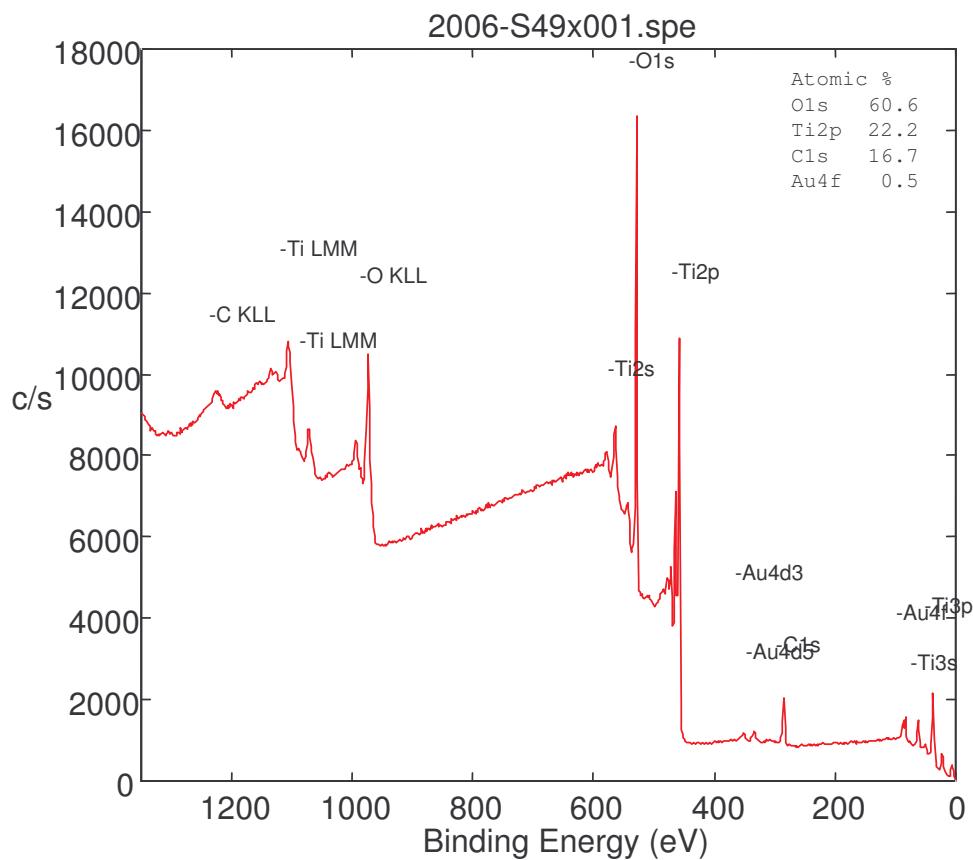


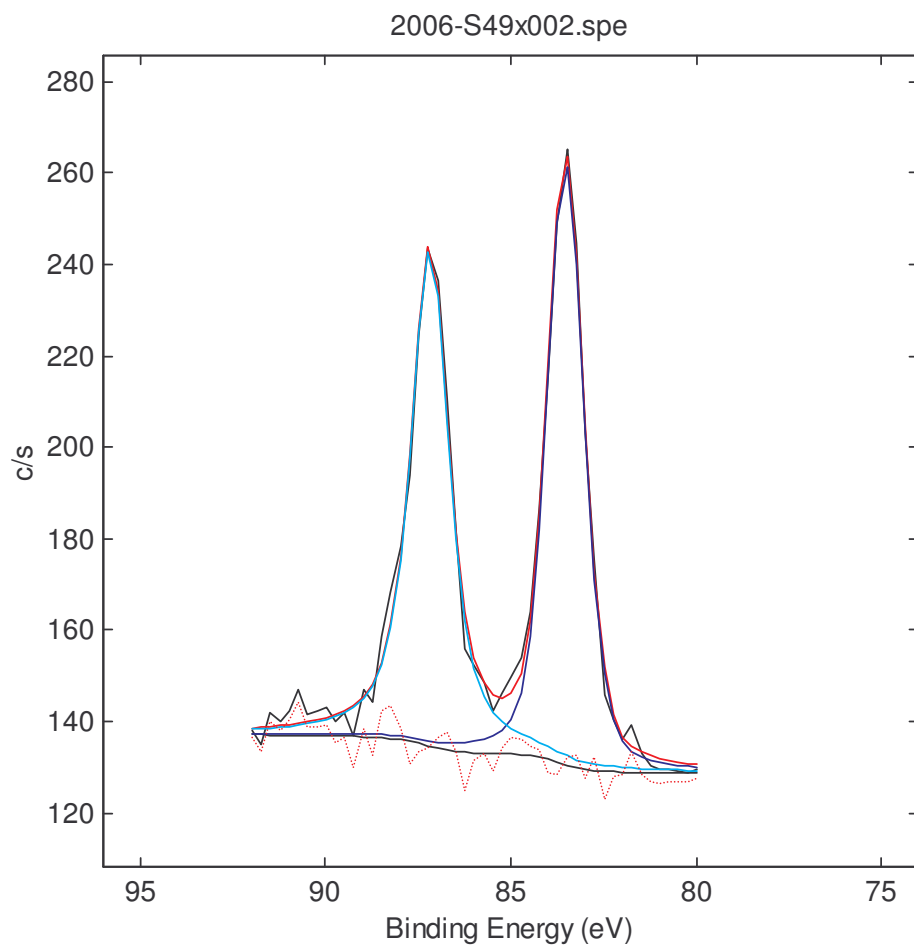
APPENDIX B : COMPLETE XPS DATA FOR SAMPLES ANALYSED BY XPS

Au/0.05mol%PO₄³⁻-TiO₂

2006-S49x001.spe: Wits CSIR-NML
2006 Mar 17 Al mono 17.9 W 100.0 μ 45.0° 187.85 eV 1.6367e+004 max 88.41 min
Su/Area1: Sample 1/1



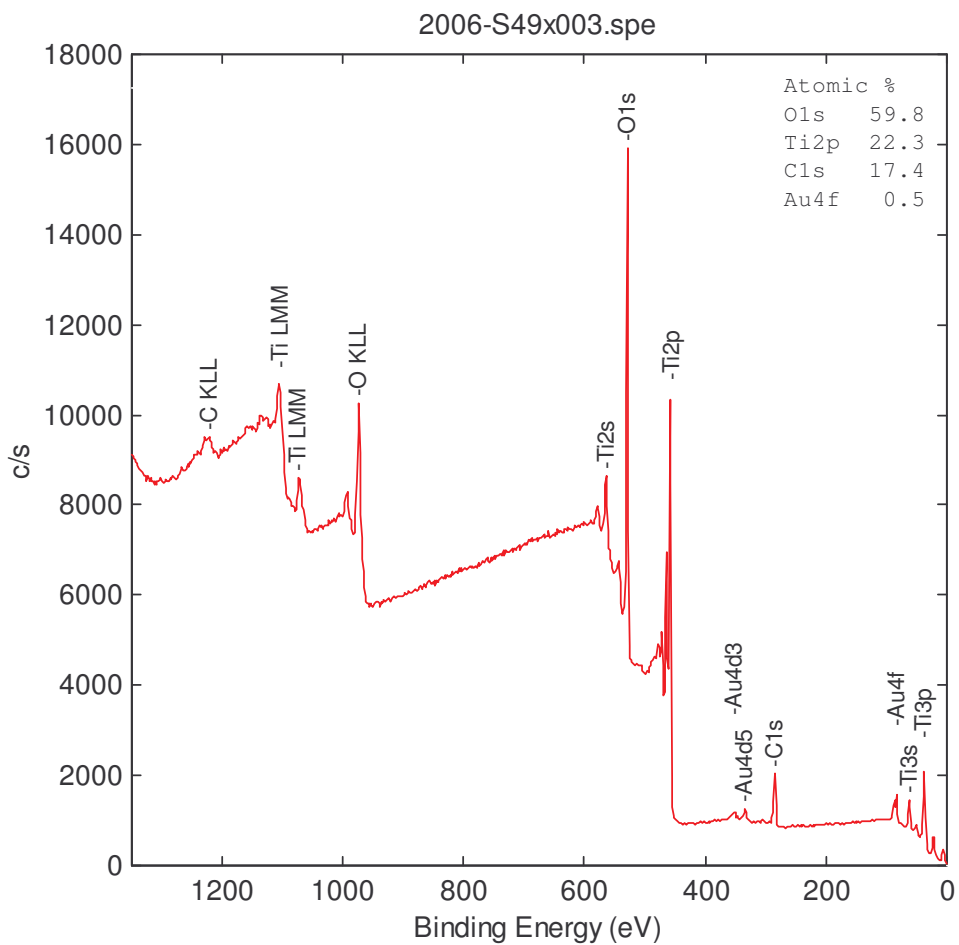
2006-S49x002.spe: Wits CSIR-NML
 2006 Mar 17 Al mono 17.9 W 100.0 μ 45.0° 2.6521e+002 max 24.83 min
 Au4f/Area1: Sample 1/1 (Shft)



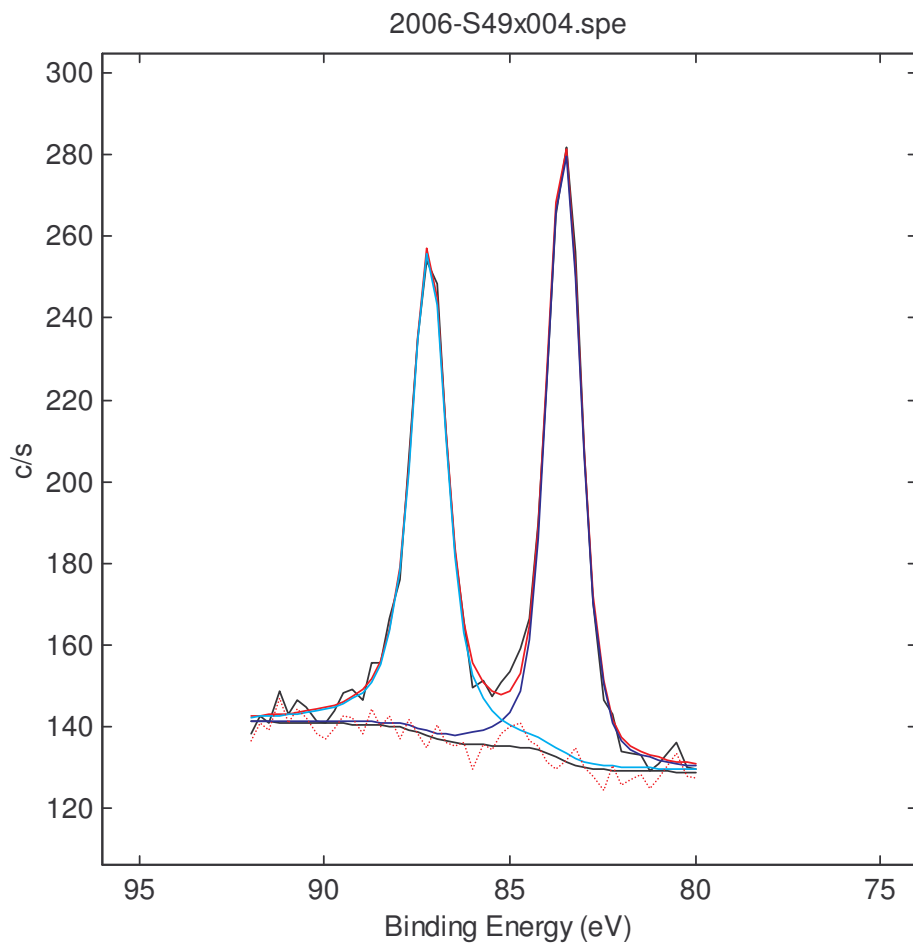
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.52	0.00	1.18	1.18	131	65	193	50.25	1.56
	2	87.19	3.67	1.24	1.24	109	30	191	49.75	

Au/0.1mol%PO₄³⁻-TiO₂

2006-S49x003.spe: Wits CSIR-NML
2006 Mar 17 Al mono 17.9 W 100.0 μ45.0° 1.5917e+004 max 88.41 min
Su/Area2: Sample 2/1



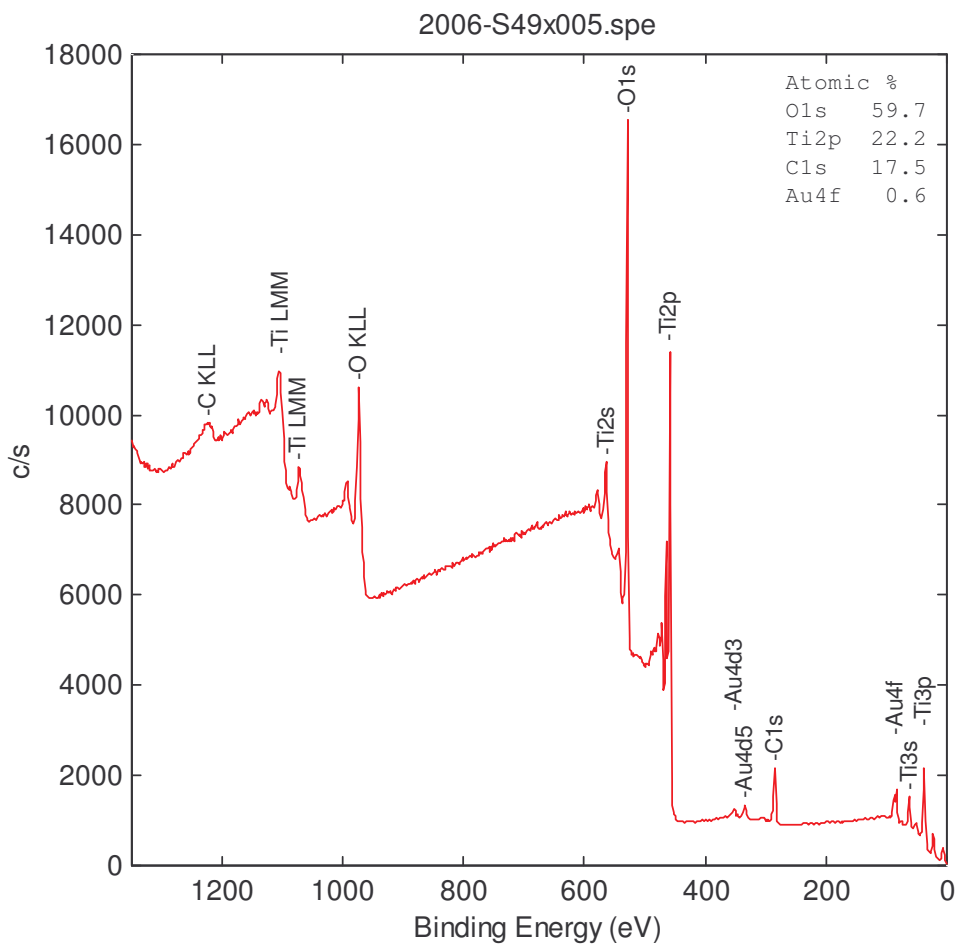
2006-S49x004.spe: Wits CSIR-NML
 2006 Mar 17 Al mono 17.9 W 100.0 μ 45.0° 2.8185e+002 max 24.83 min
 Au4f/Area2: Sample 2/1 (Shft)



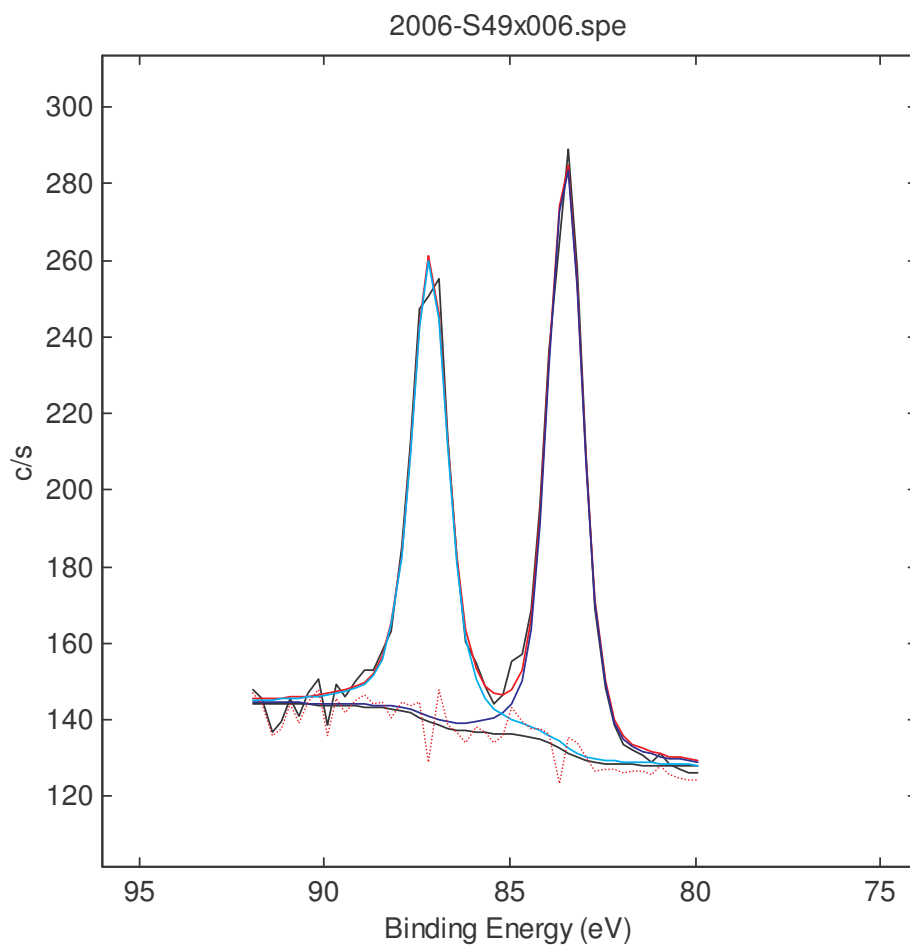
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.53	0.00	1.11	1.11	149	59	210	51.90	1.15
	2	87.19	3.66	1.15	1.15	119	30	194	48.10	

Au/0.2mol%PO₄³⁻-TiO₂

2006-S49x005.spe: Wits CSIR-NML
2006 Mar 18 Al mono 17.9 W 100.0 μ 1.6536e+004 max 88.41 min
Su/Area3: Sample 3/1



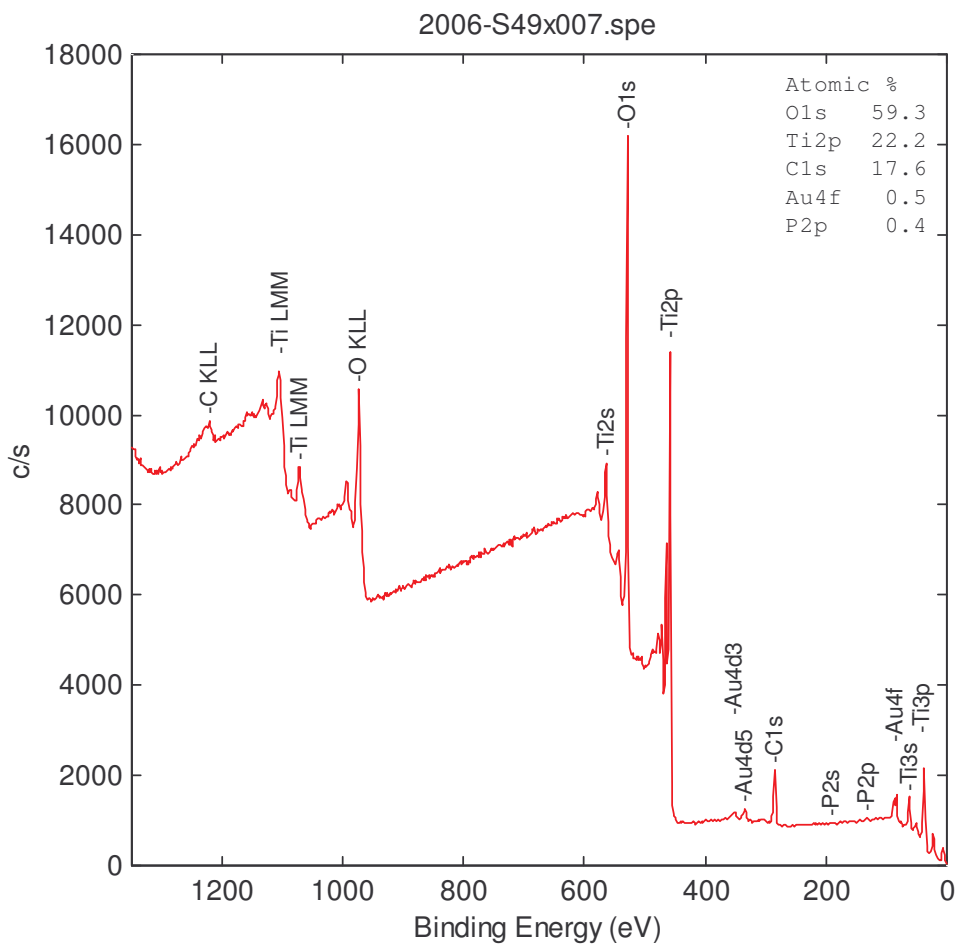
2006-S49x006.spe: Wits
 2006 Mar 18 Al mono 17.9 W 100.0 μ 2.8903e+002 max 24.83 min
 Au4f/Area3: Sample 3/1 (Shft)



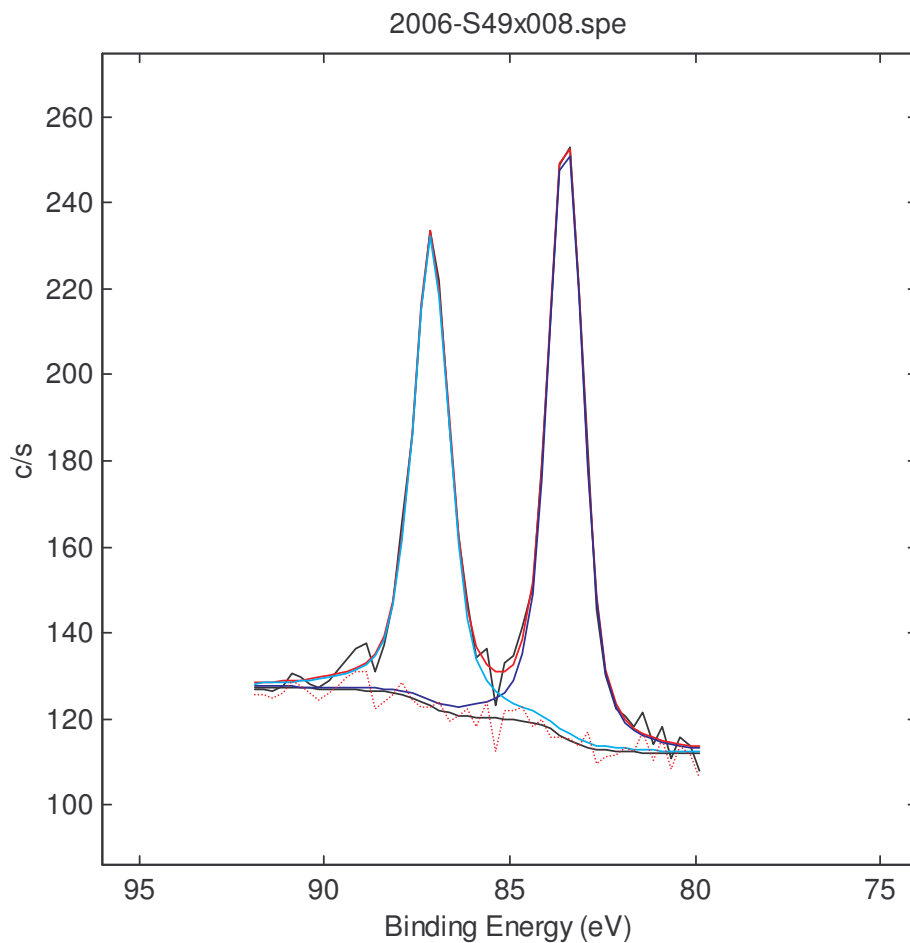
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.49	0.00	1.12	1.12	154	65	214	53.64	1.95
	2	87.16	3.67	1.17	1.17	120	50	185	46.36	

Au/0.4mol%PO₄³⁻-TiO₂

2006-S49x007.spe: Wits CSIR-NML
2006 Mar 18 Al mono 17.9 W 100.0 μ45.0° 1.6195e+004 max 88.41 min
Su/Area4: Sample 4/1



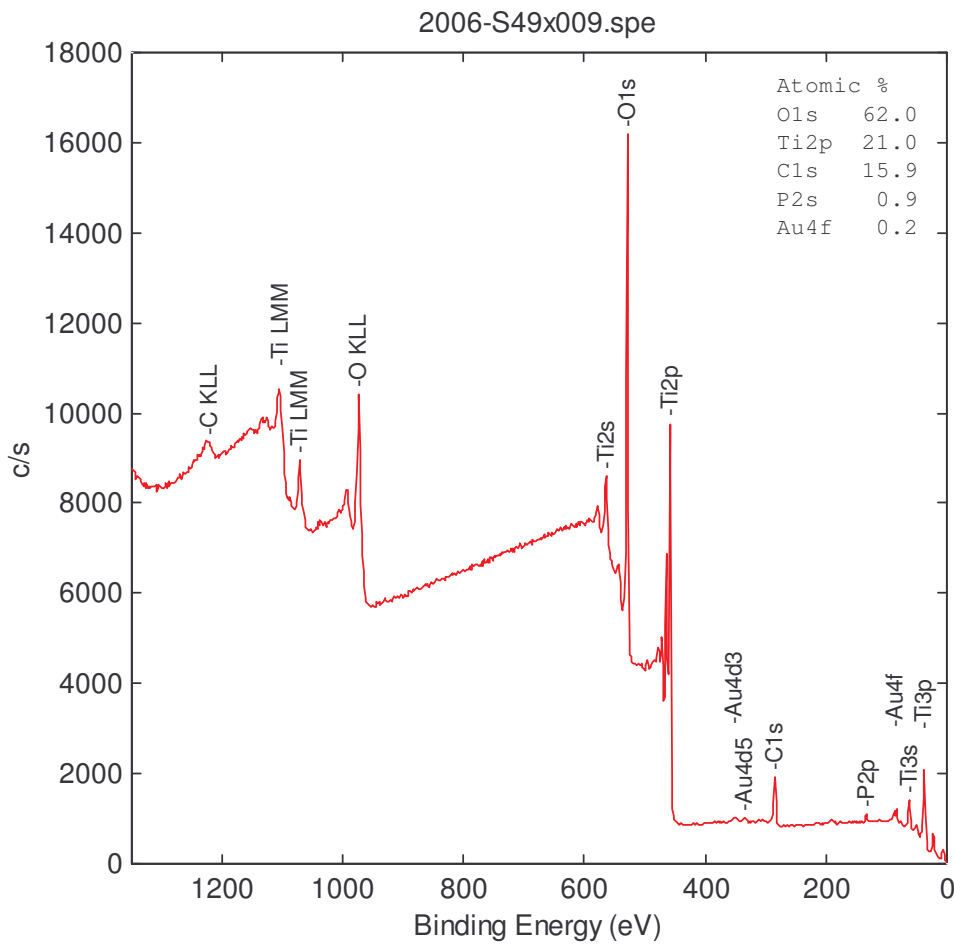
2006-S49x008.spe: Wits
 2006 Mar 18 Al mono 17.9 W 100.0 μ 2.5293e+002 max 24.83 min
 Au4f/Area4: Sample 4/1 (Shft)



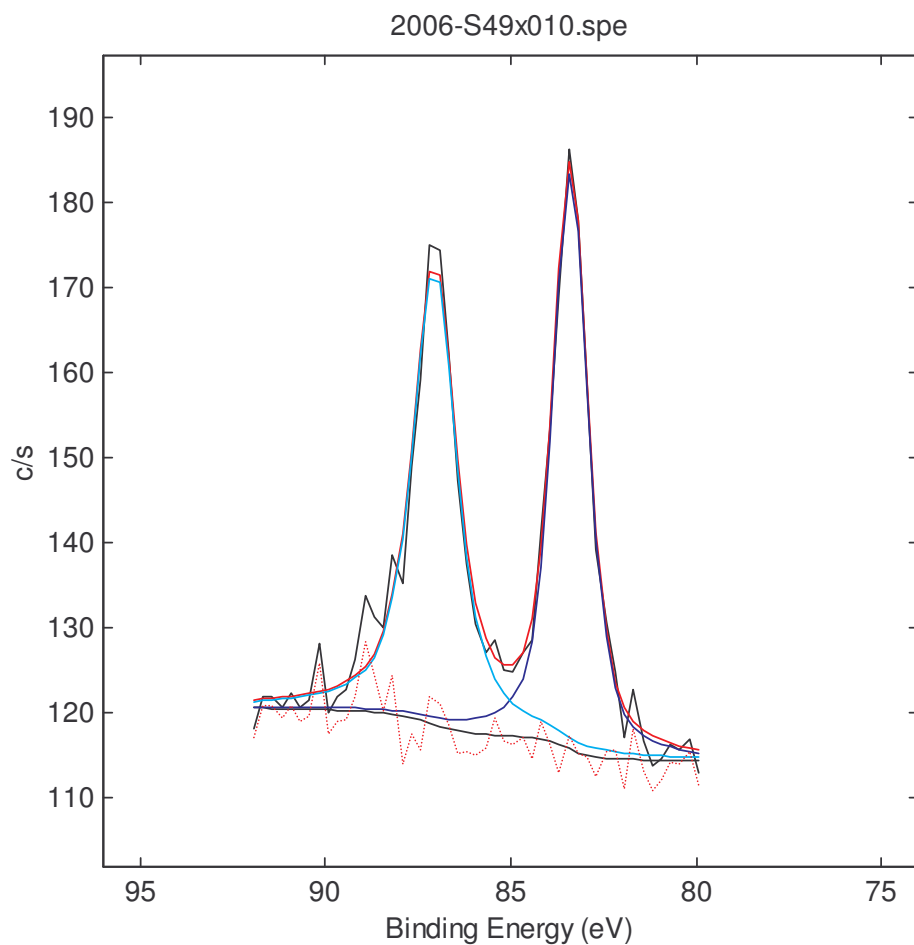
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.49	0.00	1.13	1.13	139	60	200	53.90	1.17
	2	87.12	3.63	1.16	1.16	109	44	171	46.10	

Au/2.5mol%PO₄³⁻-TiO₂

2006-S49x009.spe: Wits CSIR-NML
2006 Mar 18 Al mono 17.9 W 100.0 μ 1.6177e+004 max 88.41 min
Su/Area5: Sample 5/1



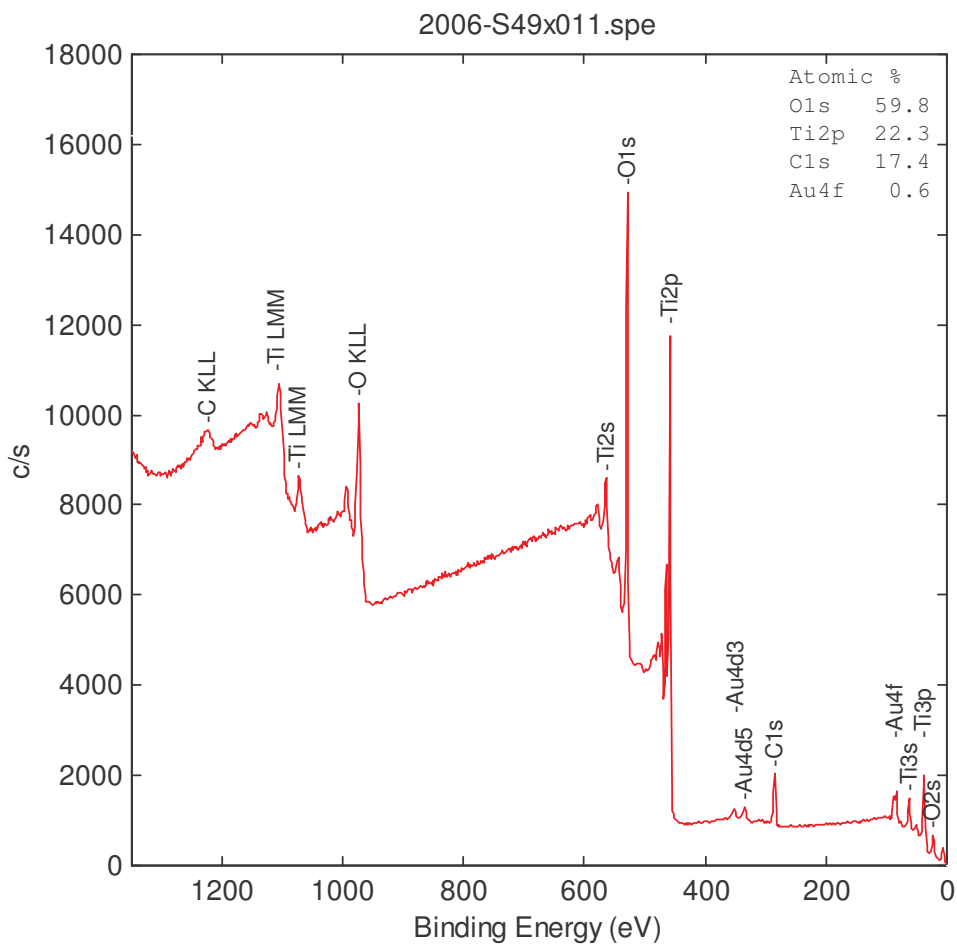
2006-S49x010.spe: Wits CSIR-NML
 2006 Mar 18 Al mono 17.9 W 100.0 μ 45.0° 1.8627e+002 max 24.83 min
 Au4f/Area5: Sample 5/1 (Shft)



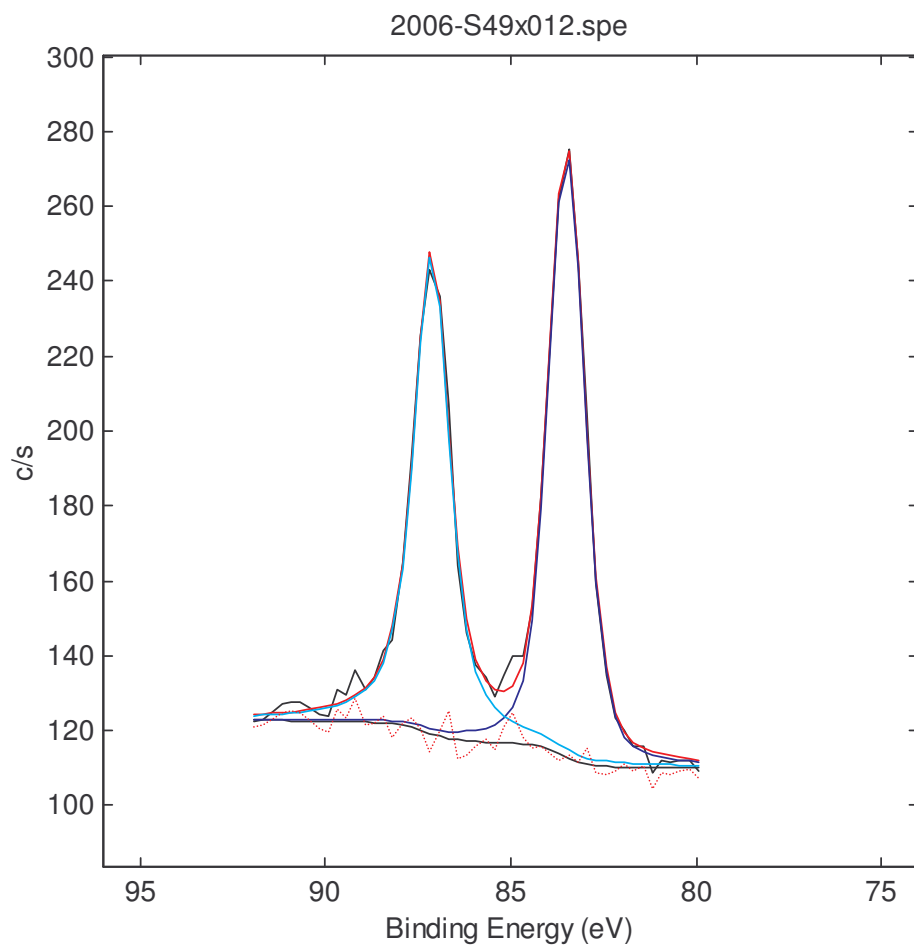
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.38	0.00	1.14	1.14	68	45	104	48.79	1.17
	2	87.06	3.68	1.43	1.43	54	30	109	51.21	

Au/0.05mol%SO₄²⁻-TiO₂

2006-S49x011.spe: Wits CSIR-NML
2006 Mar 18 Al mono 17.9 W 100.0 μ45.0° 1.4944e+004 max 88.41 min
Su/Area6: Sample 6/1



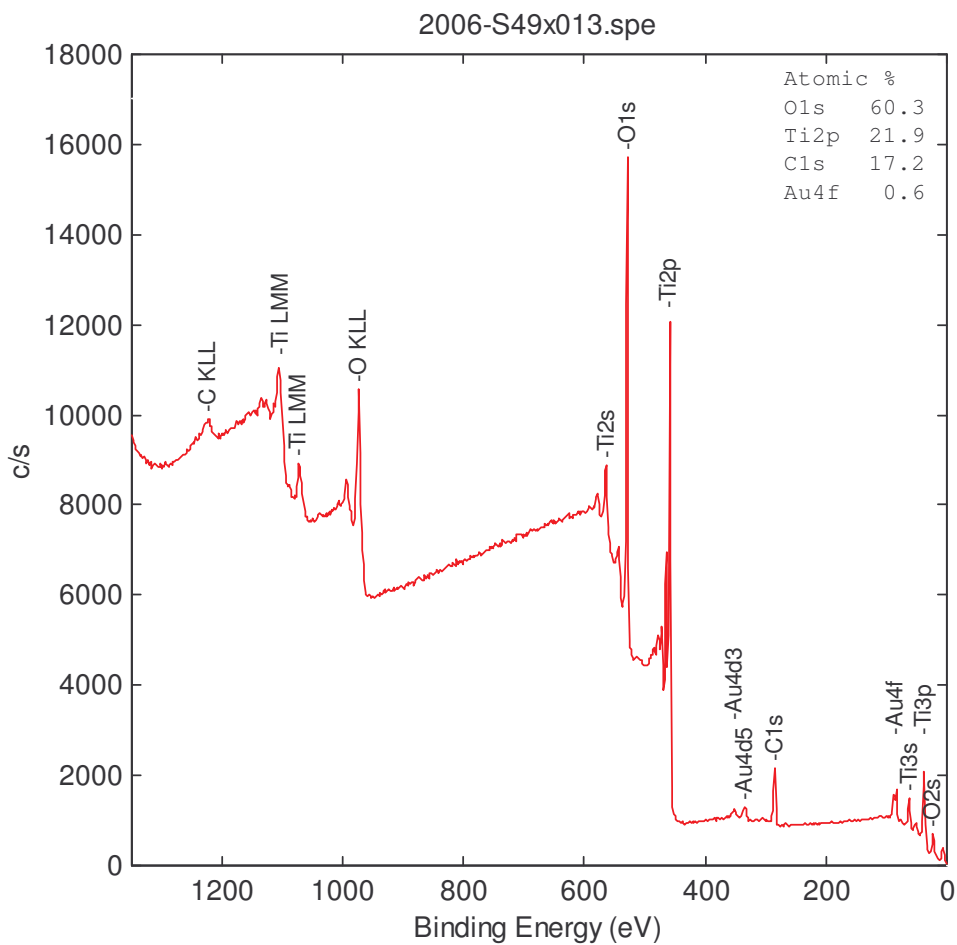
2006-S49x012.spe: Wits
 2006 Mar 18 Al mono 17.9 W 100.0 μ 2.7533e+002 max 18.35 min
 Au4f/Area6: Sample 6/1 (Shft)



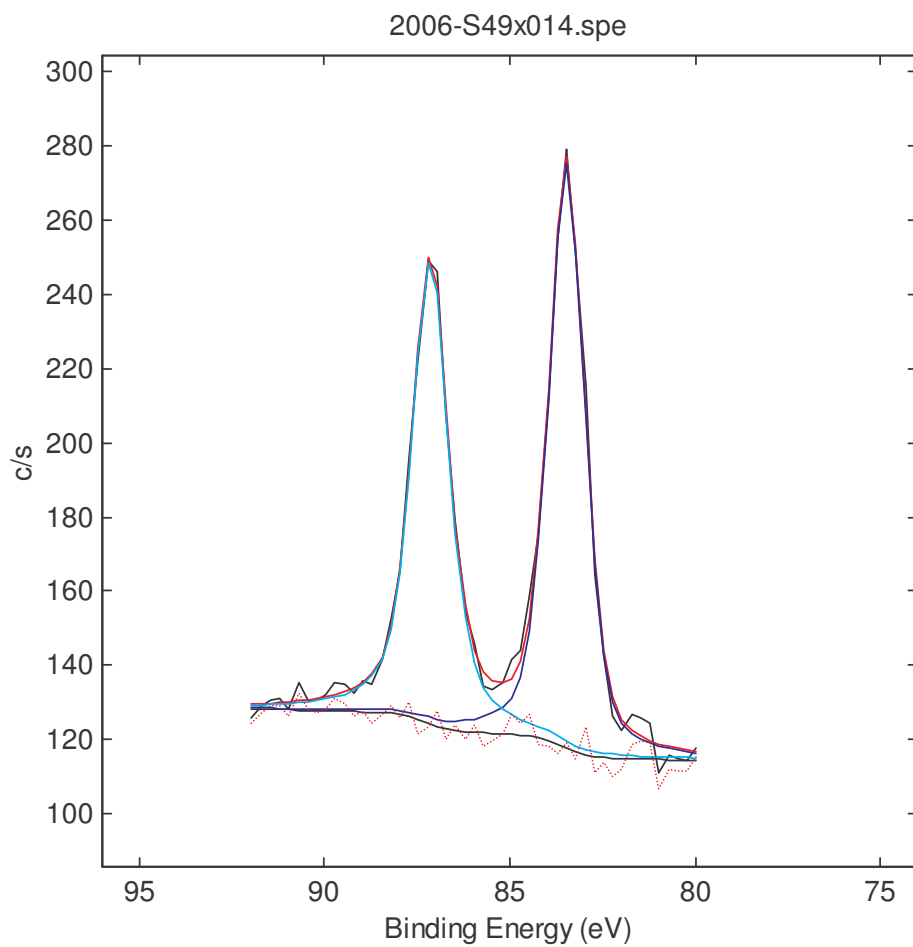
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.49	0.00	1.18	1.18	161	65	236	52.87	0.93
	2	87.14	3.66	1.16	1.16	128	30	211	47.13	

Au/0.1mol%SO₄²⁻-TiO₂

2006-S49x013.spe: Wits CSIR-NML
2006 Mar 18 Al mono 17.9 W 100.0 μ 1.5727e+004 max 88.41 min
Su/Area7: Sample 7/1



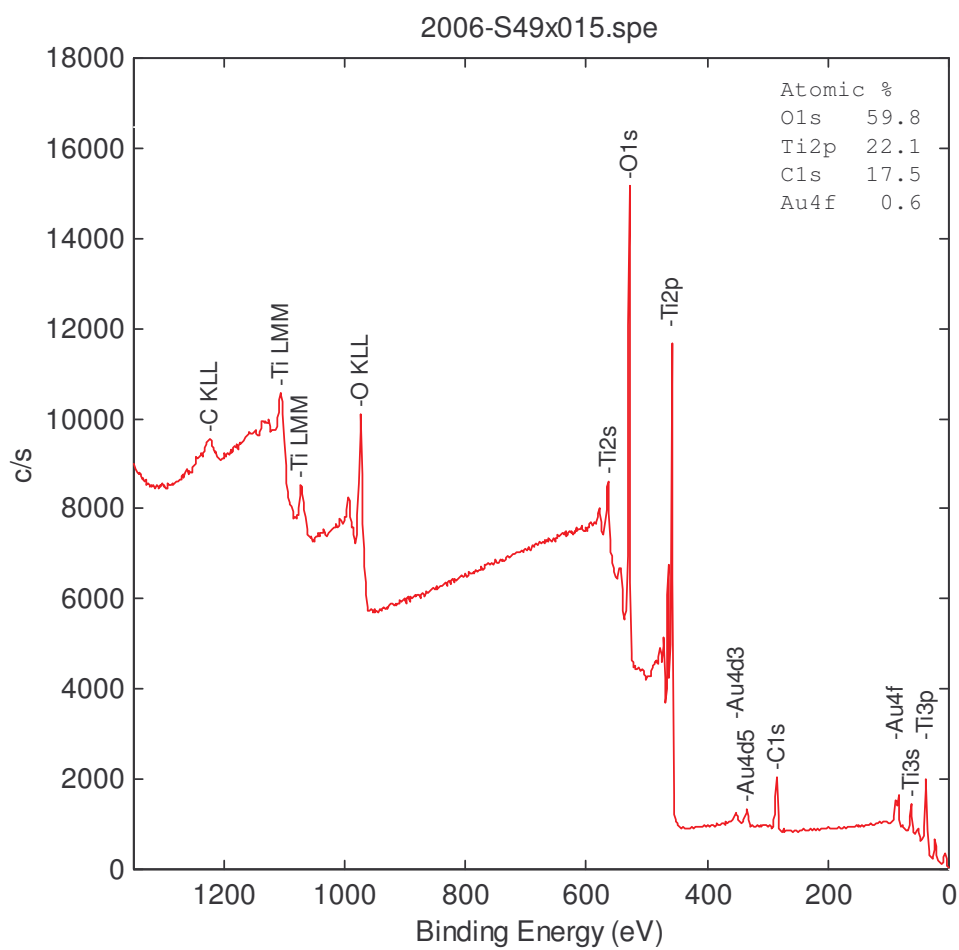
2006-S49x014.spe: Wits
 2006 Mar 18 Al mono 17.9 W 100.0 μ 2.7908e+002 max 18.35 min
 Au4f/Area7: Sample 7/1 (Shft)



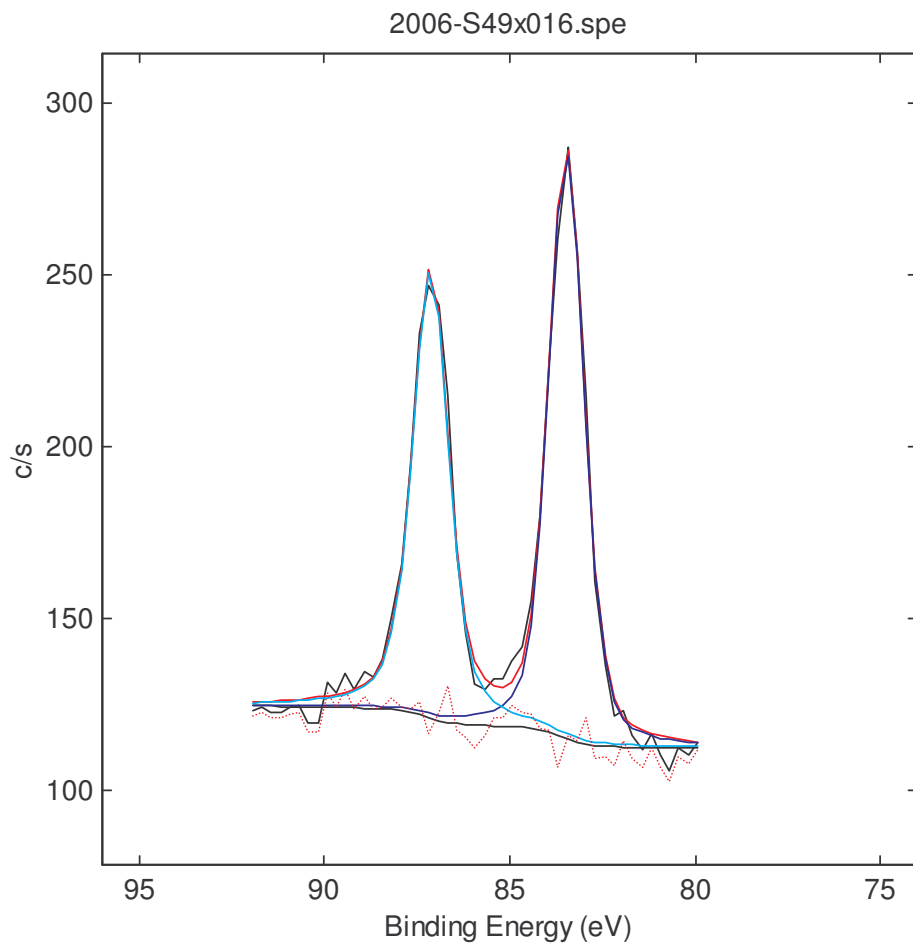
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.47	0.00	1.14	1.14	158	55	233	53.40	1.15
	2	87.14	3.67	1.18	1.18	126	39	203	46.60	

Au/0.2mol%SO₄²⁻-TiO₂

2006-S49x015.spe: Wits CSIR-NML
2006 Mar 18 Al mono 17.9 W 100.0 μ45.0° 1.5182e+004 max 88.41 min
Su/Area8: Sample 8/1



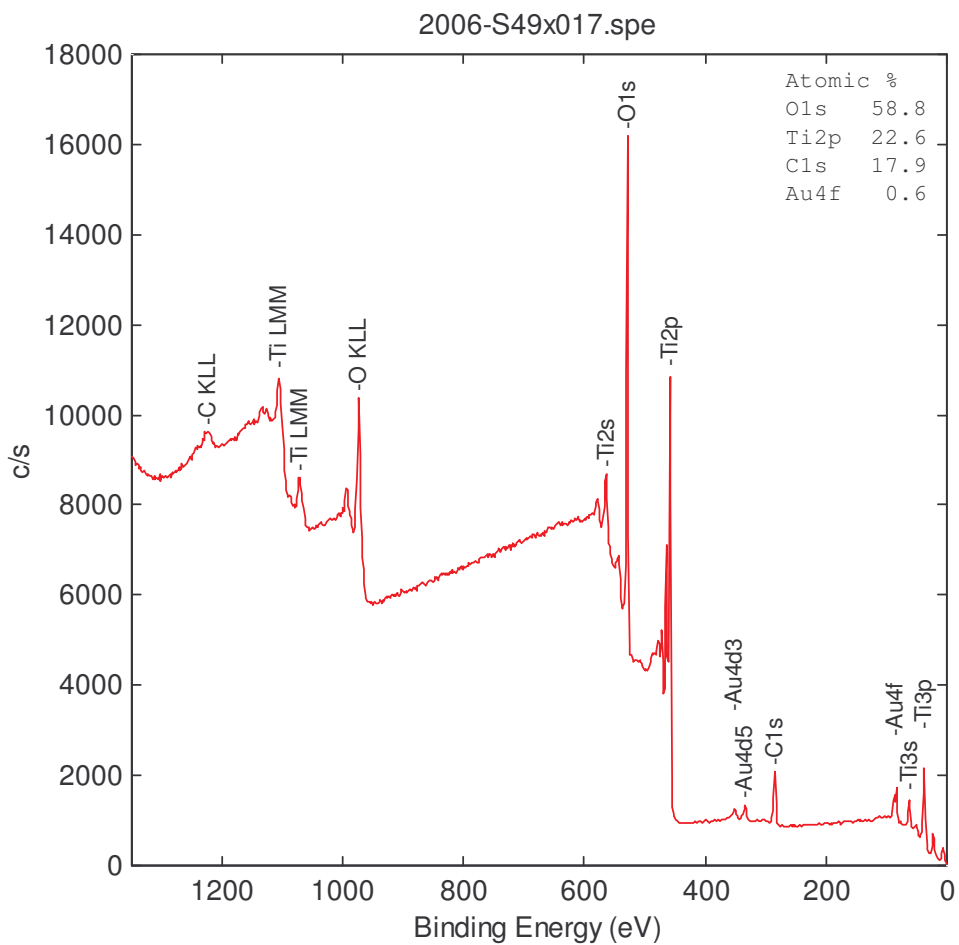
2006-S49x016.spe: Wits
 2006 Mar 19 Al mono 17.9 W 100.0 μ 2.8732e+002 max 18.35 min
 Au4f/Area8: Sample 8/1 (Shft)



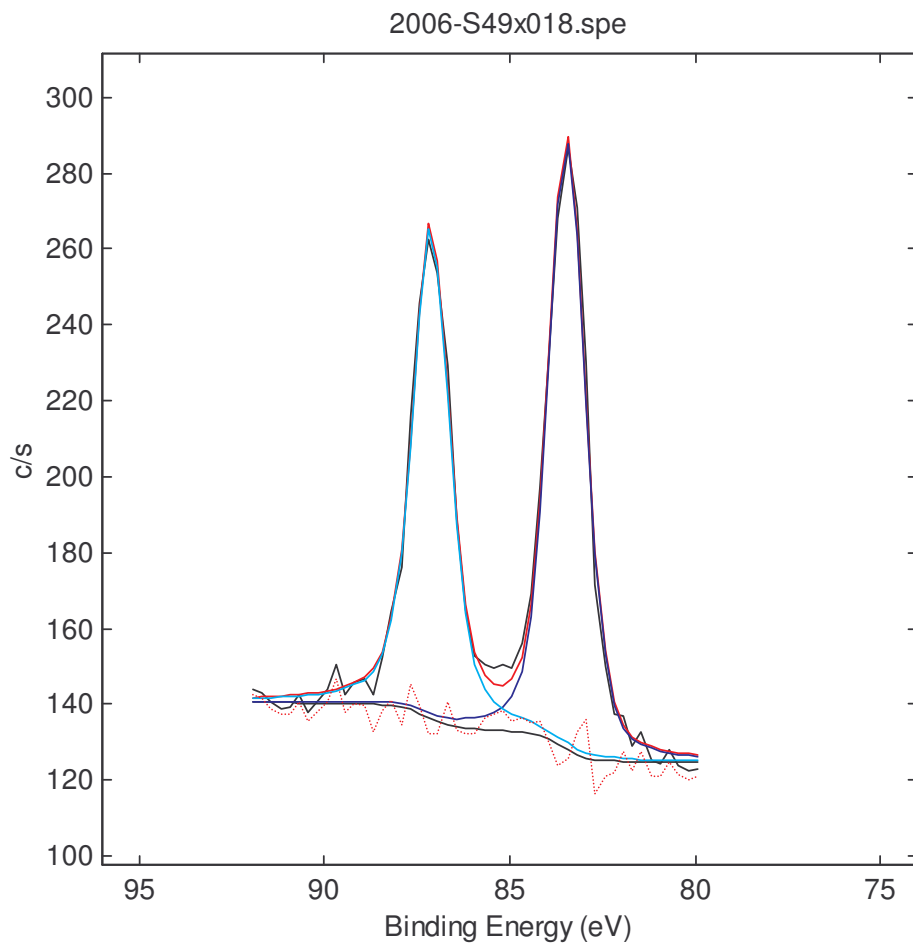
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.47	0.00	1.14	1.14	170	65	241	54.66	2.12
	2	87.14	3.68	1.17	1.17	130	50	200	45.34	

Au/0.4mol%SO₄²⁻-TiO₂

2006-S49x017.spe: Wits CSIR-NML
2006 Mar 19 Al mono 17.9 W 100.0 μ 1.6173e+004 max 88.41 min
Su/Area9: Sample 9/1



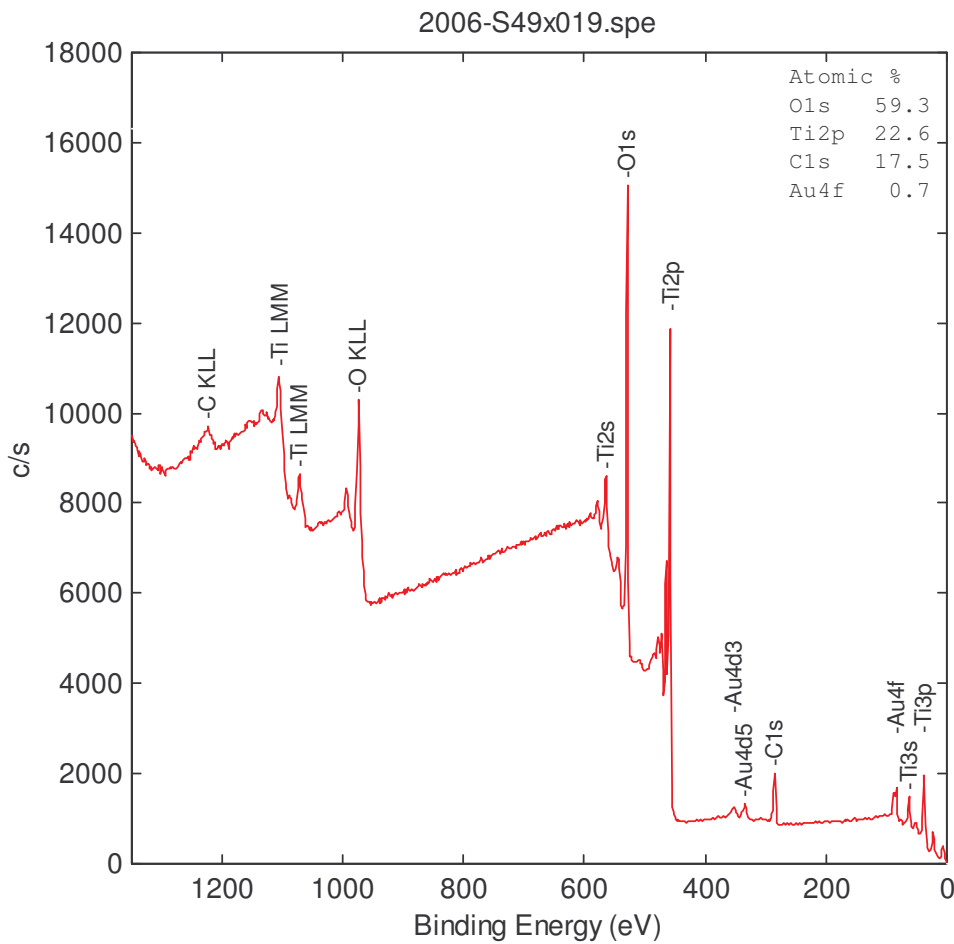
2006-S49x018.spe: Wits CSIR-NML
 2006 Mar 19 Al mono 17.9 W 100.0 μ 45.0° 2.8688e+002 max 18.35 min
 Au4f/Area9: Sample 9/1 (Shft)



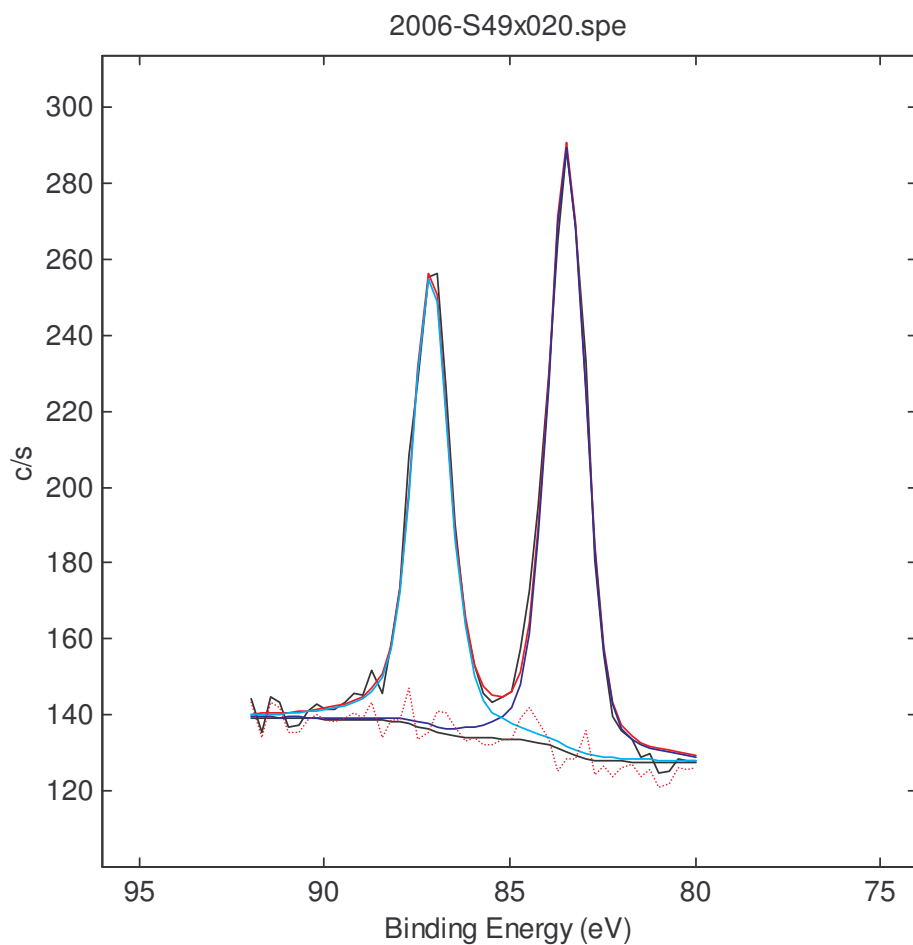
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.46	0.00	1.19	1.19	160	65	237	53.73	1.47
	2	87.13	3.67	1.19	1.19	130	50	204	46.27	

Au/2.5mol%SO₄²⁻-TiO₂

2006-S49x019.spe: Wits CSIR-NML
2006 Mar 19 Al mono 17.9 W 100.0 μ45.0°187.85 eV1.5054e+004 max 88.41 min
Su/Area10: Sample 10/1



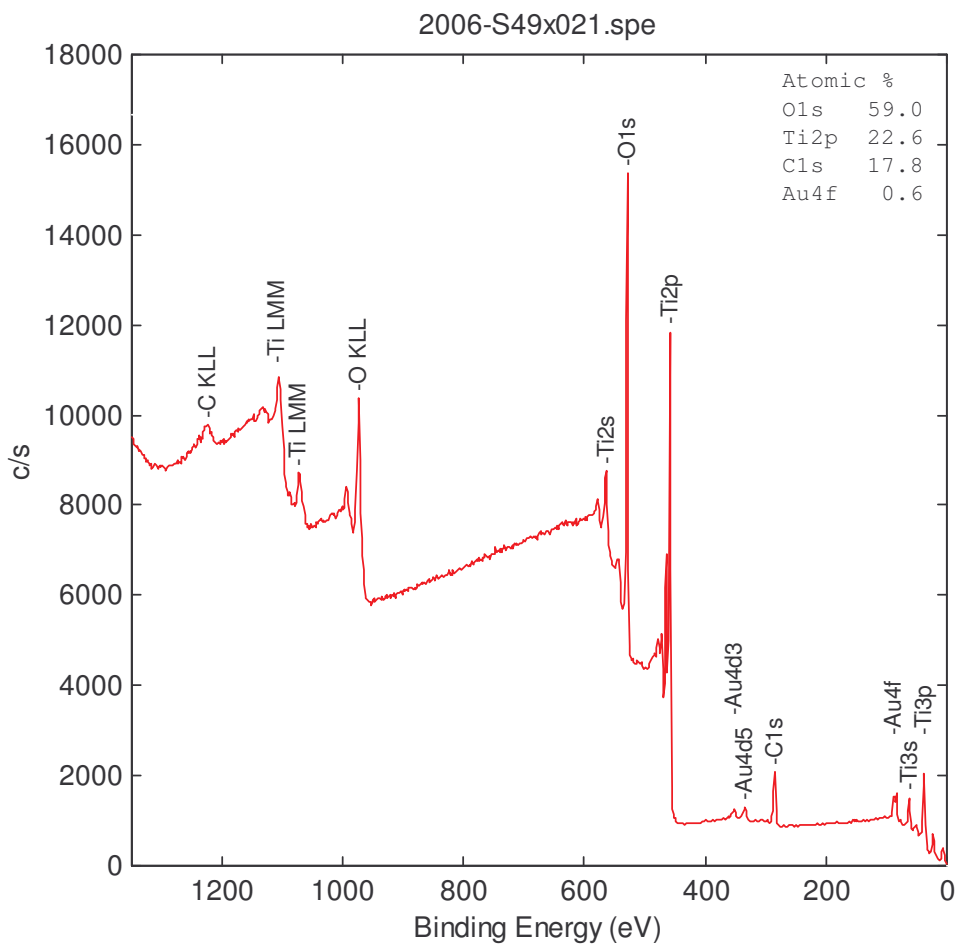
2006-S49x020.spe: Wits CSIR-NML
 2006 Mar 19 Al mono 17.9 W 100.0 μ 45.0° 2.8887e+002 max 18.35 min
 Au4f/Area10: Sample 10/1 (Shft)



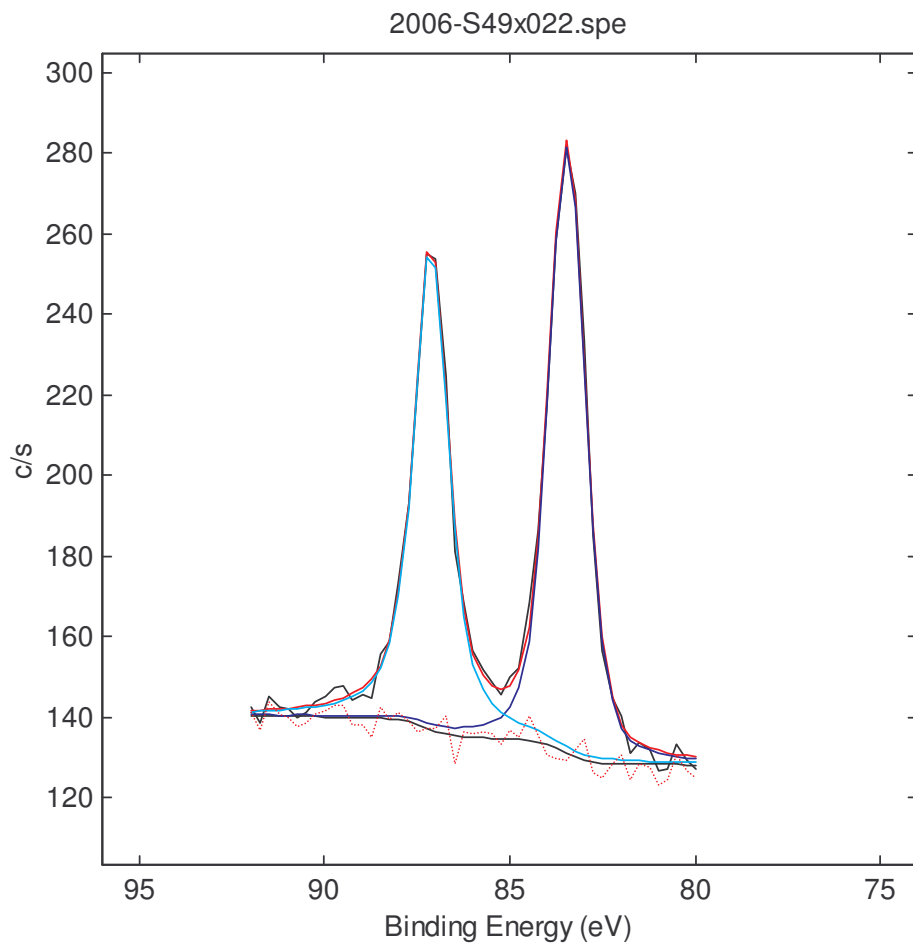
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.46	0.00	1.18	1.18	159	65	233	55.50	1.36
	2	87.12	3.66	1.17	1.17	121	50	187	44.50	

Au/0.05mol%K⁺-TiO₂

2006-S49x021.spe: Wits CSIR-NML
2006 Mar 19 Al mono 17.9 W 100.0 μ 1.5374e+004 max 88.41 min
Su/Area11: Sample 11/1



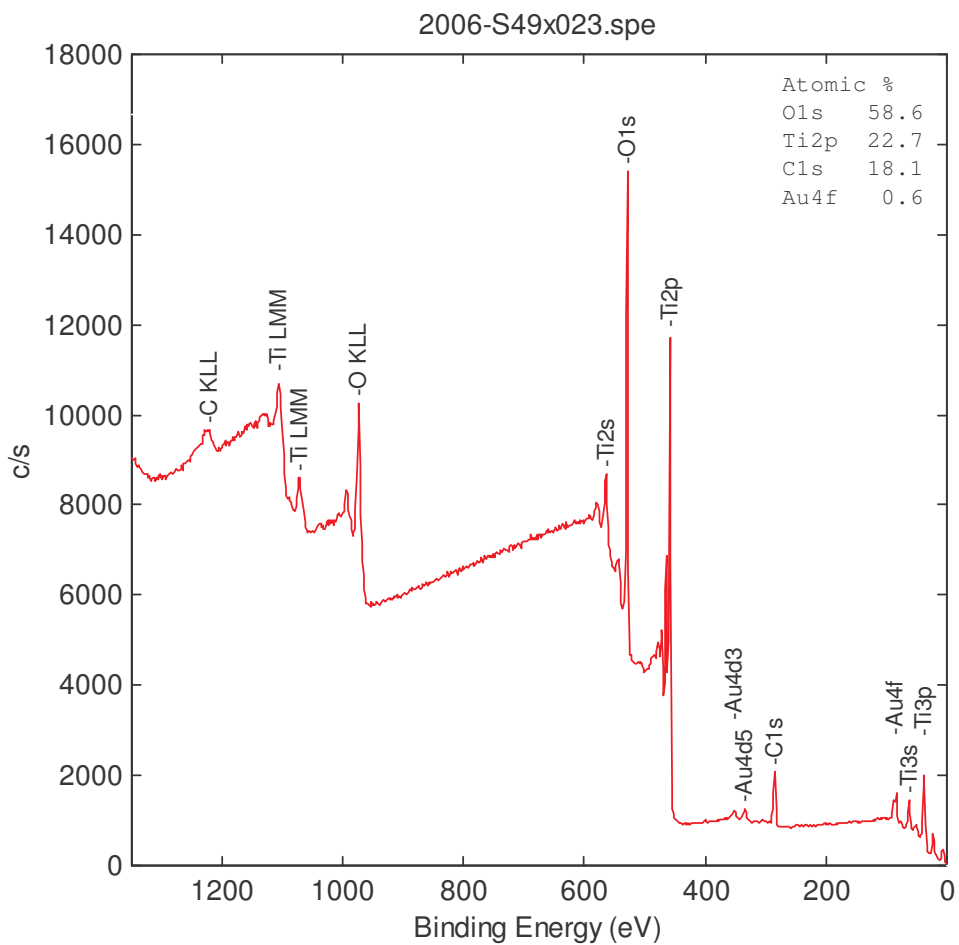
2006-S49x022.spe: Wits CSIR-NML
 2006 Mar 19 Al mono 17.9 W 100.0 μ 45.0° 2.8152e+002 max 25.91 min
 Au4f/Area11: Sample 11/1 (Shft)



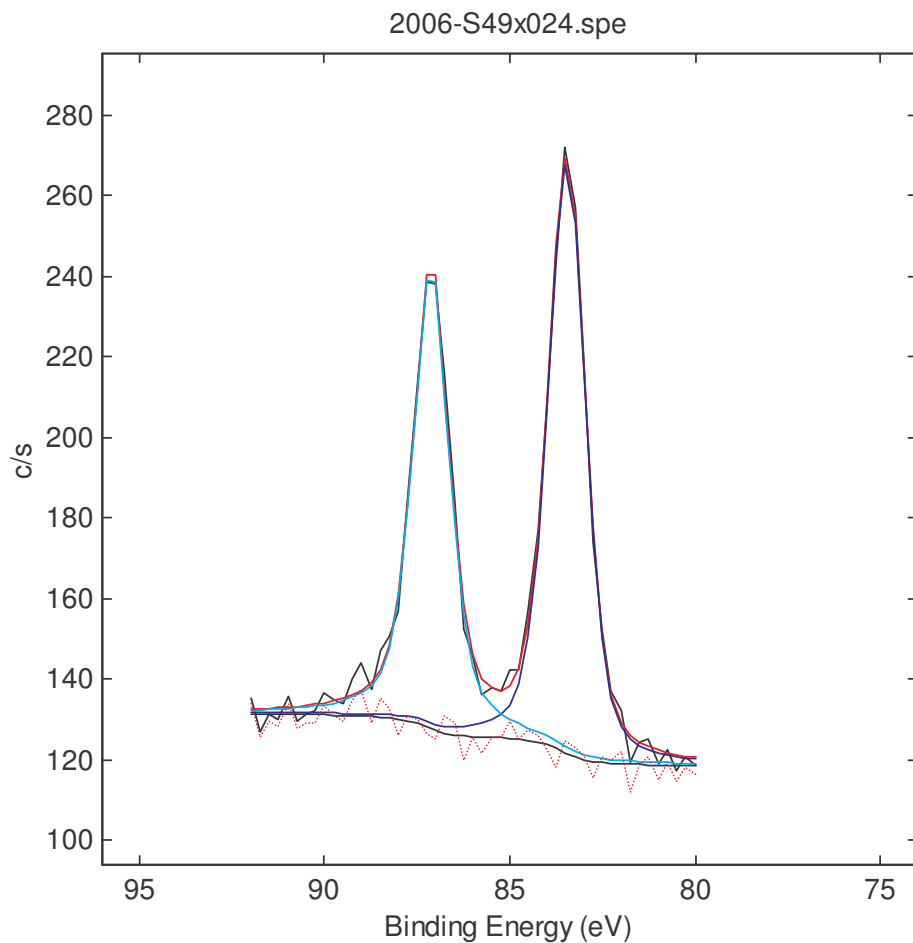
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.45	0.00	1.19	1.19	151	65	222	53.95	1.09
	2	87.13	3.67	1.10	1.10	121	30	189	46.05	

Au/0.1mol%K⁺-TiO₂

2006-S49x023.spe: Wits CSIR-NML
2006 Mar 19 Al mono 17.9 W 100.0 μ45.0° 1.5387e+004 max 88.41 min
Su/Area12: Sample 12/1



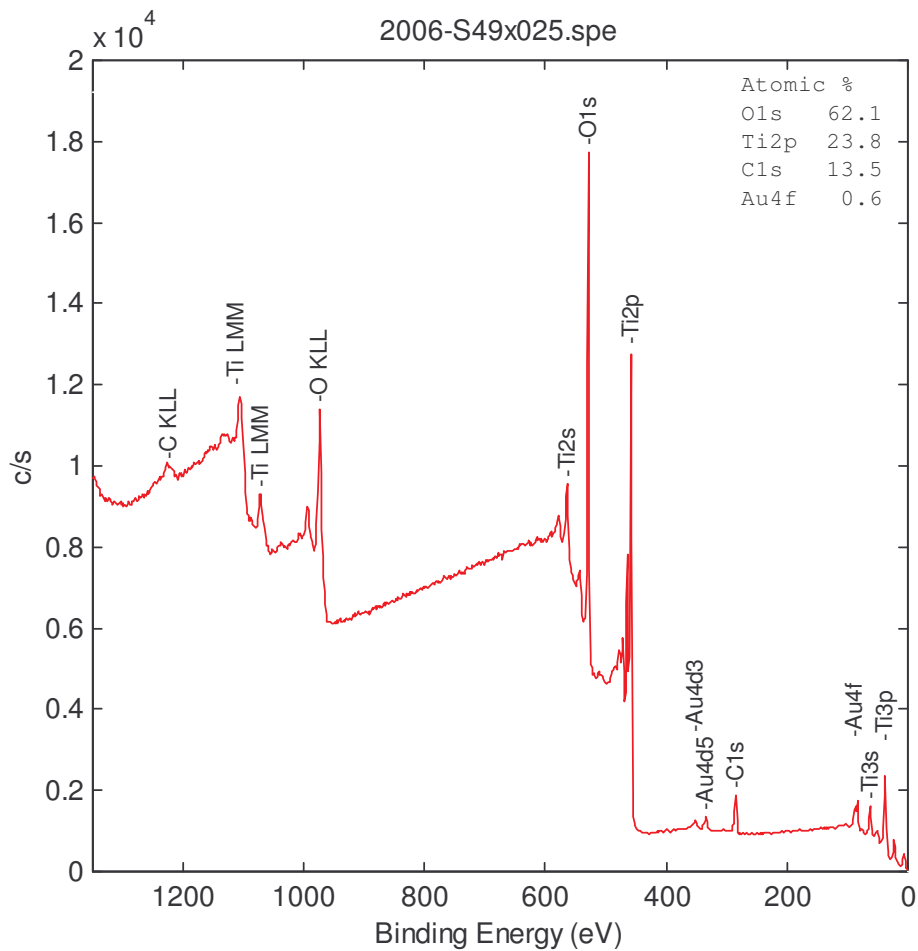
2006-S49x024.spe: Wits
 2006 Mar 19 Al mono 17.9 W 100.0 μ 2.7204e+002 max 25.91 min
 Au4f/Area12: Sample 12/1 (Shft)



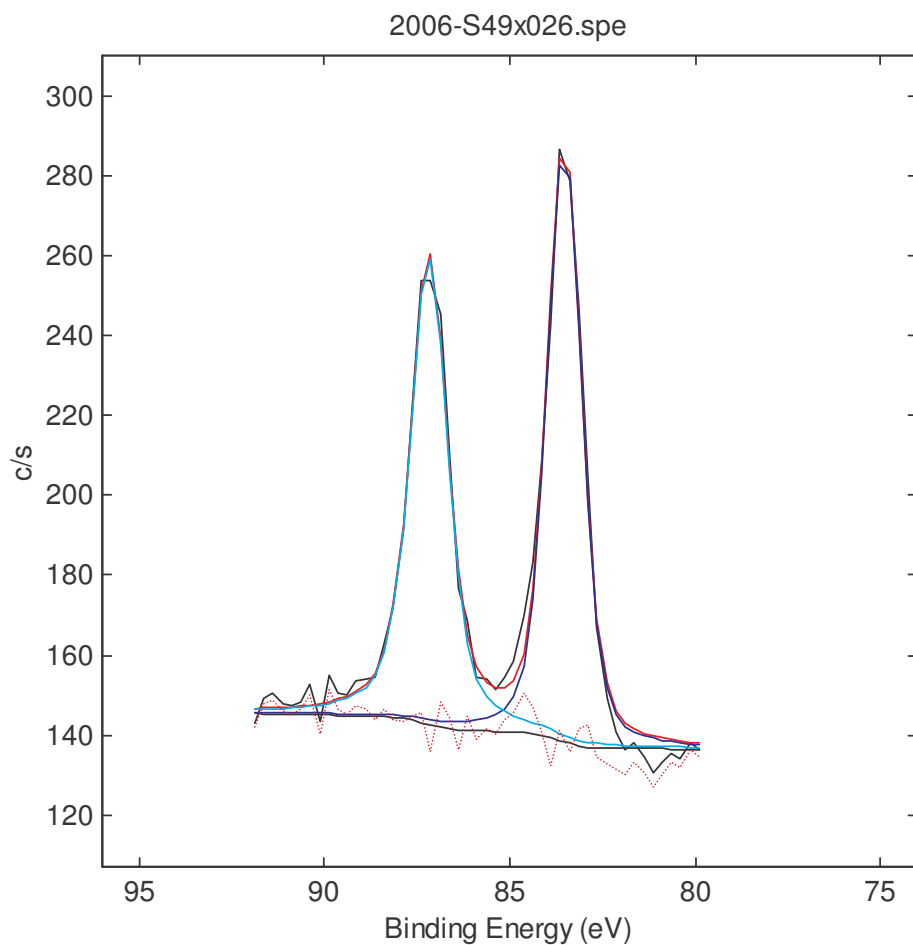
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.47	0.00	1.20	1.20	146	63	221	54.96	1.49
	2	87.12	3.66	1.14	1.14	116	41	181	45.04	

Au/0.2mol%K⁺-TiO₂

2006-S49x025.spe: Wits CSIR-NML
2006 Mar 21 Al mono 17.9 W 100.0 μ 45.0° 1.7732e+004 max 88.41 min
Su/Area1: Sample 13/1



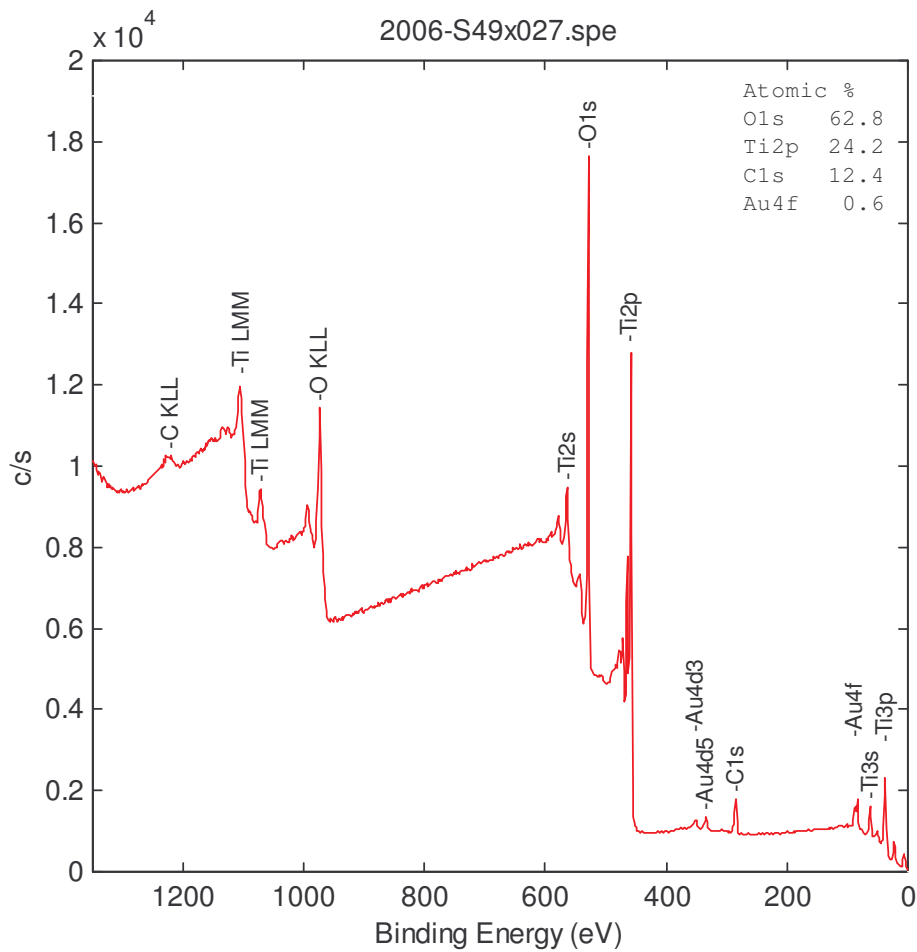
2006-S49x026.spe: Wits CSIR-NML
 2006 Mar 21 Al mono 17.9 W 100.0 μ 45.0° 2.8663e+002 max 35.63 min
 Au4f/Area1: Sample 13/1 (Shft)



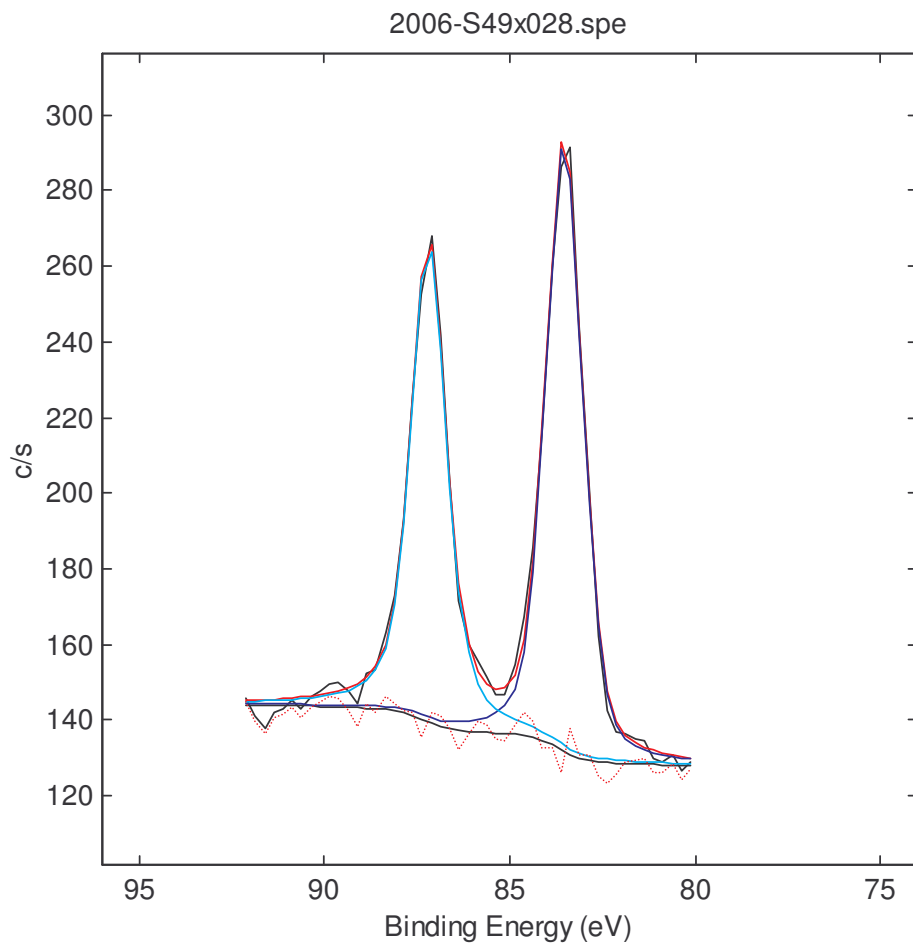
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.53	0.00	1.11	1.11	148	65	205	52.21	3.41
	2	87.19	3.66	1.19	1.19	117	45	188	47.79	

Au/0.4mol%K⁺-TiO₂

2006-S49x027.spe: Wits CSIR-NML
2006 Mar 21 Al mono 17.9 W 100.0 μ 1.7654e+004 max 88.41 min
Su/Area2: Sample 14/1



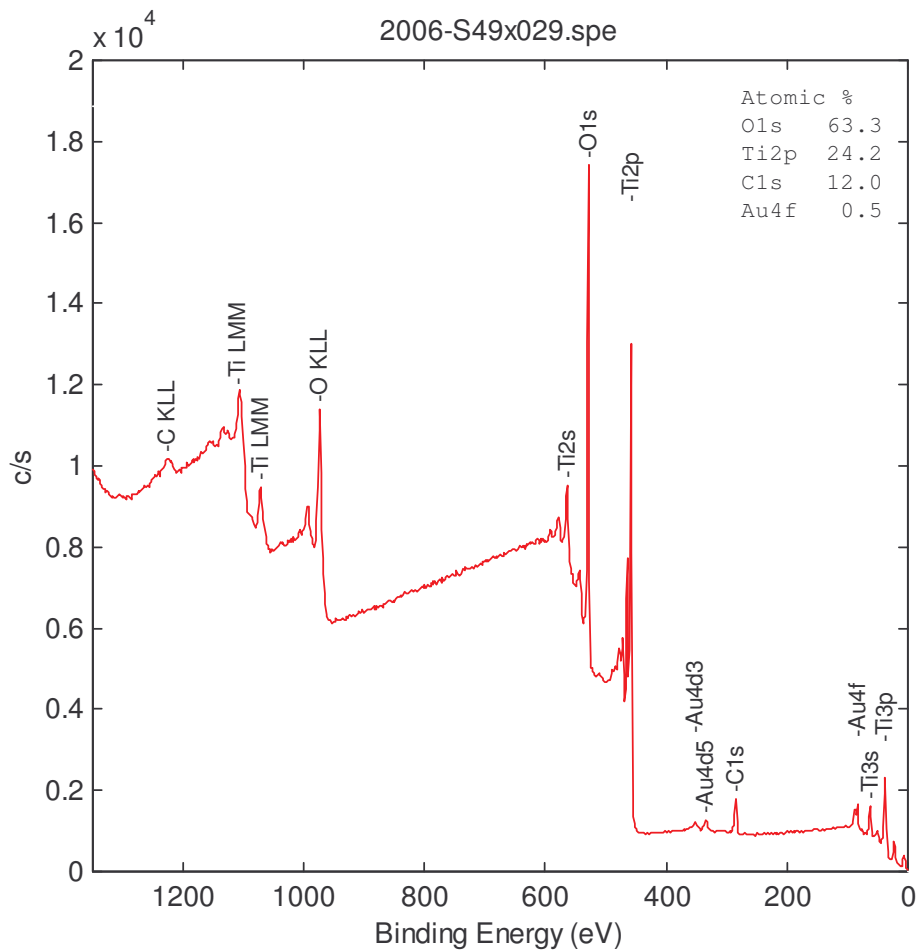
2006-S49x028.spe: Wits CSIR-NML
 2006 Mar 21 Al mono 17.9 W 100.0 μ 45.0° 2.9152e+002 max 35.63 min
 Au4f/Area2: Sample 14/1 (Shft)



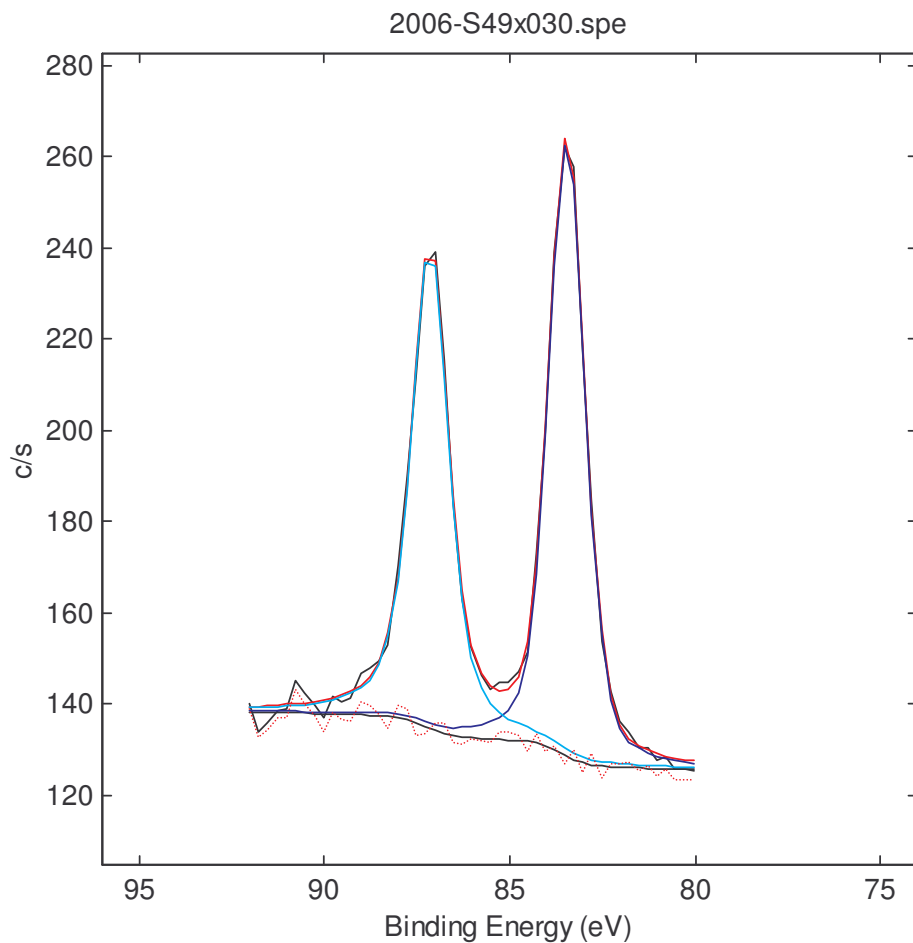
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.53	0.00	1.17	1.17	162	65	234	54.60	1.80
	2	87.19	3.66	1.14	1.14	126	44	195	45.40	

Au/2.5mol%K⁺-TiO₂

2006-S49x029.spe: Wits
2006 Mar 22 Al mono 17.9 W 100.0 μ 1.7416e+004 max 88.41 min
Su/Area3: Sample 15/1



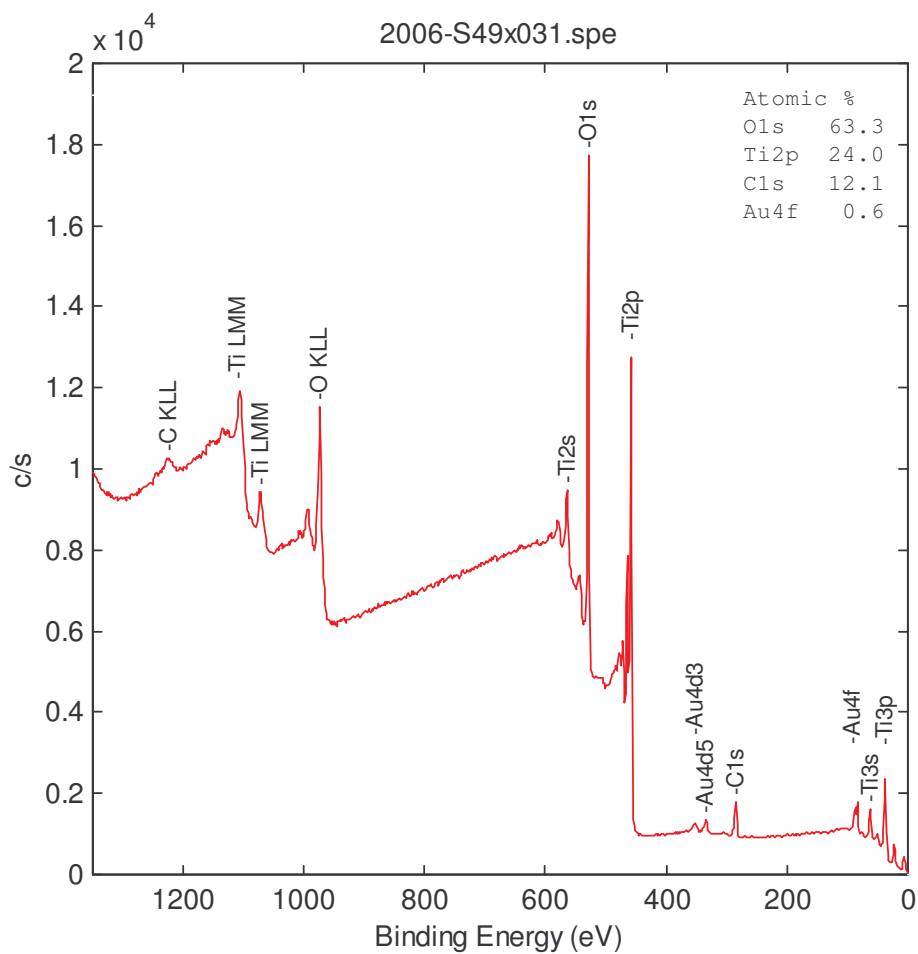
2006-S49x030.spe: Wits CSIR-NML
 2006 Mar 22 Al mono 17.9 W 100.0 μ 2.6204e+002 max 35.63 min
 Au4f/Area3: Sample 15/1 (Shft)



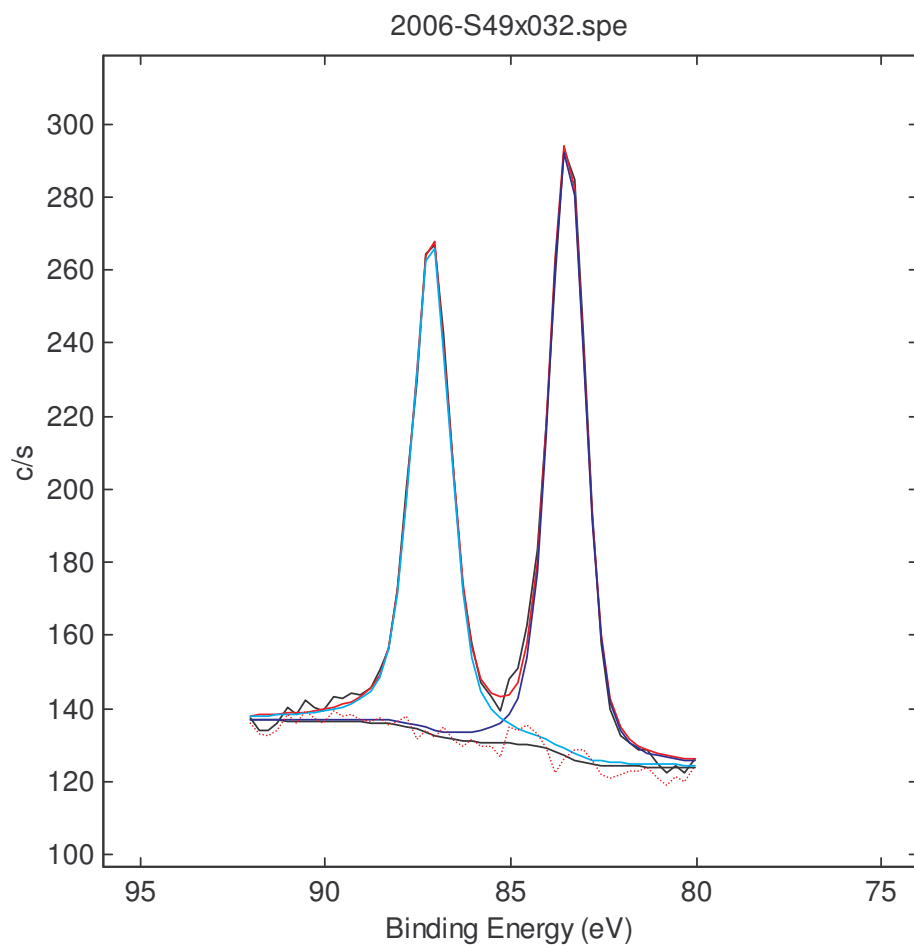
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.45	0.00	1.16	1.16	135	62	196	53.18	0.94
	2	87.16	3.70	1.20	1.20	106	41	173	46.82	

Au/0.05mol%Na⁺-TiO₂

2006-S49x031.spe: Wits
2006 Mar 22 Al mono 17.9 W 100.0 μ 1.7716e+004 max 88.41 min
Su/Area4: Sample 16/1



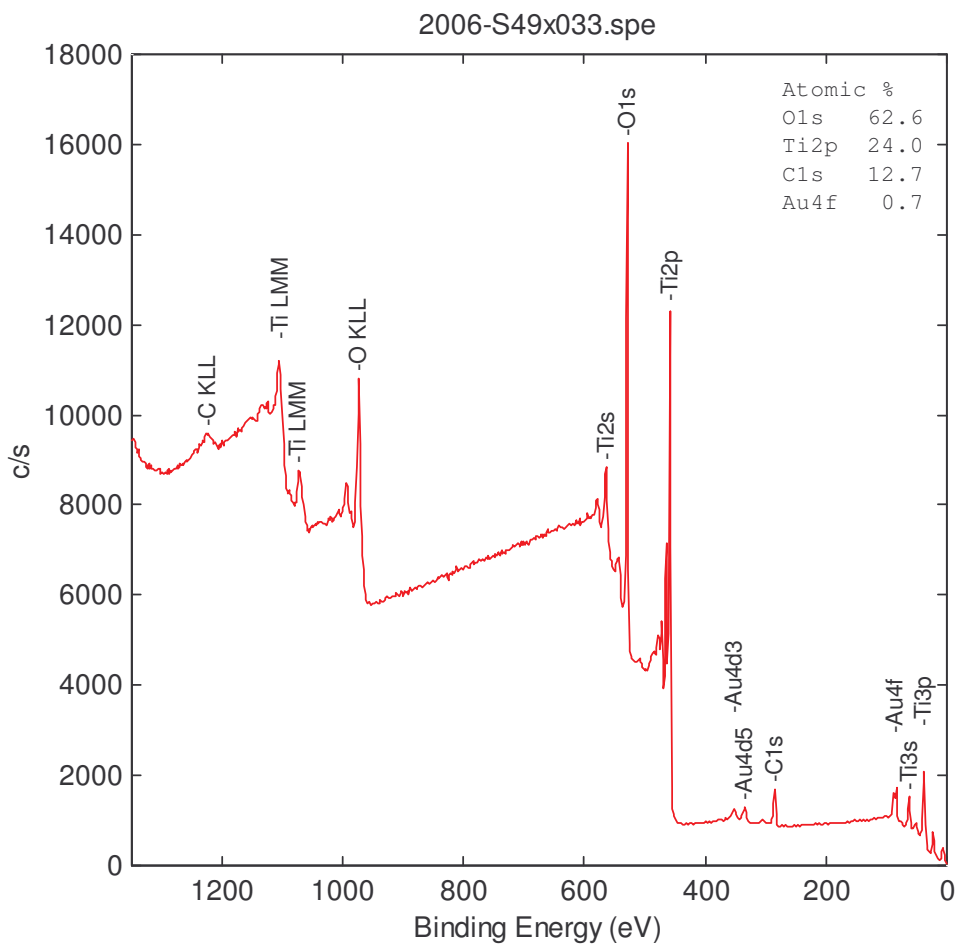
2006-S49x032.spe: Wits CSIR-NML
 2006 Mar 22 Al mono 17.9 W 100.0 μ 45.0° 2.9307e+002 max 35.63 min
 Au4f/Area4: Sample 16/1 (Shft)



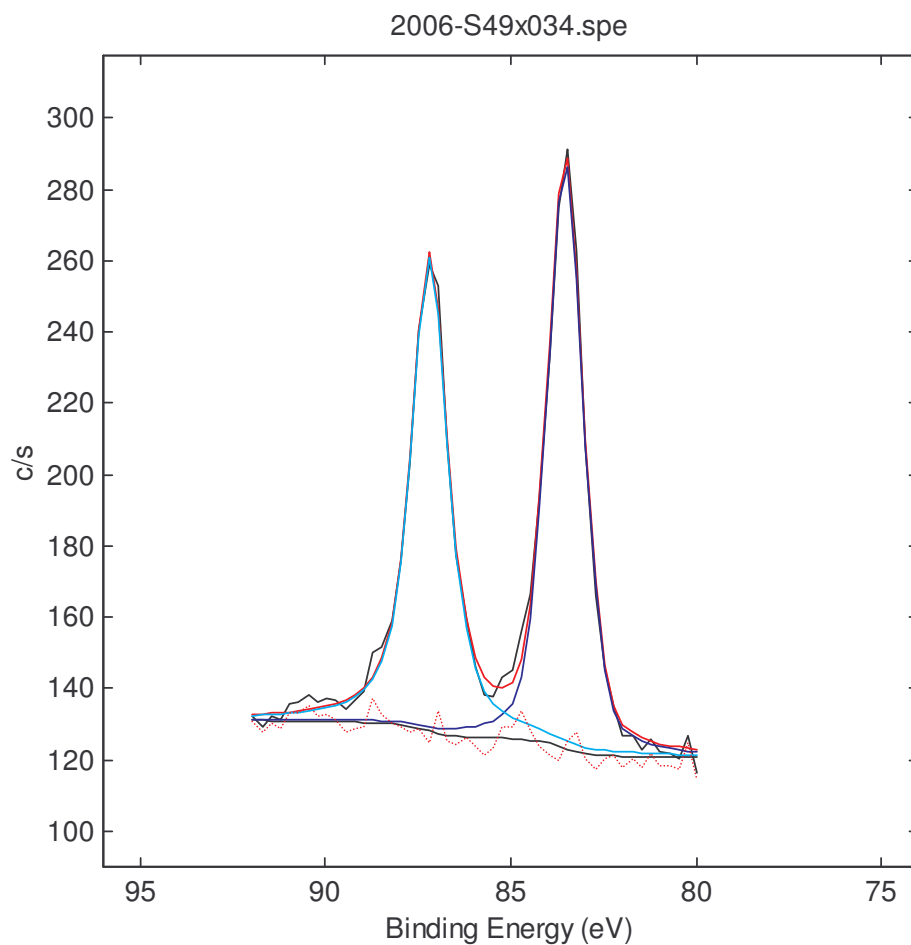
Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.48	0.00	1.17	1.17	167	65	241	52.53	1.33
	2	87.15	3.66	1.21	1.21	136	49	218	47.47	

Au/0.1mol%Na⁺-TiO₂

2006-S49x033.spe: Wits CSIR-NML
2006 Mar 22 Al mono 17.9 W 100.0 μ 45.0° 1.6040e+004 max 88.41 min
Su/Area5: Sample 17/1



2006-S49x034.spe: Wits CSIR-NML
 2006 Mar 22 Al mono 17.9 W 100.0 μ 45.0° 2.9133e+002 max 35.63 min
 Au4f/Area5: Sample 17/1 (Shft)



Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.53	0.00	1.17	1.17	165	65	239	51.93	2.12
	2	87.19	3.66	1.17	1.17	133	30	221	48.07	

Au/0.2mol%Na⁺-TiO₂

2006-S49x035.spe: Wits

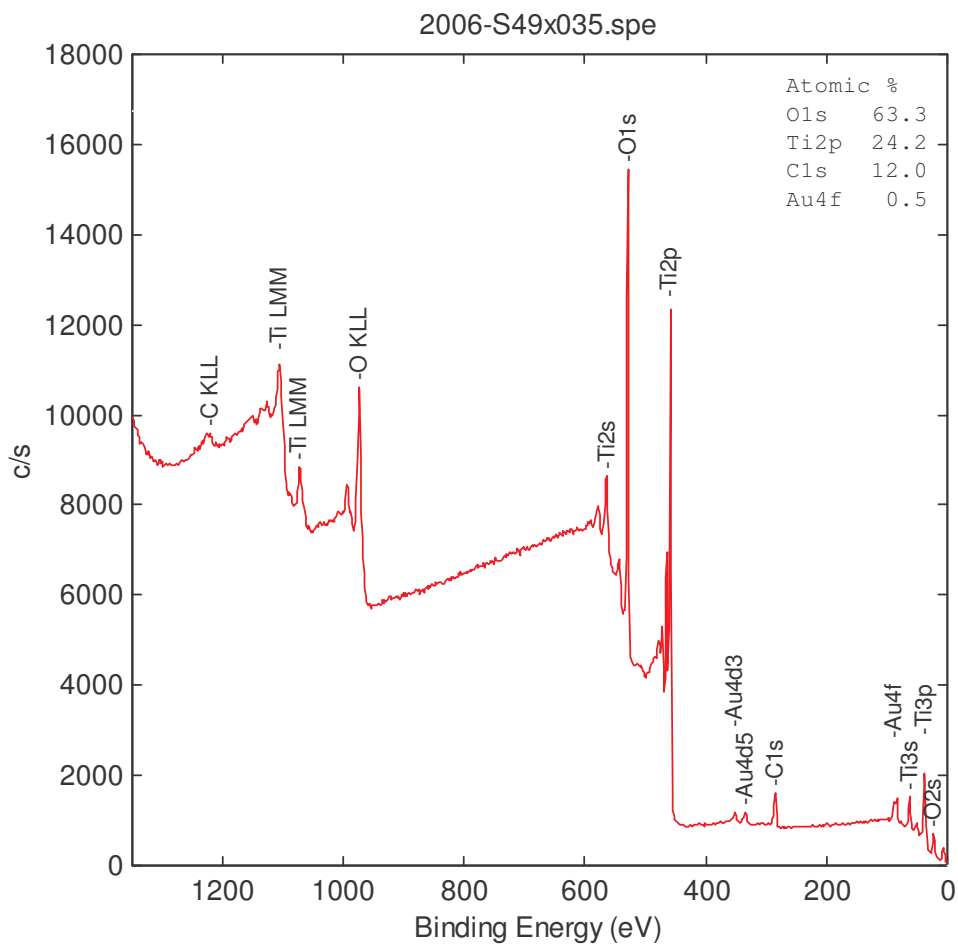
CSIR-NML

2006 Mar 22 Al mono 17.9 W 100.0 μ45.0°

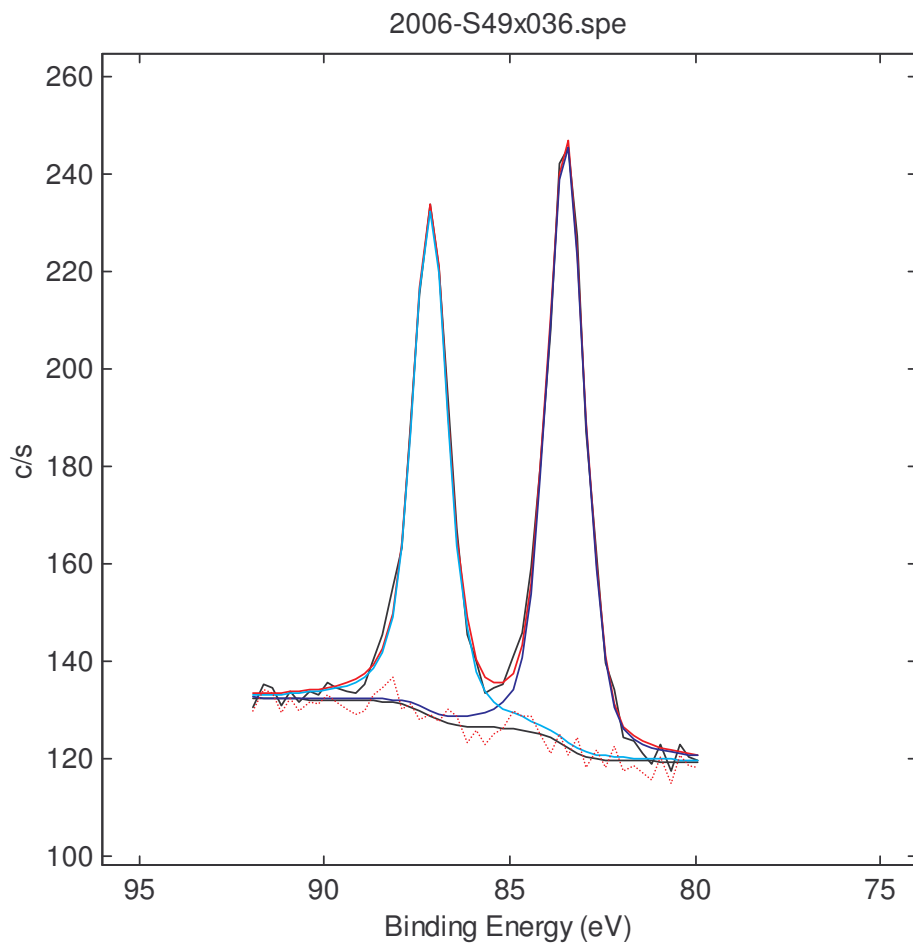
1.5430e+004 max

88.41 min

Su/Area6: Sample 18/1



2006-S49x036.spe: Wits CSIR-NML
 2006 Mar 22 Al mono 17.9 W 100.0 μ 2.4563e+002 max 35.63 min
 Au4f/Area6: Sample 18/1 (Shft)



Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.48	0.00	1.21	1.21	125	65	188	54.63	1.10
	2	87.14	3.66	1.14	1.14	104	50	156	45.37	

Au/0.4mol%Na⁺-TiO₂

2006-S49x037.spe: Wits

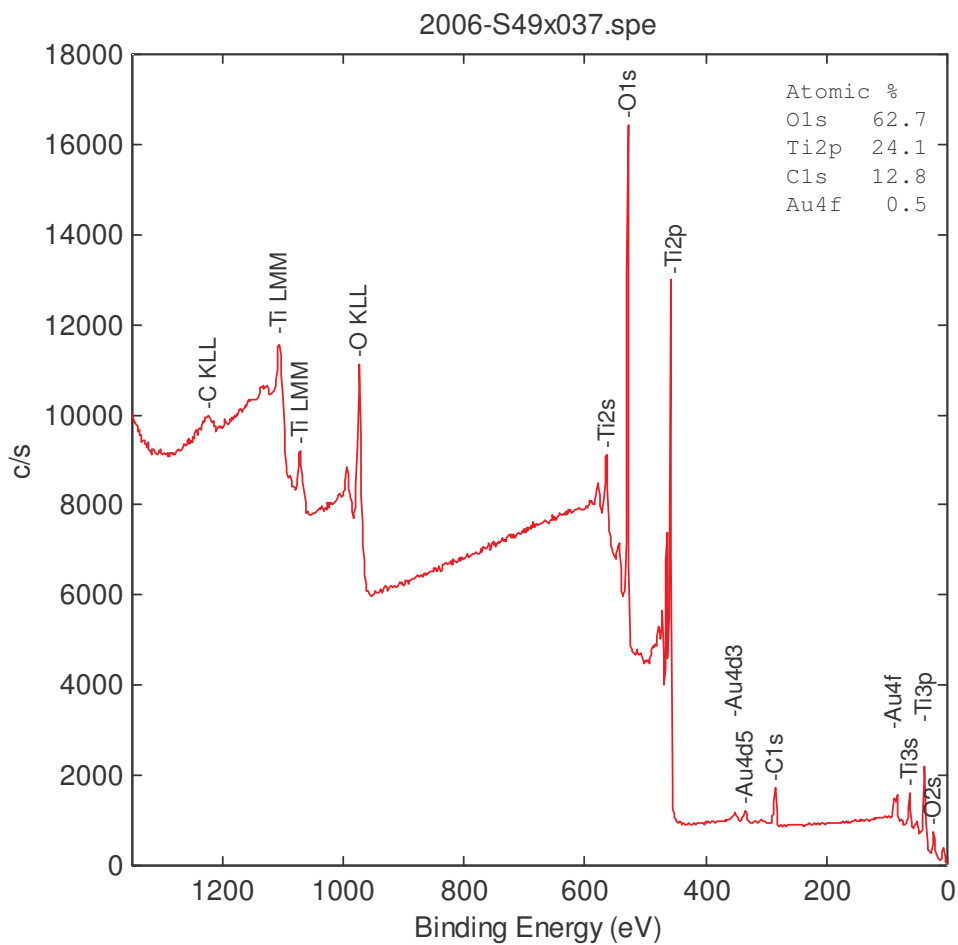
CSIR-NML

2006 Mar 22 Al mono 17.9 W 100.0 μ45.0°

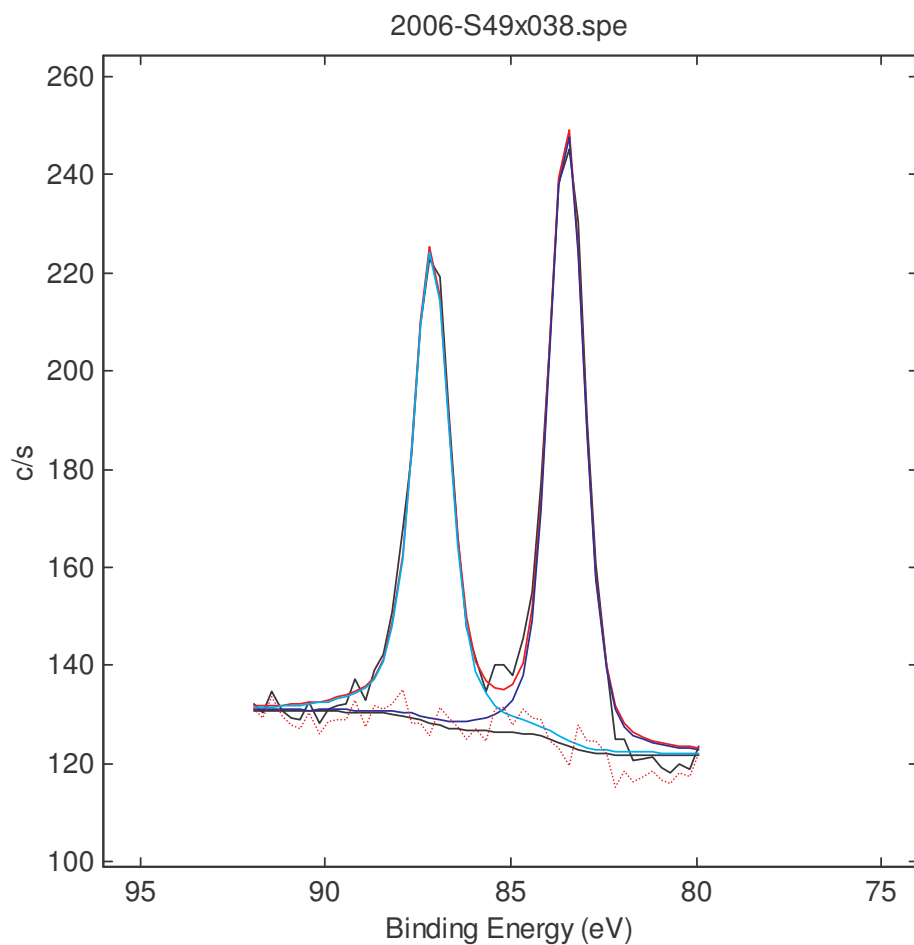
1.6416e+004 max

88.41 min

Su/Area7: Sample 19/1



2006-S49x038.spe: Wits CSIR-NML
 2006 Mar 22 Al mono 17.9 W 100.0 μ 2.4521e+002 max 35.63 min
 Au4f/Area7: Sample 19/1 (Shft)



Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.49	0.00	1.14	1.14	125	65	177	53.87	2.34
	2	87.15	3.66	1.19	1.19	96	50	151	46.13	

Au/2.5mol%Na⁺-TiO₂

2006-S49x039.spe: Wits

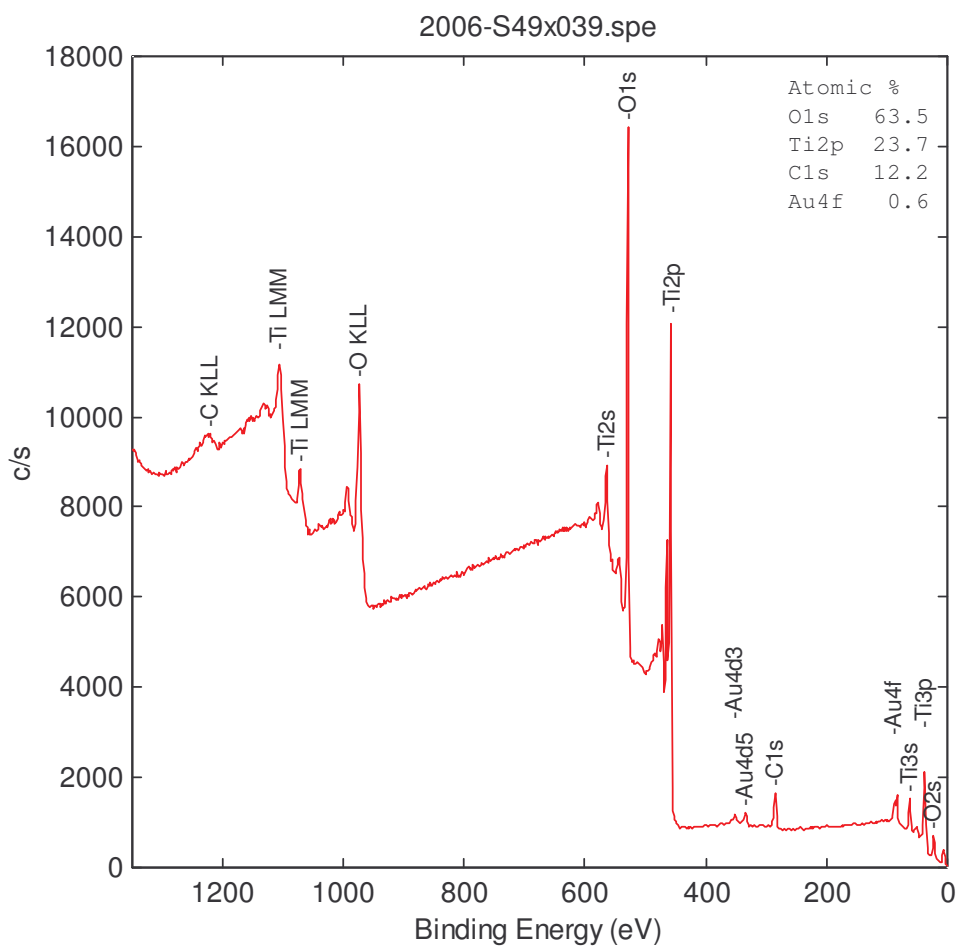
CSIR-NML

2006 Mar 22 Al mono 17.9 W 100.0 μ45.0°

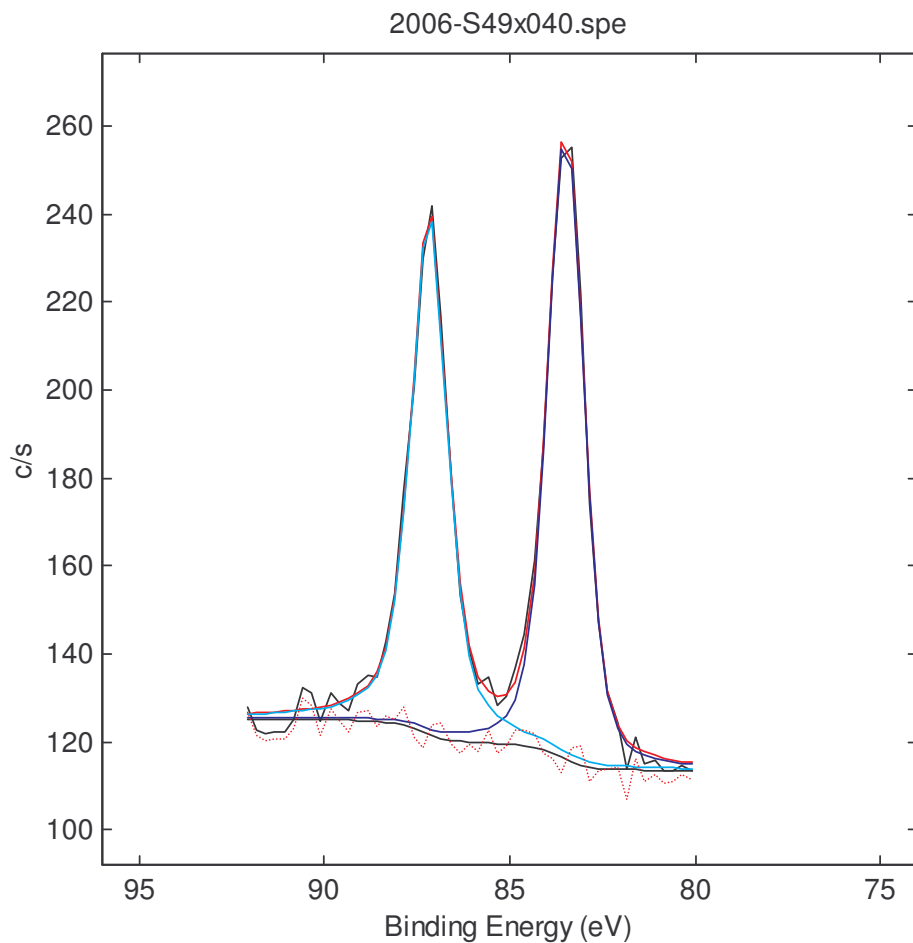
1.6445e+004 max

88.41 min

Su/Area8: Sample 20/1



2006-S49x040.spe: Wits CSIR-NML
 2006 Mar 23 Al mono 17.9 W 100.0 μ 45.0° 2.5518e+002 max 35.63 min
 Au4f/Area8: Sample 20/1 (Shft)



Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.49	0.00	1.17	1.17	142	65	206	52.63	1.85
	2	87.18	3.69	1.14	1.14	118	41	185	47.37	

Au/TiO₂

2006-S49x053.spe: Wits

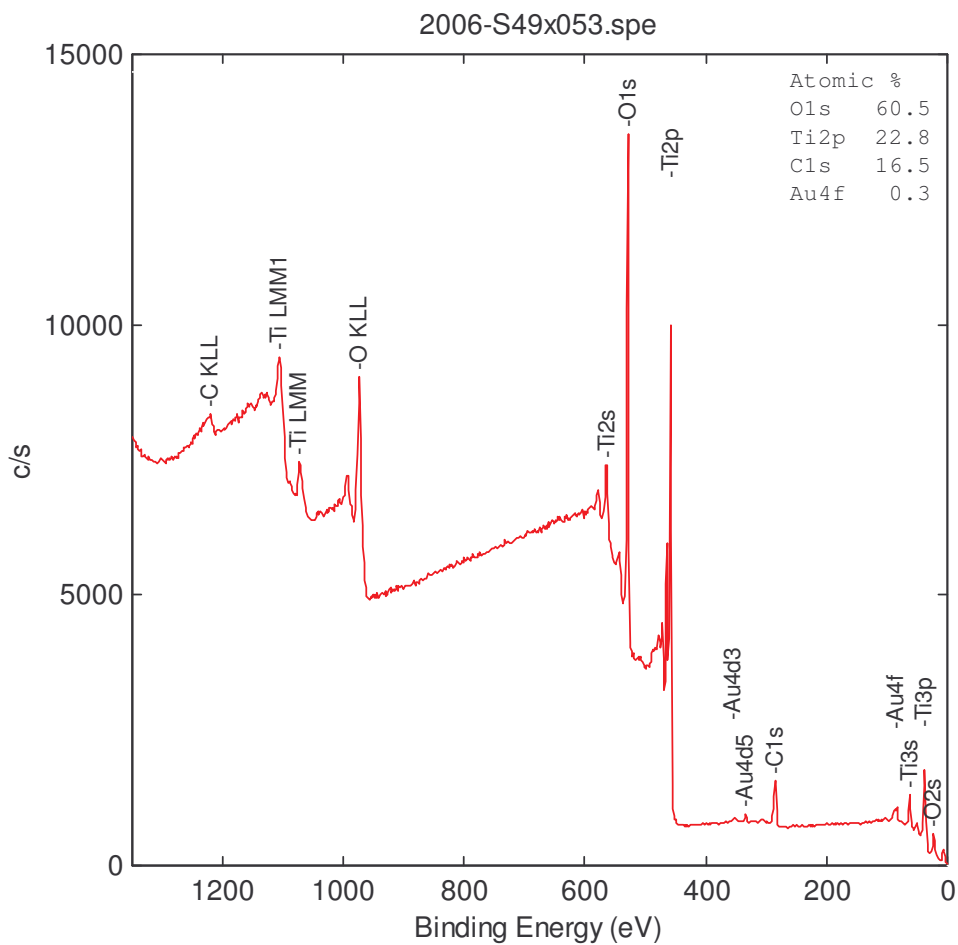
CSIR-NML

2006 Apr 3 Al mono 17.9 W 100.0 μ

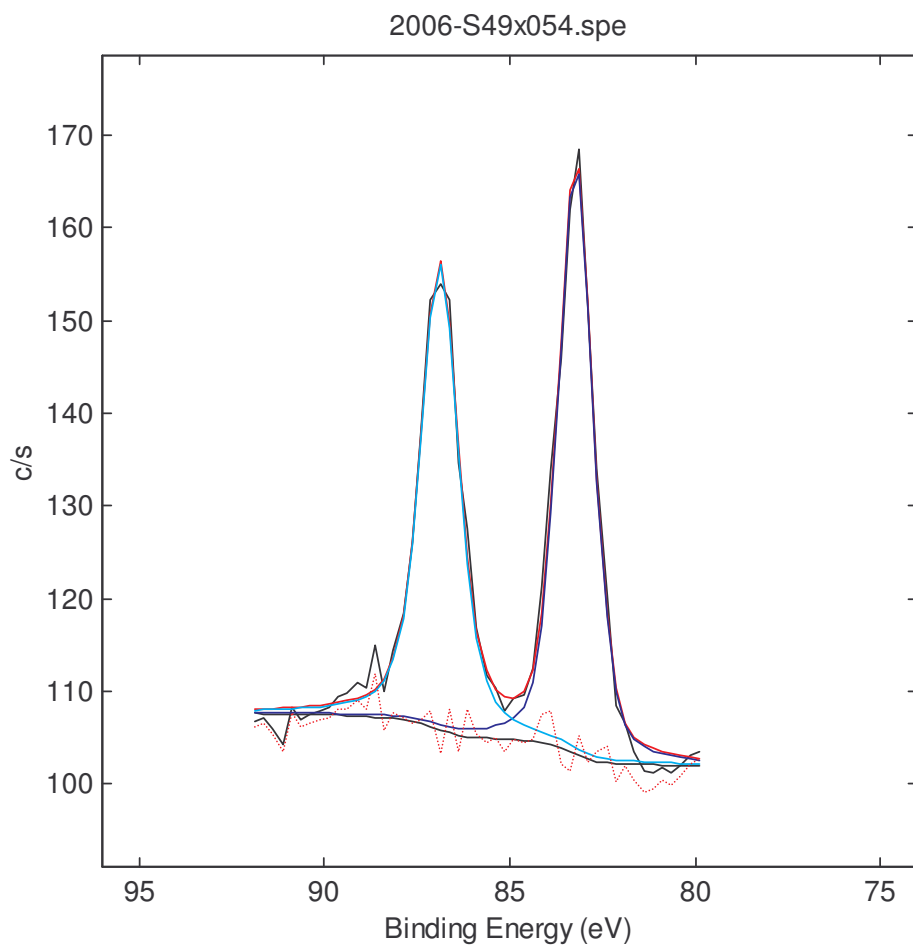
1.3527e+004 max

88.41 min

Su/Area3: Sample 27/1



2006-S49x054.spe: Wits CSIR-NML
 2006 Apr 3 Al mono 17.9 W 100.0 μ 45.0°29.35 eV 1.6853e+002 max 56.14 min
 Au4f/Area3: Sample 27/1 (Shft)



Spec	Band	Pos	PosSep	B_FWHM	FWHM	Height	%Gauss	Area	%Area	ChiSquared
1	1	83.22	0.00	1.12	1.12	64	65	89	52.35	1.34
	2	86.89	3.67	1.22	1.22	50	50	81	47.65	