



RT-He-05: AUG-He2022-DIM (19.07.2022)

Pre-characterisation & post-characterisation with SEM / CLSM

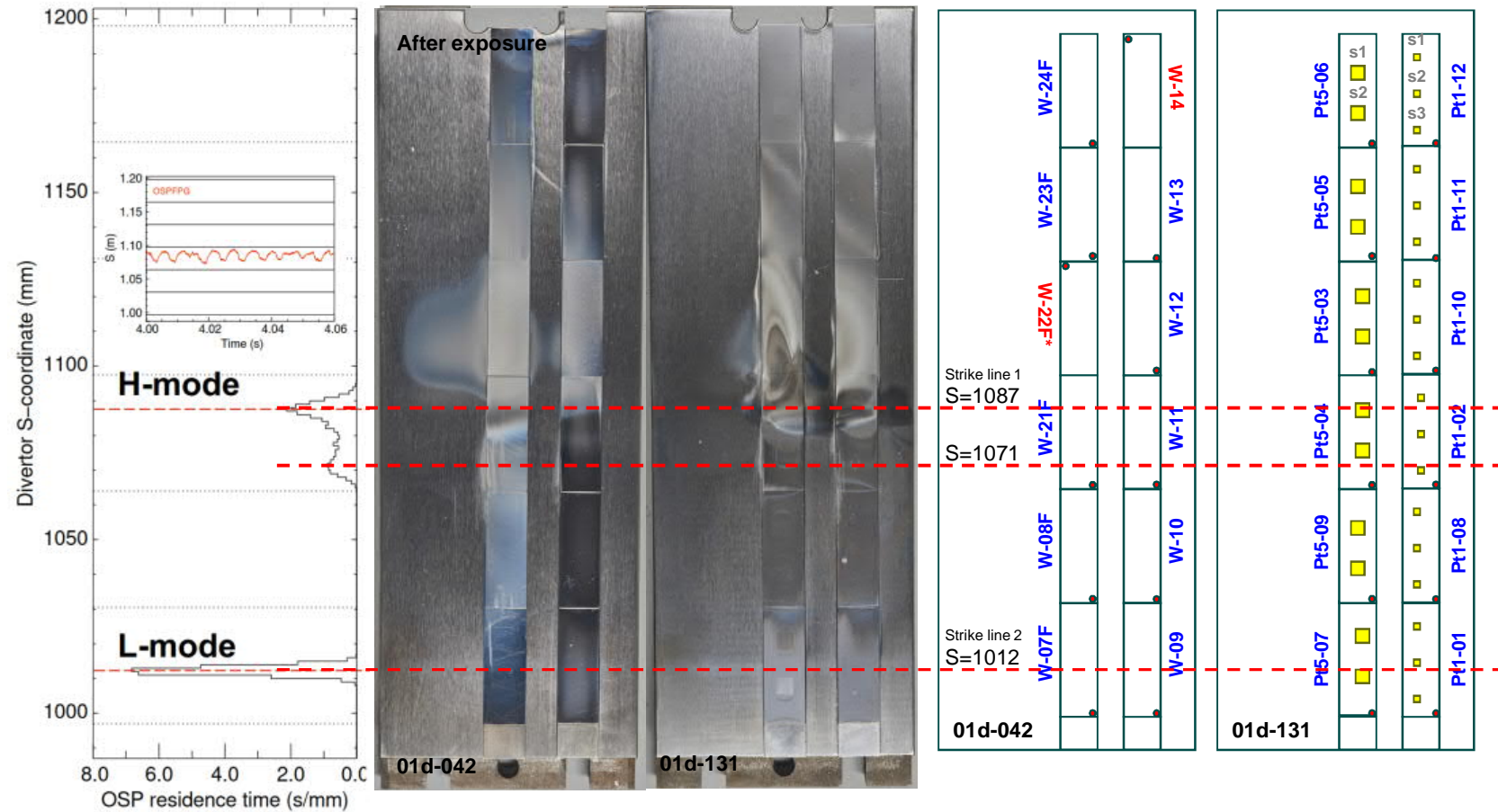


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AUG-He campaign: DIM-exposure (2022-07-19)

- 2022-pre:
 - Pre-characterisation of all 24 samples with SEM/EDX and CLSM
- 2022-07-19 AUG exposure
- 2022-post
 - Analyses on samples (still installed in DIM tiles) and on DIM tiles at several position
 - clearly fuzz formation take place above H-mode strike line (grey areas in tiles)
 - After dismantling, revisits of pre-analysed positions → many EDX data still unevaluated
 - IBA: RBS / PIXE
- 2023-post / plans on marker samples
 - Check for missing data (and in case obtain them)
 - Evaluate & compile data
 - **Decide about positions for detailed analyses at other institutions (e.g. position for μ -beam PIXE)**
 - Prepare (assist) presentations & publications
- 2023-post / plans on DIM tiles
 - Add analyses, e.g., beside each FIB trench on the "fuzz" samples (on demand after discussion of results from FZJ)





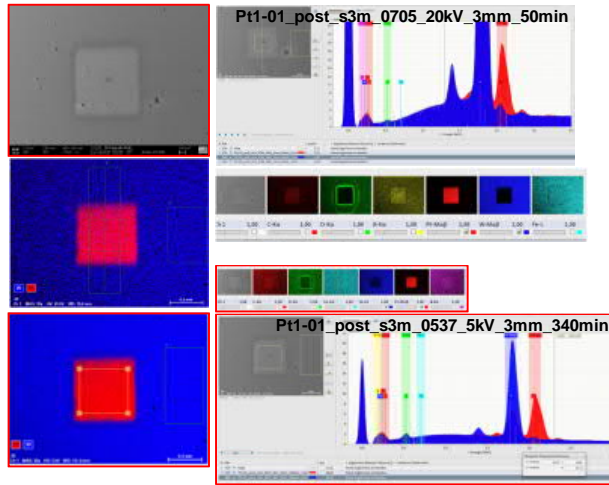
Post analyses of Pt-marker intarsia: Pt1-01 "mid"

25 μm before vs. after in marker
3mm map: 20 & 5kV
5kV in marker

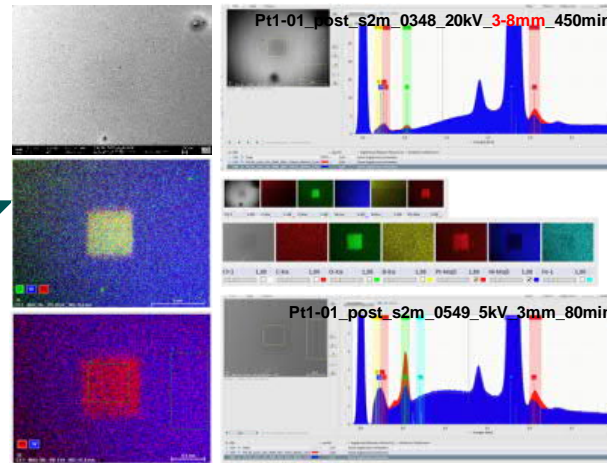
L-mode OSL: s=1012



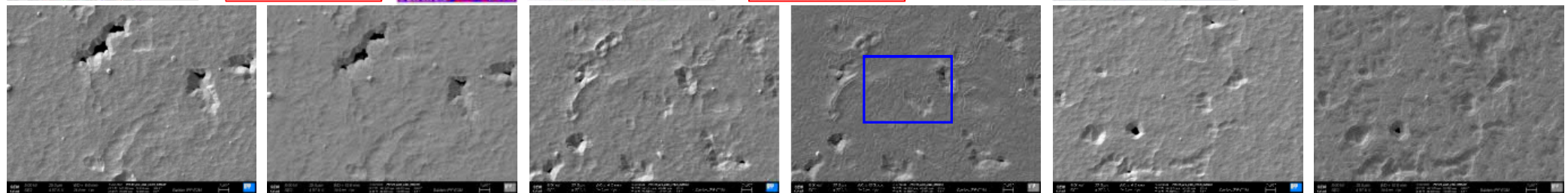
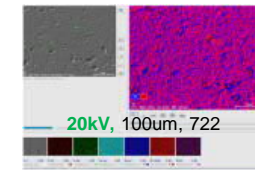
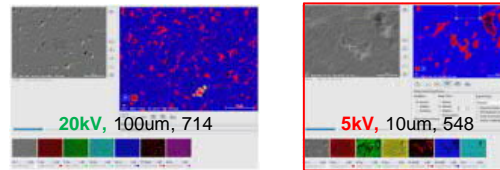
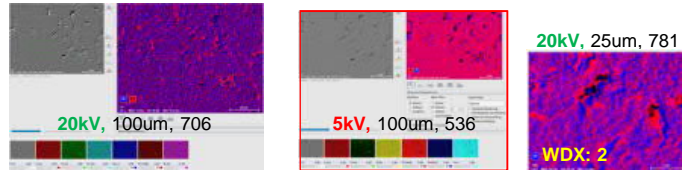
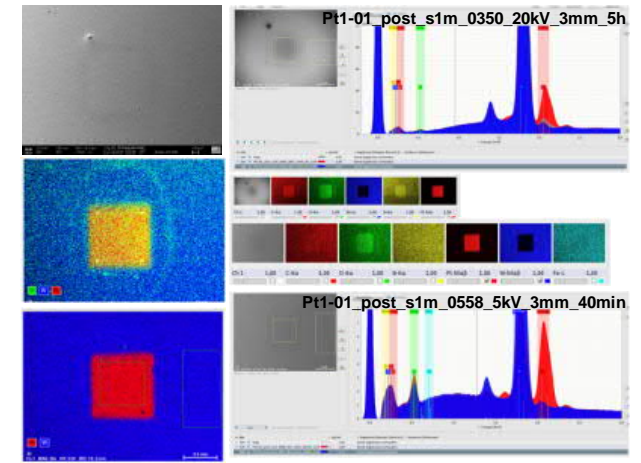
Pt1-01_post_s3m(s=1006)



Pt1-01_post_s2m(s=1014)



Pt1-01_post_s1m(s=1023)

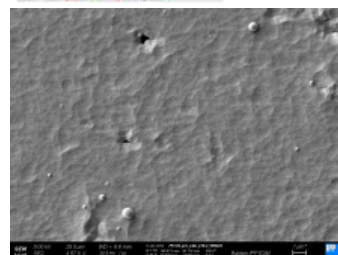
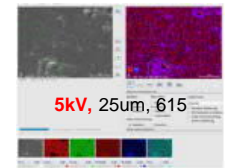
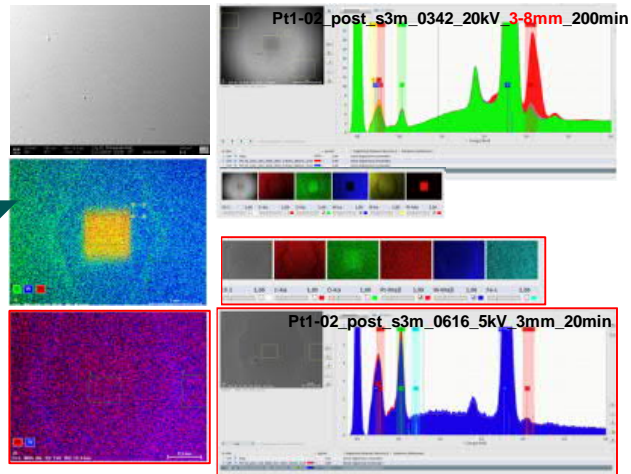




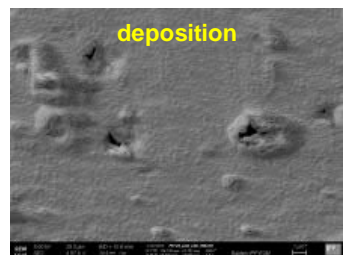
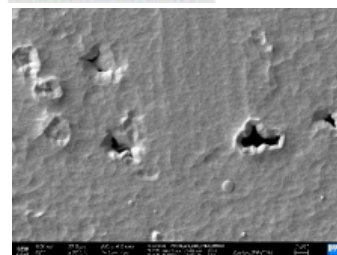
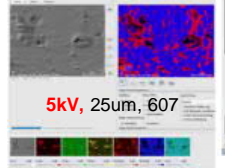
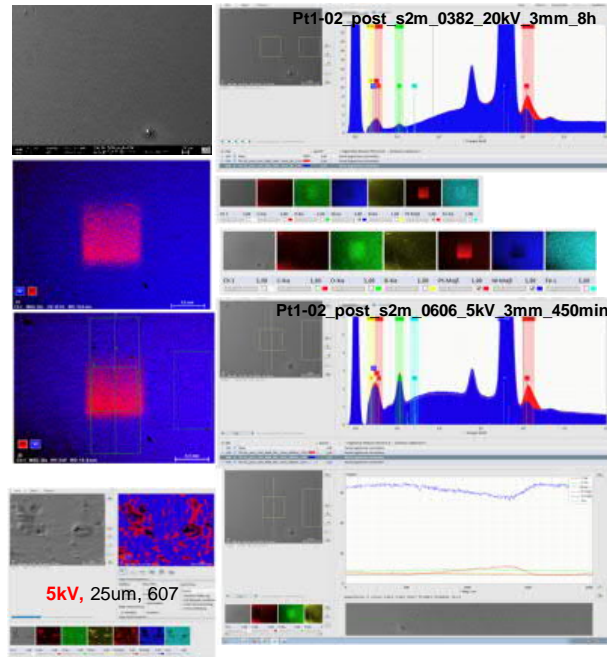
Post analyses of Pt-marker intarsia: Pt1-02 “mid”

H-mode OSL b: s=1071

Pt1-02_post_s3m(s=1072)

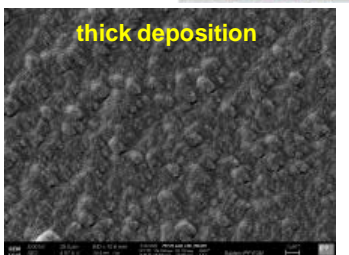
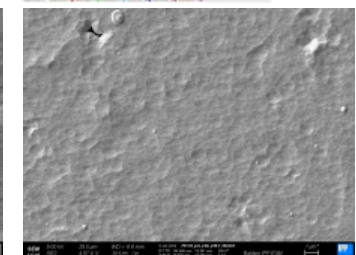
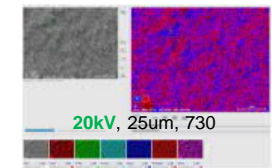
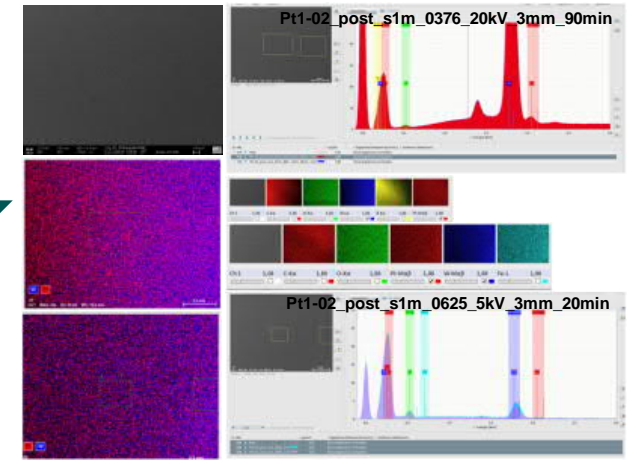


Pt1-02_post_s2m(s=1081)



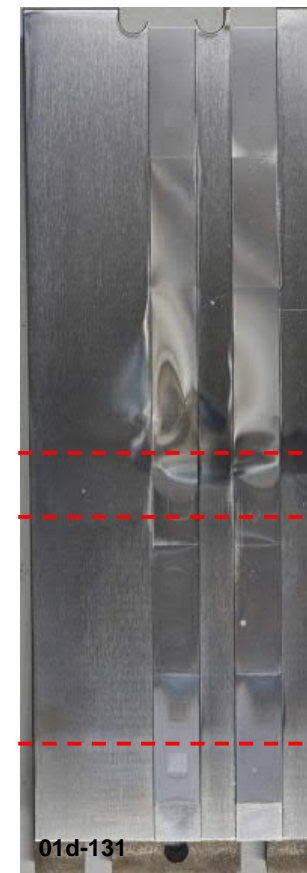
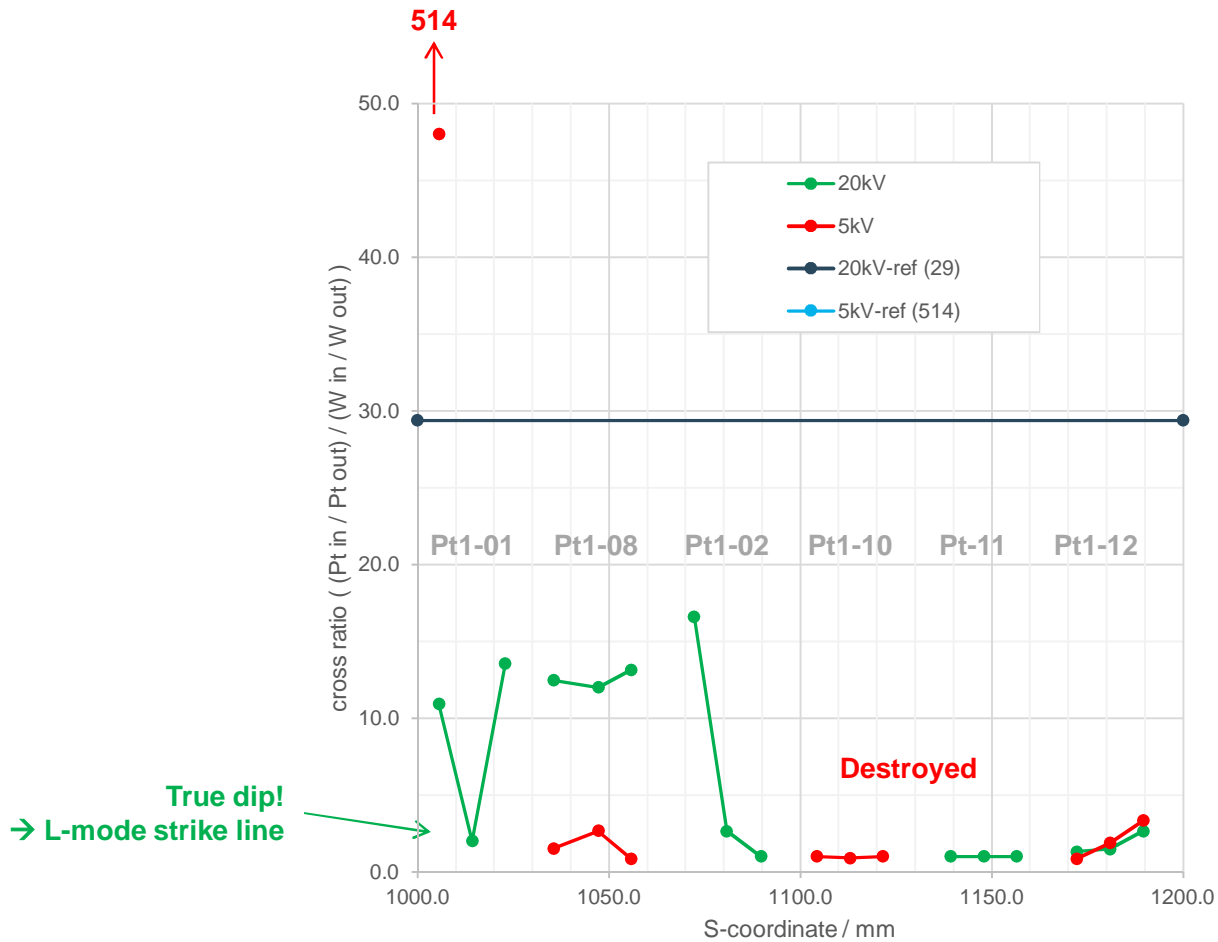
H-mode OSL a: s=1087

Pt1-02_post_s1m(s=1090)





Pt & W Peak height evaluation in- & outside 1x1 mm² Pt-marker



sample	pos	comment
Pt1-12	top	
	s1	clear
	s2	faded / slight depo
Pt1-11	top	
	s1	gone
	s2	gone
Pt1-10	top	
	s1	gone
	s2	gone
Pt1-02	top	
	s1	gone
	s2	shaded
Pt1-08	top	
	s1	clear / depo
	s2	clear
Pt1-01	top	
	s1	clear
	s2	faded
Pt1-01	s3	clear

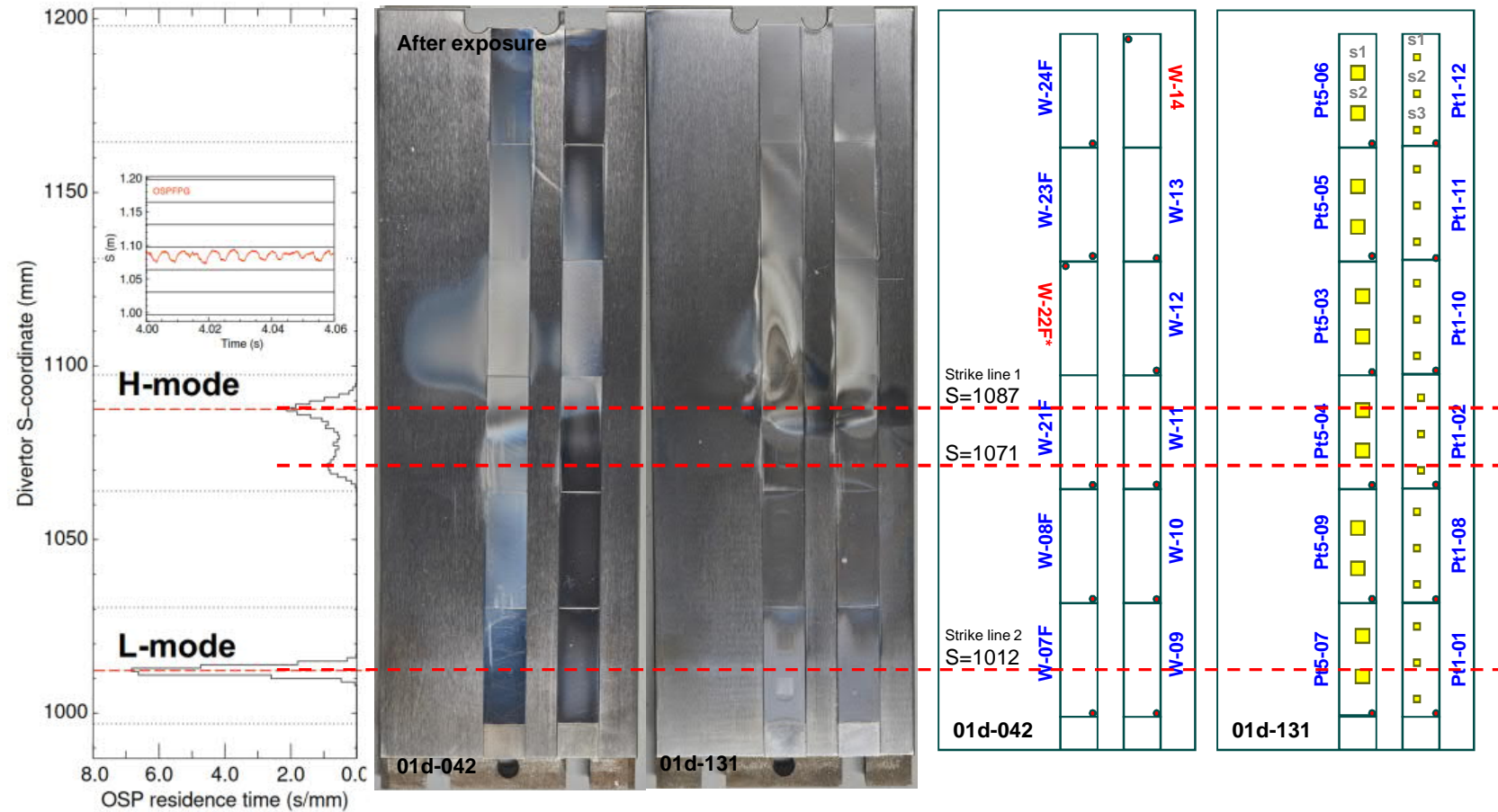
S=1198

S=997



Status of Pt-marker spots (Pt1 & Pt5)

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Overview of sub-tasks in WP PWIE SP B.2 & B.3



	Sub-task	Coordination / sample preparation	SEM / EDX / FIB / OM – pre	RBS / NRA – pre	DIM-experiment	SEM / EDX / FIB / OM - post	RBS / NRA – post	Evaluation	Other institutions	Status	Publication
1	AUG-He: Pt-marker/erosion	Yes	Done	Done	Jul 2022	Ongoing	No	Ongoing	Ongoing	Ongoing	PFMC ^a
2	AUG-He: DIM-tiles (fuzz)	Yes	Done	No	Jul 2022	Request	Done	Request	No	Ongoing	Pending
3	AUG depo-cracks	--	--	--	Campaign integrated	Ongoing	No	Pending	No	Ongoing	Pending ¹
4	AUG melting / bridging	Yes	Done	No	Apr 2021	Done	No	Done	No	Ongoing	Pending ²
5	Magnum-PSI: ENEA-58 (6 th)	No	Done	No	Nov 2022	Ongoing	No	Ongoing	No	Ongoing	Pending
6	Magnum-PSI: Chain19 (7 th)	Done	Done	No	Feb 2023	Ongoing	No	Ongoing	No	Ongoing	Pending
7	WEST: C5 marker tiles (surface)	--	--	--	C1-C5	Done	Done	Ongoing	Yes	Ongoing	IAEA ^b
8	WEST: gaps (C3, C4, C5 tiles)	--	--	--	C1-C5	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Pending
9	WEST: C4only standard tile (surface/gaps)	--	--	--	Only C4	Ongoing	Pending	Ongoing	No	Ongoing	Pending
10	WEST: ITER-like tile (surface/gaps)	--	--	--	C1-C4	Done	Done	Request	Yes	Request	PFMC ^{c, 3}
11	WEST: revisit of 2021/22 tasks	--	--	--	C1-C5	Done	Done	Request	Yes	Request	Pending

^a Rasinski PFMC

^b Tsitrone IAEA

^c Martin PFMC

[1] Rohde et al., 2023, NME 34, 101320

[2] Ratynskaia et al., 2022 NME 33, 101303

[3] Diez et al., 2023, NME 34, 101399;

Balden et al., 2021 Phys. Scr. 96, 124020