DEVELOPING BESPOKE STRETCHABLE SENSORS FOR PROSTHETIC & ORTHOTIC LINERS

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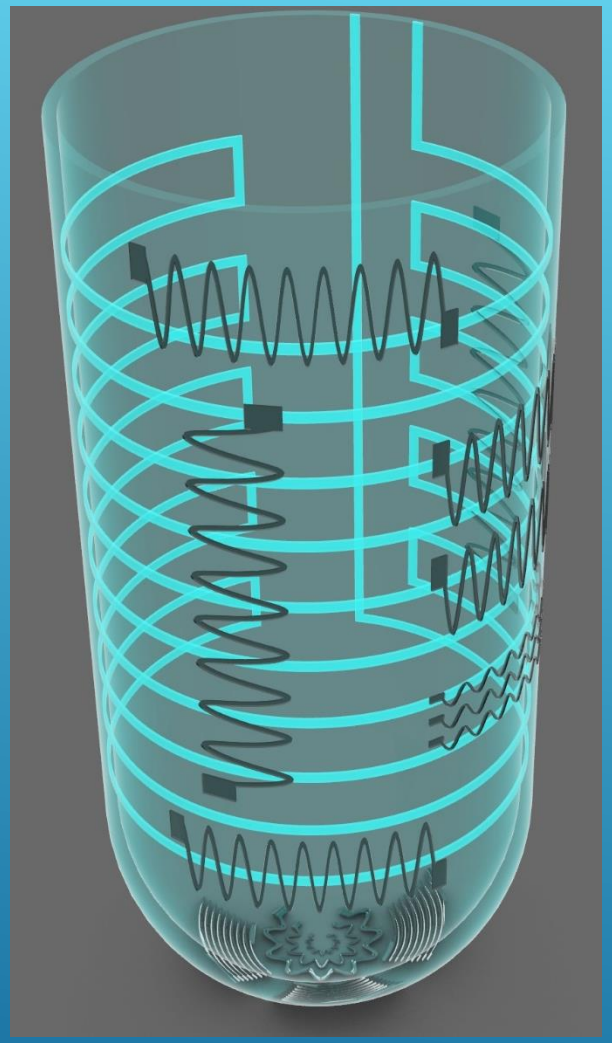
Wearable Assistive Materials, Royal National Orthopaedic Hospital, Aspire Create, Global Disability Innovation Hub

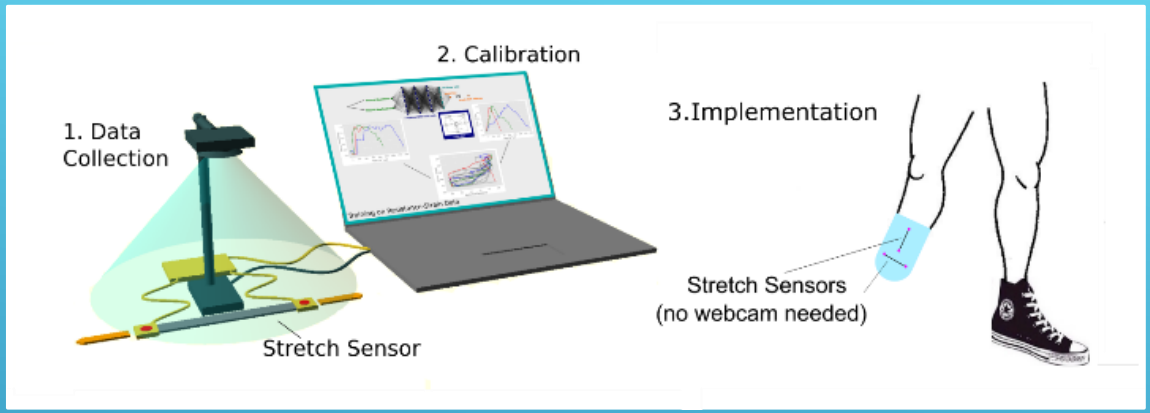
UCL



THIS TALK:

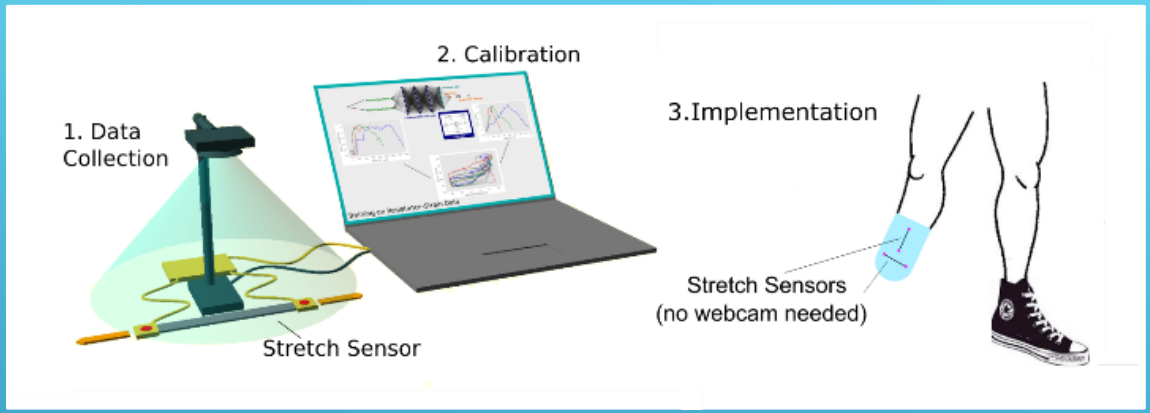
1. Calibration of 1D Stretch Sensors
2. Calibration of 2D Stretch Sensors
3. Printing nanocomposite stretch sensors
4. Towards bespoke intelligent socket liners

CONCEPT



"A deep learning approach to non-linearity in wearable stretch sensors" **B Oldfrey, R Jackson, P Smitham, M Miodownik**

1D CALIBRATION



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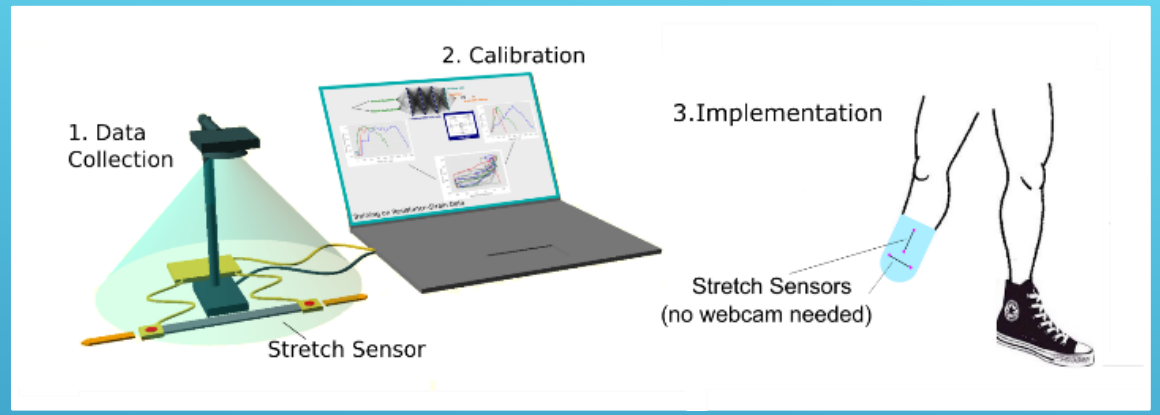

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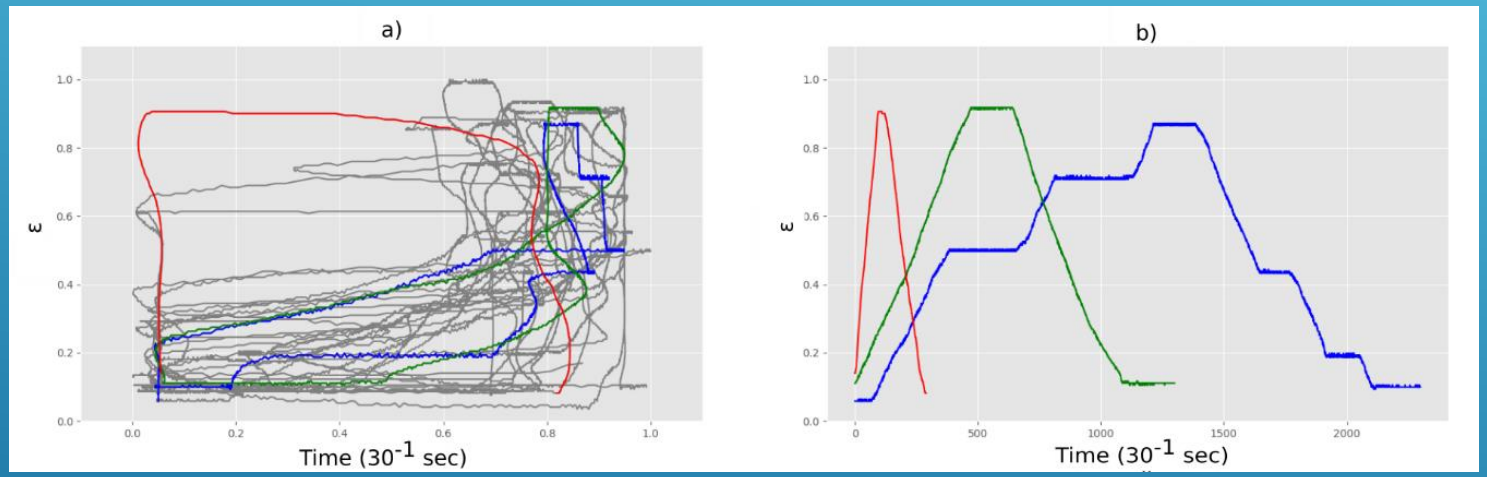

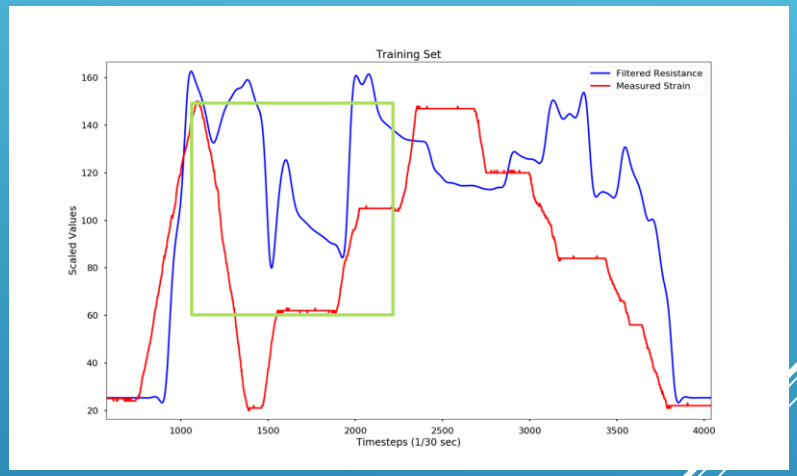

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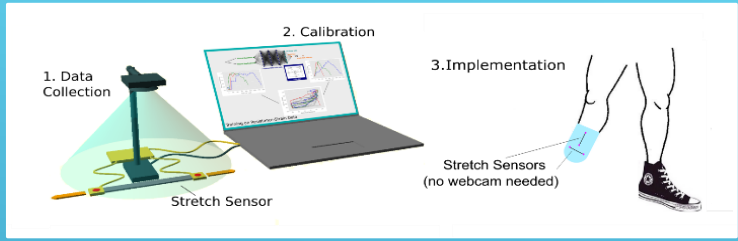

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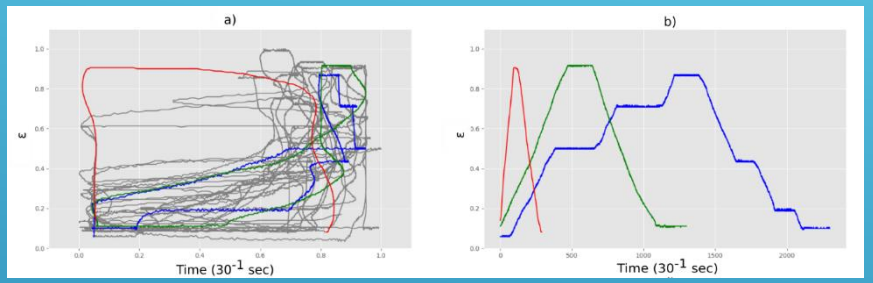

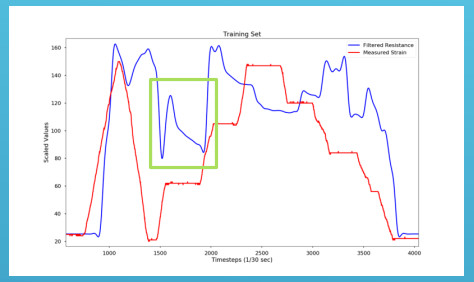

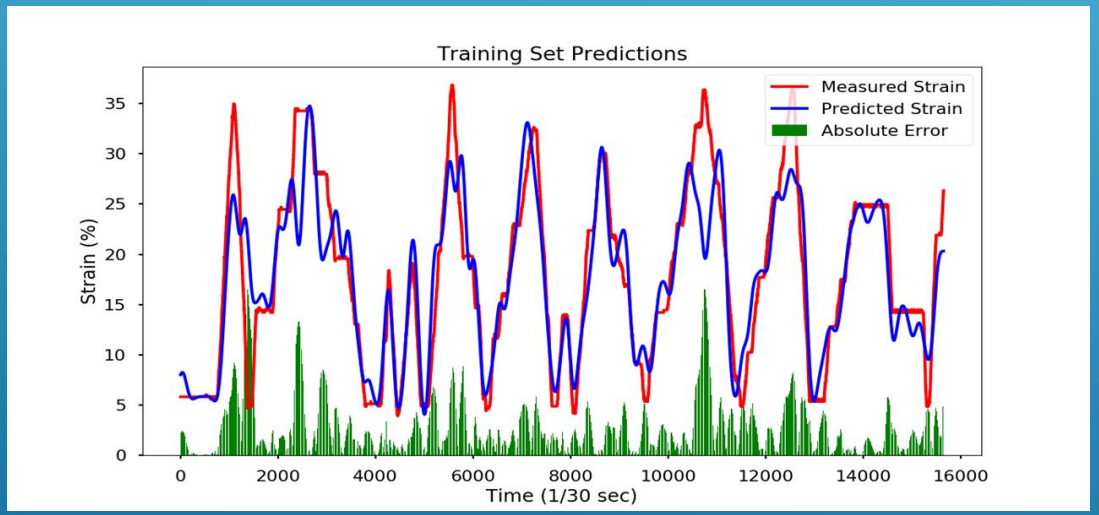

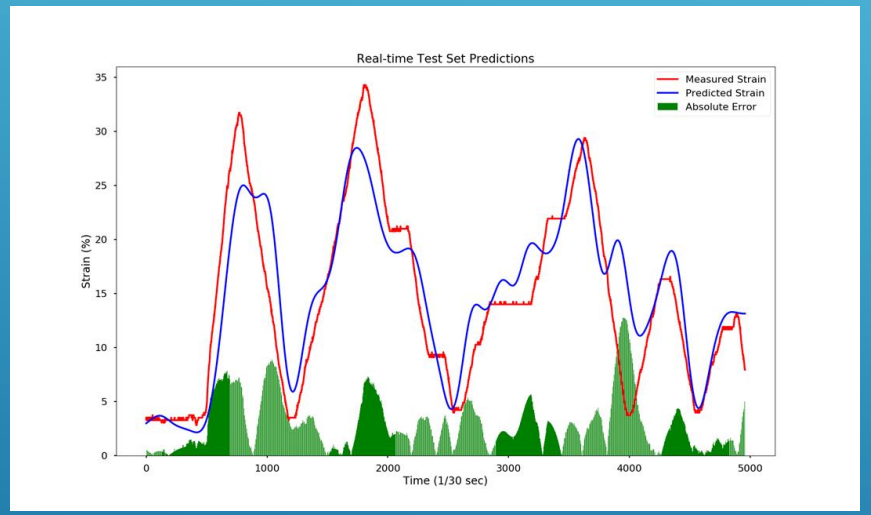

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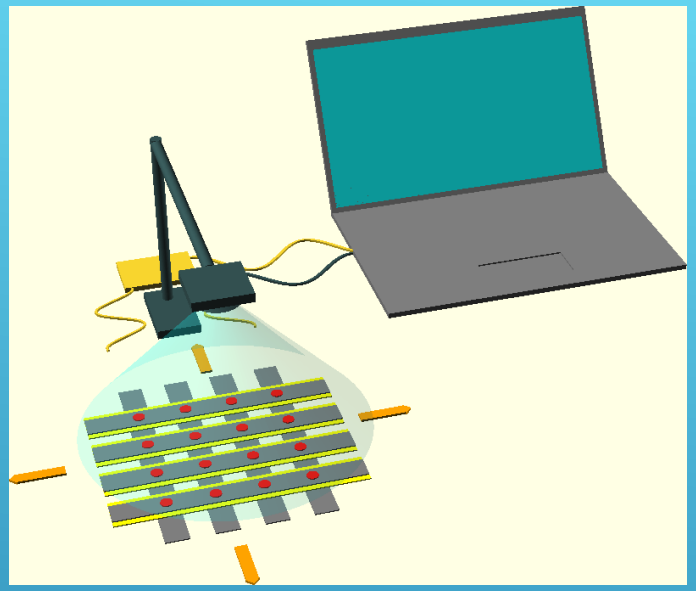
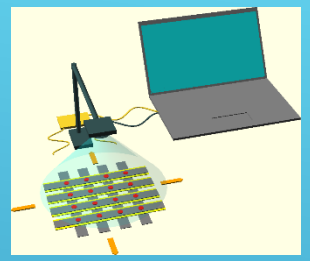
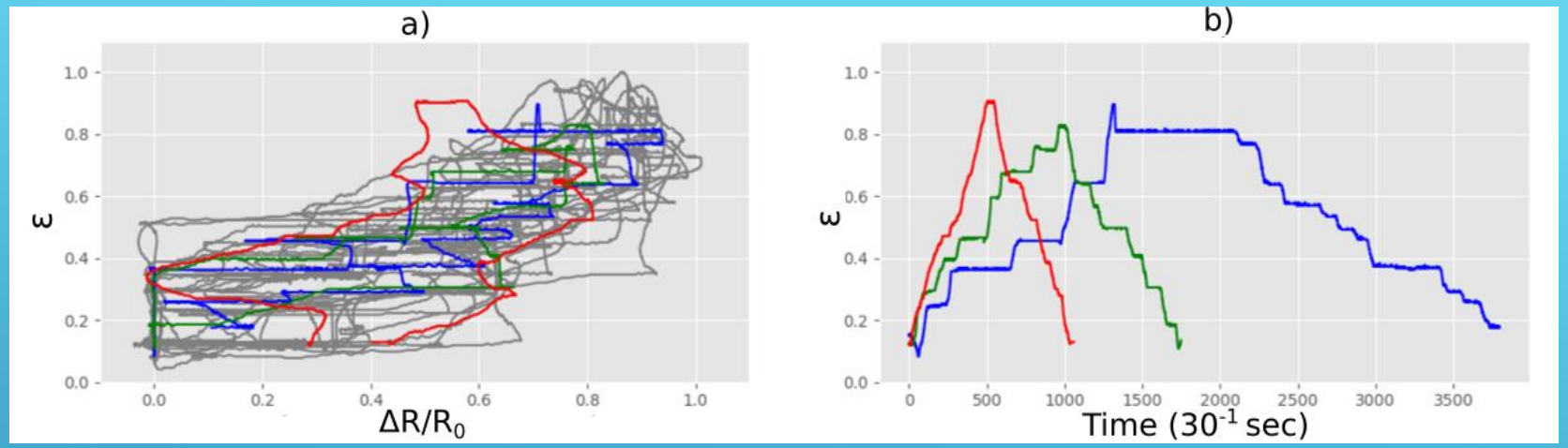


2D CALIBRATION





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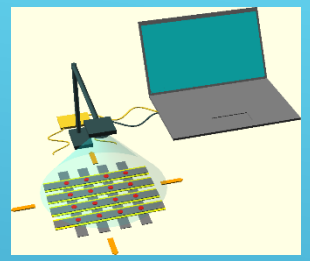
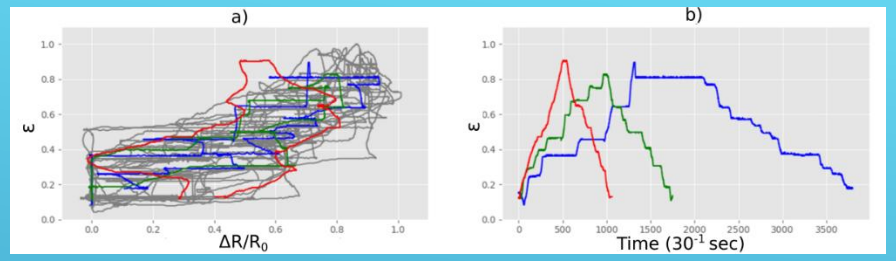
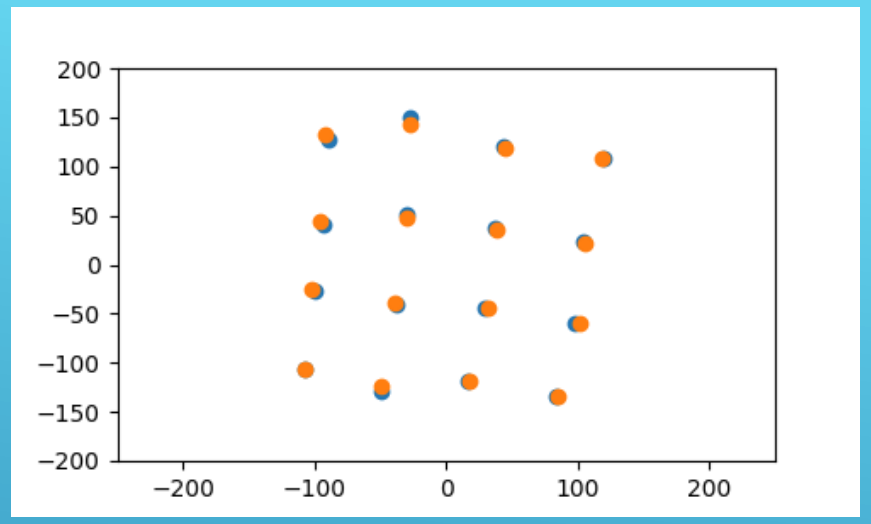




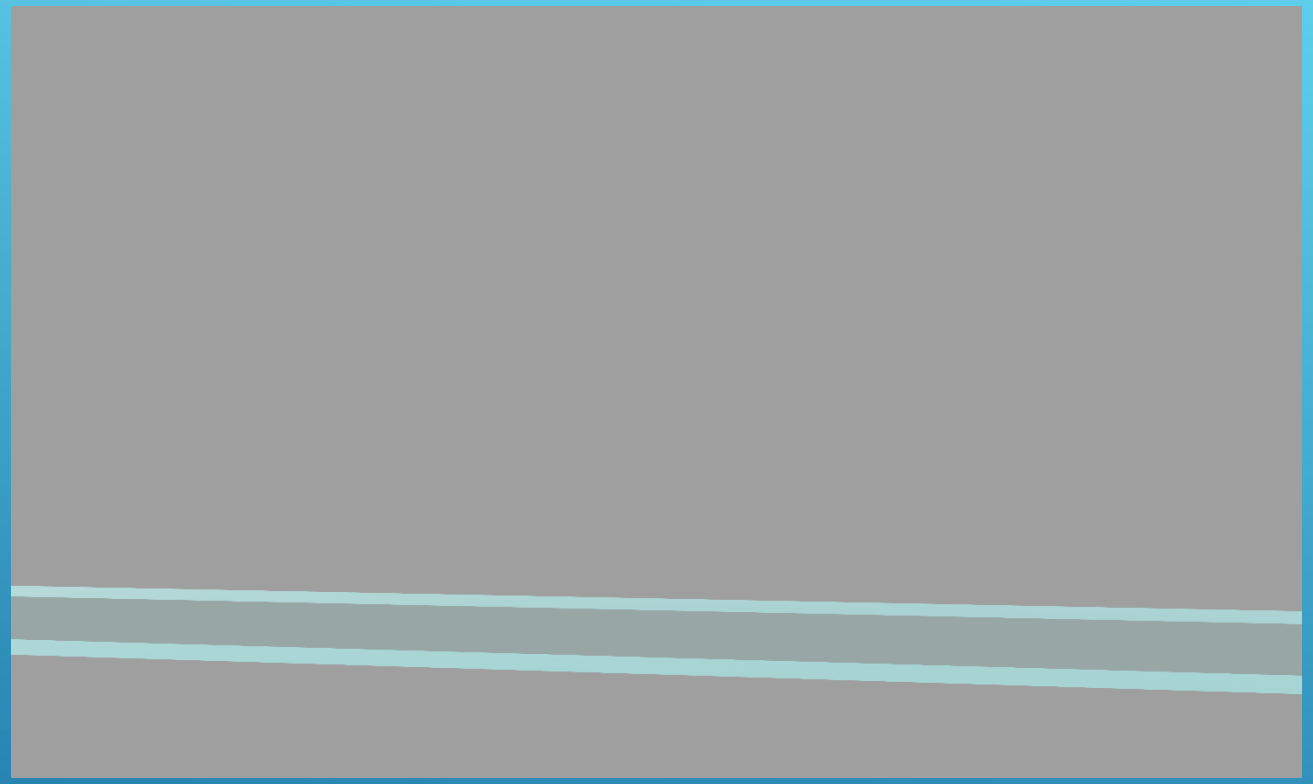


2D CALIBRATION

Active: 15%wt MWCNTs + PDMS + CHLOROFORM

Inactive Substrate: Ecoflex 0030 Silicone

NANOCOMPOSITE STRETCH SENSORS



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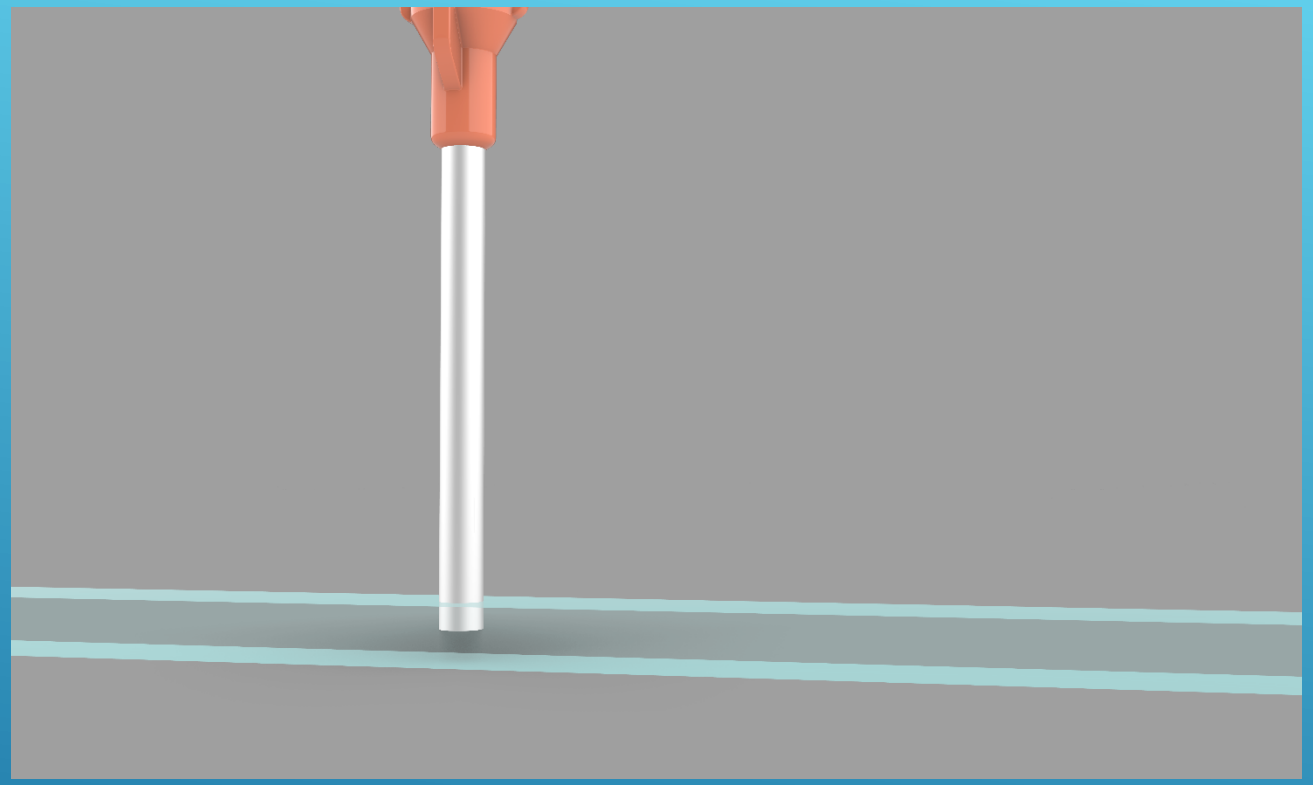

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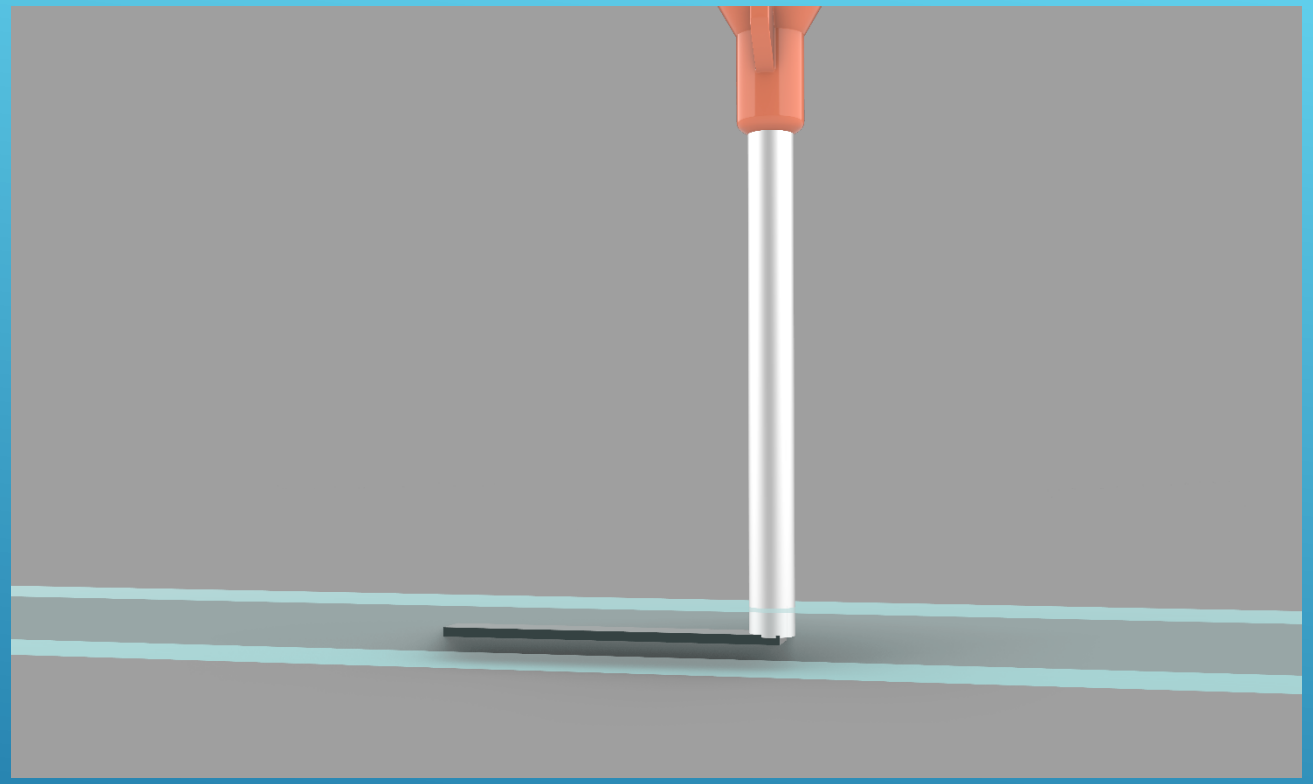

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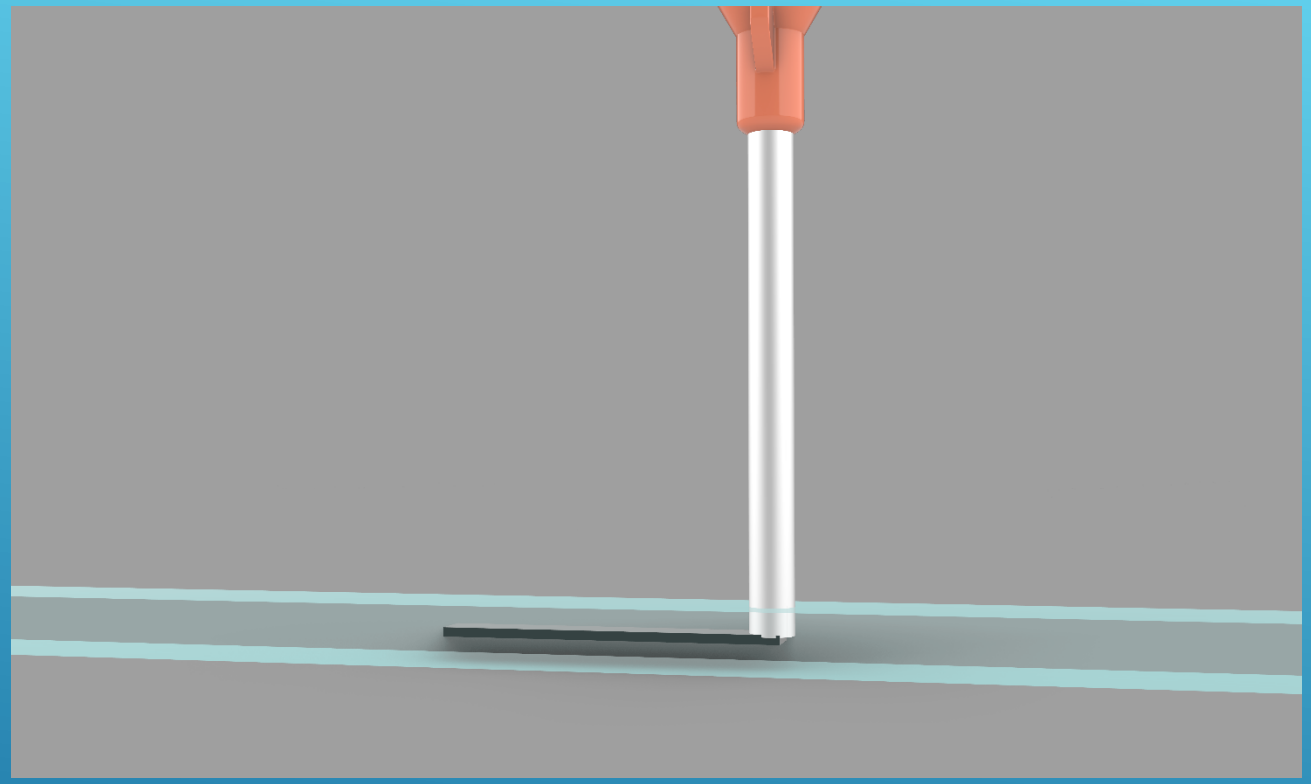

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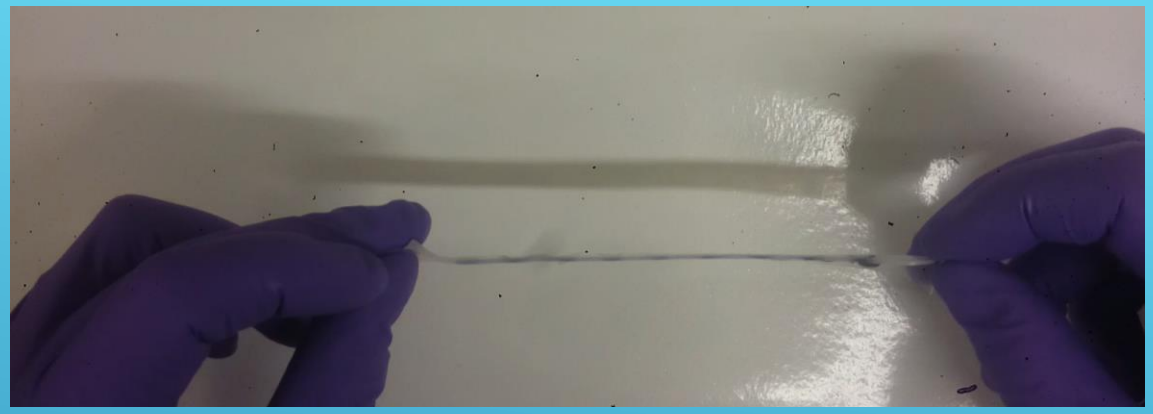

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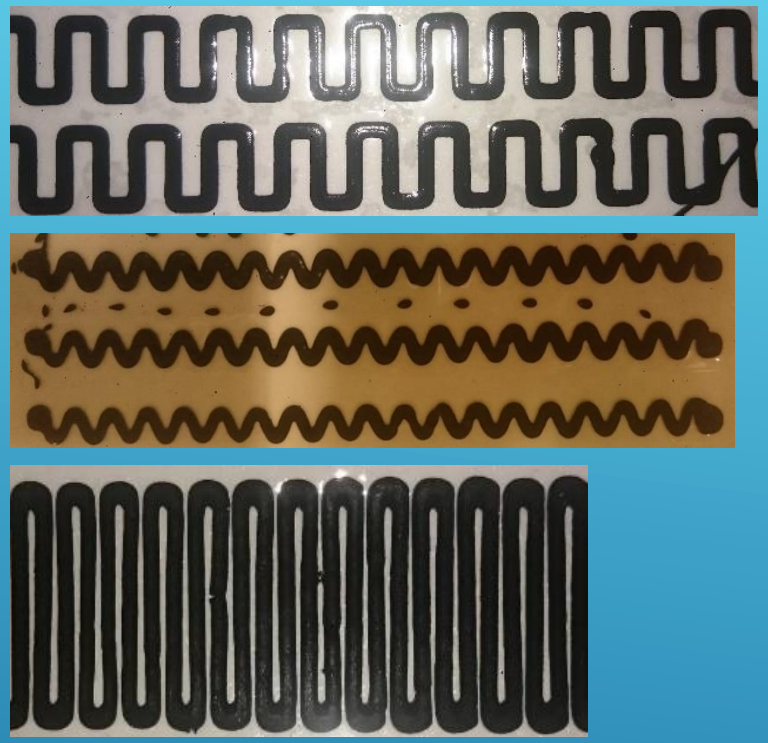

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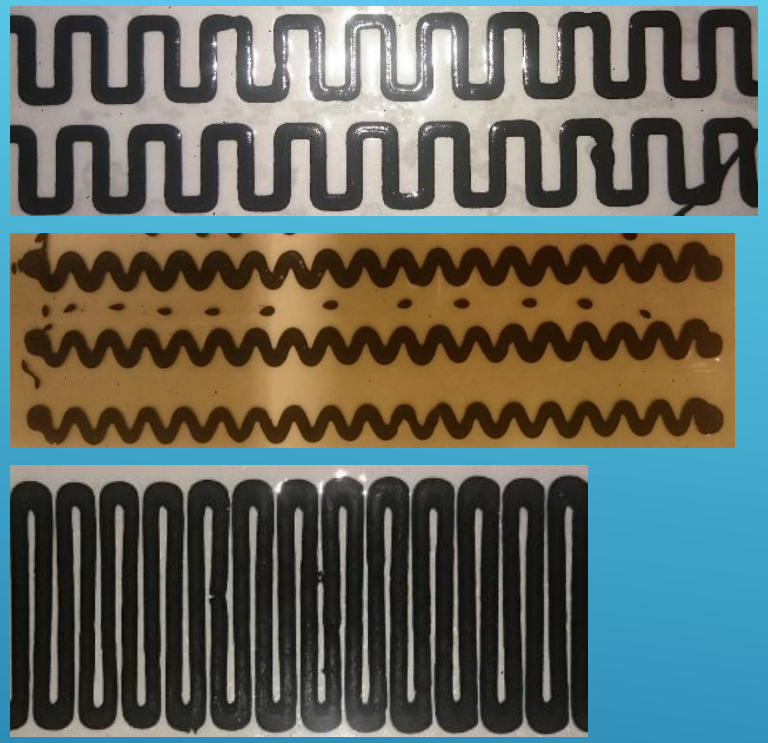

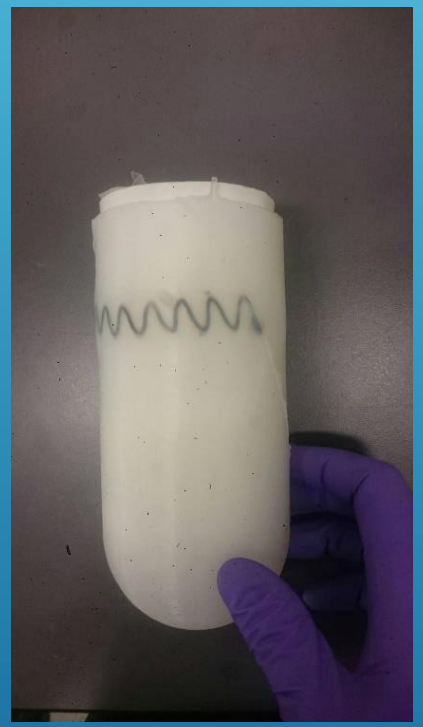

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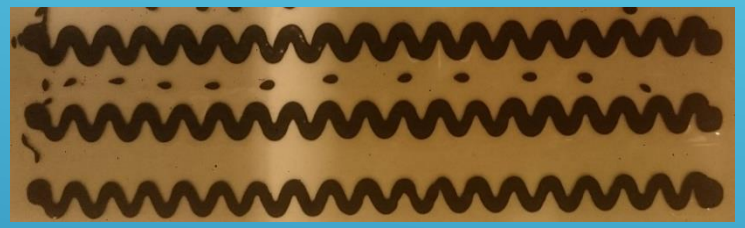

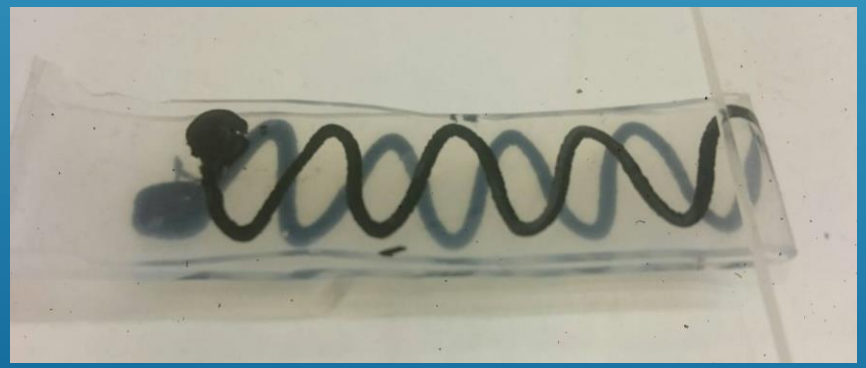

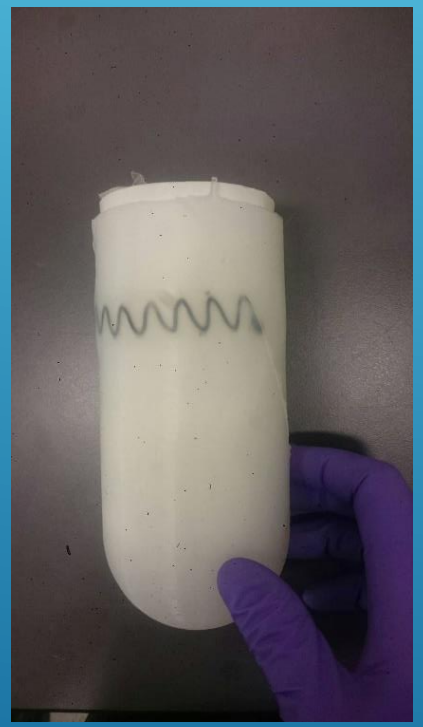

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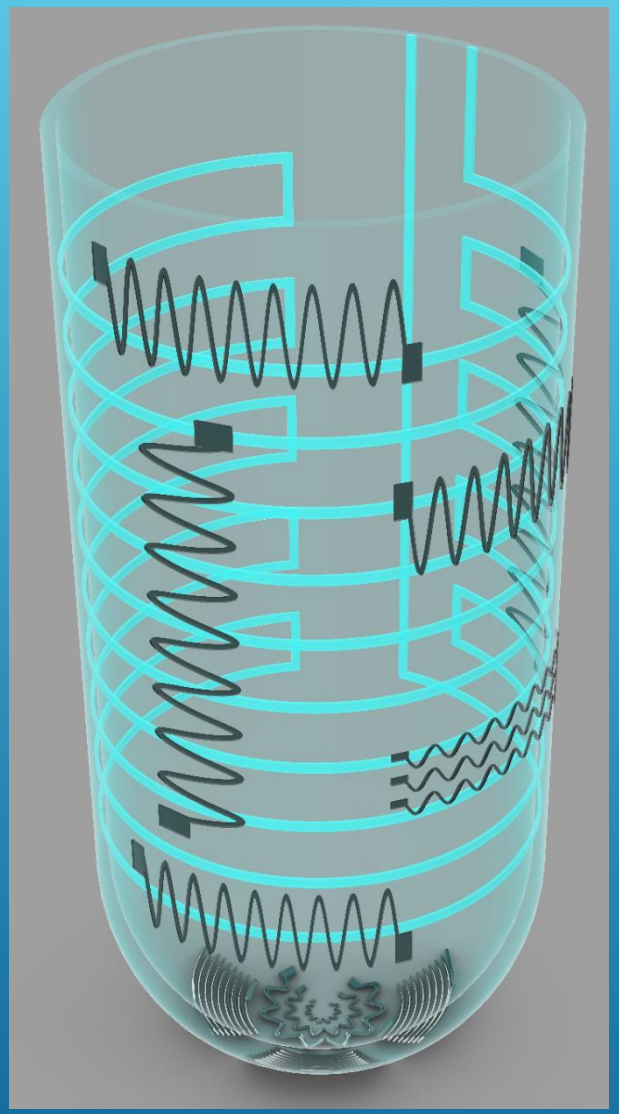
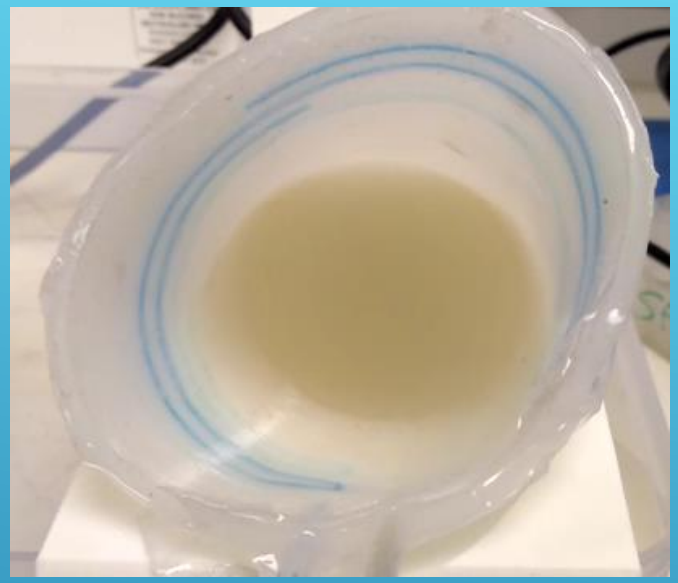
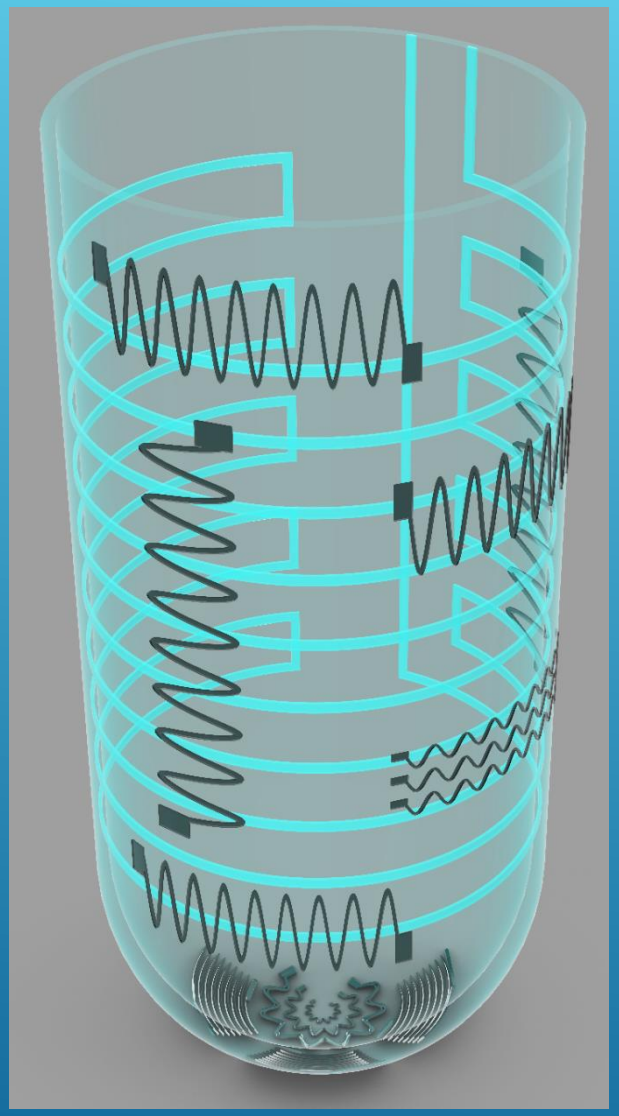
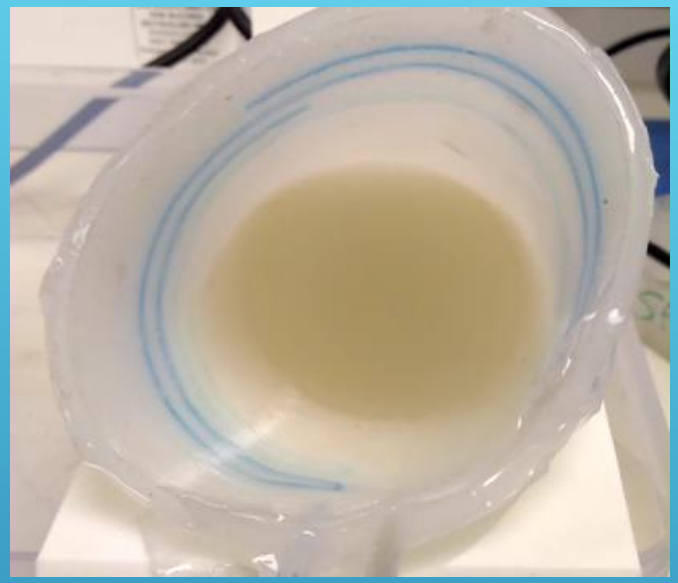
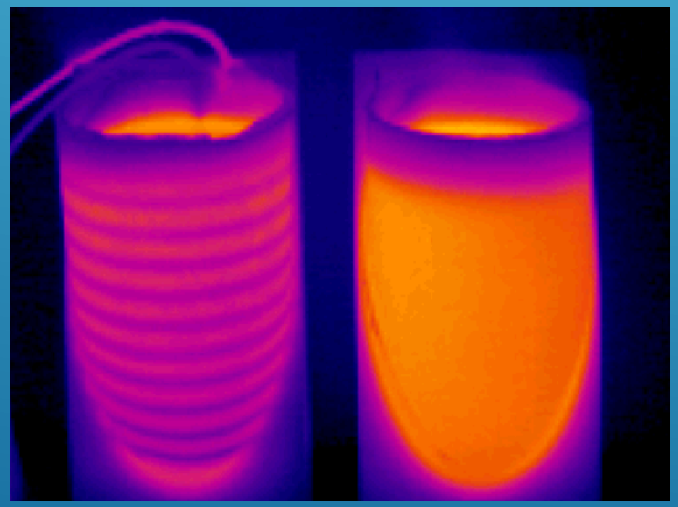




BESPOKE INTELLIGENT LINERS







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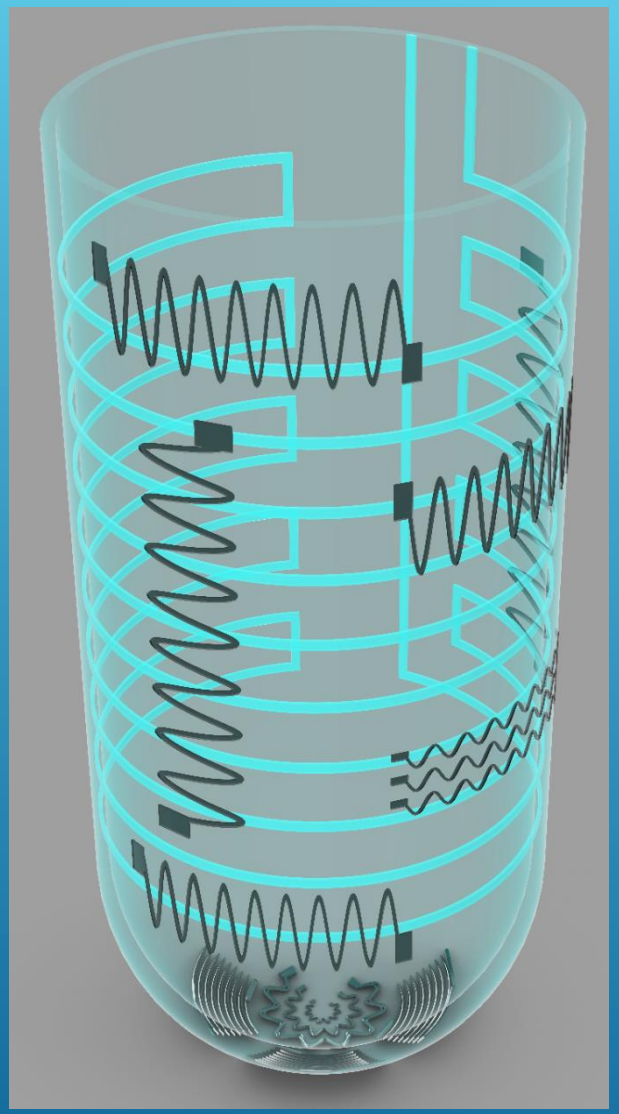

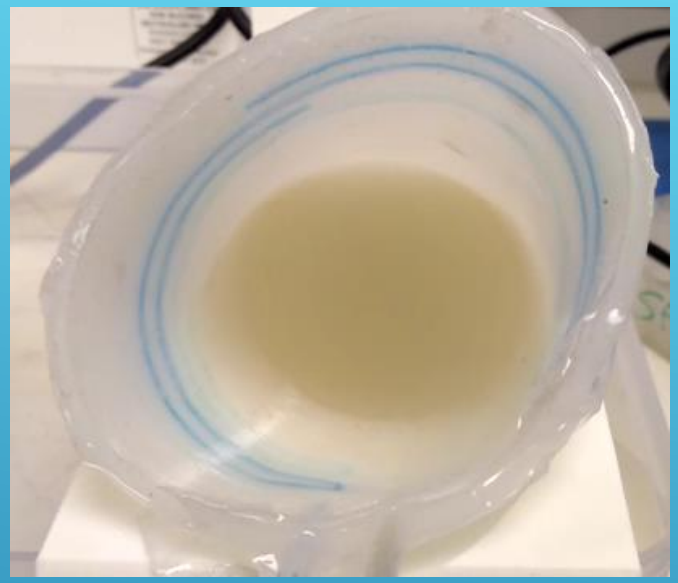

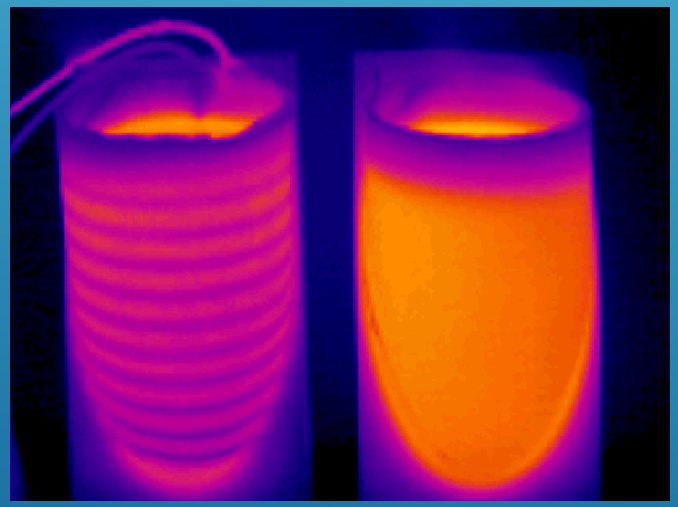

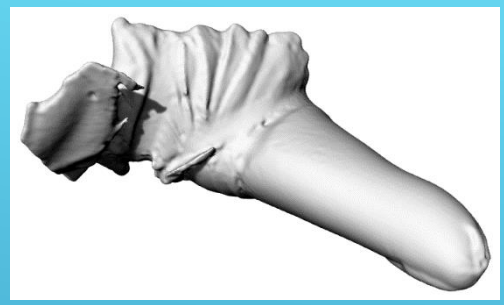

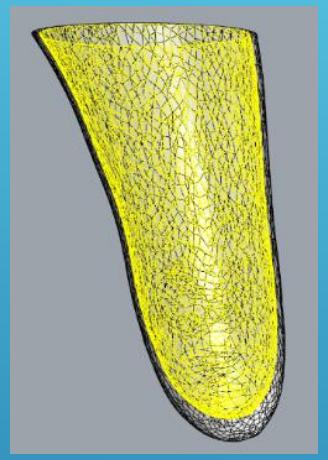

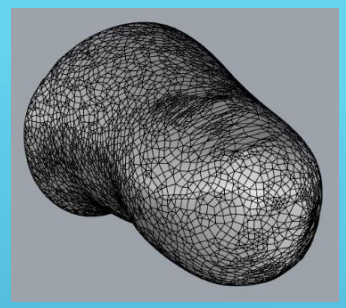

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ACKNOWLEDGEMENTS

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- STARWORKS
- UCL INSTITUTE OF MAKING & GLOBAL DISABILITY INNOVATION HUB
- ASPIRE CREATE
- ROYAL NATIONAL ORTHOPAEDICS HOSPITAL
- EPSRC

THANKS!