

An easy-to-use microfluidic interconnection system to create quick and reversibly interfaced simple microfluidic devices - DTU Orbit (08/11/2017)

An easy-to-use microfluidic interconnection system to create quick and reversibly interfaced simple microfluidic devices

The presented microfluidic interconnection system provides an alternative for the individual interfacing of simple microfluidic devices fabricated in polymers such as polymethylmethacrylate, polycarbonate and cyclic olefin polymer. A modification of the device inlet enables the direct attachment of tubing (such as polytetrafluoroethylene tubing) secured and sealed by using a small plug, without the need for additional assembly, glue or o-rings. This provides a very clean connection that does not require additional, potentially incompatible, materials. The tightly sealed connection can withstand pressures above 250 psi and therefore supports applications with high flow rates or highly viscous fluids. The ease of incorporation, configuration, fabrication and use make this interconnection system ideal for the rapid prototyping of simple microfluidic devices or other integrated systems that require microfluidic interfaces. It provides a valuable addition to the toolbox of individual and small arrays of connectors suitable for micromachined or template-based injection molded devices since it does not require protruding, threaded or glued modifications on the inlet and avoids bulky and expensive fittings.

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