

## Optics Meets Microfluidics for Highly Sensitive Force Sensing

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**Abstract :** Despite the revolutionizing impact of optical tweezers in materials science and cell biology up to the present date, trapping has so far extensively relied on specific material properties of the probe and local heating has limited applications related to investigating dynamic processes within living systems. To overcome these limitations while maintaining high sensitivity, here we present a new optofluidic approach that can be used to gently trap microscopic particles and measure femtoNewton forces in a contact-free manner and with thermally limited precision.

**Keywords :** optofluidics, force measurements, microrheology, FLUCS, thermoviscous flows

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