UV Nanoimprint Lithography

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Abstract:

Nanoimprint lithography techniques are known to possess remarkable replication capability down to sub-5nm resolution. Translating this nano-scale resolution to a commercially viable manufacturing approach requires development of tools, materials, masks and processes that can achieve reliable nano-scale performance at reasonable cost.

In recent years, a form of UV imprint lithography known as Jet and Flash Imprint Lithography (J-FIL) has seen significant progress in mask infrastructure, materials, CD control through etch, defect reduction, overlay, and throughput. This progress has opened up emerging nanomanufacturing applications for J-FIL such as patterned media for hard disk drives; and as a complement to photolithography at sub-25nm half-pitch nodes for semiconductor ICs.

The speaker will provide the current state of J-FIL technology in applications such as terabit density magnetic storage and advanced solid state memory. He will discuss both stepper tools as well as whole substrate patterning tools developed using the J-FIL technology. Finally, he will also discuss emerging applications of J-FIL in the biomedical and energy sectors.