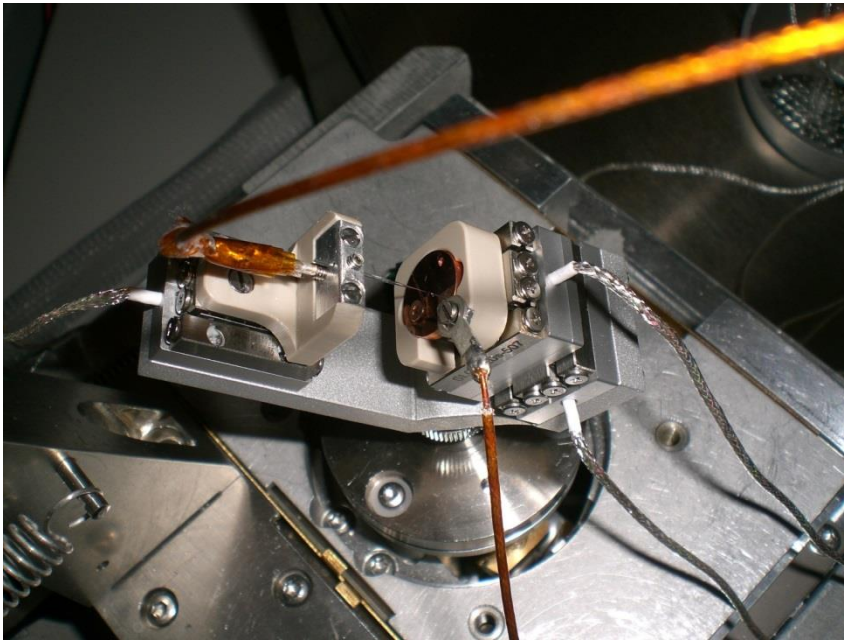


In situ SEM DC experiments in Uppsala – update 17 June 2013

Tomoko Muranaka

3D piezo positioner installed Oct 2012



- What we can do:
 - Target measurement spot
 - 2D scanning
 - Searching weak point

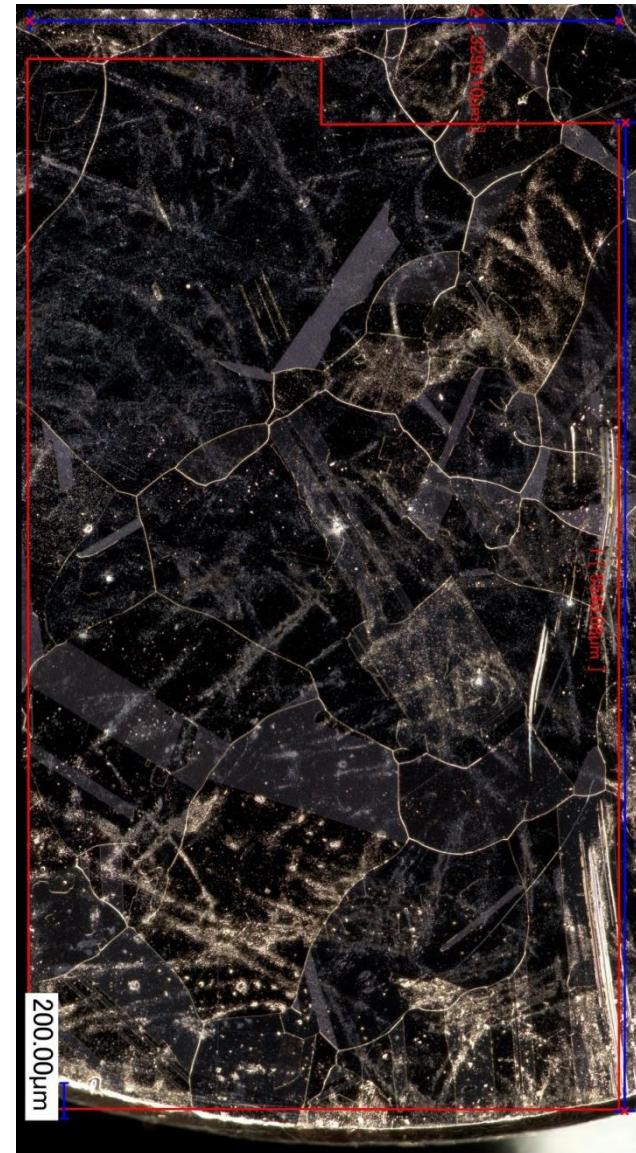
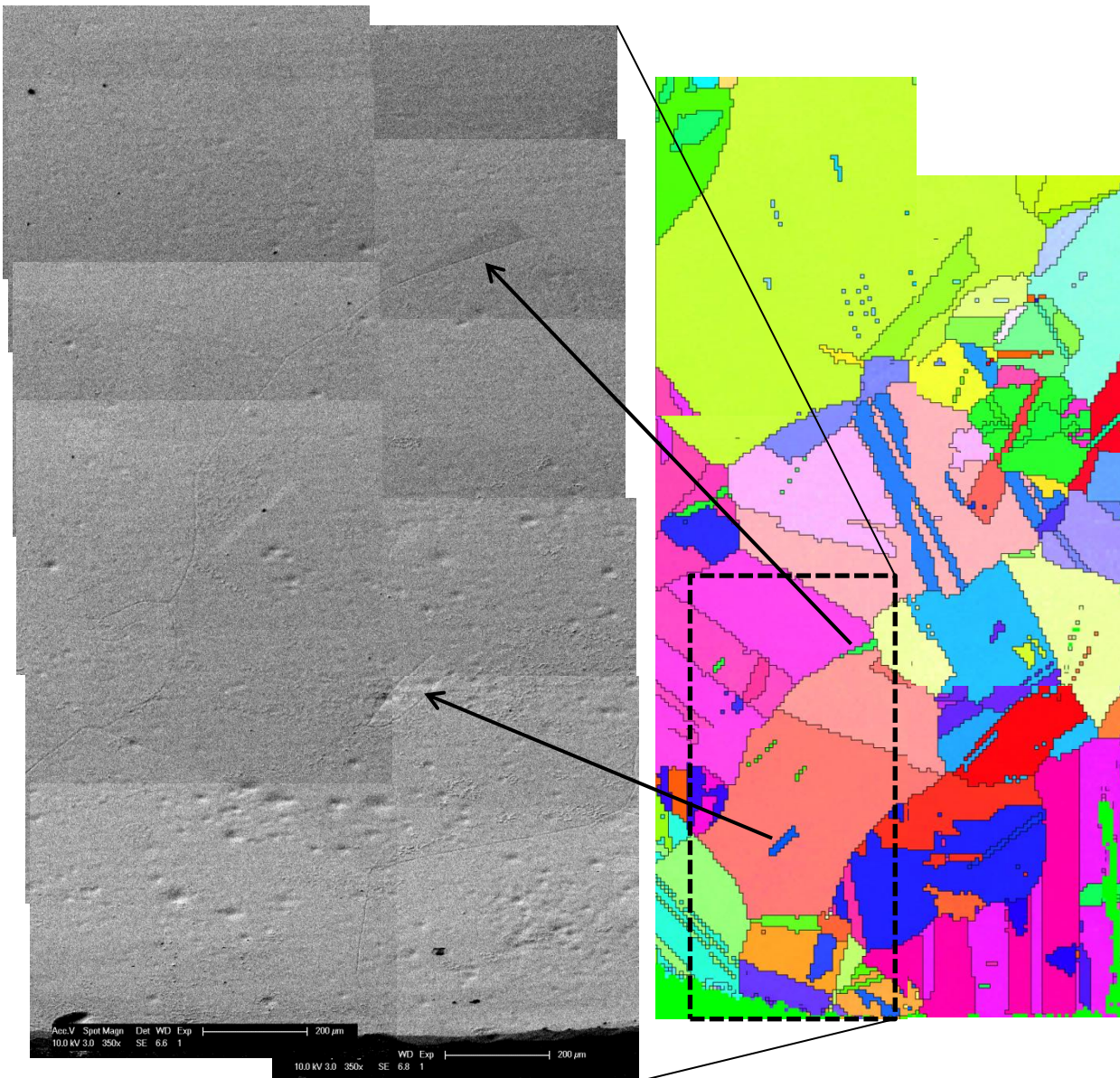
Plan

- Field emission measurement: Grain orientation dependence
- Field emission measurement: Stability measurement
- Breakdown: EBSD, Evidence of dislocation (?)

Grain orientation dependence

- (111) and (001) grains are chosen thanks to EBSD done by Anité.
- One reference spot to determine the gap (1 μ m) on the (111) grain.
- Three measurement spots on each grains.
- Voltage that the measured current exceeded 10nA were 400 to 800 MV/m on each grains.

Grain identification



But...

- Anode surface was ugly.
- Anode holder was probably loose due to deformation of other side of the tip (mechanical cut)

Solution:

- KOH etching
- Diamond cut before cleaning

