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Fabrication of microfluidic devices with 3D embedded flow-invasive microelements

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Abstract: A process is demonstrated for fabricating microfluidic devices with pre-fabricated microelements embedded within a microchannel orthogonal to the flow. The microelements constitute a functional three-dimensional (3D) structure that can be used for a broad range of applications. The process is demonstrated using PDMS and glass and conventional microfabrication processes. The use of this process for applications of dielectrophoresis and magnetophoresis is discussed.