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## DIRECT-WRITE MASKLESS NANOLITHOGRAPHY

### HARDWARE, CIRCUITS, & SENSORS

Table-top-sized nano-/micro-lithography machine for less-expensive, high-throughput direct-writing in multiple potential patterns.

#### TECHNOLOGY TYPE

Manufacturing  
Nanomaterials

#### STAGE OF DEVELOPMENT

Established proof of concept.

#### IP PROTECTION

Provisional patent filed.

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#### TECHNOLOGY SUMMARY

Commercially available nano- or micro-scale lithography machines require the use of expensive equipment and have large physical footprints. Additionally, available electron beam lithography machines are low-throughput, restricting use to research and development and low-volume production of semiconductor devices.

University of Utah researchers have developed an economical table-top-sized electron beam lithography machine that is high throughput. This technology patterns photoresist between two UV polarizers to direct-write customizable patterns without a mask. Potential patterns include straight, curved, array, and isolated.

#### FEATURES AND BENEFITS

- Offers a table-top-sized physical footprint.
- Enables nano-scale lithography for less than \$30,000.
- Alignment can be achieved without marks and performed intuitively.
- High-throughput.

#### INVENTOR PROFILE

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