

## Appendix E2

### SEM/EDS Data for Test #3 Day-30 Copper Coupons

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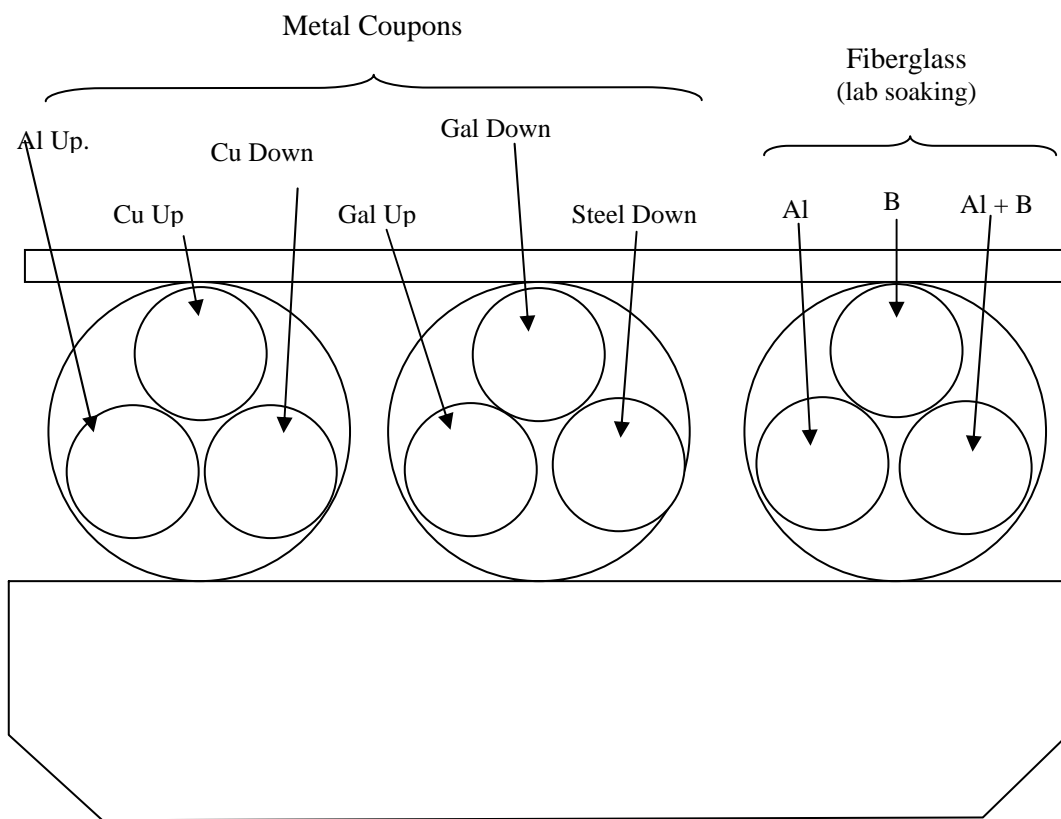
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This appendix shows the SEM/EDS results for the metal copper coupons under two different catalogs: (1) suspended; (3) submerged. *Suspended* refers to coupons located above the water level of the solution during ICET tests. Suspended coupons were only contacted with the solution during the 4 hour spraying period at the initial date of the test. In addition, the surface of the suspended coupons may also be affected by the moisture in the test chamber gas space during the test. *Submerged* refers to the coupons that were submerged in the solution during the test.

The coupon samples were collected on May 5, 2005 (the date Test #3 was shut down) and subsequently examined by SEM/EDS. The copper coupon samples were dried in air before being coating with Au/Pd for SEM examination. SEM results present the surface condition of the copper coupons. In addition, EDS results provide a semi-quantitative elemental analysis of the coupon surface and the corrosion products. Available logbook entries for this laboratory session are included in this appendix as transcribed notes.

## Transcribed Laboratory Log

Laboratory session from May 17, 2005.  
 Test #3 Day-30 Metal Coupons

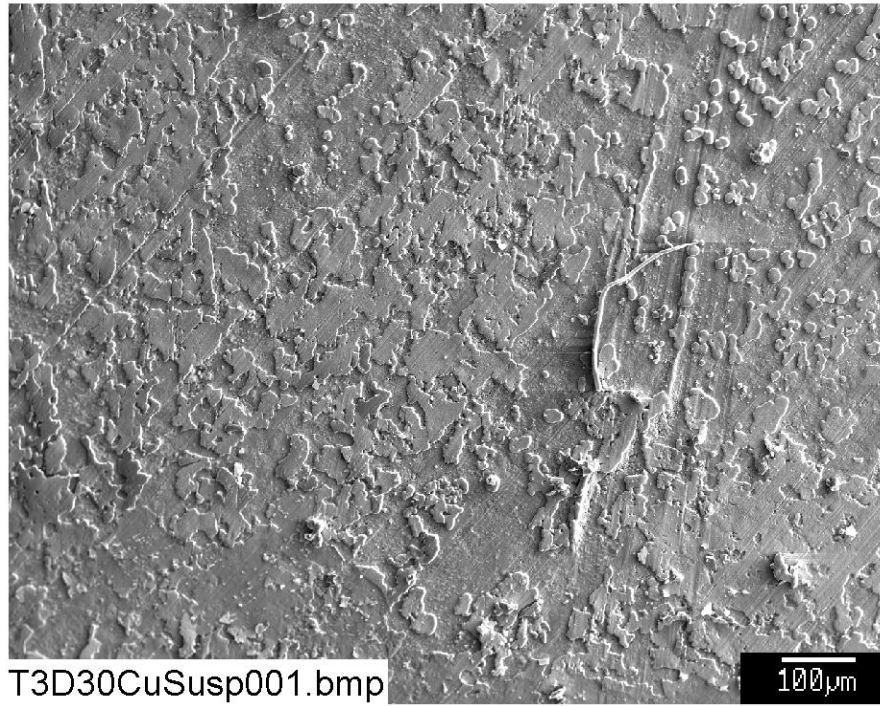


### Suspended Cu

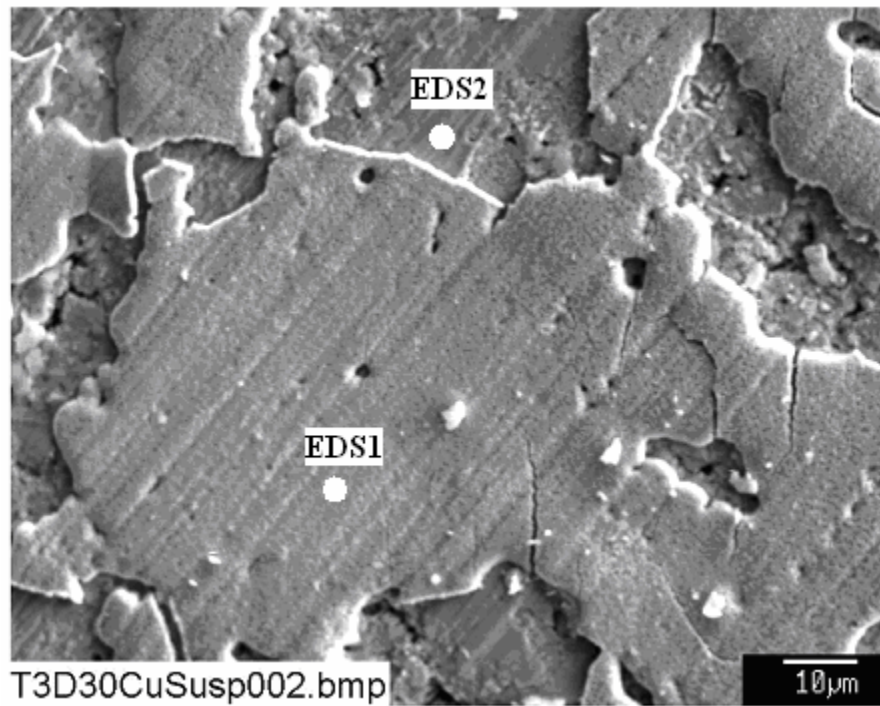
Image:	T3D30CuSusp001	100 ×	SEM image	Figure E2-1
	T3D30CuSusp002	1000 ×	Annotated SEM image	Figure E2-2
	T3D30CuSusp003	100 ×	Backscattered image	Figure E2-3
EDS:	T3D30SuspCu01		Medium (convex) dark spot on 002	Figure E2-4
	T3D30SuspCu02		Light spot (concave) on 002	Figure E2-5

### Submerged Cu

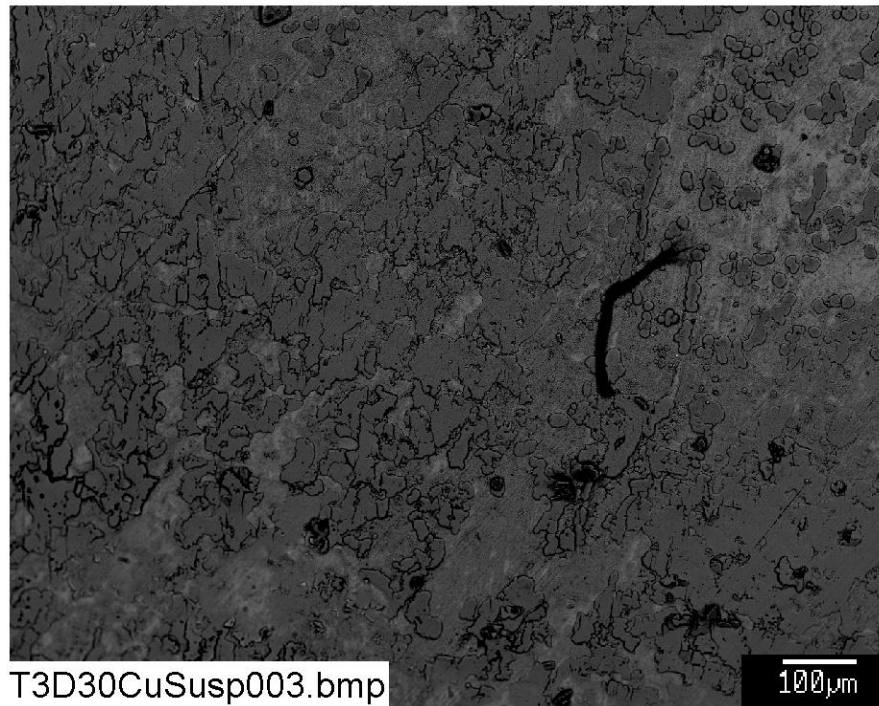
Image:	T3D30CuSubm004	100 ×	SEM image	Figure E2-6
	T3D30CuSubm005	1000 ×	Annotated SEM image	Figure E2-7
EDS:	T3D30SubmCu03		White spot on 005	Figure E2-8
	T3D30SubmCu04		Dark surface on 005	Figure E2-9



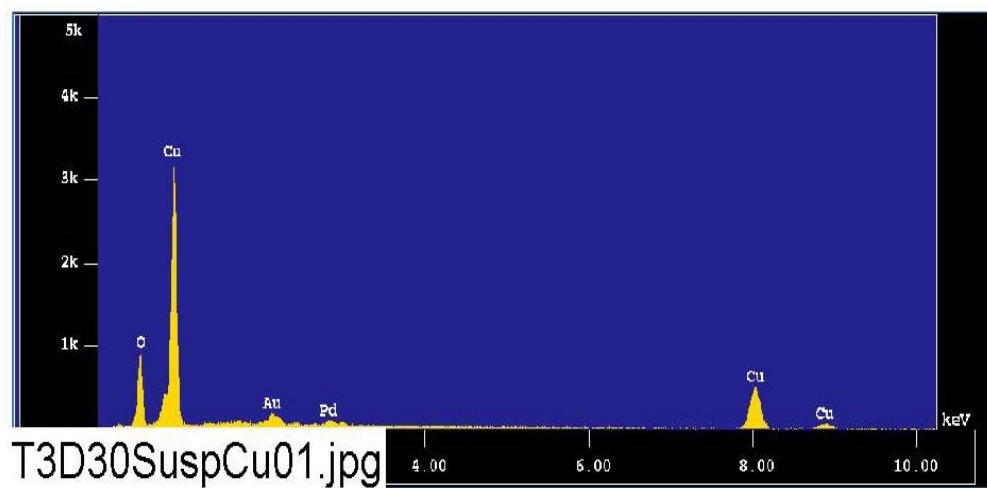
**Figure E2-1: SEM image magnified 100 times for a Test #3 Day-30 suspended copper coupon. (T3D30CuSusp001)**



**Figure E2-2: Annotated SEM image magnified 1000 times for a Test #3 Day-30 suspended copper coupon. (T3D30CuSusp002)**

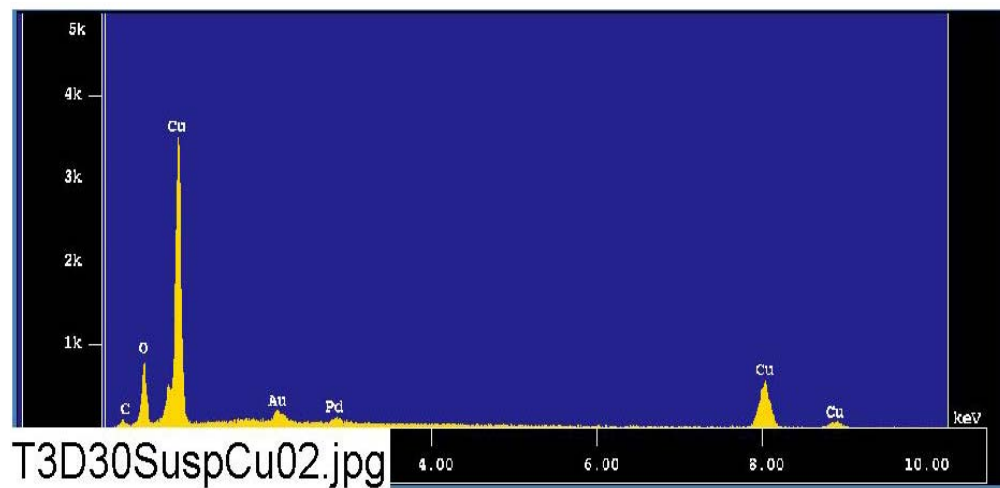


**Figure E2-3: Backscattered SEM image magnified 100 times for a Test #3 Day-30 suspended copper coupon. (T3D30CuSusp003)**

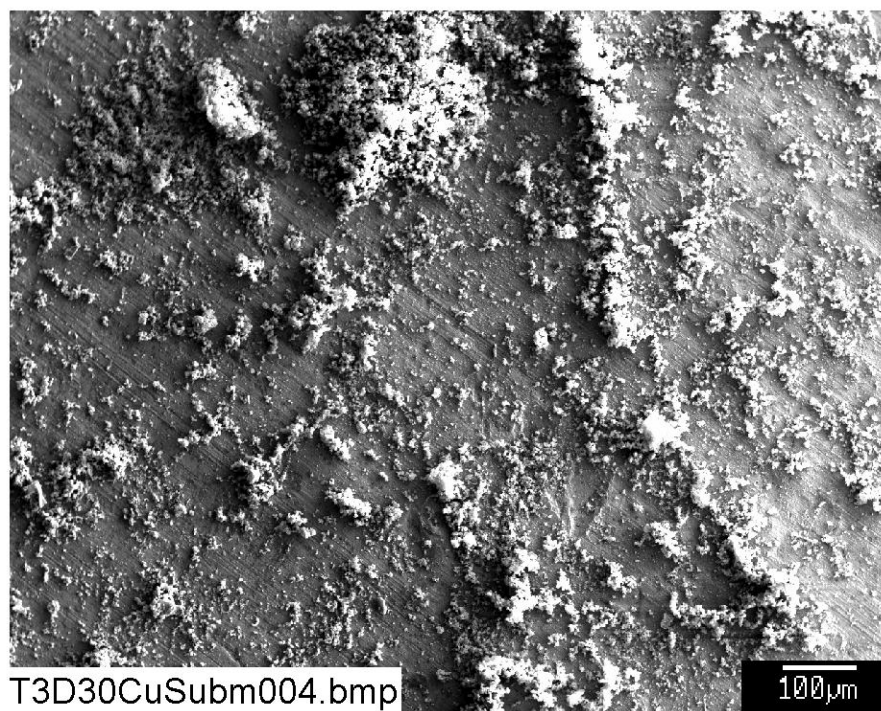


**Figure E2-4: EDS counting spectrum for the convex surface (EDS1) shown in Figure E2-32 (T3D30SuspCu01)**



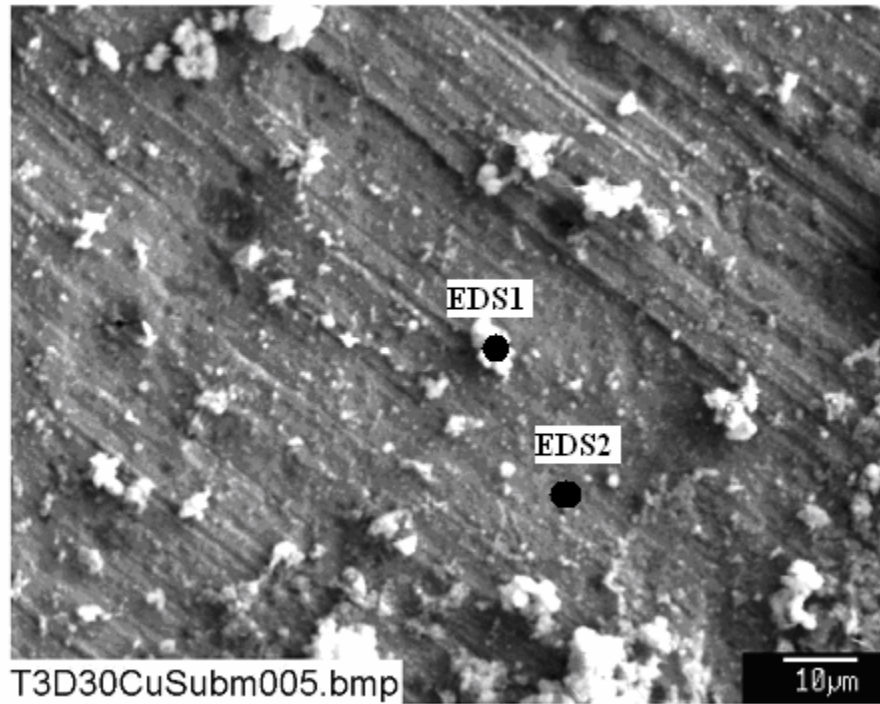


**Figure E2-5: EDS counting spectrum for the concave surface (EDS2) shown in Figure E2-32. (T3D30SuspCu02)**

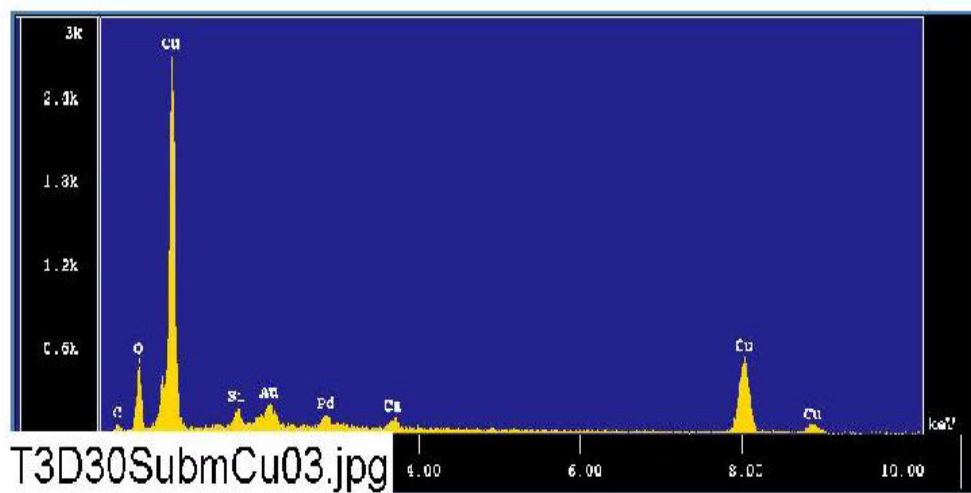


**Figure E2-6: SEM image magnified 100 times for a Test #3 Day-30 submerged copper coupon. (T3D30CuSubm004)**

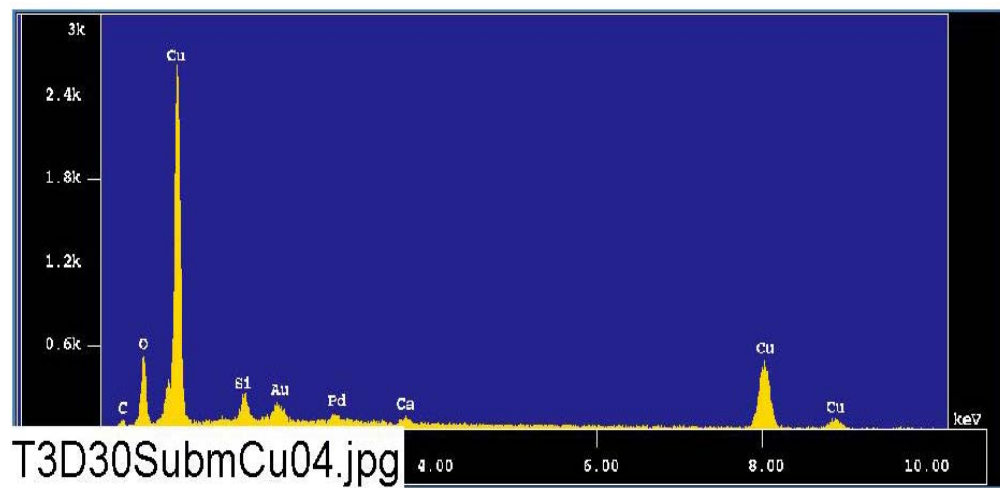




**Figure E2-7: Annotated SEM image magnified 1000 times for a Test #3 Day-30 submerged copper coupon. (T3D30CuSubm005)**



**Figure E2-8: EDS counting spectrum for the white particles (EDS1) shown in Figure E2-7. (T3D30SubmCu03)**



**Figure E2-9: EDS counting spectrum for the dark surface (EDS2) shown in Figure E2-7.  
(T3D30SubmCu04)**