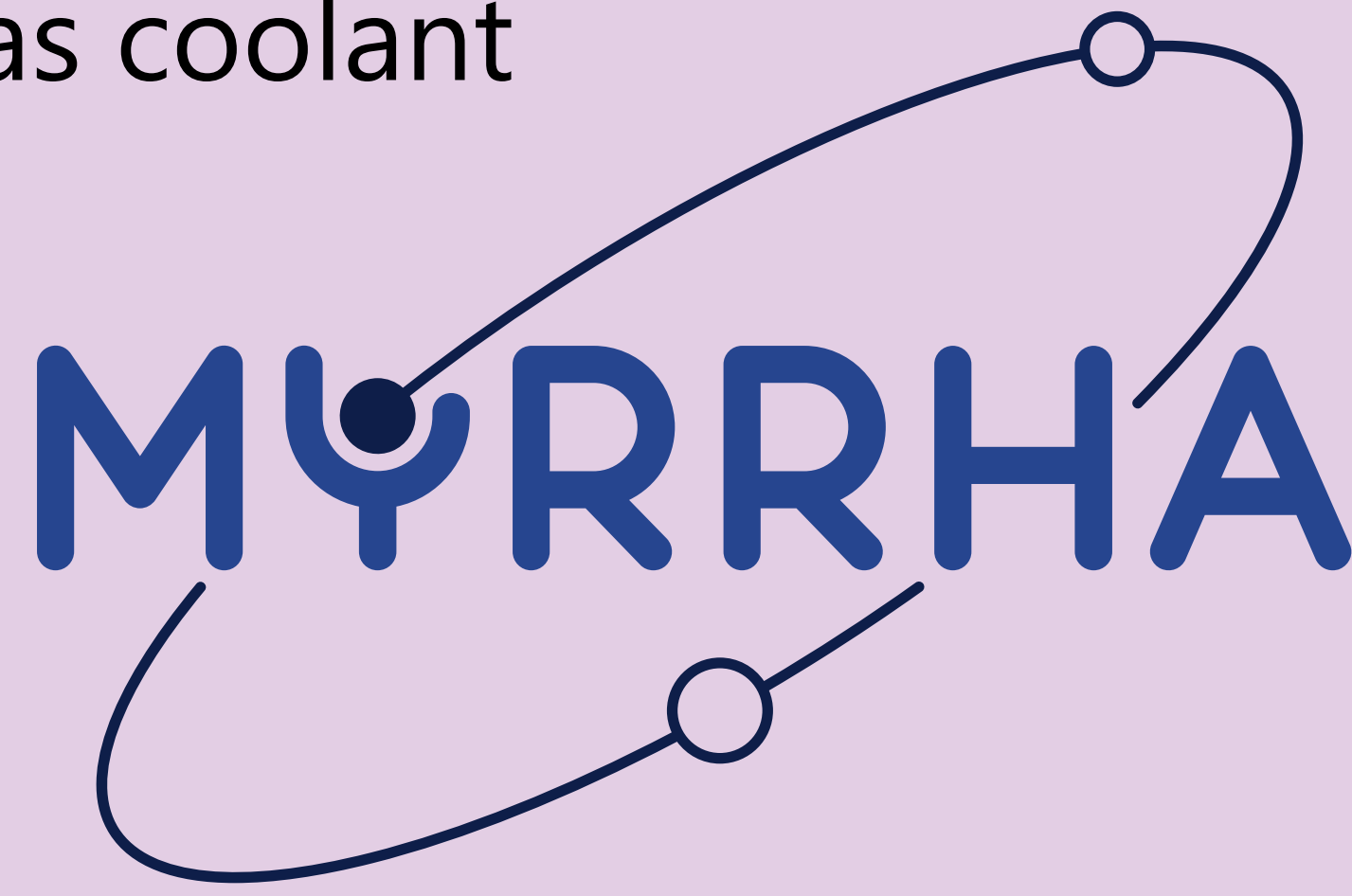




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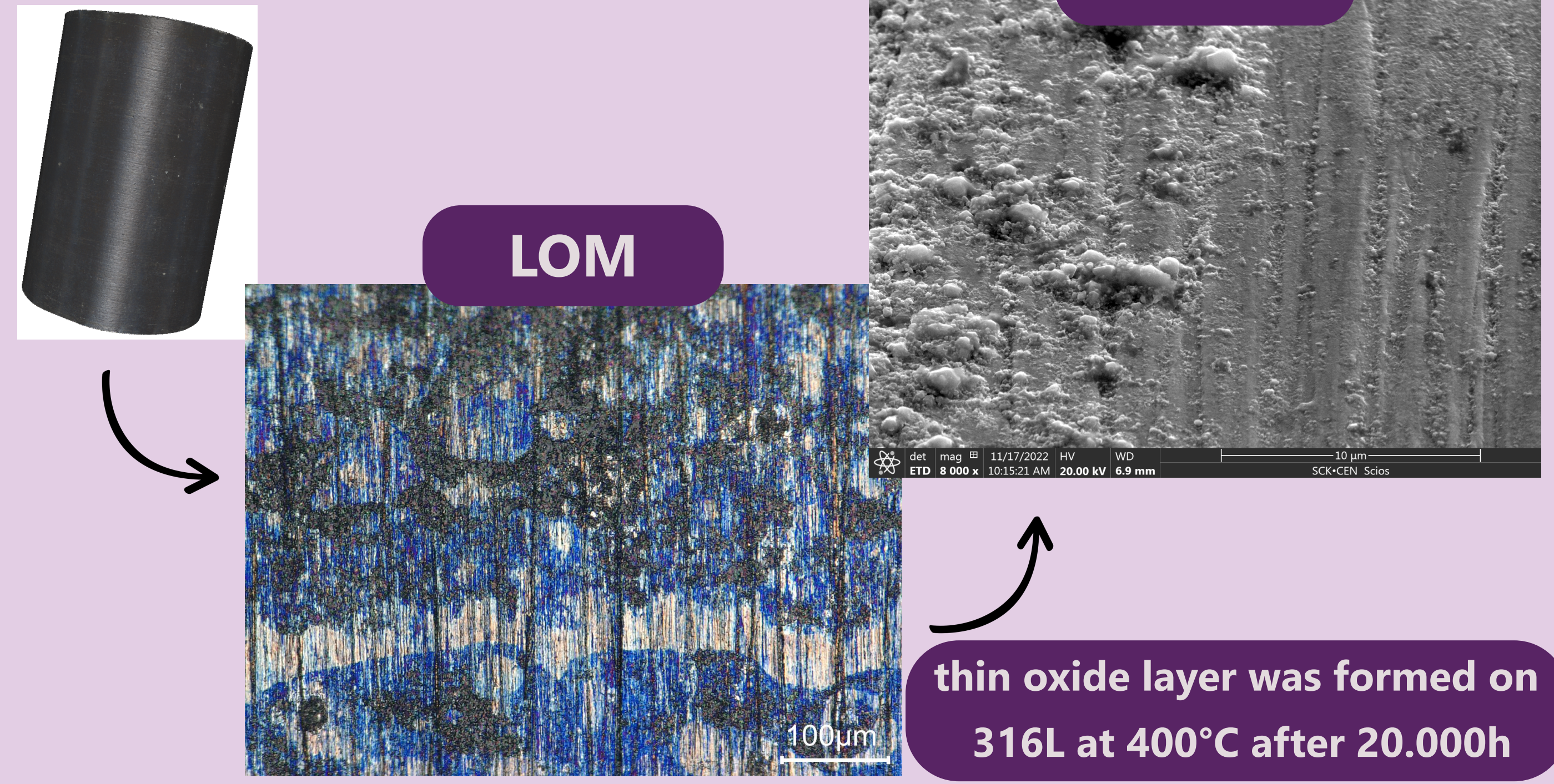
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1 Background

- MYRRHA reactor
- Lead-bismuth eutectic (LBE) as coolant
- Steel as structural material
- Corrosion poses a problem
- Oxide film as prevention
- Mass transfer barrier

2 Introduction

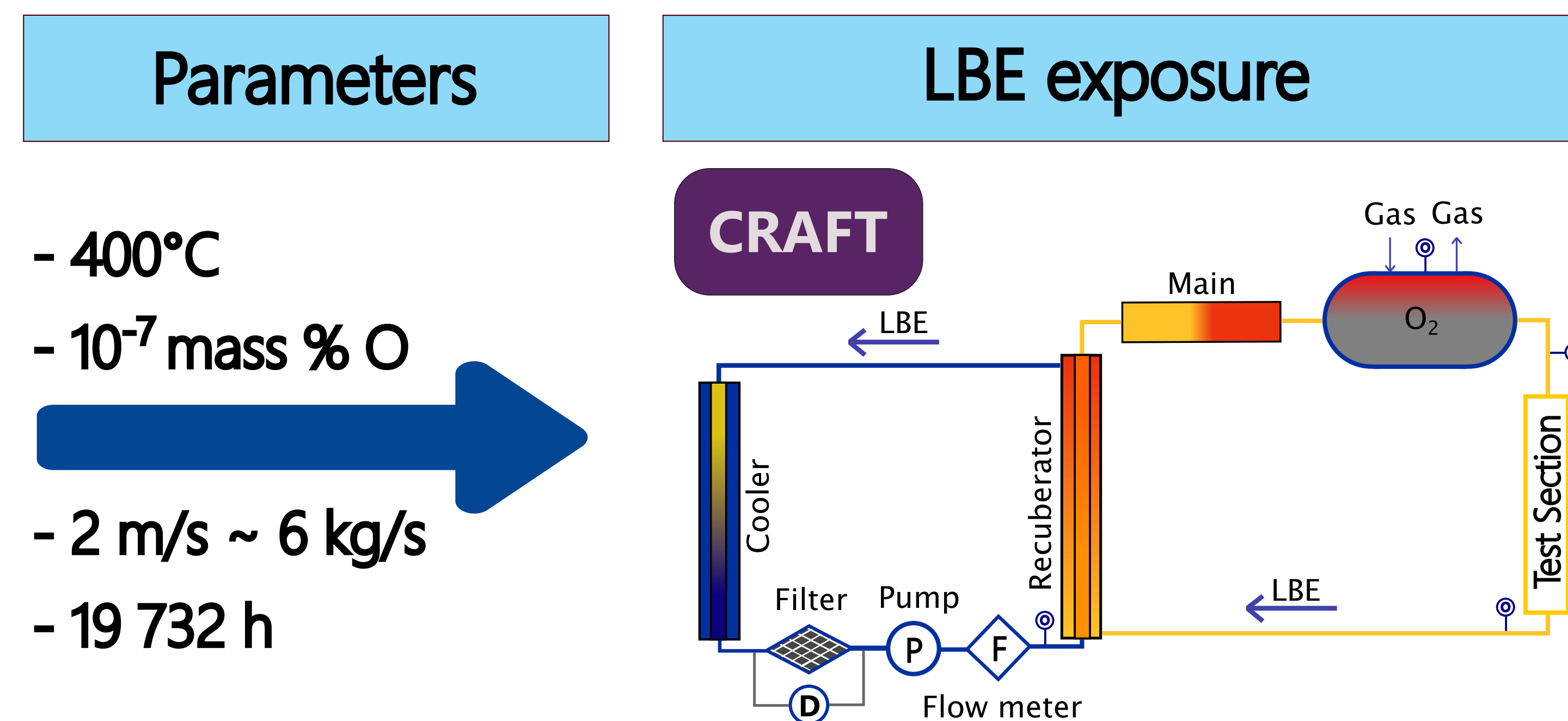


3 Experiment

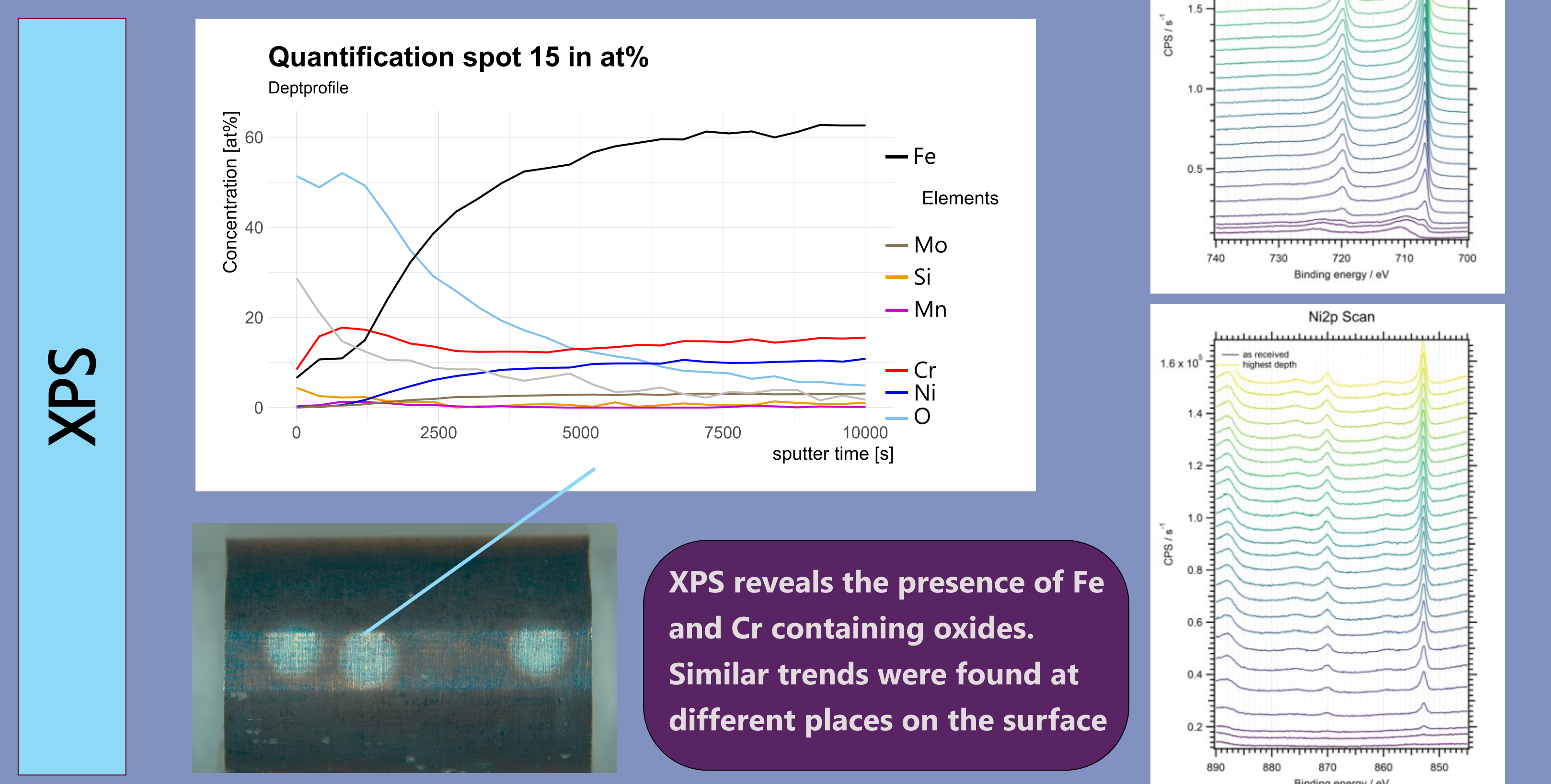
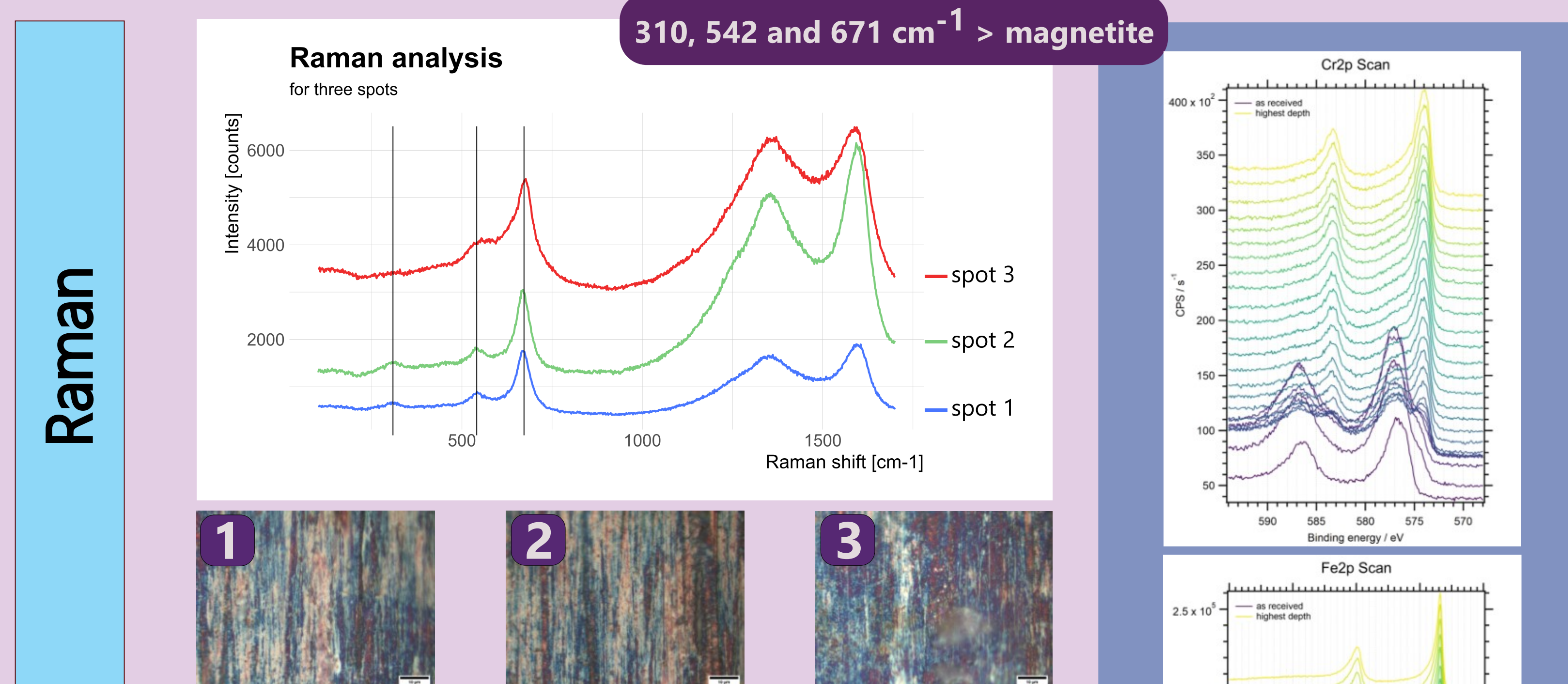
Material

- Austenitic 316L
- Delta ferrites
- Solution annealed
- Grains ~ 50µm
- Turning

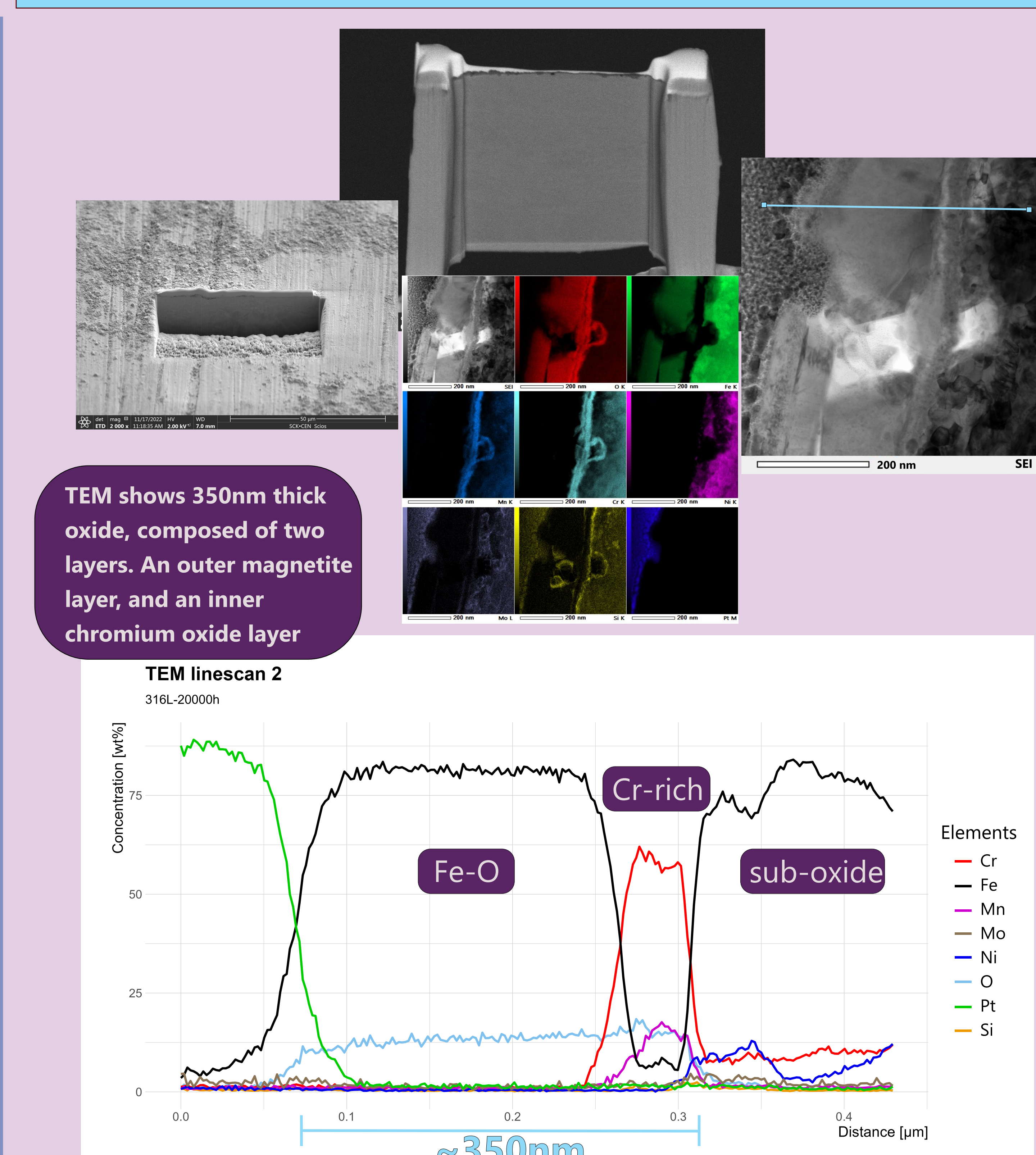
Element	Cr	Ni	Mo	Mn	Si	Cu	V	C
[mass %]	16.73	9.97	2.05	1.81	0.67	0.23	0.07	0.019



4 Results and Discussions



Transmission Electron Spectroscopy (TEM)



5 Conclusion

After 20.000h at 400°C in flowing LBE with 10^{-7} m% O, the sample of 316L showed the following:

- The in-situ formation of a thin oxide film
- An outer layer consisting of magnetite, and an inner layer consisting of a chromium-rich oxide

