Sub-5 nm Patterning Using Helium Ion Beam Lithography and Nanoimprint Lithography

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Goal: Deterministic patterning of sub-5 nm features

EBL doesn't have enough resolution.

Helium ion beam lithography(HIBL)

- Better resolution than EBL
  - Smaller focus spot
  - Less proximity effects
- Slow
- Damage certain substrates

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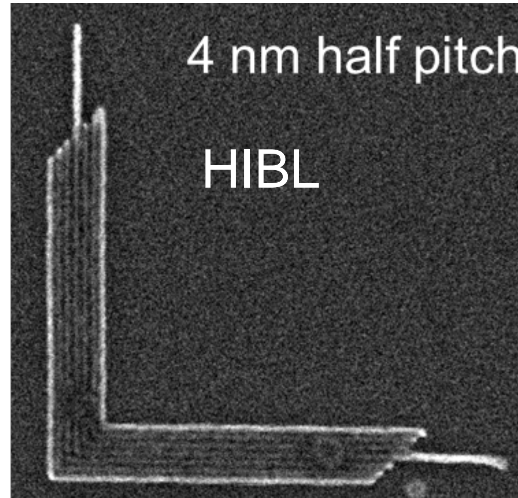
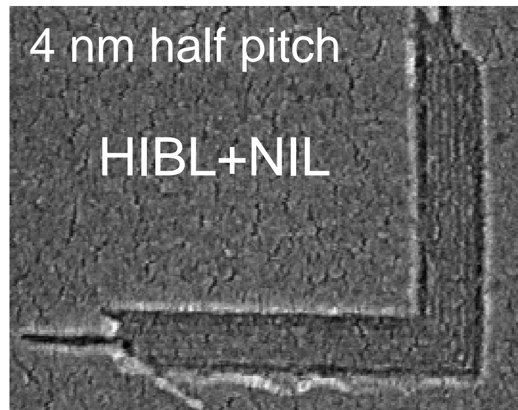
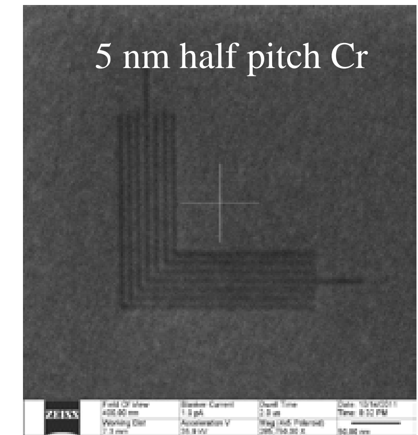
Nanoimprint lithography(NIL)

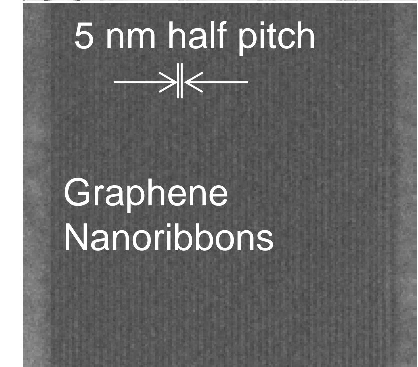
- High throughput
- Work on arbitrary substrates
- Needs mold





Direct milling with He+





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