Porous Silicon via Imprint Stamping and Anodic Alumina Masks

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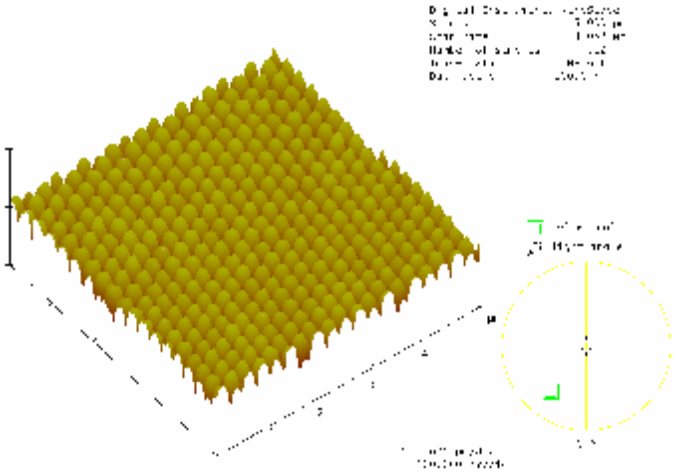
Motivation: Reproducible, ordered, nanoporous Silicon

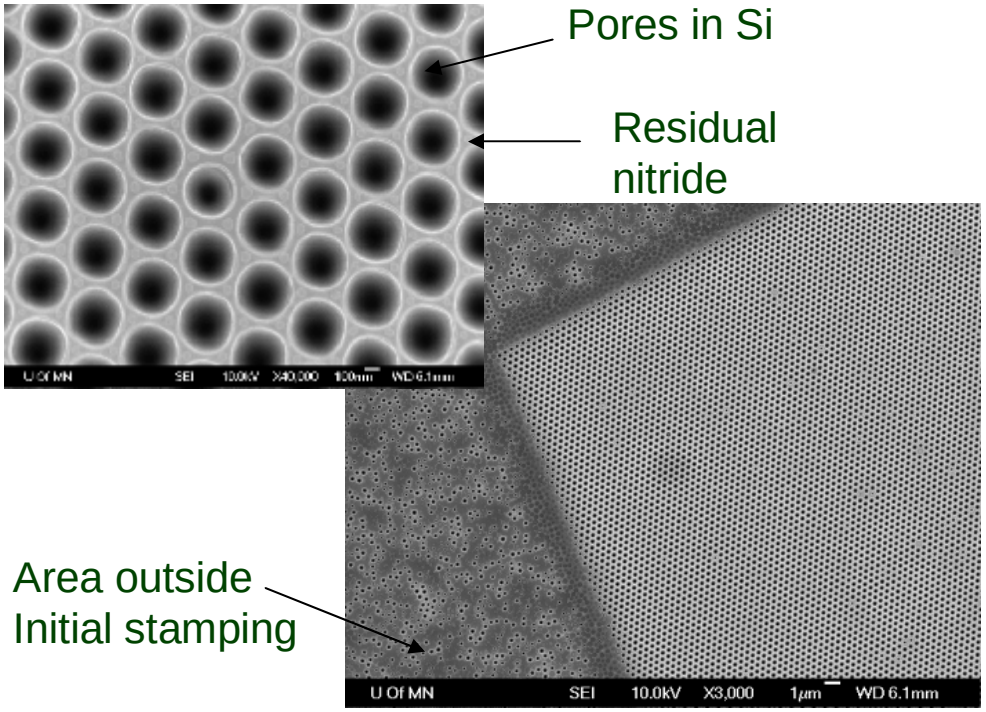
- Use nanoimprint stamp to direct self-assembly of nanopores in anodic aluminum oxide
- Etch through anodic alumina to transfer pattern to Si



AFM of 300nm center-to center Si_3N_4 stamp. (courtesy of Liwen Tan)

Methods and Result:

- Deposit Si_3N_4, then Al onto Si
- Nanoimprint aluminum & anodize to make alumina
- Reactive ion etching used to “drill” into Si



- Jia Zou, Xiaoyu Qi, Liwen Tan, Bethanie J.H. Stadler, submitted to APL.
- Bethanie J. H. Stadler, Na hyoung Kim, Liwen Tan, Jia Zou, Kate Kelchner, Ryan K Cobian **(Invited)** *MRS Proceedings* I6.3 (2005).