chrome etching
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• ICP plasma etching chrome
  – could be used for making nanometer scale features on photomasks where RIE process is insufficient
  – could be used for creating a chrome “hard mask” to etch patterns where selectivity to resist is insufficient
  – could be used for nanometer scale features desired in chrome as the active device
recipe

- **tool** = Plasma Therm ICP
  - pressure = 10 mTorr
  - gas 1: Cl2, 80 sccm
  - gas 2: O2, 26 sccm
  - gas 3: H2, 18 sccm
  - RIE power = 50 W
  - ICP power = 500 W

- **result**
  - Cr etch rate ~ 12.2 Ang/sec
  - ZEP520 etch rate ~ 58.8 Ang/sec
  - selectivity Cr:ZEP520 ~ 0.21
• pattern above is Cr on quartz substrate
• 100 nm diameter posts in 78 nm thick Cr
• posts in ZEP520 were created by exposing area around posts
  (a negative image exposure approach)