

SP B.2 and B.3: Erosion/Deposition investigations in W7-X in 2021

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 **EUROfusion**



Erosion of W marker layers

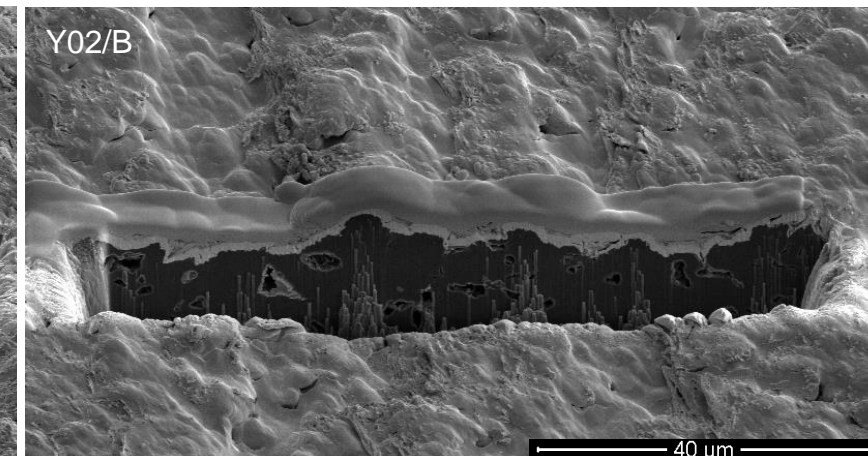
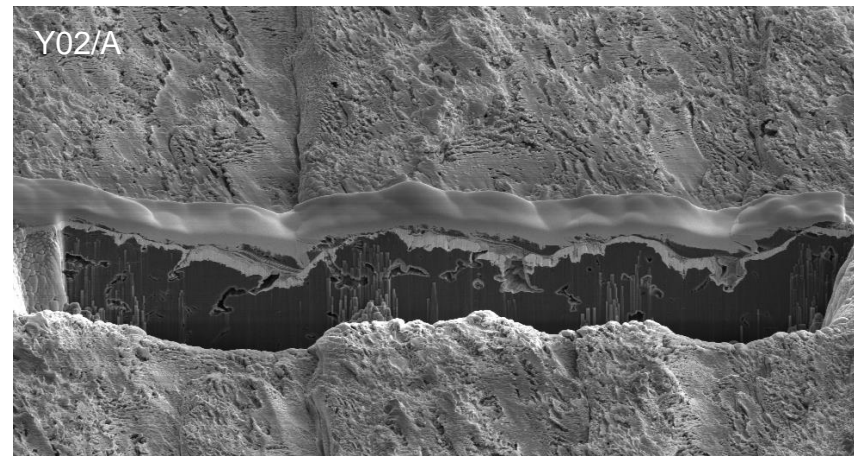
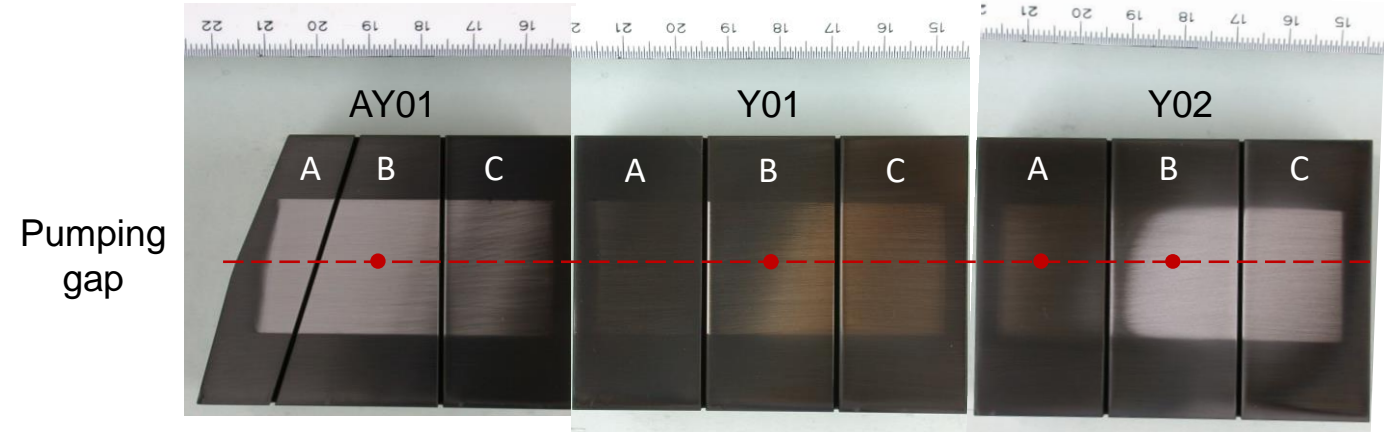
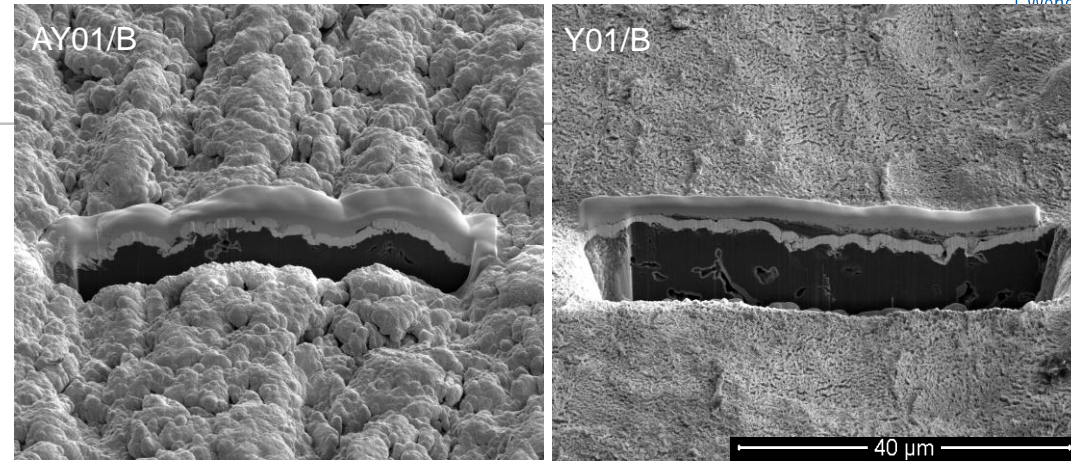
- 3 W-coated marker stripes at TDU
- 21 W-coated inner heat-shield tiles
- 2 W marker stripes on scraper elements
- exposed during OP 1.2b in 2018
- IBA analysis in 2019/2020

⇒ Evaluation of spectra and data analysis in 2021

⇒ SEM investigations in 2021

⇒ Presentation of results at PFMC 2021

⇒ Publication of results in PFMC proceedings



Redeposition of carbon

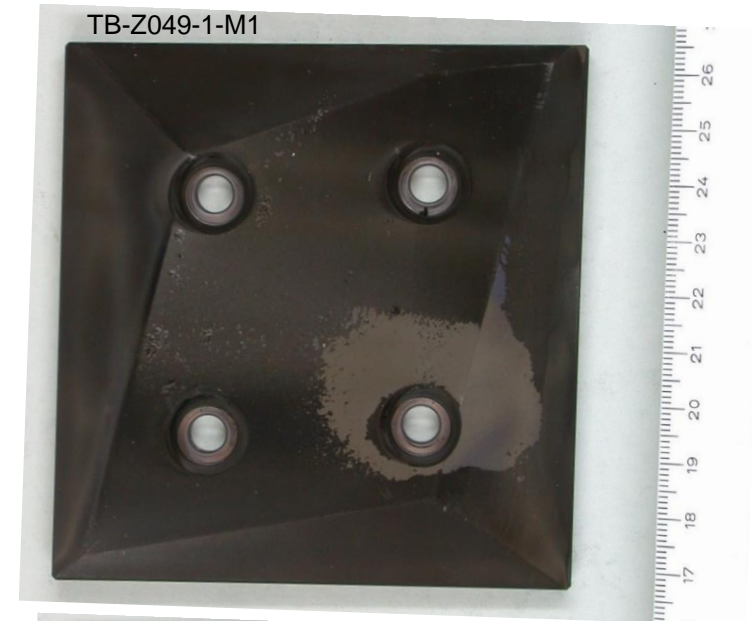
- 20 regular carbon tiles for investigation of carbon deposition
- exposed during OP 1.2a and OP1.2b in 2017 - 2018
- IBA analysis in 2019/2020

⇒ Evaluation of spectra and data analysis in 2021

⇒ SEM investigations in 2021

⇒ Presentation of results at PFMC 2021 (C.P. Dhard)

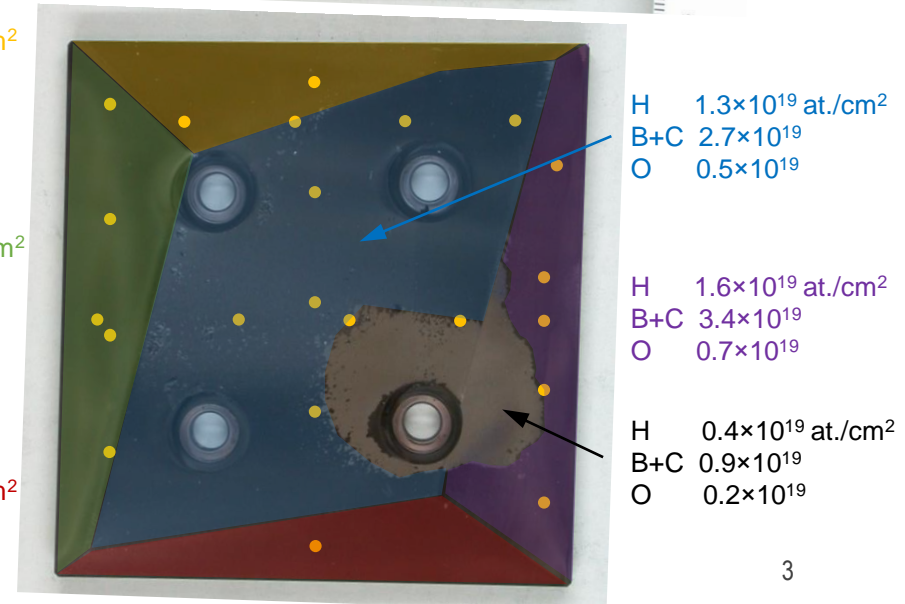
⇒ Publication of results in PFMC proceedings



H 1.3×10^{19} at./cm²
B+C 2.5×10^{19}
O 0.5×10^{19}

H 0.7×10^{19} at./cm²
B+C 1.8×10^{19}
O 0.3×10^{19}

H 1.2×10^{19} at./cm²
B+C 2.2×10^{19}
O 0.5×10^{19}

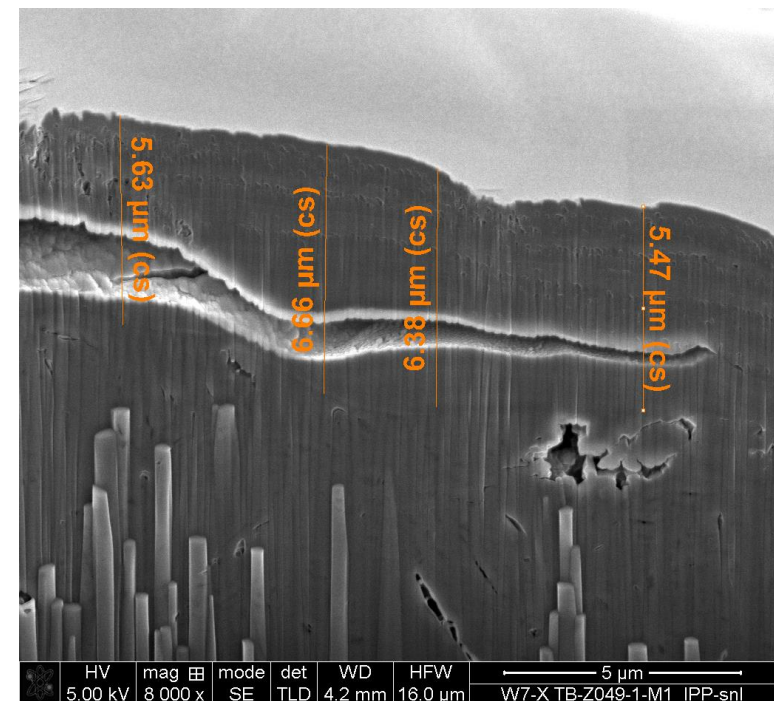
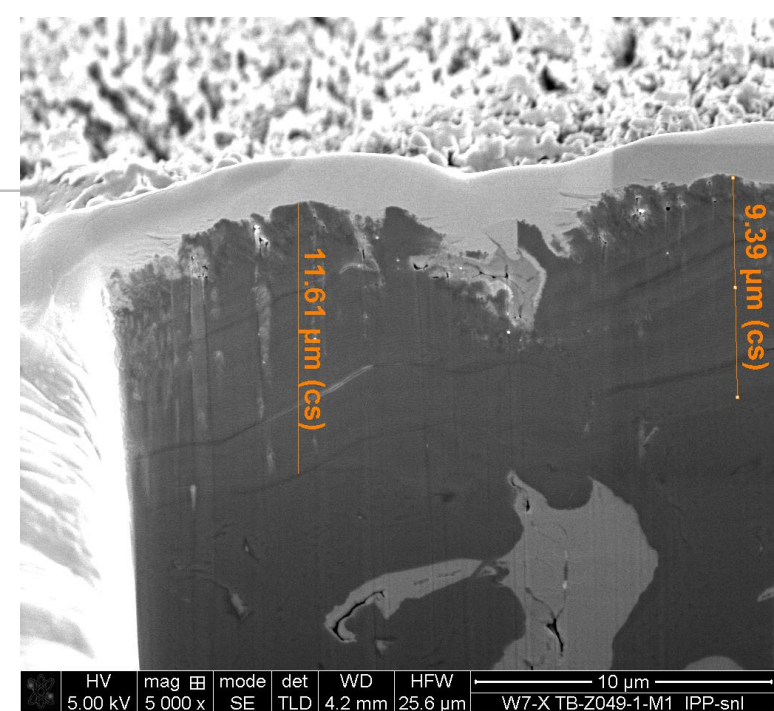


Redeposition of carbon

- 20 regular carbon tiles for investigation of carbon deposition
- exposed during OP 1.2a and OP1.2b in 2017 - 2018
- IBA analysis in 2019/2020

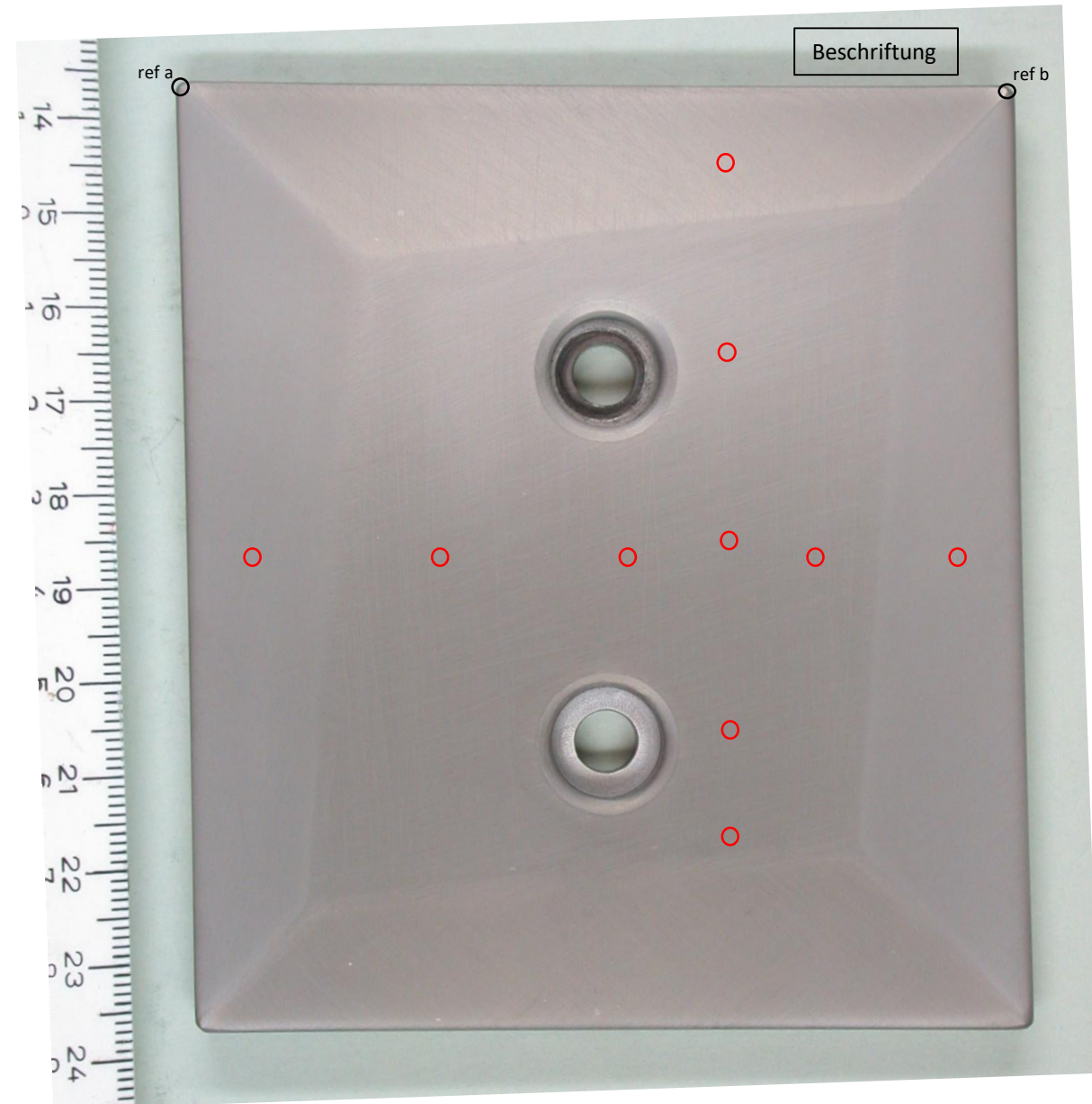
⇒ Evaluation of spectra and data analysis in 2021

⇒ SEM investigations in 2021



W marker samples for OP 2.1

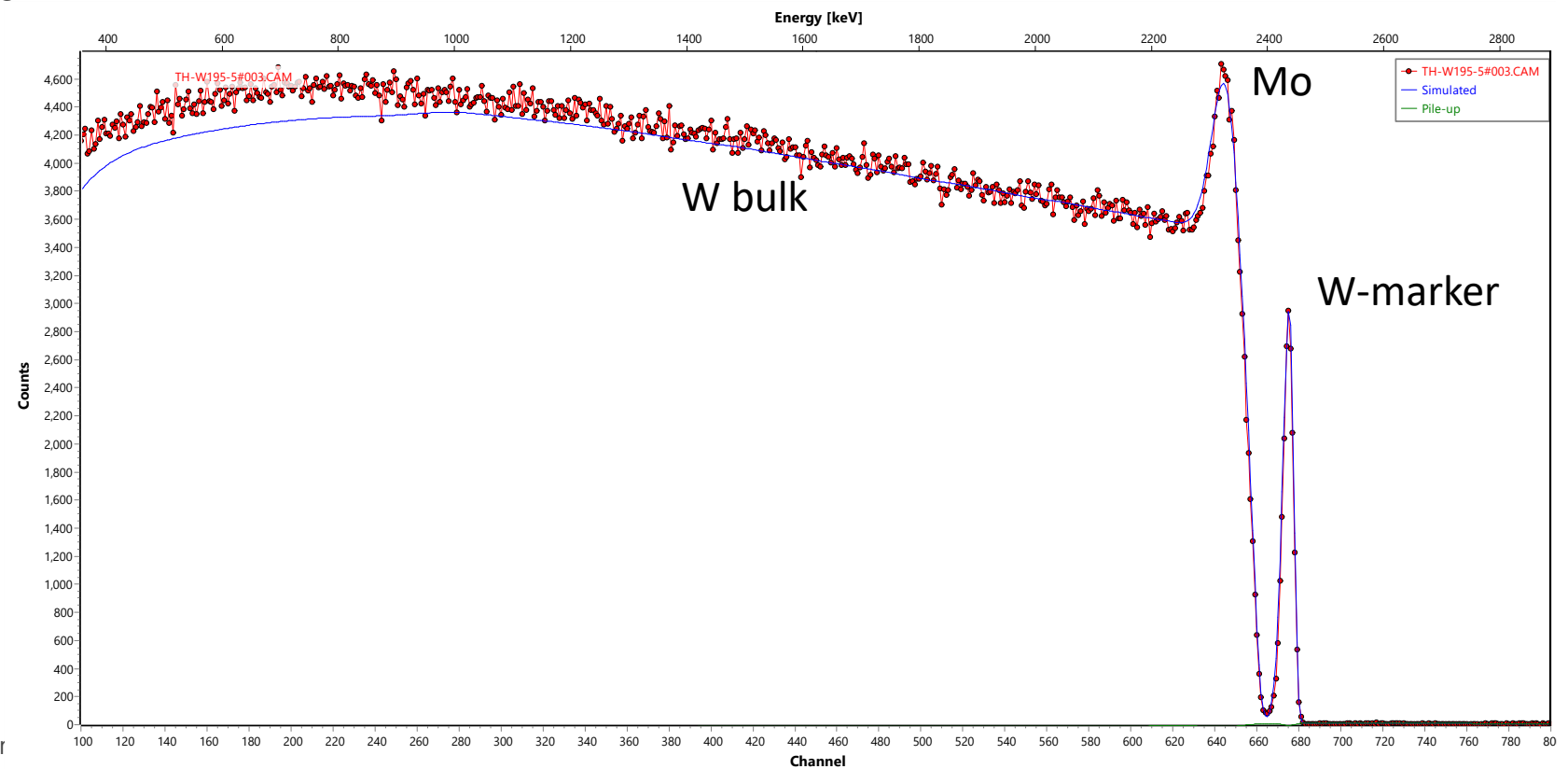
- 17 W-coated inner-heat tiles coated with Mo/W marker layers
 - IBA analysis using 2.5 MeV protons in March/April 2021
 - Tiles sent to W7-X for installation
- ⇒ Evaluation of spectra and data analysis ongoing



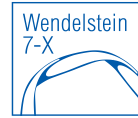
W marker samples for OP 2.1

- 17 W-coated inner-heat tiles coated with Mo/W marker layers
- IBA analysis using 2.5 MeV protons in March/April 2021
- Tiles sent to W7-X for installation

⇒ Evaluation of spectra and data analysis ongoing



Summary: Work in 2021



- Spectrum evaluation and analysis of IBA data measured in 2019/2020, samples from OP 1.2b
- SEM analysis of selected samples from OP 1.2b
- Pre-characterization of W-marker layers on inner heat shield for OP 2.1
 - IBA measurements done
 - Spectrum evaluation and data analysis ongoing
- Publication of results from OP 1.2b