



Summary of WEST activities in 2025

Plan for 2026 activities

WP PWIE SP.B

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october 2025 – end of the year meeting



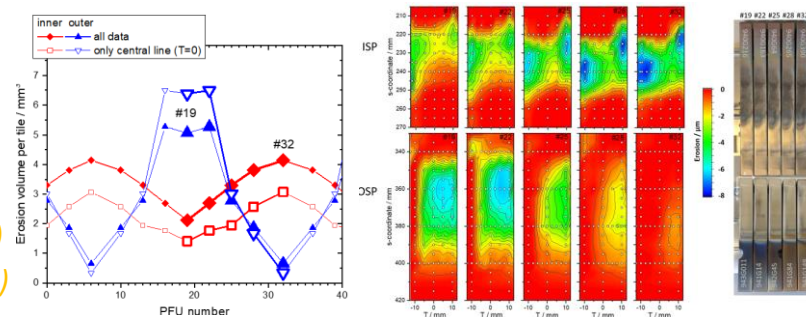
This work has been carried out within the framework of the EUROfusion Consortium, funded by the European Union via the Euratom Research and Training Programme (Grant Agreement No 101052200 — EUROfusion). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the European Commission can be held responsible for them.

Erosion – status and main results



- Graphite PFUs (standard and erosion markers) – phase 1

- ✓ completed for C3, C4, and C5 marker PFUs
(VR, RBI, JSI, IAP, VTT, MPG, IPPLM, UT, IST)
- ✓ Completed for C5 standard tiles covering a ripple pattern (MPG)
- ✓ Unknown for C5 standard tiles covering a ripple pattern (INFLPR)



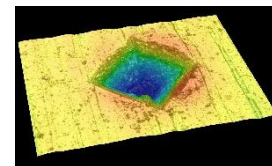
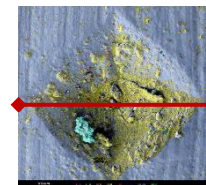
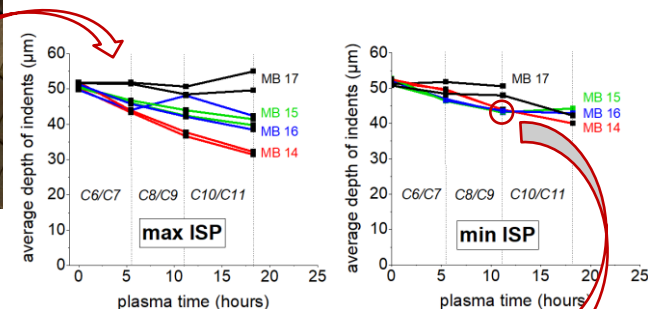
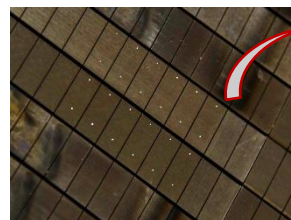
- ITER-like PFUs – phase 2

since 2021 : 4 dedicated PFUs with indents on Q3B

- ✓ erosion monitoring after C7, C9, C11 – completed (CEA)
- ✓ 1 PFU removed and cut into MBs after C9, 3 PFUs still in the machine
 - Destructive analysis to better evaluate erosion (scheduled end of 2025?)
(AMU, MPG)

More details during PWIE in Nov.

2025 : installation of 1 new PFU with indents on Q1A

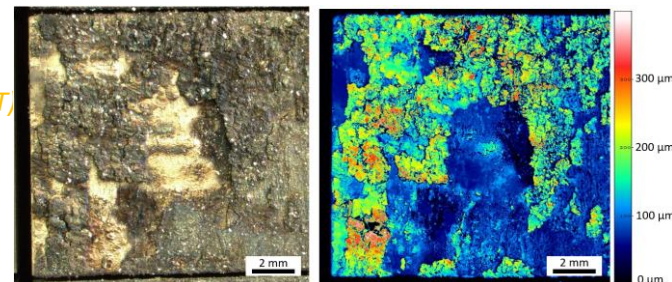
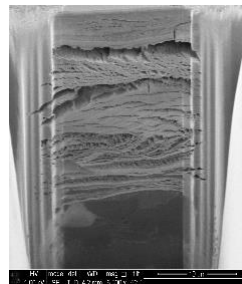
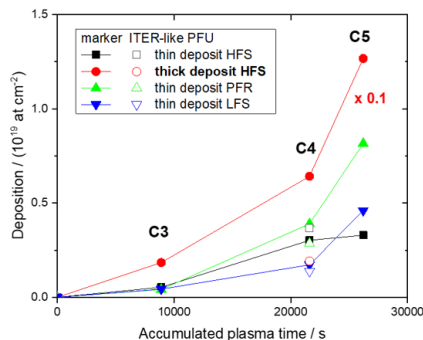


Deposited layers – status and main results



• Graphite PFUs (standard and erosion markers) – phase 1

✓ Completed for C3, C4, and C5 marker PFUs (*VR, RBI, JSI, IAP, VTT, MPG, IPPLM, UT, IST*)



• ITER-like PFUs – phase 2

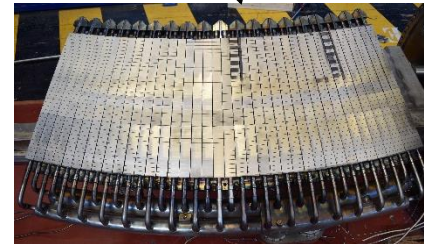
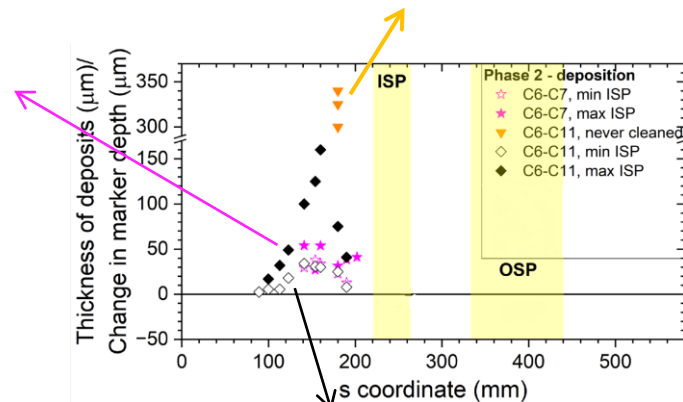
✓ 2023 Post C7 : completed for deposits formed during the high fluence campaign (*AMU*)

✓ Post C9 measurements (scheduled before end of the year) (*CEA*)

✓ 2025 Post C11 measurements -> completed (*CEA*)

- Partially laser-cleaned PFUs on sector
- Never cleaned PFUs on sector

More details during PWIE in Nov.



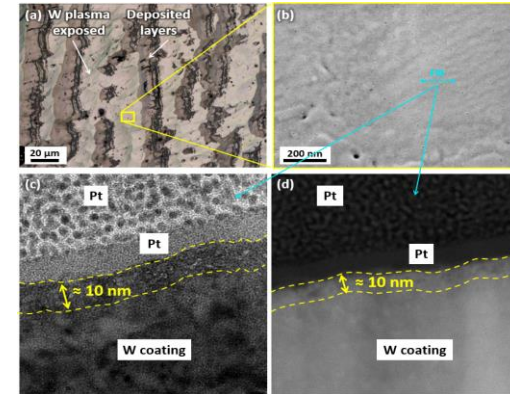
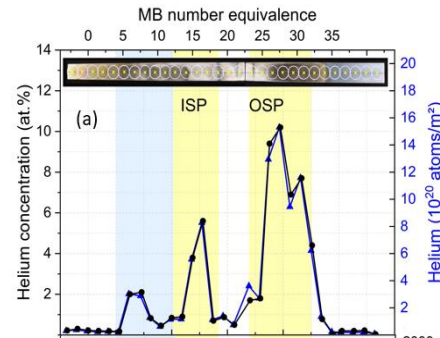
Helium retention after the C4 campaign



- Graphite PFUs (standard) – phase 1

- ✓ Completed for C4 standard PFUs

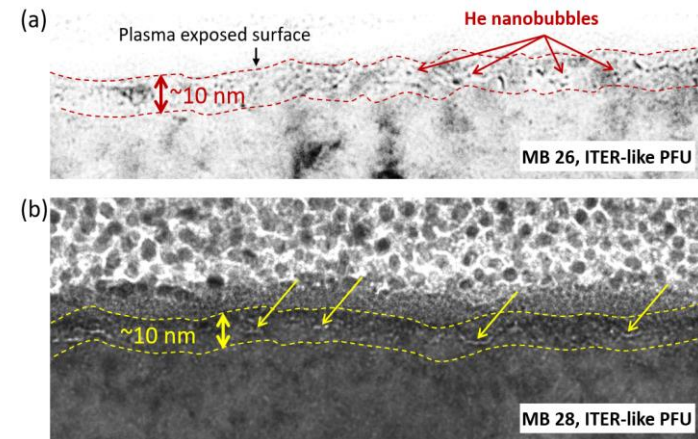
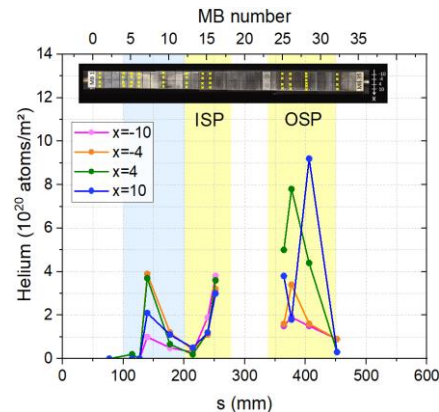
- ✓ He content (RBI)
- ✓ W nanobubbles (AMU)



- ITER-like PFUs – phase 2

- ✓ Completed for C4 ITER-like PFU

- ✓ He content (RBI)
- ✓ W nanobubbles (AMU)



Publications related to WEST studies within SP.B

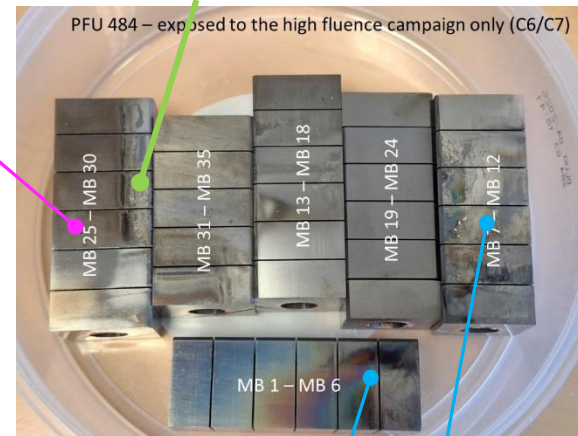


	First author	Topic, keys words	Status of publication
2024	Marin	XPS, ITER-like PFU, phase 1	Published
	Martin	Deposited layers, ITER-like PFU, C7 high fluence campaign	Published
	Diez	Cracks on leading edge, ITER-like PFU, phase 1	Published
	Tsavalas	Toroidal characterization, ero/depo, ITER-like MB, phase 1	Submitted in July 2025
2025	Balden	ero/depo, Gr PFUs, phase 1	Draft ready
	Bogdanovic/Diez	He retention, W nanobubbles, C4 helium campaign, phase 1	Draft ready
	Hakola	Depth profiles, deposited layers, Gr PFUs, phase 1	Published
	Jogi	LIBS, B content, Gr PFUs, phase 1	Revised paper sent on sept. 28th
	Mateus	IBA, elemental analysis, Gr PFUs, phase 1	Submitted in July 2025
	Hakola	Review, material migration, phase 1 & 2	On going
2026	Diez	Erosion, ITER-like PFU, phase 2	
	...		
	Pitthan, Tsavalas, Krieger, Martin ?	Characterization of boro samples	

Future work (2026-2027)



Flakes (thickness, chemical comp.)



Deposited layers (thickness, chemical comp., retention)

➤ Characterization of high fluence campaigns (C7 and C12)

- PFU 484 – exposed to C7 only (segments cut ; available for shipping) (who?)
- PFU 055 – exposed to C12 only (available in summer 2026) cracks
- PFU357 – exposed to C6-C9 (segments cut ; available for shipping)

➤ Erosion

- Characterization of PFUs with indents after the C12 campaign (Q3B, Q1A) (CEA)
- Remove 1 PFU with indent after C12 for further/destructive analysis (MPG)

➤ Boro samples

- Uniform boronisation scheduled for october 28th (batch of 42 samples expected in december for characterization) -> comparison with non uniform boro (CEA, VR, Demokritos, MPG, AMU, WUT)

➤ Prospects :

- Installation of new samples on RCP vertical probe
- Continue surface characterization of first wall samples
- Fuel retention (B,D) in co-deposited layers by TDS (SP.C ?)



Thank you
Questions ?