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Optimal Mo tile surface

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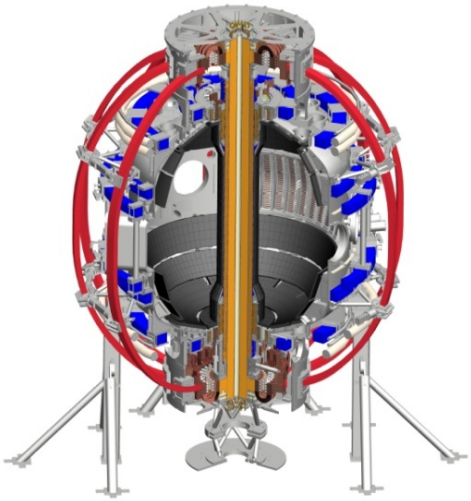
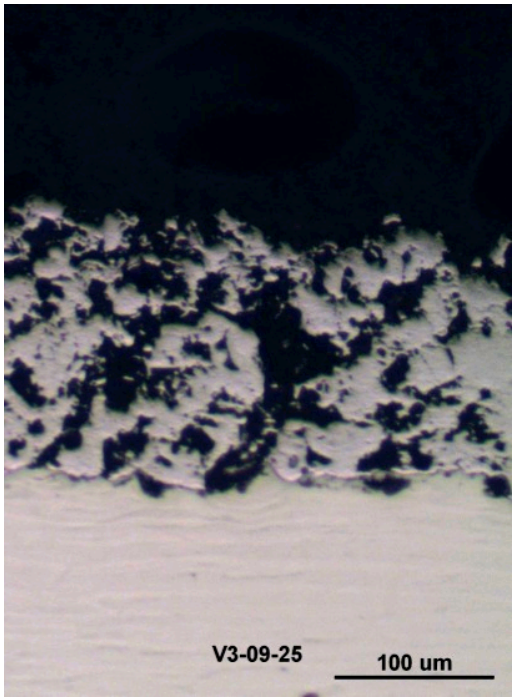
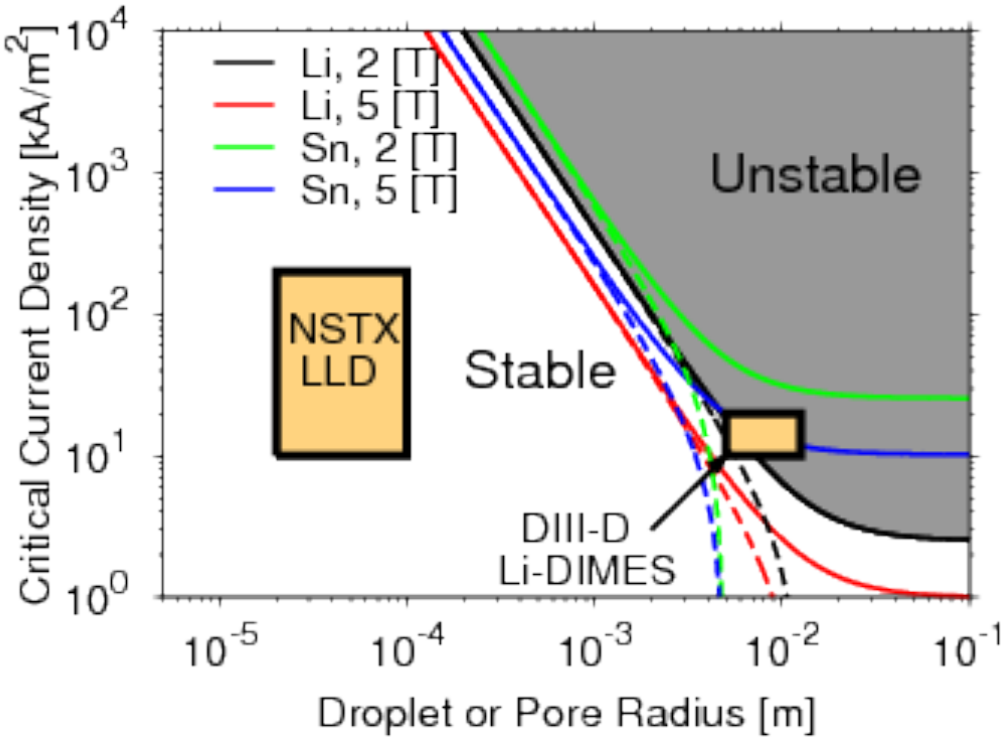


Motivation

- Previous LLD surface was porous Mo to help retain Li in presence of JxB forces.
- Will microtexturing be important to retain Li on the planned single row of Mo tiles ?



LLD surface cross section:
plasma sprayed porous Mo



Jaworski 2013 Nucl. Fusion 53 083032

Piggy back XMP with MAPP

- Machine four Mo discs to fit as two pairs in MAPP
- Disc mass < 5 g to allow gravimetry with microbalance.
- Use in pairs with lower disc as control to assess any systematic errors in mass change.
- One plasma facing surface will be knurled or grooved to retain Li.

MAPP probe

- Expose to Li evaporation for 1 run day.
- Expect 100 μg of Li deposition, 400 μg if oxidized to lithium carbonate.
- Compare mass gain of grooved and plain Mo surface
- Assess Li mass loss.

- Desire low triangularity plasma with significant heat flux onto MAPP to raise temperature above Li melting temp (180°C).
- Also assess Li / Mo surface coverage with XPS.