

LAMPIRAN



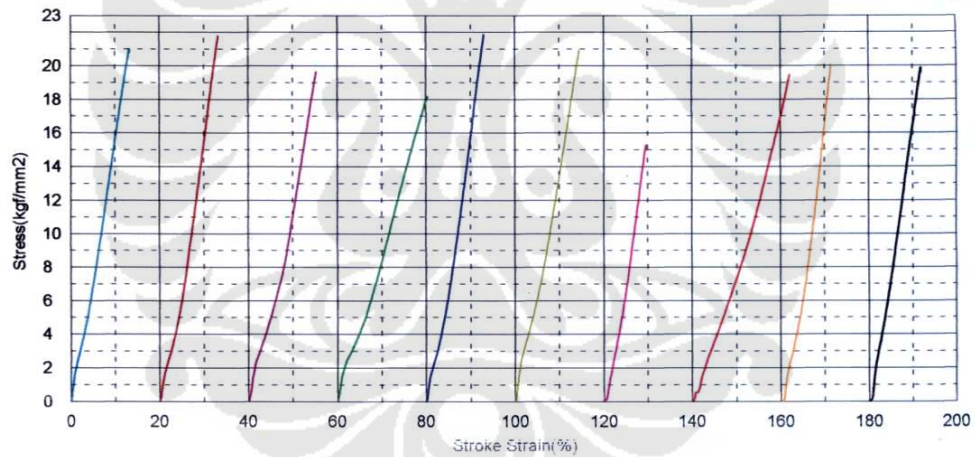
Lampiran 1

Data Hasil Pengujian Tarik

Shape: Rod

Units	Diameter mm	Gauge Length mm
X	13.9100	50.0000
D1	13.9700	50.0000
E1	14.0500	50.0000
F1	14.0200	50.0000
D2	13.9500	50.0000
E2	13.9300	50.0000
F2	14.0700	50.0000
D3	13.9800	50.0000
E3	14.1000	50.0000
F3	13.9700	50.0000

Name	Max Stress kgf/mm2	Max Load kgf
X	21.0386	3197.13
D1	21.7875	3339.57
E1	19.6667	3049.11
F1	18.1884	2807.88
D2	21.8876	3345.31
E2	20.9615	3194.58
F2	15.2976	2378.49
D3	19.4603	2987.13
E3	20.0682	3133.56
F3	19.9050	3051.02

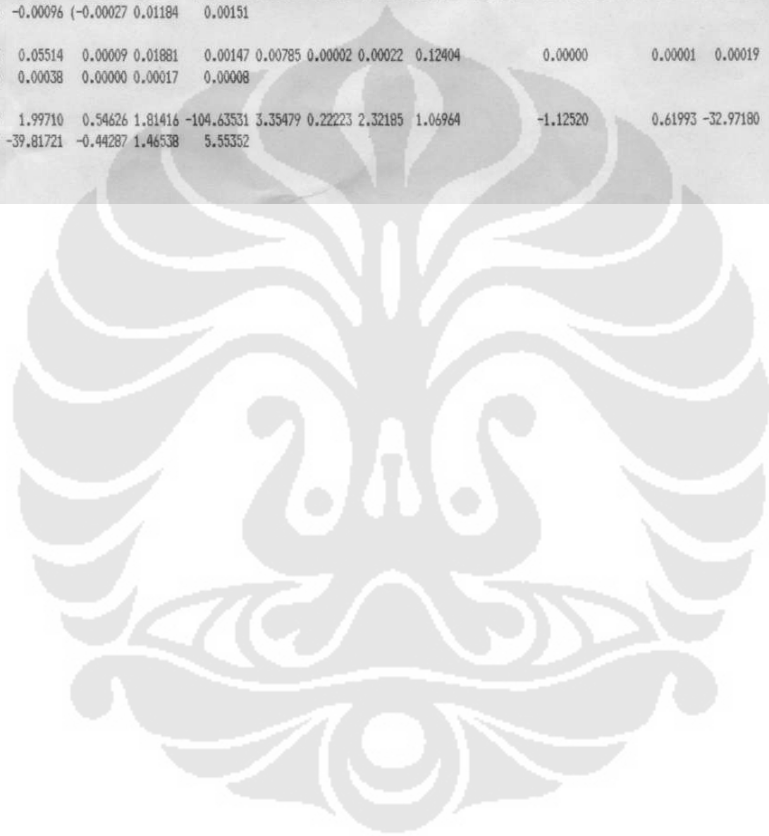


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Lampiran 2

Data Hasil Pengujian Komposisi Kimia Sampel X

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	AL2	Li2	Na1
1>	0.16889 0.00389	2.80024 -0.00123	0.01688 (-0.00027	1.05036 0.01196	(-0.00037 0.00157	0.23956	0.00899	0.00956	11.50857	118.54500	(-0.00004	38.48100	0.00098	(-0.00072	84.1812	(-0.00032	0.00034
2>	0.16644 0.00363	2.72225 -0.00069	0.01675 (-0.00027	1.02375 0.01172	(-0.00245 0.00145	0.22845	0.00896	0.00925	11.68398	118.44200	(-0.00004	38.71400	0.00099	(-0.00045	84.1261	(-0.00026	0.00038
Avg	0.16767 0.00376	2.76124 -0.00096	0.01682 (-0.00027	1.03705 0.01184	(-0.00141 0.00151	0.23400	0.00898	0.00941	11.59628	118.49350	(-0.00004	38.59750	0.00098	(-0.00059	84.1537	(-0.00029	0.00036
Sd	0.00173 0.00018	0.05514 0.00038	0.00009 0.00000	0.01881 0.00017	0.00147 0.00008	0.00785	0.00002	0.00022	0.12404		0.00000		0.00001	0.00019	0.0389	0.00004	0.00003
Sd%	1.03049 4.90957	1.99710 -39.81721	0.54626 -0.44287	1.81416 1.46538	-104.63531 5.55352	3.35479	0.22223	2.32185	1.06964		-1.12520		0.61993	-32.97180	0.0462	-14.38671	7.46822



Lampiran 3

Data Hasil Pengujian Komposisi Kimia Sampel D

Sampel D1

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	ALZ	Li2	Na1
1>	0.17948 0.00386	2.78429 -0.00082	0.01750 (-0.00022	1.07963 0.01247	0.00059 0.00165	0.24256	0.00923	0.00986	11.71723	118.21400	(-0.00004	39.88000	0.00134	(-0.00028	83.9420	(-0.00035	0.0000
2>	0.17334 0.00382	2.82028 0.00038	0.01816 (-0.00019	1.07547 0.01260	(-0.00243 0.00169	0.24401	0.00937	0.00979	11.99016	118.61600	(-0.00004	40.82500	0.00134	0.00012	83.6423	(-0.00026	0.0000
Avg	0.17641 0.00384	2.80229 -0.00022	0.01783 (-0.00020	1.07755 0.01253	(-0.00092 0.00167	0.24329	0.00930	0.00982	11.85370	118.41499	(-0.00004	40.35250	0.00134	(-0.00008	83.7921	(-0.00030	0.0000
Sd	0.00434 0.00003	0.02545 0.00085	0.00047 0.00002	0.00294 0.00009	0.00214 0.00003	0.00103	0.00010	0.00005	0.19299		0.00000		0.00001	0.00028	0.2119	0.00006	0.0000
SdZ	2.45926 0.75383	0.90814 -389.70789	2.63464 -9.27726	0.27263 0.75276	-232.27888 1.74038	0.42310	1.06305	0.48246	1.62813		-1.22435		0.43600	-366.33319	0.2529	-20.81154	3.2026

Sampel D2

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	ALZ	Li2	Na1
1>	0.16436 0.00371	2.68733 -0.00205	0.01571 (-0.00036	1.02080 0.01184	(-0.00282 0.00142	0.23923	0.00670	0.00886	11.53903	122.41600	(-0.00004	39.15000	0.00117	(-0.00131	84.3050	(-0.00043	(-0.00018
2>	0.16604 0.00408	2.63320 -0.00190	0.01511 (-0.00042	1.01814 0.01128	(-0.00406 0.00123	0.22408	0.00640	0.00847	11.39007	123.07100	(-0.00005	37.87600	0.00111	(-0.00167	84.5276	(-0.00054	(-0.00021
Avg	0.16520 0.00389	2.66027 -0.00197	0.01541 (-0.00039	1.01947 0.01156	(-0.00344 0.00133	0.23166	0.00655	0.00867	11.46455	122.74350	(-0.00005	38.51300	0.00114	(-0.00149	84.4163	(-0.00048	(-0.00020
Sd	0.00119 0.00027	0.03828 0.00010	0.00042 0.00004	0.00188 0.00040	0.00087 0.00013	0.01072	0.00021	0.00028	0.10533		0.00000		0.00004	0.00026	0.1574	0.00008	0.00002
SdZ	0.71744 6.87271	1.43878 -5.31839	2.72979 -11.13934	0.18463 3.45445	-25.36175 10.15836	4.62548	2.43077	3.22421	0.91878		-2.89918		3.78405	-17.35141	0.1865	-16.10309	-11.17991

Sampel D3

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	ALZ	Li2	Na1
1>	0.16976 0.00396	2.73936 -0.00048	0.01712 (-0.00021	1.03135 0.01229	0.01180 0.00156	0.23675	0.00916	0.00943	11.81584	118.16400	(-0.00004	40.39800	0.00109	(-0.00010	83.9411	(-0.00021	0.00041
2>	0.17333 0.00385	2.79198 -0.00089	0.01787 (-0.00021	1.05774 0.01256	0.00956 0.00167	0.24485	0.00941	0.00972	11.88770	119.90600	(-0.00004	40.85300	0.00102	0.00026	83.7795	(-0.00024	0.00038
Avg	0.17155 0.00390	2.76567 -0.00068	0.01749 (-0.00021	1.04454 0.01243	0.01068 0.00161	0.24080	0.00928	0.00957	11.85177	119.03500	(-0.00004	40.62550	0.00105	(0.00008	83.8603	(-0.00022	0.00040
Sd	0.00252 0.00007	0.03721 0.00029	0.00053 0.00000	0.01866 0.00019	0.00159 0.00008	0.00572	0.00017	0.00020	0.05081		0.00000		0.00005	0.00026	0.1143	0.00002	0.00002
SdZ	1.47002 1.88688	1.34538 -42.69304	3.01730 -0.99753	1.78673 1.53112	14.87760 5.01696	2.37652	1.88063	2.07510	0.42872		-0.85386		4.51824	323.94348	0.1363	-8.82209	5.62500

Lampiran 4

Data Hasil Pengujian Komposisi Kimia Sampel E

Sampel E1

Run	Fe7	Cu	Mn	Mg	Zn	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	AL%	Li2	Na1
P1	Sb5	Sr	V3	Zr3													
1>	0.16172	2.63266	0.01500	0.97861	0.00212	0.21802	0.00811	0.00843	11.33089	115.45500	(-0.00005	34.58000	0.00084	(-0.00229	84.6339	(-0.00045	0.00040
	0.00402	-0.00340	(-0.00042	0.01070	0.00123												
2>	0.16606	2.64088	0.01558	0.99477	0.00260	0.22720	0.00836	0.00848	11.54181	121.80900	(-0.00005	37.56700	0.00089	(-0.00166	84.3823	(-0.00044	0.00040
	0.00385	-0.00310	(-0.00045	0.01118	0.00127												
Avg	0.16389	2.63677	0.01529	0.98669	0.00236	0.22261	0.00824	0.00845	11.43635	118.63200	(-0.00005	36.07350	0.00087	(-0.00198	84.5081	(-0.00045	0.00040
	0.00393	-0.00325	(-0.00044	0.01094	0.00125												
Sd	0.00307	0.00581	0.00041	0.01143	0.00034	0.00649	0.00018	0.00004	0.14915		0.00000		0.00003	0.00044	0.1778	0.00001	0.00000
	0.00012	0.00021	0.00002	0.00034	0.00003												
Sd%	1.87125	0.22036	2.68417	1.15802	14.48673	2.91718	2.17446	0.47037	1.30414		-1.80248		3.62122	-22.51347	0.2104	-2.55841	0.31498
	3.03173	-6.57477	-4.66235	3.07345	2.29341												

Sampel E2

Run	Fe7	Cu	Mn	Mg	Zn	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	AL%	Li2	Na1
P1	Sb5	Sr	V3	Zr3													
1>	0.15934	2.64943	0.01492	0.99211	0.00271	0.23894	0.00834	0.00853	11.17270	121.90200	(-0.00005	37.57100	0.00101	(-0.00165	84.7391	(-0.00047	0.00027
	0.00419	-0.00188	(-0.00042	0.01156	0.00133												
2>	0.16161	2.61020	0.01551	0.98853	0.00754	0.24388	0.00875	0.00873	11.60662	119.57100	(-0.00004	39.03800	0.00115	(-0.00057	84.3319	(-0.00033	0.00032
	0.00414	-0.00129	(-0.00030	0.01220	0.00148												
Avg	0.16047	2.62981	0.01521	0.99032	0.00512	0.24141	0.00855	0.00863	11.38966	120.73650	(-0.00004	38.30450	0.00108	(-0.00111	84.5355	(-0.00040	0.00030
	0.00416	-0.00159	(-0.00036	0.01188	0.00140												
Sd	0.00160	0.02774	0.00042	0.00253	0.00342	0.00349	0.00029	0.00014	0.30683		0.00000		0.00010	0.00076	0.2879	0.00010	0.00003
	0.00003	0.00042	0.00008	0.00045	0.00010												
Sd%	0.99922	1.05496	2.78156	0.25816	66.65673	1.44694	3.41593	1.60804	2.69390		-3.89714		9.09086	-69.04800	0.3406	-25.43865	10.59777
	0.82376	-26.30977	-22.49203	3.78325	7.23041												

Sampel E3

Run	Fe7	Cu	Mn	Mg	Zn	Ti4	Cr1	Ni6	Si	Al3	Be3	Bq1	Ca3	Co1	AL%	Li2	Na1
P1	Sb5	Sr	V3	Zr3													
1>	0.15696	2.58578	0.01482	0.97327	(-0.00249	0.23213	0.00814	0.00828	11.66161	115.99500	(-0.00005	35.05900	0.00112	(-0.00193	84.3484	(-0.00041	0.00024
	0.00411	-0.00227	(-0.00037	0.01133	0.00133												
2>	0.16296	2.69478	0.01527	1.00538	(-0.00267	0.22418	0.00835	0.00888	11.40531	114.46500	(-0.00005	34.56300	0.00117	(-0.00199	84.4649	(-0.00041	0.00028
	0.00428	-0.00271	(-0.00035	0.01113	0.00132												
Avg	0.15996	2.64028	0.01505	0.98932	(-0.00258	0.22816	0.00824	0.00858	11.53346	115.23000	(-0.00005	34.81100	0.00115	(-0.00196	84.4066	(-0.00041	0.00026
	0.00420	-0.00249	(-0.00036	0.01123	0.00132												
Sd	0.00425	0.07707	0.00032	0.02270	0.00013	0.00562	0.00015	0.00042	0.18123		0.00000		0.00004	0.00005	0.0824	0.00000	0.00003
	0.00012	0.00031	0.00001	0.00015	0.00001												
Sd%	2.65601	2.91902	2.10707	2.29444	-4.88036	2.46534	1.83093	4.87742	1.57134		-0.15870		3.36173	-2.37121	0.0976	-1.11876	10.04940
	2.87521	-12.53844	-3.44213	1.29486	0.92327												

Lampiran 5

Data Hasil Pengujian Komposisi Kimia Sampel F

Sampel F1

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bg1	Ca3	Co1	ALZ	Li2	Na1
1>	0.15668 0.00466	2.57703 -0.00337	0.01433 (-0.00035	0.97674 0.01089	(-0.00282 0.00130	0.22370	0.00779	0.00821	11.25400	111.01800	(-0.00005	32.87400	0.00107	(-0.00237	84.7727	(-0.00030	0.00020
2>	0.16386 0.00411	2.61506 -0.00267	0.01542 (-0.00034	0.99471 0.01134	(-0.00322 0.00139	0.22877	0.00832	0.00866	11.61028	112.56800	(-0.00005	34.43100	0.00111	(-0.00172	84.3451	(-0.00035	0.00019
Avg	0.16027 0.00439	2.59604 -0.00302	0.01487 (-0.00034	0.98573 0.01111	(-0.00302 0.00134	0.22624	0.00806	0.00844	11.43214	111.79300	(-0.00005	33.65250	0.00109	(-0.00204	84.5589	(-0.00032	0.00019
Sd	0.00508 0.00039	0.02689 0.00050	0.00077 0.00001	0.01270 0.00032	0.00029 0.00007	0.00359	0.00037	0.00032	0.25193		0.00000		0.00003	0.00046	0.3023	0.00004	0.00001
SdZ	3.16833 8.77883	1.03576 -16.46898	5.15130 -2.22861	1.28888 2.84854	-9.48909 4.87682	1.58694	4.63440	3.82835	2.20368		-2.08695		2.47604	-22.47170	0.3575	-11.16166	5.66823

Sampel F2

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bg1	Ca3	Co1	ALZ	Li2	Na1
1>	0.15068 0.00467	2.57072 -0.00208	0.01460 (-0.00031	0.95617 0.01140	(-0.00312 0.00137	0.23520	0.00792	0.00827	11.46342	113.13900	(-0.00005	34.51200	0.00099	(-0.00165	84.5817	(-0.00031	0.00041
2>	0.16442 0.00431	2.63723 -0.00326	0.01555 (-0.00040	0.99830 0.01111	(-0.00419 0.00130	0.22707	0.00814	0.00851	11.41369	118.00800	(-0.00005	35.26000	0.00088	(-0.00186	84.5194	(-0.00045	0.00035
Avg	0.15755 0.00449	2.60398 -0.00267	0.01508 (-0.00035	0.97723 0.01126	(-0.00366 0.00133	0.23113	0.00803	0.00839	11.43836	115.57350	(-0.00005	34.88600	0.00093	(-0.00176	84.5505	(-0.00038	0.00038
Sd	0.00971 0.00025	0.04703 0.00084	0.00068 0.00006	0.02979 0.00021	0.00076 0.00005	0.00575	0.00015	0.00017	0.03516		0.00000		0.00008	0.00015	0.0441	0.00010	0.00004
SdZ	6.16325 5.67211	1.80605 -31.46309	4.50157 -17.98692	3.04852 1.82469	-20.84016 3.48772	2.49652	1.89532	1.98789	0.30741		-0.55855		8.65512	-8.28273	0.0521	-26.53021	10.09589

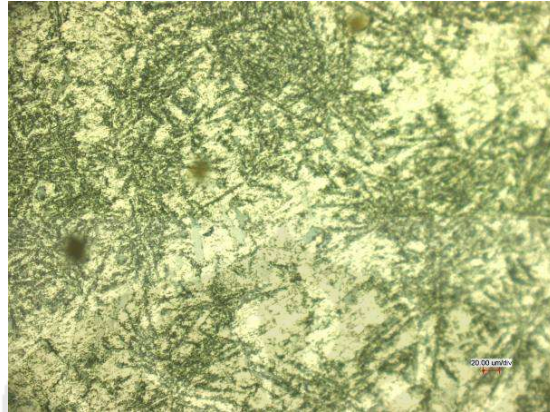
Sampel F3

Run	Fe7 P1	Cu Sb5	Mn Sr	Mg V3	Zn Zr3	Ti4	Cr1	Ni6	Si	Al3	Be3	Bg1	Ca3	Co1	ALZ	Li2	Na1
1>	0.15882 0.00434	2.56910 -0.00377	0.01441 (-0.00040	0.94922 0.01080	(-0.00714 0.00127	0.22552	0.00778	0.00835	11.46972	110.47000	(-0.00005	32.91200	0.00104	(-0.00298	84.5942	(-0.00036	0.00013
2>	0.17484 0.00478	2.69884 -0.00500	0.01543 (-0.00036	1.01546 0.01034	0.00083 0.00136	0.22011	0.00775	0.00909	11.16391	105.20900	(-0.00005	29.57600	0.00104	(-0.00341	84.6852	(-0.00033	0.00020
Avg	0.16683 0.00456	2.63397 -0.00438	0.01492 (-0.00038	0.98234 0.01057	(-0.00316 0.00132	0.22282	0.00777	0.00872	11.31682	107.83950	(-0.00005	31.24400	0.00104	(-0.00319	84.6397	(-0.00034	0.00016
Sd	0.01133 0.00031	0.09174 0.00087	0.00072 0.00003	0.04684 0.00032	0.00563 0.00006	0.00382	0.00002	0.00052	0.21624		0.00000		0.00001	0.00030	0.0643	0.00002	0.00005
SdZ	6.78941 6.82778	3.48302 -19.86181	4.84984 -7.14829	4.76796 3.06611	-178.50960 4.57979	1.71619	0.30650	5.94845	1.91082		-0.67924		0.49791	-9.47872	0.0760	-6.19694	28.73061

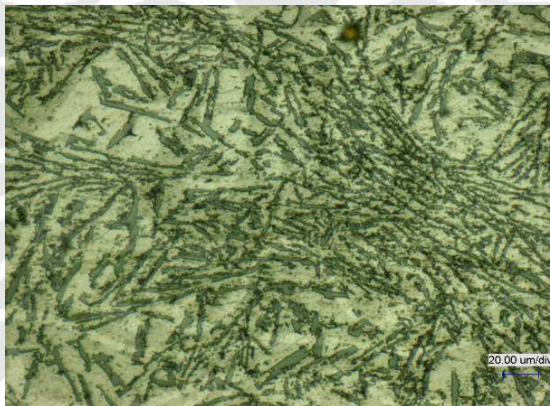
Lampiran 6

Foto Hasil Pengamatan Struktur Mikro Sampel X

Perbesaran 450X



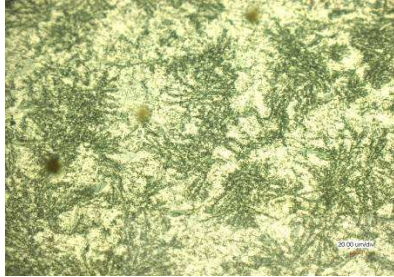
Perbesaran 1000X



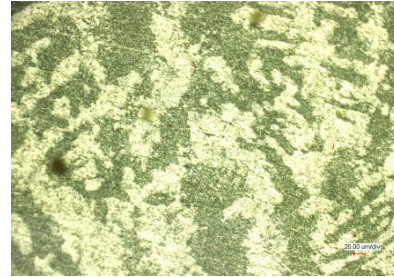
Lampiran 7

Foto Hasil Pengamatan Struktur Mikro Sampel D

Perbesaran 450X



D1

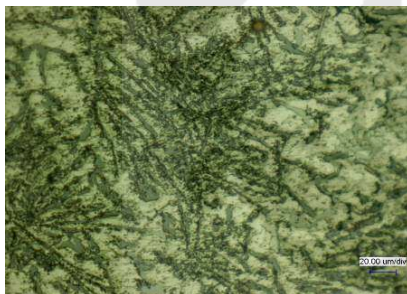


D2

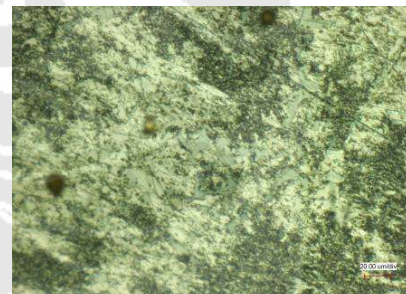


D3

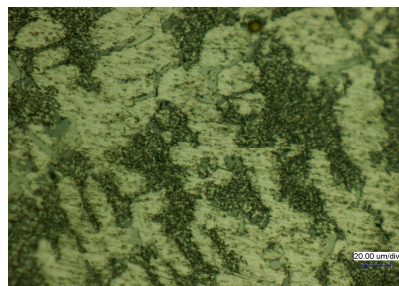
Perbesaran 1000X



D1



D2

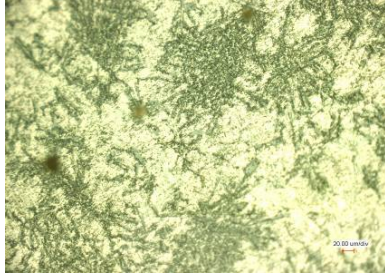


D3

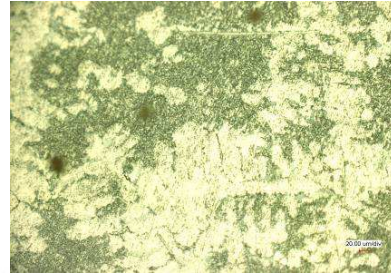
Lampiran 8

Foto Hasil Pengamatan Struktur Mikro Sampel E

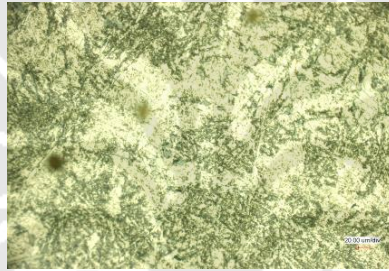
Perbesaran 450X



E1

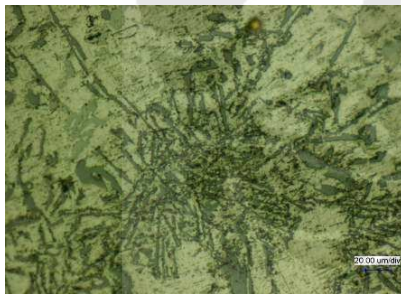


E2

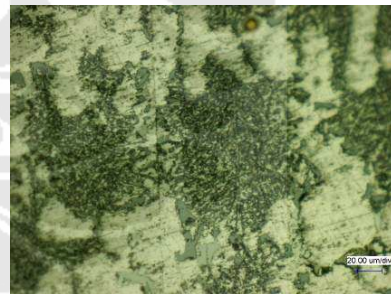


E3

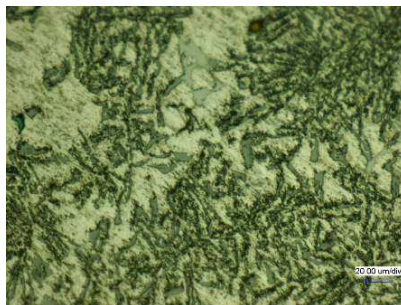
Perbesaran 1000X



E1



E2

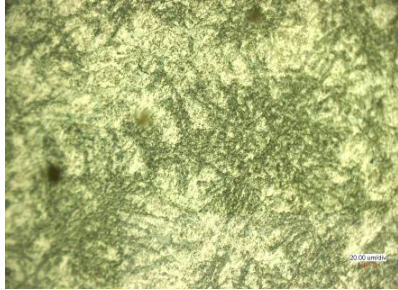


E3

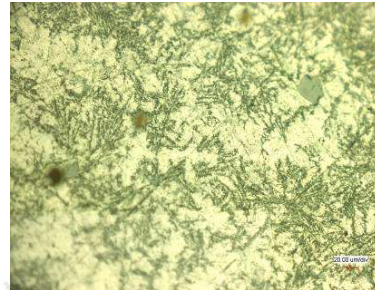
Lampiran 9

Foto Hasil Pengamatan Struktur Mikro Sampel F

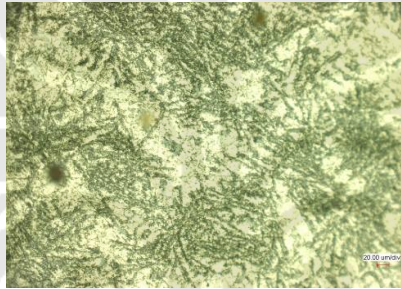
Perbesaran 450X



F1

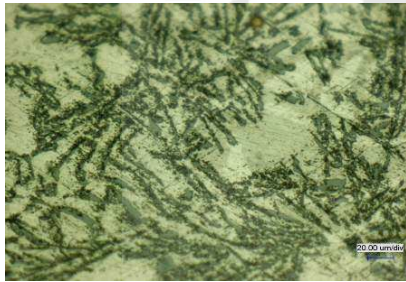


F2

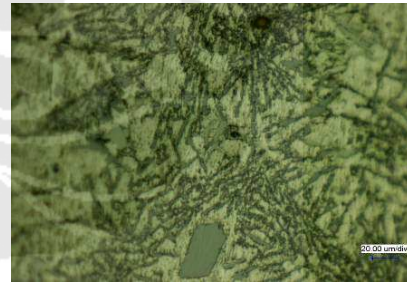


F3

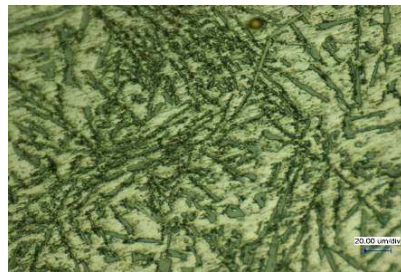
Perbesaran 1000X



F1



F2



F3