Annexure.1. GC-MS CHROMATOGRAM- INTERPRETATION FOR THE PEAKS OF THE SAMPLES:

Samples: MS-1 and XC-1 are sample codes for the FAME from *Myxosarcina* sp. for GC-MS analysis.

Unidentified peaks: Represented as NI- non identified peaks (Retention time – 10.7, 14.6, 15.12, 15.45, 17.82) (marked in the chromatogram attached below this document)

NIIST Database matches: Untransesterified fatty acids such as Octadecene and Eicosene, corresponding to the retention time of 13.77and 15.88 respectively were also detected in the chromatogram (Mass spectrum data- Annexure. 3)

#NOTE: Hence both the retention time of Supelco standard and NIIST database were used to interpret the compounds. The following table reveals the interpretation of the peaks of the chromatogram of the sample.

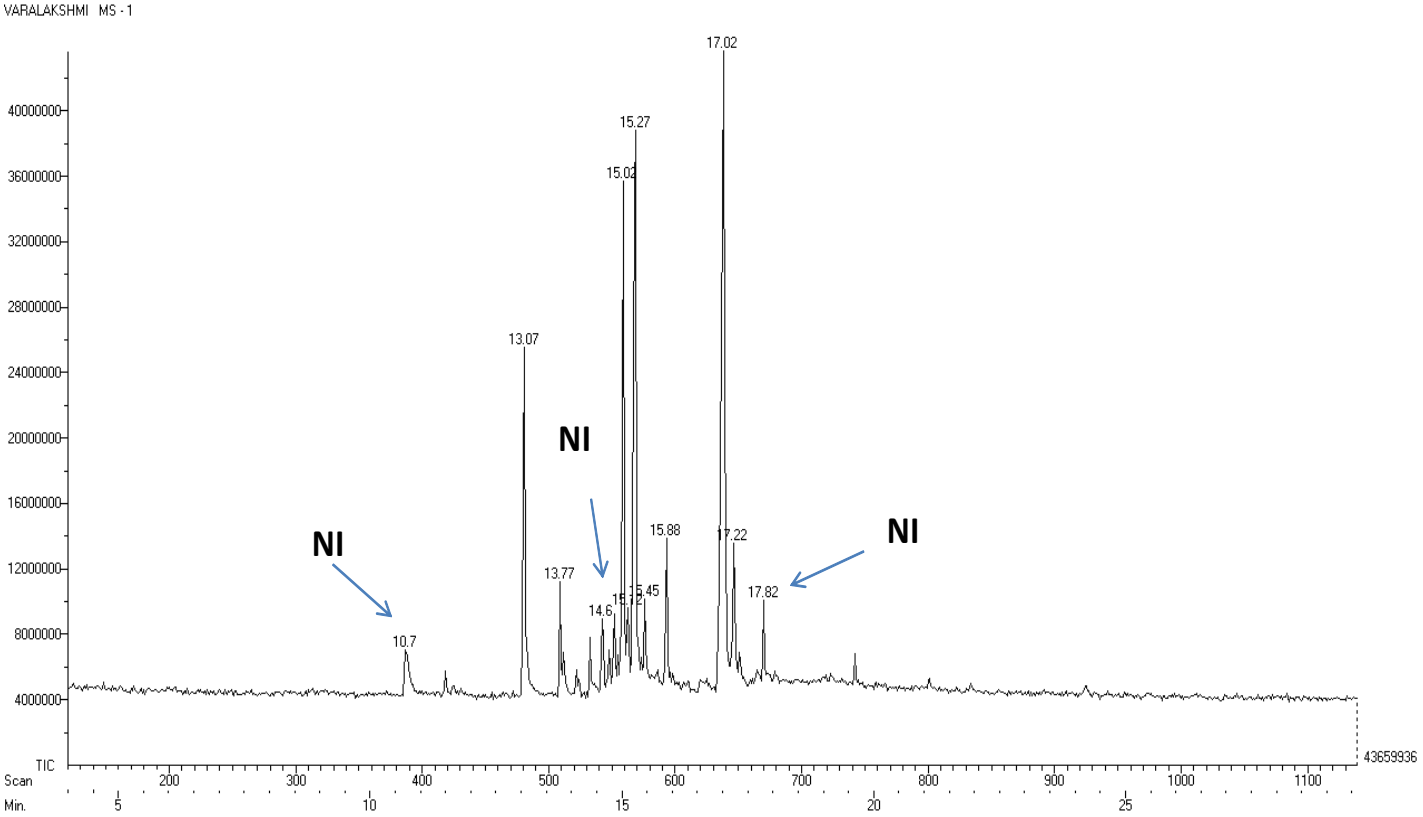


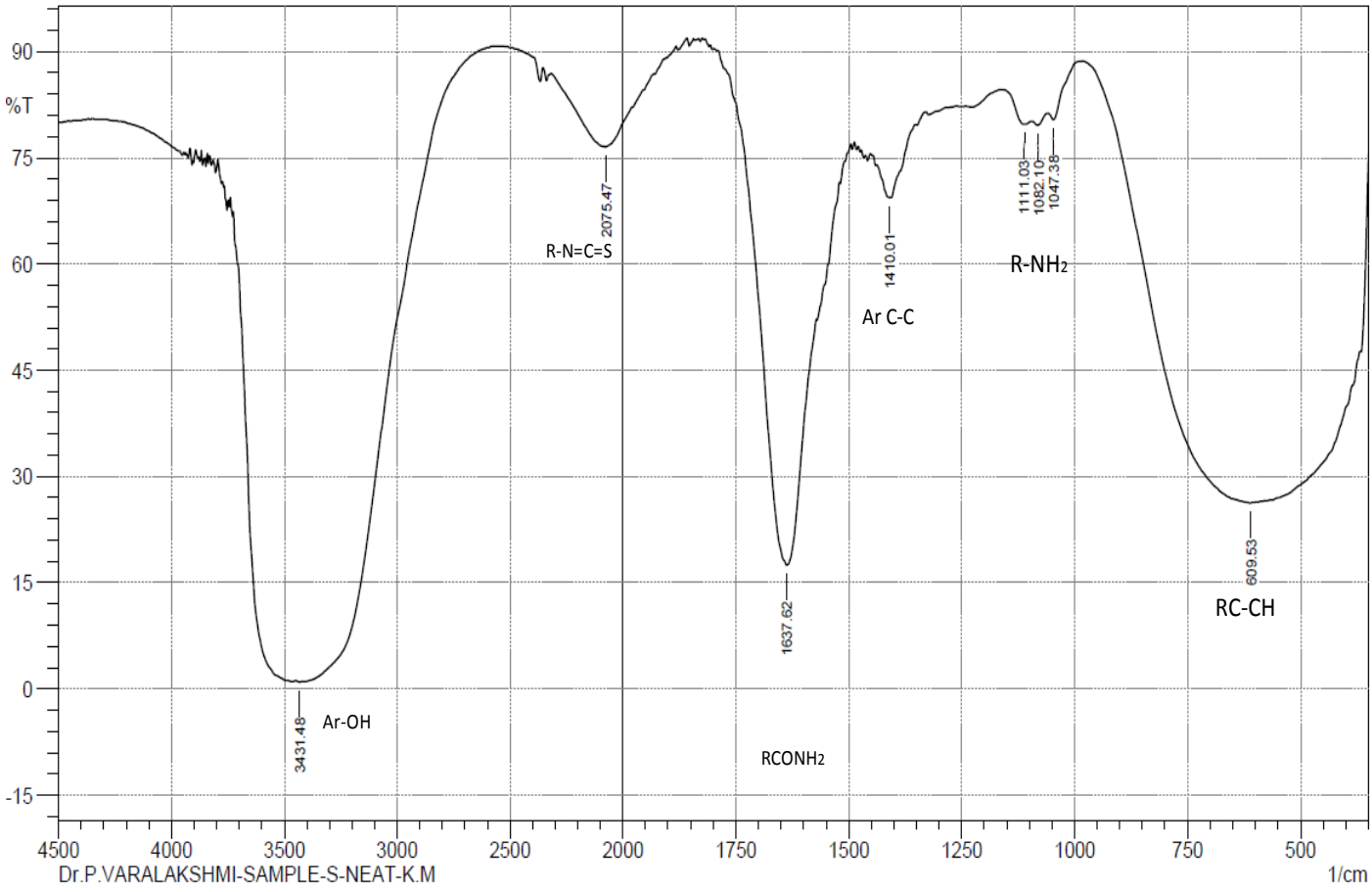
Fig.1. GC-MS chromatogram showing each peaks and NI denotes non identified peaks

Table.1. Retention times, *m/z* value, carbon number and identification of each peak by comparing with NIIST database and Supelco standard.

Retention time	Compound	*m/Z*	Carbon no.	Compared to
10.7	NI	NI	NI	NI
13.0	Methyl tetradecanoate	242	C14:0	Both Supelco and database
13.77	3 - Octadecene	252	C18:1	NIIST database
14.6	NI	NI	NI	NI
15.02	Hexadecenoic acid methyl ester	268	C16:1	Supelco standard
15.27	Hexadecanoic acid methyl ester	270	C16:0	Both Supelco and database
15.88	9- Eicosene	280	C20:2	NIIST database
17.02	8 - Octadecenoic methyl ester	296	C18:1	Both Supelco and database
17.22	Octadecanoic methyl ester	298	C18:0	Both Supelco and database
17.82	NI	NI	NI	NI

Table.2. Properties of sugar industry waste (SIW).

Parameters	Values
Total dissolved solids (TDS)	860 ± 20 mg /ml SIW
Reducing sugars	4.1 ± 0.03 mg/ml SIW
Protein	16.1 ± 0.01 mg/ml SIW
pH	5.12



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	609.53	26.268	0.441	650.03	576.74	42.311	0.303
2	1047.38	80.404	2.032	1058.96	983.73	5.357	0.008
3	1082.1	79.581	0.994	1095.6	1058.96	3.499	0.091
4	1111.03	79.709	1.472	1163.11	1095.6	5.84	0.155
5	1410.01	69.357	6.573	1438.94	1352.14	11.632	1.691
6	1637.62	17.461	46.171	1790	1572.04	76.386	40.726
7	2075.47	76.545	0.284	2079.33	1955.88	12.405	0.764
8	3431.48	0.959	0.141	3448.84	3421.83	53.654	0.86

Fig.2. FT-IR analysis of SIW sample with evidence of organic nitrogen and carbon compounds (Shakambari Ganeshan *et al.,* 2015).

Reference:

1. John Coates. *Encyclopedia of Analytical Chemistry*, 2000. Interpretation of Infrared Spectra, A Practical Approach. R.A. Meyers (Ed.). pp. 10815–10837. Ó John Wiley & Sons Ltd, Chichester

2. Shakambari Ganeshan, Sumi M Babu, Ashokkumar Balasubramaniem, Palanivelu Peramachi and Varalakshmi Perumal. Industrial effluent as a substrate for glutaminase free L-asparaginase production from *Pseudomonas plecoglossicida* strain RS1; media optimization, enzyme purification and its characterization, RSC Advances, 2015, DOI: 10.1039/C5RA05507E.