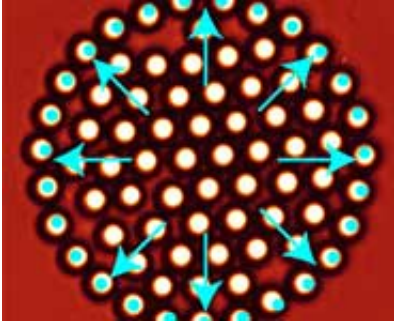


Squeezing in the micro-domain

October 10 2013



While the air pressure in a wheel and the blood pressure inside a human body can precisely be measured, it is still a challenge to measure the pressure inside microscopic objects such as cells in our bodies.

Researchers from Universities of Bristol and Düsseldorf (Germany) have found a method to measure the pressure in small objects, which is published in the latest issue of *Nature Communications*.

The idea is similar to using a sleeve when our [blood pressure](#) is taken, but on a scale ten thousand times smaller. Rather than squeezing an arm, a liquid of tiny particles is squeezed by other particles using the tiny forces of light known as optical tweezers.

Dr Paddy Royall, Royal Society University Research Fellow in the Schools of Physics and Chemistry, said: "In the future, this method can

be used to access the turgor pressure inside [cells](#) and thus to diagnose various diseases, for example certain types of cancerous cells have abnormally low [pressure](#)."

More information: Williams, I. et al. Direct measurement of osmotic pressure via adaptive confinement of quasi hard disc colloids, *Nature Communications*, 02 October 2013. www.nature.com/ncomms/2013/131.../5/pdf/ncomms3555.pdf

Provided by University of Bristol

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