

## **Sub-50 nm Imprint Lithography for Wafer-Scale Nano-Manufacturing**

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The Step and Flash Imprint Lithography (S-FIL) process is a step and repeat nano-replication technique based on the use of low viscosity, UV curable liquids. S-FIL uses field-to-field drop dispensing of UV curable liquids to pattern sub-50 nm features. This approach allows for patterning of structures with widely varying pattern densities and complicated structures.

Nano-manufacturing requires the features to be printed reproducibly, aligned precisely and printed with low defect density. In brief, the latest data on the S-FIL process will be discussed. The presentation will specifically include:

- Full wafer (200 mm) residual thickness control to enable practical etching (thickness variation < 10 nm, 3 sigma );
- Field edge control compatible with 150 um kerf regions;
- Field-to-field imprint critical dimensions control and line edge roughness;
- Overlay alignment results; and
- Process life and defect data.