

Micro Nano Patterning

E-Beam and SCIL

MiPlaza Philips Research Europe, The Netherlands



Contact:	Dr. Falco van Delft Email falco.van.delft@philips.com • Phone +31 (40) 2743124						
Material class:	Silicon X	Polymer X	Metal X	Ceramic X	Glass X	Organic X	Other X
Short technology description:	<p>For nano-structuring e-beam lithography is a versatile exposure tool. Feature sizes in the sub-100 nm range can be structured. The machine can handle substrate cassettes in which substrates of various sizes and materials can be handled.</p> <p>For manufacturing bigger quantities replication technologies like nano-imprint lithography are required. The fabrication of master templates for replication is done by e-beam lithography and subsequent etching. The stamp can be either the master or the stamp can be replicated in PDMS from this master. SCIL (surface conformal imprint lithography) offers the possibility to do large area printing and printing on non-flat substrates and over topography.</p>						
Typical structures and designs:	<p>Feature sizes > 0.01 nm Materials: many possibilities Technology choices depending on thin film materials, masking materials, feature sizes, ...</p>						
				<p>Phase change memories by e-beam</p>			
			<p>SCIL patterned honeycomb grid</p>				
Special features:	<ul style="list-style-type: none"> - Can be combined with other MiPlaza capabilities - Mix&Match with stepper 						
Limitations, constraints:	<ul style="list-style-type: none"> - Max. size 6"x6" and 200mm diameter 						
Material examples:	<ul style="list-style-type: none"> - many 						