

NIL processing in a 300mm CMOS Fab line

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Achieving high-quality nanopatterning while benefiting from the large-volume, cost-effective potential of nanoimprint lithography is the critical milestone for large number of applications in optics, life science, automotive and more. In this respect, we demonstrate the seamless integration of nanoimprint lithography into existing advanced lithography infrastructure, enabling meticulous control over every aspect of the patterning module.

Our developments leverage the extensive metrology capabilities at imec to precisely track pattern transfer fidelity throughout the entire fabrication process, from the master template to imprint to the final etched wafers.

The results of our study showcase a successful fusion of the best attributes of both CMOS and nanoimprint technologies. We achieve high-quality, high-resolution, high-density patterning over larger areas while benefiting from the large-volume, cost-effectiveness, and materials flexibility of nanoimprint lithography.

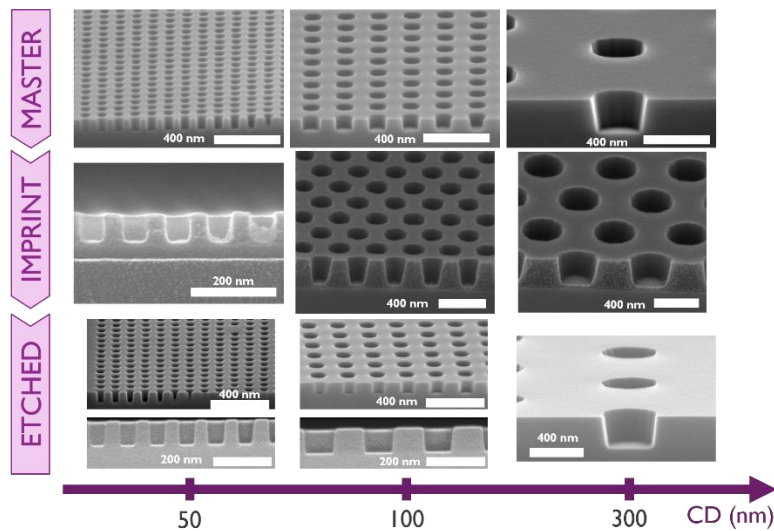


Figure 1. Demonstration of transfer fidelity across a complete patterning module including nanoimprint as lithography step.