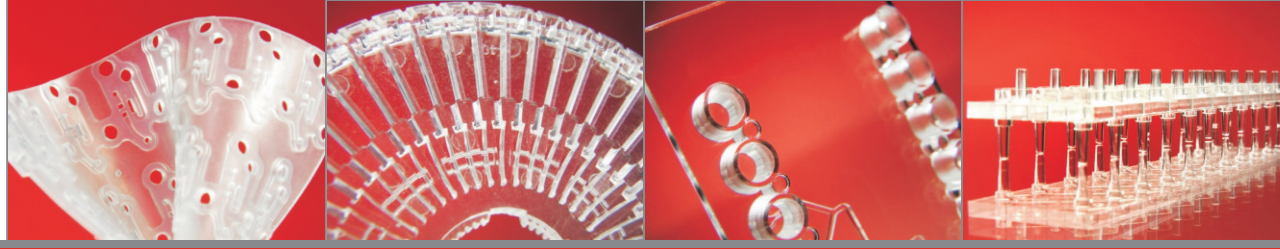
thinXXS MICROTECHNOLOGY



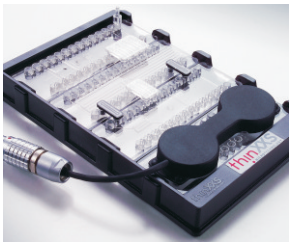
Case Study

µBUILDER

microBUILDER consortium

thinXXS develops a microfluidic sensor slide.

The components of the thinXXS Construction!Kit are based on typical laboratory standards: The assembly platform has the size of a microplate, the modules that of a microscope slide. Up to four modules may be combined with each other in one such platform. The Kit includes the platform itself as well as slides that can execute different unit operations: Pumping, mixing, splitting. A variety of connectors allow the user to flexibly interconnect the modules or to link them to outside equipment. Up to now there were no detection slides available for this Construction!Kit.



The Construction!Kit of the thinXXS Microtechnology AG is the fast lane to your lab-on-a-chip system. Its modular concept considerably reduces the technological and economic risks.

The Construction!Kit's components are based on typical laboratory standards: the assembly platform has the size of a microplate, the modules that of a micros-cope slide. Up to four modules may be combined with each other in one such platform.

Challenge

Development of a standard microfluidic slide to integrate flow sensors made of a silicon/glass hybrid. These sensors have been developed and produced within the µBUILDER project funded by the European Commision. The sensors match the specifications of the Construction!Kit micropumps and will be integrated in a standard slide of the kit.

Solution

thinXXS Microtechnology modified the existing design of the Construction!Kit standard slides and implemented fluid channels to interconnect the sensor with the standard fluidic ports. The devices were produced by precision injection molding. The fluidic connection between sensor and slide was sealed by an injection molded elastomer seal.

Prospect

The chosen solution allows for integration of any sensor - provided that the outer dimensions and the position of the fluidic connection remain the same. The combination of silicon/glass sensors or actuators with the injection molded slide enables a user to profit from the electrical and mechanical characteristics of silicon and from the economic advantages of polymers.

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