September 1970 Brief 70-10497

NASA TECH BRIEF

New Method for Photoresist Stripping

The problem:

Conventional methods used to strip cured photoresist tend to leave trace contamination that is undesirable in semiconductor work. These methods are inconvenient; they require constant elevated temperature baths, and the stripping chemicals have short effective life.

The solution:

A new stripping procedure for a negative working photoresist that employs dehydration of the resist in a vacuum. Following vacuum dehydration, the resist film is removable with ordinary solvents.

How it's done:

After the semiconductor substrate is coated with photoresist, exposed, developed, cured and etched, the cured resist-coated substrate is placed in a vacuum of 1×10^{-6} torr for a period of time governed by the coating thickness. After vacuum dehydration, the substrate is rinsed in ordinary solvent (xylene, acetone, etc.) which readily removes the photoresist.

Since the photoresist itself contains solvent (xylene), no contaminating materials are introduced, thus eliminating the possibility of adverse chemical reactions which can take place in conventional stripping.

Note:

No additional documentation is available.

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: W. E. Davern and L. S. Tobin of
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under contract to
Electronics Research Center
(ERC-10239)

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