Appendix C1

ESEM/EDS Data for Test #3 Day-30 Fiberglass in High-Flow Zones

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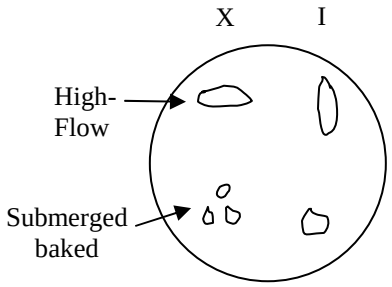
For ICET tests, the debris accumulated on the fiberglass is of great concern, because it may cause significant head loss for the recirculation of the coolant during loss-of-coolant accident (LOCA). To evaluate these potential debris accumulations, fiberglass samples submerged in high-flow zones in the test tank were examined by ESEM/EDS.

The fiberglass samples examined in this appendix were extracted on the shut down date of Test #3 (May 5, 2005). Both exterior and interior locations of the fiberglass samples were examined. Environmental SEM (ESEM) was employed to analyze the wet fiberglass samples under low-vacuum conditions (i.e., 80 Pa) and without any carbon coating, in order to minimize the possible modification of the fiberglass through the drying process. EDS results provide a semi-quantitative elemental analysis of the debris attached on fiberglass. Available logbook entries for this laboratory session are included in this appendix as transcribed notes.

Transcribed Laboratory Log

Laboratory session from May 11, 2005.
Test #3 Day-30 High-Flow Fiberglass.



High-Flow Exterior

Image:	T3HiFX31	100 ×	ESEM image	Figure C1-1
	t3hifX32	1000 ×	ESEM image higher magnification	Figure C1-2
	t3hifX33	100 ×	ESEM image	Figure C1-3
EDS:	t3hifX34		EDS on particles in T3HiFX33	Figure C1-4
Image:	t3hifX35	600 ×	ESEM image on fiberglass	Figure C1-5

High-Flow Interior

Image:	T3HiFI36	100 ×	ESEM image of fiberglass	Figure C1-6
	t3hifI37	1000 ×	ESEM image higher magnification	Figure C1-7
	t3hifI38	100 ×	ESEM image	Figure C1-8

Figure C1-1: ESEM image magnified 100 times for a Test #3 Day-30 exterior high-flow fiberglass sample. (T3HiFX31)

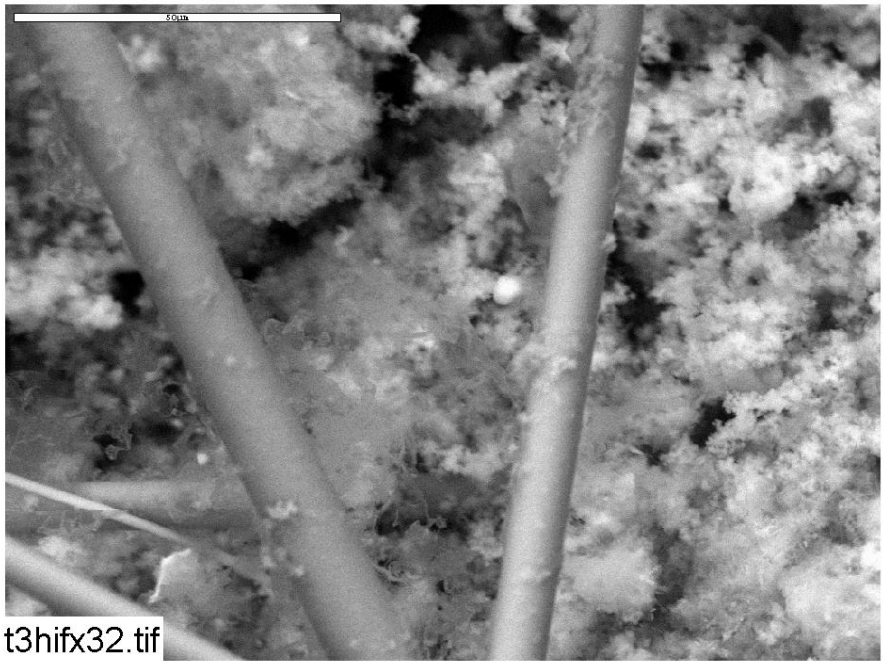


Figure C1-2: ESEM image magnified 1000 times for a Test #3 Day-30 exterior high-flow fiberglass sample. (t3hifx32)

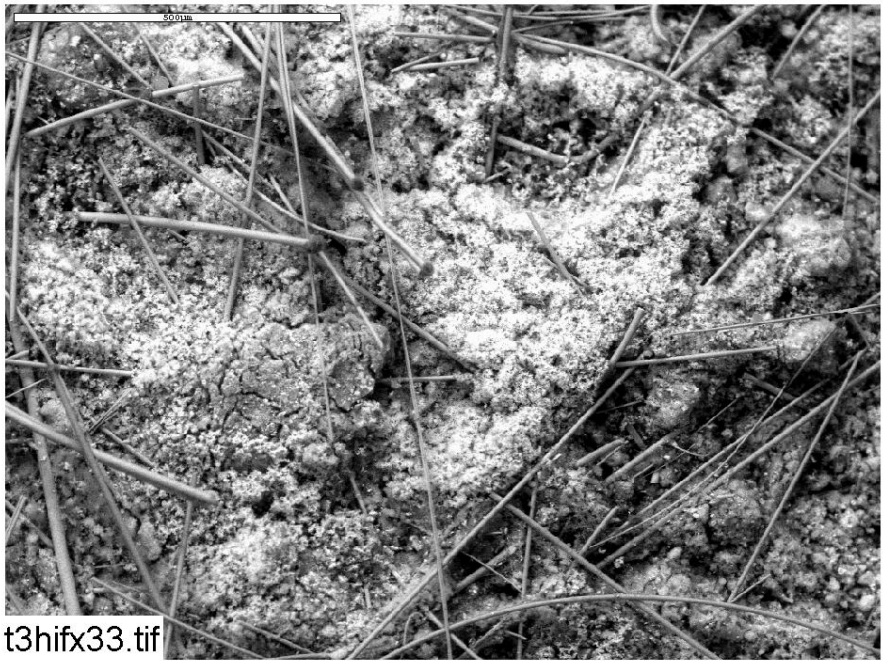


Figure C1-3: ESEM image magnified 100 times for a Test #3 Day-30 exterior high-flow fiberglass sample. (t3hifx33)

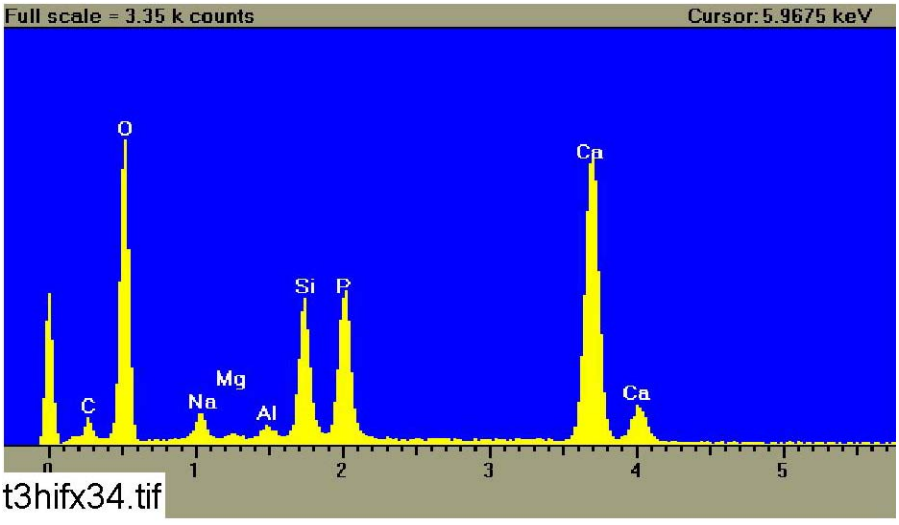


Figure C1-4: EDS counting spectrum for the large masses of particulate deposits shown in Figure C1-3. (t3hifx34)

Figure C1-5: ESEM image magnified 600 times for a Test #3 Day-30 exterior high-flow fiberglass sample. (t3hifx35)

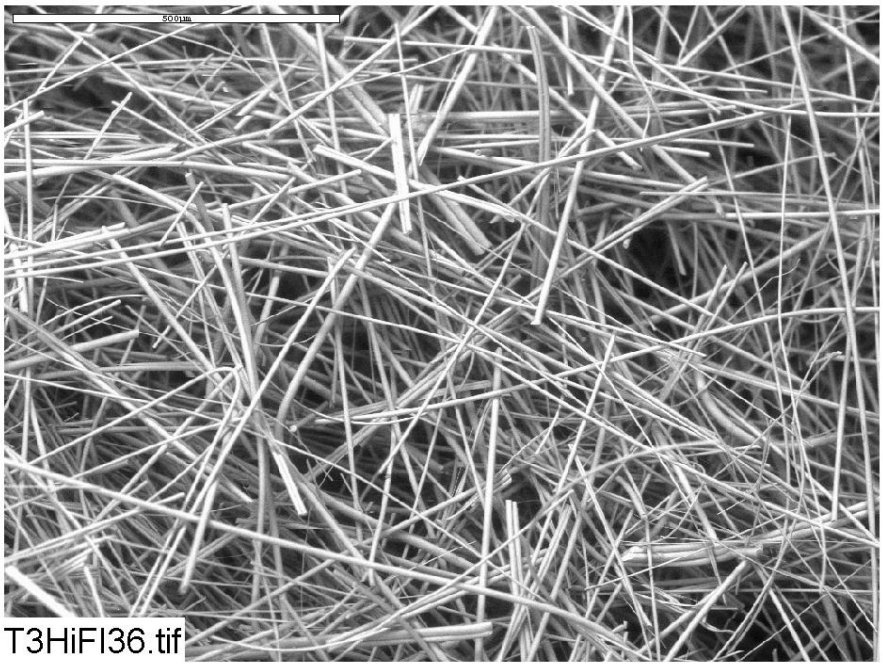


Figure C1-6: ESEM image magnified 100 times for a Test #3 Day-30 interior high-flow fiberglass sample. (T3HiFI36)

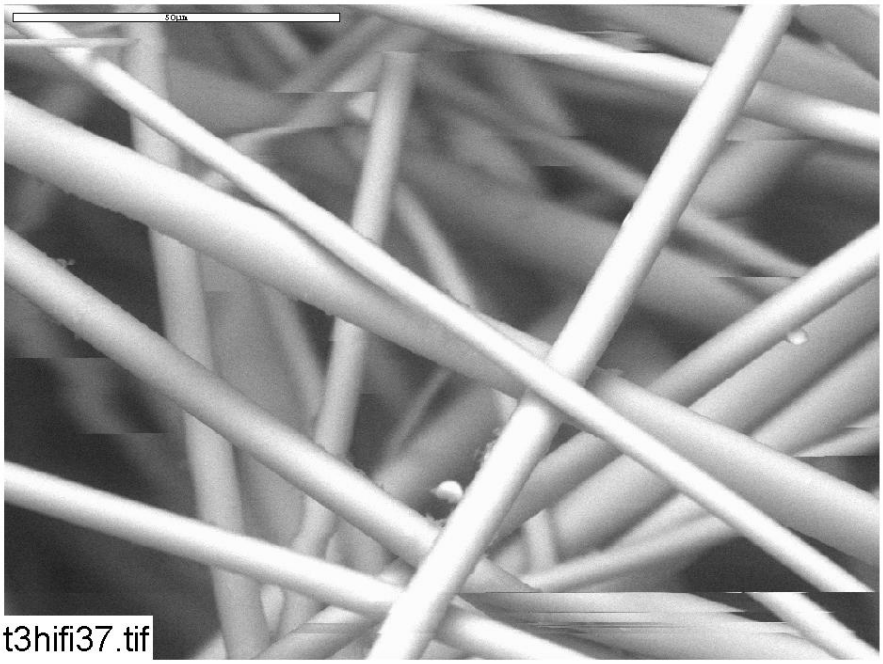


Figure C1-7: ESEM image magnified 1000 times for a Test #3 Day-30 interior high-flow fiberglass sample. (t3hifi37)

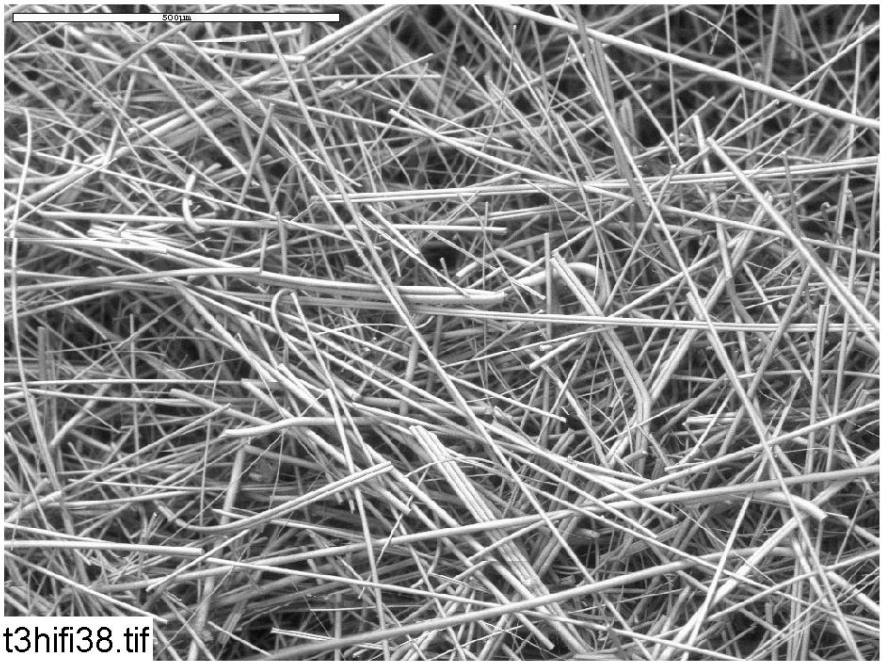


Figure C1-8: ESEM image magnified 100 times for a Test #3 Day-30 interior high-flow fiberglass sample. (t3hifi38)