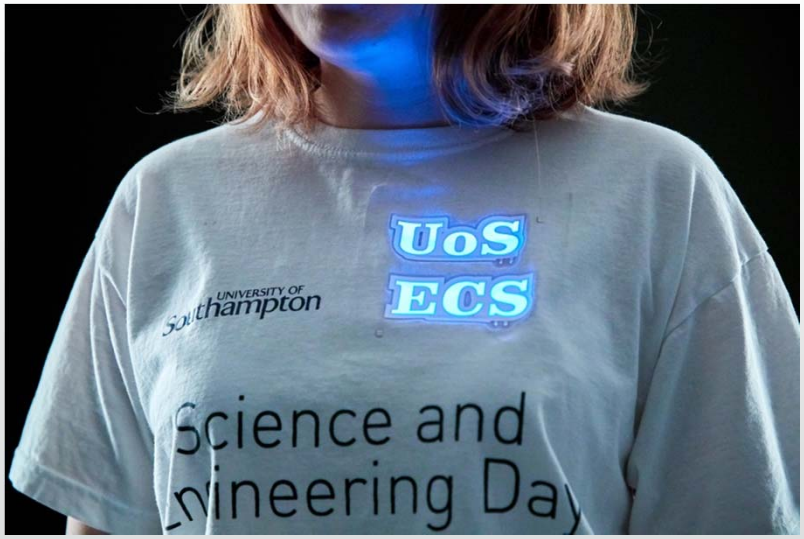
Outcome – Prototypes

Printed light emitting textile



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Outcome – Events

Science and Engineering Festival 2017

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Outcome – Events

Fashion Textile Design (FTD) show at Winchester 2017

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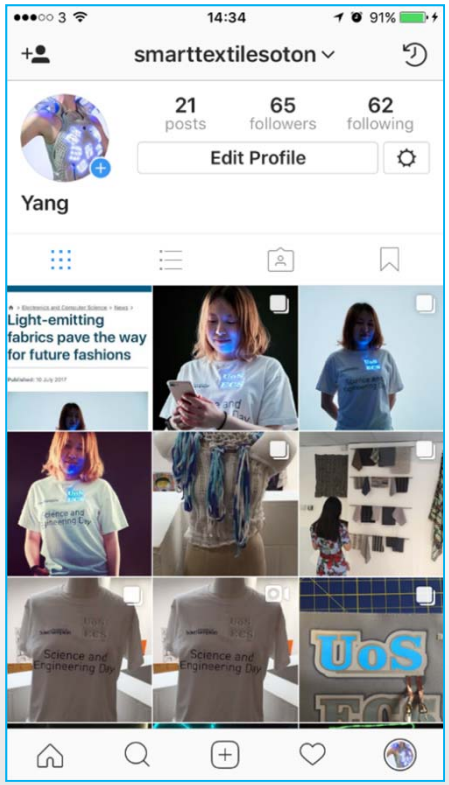
Outcome – Social media



@Smarttextilesoton **@SmarttextileUoS**

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Outcome – Public website

Electronics and Computer Science

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Light-emitting fabrics pave the way for future fashions

Published: 10 July 2017

The University of Southampton is shining a light on future fashions thanks to an innovative collaboration between electronics experts and art school students.

PhD student Jingqi Liu models a light-emitting T-

Working with academics from the University's Electronics and Computer Science (ECS) department, fashion students at Winchester School of Art (WSA) created three light-emitting 'smart' textiles – a knitted dress, a printed T-shirt and a woven fabric swatch.

The prototype pieces combined traditional fabrics with electronic elements and were created as part of a public engagement project, with the students using feedback from events such as Southampton Science and Engineering Festival to refine their creations.

Fashion students Elizabeth Brady and Rebecca Moore worked with Dr Yang Wei and Dr Kai Yang, senior research fellows within ECS's Electronics and Electrical Engineering research group, to create the pieces. The results went on show to staff, students and the public at the WSA degree show recently, and will go on display again at University open days this autumn.

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Light-emitting fabrics pave the way

future fashions

Published: 6 July 2017

PhD student Jingqi Liu models a light-emitting T-shirt.
Credit: University of Southampton

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Dr Wei said: "This was a great way of combining expertise from two

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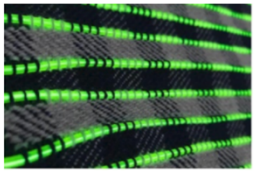
Light-Emitting Fabrics Pave the Way for Future Fashions

July 11, 2017 | University of Southampton

Reading time 1 min (229 words)



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Dr Wei said: "This was a great way of combining expertise from two very different disciplines. The items we created were just prototypes, but this was a very useful exercise for the students, as light-emitting textiles are likely to become an increasingly important element in clothes design in the future.

"There are many other potential applications too, including furnishing, automotive, safety,

SOUTHERN Daily Echo

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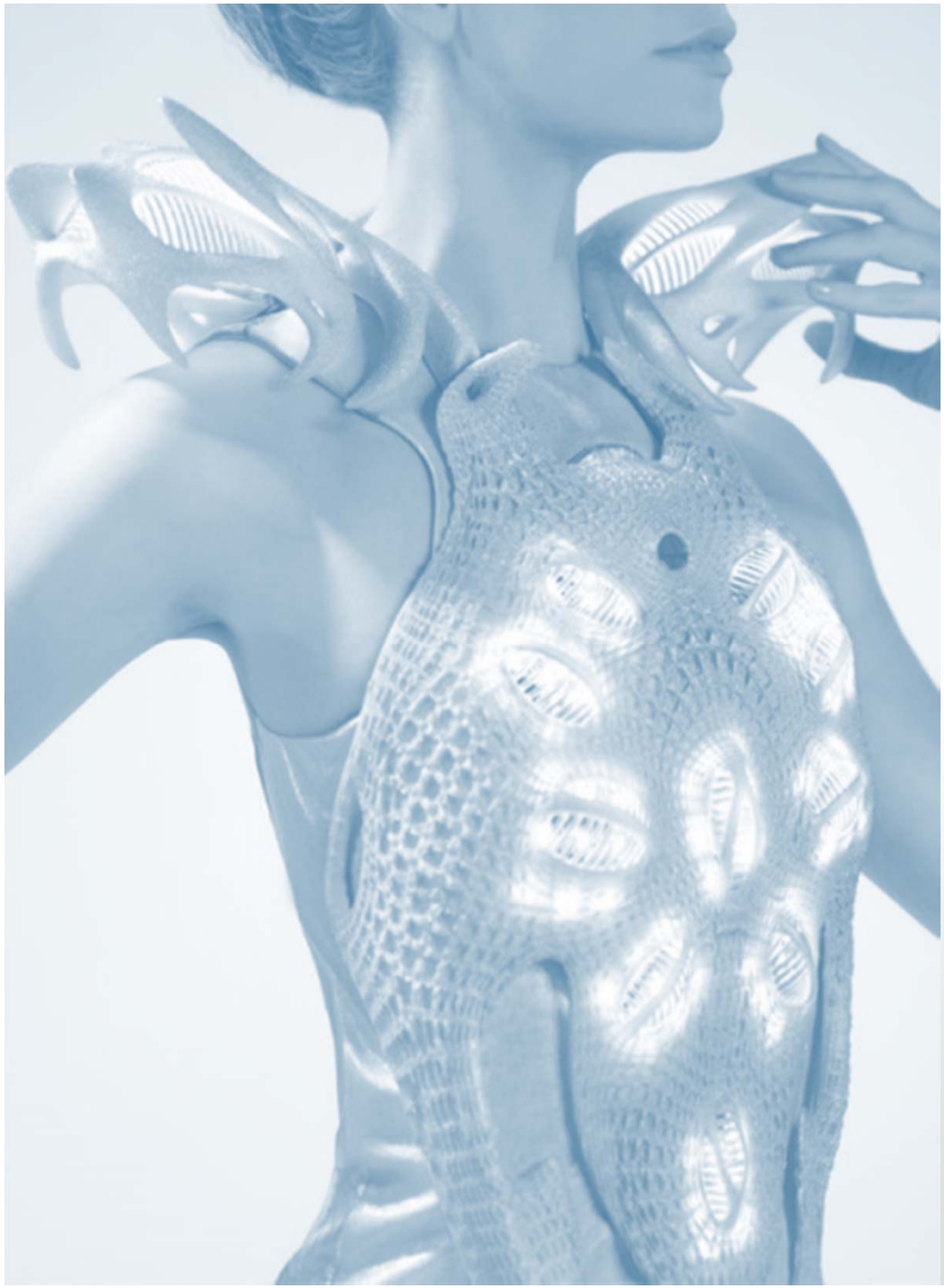
Post project

- Invited talk
- Follow on project
- Commercialization
- Other public engagement projects



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Thank you

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