

Lampiran 2. Spektrogram GC larutan sampel

- Spektrogram GC kontrol larutan alkohol

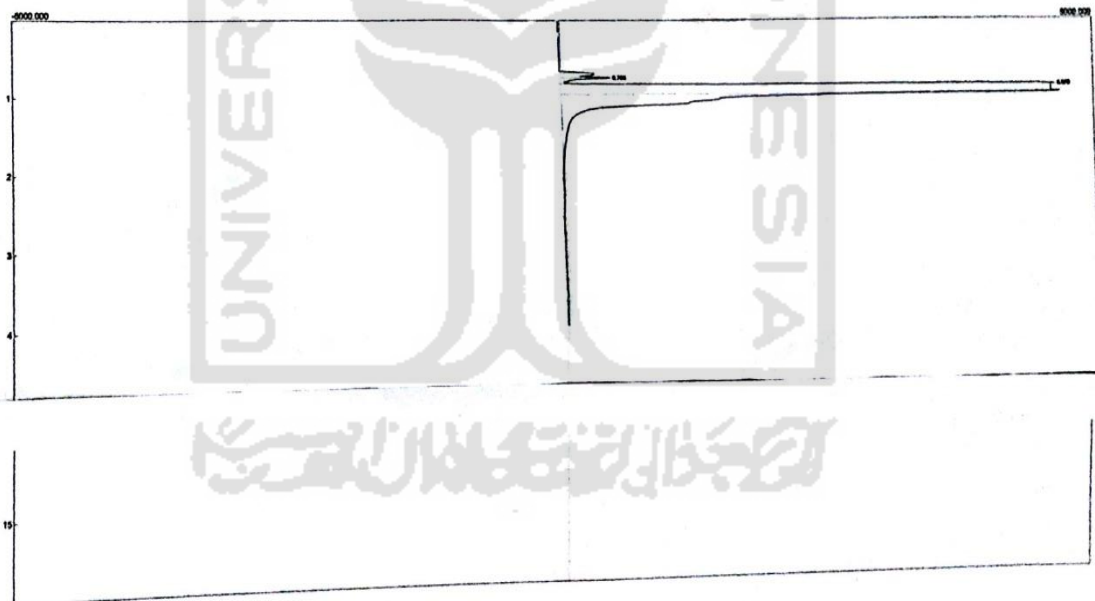
Lab name: SRI Instruments
 Client: Valued Customer
 Analysis date: 12/14/2016 10:53:59
 Method: Syringe Injection
 Lab ID:
 Description: FID-CHANNEL 1
 Column: RESTEK 15METER MXT-1
 Carrier: Nitrogen 25 PSI
 Temp. prog:
 Events: C:\Peak426-32bit\cek.evt
 Components: test.cpt
 Data file: kontrol.chr ()
 Sample: methanol
 Comments: TYPE YOUR COMMENTS HERE

Temperature program:

Init temp	Hold	Ramp	Final temp
60.00	0.000	5.000	80.00

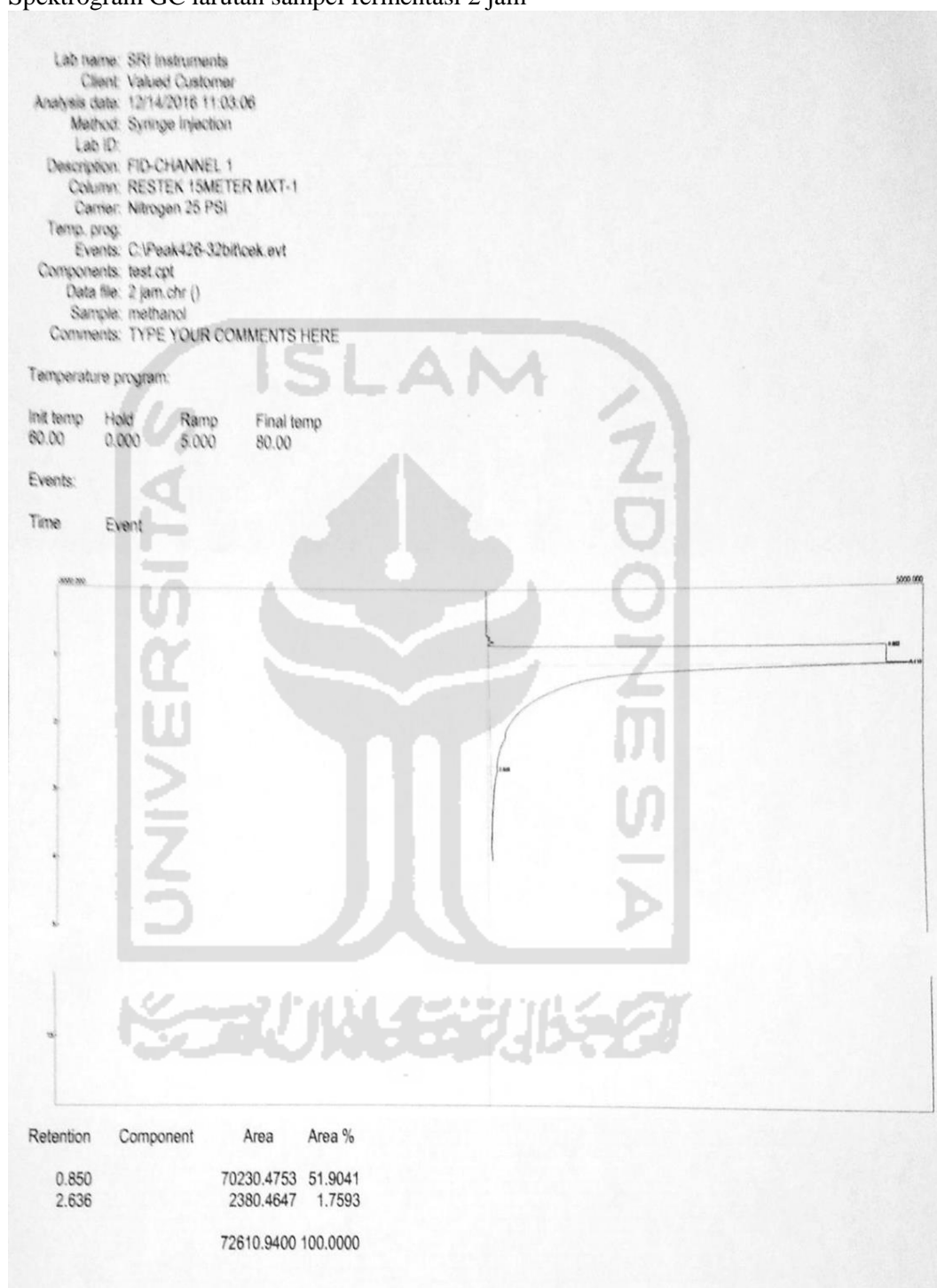
Events:

Time	Event

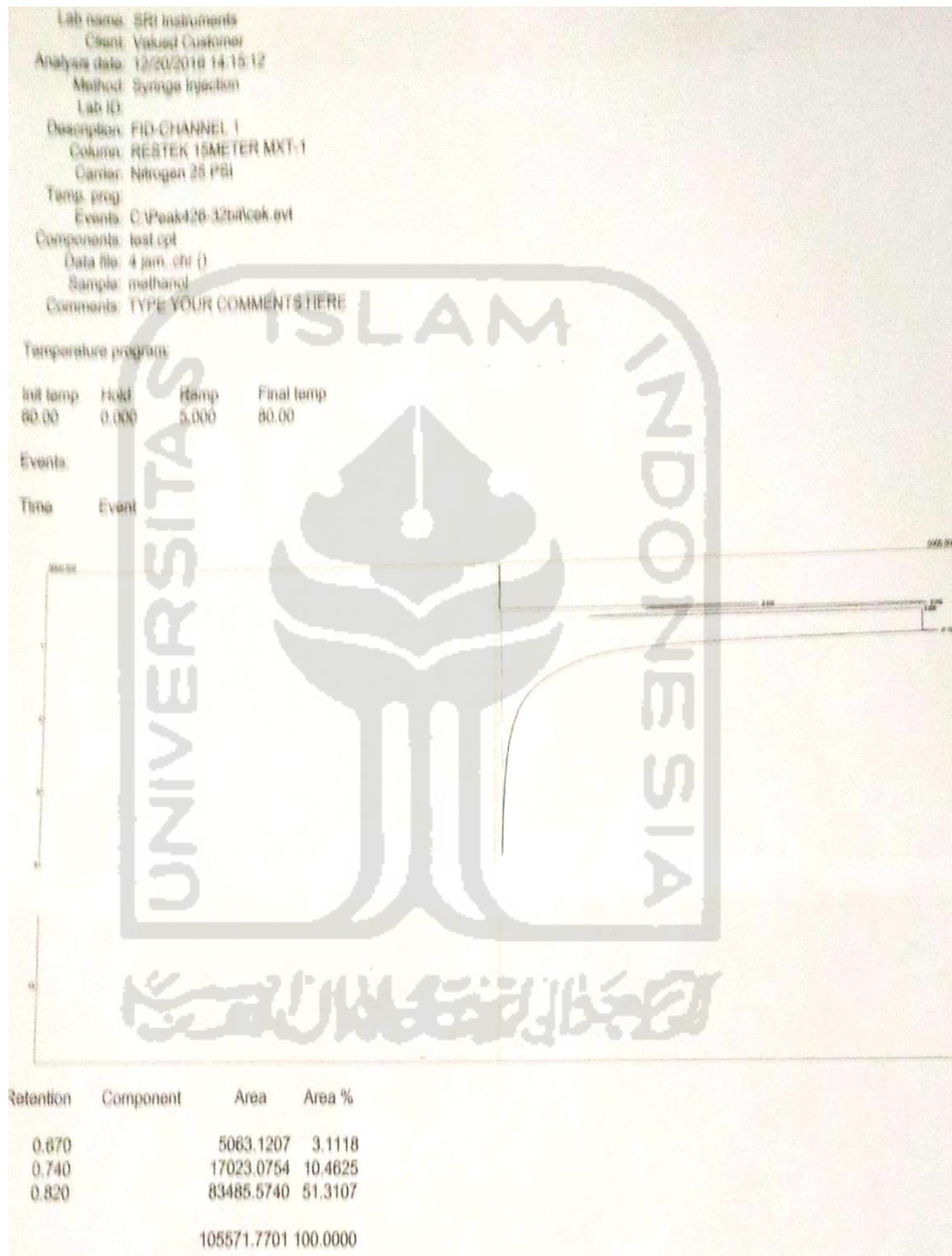


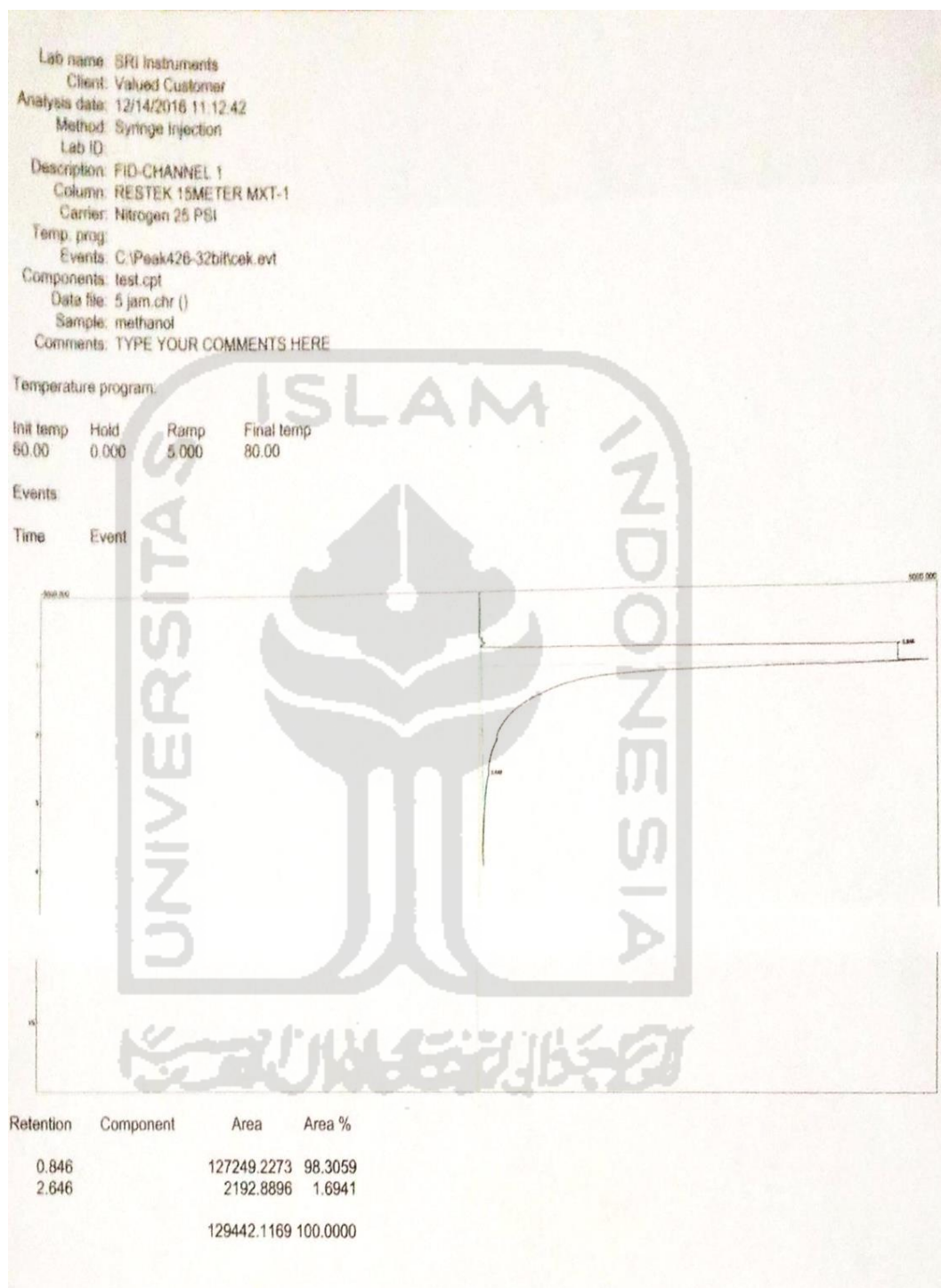
Retention	Component	Area	Area %
0.766		1103.4534	1.9978
0.870		54130.0898	98.0022
		55233.5432	100.0000

➤ Spektrogram GC larutan sampel fermentasi 2 jam



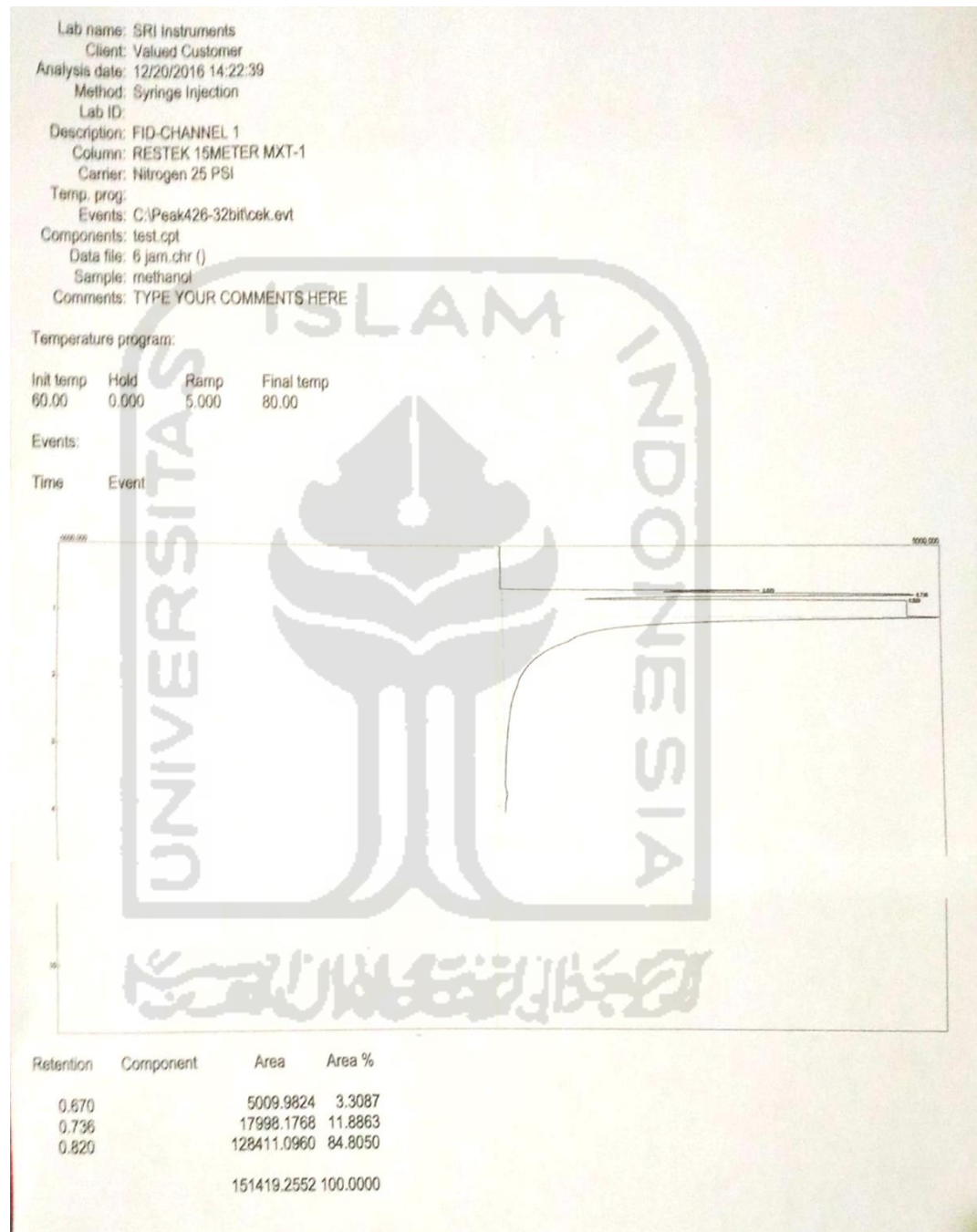
➤ Spektrogram GC larutan sampel fermentasi 4 jam



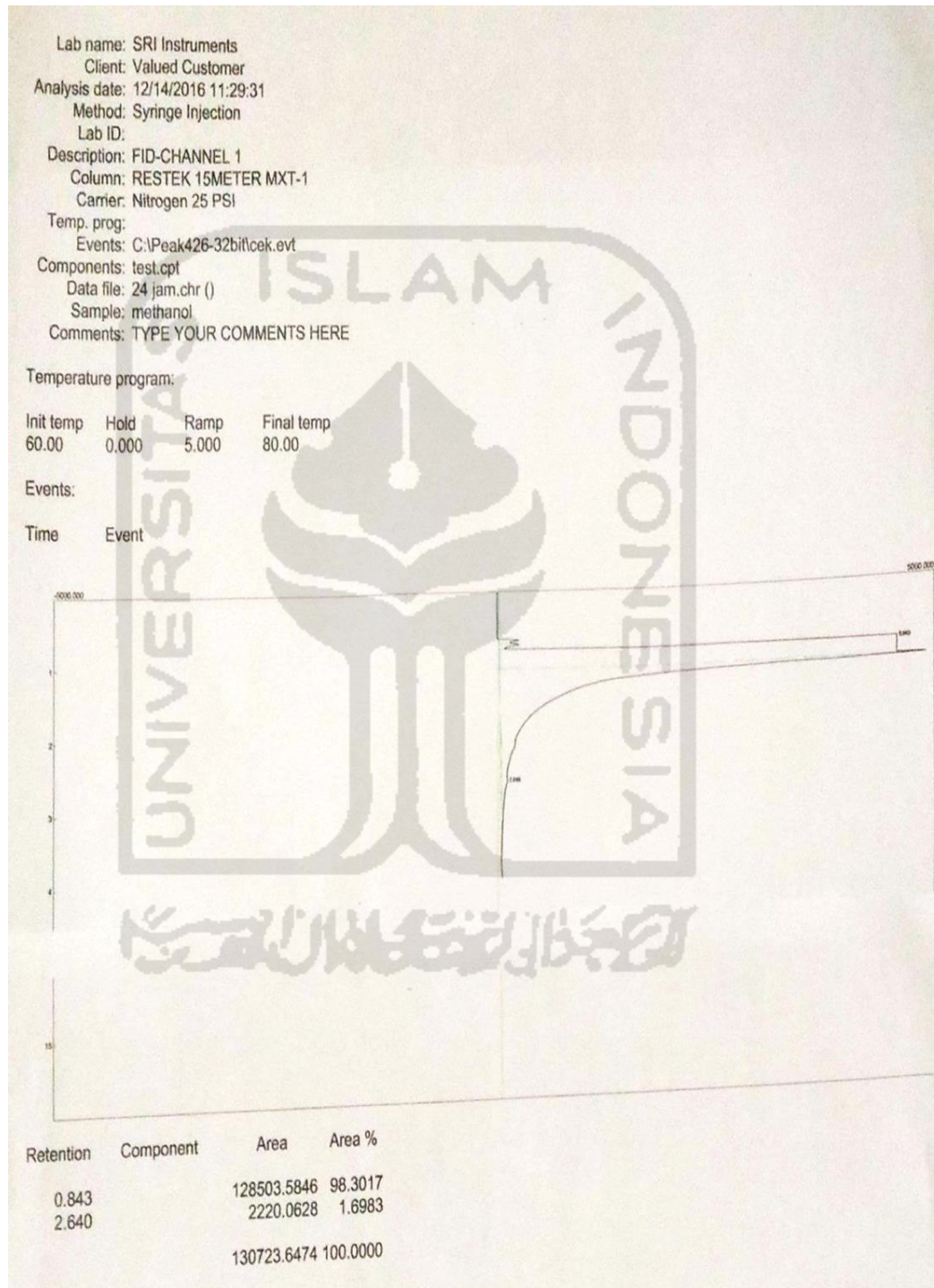


➤ Spektrogram GC larutan sampel fermentasi 5 jam

➤ Spektrogram GC larutan sampel fermentasi 6 jam



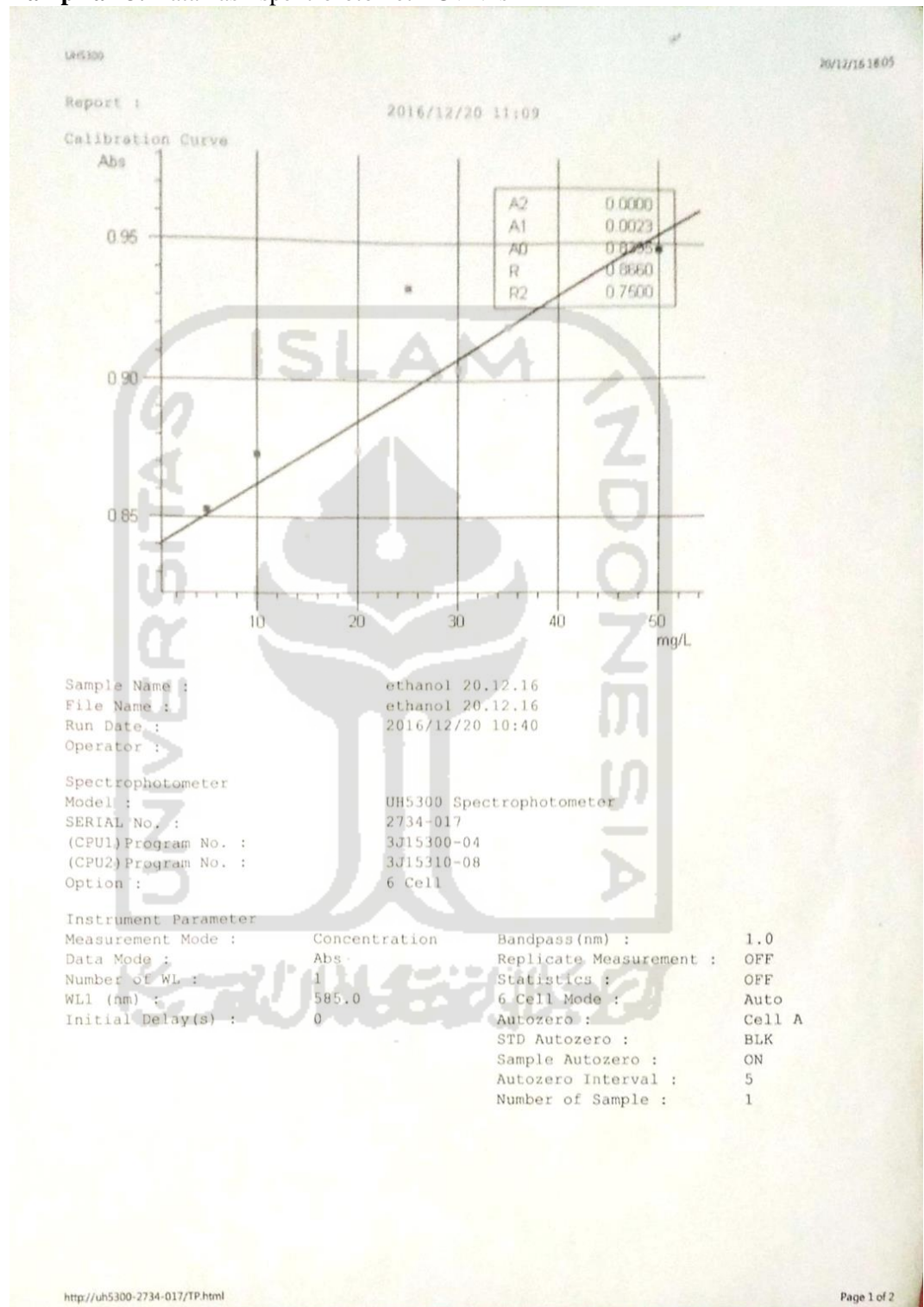
➤ Spektrogram GC larutan sampel fermentasi 24 jam



Lampiran 3. Perhitungan pembuatan larutan standar

- **Larutan induk 50%**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 100\% = 25\text{mL} \times 50\%$
 $V1 = 12,5 \text{ mL}$
- **Larutan standar 5 %**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 5\%$
 $V1 = 2,5 \text{ mL}$
- **Larutan induk 10%**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 10\%$
 $V1 = 5 \text{ mL}$
- **Larutan standar 15 %**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 15\%$
 $V1 = 7,5\text{mL}$
- **Larutan standar 20 %**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 20\%$
 $V1 = 10 \text{ mL}$
- **Larutan induk 25%**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 25\%$
 $V1 = 12,5 \text{ mL}$
- **Larutan standar 30 %**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 30\%$
 $V1 = 15 \text{ mL}$
- **Larutan standar 35 %**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 35\%$
 $V1 = 17,5 \text{ mL}$
- **Larutan induk 50%**
 $V1 \times M1 = V2 \times M2$
 $V1 \times 50\% = 25\text{mL} \times 50\%$
 $V1 = 25 \text{ mL}$

Lampiran 3. Data hasil spektrofotometri Uv-Vis



➤ Data hasil spektrofotometri Uv-Vis absorbansi larutan standar dan sampel

20/12/16 18:05

U4500

STD

STD No.	Abs	CONC (mg/L)	DIFF	RD	T
STD1	0.853	5.0000	0.9317	104.27164	0.11070
STD2	0.873	10.0000	4.7406	530.52918	0.56325
STD3	0.843	15.0000	-13.3676	-1495.98295	-1.58824
STD4	0.874	20.0000	-4.6435	-519.65330	-0.55170
STD5	0.933	25.0000	16.2442	1817.90160	1.93001
STD6	0.904	30.0000	-1.6089	-180.05165	-0.19116
STD7	0.919	35.0000	0.1127	12.60695	0.01338
STD8	0.948	50.0000	-2.4093	-269.62147	-0.28625

Curve Information

Calibration Curve Type : 1st Order

Calibration Curve Formula : Abs=f(CONC)

Through Zero : OFF

CONC Min : 0.0000

CONC Max : 100.0000

Calibration Curve Factor : A0 : 0.8395 A1 : 0.0023

Factor : Correlation Coefficient: R =0.8660
Determination Coefficient: R2 =0.7500

Sample

Sample ID	Abs	CONC (mg/L)
2 jam	0.886	32.5275
4 jam	0.892	38.5295
5 jam	0.885	31.5138
6 jam	0.889	35.5540
24 jam	0.881	28.4469

Lampiran 4. Perhitungan konsentrasi alkohol dalam sampel

Diketahui :

Persamaan linear yang diperoleh : $y = 0,002x + 0,838$

Ditanya : konsentrasi alkohol dalam sampel =?

Jawab :

➤ **Kandungan alkohol dalam sampel 2 jam fermentasi**

$$\begin{aligned} & \text{➤ } y = 0,002x + 0,838 \\ & 0,886 = 0,002x + 0,838 \\ & (0,886 - 0,838) = 0,002x \\ & 0,048 = 0,002x = 24 \\ & \text{Jadi, konsentrasi alkohol} = 24\% \end{aligned}$$

➤ **Kandungan alkohol dalam sampel 4 jam fermentasi**

$$\begin{aligned} & \text{➤ } y = 0,002x + 0,838 \\ & 0,892 = 0,002x + 0,838 \\ & (0,892 - 0,838) = 0,002x \\ & 0,054 = 0,002x = 27 \\ & \text{Jadi, konsentrasi alkohol} = 27\% \end{aligned}$$

➤ **Kandungan alkohol dalam sampel 5 jam fermentasi**

$$\begin{aligned} & \text{➤ } y = 0,002x + 0,838 \\ & 0,885 = 0,002x + 0,838 \\ & (0,885 - 0,838) = 0,002x \\ & 0,047 = 0,002x \\ & x = 23,5 \\ & \text{Jadi, konsentrasi alkohol} = 23,5\% \end{aligned}$$

➤ **Kandungan alkohol dalam sampel 6 jam fermentasi**

$$\begin{aligned} & \text{➤ } y = 0,002x + 0,838 \\ & 0,889 = 0,002x + 0,838 \\ & (0,889 - 0,838) = 0,002x \\ & 0,051 = 0,002x \\ & x = 25,5 \\ & \text{Jadi, konsentrasi alkohol} = 25,5\% \end{aligned}$$

➤ **Kandungan alkohol dalam sampel 24 jam fermentasi**

$$\begin{aligned} & \text{➤ } y = 0,002x + 0,838 \\ & 0,881 = 0,002x + 0,838 \\ & (0,881 - 0,838) = 0,002x \\ & 0,043 = 0,002x \\ & x = 21,5 \\ & \text{Jadi, konsentrasi alkohol} = 21,5\% \end{aligned}$$