

Lithography is a versatile tool for patterning fine microstructures and has been widely used for many years in the manufacture of silicon based MEMS devices and micro-electronic components. The processes are well established for volume manufacture and are used to make products that are relied upon in everyday life. To make these products cost effectively, a high throughput is required to offset the high capital cost involved in these processes. This can create a barrier for early stage development projects that find it difficult to access such facilities.

In addition to cost barriers, design flexibility and speed of response are also common barriers for early stage development projects accessing such foundry services. These types of projects generally seek to fabricate small quantities of devices for proof-of-principle testing and validation. In order to achieve this, there is often an undesirable compromise between design and response time in order to bring costs to a manageable level. A method commonly used to do this is to share space with other projects on a common substrate, which may not be suitable for some projects

MiniFAB operates a specialized suite of UV-lithography equipment that is ideally suited for such early stage development projects. When used in conjunction with our electroforming and metal deposition techniques, MiniFAB offers a cost-effective process to fabricate small batches of devices for testing and validation. In addition, MiniFAB's wirebonding service can be used at the end of this process to integrate the fabricated test device to an electronics board for laboratory testing. This process provides the researcher a dedicated development process for the fabrication of proof-of-concept devices. The quick response of the process cycle allows for design modifications at each iteration if required.

MiniFAB's lithography capability is not limited to silicon based MEMS devices but can be used in several innovative ways to fabricate the desired microfeatures within a product. We offer access to common photoresists, spinnable or dryfilm, positive or negative, ranging in thickness from 1-200 um. The process capabilities of lithography can be exploited to pattern fine microstructures on polymers or specialty substrates which can be integrated within a microdevice when combined with MiniFAB's direct microfabrication capabilities such as laser micromachining or micromilling. For example, UV-lithography can be used to pattern micro-channels in materials that can be subsequently laser patterned.

We encourage you to engage MiniFAB in the early stage of your product development cycle to help determine the best fabrication routes and to fabricate provide proof-of-principle devices for testing and evaluation.

## For More Information

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