

Custom Microfluidics Interface Conveniently to Glass Substrates

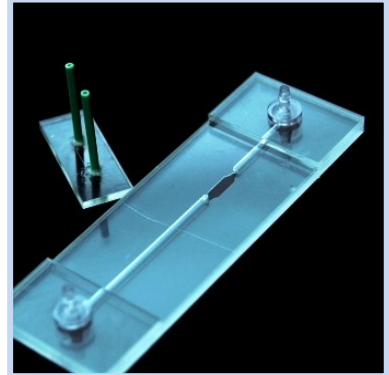
ALine's microfluidic flowcells press-apply to glass slides, ideal for microscopy or spectroscopy.

Many surface-based assays require a fluidic interface to a well characterized surface. Typically, a glass slide that is functionalized, with a patterned or spotted array, or a gold-coated slide, provides a well characterized surface and affords a simple interface to a detection system.

ALine's custom laminate fabrication capability offers a range of options in materials, functionality and complexity to create easy-to-use, robust microfluidic interfaces to glass slides. Bonding materials with a track record of success in biomedical applications are used to attach flowcells and fluidic components directly to the glass surface with a pressure sensitive adhesive.

Channel heights as small as 12.5 microns tall and 100 microns wide with alignment registration to 50 microns between layers are available.

ALine's flexible and rapid prototyping of these flowcells has supported Rockville, MD-based TetraCore, a biotechnology company focused on field-portable assays and instruments for veterinary, domestic preparedness, and clinical applications. Dr. William Nelson, President of TetraCore, explains how ALine's capability has supported their product development effort, "We have been testing different configurations for the fluidic channel and the chamber. For example, we needed to generate cartridges with a small flow cell to deliver materials to the low-density microarray in a process called fluid-



forced discrimination. Because this is a magnetic bead-based assay, we were examining different methods for trapping beads in the process and excluding beads from some functions. With polymer laminate fabrication we can change the configuration of the fluidic channel and the chamber of the prototype and within a few days after submitting a CAD drawing, have a new device to test whose parameters are close to the finished product. There is no expensive tooling and no waiting around for injection molding."

CUSTOM CUVETTES

Tailor your research tool to your needs cost effectively. Specify materials and pathlength for a [custom bio micro cuvette](#) using our [selector guide](#). Work with a standard spectrometer or lay flat for microscope stage viewing. Incorporate porous membranes, biocompatible materials, volumes from 1 uL, pathlengths from 50 um.

Dr. Leanna Levine, president of ALine commented,

"TetraCore's development needs were readily met with flowcells that attach to the glass surface containing the microarray. A simple press-apply flowcell has allowed TetraCore to quickly optimize the geometry and run many hundreds of tests. We will be pleased to support them through product launch."

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CUSTOM FABRICATION

ALine's [design and development services](#) provide you with customizable, cost-effective, and rapid prototyping of complex fluidic components that integrate on board pneumatic valves, porous membranes, mixers, and pumps. Our devices can be readily integrated with electroactive or optical components for applications in molecular or immuno-analysis

ALine provides expert support and many years of experience in the design and fabrication of custom microfluidic components for life science research and immuno and molecular diagnostics market. We manufacture under an FDA compliant quality system.