

Photothermal Patterning Flow Cell

Tech ID: 33827 / UC Case 2022-631-0

ABSTRACT

Researchers at the University of California, Davis have developed a photothermal patterning flow cell that enables precise and efficient patterning of polymer films, compatible with existing cleanroom photolithography equipment.

FULL DESCRIPTION

Researchers at the University of California Davis have developed a patterning flow cell technology that precisely patterns conjugated polymers using a photothermal process. The flow cell, which consists of two glass plates held by negative pressure, is designed to prevent redeposition of dissolved material on the polymer film during the patterning process. The invention can be used with existing cleanroom equipment, enabling the widespread adoption of this patterning method.

APPLICATIONS

- ▶ Instrument companies that develop lithography equipment
- ▶ Electronics industry for the development of devices requiring patterned polymer films
- ▶ Researchers and institutions that require patterning of conjugated polymers

FEATURES/BENEFITS

- ▶ Allows photothermal patterning of conjugated polymers
- ▶ Prevents redeposition of dissolved material during the patterning process
- ▶ Compatible with existing cleanroom equipment
- ▶ Can be used with a variety of polymers and solvent mixtures
- ▶ Addresses redeposition of dissolved material on the polymer film during the patterning process
- ▶ Generalized patterning method improves efficiency and compatibility with existing equipment

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	2024/248931	12/05/2024	2022-631

Additional Patent Pending

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OTHER INFORMATION

KEYWORDS

cleanroom compatibility,
conjugated polymers,
flow cell technology,
lithography equipment,
patterning efficiency,
photothermal patterning,
polymer film applications,
redeposition prevention

CATEGORIZED AS

- ▶ **Optics and Photonics**
 - ▶ All Optics and Photonics
- ▶ **Engineering**
 - ▶ Engineering

- ▶ **Materials & Chemicals**
 - ▶ Electronics
 - Packaging
 - ▶ Polymers
 - ▶ Thin Films
- ▶ **Nanotechnology**
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 - ▶ Scientific/Research

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