

## Research Staff of the Year – Faculty of Science and Engineering



**Name:** Qian Yang

**Faculty:** Science and Engineering

**Position:** Dame Kathleen Ollerenshaw Fellow

**Research area:** 2D atomic-scale capillaries

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I'm Qian Yang, Dame Kathleen Ollerenshaw Fellow at the Department of Physics and Astronomy. I've been working here since 2018, shortly after obtaining PhD Degree. I started as a research associate working with Prof. Andre Geim, whose inspirational guidance and constant support helped me to quickly develop into an independent researcher. I am currently working on the atomic scale capillaries assembled from van der Waals materials, to reveal the effect of ultimate nanoconfinement on the behaviour of various molecules.

**In your own words, please describe your outstanding research whether that be an output, impact, contribution to the environment:**

Our previous work on the molecular transport under extreme spatial confinement using atomic scale capillaries led to high profile publications and, more importantly, opened up new revenues to study the otherwise experimentally inaccessible atomic scale. I put forward fellowship and grant applications based on our work and the ideas developed from it, successfully secured several major sources of funding, including the Dame Kathleen Ollerenshaw Fellowship and European Research Council Starting Grant, to continue our exploration of molecular behaviour down to the ultimate confinement.

**What motivated you to do this?**

I am lucky enough to have studied graphene in Manchester with the very people who discovered it. And now I'm working on these fascinating nanocapillaries which are designed and proudly made in NGI, to explore the frontiers in the field. It's simply exciting to think about what these nanochannels could offer, from help in understanding transmembrane transport in cell membranes, to water purification, to even achieving energy harvesting.

**What are you planning to do next?**

Deliver the research as I proposed, I suppose. A lot to learn and to experience, lots of fun as well.