

Appendix A

GLM Results for Exposure to Diesel Fuel and Hydraulic Fluid

Table A.1 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HCLV PTH**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	6.90	0.11	0.02
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene Silicone Urethane	0.24	-0.12	
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene			
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane		-0.21	-0.18
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux		-0.13	
Parylene*Flux Silicone*Flux Urethane*Flux			
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux	0.23		
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			
Model R ²	28.5%	9.5%	3.0%
Standard Deviation	0.17	0.24	0.25

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.2 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HCLV SMT**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	7.25	-0.04	-0.01
Benzimidazole Immersion Ag Immersion Au/Pd			-0.03
Parylene Silicone Urethane	-0.08	0.10	
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene			
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane			
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			
Parylene*Flux Silicone*Flux Urethane*Flux			
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			
Model R ²	13.6%	9.1%	1.3%
Standard Deviation	0.08	0.14	0.12

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.3 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HVLC PTH**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	5.04	5.05	5.04
Benzimidazole			
Immersion Ag			
Immersion Au/Pd	-0.01		
Parylene			
Silicone		0.02	0.05
Urethane	-0.02	-0.03	-0.03
Flux		-0.01	
Benzi*Parylene			
Imm Ag*Parylene			
Imm Au/Pd*Parylene			
Benzi*Silicone			
Imm Ag*Silicone			
Imm Au/Pd*Silicone			
Benzi*Urethane			
Imm Ag* Urethane			
Imm Au/Pd* Urethane			
Benzi*Flux			
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux			
Silicone*Flux			
Urethane*Flux			
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			0.03
Imm Au/Pd*Silicone*Flux			0.03
Benzi*Urethane*Flux			
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux			
Model R ²	19.7%	53.5%	71.6%
Standard Deviation	0.02	0.02	0.02

Table A.4 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HVLC SMT**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	4.95	4.95	4.95
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene Silicone Urethane	0.06	0.02 0.06	0.06 0.06
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene			
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane	0.03	0.03	0.03
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			
Parylene*Flux Silicone*Flux Urethane*Flux			
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux	-0.06	-0.06	-0.06
Model R ²	55.4%	52.3%	57.9%
Standard Deviation	0.02	0.02	0.03

Table A.5 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HSD PTH**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	12.80	2.90	2.35
Benzimidazole			0.79
Immersion Ag			0.79
Immersion Au/Pd			
Parylene			
Silicone	0.08		
Urethane	4.04	-1.14	
Flux			
Benzi*Parylene			
Imm Ag*Parylene			
Imm Au/Pd*Parylene			
Benzi*Silicone			
Imm Ag*Silicone			
Imm Au/Pd*Silicone			
Benzi*Urethane		1.47	
Imm Ag* Urethane	0.22	-1.18	-2.53
Imm Au/Pd* Urethane			
Benzi*Flux			
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux			
Silicone*Flux			
Urethane*Flux	0.17		
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux		-2.10	
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux			
Model R ²	98.9%	20.3%	14.2%
Standard Deviation	0.20	1.41	1.61

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.6 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HSD SMT**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	4.76	8.54	7.84
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene Silicone Urethane	4.29	-5.06	-3.43
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene			
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane	0.29	-2.50	-3.30
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			
Parylene*Flux Silicone*Flux Urethane*Flux	0.24		
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux	-0.34 -0.31		
Model R ²	99.2%	42.0%	35.9%
Standard Deviation	0.17	2.99	2.69

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.7 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HF LPF PTH 50MHz**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	-0.27	0.02	0.02
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene Silicone Urethane	-0.72	0.02	0.03
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene		0.03	0.03
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone	0.71 0.72 0.71		
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane			-0.03
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			0.02
Parylene*Flux Silicone*Flux Urethane*Flux	0.69		-0.02
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			-0.04
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux	-0.69 -0.69 -0.68		
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			0.04 -0.05
Model R ²	18.6%	13.9%	26.2%
Standard Deviation	0.27	0.03	0.03

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.8 Significant Coefficients for the GLM Analyses by Test Time

Experimental Variables	Electrical Response: HF LPF PTH f(-3dB)		
	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	250.4	-1.86	-0.83
Benzimidazole			
Immersion Ag	-3.0		
Immersion Au/Pd			
Parylene			
Silicone		-2.77	
Urethane			
Flux			
Benzi*Parylene	-5.6		
Imm Ag*Parylene	5.5		
Imm Au/Pd*Parylene			
Benzi*Silicone			
Imm Ag*Silicone			
Imm Au/Pd*Silicone	-5.1		-4.40
Benzi*Urethane	-5.2		
Imm Ag* Urethane	3.9		
Imm Au/Pd* Urethane			
Benzi*Flux	-4.0		
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux	-5.4	-3.80	-3.90
Silicone*Flux			
Urethane*Flux			
Benzi*Parylene*Flux	11.4		
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux	10.8		
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux			
Model R ²	20.7%	9.1%	9.1%
Standard Deviation	4.8	4.84	5.05

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.9 Significant Coefficients for the GLM Analyses by Test Time**Environment: Diesel Fuel
and Hydraulic Fluid****Electrical Response: HF LPF PTH f(-40dB)**

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	441.8	-3.0	-2.2
Benzimidazole Immersion Ag Immersion Au/Pd			-3.0
Parylene Silicone Urethane		3.4	
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene		-6.1	
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone	-3.2		-3.5
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane			
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux	-2.9	-4.7	
Parylene*Flux Silicone*Flux Urethane*Flux	-5.4	-8.1	-4.9
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux		10.1	
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux		5.6	
Model R ²	16.9%	19.1%	16.7%
Standard Deviation	4.9	4.8	4.8

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.10 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: HF LPF SMT 50Mhz

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	-0.247	0.012	0.008
Benzimidazole			0.012
Immersion Ag			
Immersion Au/Pd			
Parylene	-0.019		
Silicone	-0.031		
Urethane			
Flux			
Benzi*Parylene	0.022		
Imm Ag*Parylene	0.027		
Imm Au/Pd*Parylene	0.026		0.013
Benzi*Silicone	0.028		
Imm Ag*Silicone	0.028		
Imm Au/Pd*Silicone	0.027		0.015
Benzi*Urethane			-0.020
Imm Ag* Urethane	-0.045		
Imm Au/Pd* Urethane			0.021
Benzi*Flux		0.0097	
Imm Ag*Flux		0.0223	0.015
Imm Au/Pd*Flux		0.0125	
Parylene*Flux			
Silicone*Flux		-0.0106	-0.015
Urethane*Flux			
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux			0.021
Imm Ag*Urethane*Flux	0.046	-0.0251	-0.020
Imm Au/Pd*Urethane*Flux			
Model R ²	21.0%	14.6%	25.2%
Standard Deviation	0.024	0.018	0.015

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.11 Significant Coefficients for the GLM Analyses by Test Time

Experimental Variables	Electrical Response: HF LPF SMT f(-3dB)		
	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	278.1	-1.011	-0.3
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene Silicone Urethane	-1.44 -1.74	-1.53 -0.93	-1.1 -0.7
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene	-0.95		-0.9
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane			-1.7
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			
Parylene*Flux Silicone*Flux Urethane*Flux			
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			1.6
Model R ²	25.7%	15.5%	20.8%
Standard Deviation	1.34	1.5	1.1

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.12 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: HF LPF SMT f(-40dB)

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	663.8	-9.1	-3.2
Benzimidazole			-4.8
Immersion Ag			
Immersion Au/Pd			
Parylene		8.2	
Silicone		8.3	
Urethane	-6.7		-11.3
Flux			
Benzi*Parylene		-9.4	
Imm Ag*Parylene	-10.2	-11.8	-10.4
Imm Au/Pd*Parylene	-10.8	-15.4	-12.9
Benzi*Silicone		-9.3	
Imm Ag*Silicone	-9.1	-11.8	-10.3
Imm Au/Pd*Silicone	-10.6	-14.3	-12.1
Benzi*Urethane			7.2
Imm Ag* Urethane			8.4
Imm Au/Pd* Urethane	-16.1	-19.8	-14.0
Benzi*Flux	-8.2	-4.0	-5.5
Imm Ag*Flux	-9.4		-10.5
Imm Au/Pd*Flux	-12.2	-10.7	-13.6
Parylene*Flux			
Silicone*Flux			
Urethane*Flux	6.7		6.8
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux	14.0		13.4
Imm Au/Pd*Parylene*Flux	15.6	14.6	17.5
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux	11.3		12.1
Imm Au/Pd*Silicone*Flux	14.5	12.1	15.5
Benzi*Urethane*Flux			
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux	15.2	20.9	16.4
Model R ²	39.9%	43.6%	49.0%
Standard Deviation	7.0	6.7	6.2

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.13 Significant Coefficients for the GLM Analyses by Test Time

Experimental Variables	Electrical Response: HF TLC 50MHz		
	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	-38.72	-0.35	-0.58
Benzimidazole	1.64		
Immersion Ag	2.11		
Immersion Au/Pd	1.24		
Parylene	-1.72		
Silicone	-6.37	-0.73	-1.56
Urethane	-2.68		0.46
Flux			
Benzi*Parylene			
Imm Ag*Parylene			
Imm Au/Pd*Parylene			
Benzi*Silicone	2.13		0.92
Imm Ag*Silicone	2.08	0.39	0.79
Imm Au/Pd*Silicone	2.89		0.45
Benzi*Urethane			
Imm Ag* Urethane	-3.50	1.41	1.04
Imm Au/Pd* Urethane	1.03		
Benzi*Flux			
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux			
Silicone*Flux			
Urethane*Flux		0.68	0.40
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux	-2.12		
Benzi*Urethane*Flux			
Imm Ag*Urethane*Flux		-0.93	-0.75
Imm Au/Pd*Urethane*Flux			
Model R ²	81.7%	49.3%	68.2%
Standard Deviation	1.06	0.52	0.49

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.14 Significant Coefficients for the GLM Analyses by Test Time

Experimental Variables	Electrical Response: HF TLC 500MHz		
	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	-17.91	-0.23	-0.26
Benzimidazole	-0.62		
Immersion Ag	-0.62		
Immersion Au/Pd	-0.61		
Parylene	-1.03		
Silicone	-2.70		-0.43
Urethane	-1.57		-0.41
Flux			
Benzi*Parylene			
Imm Ag*Parylene			
Imm Au/Pd*Parylene			
Benzi*Silicone	0.56		
Imm Ag*Silicone			
Imm Au/Pd*Silicone			
Benzi*Urethane			0.50
Imm Ag* Urethane	0.98		
Imm Au/Pd* Urethane			0.57
Benzi*Flux			
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux			
Silicone*Flux			
Urethane*Flux			
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux	0.57		
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux	0.56		-0.63
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux		-0.87	-0.57
Model R ²	82.4%	5.4%	27.8%
Standard Deviation	0.47	0.64	0.37

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.15 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: HF TLC 1GHz

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	-12.60	-0.33	-0.35
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene	-0.94		
Silicone	-2.57		-0.38
Urethane	-0.55		
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene		-1.19	
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane	-0.77 -1.17		0.17
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			
Parylene*Flux Silicone*Flux Urethane*Flux			0.10
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux		1.30	
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux	0.85		
Model R ²	70.9%	5.9%	52.0%
Standard Deviation	0.62	0.84	0.18

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.16 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: HF TLC RNF

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	651.1	-2.7	-3.3
Benzimidazole	-6.1		
Immersion Ag	-2.7	2.7	
Immersion Au/Pd			
Parylene	-5.0		-0.9
Silicone	-16.1		
Urethane	-16.7	3.2	4.4
Flux			
Benzi*Parylene			
Imm Ag*Parylene		-4.3	
Imm Au/Pd*Parylene			
Benzi*Silicone			1.0
Imm Ag*Silicone			
Imm Au/Pd*Silicone			
Benzi*Urethane	5.4		
Imm Ag* Urethane		-2.1	
Imm Au/Pd* Urethane	-5.8		
Benzi*Flux			
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux			
Silicone*Flux			
Urethane*Flux			
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux		-2.9	
Benzi*Silicone*Flux	4.3		
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux	4.6		
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux	4.5		
Model R ²	82.0%	36.8%	69.3%
Standard Deviation	3.5	2.4	1.4

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.17 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: HF TLC RNR

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	-46.2	-1.4	-5.1
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene			2.4
Silicone	-4.7	2.0	5.2
Urethane			5.5
Flux			
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene	-4.4		
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone	5.5		
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane	-9.1	3.5	
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux		-2.3	-2.9
Parylene*Flux Silicone*Flux Urethane*Flux	5.2		
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			
Model R ²	19.7%	11.3%	17.3%
Standard Deviation	6.5	3.9	5.4

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.18 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: 10-Mil Pads

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	11.76	13.32	12.56
Benzimidazole	0.28		
Immersion Ag	0.38		
Immersion Au/Pd			
Parylene	1.86		0.54
Silicone		-2.71	-2.56
Urethane	0.69	-0.55	0.28
Flux	1.63		
Benzi*Parylene			
Imm Ag*Parylene			
Imm Au/Pd*Parylene		-0.79	-0.63
Benzi*Silicone			
Imm Ag*Silicone	-0.47		
Imm Au/Pd*Silicone			
Benzi*Urethane			0.41
Imm Ag* Urethane			
Imm Au/Pd* Urethane			
Benzi*Flux			
Imm Ag*Flux	-0.42		
Imm Au/Pd*Flux			
Parylene*Flux	-1.23		
Silicone*Flux	-1.89		
Urethane*Flux	-1.59		
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			-0.49
Imm Au/Pd*Parylene*Flux			0.66
Benzi*Silicone*Flux	-0.69		
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux			
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux			
Model R ²	82.2%	73.6%	90.8%
Standard Deviation	0.46	0.67	0.41

Table A.19 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: PGA-A

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	11.38	11.56	10.69
Benzimidazole	0.29		
Immersion Ag			
Immersion Au/Pd			
Parylene	0.96		0.53
Silicone	0.38	-1.46	-1.20
Urethane			1.09
Flux	1.54		
Benzi*Parylene	-0.59	1.16	
Imm Ag*Parylene		0.85	
Imm Au/Pd*Parylene			
Benzi*Silicone			
Imm Ag*Silicone			
Imm Au/Pd*Silicone			
Benzi*Urethane			0.44
Imm Ag* Urethane			
Imm Au/Pd* Urethane			
Benzi*Flux			
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux	-1.04		
Silicone*Flux	-2.27		
Urethane*Flux	-1.37		
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux			
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux			
Model R ²	49.8%	56.4%	85.7%
Standard Deviation	0.67	0.69	0.37

Table A.20 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: PGA-B

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	11.30	11.40	10.50
Benzimidazole Immersion Ag Immersion Au/Pd			
Parylene	0.70		0.54
Silicone		-1.34	-1.10
Urethane			1.01
Flux	1.75		
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene		1.06 0.89	
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane			0.67
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux			
Parylene*Flux Silicone*Flux Urethane*Flux	-1.27 -2.13 -1.63		0.75
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			-0.75 -0.73 -0.68
Model R ²	52.4%	49.6%	80.1%
Standard Deviation	0.66	0.74	0.45

Table A.21 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: Gull Wing

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	11.86	11.24	10.97
Benzimidazole			
Immersion Ag	1.09		
Immersion Au/Pd	0.56	-0.32	
Parylene	1.31	1.29	1.27
Silicone		-1.39	-2.02
Urethane			
Flux			
Benzi*Parylene			
Imm Ag*Parylene	-0.72		
Imm Au/Pd*Parylene			
Benzi*Silicone	0.86		
Imm Ag*Silicone	-0.69		
Imm Au/Pd*Silicone			
Benzi*Urethane			1.05
Imm Ag* Urethane	-1.32	-0.82	-0.49
Imm Au/Pd* Urethane	-0.81		
Benzi*Flux	1.53		
Imm Ag*Flux			
Imm Au/Pd*Flux			
Parylene*Flux			
Silicone*Flux			
Urethane*Flux			
Benzi*Parylene*Flux	-1.52		
Imm Ag*Parylene*Flux			-0.91
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux	-2.06		
Imm Ag*Silicone*Flux			
Imm Au/Pd*Silicone*Flux	-0.79		
Benzi*Urethane*Flux	-2.08		
Imm Ag*Urethane*Flux			
Imm Au/Pd*Urethane*Flux			
Model R ²	63.6%	61.2%	83.1%
Standard Deviation	0.58	0.79%	0.55

Table A.22 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: Stranded Wire 1

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	14.40	-0.0003	-0.0006
Benzimidazole Immersion Ag Immersion Au/Pd			0.0012
Parylene Silicone Urethane			
Flux	-0.87		
Benzi*Parylene Imm Ag*Parylene Imm Au/Pd*Parylene			
Benzi*Silicone Imm Ag*Silicone Imm Au/Pd*Silicone			
Benzi*Urethane Imm Ag* Urethane Imm Au/Pd* Urethane			
Benzi*Flux Imm Ag*Flux Imm Au/Pd*Flux		0.0020	
Parylene*Flux Silicone*Flux Urethane*Flux			
Benzi*Parylene*Flux Imm Ag*Parylene*Flux Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux Imm Ag*Silicone*Flux Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux Imm Ag*Urethane*Flux Imm Au/Pd*Urethane*Flux			0.0022
Model R ²	3.1%	3.6%	6.5%
Standard Deviation	2.46	0.0033	0.0023

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.

Table A.23 Significant Coefficients for the GLM Analyses by Test Time

Environment: Diesel Fuel
and Hydraulic Fluid

Electrical Response: Stranded Wire 2

Experimental Variables	Pre-Test	Post Diesel Fuel	Post Hydraulic Fluid
Constant	22.66	0.0012	0.0000
Benzimidazole	2.72		
Immersion Ag	1.23		
Immersion Au/Pd			
Parylene			
Silicone			
Urethane		-0.0034	
Flux	-1.53		
Benzi*Parylene			
Imm Ag*Parylene			
Imm Au/Pd*Parylene			
Benzi*Silicone	-2.52		
Imm Ag*Silicone			
Imm Au/Pd*Silicone			
Benzi*Urethane		0.0041	
Imm Ag* Urethane		-0.0036	
Imm Au/Pd* Urethane			
Benzi*Flux			
Imm Ag*Flux	2.78		
Imm Au/Pd*Flux	1.16		
Parylene*Flux			
Silicone*Flux			
Urethane*Flux			0.0045
Benzi*Parylene*Flux			
Imm Ag*Parylene*Flux			
Imm Au/Pd*Parylene*Flux			
Benzi*Silicone*Flux			
Imm Ag*Silicone*Flux	-2.90		
Imm Au/Pd*Silicone*Flux			
Benzi*Urethane*Flux	-3.06		
Imm Ag*Urethane*Flux			-0.0113
Imm Au/Pd*Urethane*Flux			
Model R ²	34.3%	15.6%	8.0%
Standard Deviation	1.95	0.0047	0.0062

*The Pre-Test column contains estimated coefficients for the raw Pre-Test measurements. The remaining columns contain the estimated coefficients for the deltas defined in Section 6.3.