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【702】Optical and 3D acoustic trapping and sustained rotation of biological samples in a 'sono-optical' microfluidic device for optical inspection

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In-vitro cell cluster models, as cancer spheroids and organoids, have become valuable models in the life sciences. We have developed a sono-optical microfluidic device with 3D acoustic trapping and optical tweezers for non-contact manipulation and imaging of such samples in liquid suspension. With 3D independent control of the transducers we can adjust the relative strength of the acoustic radiation and viscous torques which will determine whether transient reorientation or continuous rotation of a given sample takes place. With acoustics alone or combined with optical tweezers, we can trap samples, change their location and orientation or induce sustained rotation of them which offers access to 3D optical inspection and tomographic information.

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