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LAMPIRAN

LAMPIRAN A

Alat dan Bahan

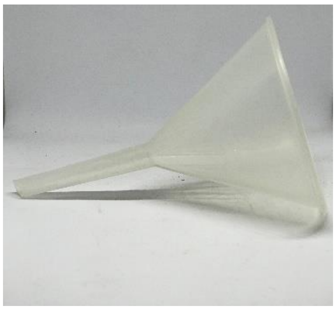
1. Alat

Gambar 1. Gelas beaker

Gambar 2. Gelas Ukur 100 mL

Gambar 3. Kuvet

Gambar 4. Botol Sampel



Gambar 5. Corong

Gambar 6. Neraca Analitis

Gambar 7. *Sand Paper*

Gambar 8. Laser Femtosecond Ti:Sapphire

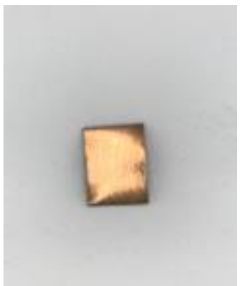
Gambar 9. Laser Nanosecond Nd:YAG

2. Bahan

Gambar 10. Plat Perak & Emas Batang

Gambar 11. Pure Water

Gambar 12. Aceton



Gambar 13. Plat Tembaga

LAMPIRAN B

Analisis Data

Tabel 1 Data hasil pengukuran Spektrometer UV-Vis untuk Au dan Ag nanopartikel serta campurannya.

Panjang Gelombang (nm)	Nanopartikel		
	Au	Ag	AuAg
315.03	0.57434	0.16178	0.50004
315.5	0.57288	0.15931	0.49771
315.97	0.57144	0.157	0.49549
316.44	0.57	0.15487	0.49337
316.91	0.56858	0.15291	0.49137
317.38	0.56717	0.15112	0.48948
317.85	0.56578	0.14949	0.4877
318.32	0.56439	0.14804	0.48602
318.79	0.56302	0.14676	0.48446
319.26	0.56166	0.14564	0.483
319.73	0.56031	0.1447	0.48166
320.2	0.55898	0.14393	0.48043
320.67	0.55766	0.14333	0.4793
321.14	0.55635	0.1429	0.47829
321.61	0.55505	0.14263	0.47738
322.08	0.55377	0.14254	0.47659
322.55	0.55249	0.14262	0.47591
323.02	0.55123	0.14287	0.47533
323.49	0.54999	0.14328	0.47487
323.96	0.54875	0.14387	0.47451
324.43	0.54753	0.14463	0.47427
324.9	0.54632	0.14556	0.47413
325.37	0.54512	0.14666	0.4741
325.84	0.54393	0.14792	0.47419
326.31	0.54276	0.14936	0.47438
326.78	0.5416	0.15097	0.47469
327.25	0.54047	0.15245	0.47511
327.72	0.53899	0.15438	0.47562
328.19	0.5381	0.15639	0.47606
328.66	0.53678	0.15871	0.47694
329.13	0.53541	0.16115	0.47791
329.6	0.53449	0.16364	0.47895
330.07	0.53354	0.16655	0.47965

330.54	0.53233	0.16944	0.48029
331.01	0.53126	0.17254	0.48135
331.48	0.53023	0.17593	0.48275
331.95	0.52928	0.17955	0.48451
332.42	0.52843	0.18337	0.48639
332.89	0.52735	0.18711	0.4885
333.36	0.52686	0.19132	0.49031
333.83	0.52567	0.19589	0.49257
334.3	0.52448	0.20066	0.49469
334.76	0.52335	0.20554	0.49696
335.23	0.52238	0.21059	0.49962
335.7	0.52152	0.21564	0.50181
336.17	0.52069	0.22102	0.50437
336.64	0.51984	0.22667	0.50714
337.11	0.51945	0.23257	0.51022
337.58	0.51847	0.23826	0.51331
338.05	0.51758	0.2441	0.51633
338.52	0.51722	0.25032	0.51979
338.99	0.51663	0.25653	0.52323
339.46	0.51586	0.26291	0.52661
339.93	0.51556	0.26903	0.5299
340.39	0.515	0.27563	0.53364
340.86	0.51416	0.28258	0.53686
341.33	0.51312	0.28936	0.54044
341.8	0.51272	0.29637	0.54378
342.27	0.51265	0.30367	0.54736
342.74	0.51222	0.31096	0.55114
343.21	0.51169	0.31846	0.55468
343.68	0.51149	0.32618	0.55801
344.15	0.51063	0.33372	0.56152
344.61	0.5101	0.3415	0.56499
345.08	0.5098	0.34907	0.569
345.55	0.509	0.35684	0.57263
346.02	0.5082	0.36491	0.57633
346.49	0.50763	0.3727	0.58004
346.96	0.50722	0.38041	0.5837
347.43	0.50691	0.38824	0.58743
347.9	0.50624	0.39612	0.59099
348.36	0.50567	0.40395	0.59506
348.83	0.50507	0.41155	0.59816
349.3	0.50471	0.41953	0.60157

349.77	0.5039	0.42737	0.60478
350.24	0.50356	0.43492	0.60841
350.71	0.50316	0.44283	0.61158
351.18	0.5025	0.45082	0.6146
351.64	0.50203	0.45864	0.61792
352.11	0.50178	0.46709	0.62093
352.58	0.5016	0.47552	0.62356
353.05	0.50133	0.48367	0.62629
353.52	0.50079	0.49209	0.62912
353.99	0.50085	0.50064	0.63158
354.45	0.50102	0.50896	0.63515
354.92	0.50086	0.51712	0.6384
355.39	0.50055	0.52601	0.64165
355.86	0.50021	0.53449	0.6442
356.33	0.50004	0.54269	0.64731
356.79	0.49955	0.55093	0.64985
357.26	0.49942	0.56001	0.65307
357.73	0.49908	0.56841	0.65633
358.2	0.49903	0.57719	0.65951
358.67	0.49869	0.58503	0.66261
359.13	0.49861	0.59364	0.66573
359.6	0.49822	0.60163	0.66919
360.07	0.49782	0.61016	0.67239
360.54	0.49761	0.61869	0.67505
361.01	0.4972	0.62696	0.67822
361.47	0.49714	0.63548	0.68115
361.94	0.49715	0.64437	0.68452
362.41	0.49677	0.65267	0.68712
362.88	0.49628	0.66153	0.68996
363.35	0.49579	0.67078	0.69335
363.81	0.4954	0.67958	0.69642
364.28	0.49545	0.68786	0.69969
364.75	0.49493	0.6968	0.70307
365.22	0.49483	0.70656	0.70628
365.68	0.49428	0.71594	0.70942
366.15	0.49299	0.7254	0.71225
366.62	0.49232	0.73452	0.71499
367.09	0.49187	0.74402	0.71816
367.55	0.49085	0.75259	0.72101
368.02	0.49004	0.76168	0.72391

Tabel 2 Data hasil pengukuran Spektrometer UV-Vis untuk AuAg nanoalloy dengan variasi komposisi

Panjang Gelombang (nm)	AuAg Nanoalloy		
	3:7	5:5	7:3
315.03	0.32528	0.36525	0.41066
315.5	0.32499	0.36464	0.4099
315.97	0.32471	0.36403	0.40914
316.44	0.32444	0.36342	0.40838
316.91	0.32418	0.36282	0.40763
317.38	0.32393	0.36222	0.40687
317.85	0.3237	0.36162	0.40611
318.32	0.32347	0.36103	0.40535
318.79	0.32326	0.36043	0.40459
319.26	0.32306	0.35984	0.40383
319.73	0.32287	0.35926	0.40307
320.2	0.32269	0.35868	0.40231
320.67	0.32252	0.3581	0.40156
321.14	0.32236	0.35752	0.4008
321.61	0.32222	0.35695	0.40004
322.08	0.32208	0.35638	0.39928
322.55	0.32196	0.35581	0.39853
323.02	0.32185	0.35525	0.39777
323.49	0.32175	0.35469	0.39701
323.96	0.32166	0.35413	0.39626
324.43	0.32158	0.35357	0.3955
324.9	0.32151	0.35302	0.39475
325.37	0.32146	0.35247	0.39399
325.84	0.32141	0.35193	0.39323
326.31	0.32138	0.35138	0.39248
326.78	0.32135	0.35084	0.39172
327.25	0.32125	0.35018	0.39098
327.72	0.32114	0.34954	0.39021
328.19	0.32091	0.34909	0.38935
328.66	0.32129	0.34847	0.38869
329.13	0.32124	0.34769	0.38765
329.6	0.32132	0.34705	0.38653
330.07	0.32154	0.34661	0.38609
330.54	0.32168	0.34615	0.38541
331.01	0.32178	0.34546	0.38461
331.48	0.32191	0.34528	0.38398

331.95	0.32204	0.34479	0.38349
332.42	0.32217	0.34417	0.38286
332.89	0.32226	0.34345	0.38205
333.36	0.32252	0.343	0.38168
333.83	0.32258	0.34268	0.38107
334.3	0.3227	0.34265	0.38013
334.76	0.32289	0.34243	0.37929
335.23	0.3232	0.34197	0.37857
335.7	0.32352	0.34215	0.37815
336.17	0.32377	0.34204	0.37766
336.64	0.32401	0.34153	0.37712
337.11	0.32433	0.34147	0.37681
337.58	0.32461	0.34108	0.37603
338.05	0.32467	0.34079	0.37552
338.52	0.32504	0.34059	0.37493
338.99	0.32542	0.34062	0.37438
339.46	0.32575	0.34005	0.37347
339.93	0.32637	0.33989	0.37302
340.39	0.32724	0.34003	0.37254
340.86	0.32773	0.33971	0.37209
341.33	0.32821	0.33975	0.37198
341.8	0.32885	0.33978	0.37136
342.27	0.3296	0.33965	0.37125
342.74	0.33004	0.3396	0.37046
343.21	0.33065	0.3397	0.37029
343.68	0.33117	0.33958	0.37011
344.15	0.3317	0.33935	0.36916
344.61	0.33239	0.33942	0.36896
345.08	0.3328	0.33943	0.36866
345.55	0.33331	0.33942	0.36787
346.02	0.33403	0.33982	0.36754
346.49	0.33446	0.34015	0.36683
346.96	0.33556	0.34048	0.36641
347.43	0.33654	0.3405	0.3662
347.9	0.33762	0.34045	0.36575
348.36	0.3384	0.34075	0.36498
348.83	0.33964	0.34104	0.36446
349.3	0.34009	0.34128	0.36376
349.77	0.34061	0.34121	0.36339
350.24	0.34143	0.34137	0.36287
350.71	0.34216	0.34167	0.36216

351.18	0.3427	0.34202	0.36169
351.64	0.34367	0.34258	0.36132
352.11	0.345	0.34268	0.36147
352.58	0.34575	0.34314	0.36144
353.05	0.34693	0.34356	0.36116
353.52	0.34767	0.34387	0.36112
353.99	0.34891	0.34409	0.36083
354.45	0.35019	0.34427	0.36077
354.92	0.35131	0.34471	0.36034
355.39	0.35251	0.34515	0.36055
355.86	0.35349	0.34546	0.36045
356.33	0.35454	0.34591	0.35998
356.79	0.35594	0.34643	0.35963
357.26	0.35723	0.34697	0.3595
357.73	0.35852	0.3476	0.35924
358.2	0.35985	0.34771	0.35956
358.67	0.36113	0.34774	0.35916
359.13	0.36271	0.34819	0.35924
359.6	0.36374	0.34836	0.35912
360.07	0.36474	0.3486	0.35874
360.54	0.36631	0.34879	0.35844
361.01	0.36785	0.34893	0.35813
361.47	0.36951	0.34921	0.35809
361.94	0.37094	0.34964	0.35798
362.41	0.37235	0.3502	0.35772
362.88	0.37405	0.35027	0.35758
363.35	0.37604	0.35127	0.35771
363.81	0.37776	0.35202	0.35764
364.28	0.37967	0.35236	0.3576
364.75	0.38184	0.35304	0.35757
365.22	0.38403	0.35387	0.35757
365.68	0.38594	0.35434	0.35773
366.15	0.38748	0.35493	0.35698
366.62	0.38947	0.35531	0.35681
367.09	0.39151	0.3561	0.35642
367.55	0.39341	0.35701	0.35606
368.02	0.39511	0.35812	0.35561
368.49	0.39733	0.35907	0.35522
368.96	0.39938	0.35991	0.3548
369.42	0.40184	0.36073	0.3551
369.89	0.40401	0.36147	0.35508

370.36	0.40617	0.36233	0.35478
370.83	0.40853	0.36287	0.35445
371.29	0.4109	0.36363	0.35423
371.76	0.41293	0.36443	0.35371
372.23	0.41531	0.36525	0.35355
372.69	0.41754	0.366	0.35338
373.16	0.42004	0.3667	0.35321
373.63	0.42247	0.36754	0.35304
374.1	0.42515	0.36837	0.35307
374.56	0.42789	0.36927	0.35323
375.03	0.43055	0.3699	0.35341
375.5	0.43309	0.37038	0.35321
375.96	0.43552	0.37121	0.35318
376.43	0.43854	0.37155	0.3531
376.9	0.44103	0.37226	0.35318

Tabel 3 Data hasil pengukuran TEM Au nanopartikel.

Area	r^2	r	d
28.882	9.193426	3.032066	6.064133
484.718	154.2905	12.42137	24.84275
41.313	13.15034	3.626339	7.252678
159.733	50.84459	7.130539	14.26108
49.886	15.87921	3.984872	7.969745
92.968	29.59263	5.439911	10.87982
125.171	39.84317	6.312144	12.62429
219.157	69.75984	8.352236	16.70447
430.009	136.8761	11.69941	23.39881
51.708	16.45917	4.05699	8.11398
122.546	39.0076	6.245607	12.49121
19.237	6.123327	2.474536	4.949072
442.869	140.9696	11.87306	23.74612
92.753	29.5242	5.433617	10.86723
183.417	58.38344	7.640906	15.28181
898.973	286.152	16.91603	33.83206
93.825	29.86543	5.464927	10.92985
24.381	7.760713	2.785806	5.571611
50.422	16.04982	4.006223	8.012446
67.73	21.55913	4.643181	9.286362
73.945	23.53742	4.851538	9.703077
110.757	35.25505	5.937596	11.87519
132.566	42.19707	6.495927	12.99185

180.523	57.46226	7.580386	15.16077
1029.075	327.5647	18.09875	36.1975
49.404	15.72578	3.965575	7.931149
51.655	16.4423	4.05491	8.109821
50.797	16.16919	4.021093	8.042186
157.161	50.0259	7.072899	14.1458
17.951	5.713981	2.390393	4.780787
468.696	149.1906	12.21436	24.42872
15.486	4.929347	2.220213	4.440427
25.345	8.067564	2.840346	5.680692
10.931	3.479445	1.865327	3.730654
148.32	47.21172	6.871079	13.74216
27.113	8.630336	2.937743	5.875487
58.46	18.6084	4.313745	8.62749
141.997	45.19905	6.723024	13.44605
195.42	62.20412	7.886959	15.77392
63.229	20.12642	4.486247	8.972495
129.244	41.13964	6.414019	12.82804
44.26	14.0884	3.753451	7.506902
13.128	4.178772	2.044205	4.088409
43.724	13.91778	3.730654	7.461309
13.664	4.349386	2.085518	4.171036
10.342	3.291961	1.814376	3.628752
62.371	19.85331	4.455705	8.91141
62.371	19.85331	4.455705	8.91141
184.381	58.6903	7.660959	15.32192
179.398	57.10416	7.556729	15.11346
15.539	4.946217	2.224009	4.448019
11.038	3.513505	1.874434	3.748869
454.014	144.5171	12.02153	24.04306
52.78	16.8004	4.098829	8.197657
65.854	20.96198	4.578425	9.156851
77.803	24.76546	4.976491	9.952982
52.298	16.64697	4.08007	8.16014
43.885	13.96903	3.737516	7.475033
89.86	28.60333	5.348208	10.69642
63.55	20.22859	4.497621	8.995242
15.807	5.031524	2.243106	4.486212
86.698	27.59683	5.253269	10.50654
46.939	14.94115	3.865378	7.730756
31.507	10.02899	3.166858	6.333716

Tabel 4 Data hasil pengukuran TEM Ag nanopartikel.

Area	r^2	r	d
490.868	156.2481	12.49993	24.99985
432.64	137.7136	11.73514	23.47029
798.6	254.2023	15.94372	31.88744
1107.158	352.4193	18.77284	37.54567
1341.307	426.9513	20.6628	41.3256
1050.063	334.2454	18.28238	36.56476
2100.23	668.524	25.85583	51.71166
2812.364	895.2033	29.91995	59.8399
1972.437	627.8462	25.05686	50.11372
563.421	179.3425	13.39188	26.78376
996.37	317.1544	17.80883	35.61766
2316.859	737.4791	27.15657	54.31313
286.709	91.26231	9.553131	19.10626
1230.003	391.5221	19.78692	39.57384
475.203	151.2618	12.29885	24.59771
1959.349	623.6802	24.97359	49.94718
659.987	210.0804	14.49415	28.9883
312.473	99.46325	9.973126	19.94625
569.295	181.2122	13.46151	26.92302
2304.904	733.6737	27.08641	54.17282
305.053	97.10139	9.854004	19.70801
700.798	223.0709	14.93556	29.87112
2035.509	647.9226	25.45432	50.90865
259.192	82.50338	9.083137	18.16627
45.14	14.36851	3.790582	7.581163
1383.355	440.3356	20.98417	41.96835
415.532	132.2679	11.50078	23.00156
298.354	94.96903	9.745205	19.49041
276.712	88.08017	9.385103	18.77021
304.229	96.8391	9.840686	19.68137
885.788	281.9551	16.79152	33.58304
538.79	171.5022	13.09588	26.19177
948.344	301.8673	17.37433	34.74866
1990.472	633.5869	25.17115	50.3423
581.147	184.9848	13.60091	27.20183
461.29	146.8332	12.11747	24.23495
989.465	314.9565	17.74701	35.49403
322.882	102.7765	10.13788	20.27575
524.774	167.0408	12.92442	25.84885

708.94	225.6626	15.02207	30.04414
265.582	84.53738	9.194421	18.38884
1261.23	401.462	20.03652	40.07303
2607.277	829.922	28.80837	57.61674
611.652	194.6949	13.95331	27.90662
1169.302	372.2004	19.2925	38.58499
327.52	104.2529	10.21043	20.42086
742.537	236.3569	15.3739	30.7478
570.326	181.5404	13.47369	26.94739
1184.761	377.1211	19.41961	38.83921
863.218	274.7708	16.57621	33.15243
303.92	96.74074	9.835687	19.67137
882.078	280.7741	16.75632	33.51263
477.367	151.9506	12.32683	24.65365
365.755	116.4234	10.78997	21.57994
95.432	30.37695	5.511529	11.02306
388.325	123.6077	11.1179	22.2358
1314.408	418.3891	20.45456	40.90912
1807.749	575.4244	23.988	47.97601
266.819	84.93113	9.215808	18.43162
774.588	246.559	15.7022	31.4044
453.045	144.2087	12.00869	24.01739
206.529	65.74022	8.108034	16.21607
1408.398	448.307	21.17326	42.34652
259.295	82.53616	9.084941	18.16988
457.374	145.5867	12.06593	24.13186

Tabel 5 Data hasil pengukuran TEM AuAg (5:5) nanoalloy.

Area	r^2	r	d
193.792	61.68591	7.854038	15.70808
321.133	102.2198	10.11038	20.22076
69.498	22.1219	4.703392	9.406785
52.551	16.7275	4.089927	8.179854
372.241	118.488	10.88522	21.77044
86.819	27.63535	5.256933	10.51387
303.01	96.45108	9.820951	19.6419
118.2	37.62423	6.133859	12.26772
126.326	40.21081	6.3412	12.6824
116.917	37.21584	6.100478	12.20096
261.633	83.28037	9.125808	18.25162
235.223	74.87381	8.652965	17.30593
252.224	80.28539	8.960212	17.92042

164.603	52.39476	7.238423	14.47685
410.786	130.7572	11.43491	22.86983
236.025	75.12909	8.667704	17.33541
229.77	73.13806	8.552079	17.10416
339.363	108.0226	10.39339	20.78678
563.36	179.3231	13.39116	26.78231
57.309	18.24202	4.271068	8.542136
184.33	58.67406	7.6599	15.3198
70.246	22.36	4.728636	9.457272
355.561	113.1786	10.63854	21.27708
133.329	42.43994	6.514594	13.02919
163.748	52.12261	7.219599	14.4392
506.586	161.2513	12.69848	25.39696
971.526	309.2463	17.5854	35.1708
173.477	55.21944	7.430979	14.86196
547.055	174.133	13.19595	26.39189
87.193	27.75439	5.268244	10.53649
242.334	77.13731	8.782785	17.56557
277.296	88.26606	9.395002	18.79
192.135	61.15847	7.820388	15.64078
220.682	70.24526	8.381245	16.76249
358.074	113.9785	10.67607	21.35214
257.035	81.81678	9.045263	18.09053
151.078	48.08962	6.934668	13.86934
350.376	111.5281	10.56069	21.12138
286.812	91.2951	9.554847	19.10969
207.905	66.17822	8.135	16.27
169.521	53.96021	7.345761	14.69152
182.352	58.04444	7.61869	15.23738
132.848	42.28683	6.502833	13.00567
100.13	31.87237	5.645562	11.29112
104.3	33.19972	5.76192	11.52384
135.164	43.02404	6.559271	13.11854
125.452	39.93261	6.319226	12.63845
304.052	96.78276	9.837823	19.67565
421.14	134.053	11.57813	23.15625
286.731	91.26931	9.553497	19.10699
176.28	56.11167	7.490772	14.98154
290.077	92.33438	9.609078	19.21816
277.289	88.26383	9.394883	18.78977
386.175	122.9233	11.08708	22.17416

276.048	87.86881	9.373836	18.74767
276.156	87.90318	9.37567	18.75134
300.814	95.75207	9.785299	19.5706
190.633	60.68037	7.78976	15.57952
345.761	110.0591	10.49091	20.98182
222.306	70.7622	8.412027	16.82405
686.828	218.6241	14.78594	29.57189
194.949	62.05419	7.877448	15.7549
190.309	60.57724	7.783138	15.56628
146.657	46.68237	6.83245	13.6649
347.65	110.6604	10.51953	21.03905
318.297	101.3171	10.06564	20.13128
197.108	62.74143	7.920948	15.8419
187.503	59.68406	7.725546	15.45109
225.705	71.84413	8.476092	16.95218
326.606	103.9619	10.19617	20.39234
363.082	115.5726	10.75047	21.50094
262.019	83.40324	9.132537	18.26507
408.46	130.0169	11.40249	22.80499
266.443	84.81144	9.209313	18.41863
427.291	136.0109	11.66237	23.32475
205.255	65.3347	8.082988	16.16598
235.256	74.88431	8.653572	17.30714
52.501	16.71159	4.087981	8.175962

Ukuran area dari nanopartikel dan nanoalloy didapatkan dengan aplikasi imageJ, kemudian untuk mendapatkan diameter digunakan persamaan luas lingkaran menggunakan *Ms. Excel*

$r^2 = \frac{area}{\pi}$

$= 408.46/3,14$

$= 130.0169 \text{ nm}^2$

$r = \sqrt{r^2}$

$= \sqrt{130.0169}$

$= 11.40249 \text{ nm}$

$d = 2 \times r$

$= 22.80499 \text{ nm}$

Tabel 6 Data hasil pengukuran LIBS dan NELIBS

Panjang Gelombang (nm)	Cu	Cu+Ag	Cu+AuAg(3:7)	Cu+ AuAg(5:5)	Cu+ AuAg(7:3)	Cu+Au
499.5947	2	-4	4	-3	3	4
499.6246	0	-5	-3	-6	-2	1
499.65454	1	-5	4	-1	2	1
499.68448	-3	-5	0	0	-4	-2
499.71439	0	0	-4	3	3	-1
499.74432	-2	-1	-1	-2	-1	1
499.77426	2	-5	6	-2	5	2
499.80417	2	1	3	-1	5	2
499.83411	-2	-6	2	-3	0	1
499.86401	-2	1	-2	-3	3	-2
499.89395	-1	5	0	2	-1	2
499.92386	3	1	-1	0	4	2
499.9538	-1	0	-5	-4	-4	-3
499.9837	-4	-4	1	-2	4	-4
500.01364	0	0	-3	2	-3	2
500.04355	1	4	-1	-1	2	2
500.07349	0	1	1	-1	2	-1
500.10339	-4	1	0	-1	0	1
500.13333	-1	1	-6	-1	-4	-2
500.16324	-1	-5	1	0	-2	-2
500.19315	4	-1	2	-2	1	0
500.22308	-4	-1	-4	0	-1	-1

500.25299	0	-3	-1	2	1	3
500.28293	-3	-3	-2	-5	0	-2
500.31284	-5	-3	-5	-3	-2	-6
500.34274	-1	-1	0	1	2	3
500.37268	-2	0	-3	0	-2	-2
500.40259	4	-2	4	-4	3	5
500.4325	0	0	0	3	-2	-1
500.46243	-1	-4	-1	-4	-1	-1
500.49234	-2	-3	-2	0	-2	1
500.52225	-5	-2	-5	1	-1	2
500.55219	-4	2	-1	5	0	-1
500.58209	-2	-6	-3	-3	-1	2
500.612	1	0	-1	3	4	1
500.64191	1	-4	-3	-1	0	-3
500.67184	1	-4	1	0	0	-1
500.70175	2	-3	2	0	3	3
500.73166	-5	-3	-1	2	2	-5
500.76157	-4	4	-3	3	-1	-2
500.7915	-1	-7	1	2	-2	-1
500.82141	-3	-1	0	-1	-1	2
500.85132	-3	1	2	-4	-2	0
500.88123	2	0	4	2	3	-2
500.91113	-3	0	-3	-2	-2	0
500.94104	-3	3	-3	0	-1	-3
500.97095	1	-1	-2	1	2	0

501.00089	2	1	0	5	-3	0
501.03079	-3	-4	-3	-2	0	-1
501.0607	1	-2	0	-3	2	1
501.09061	-2	-7	-2	-6	-3	-3
501.12051	-1	-2	3	-4	2	0
501.15042	1	-3	4	2	8	4
501.18033	2	2	-2	0	-2	2
501.21024	-1	3	-1	3	-1	-1
501.24014	-2	-1	0	-2	-1	-1
501.27005	-1	-1	-2	-2	-1	-4
501.29996	-10	-1	-9	0	-4	-7
501.32986	0	-1	0	-2	-2	0
501.35977	-1	2	0	4	0	3
501.38968	-4	1	-6	-2	-5	-3
501.41959	-2	5	-4	0	0	-2
501.44949	-1	-3	0	-2	-5	0
501.4794	-6	-1	-2	2	-7	-7
501.50931	2	-2	0	-4	6	0
501.53922	-4	-4	-3	0	-1	-3
501.56912	4	4	-2	-1	-3	2
501.599	-3	0	-5	-1	1	-1
501.62891	3	-8	1	0	2	5
501.65881	1	-4	-1	-1	3	2
501.68872	-2	-3	1	1	2	-3
501.71863	-2	-4	-2	-5	0	-1

501.74854	5	2	2	2	4	1
501.77841	-4	0	-3	0	1	-2
501.80832	2	3	-2	2	-2	-1
501.83823	1	2	0	2	-2	1
501.86813	-2	-1	-3	2	1	-1
501.89804	1	0	4	-1	1	2
501.92792	1	-4	0	0	2	5
501.95782	-2	-1	0	-3	2	1
501.98773	4	-4	3	-2	4	2
502.01764	-6	2	-1	-3	2	-1
502.04752	-2	1	3	0	-1	-1
502.07742	-6	0	-3	4	-1	-3
502.10733	2	-3	1	-3	2	2
502.13721	-4	-2	2	2	0	-4
502.16711	4	-6	1	-2	0	4
502.19702	1	-3	-5	-3	1	1
502.2269	-1	-3	0	0	-1	2
502.25681	-4	-1	-4	0	-1	-2
502.28668	2	-1	1	1	5	5
502.31659	3	0	1	8	2	6
502.3465	-1	-1	3	1	1	-3
502.37637	0	-5	1	-5	2	-1
502.40628	2	-2	-2	-4	5	3
502.43616	0	-2	-3	0	-1	-4
502.46606	-3	-5	2	-4	2	1

502.49594	1	1	6	1	0	1
502.52585	4	-2	-1	-1	4	1
502.55573	-3	-7	-2	-3	-5	-3
502.58563	4	-1	7	5	0	0
502.61551	1	1	1	1	-1	3
502.64542	-2	-4	1	-3	4	5
502.67529	0	3	-4	0	-1	-3
502.7052	3	3	3	-1	1	3
502.73508	-2	-3	0	-2	2	0
502.76498	-3	1	-2	2	-3	-2
502.79486	3	-5	0	-3	1	3
502.82474	-2	4	-4	-2	-2	-3
502.85464	3	-1	-2	-2	-1	0
502.88452	-2	0	0	1	-2	-1
502.91443	-2	-1	3	1	2	1
502.94431	-5	3	-3	4	-1	-2
502.97418	3	-3	0	-4	2	6
503.00409	0	1	-3	-2	0	-5
503.03397	1	-2	2	3	2	-4
503.06384	1	0	3	2	0	-1
503.09375	3	6	2	5	4	3
503.12363	-4	2	-2	2	2	3
503.1535	-4	5	-2	2	-2	-6
503.18338	1	-1	3	-1	5	4
503.21329	2	-7	-2	1	-3	1

503.24316	4	-4	5	-4	3	5
503.27304	-1	-1	-1	1	0	1
503.30292	-1	1	-2	2	0	-2
503.33279	1	6	0	5	0	2
503.3627	0	0	-2	-2	1	-1
503.39258	0	3	-1	2	3	-4
503.42245	3	-4	5	-1	4	1
503.45233	-1	5	-3	2	-3	5
503.48221	-4	-2	-2	1	3	-5
503.51208	3	1	-2	3	2	4
503.54196	2	1	2	-1	5	-1
503.57187	2	0	-3	-3	2	-2

Data intensitas yang didapatkan dari LIBS dan NELIBS plat Cu kemudian diimpor kedalam aplikasi Origin dan diolah. Data intesitas unsur Cu terdeteksi pada 3 panjang gelombang yaitu 510,515, dan 521 nm. Data intensitas tersebut lalu diekstrak untuk melihat kenaikan intensitas dari plat Cu kontrol dan plat Cu setelah diberi nanopartikel dan nanoalloy. Nilai kenaikan intensitas diperoleh menggunakan persamaan selisih perbandingan sederhana.

$$\Delta I = \frac{I^{515}}{I_0^{515}}$$

$$= \frac{1295\ a.u}{151\ a.u}$$

$$= 8.576 \text{ kali}$$