

## UKFN Short Research Visit Report

### The use of droplet microfluidics to enable hybrid soft material printing

**Participants: Dr Yifan Li (Northumbria University); Dr Jonathan Terry (University of Edinburgh)**  
**Visits carried out between August 2018 and February 2019**

This SRV proposed proof-of-concept research to develop soft material printing utilizing droplet microfluidics, which it is hoped will enable next-generation flexible electronics. A number of successful visits have been made by both participants, which has resulted in a range of research outputs and plans for future funding opportunities and continuing collaboration. The research integrates Northumbria University (NU) experience in soft materials and microfluidics with University of Edinburgh (UoE) expertise in sensor and microsystems design and fabrication.

The research outputs that have arisen from the SRV are summarised below:

- Paper entitled “*Advanced 3D Morphing Transducers by Smart Hydrogel Patterning*” accepted to the 2019 International Conference on Solid-State Sensors, Actuators and Microsystems, 23<sup>rd</sup> – 27<sup>th</sup> June in Berlin, Germany;
- The UoE agreed to support Dr Li’s EPSRC NIA application (submitted recently) by waiving access costs to the Cleanroom Facility (SRF) during his research.
- A 2<sup>nd</sup> paper has been submitted for the 2019 International Soft Matter Conference to be held in Edinburgh, 3<sup>rd</sup> – 7<sup>th</sup> June. Awaiting decision.

The participants are also in discussions about a co-authored journal publication based on further planned experiments at Northumbria and Edinburgh. This work will be used to leverage future joint funding applications.

Both participants would like to thank the UK Fluids Network for the SRV grant, which has proved invaluable in strengthening the collaboration between themselves and their institutions.

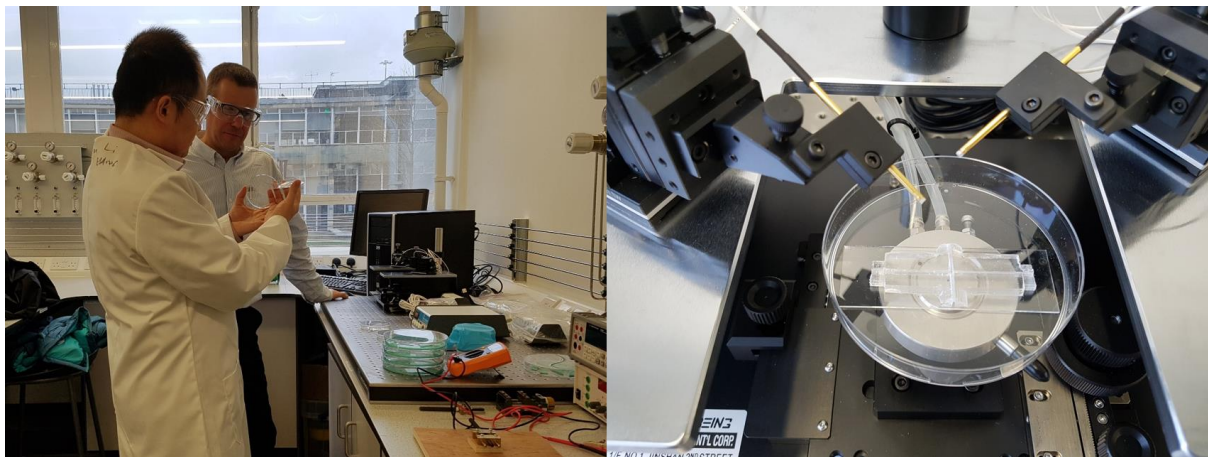


Photo Caption: Dr. Li and Dr. Terry in discussion of a proposed microfluidic-soft material-electrical testing platform