

New ways to stretch DNA and other organic molecules

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By taking advantage of the unique patterns generated when two immiscible fluids flow together, scientists have developed a new tool for studying tiny biomolecules.

Researchers at the National Taiwan University and the National Central University in Taiwan used a technique called two-phase microfluidics to stretch [organic molecules](#) in a systematic manner. The researchers created different types of [flow patterns](#) by controlling wall wettability of a [microfluidic](#) channel, the flow rate ratio of two fluids, and the Reynolds number, which is a ratio between the inertial and viscous forces in a fluid.

By systematically varying these three parameters, the researchers could control the extension of a polymer string suspended in the fluid flow. Stretching polymers, proteins, DNA, and other organic macromolecules can reveal clues about what the molecules are made of and how they interact with other substances.

More information: "Polymer stretch in two-phase microfluidics: Effect of wall wettability," *Biomicrofluidics*

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