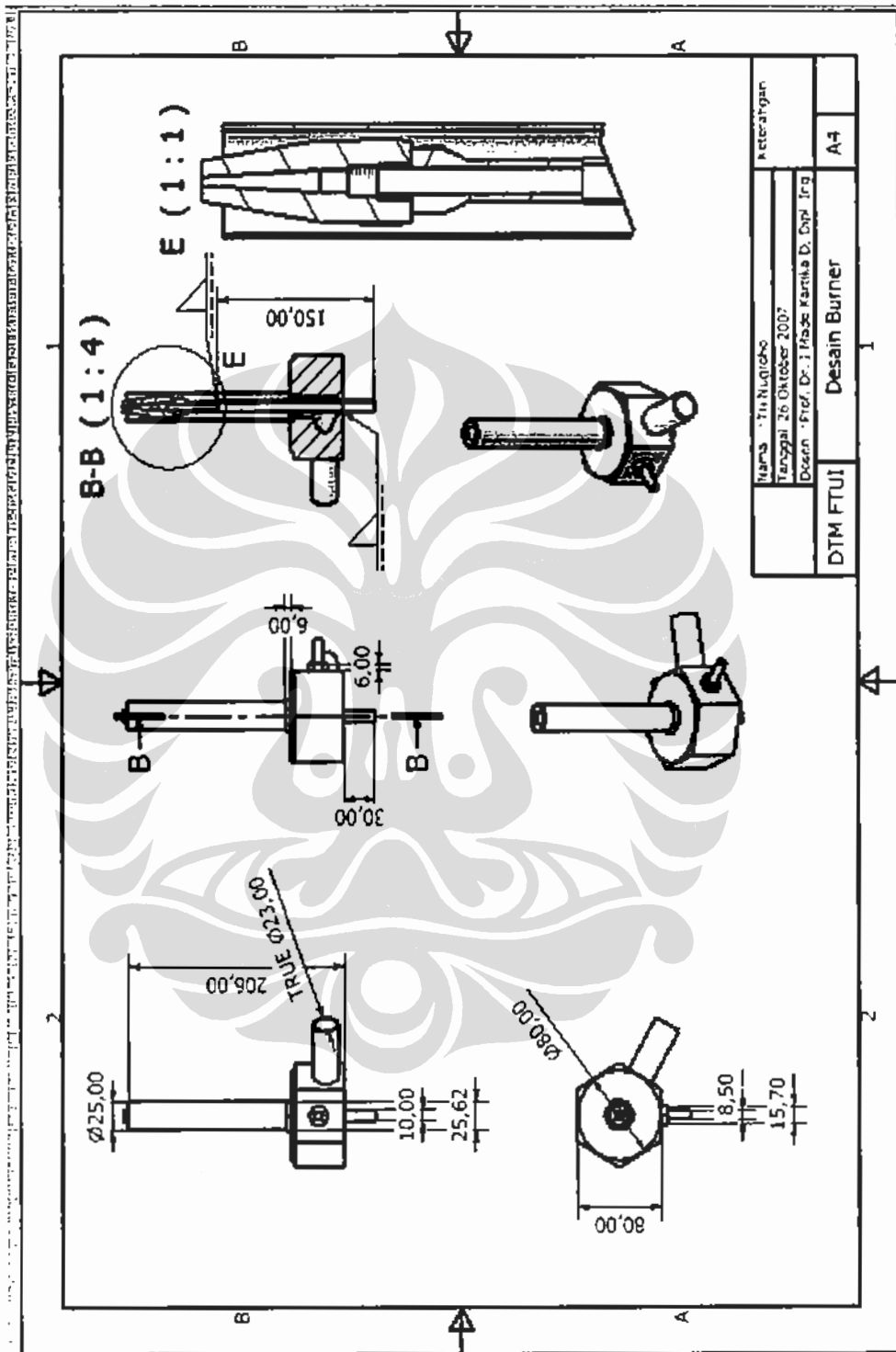
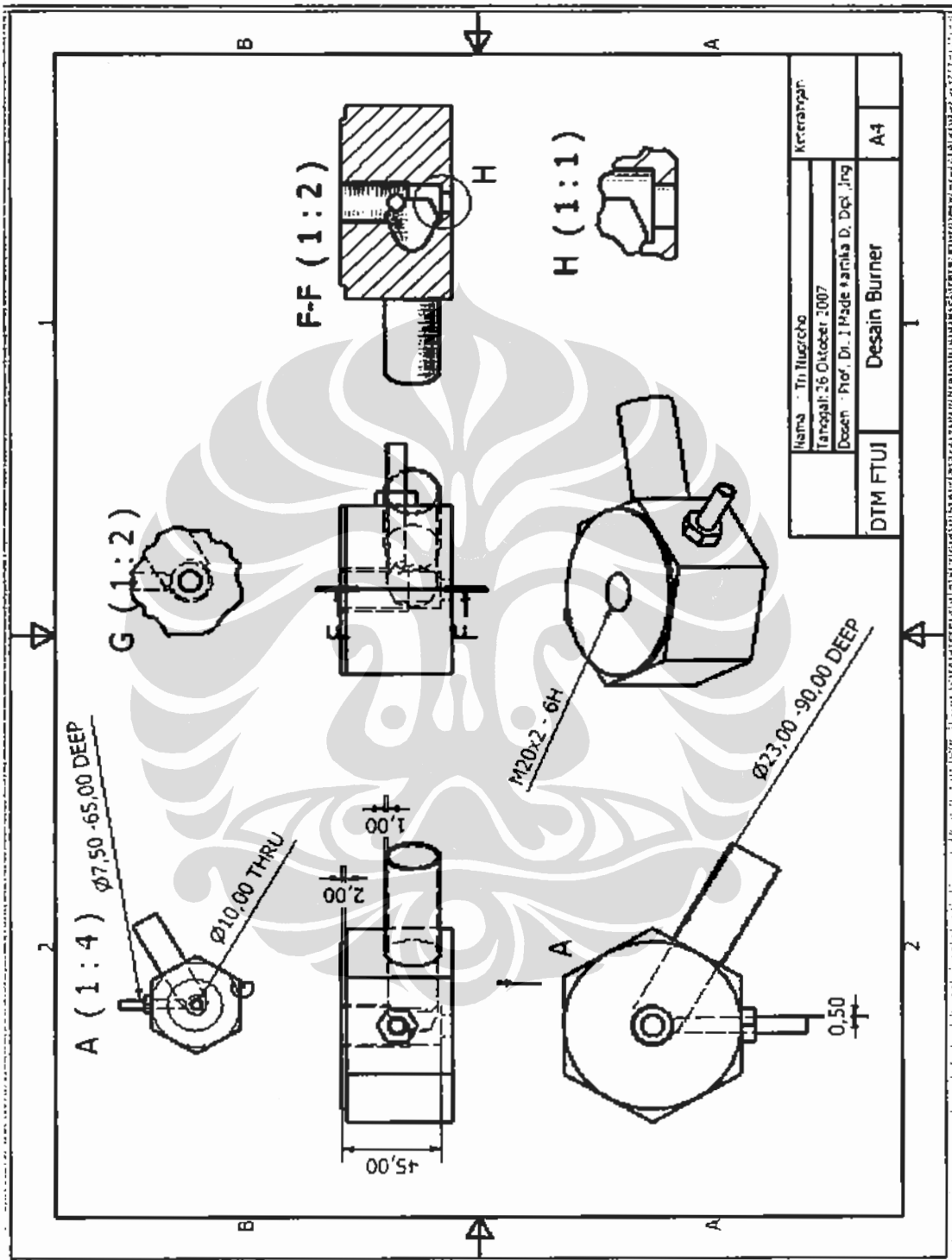
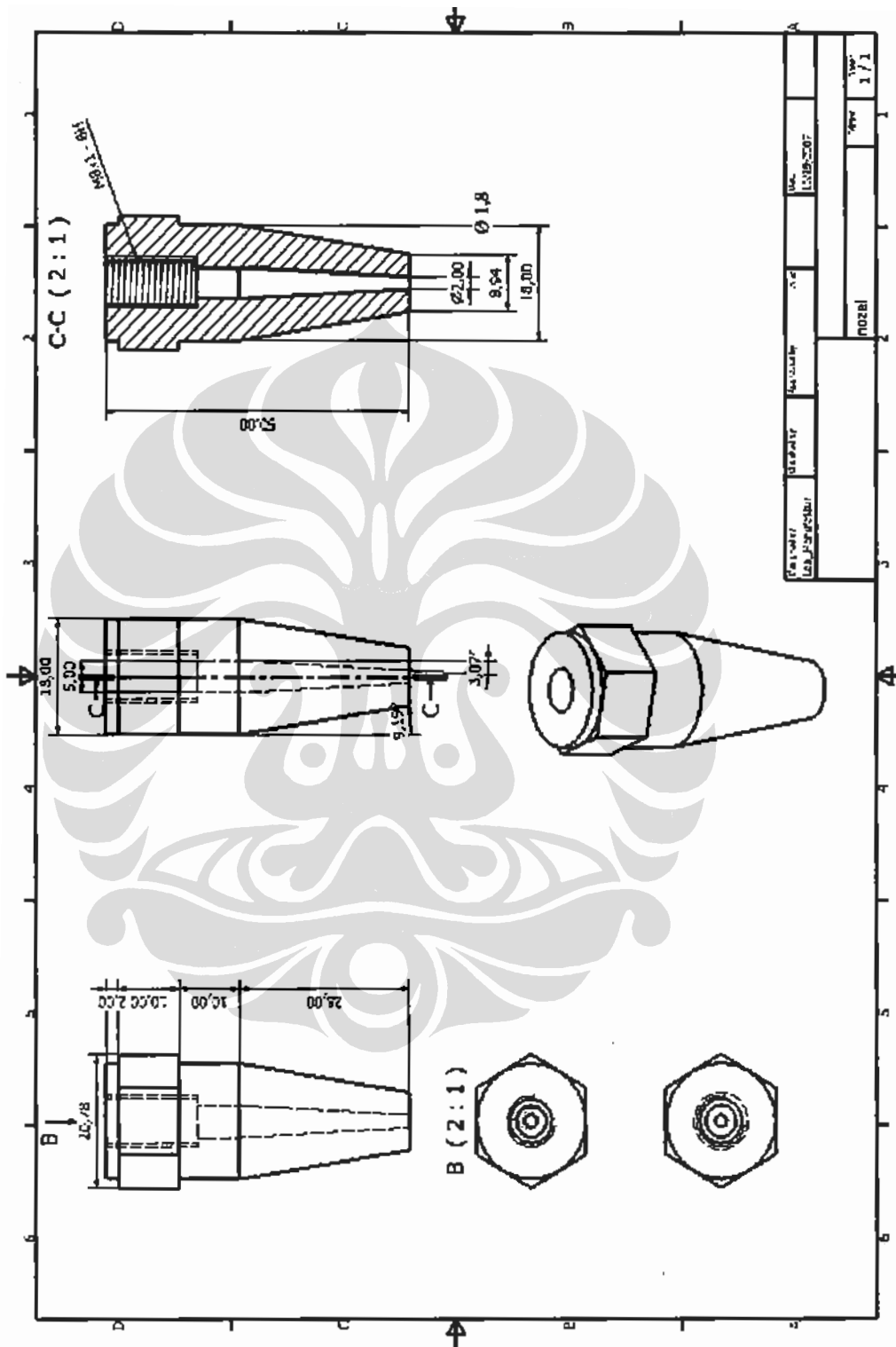


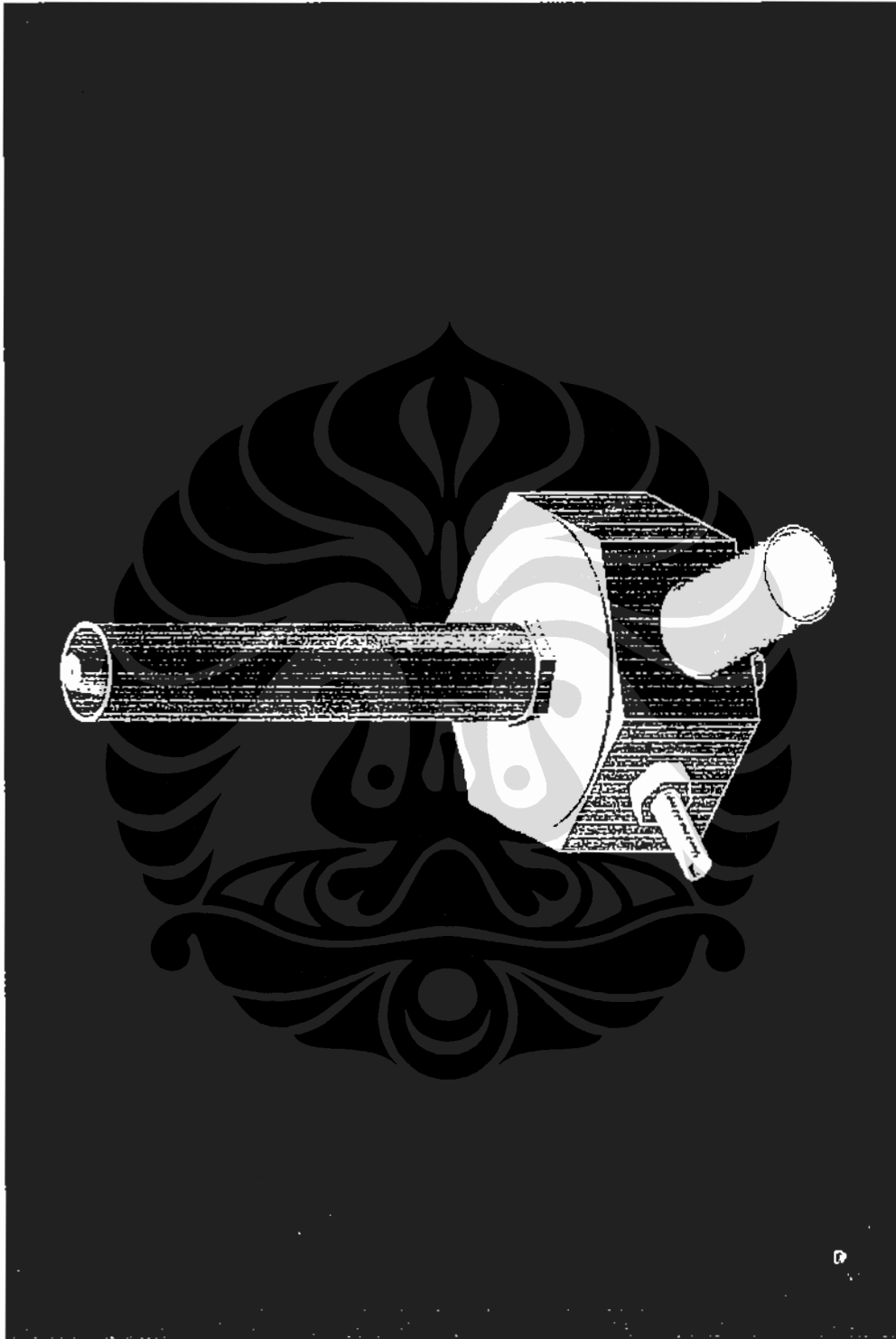
LAMPIRAN 1 : DISAIN BURNER GAS TIPE EJECTED COMBUSTOR





Nama : Tri Ilustricho		Keterangan:	
Tanggal: 26 Oktober 2007			
Dosen : Prof. Dr. I Made Karmila D. Dwi, Ing			
DTM FTUI	Desain Burner	A4	





1.ampiran 2 Viskositas gas dan uap

Viscosity ($\times 10^{-6}$) of Gases and Vapors
(in gms/cm²/sec)

T	C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0				171	94		139	166	83	85	91	102							
10			180	180	72		140	170	84	87	92	103			170	81			76
20			183	183	76		148	173	87	91	101	109			178	84			80
30			186	186	79		153	175	90	94	104	113			184	88			84
40			190	190	82		157	177	92	98	108	117			188	90			87
50		68	194	194	85		168	180	94	101	110	120			192	94			90
75		82	210	210	91		180	188	98	100	108	120			203	100	63		96
100		93	218	218	97		190	196	108	105	114	126			211	108	68	102	126
150	105	110	242	242	108		211	218	124	113	127	140			229	120	77	114	144
200		125	255	255	120		232	240	138	122	141	154			245	134	85	125	164
250		136	275	275	132		250	266	153	130	155	167			253	151	92	137	183
300		147	295	295	145		268	294	166	139	171	180			280	170	100		202
350		158	313	313	158		286		180	148		193			295	181			221
400		166		332	174		304		194	156		205			311	193			241
500				360	333		333		171	171		226			340	205			
600				390	361		361		185	185		256			369	226			
700				420	389		389		198	198		285			381	256			
800				442	415		415		211	211					419	285			
900				470	440		440		224	224					440				
1,000				500	470		470		235	235					460				

Legend: 1. Acetic Acid Vapor, 2. Acetone Vapor, 3. Air, 4. Acetylene, 5. Benzene Vapor, 6. Carbon Dioxide, 7. Carbon Monoxide, 8. Ethyl Alcohol Vapor, 9. Hydrogen, 10. Ethane, 11. Ethylene, 12. Methane, 13. Methyl Alcohol Vapor, 14. Nitrogen, 15. Propylene, 16. n-Octane Vapor, 17. Propane, 18. Water Vapor.

Units: 1 gm/cm²/sec = 1 poise = 1 dyne sec/cm² = 10³ centipoise = 10⁶ micropoise.

Lampiran 3 Karakteristik bahan bakar

Name of matter, chemical formula	Molecular mass M_c , kg/mol	Density ρ , kg/m ³	Gas constant R_c , J/(kg·°C)	Heat of combustion			
				Q_h^{vol}	Q_l^{vol}	Q_h^m	Q_l^m
				kJ/m ³ / kJ/kg			
Carbon on combustion to CO (C)	12.01	—	—	—	—	9295	9295
Carbon on combustion to CO ₂ (C)	12.01	—	—	—	—	32908	32908
Carbon monoxide (CO)	28.01	1.25	297	12644	12644	10132	10132
Hydrogen (H ₂)	2.016	0.09	412	12770	10760	141974	119617
Methane (CH ₄)	16.04	0.717	518	39853	35797	56103	49404
Ethane (C ₂ H ₆)	30.07	1.34	276	70422	64351	51958	47436
Propane (C ₃ H ₈)	44.09	1.96	187	101823	93573	50409	46348
Butane (C ₄ H ₁₀)	58.12	2.59	143	134019	123552	49572	45720
Pentane (C ₅ H ₁₂)	72.14	3.22	—	150723	140928	48575	45025
Pentane (C ₆ H ₁₄)	78.11	3.48	115	148213	137143	48358	44661
Benzol (C ₆ H ₆)	78.11	3.48	—	146287	140383	42035	40340
Ethylene (C ₂ H ₄)	28.05	1.25	296	64016	14320	50786	47562
Propylene (C ₃ H ₆)	42.08	1.88	198	94370	88216	49279	46055
Butylene (C ₄ H ₈)	56.10	2.50	148	114509	107015	48692	45469
Acetylene (C ₂ H ₂)	26.03	1.16	320	58992	56940	50367	48651
Hydrogen sulfide (H ₂ S)	34.07	1.52	242	25707	23697	16705	15407
Sulfur (S)	32.06	—	—	—	—	9261	9261

Lampiran 4 Properti Udara dan Propane (C₃H₈)

$t, ^\circ\text{C}$	$\lambda \cdot 10^4, \text{W}/(\text{cm} \cdot ^\circ\text{C})$	$\eta \cdot 10^4, \text{N} \cdot \text{s}/\text{m}^2$	Pr	$\nu \cdot 10^4, \text{m}^2/\text{s}$	$c_p, \text{kJ}/(\text{kg} \cdot ^\circ\text{C})$	$\frac{c_p}{c_v} = k$	$a \cdot 10^3, \text{m}^2/\text{s}$	$\rho, \text{kg}/\text{m}^3$
<i>Air</i>								
0	24.4	17.2	0.707	13.3	1.004	1.400	6.76	1.293
100	32.1	21.9	0.688	23.0	1.009	1.397	12.1	0.946
200	39.3	26.0	0.680	34.8	1.026	1.390	18.4	0.747
300	46.1	29.7	0.674	48.2	1.047	1.378	25.7	0.616
400	52.1	33.0	0.678	63.0	1.068	1.366	33.5	0.524
500	57.4	36.2	0.687	79.3	1.093	1.357	41.5	0.456
600	62.3	39.1	0.699	96.2	1.114	1.345	49.9	0.404
700	67.1	41.8	0.706	115	1.135	1.337	58.7	0.363
800	71.8	44.3	0.713	135	1.156	1.330	68.2	0.328
900	76.3	46.7	0.717	155	1.172	1.325	77.8	0.301
1000	80.7	49.0	0.719	178	1.185	1.320	88.8	0.276
<i>Propane (C₃H₈)</i>								
0	15.2	7.50	0.762	3.81	1.5495	1.138	1.80	1.967
100	26.3	10.00	0.768	6.94	2.0168	1.102	3.26	1.44
200	40.1	12.45	0.763	10.9	2.4581	1.083	5.17	1.14
300	56.2	14.81	0.748	15.8	2.8345	1.070	7.61	0.939
400	74.8	17.16	0.727	21.6	3.1610	0.062	10.7	0.799
500	95.6	19.42	0.700	28.2	3.4487	1.057	14.4	0.694
600	118.6	21.77	0.678	35.6	3.6974	1.053	18.8	0.616

Lampiran 5. Pengaruh Perubahan Panjang Nyala Api Difusi Terhadap Temperatur Ujung nozel.

