

ARIES Update – QPR

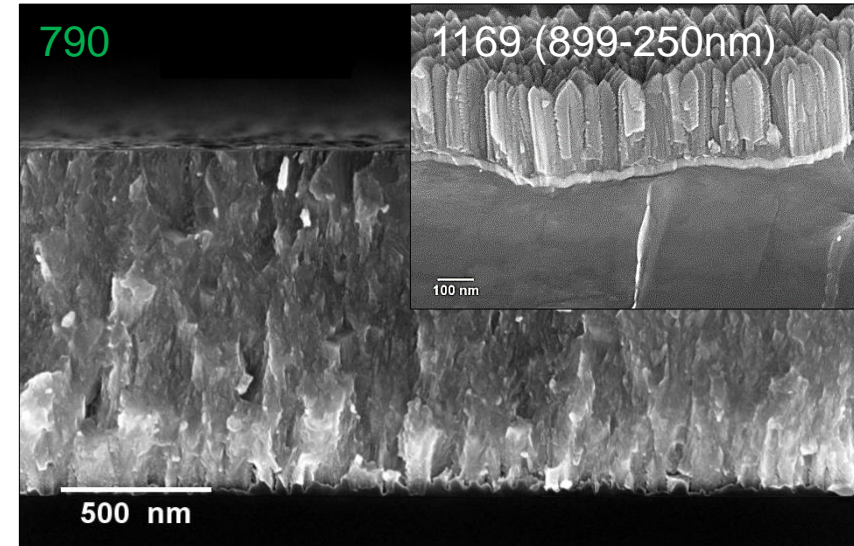
Stewart Leith, Michael Vogel



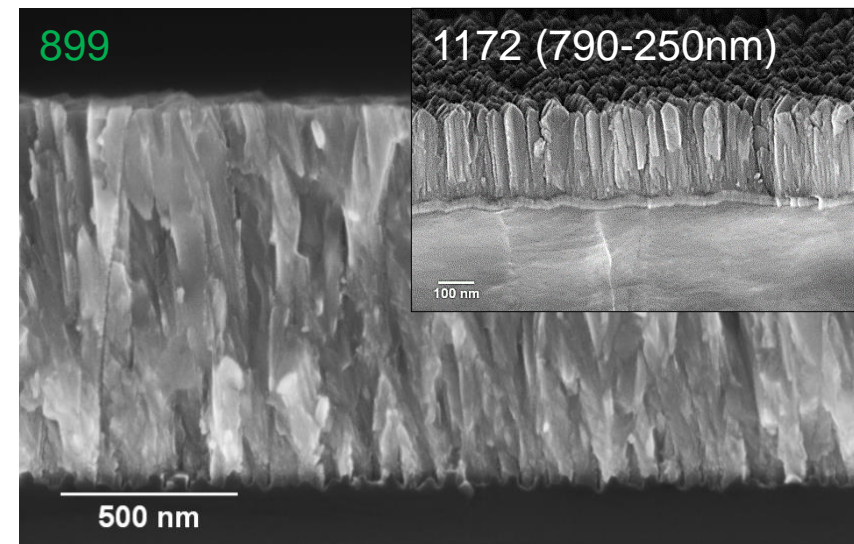
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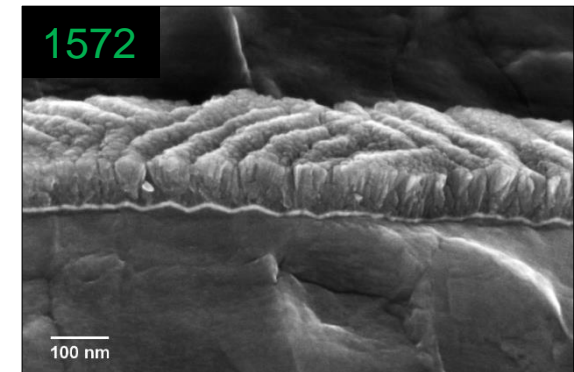
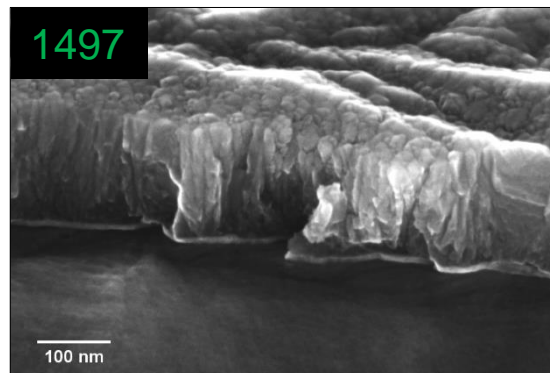
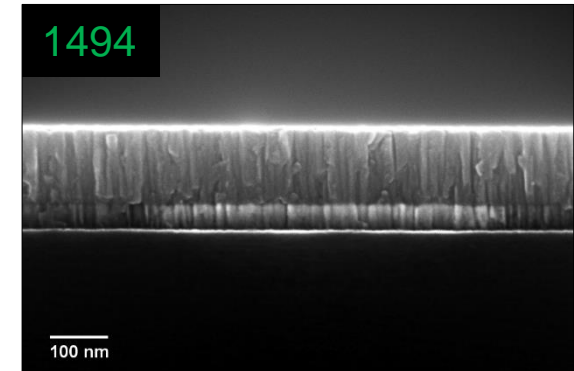
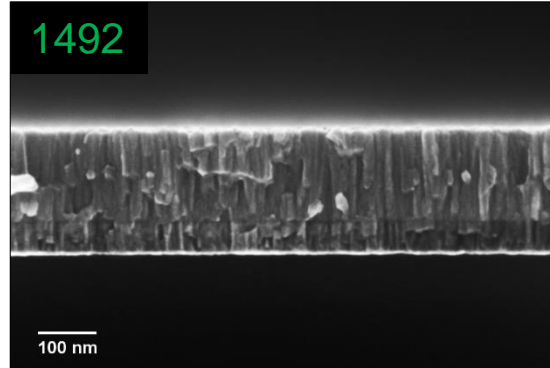
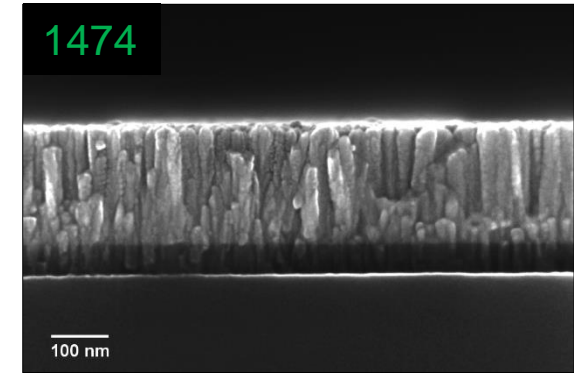
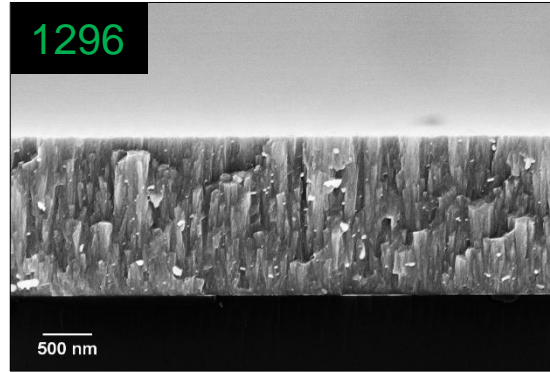
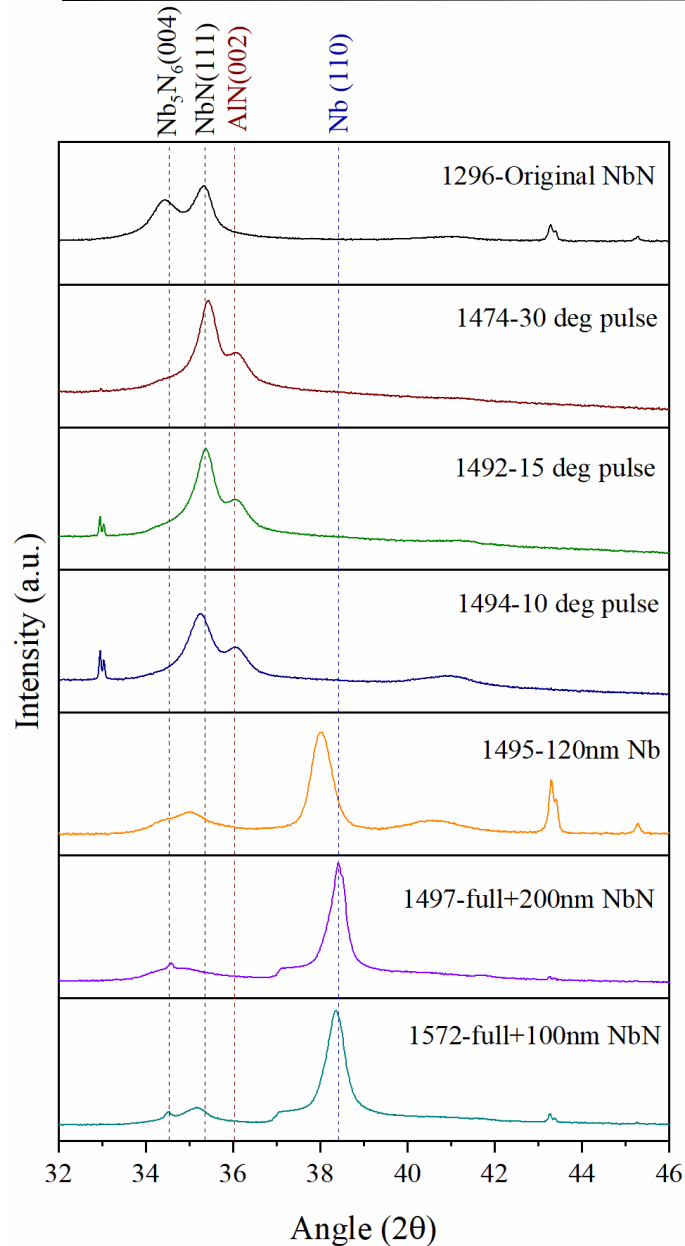


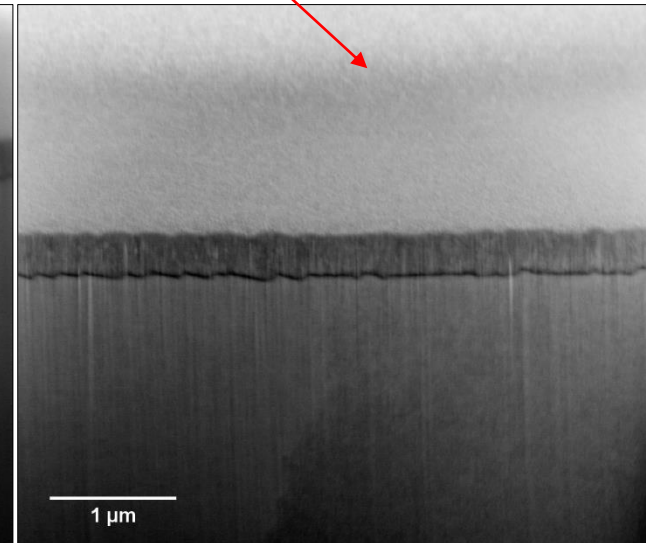
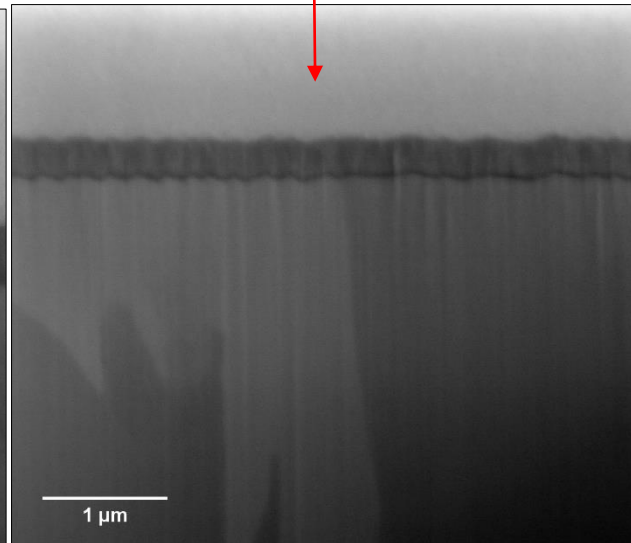
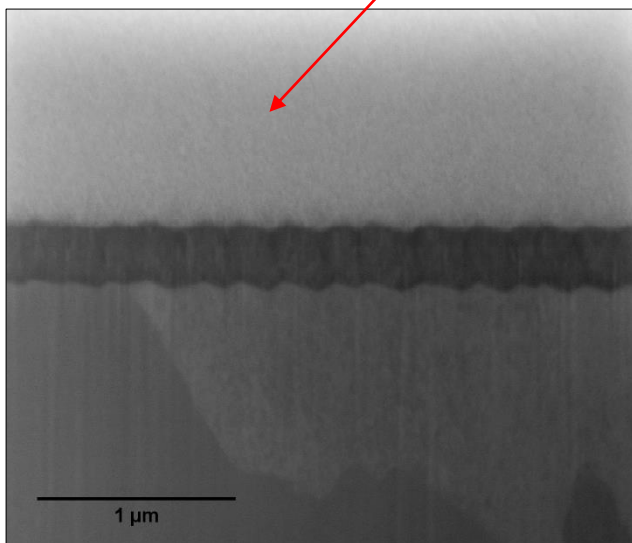
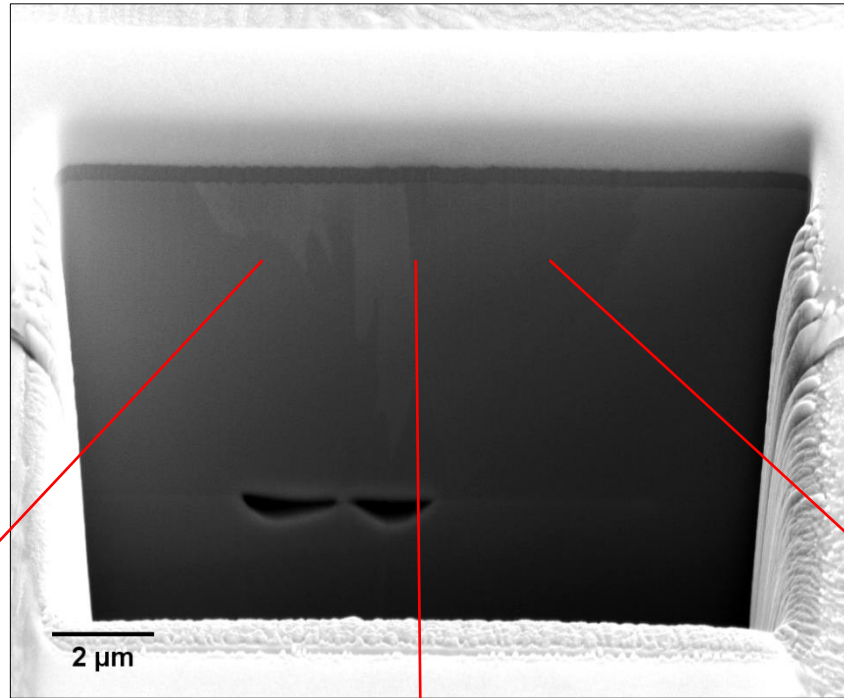
- Previous HiPIMS Nb SIS samples
 - Sample 790 recipe (High Ben)
 - Sample 899 recipe (High Tc)
- NbN recipe influence on Entry Flux!
 - **High Ben coatings used in future**
- Microstructure change due to rotation!
 - **Pulsing introduced**



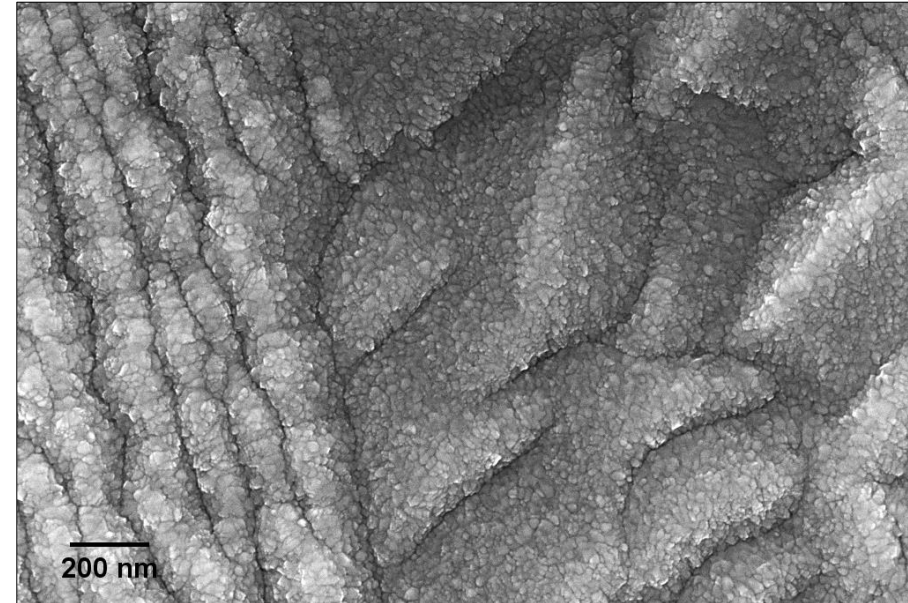
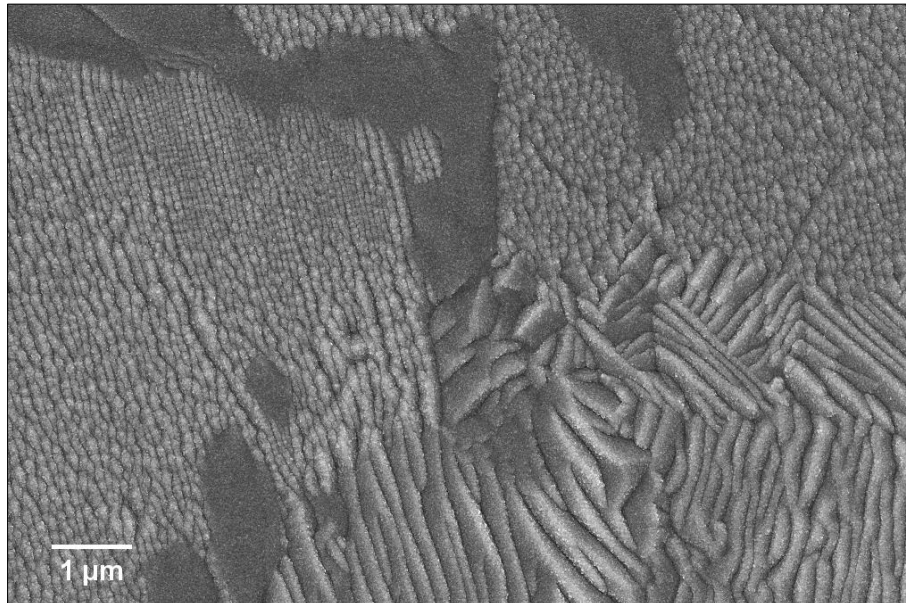
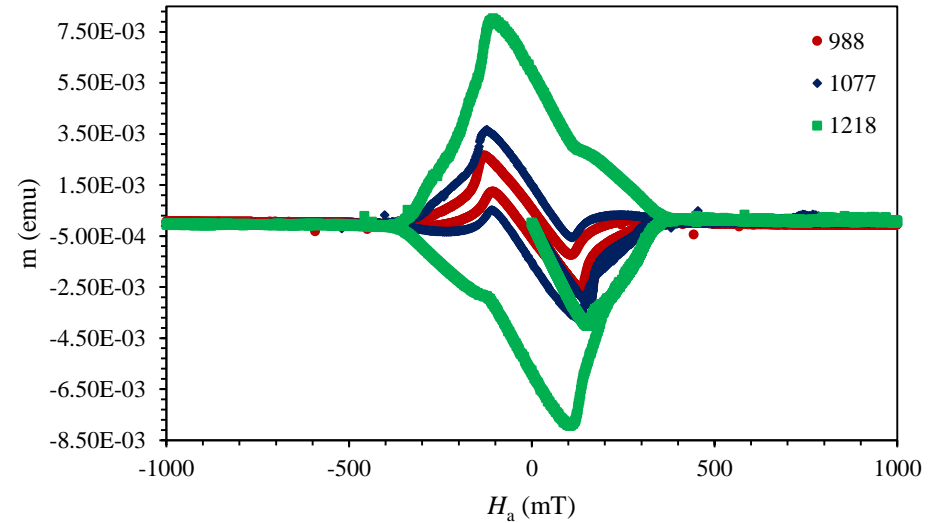
| Sample | Entry Flux (Oe) | Transition Temp (K) |
|------------------|-----------------|---------------------|
| 1165 (899-200nm) | 390 | 15.9 |
| 1166 (899-150nm) | 380 | 15.8 |
| 1167(899-100nm) | 340 | 15.5 |
| 1169 (899-250nm) | 330 | 16.1 |
| 1170 (790-200nm) | 610 | 15.2 |
| 1171 (790-150nm) | 615 | 15 |
| 1172 (790-250nm) | 590 | 15.3 |



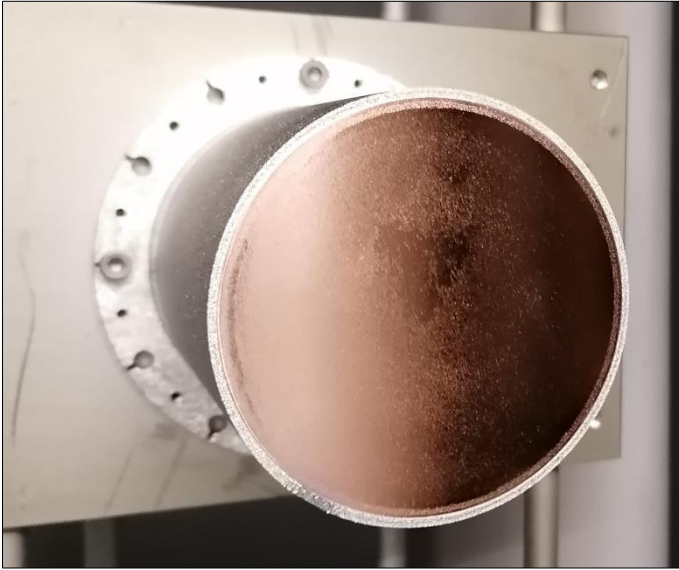




- HiPIMS Nb ($\sim 4\mu\text{m}$)
 - Sample 1077 recipe
 - 400W (1000Hz, 120 μs)
 - $8e^{-3}\text{mbar}$
- AlN ($\sim 8\text{nm}$)
 - 3500W, $6e^{-3}\text{mbar}$, 100% N₂
 - 1×10^0 pulse
- HiPIMS NbN (180nm)
 - Sample 1296 recipe (Highest H_{en})
 - 400W (1000Hz, 120 μs)
 - $2.2e^{-2}\text{mbar}$, 10% N₂
 - 50×10^0 pulses



Pre-Coating



Post-Coating



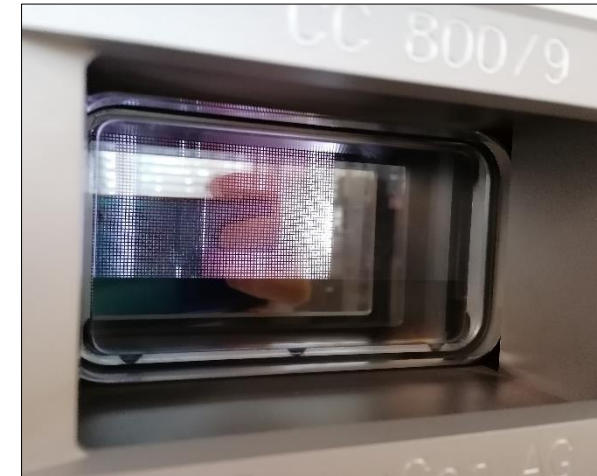
Nb Coating



AlN Coating



NbN Coating



Thanks for your Attention!



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