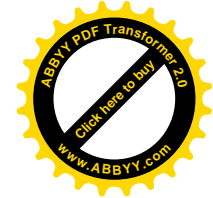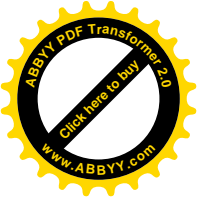# REFERENCE LIST

J. E. Angmor, D. M. Dicks, W. C. Evans, and D. K. Sandra, " Studies on *Cinnamomum zeylanicum* Part 1 The essential oil components of *C. Zeylanicum* Nees grown in Ghana," *Planta Medica,* vol. 21, pp. 416–420, 1972.

A. W. Archer, "Determination of cinnamaldehyde, coumarin and cinnamyl alcohol in cinnamon and cassia by high-performance liquid chromatography," *Journal of Chromatography,* vol. 441, pp. 272-216, 1988.

O. T. Asekun, D. S. Grierson, and A. J. Afolayan, "Characterization of essential oils from helichrysum odoratissium using different drying methods," *J. Applied. Sci,* vol. 7, pp. 1005-1008, 2007.

A. O. T. Ashafa and D. S. a. A. Grierson, A. J., "Effects of drying methods on the chemical composition of essential oil from felicia muricata leaves," *Asian Journal of Plant Sciences,* vol. 7(6), pp. 603-606, 2008.

C. J. Bailey and C. Day, "Traditional plant medicines as treatments for diabetes," *Diabetes Care,* vol. 12, pp. 553-564, 1989.

O. Baritaux, H. Richard, J. Touche, and M. Derbesy, "Effects of drying and storage of herbs and spices on the essential oil. Part I. Basil. *Ocimum basilicum L,*" *FlaVour Fragrance J.,* vol. 7, pp. 267-271, 1992.

J. P. Bartley and A. L. Jacobs, "Effects of drying on flavour compounds in Australian-grown ginger (*Zingiber officinale*)," *J. Sci. Food Agric. ,* vol. 80, pp. 209-215, 2000.

T. Bernard, F. Perineau, M. Delmas, and A. Gaset, "Extraction of essential oils by refining of plant materials. II. Processing of products in the dry state: *Illicium verum Hooker* (fruit) and *Cinnamomum zeylanicum* (bark)," *Flavour and Fragrance Journal* vol. 4, pp. 85–90, 1989.

D. B. Brooker, F. W. Bakker-Arkema, and C. W. Hall, "Drying and storage of grains and oil seeds.," *Van Nostrand Reinhold,* p. 206, 1992.

J. B. Cai, P. Lin, X. L. Zhu, and Q. D. Su, "Comparative analysis of clary sage (*S. sclarea L.*) oil volatiles by GC–FTIR and GC–MS," *Food Chemistry,* vol. 99, pp. 401–407, 2006.

J. C. Chalchat and I. Valade, "Chemical composition of leaf oils of *Cinnamomum* from Madagascar: *C. zeylanicum Blume, C. camphora L., C. fragrans Baillon* and *C. angustifolium*," *Journal of Essential Oil Research,* vol. 12, pp. 537–540, 2000.

K. A. Chandra, A. D. U. S. Amarasinghe and S. Walpolage, "Performance analysis of a dryer design for drying cinnamon chips" *Annual Transactions of IESL,* vol. 1, part B, pp.123-129, 2011.

R. W. Day and Q. G. P. Quinn, "Comparisons of treatments after an analysis of variance in ecology," *Ecological Monographs,* vol. 59, pp. 433–463, 1989.

M. C. Diaz-Maroto, M. S. Perez-Coello, and M. D. Cabezudo, "Effect of drying method on the volatiles in Bay Leaf (*Laurus nobilis L.*)," *J. Agric. Food Chem,* vol. 50, pp. 4520-4, 2002a.

M. C. Diaz-Maroto, M. S. P. Perez -Coello, M. A. G. L. Vinas, and M. D. Cabezudo, "Influence of drying on the flavor quality of spearmint (*Mentha Spicata L.*)," *J. Agric. Food Chem,* vol. 51, pp. 1265-1269, 2002b.

M. C. Diaz-Maroto, M. S. Perez -Coello, and M. D. Cabezudo, "Effect of different drying methods on the volatile components of parsley (*Petroselinum Crispum L.*)," *Eur. Food Res. Technol,* vol. 215, pp. 227-230, 2002c.

Y. Ding, E. Q. Wu, C. Liang, J. B. Chen, M. N. Tran, C. H. Hong, Y. Jang, K. L. Park, K. H. Bae, Y. H. Kim, and J. S. Kang, "Discrimination of cinnamon bark and cinnamon twig samples sourced from various countries using HPLC-based fingerprint analysis," *Food Chemistry,* vol. 127, pp. 755–760, 2011.

S.A. Gaur and S.S. Gaur, "Statistical Methods for Practice and Research, A guide to data analysis using SPSS," 2009.

S. L. Geng, Z. X. Cui, X. C. Huang, Y. F. Chen, D. Xu, and P. Xiong, "Variations in essential oil yield and composition during Cinnamomum cassia bark growth," *Industrial Crops and Products,* vol. 33, pp. 248–252, 2011.

M. E. Guynot, A. J. Ramos, L. Setó, P. Purroy, V. Sanchis, and S. Marin, "Antifungal activity of volatile compounds generated by essential oils against fungi commonly causing deterioration of bakery products," *Journal of Applied Microbiology,* vol. 94, pp. 893–899, 2003.

A. A. Hosseini, S. Padhye, W. Huisman, A. v. Boxtel, and J. Müller, "Effect of drying on the color of tarragon (A*rtemisia Dracunculus L.*) leaves," *Food and Bioprocess Techonology,* vol. 4(7), pp. 1281-1287, 2011.
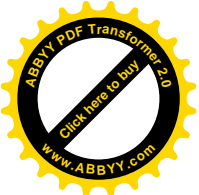
D. C. Howell, "Statistical Methods for Psychology," vol. Chapter 12; Multiple comparisons among treatment means, 2013.

http://www.lookchem.com, Visited, 15th January 2013

R. Huopalahti, R. Kesa lahti, and R. Linko, "Effect of hot air and freeze-drying on the volatile compounds of dill (*Anethum graVeolens L.*) herb," *J. Agric. Sci. Finland* vol. 57, pp. 133-138, 1985.

G. K. Jayaprakasha, L. Jaganmohan Rao, and K. K. Sakariah, "Chemical composition of volatile oil from Cinnamomum verum buds," *Zeitschrift für Naturforschung C,* vol. 57, pp. 990-993, 2002.

I. Jerkovic, J. Mastelic, and M. Milos, "The impact of both the season of collection and drying on the volatile constituents of *Origanum Vulgare L. ssp. hirtum* grown wild in Croatia," *Int. J. Food Sci. Technol. ,* vol. 36, pp. 649-654, 2001.

L. Jirovetz, G. Buchbauer, M. B. Ngassoum, and R. Eberhardt, "Analysis and quality control of the essential oil of the leaves of *Cinnamomum zeylanicum* from Cameroon," *Ernahrung,* vol. 22(10), pp. 443–445, 1998.

L. Jirovetz, G. Buchbauer, J. Ruzika, M. P. Shafi, and M. K. Rosamma, "Analysis of *Cinnamomum zeylanicum Blume* leaf oil from South India," *Journal of Essential Oil Research,* vol. 13, pp. 442-443, 2001.

I. T. Jolliffe, "Principal Component Analysis," *New York: Springer,* 2002.
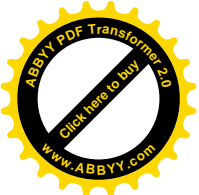
D. Kalemba and A. Kunicka, "Antibacterial and antifungal properties of essential oils," *Current Medicinal Chemistry,* vol. 10, pp. 813-829, 2003.

P. N. Kaul, A. K. Bhattacharjee, and B. R. R. Rao, "Seasonal variation in the composition of the essential oil of cinnamon (*Cinnamomum zeylanicum Blume*) leaves," *Indian Perfumer,* vol. 40(2), pp. 36–38, 1996.

P. N. Kaul, Bhattacharjee, A.K. and Rao, B.R.R. (1998) . „ "Chemical composition of the essential oils of cinnamon (*Cinnamomum zeylanicum Blume*) leaves affected by leaf spot disease," *Indian Perfumer,* vol. 42(1), pp. 33–35, 1998.

P. N. Kaul, A. K. Bhattacharya, B. R. R. Rao, K. V. Syamasundar, and S. Ramesh, " Volatile constituents of essential oils isolated from different parts of cinnamon (*Cinnamomum zeylanicum Blume*)," *Journal ofScience of Food and Agriculture,* vol. 83(1), pp. 53–55, 2003.

S. Khangholi and A. Rezaeinodehi, "Effect of drying temperature on essential oil content and composition of sweet wormwood (*Artemisia Annua*) growing wild in Iran," *Pak. J. Biol. Sci,* vol. 11, pp. 934-937, 2008.

A. J. Klockars and G. Sax, "Multiple comparisons," *Thousand Oaks, CA: Sage Publications. Quantitative Applications in the Social Sciences series #61,* 1986.

M. Koketsu, S. L. Gonclaves, R. L. Godoi, D. Lopez, and N. Morsbach, "The bark and leaf essential oils of cinnamon (*Cinnamomum verum Presl.*) grown at Parana,Brazil," *Ciência Tecnologia Alimentos,* vol. 17(3), pp. 281–285, 1997.

J. Kopka, "Gas chromatography–mass spectrometry," *Biotechnology in Agriculture and Forestry,* vol. 57, pp. 3–20, 2006.

B. Krishnamoorthy, A. Gopalam, and J. Abraham, "Quality parameters of cinnamon (*Cinnamomum verum*) in relation to flush colour," *Indian Cocoa Arecanut and Spices Journal XII,* vol. 2, p. 38, 1988.

B. Krishnamoorthy, J. Rema, T. J. Zachariah, A. Jose, and A. Gopalam, "Navasree and Nithyasreee –two high yielding and high quality cinnamon (*Cinnamomum verum – Bercht & Presl.*)," *Journal of Spices and Aromatic Crops,* vol. 5(1), pp. 28–33, 1996.

Y. Q. Li, D. X. De-xin Kong, and H. Wu, "Analysis and evaluation of essential oil components of cinnamon barks using GC–MS and FTIR spectroscopy," *Industrial Crops and Products,* vol. 41, pp. 269-278, 2013.

J. Liu, X. Chen, W. Yang, W. Liu, and T. Jiang, "Study on establishment of RP-HPLC and GC–MS ingerprints for wild germplasm resource of Ophiopogon japonicas in Sichuan and hierarchical clustering analysis," *Journal of Chinese Medical Materials,* vol. 35, pp. 2726-2730, 2010.

D. K. Maheshwari, R. C. Dubey, and Saravanamurthu R., " Industrial exploitation of microorganisms" p. 412, 2010.

G. R. Mallavarapu, R. S., R. S. Chandrasekhara, B. R. R. Rao, P. N. Kaul, and A. K. Bhattacharya, "Investigation of the essential oil of cinnamon leaf grown at Bangalore and Hyderabad," *Flavour and Fragrance Journal* vol. 10, pp. 239-242, 1995.

B. Mang, M. Wolters, B. Schmitt, K. Kelb, R. Lichtinghagen, D. O. Stichtenoth, and A. Hahn, "Effects of a cinnamon extract on plasma glucose, hba1c, and serum lipids in diabetes mellitus type 2," *European Journal of Clinical Investigation,* vol. 36, pp. 340–344., 2006.

D. D. Medici, S. Pieretti, G. Salvatore, M. Nicoletti, and P. Rasoanaivo, "Chemical analysis of essential oils of Malagasy medicinal plants by gas chromatography and NMR spectroscopy," *Flavour and Fragrance Journal,* vol. 7, pp. 275-281, 1992.

D. G. Mercer, "A comparison of the kinetics of mango drying in open-air, solar, and forced air dyers," *Department of Food Science, University of Guelph, Guelph, Ontario, N1G 2W1Canada,* 2012.

J. Muller and A. Heindl, "Drying of Medicinal plants, Medicinal and Aromatic Plants," *University of Hohenheim, Institute of Agricultural Engineering, Germany,* pp. 237-252, 2006.

L. Nykanen and I. Nykanen, "The effect of drying on the composition of the essential oil of some Labiatae herbs cultivated in Finland," *In Flavour Science and Technology; Martens, M., Dalen, G. A., Russwurm, H., Eds.; John Wiley: New York,* pp. 83-88, 1987.

R. Omidbaigi, F. Sefidkon, and F. Kazemi, "Influence of drying methods on the essential oil content and composition of roman chamomile," *Flavour and Fragrance Journal,* vol. 19, pp. 196-198, 2004.

S. Oztekin, Bascetincelik, A., & Soysal, Y. (1999). . . , 16 (1-4), . "Crop Drying Programme in Turkey," *Renewable Energy,* vol. 16, pp. 789-794, 1999.

K. Paakkonen, T. Malmsten, and L. Hyvonen, "Effects of drying methods, packaging and storage temperature and time on the quality of dill (*Anethum graVeolens*)," *J. Food Sci.,* vol. 54, pp. 1485-1495, 1989.
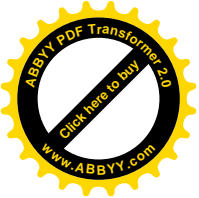
P.A. Paranagama, "Analysis of Sri Lanka Essential Oils by Gas Chromatography and Mass spectroscopy," *M.Phil. Thesis, Kelaniya University, Sri Lanka*, 1991

P. A. Paranagama, S. Wimalasena, G.S. Jayatilake, A.L. Jayawardena, U.M. Senanayake and A.M. Mubarak, "A comparison of essential oil constituents of bark, leaf, root and fruit of cinnamon (*Cinnamomum Zeylanicum*blum) grown in Sri Lanka," *J.Natn. Sci. Foundation Sri Lanka, Kelaniya University, Sri Lanka,* vol 29(3&4), pp. 147-153, 2001.

V. A. Parthasarathy, C. Bhageerathy, and Z. T.John, "Cinnamon and Cassia, Chemistry of Spices," *Indian Institute of Spices Research Calicut, Kerala, India,* pp. 124-145, 2008.

S. P. Prematilake, S. Kathirgamathaiyah, and D. N. Samaraweera, "The effect of fillings on the quality of cinnamon (*Gnnamomum verum*) quills," *Research Station, Dept of Export Agriculture, Matale,Dept of Export Agriculture, Peradeniya, Cinnamon Research Station, Matara,* 1997.

B. Qin, M. Nagasaki, M. Ren, G. Bajotto, Y. Oshida, and Y. Sato, "Cinnamon extract (traditional herb) potentiates in vivo insulin-regulated glucose utilization via enhancing insulin signaling in rats," *Diabetes Research and Clinical Practice,* vol. 62, pp. 139-148, 2003.
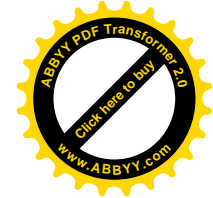
B. Raghavan, K. O. Abraham, L. Jaganmohan Rao, and M. L. Shankaranarayana, "Effect of drying on flavour quality of Indian spearmint (*Mentha Spicata L.*)," *J. Spices Aromatic Crops,* vol. 3, pp. 142-151, 1994b.

B. Raghavan, K. O. Abraham, M. L. Shankaranarayana, and W. D. Koller, "Studies on flavor changes during drying of dill (*Anethum sowa Roxb.*) leaves," *J. Food Qual. ,* vol. 17, pp. 457-466, 1994a.

V. K. Raina, S. K. Srivastava, K. K. Aggarwal, S. Ramesh, and S. Kumar, "Essential oil composition of *Cinnamomum zeylanicum Blume* leaves from Little Andaman, India," *Flavour and Fragrance Journal,* vol. 16(5), pp. 374–376, 2001.

B. R. R. Rao, D. K. Rajput, P. N. Kaul, A. K. Bhattacharya, and A. A. Naqvi, "Effect of short and long-termstorage on essential oil content and composition of cinnamon (*Cinnamomum verum Bercht & Presl*) leaves," *Journal of Spices and Aromatic Crops,* vol. 15(1), pp. 19–24, 2006.

Y. R. Rao, S. C. Paul, and P. K. Dutta, "Major constituents of essential oils of *Cinnamum zeylanicum,*" *Indian Perfumer,* vol. 32, pp. 86–89, 1988.

P. N. Ravindran, K. Nirmal Babu, and M. Shylaia, " Cinnamon and Cassia (The *Genus Cinnamomum*)," *CRC Press, Boca Raton, USA,* pp. 1–379, 2004.

E. Reverchon, "Supercritical fluid extraction and fractionation of essential oils and related products," *J. Supercrit. Fluids,* vol. 10, pp. 1-37, 1997.

M. S. F. Ross, "Analysis of cinnamon oils by high-pressure liquid chromatography," *Journal of chromatogruphy,* vol. 118, pp. 273-275, 1976.
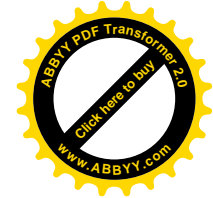
K. Ruse, M. Sabovics, T. Rakcejeva, L. Dukalska, R. Galoburda, and L. Berzina., "he effect of drying conditions on the presence of volatile compounds in cranberries," *T. World Academy of Science, Engineering and Technology,* 2012.

U. M. Senanayake, T. H. Lee, and R. B. H. Wills, "Volatile constituents of cinnamon (cinnamomum zeylanicum) oils," *Agric. Food Chem J. ,* vol. 26(4), pp. 822–824, 1978.

G. Singh, S. Maurya, M. P. Delampasona, and C. A. N. Catalan, "A comparison of chemical, antioxidant and antimicrobial studies of cinnamon leaf and bark volatile oils, oleoresins and their constituents," *Food and Chemical Toxicology* vol. 45, pp. 1650-1661, 2007.

K. Suhr and P. Nielsen, "Antifungal activity of essential oils evaluated by two different application techniques against rye bread spoilage fungi," *Journal of Applied Microbiology,* vol. 94, pp. 665–674, 2003.

P. S. Variyar and C. Bandyopadhyay, "On some chemical aspects of Cinnamomum zeylanicum," *PAFAI Journal* vol. Oct–Dec, pp. 35–38, 1989.

R. Venskutonis, "Effect of drying on the volatile constituents of thyme (Thymus Vulgaris L.) and sage (*SalVia Officinalis L.*)," *Food Chem.,* vol. 59, pp. 219-227, 1997.

R. Venskutonis, L. Poll, and M. Larsen, "Influence of drying and irradiation on the composition of volatile compounds of thyme (*Thymus Vulgaris L.*)," *FlaVvour Fragr. J.,* vol. 11, pp. 123-128, 1996.

P. S. Vishwambhar, "Cultivation of medicinal plants and its contribution to livelihood enhancement in the Indian Central Himalayan Region," *Advancement in Medicinal Plant Research,* vol. 1(2), pp. 17-23, 2013.

S. Y. Wang, P. F. Chen, and S. T. Chang, "Antifungal activities of essential oils and their constituents from indigenous cinnamon (*Cinnamomum Osmophloeum*) leaves against wood decay fungi," *Bioresource Technology,* vol. 96, pp. 813–818, 2005.

Y. Wang, Z. T. Jiang, and S. Jiang, "Chemical composition of the essential oils of Cinnamomum loureirii Nees. from China obtained by hydrodistillation and microwave-assisted hydrodistillation," *Journal of Essential Oil Research,* vol. 22, pp. 129–131, 2010.

R. O. B. Wijesekera, "The chemistry and technology of cinnamon," *CRC Critical Reviews in Food Science and Nutrition* vol. 10, pp. 1–30, 1978.

A. L. Yousif, C. H. Scaman, T. D. Durance, and B. Girard, "Flavor volatiles and physical properties of vacuum-microwave and airdried sweet basil (*Ocimum Basilicum L.*)," *J. Agric. Food Chem,* vol. 47, pp. 4777-4781, 1999.

A. N. Yousif, T. D. Durance, D. H. Scaman, and B. Girard, "Headspace volatiles and physical characteristics of vacuummicrowave, air, and freeze-dried oregano (*Lippia berlandieri Schauer*)," *J. Food Sci.,* vol. 65, pp. 926-930, 2000.

APPENDICES

Appendix A: Gas chromatograms of hydro distilled cinnamon oil at different drying temperatures
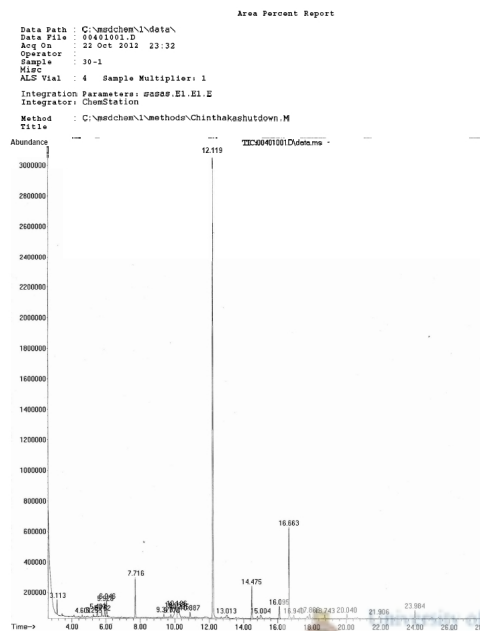
(a)
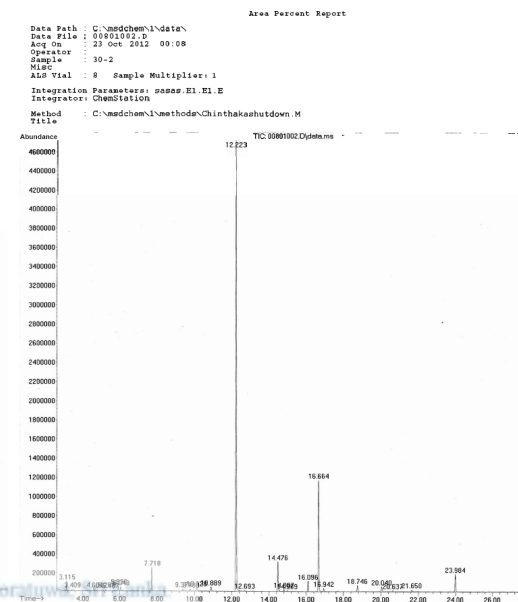
(b)
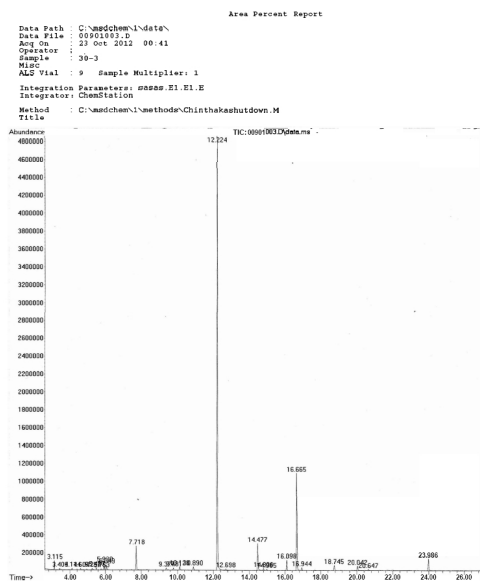
(c)
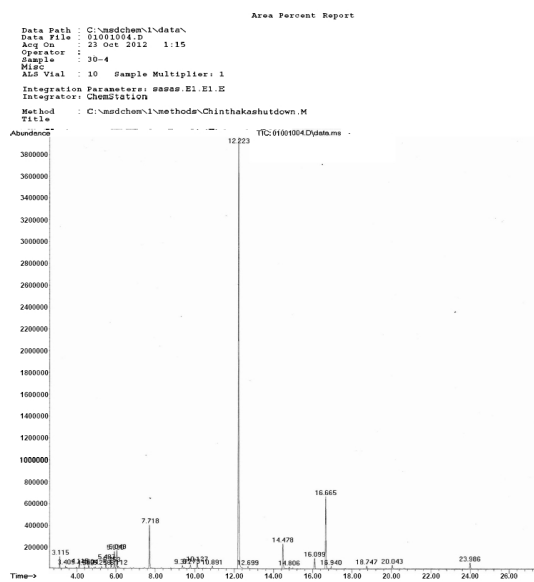
(d)

Figure A.1: Air drying at ambient temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4
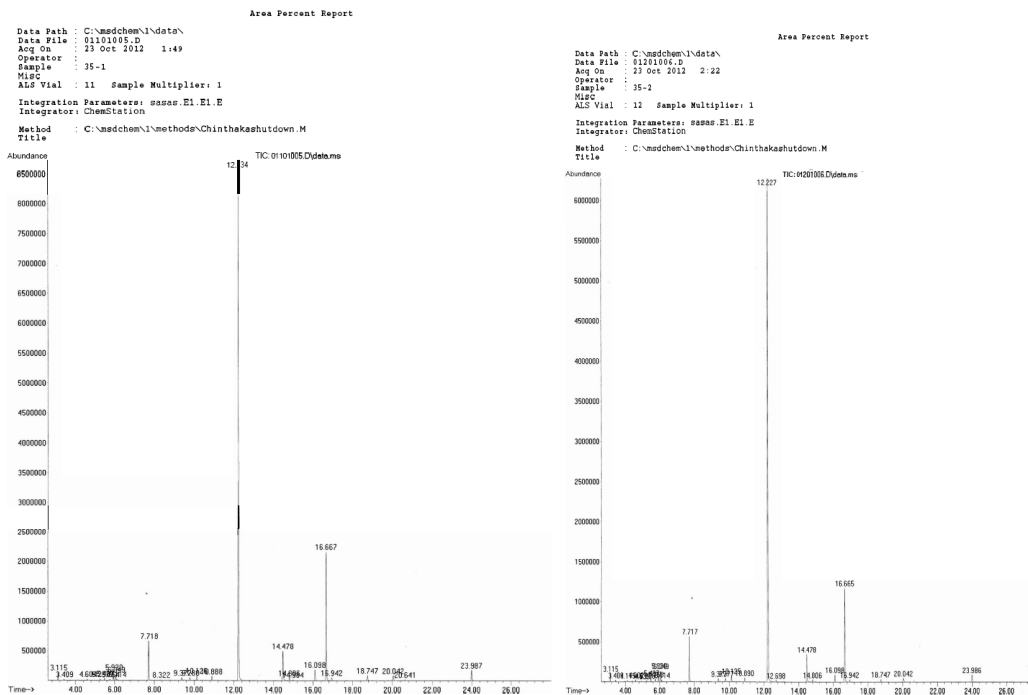
(a)

(b)
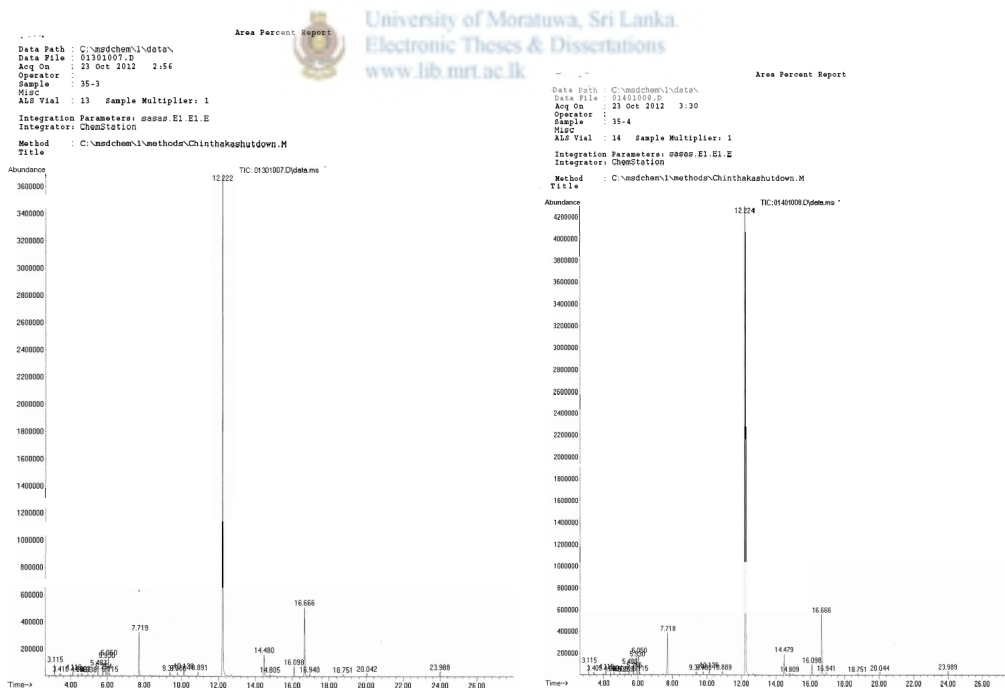
(c)

(d)

Figure A.2: Air drying at 35 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

(a)

(b)

(c)

(d)
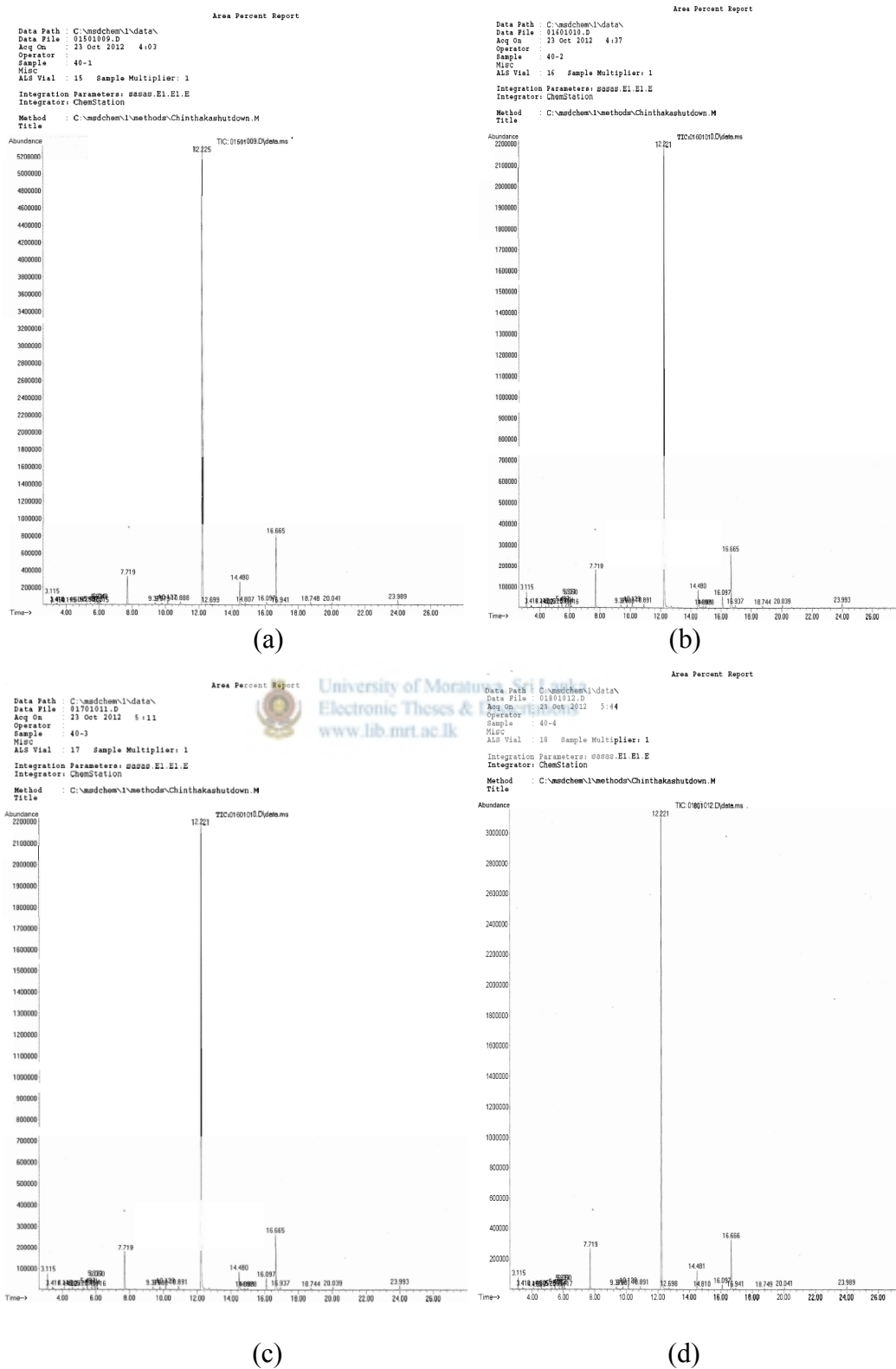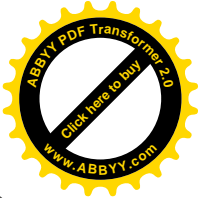
Figure A.3: Air drying at 40 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d)
Trial 4
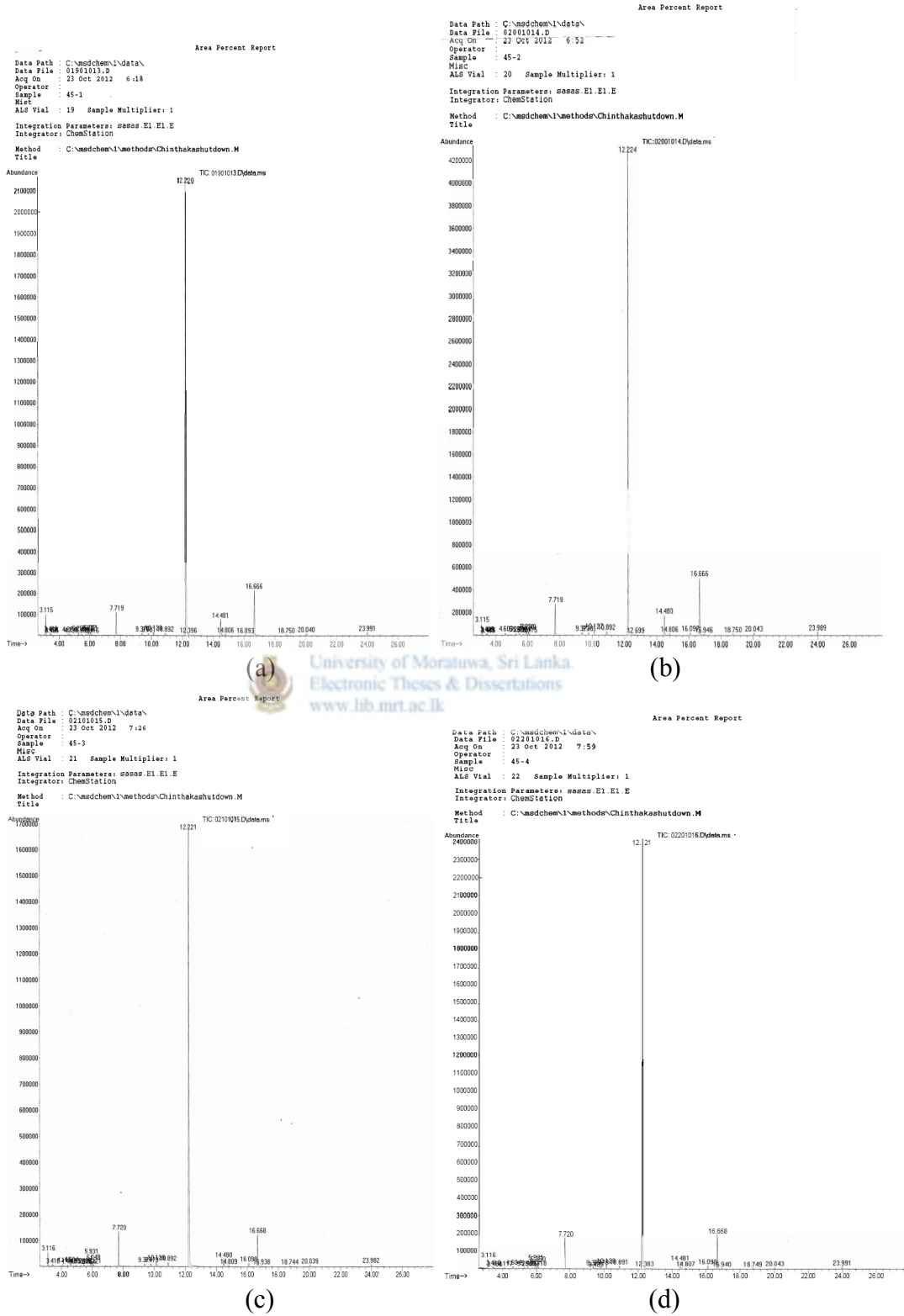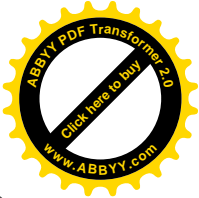
Figure A.4: Air drying at 45 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

(a)

(b)

(c)

(d)
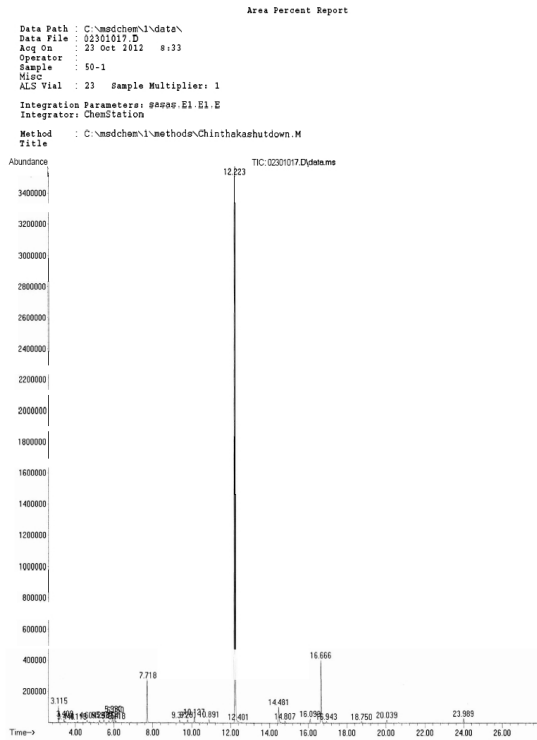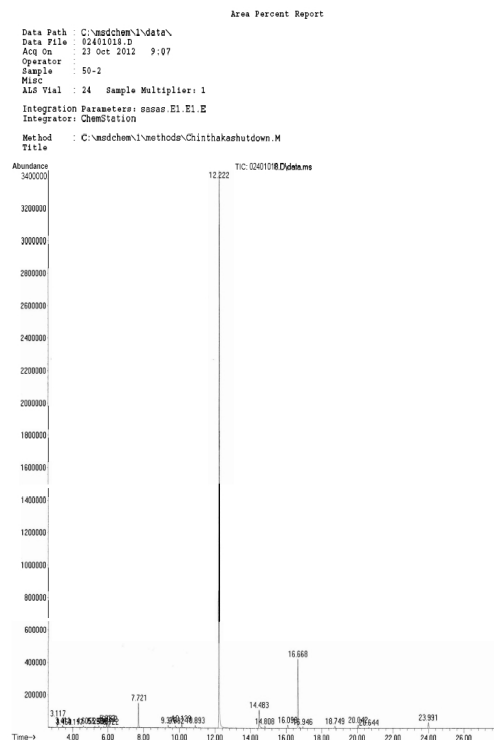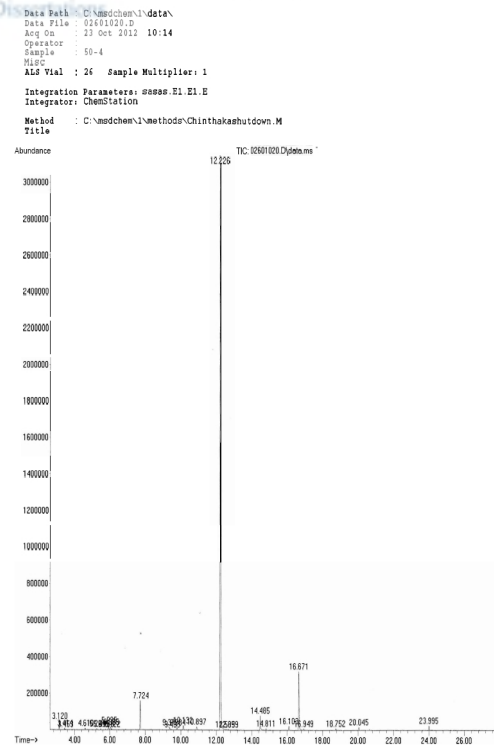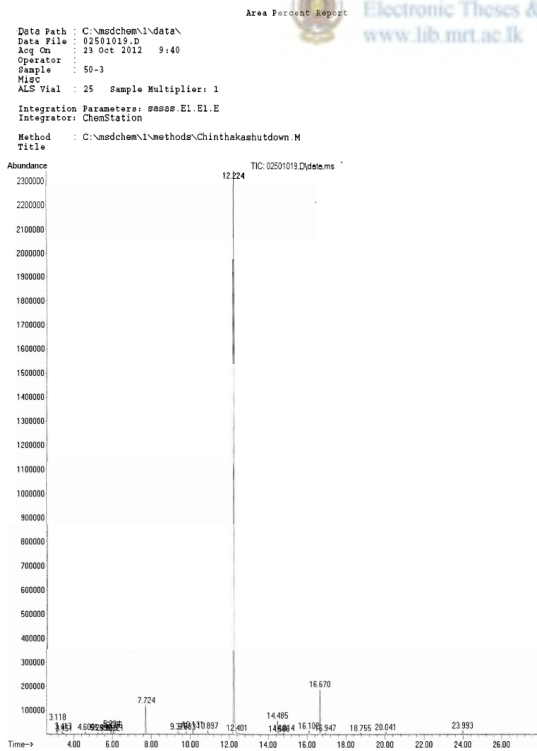
(c)   (d)

Figure A.5: Air drying at 50 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

Appendix B: Standard & obtained mass spectra of different volatile organic compounds of cinnamon bark oil

Source: National Institute of Standards and Technology (NIST08. LIB)
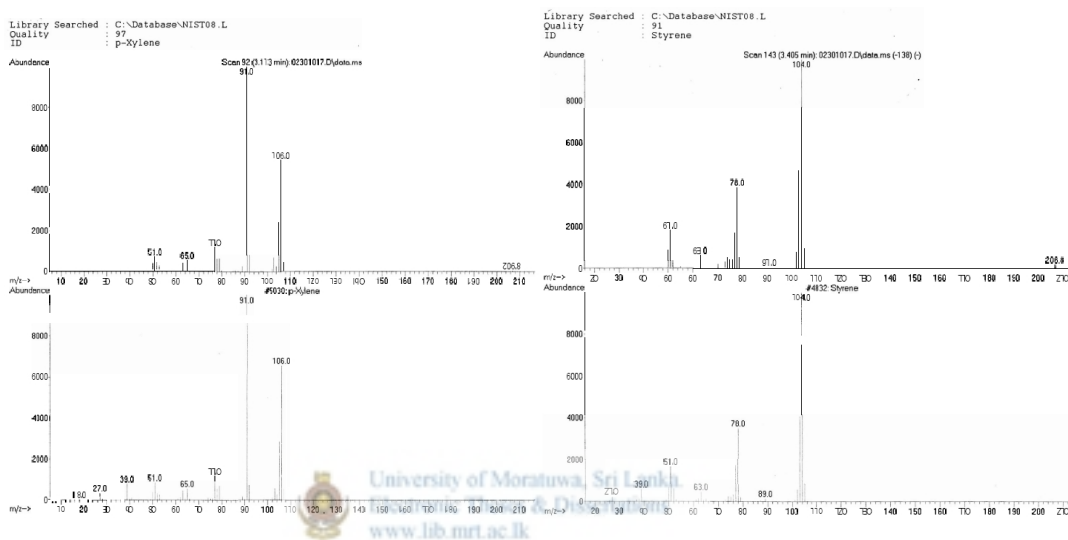
(a)   (b)
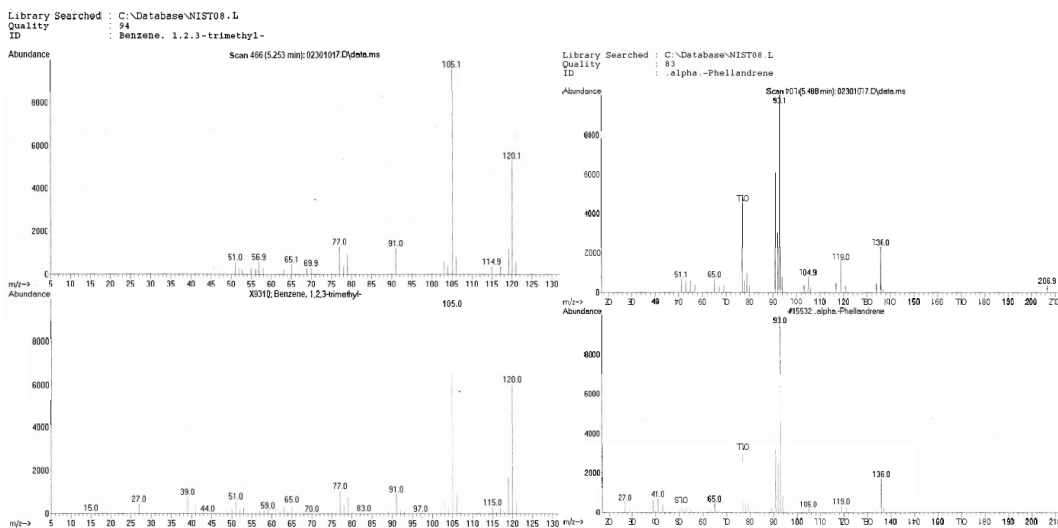
(c)   (d)

Figure B.1: Mass spectra for (a) 1, 4-dimethyl benzene (p-xylene), (b) styrene, (c) benzene, 1, 2, 3-trimethyl and (d) α-phellandrene

(a)

(b)

(c)

(d)
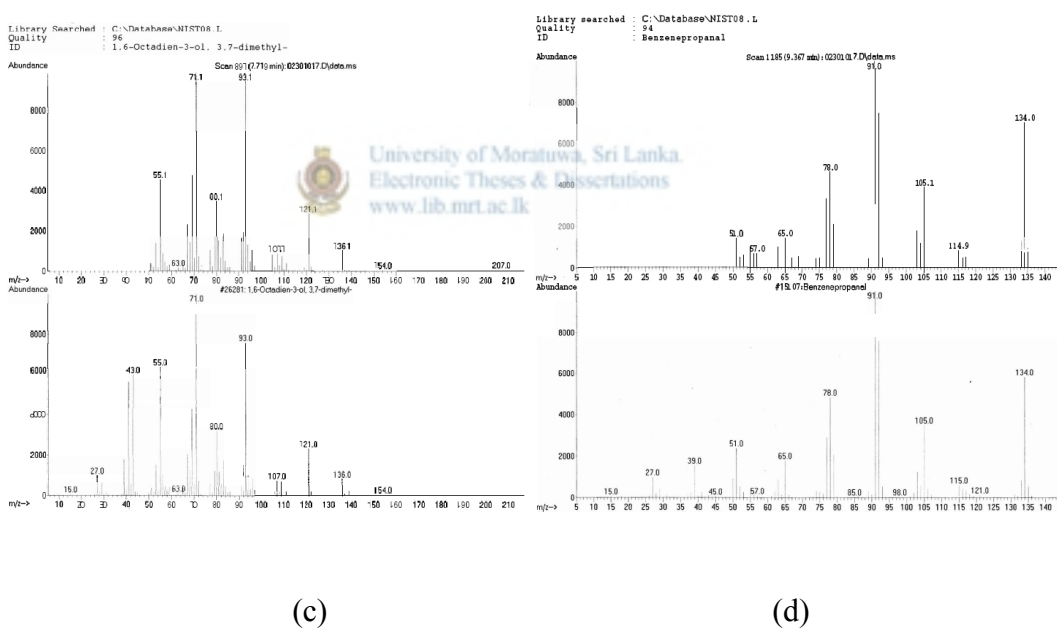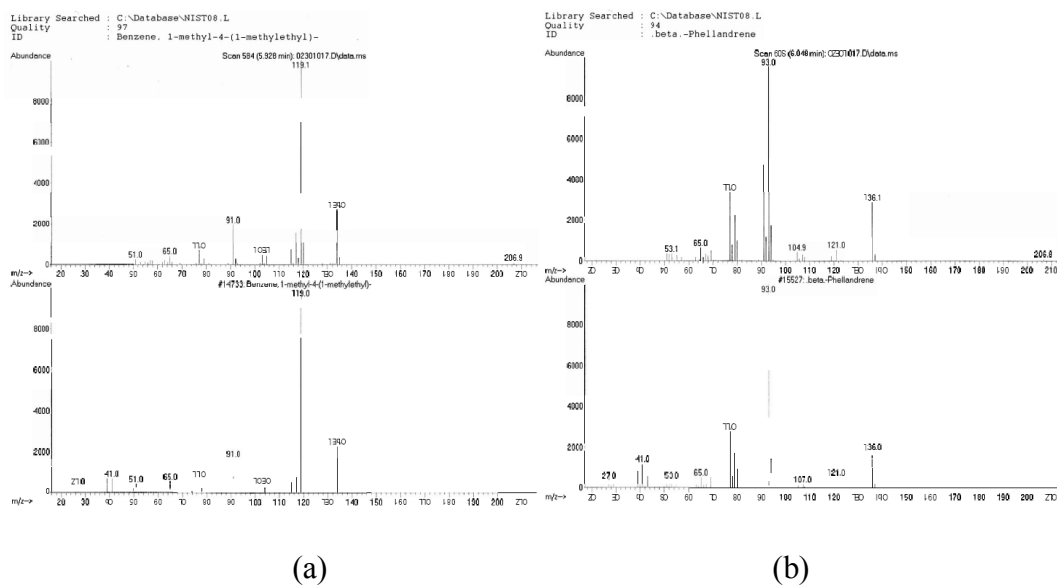
Figure B.2: Mass spectra for (a) benzene,1-methyl-4-(1-methylethyl) (p-cymene), (b) β-phellandrene, (c) 1,6-octadiene-3-ol,3,7-dimethyl-(linalool) and (d) benzenepropanal
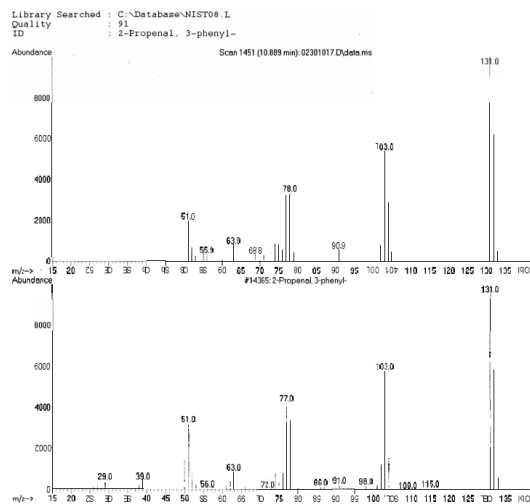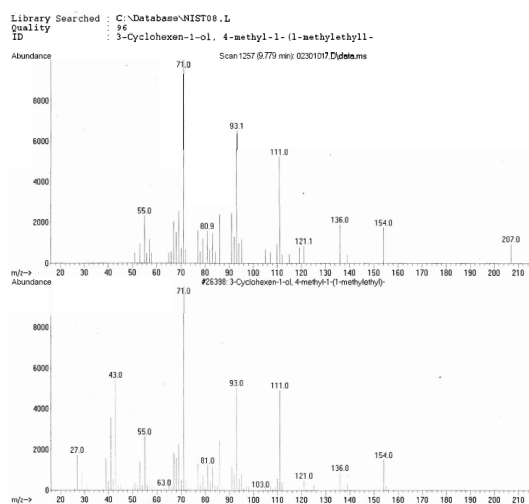
(a)

(b)
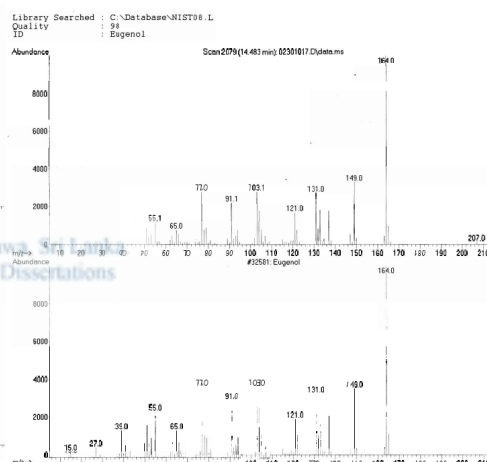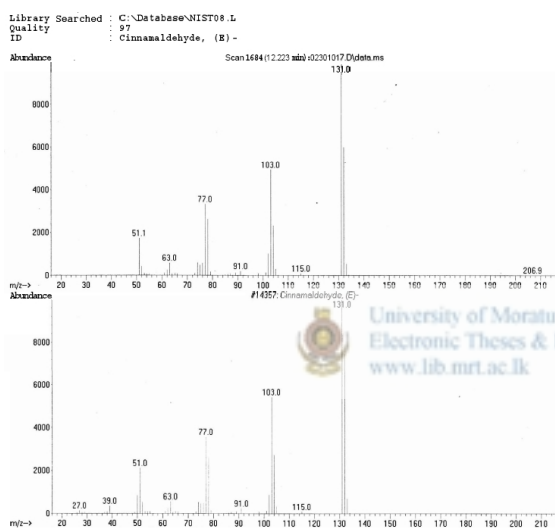
(c)

(d)

Figure B.3: Mass spectra for (a) 3-cyclohexene-1-ol,4-methyl-1-(1-methylethyl) (terpinen -4-ol), (b) 2-propenal,3-phenyl (cinnamldehyde), (c) cinnamaldehyde-E and (d) eugenol
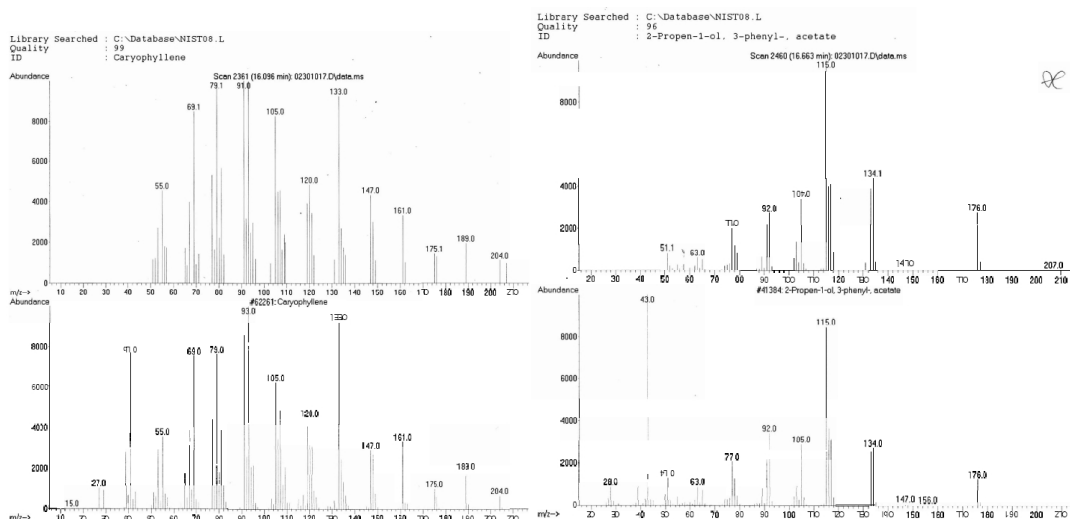
(a) (b)
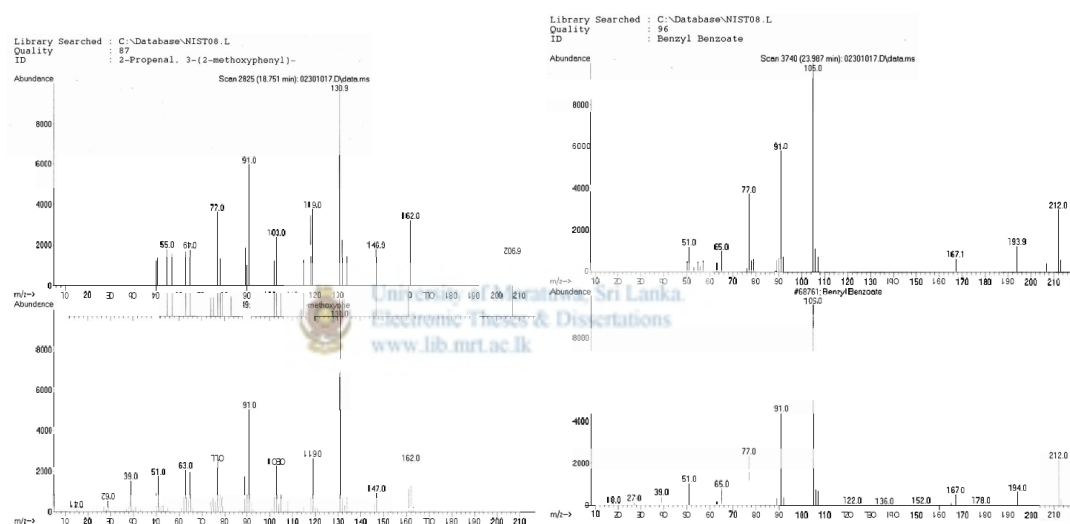
(c) (d)

Figure B.4: Mass spectra for (a) caryophyllene, (b) 2-propen-1-ol 3-phenyl acetate (cinnamyl acetate), (c) 2-Propenal,3-(2-methoxyphenyl)- (2-methoxy-cinnamadehyde) and (d) benzyl benzoate
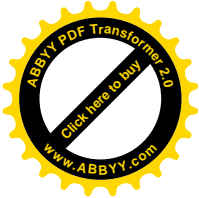
Appendix C: Gas chromatogram data sheets of hydro distilled cinnamon oil at different drying temperatures

Area Percent Report

```
Data Path : C:\msdchem\1\data\
Data File : 00401001.D
Acq On    : 22 Oct 2012  23:32
Operator  :
Sample    : 30-1
MISC      :
ALS Vial  : 4    Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 00401001.D\data.ms
```

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.113	87	92	108	VV	96285	1176729	1.53%	0.972%
2	3.409	138	144	148	PV 2	13557	121063	0.16%	0.100%
3	4.601	344	352	370	VV	17006	65970	0.09%	0.054%
4	5.255	457	466	474	PV	16654	244547	0.32%	0.202%
5	5.483	499	506	517	BV 2	40718	801435	1.04%	0.662%
6	5.752	538	553	564	BV 2	27092	99738	0.13%	0.082%
7	5.928	574	584	592	VV	92929	1771146	2.31%	1.463%
8	6.046	595	605	612	VV	105995	2271135	2.96%	1.876%
9	7.716	882	896	906	BV	255905	5120950	6.68%	4.230%
10	9.370	1177	1186	1192	PV 3	25271	401928	0.52%	0.332%
11	9.778	1250	1257	1268	VV 5	21069	560520	0.73%	0.463%
12	10.033	1268	1301	1312	VV 2	54475	748483	0.98%	0.618%
13	10.126	1312	1318	1326	VV 3	65025	406108	0.53%	0.335%
14	10.235	1326	1337	1361	VV 2	45154	528209	0.69%	0.436%
15	10.887	1438	1451	1458	PV 2	35586	832911	1.09%	0.688%
16	12.219	1673	1683	1707	PV	3060325	76695606	100.00%	63.352%
17	13.013	1802	1822	1839	VV 6	17364	169734	0.22%	0.140%
18	14.475	2058	2078	2101	PV	210088	5104001	6.65%	4.216%
19	15.004	2155	2170	2195	PV 4	23127	216025	0.28%	0.178%
20	16.095	2352	2361	2378	VV 5	81526	2076224	2.71%	1.715%
21	16.663	2446	2460	2475	VV	593525	17189685	22.41%	14.199%
22	16.940	2498	2508	2520	VV 4	24142	150502	0.20%	0.124%
23	17.866	2658	2670	2679	VV 5	29723	187177	0.24%	0.155%
24	18.743	2808	2824	2834	BV 4	24196	1106513	1.44%	0.914%
25	20.040	3034	3050	3067	PV 4	30247	168839	0.22%	0.139%
26	21.906	3368	3376	3391	PV 3	16205	95713	0.12%	0.079%
27	23.984	3729	3739	3757	VV	55910	2751754	3.59%	2.273%

Sum of corrected areas: 121062644

(a)

Area Percent Report

```
Data Path : C:\msdchem\1\data\
Data File : 00801002.D
Acq On    : 23 Oct 2012  00:08
Operator  :
Sample    : 30-2
MISC      :
ALS Vial  : 8    Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 00801002.D\data.ms
```

| peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.115	87	92	105	PV	94439	1603579	1.50%	0.957%
2	3.409	138	144	148	PV 2	13557	182644	0.17%	0.109%
3	4.604	345	353	362	PV 2	15438	131945	0.12%	0.079%
4	5.257	457	467	472	BV	16510	308316	0.29%	0.184%
5	5.487	501	507	519	VV 3	11031	1233265	1.15%	0.736%
6	5.93	576	584	595	VV	49892	2468205	2.30%	1.473%
7	6.049	595	605	613	VV	39169	2550311	2.38%	1.522%
8	7.718	881	897	908	PV	241806	8200540	7.65%	4.894%
9	9.374	1171	1186	1197	VV 2	22194	546256	0.51%	0.326%
10	9.78	1251	1257	1268	VV 4	20220	799276	0.75%	0.477%
11	10.128	1310	1318	1331	VV	32570	285324	0.27%	0.170%
12	10.889	1436	1451	1467	PV 2	44794	1156186	1.08%	0.690%
13	12.223	1672	1684	1721	PV	4710040	107201874	100.00%	63.977%
14	12.693	1757	1766	1774	PV 4	9600	84392	0.08%	0.050%
15	14.476	2063	2078	2094	PV	308919	7617421	7.11%	4.546%
16	14.807	2127	2136	2145	VV	23910	242458	0.23%	0.145%
17	14.989	2161	2168	2177	VV 6	10804	108503	0.10%	0.065%
18	16.096	2350	2361	2382	PV 2	108999	2711172	2.53%	1.618%
19	16.664	2449	2460	2485	PV	1157142	23500731	21.92%	14.025%
20	16.942	2500	2509	2525	VV 3	33904	389808	0.36%	0.233%
21	18.746	2812	2824	2842	BV	64929	1556662	1.45%	0.929%
22	20.04	3035	3050	3068	VV 7	52024	647671	0.60%	0.387%
23	20.637	3142	3155	3162	PV 7	12305	165434	0.15%	0.099%
24	21.65	3320	3332	3354	PV 7	20826	288673	0.27%	0.172%
25	23.984	3729	3739	3756	PV	179413	3582500	3.34%	2.138%

Sum of corrected areas: 167563146

(b)

Area Percent Report

```
Data Path : C:\msdchem\1\data\
Data File : 00901003.D
Acq On    : 23 Oct 2012  00:41
Operator  :
Sample    : 30-3
MISC      :
ALS Vial  : 9    Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 00901003.D\data.ms
```

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.115	84	92	100	PV	96351	1570145	1.49%	0.948%
2	3.409	134	144	147	PV 2	13934	163971	0.16%	0.099%
3	4.114	259	267	275	VV	18166	146984	0.14%	0.089%
4	4.604	347	352	357	PV	15373	121184	0.11%	0.073%
5	5.257	458	467	474	VV	16211	284879	0.27%	0.172%
6	5.487	501	507	519	PV	24289	1237234	1.17%	0.747%
7	5.753	539	553	564	PV	11683	108674	0.10%	0.066%
8	5.93	573	584	594	VV	73686	2575501	2.44%	1.555%
9	6.049	594	605	613	PV	52661	2843817	2.69%	1.717%
10	7.718	885	897	913	PV	270375	7123621	6.75%	4.301%
11	9.374	1178	1186	1201	PV 2	22018	530007	0.50%	0.320%
12	9.781	1250	1257	1269	VV 3	23367	821510	0.78%	0.496%
13	10.128	1310	1318	1326	PV	34804	344787	0.33%	0.208%
14	10.897	1438	1451	1464	PV	36435	1021919	0.97%	0.617%
15	12.224	1669	1684	1718	PV	5E+06	105607138	100.00%	63.762%
16	12.698	1744	1767	1778	VV 4	14377	225949	0.21%	0.136%
17	14.477	2067	2078	2108	PV	302555	7415124	7.02%	4.477%
18	14.806	2128	2136	2147	PV	20162	221258	0.21%	0.134%
19	14.985	2155	2167	2174	BV 6	13665	157148	0.15%	0.095%
20	16.098	2351	2361	2376	PV 2	113887	2784191	2.64%	1.681%
21	16.665	2446	2460	2481	BV	1E+06	24274305	22.99%	14.656%
22	16.944	2499	2509	2520	VV 5	30467	384660	0.36%	0.232%
23	18.745	2814	2824	2838	PV 2	54854	1484019	1.41%	0.896%
24	20.042	3035	3051	3065	VV 8	47029	648137	0.61%	0.391%
25	20.647	3142	3156	3163	BV 8	11327	172002	0.16%	0.104%
26	23.986	3728	3740	3760	PV	126107	3358917	3.18%	2.028%

Sum of corrected areas: 165627079

(c)

Area Percent Report

```
Data Path : C:\msdchem\1\data\
Data File : 01001004.D
Acq On    : 23 Oct 2012  1:15
Operator  :
Sample    : 30-4
MISC      :
ALS Vial  : 10   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 01001004.D\data.ms
```

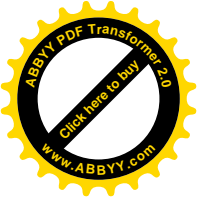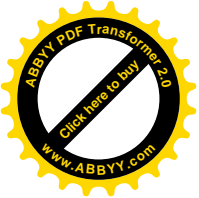| peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	corr. % max.
1	3.115	86	92	105	BV	103395	1288068	1.45%	0.927%
2	3.409	138	144	148	BV 2	18353	222320	0.25%	0.160%
3	4.115	258	267	288	BB 2	30911	142200	0.16%	0.102%
4	4.399	300	317	325	PV 3	14955	80921	0.09%	0.058%
5	4.604	341	352	364	BV	23011	108418	0.12%	0.078%
6	5.256	455	467	472	VV	17706	302911	0.34%	0.218%
7	5.487	498	507	517	PV	69259	1218593	1.37%	0.877%
8	5.753	539	553	562	PV 2	43616	225870	0.25%	0.163%
9	5.93	569	584	594	VV	153560	2048126	2.31%	1.474%
10	6.049	594	605	612	VV	162148	2138443	2.41%	1.539%
11	6.112	612	616	626	VV 5	18473	106847	0.12%	0.077%
12	7.718	887	897	911	BV	396090	6459794	7.27%	4.649%
13	9.372	1177	1186	1197	PV 2	27064	497442	0.56%	0.358%
14	9.779	1248	1257	1272	VV 4	31897	740604	0.83%	0.533%
15	10.13	1298	1318	1333	PV 2	50917	353536	0.40%	0.254%
16	10.891	1443	1451	1466	PV	21970	932356	1.05%	0.671%
17	12.22	1673	1684	1725	PV	4E+06	88803061	100.00%	63.910%
18	12.7	1758	1767	1776	PV 3	18463	117060	0.13%	0.084%
19	14.48	2059	2078	2112	BV	227569	5792833	6.52%	4.169%
20	14.81	2126	2145	2152	PV 2	12135	112739	0.13%	0.081%
21	16.1	2348	2361	2371	PV 5	97022	2363543	2.66%	1.701%
22	16.67	2450	2460	2475	PV	651534	20133881	22.67%	14.490%
23	16.94	2500	2508	2521	PV 4	22637	167733	0.19%	0.121%
24	18.75	2806	2824	2836	PV 2	26161	1321416	1.49%	0.951%
25	20.04	3036	3051	3072	PB 6	34729	281258	0.32%	0.202%
26	23.99	3726	3740	3756	BV	56347	2990208	3.37%	2.152%

Sum of corrected areas: 138950182

(d)

Figure C.1: Air drying at ambient temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

70

(a)

```
                    Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01101005.D
Acq On    : 23 Oct 2012  1:49
Operator  :
Sample    : 35-1
MISC      :
ALS Vial  : 11   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 01101005.D\data.ms

peak R.T.   first max  last PK   peak    corr.     corr.   % of
#    min    scan scan scan TY   height   area      % max.  total
---  -----  ---- ---- ---- --   ------   ----      ------  -----
 1   3.115   82   92  104 PV   128677   2571238    1.24%  0.827%
 2   3.409  132  144  148 PV    19496    528550    0.26%  0.170%
 3   4.604  345  352  367 BV    24577    568419    0.27%  0.183%
 4   5.257  456  467  473 PV    23721    410403    0.20%  0.132%
 5   5.487  499  507  515 VV    34356   2770221    1.34%  0.891%
 6   5.754  544  554  562 BV 3  18852    407616    0.20%  0.131%
 7   5.93   575  584  595 VV   134593   5618171    2.71%  1.807%
 8   6.049  595  605  612 VV 2  96535   8335537    4.03%  2.681%
 9   6.114  612  616  626 VV 5  20626    493627    0.24%  0.159%
10   7.718  866  897  910 PV   653643  15800522    7.63%  5.082%
11   8.322  996 1002 1009 VV 8  10952    265511    0.13%  0.085%
12   9.372 1173 1186 1200 PV 3  45962   1371120    0.66%  0.441%
13   9.78  1250 1257 1265 VV    45416   1308937    0.63%  0.421%
14  10.126 1309 1318 1333 VV 2  82174   2262457    1.09%  0.728%
15  10.888 1440 1451 1468 BV 2  70665   1685140    0.81%  0.542%
16  12.234 1673 1686 1723 PV   9E+06 207020420  100.00% 66.585%
17  14.478 2068 2078 2096 PV   496087  11836401    5.72%  3.807%
18  14.806 2126 2136 2146 VV    45696   1394870    0.67%  0.449%
19  14.984 2155 2167 2179 VV 6  17674    605815    0.29%  0.195%
20  16.098 2351 2361 2376 PV 2 181812   4334106    2.09%  1.394%
21  16.667 2448 2461 2487 BV   2E+06  32244631   15.58% 10.371%
22  16.942 2494 2509 2523 VV 4  47575   1589329    0.77%  0.511%
23  18.747 2809 2824 2854 PV    86137    811479    0.39%  0.261%
24  20.042 3041 3051 3074 VV 6  80972   2782261    1.34%  0.895%
25  20.641 3142 3155 3168 BV 9  17136    639471    0.31%  0.206%
26  23.987 3730 3740 3759 PV 2 172240   3255243    1.57%  1.047%

Sum of corrected areas:   310911496
```

(b)

```
                    Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01201006.D
Acq On    : 23 Oct 2012  2:22
Operator  :
Sample    : 35-2
MISC      :
ALS Vial  : 12   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 01201006.D\data.ms

peak R.T.   first max  last PK   peak      corr.       corr.   % of
#    min    scan scan scan TY   height     area        % max.  total
---  -----  ---- ---- ---- --   ------     ----        ------  -----
 1   3.115   87   92  103 VB    97813    1856454     1.33%  0.897%
 2   3.409  132  144  148 PV    20572     341488     0.25%  0.165%
 3   4.115  257  267  274 VV 2  18487     270484     0.19%  0.131%
 4   4.602  346  352  367 BV 2  24495     406646     0.29%  0.196%
 5   4.938  403  411  415 VV 2  11089     172962     0.12%  0.084%
 6   5.256  455  466  473 VV 2  16699     304235     0.22%  0.147%
 7   5.487  500  507  517 VV    50868    1732277     1.24%  0.837%
 8   5.753  543  553  562 BV 3  33761     529928     0.38%  0.256%
 9   5.93   562  584  593 PV   137613    3688073     2.65%  1.782%
10   6.049  593  605  612 VV   133074    4952614     3.56%  2.393%
11   6.114  612  616  625 VV 4  23238     401126     0.29%  0.194%
12   7.717  884  897  912 PV   560096   10865534     7.80%  5.250%
13   9.373 1167 1186 1200 BV 2  41607     949958     0.68%  0.459%
14   9.777 1248 1257 1269 VV 2  44018     978933     0.70%  0.473%
15  10.13  1309 1317 1333 VV    72944    1455461     1.05%  0.703%
16  10.89  1442 1451 1461 BV    51488    1177617     0.85%  0.569%
17  12.23  1669 1685 1733 PV  6213491 139258890   100.00% 67.287%
18  12.7   1757 1767 1776 BV 5  17981     358805     0.26%  0.173%
19  14.48  2050 2078 2099 BV   338752    7632779     5.48%  3.688%
20  14.81  2124 2136 2147 PV 2  25622     548328     0.39%  0.265%
21  16.1   2345 2361 2377 PV 4  89478    2878849     2.07%  1.391%
22  16.67  2438 2460 2489 BV 2 1154122  21627586    15.53% 10.450%
23  16.94  2497 2509 2520 BV 3  27807     592489     0.43%  0.286%
24  18.75  2806 2824 2844 PV 3  35549     602261     0.43%  0.291%
25  20.04  3034 3051 3063 PV 5  48001    1151857     0.83%  0.557%
26  23.99  3727 3740 3752 PV    86986    2226917     1.60%  1.076%

Sum of corrected areas:   206962548
```

(c)

```
                    Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01301007.D
Acq On    : 23 Oct 2012  2:56
Operator  :
Sample    : 35-3
MISC      :
ALS Vial  : 13   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 01301007.D\data.ms

peak R.T.   first max  last PK   peak    corr.      corr.   % of
#    min    scan scan scan TY   height   area       % max.  total
---  -----  ---- ---- ---- --   ------   ----       ------  -----
 1   3.115   84   92  102 PV    83317   1060553    1.29%  0.871%
 2   3.41   138  144  148 PV    17414    221608    0.27%  0.182%
 3   4.116  261  267  283 VV    30750    399518    0.49%  0.328%
 4   4.399  299  317  325 VV 2  16120    242393    0.30%  0.199%
 5   4.603  343  352  363 VV 2  18829    296046    0.36%  0.243%
 6   4.938  401  411  425 PV    13653    203112    0.25%  0.167%
 7   5.258  456  467  474 PV 2  14421    204561    0.25%  0.168%
 8   5.487  485  507  516 PV    65193   1188404    1.45%  0.976%
 9   5.754  545  554  562 VV 2  36375    510655    0.62%  0.419%
10   5.93   562  584  593 PV   115220   2188076    2.67%  1.797%
11   6.05   593  605  612 VV   135407   2908911    3.55%  2.389%
12   6.115  612  617  624 VV 6  17022    264429    0.32%  0.217%
13   7.719  887  897  910 PV   320275   6347490    7.74%  5.213%
14   9.373 1173 1186 1200 PV    25829    586896    0.72%  0.482%
15   9.78  1249 1257 1268 VV 5  25806    573502    0.70%  0.471%
16  10.128 1311 1318 1332 BV 2  40051    718558    0.88%  0.590%
17  10.891 1440 1451 1462 PV 2  30490    712312    0.87%  0.585%
18  12.222 1672 1684 1727 PV   4E+06  82036403  100.00% 67.374%
19  14.48  2050 2078 2101 PV 2 157114   4504002    5.49%  3.699%
20  14.805 2127 2135 2148 BV    14240    254848    0.31%  0.209%
21  16.098 2342 2361 2374 BV 6  72669   1676672    2.04%  1.377%
22  16.666 2440 2461 2485 PV   500423  12447801   15.17% 10.223%
23  16.94  2497 2509 2521 VV 5  17139    382273    0.47%  0.314%
24  18.751 2808 2825 2833 BV 5  13952    344588    0.42%  0.283%
25  20.042 3039 3050 3064 VV 7  22388    499158    0.61%  0.410%
26  23.988 3721 3740 3758 PV    34913    989931    1.21%  0.813%

Sum of corrected areas:   121762702
```

(d)

```
                    Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01401008.D
Acq On    : 23 Oct 2012  3:30
Operator  :
Sample    : 35-4
MISC      :
ALS Vial  : 14   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method    : C:\msdchem\1\methods\Chinthakashutdown.M
Title     :
Signal    : TIC: 01401008.D\data.ms

peak R.T.   first max  last PK   peak     corr.      corr.   % of
#    min    scan scan scan TY   height    area       % max.  total
---  -----  ---- ---- ---- --   ------    ----       ------  -----
 1   3.115   80   92  100 PV    90314   1265640    1.31%  0.886%
 2   3.409  138  144  148 PV    22661    284269    0.30%  0.199%
 3   4.115  258  267  276 BV    38150    397305    0.41%  0.278%
 4   4.399  306  317  324 VV    19497    224521    0.23%  0.157%
 5   4.604  332  352  369 VV 2  23222    350448    0.36%  0.245%
 6   4.938  403  411  416 PV 3  15809    180593    0.19%  0.126%
 7   5.258  456  467  474 PV 2  14421    249985    0.26%  0.175%
 8   5.488  499  507  520 VV    85355   1518482    1.58%  1.063%
 9   5.755  543  554  563 PV    50252    634516    0.66%  0.444%
10   5.93   563  584  593 VV   149859   2526994    2.62%  1.769%
11   6.05   593  605  612 PV   181334   3925483    4.07%  2.748%
12   6.115  612  617  625 VV 6  21347    279187    0.29%  0.195%
13   7.718  878  897  911 BV   380377   7356709    7.64%  5.150%
14   9.374 1178 1186 1199 PV    31589    692816    0.72%  0.485%
15   9.78  1250 1257 1273 PV 3  31039    687102    0.71%  0.481%
16  10.126 1310 1318 1325 PV 5  48239    689183    0.72%  0.482%
17  10.889 1433 1451 1463 BV 3  32573    781382    0.81%  0.547%
18  12.224 1673 1684 1742 PV  4236447 96332888  100.00% 67.437%
19  14.479 2065 2078 2119 BV   191077   5192551    5.39%  3.635%
20  14.809 2126 2136 2145 BV    15743    266497    0.28%  0.187%
21  16.098 2351 2361 2387 VV 2  96967   1961313    2.04%  1.373%
22  16.666 2449 2461 2488 BV   549799  14216304   14.76%  9.952%
23  16.941 2492 2509 2523 VB 3  24194    486137    0.50%  0.340%
24  18.751 2814 2825 2841 PV 6  15224    429975    0.45%  0.301%
25  20.044 3035 3051 3068 PV 4  25428    505661    0.52%  0.354%
26  23.989 3731 3740 3761 BV    35465   1412774    1.47%  0.989%

Sum of corrected areas:   142848715
```

Figure C.2: Air drying at 35 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

(a)
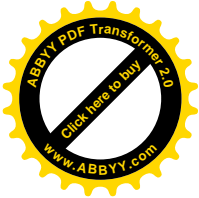
Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01501009.D
Acq On : 23 Oct 2012 4:03
Operator :
Sample : 40-1
MISC :
ALS Vial : 15 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :
Signal : TIC: 01501009.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.115	86	92	109	PV		104166	2058185	1.73%	1.267%
2	3.41	138	144	148	PV		17415	224165	0.19%	0.138%
3	3.45	148	151	154	VV		5391	95790	0.08%	0.059%
4	4.115	262	267	274	VV	2	8407	217469	0.18%	0.134%
5	4.604	347	353	368	BV	4	14531	486715	0.41%	0.300%
6	5.258	459	467	474	VV	2	17911	331374	0.28%	0.204%
7	5.487	501	507	517	VV		22835	799197	0.67%	0.492%
8	5.753	543	553	563	PV	3	15881	504838	0.43%	0.311%
9	5.93	570	584	594	VV		47019	1219912	1.03%	0.751%
10	6.049	594	605	612	VV	2	49099	2038602	1.72%	1.255%
11	6.115	612	617	624	VV	3	8770	271836	0.23%	0.167%
12	7.719	879	897	909	PV		329720	6726574	5.66%	4.141%
13	9.375	1173	1186	1199	PV	3	26203	747217	0.63%	0.460%
14	9.779	1249	1257	1269	VV	7	22212	690363	0.58%	0.425%
15	10.13	1310	1318	1326	PV	2	40421	1387657	1.17%	0.854%
16	10.89	1443	1451	1468	PV	2	32769	791075	0.67%	0.487%
17	12.23	1667	1684	1740	PV		5268309	118778211	100.00%	73.122%
18	12.7	1760	1767	1776	VV	3	11973	429759	0.36%	0.265%
19	14.48	2061	2078	2111	PV		268470	5440062	4.58%	3.349%
20	14.81	2126	2136	2147	PV		19289	727484	0.61%	0.448%
21	16.1	2346	2361	2371	PV	6	33005	1621135	1.36%	0.998%
22	16.67	2443	2460	2481	PV		799076	13511627	11.38%	8.318%
23	16.94	2499	2509	2520	PV	5	11797	533316	0.45%	0.328%
24	18.75	2816	2824	2842	PV	2	28655	354116	0.30%	0.218%
25	20.04	3041	3050	3068	VV	6	28576	1196077	1.01%	0.736%
26	23.99	3725	3740	3759	PV		50755	1255649	1.06%	0.773%

Sum of corrected areas: 162438405

(b)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01601010.D
Acq On : 23 Oct 2012 4:37
Operator :
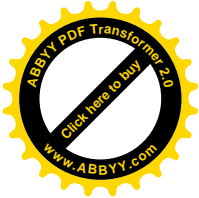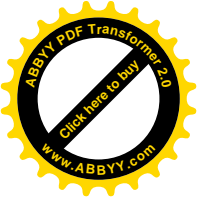Sample : 40-2
MISC :
ALS Vial : 16 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :
Signal : TIC: 01601010.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.115	87	92	100	VV		73200	578963	1.11%	0.813%
2	3.41	138	144	148	VV		12004	101123	0.19%	0.142%
3	4.115	261	267	274	PV	2	12992	226467	0.43%	0.318%
4	4.402	310	317	322	VV	4	7652	147660	0.28%	0.207%
5	4.603	347	352	362	VV		11338	248035	0.47%	0.348%
6	5.257	456	467	473	VV		10820	149548	0.29%	0.210%
7	5.487	500	507	514	PV	2	23237	354642	0.68%	0.498%
8	5.754	538	554	560	PV	3	14521	319377	0.61%	0.448%
9	5.931	575	584	594	VV		56057	518432	0.99%	0.728%
10	6.05	594	605	612	PV		53312	903696	1.73%	1.269%
11	6.116	612	617	624	VV	4	8870	179183	0.34%	0.252%
12	7.719	887	897	907	PV		179291	2947515	5.64%	4.139%
13	9.376	1177	1186	1195	PV	2	14178	338263	0.65%	0.475%
14	9.78	1250	1257	1271	PV	4	14132	326869	0.63%	0.459%
15	10.129	1310	1318	1326	PV	2	21256	554969	1.06%	0.779%
16	10.891	1441	1451	1465	PV		17073	351793	0.67%	0.494%
17	12.221	1670	1684	1720	BV		2191857	52227776	100.00%	73.340%
18	14.48	2062	2078	2099	PV	2	85075	2371400	4.54%	3.330%
19	14.808	2130	2136	2151	VV		8332	279558	0.54%	0.393%
20	14.978	2151	2166	2177	VV	5	7964	249694	0.48%	0.351%
21	16.097	2351	2361	2374	VV	5	54250	768391	1.47%	1.079%
22	16.665	2440	2460	2475	PV		257109	5635102	10.79%	7.913%
23	16.937	2500	2508	2520	PV	5	12400	341774	0.65%	0.480%
24	18.744	2807	2824	2838	PV	2	8790	150972	0.29%	0.212%
25	20.039	3039	3050	3064	PV	5	12597	396525	0.76%	0.557%
26	23.993	3727	3741	3751	PV		19287	545493	1.04%	0.766%

Sum of corrected areas: 71213220

(c)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01701011.D
Acq On : 23 Oct 2012 5:11
Operator :
Sample : 40-3
MISC :
ALS Vial : 17 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :
Signal : TIC: 01701011.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.115	87	92	103	VV		101115	51887	1.16%	0.848%
2	3.409	138	144	148	VV		11148	8321	0.19%	0.136%
3	4.023	242	251	256	VV	3	1980	20168	0.45%	0.330%
4	4.402	310	317	322	VV	4	7652	4993	0.11%	0.082%
5	4.604	347	353	357	VV	2	6001	51527	1.15%	0.842%
6	5.257	449	467	474	PV		14876	13155	0.29%	0.215%
7	5.487	497	507	516	PV		24091	30838	0.69%	0.504%
8	5.785	555	559	563	PV	3	1818	9369	0.21%	0.153%
9	5.928	583	584	590	VV	4	2800	45462	1.01%	0.743%
10	6.05	594	605	612	PV		17652	76055	1.70%	1.243%
11	7.718	886	897	907	VV	7	10372	254599	5.68%	4.161%
12	8.267	987	993	999	PV	3	1707	13071	0.29%	0.214%
13	9.376	1177	1186	1195	PV	2	14178	28941	0.65%	0.473%
14	9.78	1250	1257	1271	PV	4	14132	26800	0.60%	0.438%
15	10.31	1342	1349	1357	PB	2	2166	24004	0.54%	0.394%
16	10.89	1441	1451	1465	PV		17073	31817	0.71%	0.520%
17	12.23	1676	1685	1701	PV		102666	4485124	100.00%	73.302%
18	14.48	2062	2078	2084	PV	2	3747	203997	4.55%	3.334%
19	14.81	688	692	695	PV	3	1341	4825	0.11%	0.079%
20	14.98	749	753	763	VV		5238	45749	1.02%	0.748%
21	16.1	2351	2361	2374	VV	5	54250	68835	1.53%	1.125%
22	16.67	2446	2460	2471	PV	3	9994	522047	11.64%	8.532%
23	16.94	1177	1186	1195	PV	2	14178	13267	0.30%	0.217%
24	18.75	2807	2824	2838	PV	2	8790	13767	0.31%	0.225%
25	20.04	1342	1349	1357	PB	2	2166	24094	0.54%	0.394%
26	#####	3737	3742	3747	VV	3	1838	45890	1.02%	0.750%

Sum of corrected areas: 6118692

(d)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01801012.D
Acq On : 23 Oct 2012 5:44
Operator :
Sample : 40-4
MISC :
ALS Vial : 18 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation
Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :
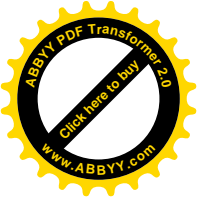Signal : TIC: 01801012.D\data.ms

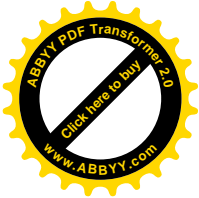| peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.115	84	92	100	VV		76093	786789	1.12%	0.823%
2	3.41	138	144	148	BV		11763	140532	0.20%	0.147%
3	4.115	261	267	273	VV	2	9536	176365	0.25%	0.184%
4	4.399	309	317	323	PV	4	5412	97981	0.14%	0.102%
5	4.605	344	353	362	BV		13946	319302	0.45%	0.334%
6	5.258	455	467	473	PV		11060	198848	0.28%	0.208%
7	5.488	497	507	516	PV		24091	499988	0.71%	0.523%
8	5.754	545	553	564	PV	2	15774	336592	0.48%	0.352%
9	5.931	573	584	593	VV	2	48023	698837	0.99%	0.731%
10	6.05	593	605	612	VV		47516	1160585	1.65%	1.214%
11	6.117	612	617	626	VV	4	10729	245528	0.35%	0.257%
12	7.719	887	897	909	BV		269075	3972183	5.65%	4.155%
13	9.378	1178	1187	1195	PV	2	18394	435936	0.62%	0.456%
14	9.781	1249	1257	1267	VV	3	17981	422552	0.60%	0.442%
15	10.13	1309	1318	1336	VV	4	31308	908339	1.29%	0.950%
16	10.89	1443	1451	1463	PV	2	21193	483736	0.69%	0.506%
17	12.22	1673	1684	1739	PV		3E+06	70343490	100.00%	73.581%
18	12.7	1760	1767	1774	VV	3	10867	285873	0.41%	0.299%
19	14.48	2055	2079	2095	PV	2	125432	3178702	4.52%	3.325%
20	14.81	2123	2136	2151	VV		10347	307775	0.44%	0.322%
21	16.1	2352	2361	2376	VV	6	34279	951221	1.35%	0.995%
22	16.67	2446	2461	2486	PV		322584	7899434	11.23%	8.263%
23	16.94	2500	2509	2520	VV	5	10873	356189	0.51%	0.373%
24	18.75	2817	2825	2833	PV	5	8371	198848	0.28%	0.208%
25	20.04	3044	3050	3069	PV	9	14984	484140	0.69%	0.506%
26	23.99	3727	3740	3751	PV	3	20677	710309	1.01%	0.743%

Sum of corrected areas: 95600074

Figure C.3: Air drying at 40 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

(a)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 01901013.D
Acq On : 23 Oct 2012 6:18
Operator :
Sample : 45-1
Misc :
ALS Vial : 19 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :

Signal : TIC: 01901013.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.115	84	92	98	BV	96590	539385	1.14%	0.871%
2	3.41	138	144	148	PV	13336	126950	0.27%	0.205%
3	3.45	148	151	154	VV 2	6870	143871	0.30%	0.232%
4	3.485	154	157	162	VV 2	5603	124869	0.26%	0.202%
5	4.604	346	353	364	PV 2	9771	296790	0.63%	0.479%
6	4.737	368	376	382	PV 3	5120	123059	0.26%	0.199%
7	5.256	455	467	473	VV 2	14177	133143	0.28%	0.215%
8	5.489	500	507	513	VV	7751	157295	0.33%	0.254%
9	5.754	548	553	560	VV 3	5219	137537	0.29%	0.222%
10	5.932	570	585	590	VV 2	15662	359177	0.76%	0.580%
11	6.051	596	605	612	VV 4	16679	605027	1.28%	0.977%
12	6.116	612	617	625	VV 3	4699	127584	0.27%	0.206%
13	7.719	887	897	912	PV	110064	2883944	6.10%	4.657%
14	9.376	1174	1186	1198	PV 3	11940	263809	0.56%	0.426%
15	9.781	1250	1257	1266	PV 4	9177	284245	0.60%	0.459%
16	10.13	1307	1318	1325	PV 4	16784	542909	1.15%	0.877%
17	10.89	1441	1451	1464	PV 2	11803	388283	0.82%	0.627%
18	12.22	1673	1684	1713	PV	2E+06	47293703	100.00%	76.330%
19	12.4	1713	1714	1719	VV 4	2338	36194	0.08%	0.058%
20	14.48	2065	2079	2105	PV 3	76757	2117906	4.48%	3.420%
21	14.81	2128	2135	2144	VV 2	7708	264216	0.56%	0.427%
22	16.09	2351	2360	2375	PV 4	5763	474981	1.00%	0.767%
23	16.67	2444	2461	2476	PV	211518	3553375	7.51%	5.738%
24	18.75	2815	2825	2837	PV 3	5993	166584	0.35%	0.269%
25	20.04	3041	3050	3060	PV 9	10020	357415	0.76%	0.577%
26	23.99	3731	3741	3752	PV 3	15643	424820	0.90%	0.686%

Sum of corrected areas: 61927069

(b)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02001014.D
Acq On : 23 Oct 2012 6:52
Operator :
Sample : 45-2
Misc :
ALS Vial : 20 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :

Signal : TIC: 02001014.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.115	87	92	103	PV	94837	1169080	1.19%	0.903%
2	3.409	138	144	148	VV	14868	256343	0.26%	0.198%
3	3.449	148	151	154	VV	7179	141073	0.14%	0.109%
4	3.486	154	157	165	VV 2	6390	166544	0.17%	0.129%
5	4.603	344	352	364	PV 2	17678	493754	0.50%	0.381%
6	5.258	460	467	473	PV	14238	252459	0.26%	0.195%
7	5.488	487	507	513	VV	13001	343086	0.35%	0.265%
8	5.754	548	553	560	VV 3	9317	235121	0.24%	0.182%
9	5.93	571	584	595	VV	35348	727600	0.74%	0.562%
10	6.049	595	605	612	VV	30677	1188500	1.20%	0.918%
11	6.115	612	617	623	VV 5	8480	231202	0.23%	0.179%
12	7.719	884	897	912	PV	274029	5840223	5.92%	4.511%
13	9.373	1173	1186	1197	VV 2	23630	541169	0.55%	0.418%
14	9.781	1247	1257	1271	VV 3	21106	616259	0.62%	0.476%
15	10.13	1309	1318	1326	VV 2	38261	1263775	1.28%	0.976%
16	10.89	1442	1451	1469	PV	32915	848004	0.86%	0.655%
17	12.22	1667	1684	1732	PV	4319008	98645515	100.00%	76.194%
18	12.7	1761	1767	1780	VV 5	6181	268430	0.27%	0.207%
19	14.48	2066	2079	2109	PV	175198	4458818	4.52%	3.444%
20	14.81	2122	2135	2146	BV	15211	534900	0.54%	0.413%
21	16.1	2354	2361	2370	VV 5	24988	994301	1.01%	0.768%
22	16.67	2440	2460	2481	PV	497951	7788690	7.90%	6.016%
23	16.95	2499	2509	2523	BV 7	10865	413421	0.42%	0.319%
24	18.75	2814	2825	2838	PV 4	12611	339202	0.34%	0.262%
25	20.04	3036	3051	3062	BV 7	20992	858191	0.87%	0.663%
26	23.99	3730	3740	3759	PV 2	29950	850593	0.86%	0.657%

Sum of corrected areas: 129466250

(c)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02101015.D
Acq On : 23 Oct 2012 7:26
Operator :
Sample : 45-3
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :

Signal : TIC: 02101015.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.116	86	92	101	PV	51885	423894	1.13%	0.859%
2	3.41	139	144	148	PV	6738	93267	0.25%	0.189%
3	4.116	262	267	273	VV 2	10279	186144	0.49%	0.377%
4	4.4	313	317	321	VV 3	5586	95288	0.25%	0.193%
5	4.604	346	353	367	VV 2	12144	272567	0.72%	0.552%
6	4.939	401	411	422	VV 2	5884	125204	0.33%	0.254%
7	5.26	455	467	475	PV	6638	100669	0.27%	0.204%
8	5.488	499	507	515	VV 2	7058	139160	0.37%	0.282%
9	5.754	546	553	561	VV 2	4014	94180	0.25%	0.191%
10	5.931	575	584	595	VV	42095	305460	0.81%	0.619%
11	6.049	595	605	612	VV	20331	490513	1.30%	0.994%
12	6.121	612	618	626	VV 4	5947	134068	0.36%	0.272%
13	7.72	885	897	911	BV	133371	2144144	5.70%	4.345%
14	9.374	1170	1186	1195	VV 2	10637	242296	0.64%	0.491%
15	9.779	1249	1257	1267	PV 2	10818	246243	0.65%	0.499%
16	10.13	1309	1318	1326	VV 6	18198	447077	1.19%	0.906%
17	10.89	1441	1451	1460	PV	15807	302006	0.80%	0.612%
18	12.22	1664	1684	1720	PV	1688824	37615542	100.00%	76.226%
19	14.48	2070	2079	2090	PV 3	30093	1776013	4.72%	3.599%
20	14.81	2129	2136	2148	VV 3	5547	142378	0.38%	0.289%
21	16.1	2353	2361	2374	PV 5	15234	373066	0.99%	0.756%
22	16.67	2449	2461	2475	PV	123003	2836488	7.54%	5.748%
23	16.94	2499	2508	2519	PV 3	4308	130190	0.35%	0.264%
24	18.74	2815	2824	2840	PV 4	3958	135705	0.36%	0.275%
25	20.04	3041	3050	3057	PV 5	6884	170632	0.45%	0.346%
26	23.98	3730	3739	3752	PV 3	9703	325199	0.86%	0.659%

Sum of corrected areas: 49347390

(d)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02201016.D
Acq On : 23 Oct 2012 7:59
Operator :
Sample : 45-4
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method : C:\msdchem\1\methods\Chinthakashutdown.M
Title :

Signal : TIC: 02201016.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.116	87	92	98	PV	50494	609078	1.17%	0.894%
2	3.41	138	144	148	PV	10593	153292	0.29%	0.225%
3	3.488	154	157	165	VV 2	3907	68713	0.13%	0.101%
4	4.117	259	267	272	PV 3	3785	94566	0.18%	0.139%
5	4.604	345	353	365	PV	12615	234714	0.45%	0.345%
6	5.258	462	467	472	VV	6279	118545	0.23%	0.174%
7	5.489	501	507	515	VV 2	9899	175093	0.34%	0.257%
8	5.757	543	554	562	VV 5	7770	148312	0.29%	0.218%
9	5.931	568	584	595	VV	39314	416272	0.80%	0.611%
10	6.05	595	605	612	VV 2	29454	674483	1.30%	0.990%
11	6.118	612	617	623	VV 6	6922	126541	0.24%	0.186%
12	7.72	883	897	909	PV	171405	3323361	6.39%	4.878%
13	9.374	1178	1186	1200	PV 3	12769	306583	0.59%	0.450%
14	9.489	1200	1206	1208	VV 2	3144	71435	0.14%	0.105%
15	9.778	1248	1257	1265	PV 5	14421	314077	0.60%	0.461%
16	10.13	1311	1318	1325	VV 4	23423	510928	0.98%	0.750%
17	10.89	1439	1451	1465	VV 2	16835	416272	0.80%	0.611%
18	12.22	1669	1684	1711	PV	2385168	51997857	100.00%	76.322%
19	12.38	1711	1712	1723	VV 4	4636	88443	0.17%	0.130%
20	14.48	2066	2079	2098	BV 2	39288	2433589	4.68%	3.572%
21	14.81	2128	2136	2149	VV 2	7253	186410	0.36%	0.274%
22	16.1	2339	2361	2371	PV 7	19851	506203	0.97%	0.743%
23	16.67	2446	2461	2476	PV	193077	4117752	7.92%	6.044%
24	16.94	2504	2508	2528	VV 5	6083	151033	0.29%	0.222%
25	18.75	2818	2825	2833	PV 3	5268	192807	0.37%	0.283%
26	20.04	3043	3051	3064	PV 4	9147	238115	0.46%	0.350%
27	23.99	3726	3741	3753	PV 2	12481	455106	0.88%	0.668%

Sum of corrected areas: 68129579

Figure C.4: Air drying at 45 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02301017.D
Acq On   : 23 Oct 2012   8:33
Operator :
Sample   : 50-1
Misc   :
ALS Vial : 23   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method   : C:\msdchem\1\methods\Chinthakashutdown.M
Title   :

Signal   : TIC: 02301017.D\data.ms
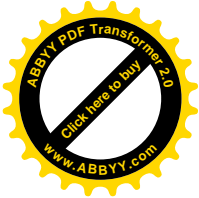
peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.115	82	92	98	PV		102476	706064	0.83%	0.656%
2	3.409	138	144	148	PV		26431	147456	0.17%	0.137%
3	3.448	148	151	154	VV		8151	66419	0.08%	0.062%
4	4.115	262	267	275	VV	3	8355	81257	0.10%	0.075%
5	4.604	344	353	365	PV	2	16433	222574	0.26%	0.207%
6	5.257	456	467	473	VV	2	17051	295987	0.35%	0.275%
7	5.487	500	507	514	VV		20631	157142	0.19%	0.146%
8	5.754	547	553	561	PV	4	14078	163928	0.19%	0.152%
9	5.93	572	584	592	VV	2	55601	573677	0.68%	0.533%
10	6.05	592	605	612	VV	2	49565	558609	0.66%	0.519%
11	6.118	612	617	624	VV	6	10594	139904	0.17%	0.130%
12	7.718	879	897	910	PV		269532	4073863	4.81%	3.785%
13	9.372	1167	1186	1198	PV	2	18602	429451	0.51%	0.399%
14	9.781	1249	1257	1273	PV	2	20894	453130	0.54%	0.421%
15	10.13	1310	1318	1334	VV	3	37351	556789	0.66%	0.517%
16	10.89	1442	1451	1466	PV	2	23326	567219	0.67%	0.527%
17	12.22	1673	1684	1714	PV		3553676	84610414	100.00%	78.611%
18	12.4	1714	1715	1720	VV	3	3161	24024	0.03%	0.022%
19	14.48	2060	2079	2095	PV	2	100782	2390502	2.83%	2.221%
20	14.81	2122	2136	2160	PV	2	12094	252251	0.30%	0.234%
21	16.1	2353	2361	2380	VB	8	28609	697454	0.82%	0.648%
22	16.67	2445	2461	2490	PV		393360	8832263	10.44%	8.206%
23	16.94	2494	2509	2520	VV	5	10226	193604	0.23%	0.180%
24	18.75	2815	2825	2839	PV	2	9867	257240	0.30%	0.239%
25	20.04	3040	3050	3066	VV	6	20471	380849	0.45%	0.354%
26	23.99	3721	3740	3756	BV	2	28917	799704	0.95%	0.743%

Sum of corrected areas: 107631774

(a)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02401018.D
Acq On   : 23 Oct 2012   9:07
Operator :
Sample   : 50-2
Misc   :
ALS Vial : 24   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method   : C:\msdchem\1\methods\Chinthakashutdown.M
Title   :

Signal   : TIC: 02401018.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.117	82	93	100	PV		53079	672605	0.87%	0.679%
2	3.411	137	144	148	PV		12098	165427	0.21%	0.167%
3	3.45	148	151	154	VV	2	3294	39286	0.05%	0.040%
4	4.117	263	268	278	VV	4	3790	67492	0.09%	0.068%
5	4.605	343	353	368	VV	3	10098	226652	0.29%	0.229%
6	5.258	461	467	473	PV	2	7840	220900	0.28%	0.223%
7	5.488	498	507	522	BV		9902	182267	0.23%	0.184%
8	5.757	542	554	560	VV	3	7292	125918	0.16%	0.127%
9	5.933	574	585	593	VV	2	26463	502225	0.65%	0.507%
10	6.052	593	606	613	VV	3	21948	507178	0.65%	0.512%
11	6.122	613	618	628	VV	3	5054	122896	0.16%	0.124%
12	7.721	881	897	913	PV	2	148338	3666146	4.72%	3.701%
13	9.376	1179	1186	1196	PV	3	14557	339770	0.44%	0.343%
14	9.782	1250	1258	1265	VV	4	12095	364534	0.47%	0.368%
15	10.129	1311	1318	1327	VV	4	25224	589296	0.76%	0.595%
16	10.893	1439	1452	1462	VV	2	15052	530952	0.68%	0.536%
17	12.222	1673	1684	1739	PV		3444861	77681476	100.00%	78.420%
18	14.483	2067	2079	2109	PV	2	110576	2147583	2.76%	2.168%
19	14.808	2127	2136	2145	PV	2	10214	258887	0.33%	0.261%
20	16.098	2353	2361	2370	PV	8	19502	632982	0.81%	0.639%
21	16.668	2445	2461	2483	PV		423592	8068294	10.39%	8.145%
22	16.946	2501	2509	2518	VV	6	8775	229674	0.30%	0.232%
23	18.749	2815	2825	2833	PV	3	11395	264486	0.34%	0.267%
24	20.042	3039	3051	3069	VV	7	20345	594333	0.77%	0.600%
25	20.644	3143	3156	3162	PV	5	4416	126925	0.16%	0.128%
26	23.991	3720	3741	3752	PV	2	34390	730059	0.94%	0.737%

Sum of corrected areas: 99058245

(b)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02501019.D
Acq On   : 23 Oct 2012   9:40
Operator :
Sample   : 50-3
Misc   :
ALS Vial : 25   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method   : C:\msdchem\1\methods\Chinthakashutdown.M
Title   :

Signal   : TIC: 02501019.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.118	81	93	103	PV		50528	434613	0.85%	0.671%
2	3.413	140	148	148	PV		11682	102338	0.20%	0.158%
3	3.451	148	151	155	VV		3212	26883	0.05%	0.042%
4	4.609	346	353	365	BV	2	9447	137246	0.27%	0.212%
5	5.259	461	467	474	VV		6898	132133	0.26%	0.204%
6	5.49	498	507	513	PV		6799	118531	0.23%	0.183%
7	5.758	546	554	562	BV	2	5249	62256	0.12%	0.096%
8	5.934	572	585	596	VV	2	23232	341343	0.67%	0.527%
9	6.055	596	606	613	VV		17458	393159	0.77%	0.607%
10	6.121	613	618	628	VV	3	5418	74990	0.15%	0.116%
11	7.724	888	898	911	PV	2	119445	2404944	4.71%	3.713%
12	9.376	1171	1187	1203	BV	2	11529	242891	0.48%	0.375%
13	9.783	1239	1258	1266	VV	7	10981	245482	0.48%	0.379%
14	10.131	1311	1319	1328	VV	5	19243	313166	0.61%	0.483%
15	10.897	1442	1452	1469	PV		14830	361422	0.71%	0.558%
16	12.224	1673	1684	1714	PV		2E+06	51101655	100.00%	78.896%
17	12.401	1714	1715	1727	VV	3	4020	67444	0.13%	0.104%
18	14.485	2070	2079	2092	PV	2	57481	1483901	2.90%	2.291%
19	14.566	2092	2094	2101	VV	4	3562	51880	0.10%	0.080%
20	14.814	2126	2137	2145	VV	2	7357	142905	0.28%	0.221%
21	16.102	2350	2362	2377	PV	5	16298	406761	0.80%	0.628%
22	16.67	2450	2461	2480	PV		186112	5166128	10.11%	7.976%
23	16.947	2496	2510	2519	VV	4	6373	115079	0.23%	0.178%
24	18.755	2815	2826	2838	PV	5	5849	157393	0.31%	0.243%
25	20.041	3038	3050	3064	PV	8	10411	217424	0.43%	0.336%
26	23.993	3723	3741	3756	PV	2	16259	468941	0.92%	0.724%

Sum of corrected areas: 64770907

(c)

Area Percent Report

Data Path : C:\msdchem\1\data\
Data File : 02601020.D
Acq On   : 23 Oct 2012   10:14
Operator :
Sample   : 50-4
Misc   :
ALS Vial : 26   Sample Multiplier: 1

Integration Parameters: sasas.E1.E1.E
Integrator: ChemStation

Method   : C:\msdchem\1\methods\Chinthakashutdown.M
Title   :

Signal   : TIC: 02601020.D\data.ms

| peak #	R.T. min	first scan	max scan	last scan	PK TY		peak height	corr. area	corr. % max.	% of total
1	3.12	88	93	102	PV		47040	577107	0.83%	0.652%
2	3.414	136	145	149	PV		9783	129229	0.19%	0.146%
3	3.453	149	151	155	VV	2	2983	31319	0.04%	0.035%
4	4.61	346	354	365	PV	2	9802	188807	0.27%	0.213%
5	5.264	461	468	473	PV		7572	220398	0.32%	0.249%
6	5.495	501	508	520	VV	3	6043	119493	0.17%	0.135%
7	5.759	549	554	562	VV	2	4307	82323	0.12%	0.093%
8	5.935	575	585	594	VV	2	25292	478857	0.69%	0.541%
9	6.055	594	606	613	PV	3	16100	480627	0.69%	0.543%
10	6.122	613	618	624	VV	5	4689	87692	0.13%	0.099%
11	7.724	884	898	914	PV		158875	3175858	4.56%	3.588%
12	9.379	1180	1187	1201	BV	4	13813	328384	0.47%	0.371%
13	9.493	1201	1207	1219	VV	2	3810	70691	0.10%	0.080%
14	9.784	1249	1258	1267	VV	6	13834	351398	0.50%	0.397%
15	10.13	1309	1319	1329	VV	4	24641	583422	0.84%	0.659%
16	10.9	1443	1452	1463	PV	3	18191	448763	0.64%	0.507%
17	12.23	1665	1685	1732	PV		3120343	69613957	100.00%	78.648%
18	12.51	1732	1733	1742	VV	4	3397	84113	0.12%	0.095%
19	12.7	1758	1767	1776	VV	3	3820	105589	0.15%	0.119%
20	14.49	2065	2079	2106	PV	3	80179	2010138	2.89%	2.271%
21	14.81	2129	2136	2146	VV	2	9515	238917	0.34%	0.270%
22	16.1	2350	2362	2375	PV	6	23165	581533	0.84%	0.657%
23	16.67	2444	2461	2485	PV		315478	7019106	10.08%	7.930%
24	16.95	2502	2510	2518	VV	6	7918	206703	0.30%	0.234%
25	18.75	2811	2825	2833	BV	4	9011	208006	0.30%	0.235%
26	20.05	3043	3051	3072	VV	7	17552	446515	0.64%	0.504%
27	24	3730	3741	3752	PV	2	24634	644377	0.93%	0.728%

Sum of corrected areas: 88513322

(d)

Figure C.5: Air drying at 50 °C temperature (a) Trial 1, (b) Trial 2, (c) Trial 3 and (d) Trial 4

74

Appendix D: One-Way ANOVA and principal components analysis (PCA) steps in IBM SPSS statistics 19
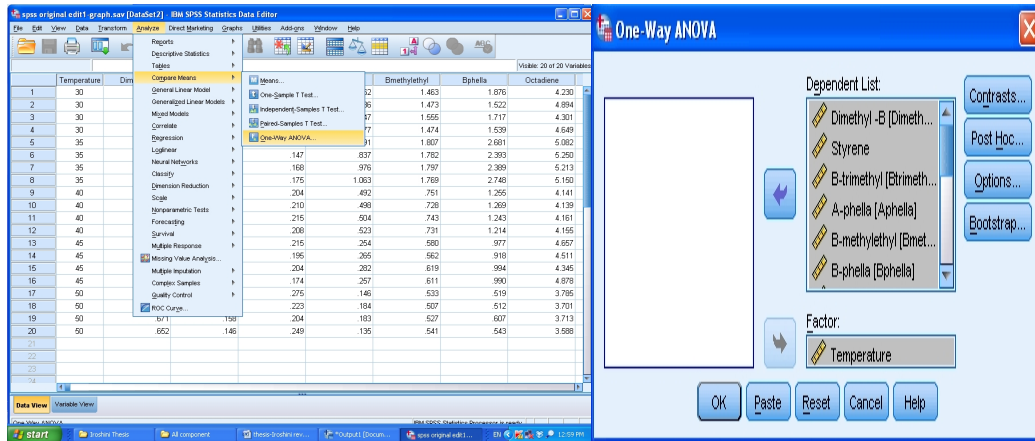
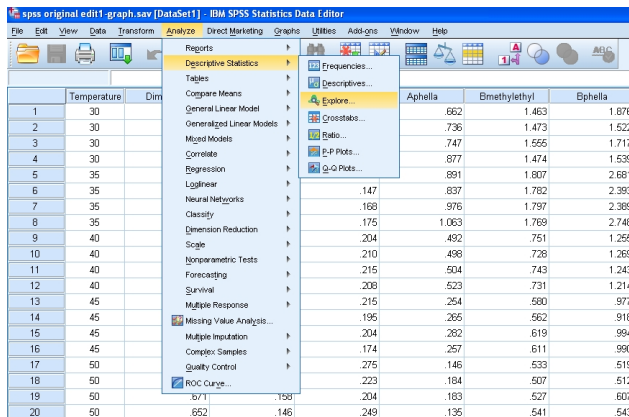(a)   (b)
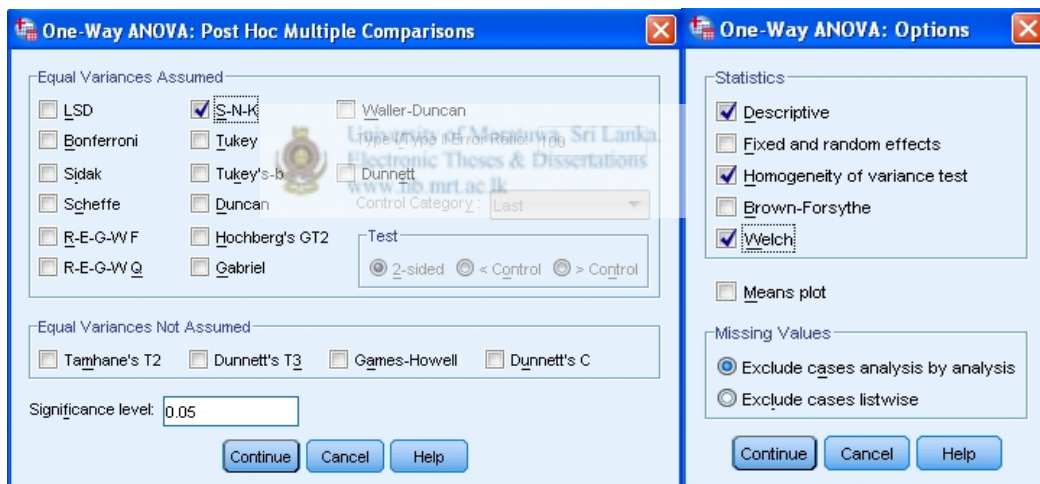
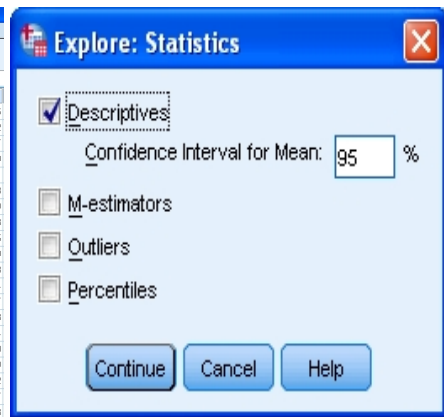(c)   (d)

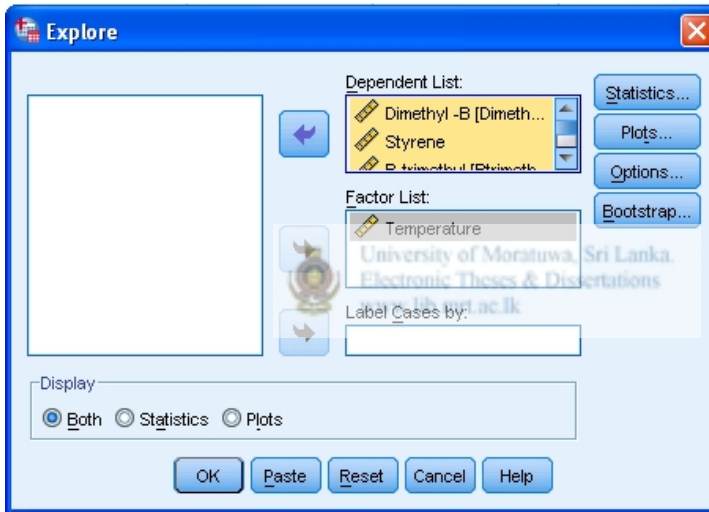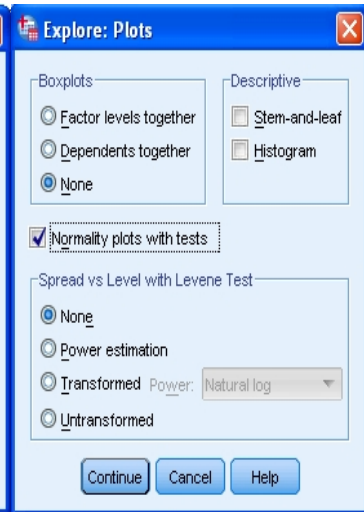Figure D.1: (a) Calculating one way ANOVA, (b) One-way ANOVA window, (c) Post Hoc Multiple Comparisons window and (d) Options window
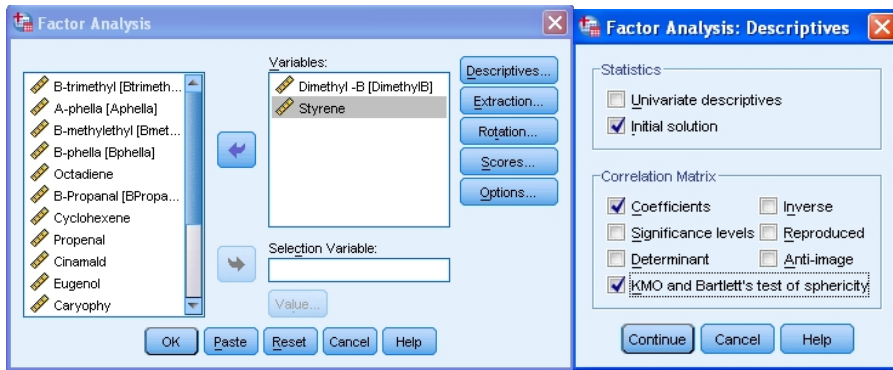
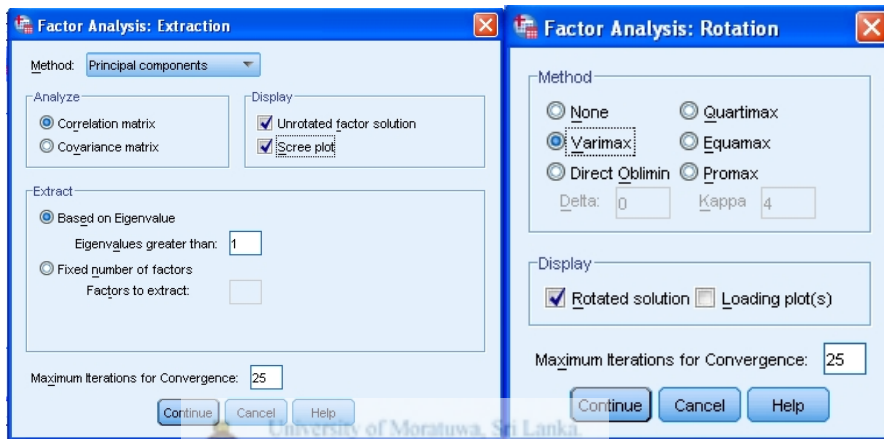(a)   (b)

(c)   (d)

Figure D.2: (a) Testing the normality, (b) Statistics window, (c) Explore window and (d) Plots window

(a)   (b)

(c)   (d)
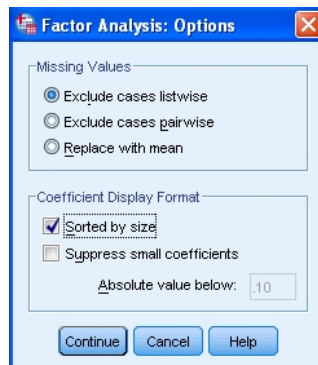
(e)

Figure D.3: (a) Factor Anaysis window, (b) Descriptive window, (c) Extraction window, (d) Rotation window and (e) Option window
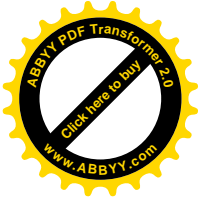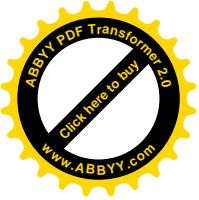
Appendix E: Matlab code for plotting the drying curves

Appendix E.1: Matlab code for plotting moisture content on dry basis against time

```matlab
function drying=drying_data()
%Importing data from excel file into defined arrays
time1=[xlsread('Drying curve graph.xlsx',1,'A4:A31')]';
moisture_dry_basis1=[xlsread('Drying curve graph.xlsx',1,'B4:B31')]';
time2=[xlsread('Drying curve graph.xlsx',1,'A4:A23')]';
moisture_dry_basis2=[xlsread('Drying curve graph.xlsx',1,'C4:C23')]';
time3=[xlsread('Drying curve graph.xlsx',1,'A4:A18')]';
moisture_dry_basis3=[xlsread('Drying curve graph.xlsx',1,'D4:D18')]';
time4=[xlsread('Drying curve graph.xlsx',1,'A4:A14')]';
moisture_dry_basis4=[xlsread('Drying curve graph.xlsx',1,'E4:E14')]';
time5=[xlsread('Drying curve graph.xlsx',1,'A4:A12')]';
moisture_dry_basis5=[xlsread('Drying curve graph.xlsx',1,'F4:F12')]';

%Plot the curves in same figures
f1=figure(1);
plot(time1,moisture_dry_basis1,'kx',time2,moisture_dry_basis2,'k.',time3,moisture_dry_basis3,'k^',time4,moisture_dry_basis4,'k+',time5,moisture_dry_basis5,'k*');
xlabel('time(hr)');ylabel('moisture content-dry basis (kgH2O/Kg dry solid)')...
   ;title('Dry basis moisture content Vs time');grid on;
 End
```
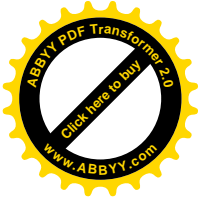
Appendix E.2: Matlab code for plotting drying rate against moisture content on dry basis

```
function drying=drying_data()
%Importing data from excel file into defined arrays
time1=[xlsread('Drying curve graph.xlsx',1,'A4:A29')]';
moisture_dry_basis1=[xlsread('Drying curve graph.xlsx',1,'B4:B29')]';
time2=[xlsread('Drying curve graph.xlsx',1,'A4:A22')]';
moisture_dry_basis2=[xlsread('Drying curve graph.xlsx',1,'C4:C22')]';
time3=[xlsread('Drying curve graph.xlsx',1,'A4:A17')]';
moisture_dry_basis3=[xlsread('Drying curve graph.xlsx',1,'D4:D17')]';
time4=[xlsread('Drying curve graph.xlsx',1,'A4:A14')]';
moisture_dry_basis4=[xlsread('Drying curve graph.xlsx',1,'E4:E14')]';
time5=[xlsread('Drying curve graph.xlsx',1,'A4:A12')]';
moisture_dry_basis5=[xlsread('Drying curve graph.xlsx',1,'F4:F12')]';

%Plot the curves in same figures
f1=figure(1);
plot(time1,moisture_dry_basis1,'kx',time2,moisture_dry_basis2,'k.',time3,moisture_d
ry_basis3,'k^',time4,moisture_dry_basis4,'k+',time5,moisture_dry_basis5,'k*');
xlabel('time(minutes)');ylabel('moisture content-dry basis (kgH2O/Kg dry solid)')...
   ;title('Dry basis moisture content Vs time');grid on;

end
```

Appendix F: SPSS Output of the One-Way ANOVA

Table F.1: Test of homogeneity of variances

	Levene Statistic	df1	df2	Sig.
p-xylene	.531	4	15	.715
styrene	2.071	4	15	.136
benzene, 1,2,3-trimethyl	2.983	4	15	.054
α-phellandrene	4.047	4	15	.020
p-cymene	2.793	4	15	.065
β-phellandrene	15.185	4	15	.000
linalool	7.340	4	15	.002
benzenepropanal	1.102	4	15	.391
terpinen-4-ol	.707	4	15	.600
cinnamaldehyde	.710	4	15	.598
cinnamaldehyde-E	1.502	4	15	.251
eugenol	17.042	4	15	.000
caryophyllene	7.397	4	15	.002
cinnamyl acetate	.760	4	15	.567
2-methoxy-cinnamaldehyde	1.367	4	15	.292
benzyl benzoate	2.939	4	15	.056
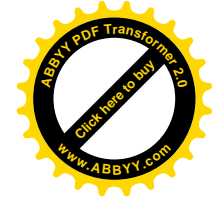
Table F.2: Tests of Normality

	Temperature	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
p-xylene	Ambient	.187	4	.	.990	4	.957
	35	.260	4	.	.903	4	.448
	40	.192	4	.	.989	4	.953
	45	.227	4	.	.940	4	.653
	50	.249	4	.	.921	4	.544
styrene	Ambient	.359	4	.	.746	4	.036
	35	.224	4	.	.938	4	.641
	40	.214	4	.	.956	4	.755
	45	.230	4	.	.955	4	.747
	50	.175	4	.	.980	4	.900
benzene, 1,2,3-trimethyl	Ambient	.190	4	.	.979	4	.893
	35	.237	4	.	.941	4	.658
	40	.185	4	.	.993	4	.971
	45	.204	4	.	.972	4	.854
	50	.183	4	.	.983	4	.919
α-phellandrene	Ambient	.288	4	.	.934	4	.619
	35	.196	4	.	.976	4	.878
	40	.257	4	.	.920	4	.536
	45	.234	4	.	.895	4	.406
	50	.297	4	.	.831	4	.169
p-cymene	Ambient	.407	4	.	.732	4	.026
	35	.189	4	.	.978	4	.892
	40	.251	4	.	.925	4	.564
	45	.250	4	.	.923	4	.552
	50	.250	4	.	.939	4	.650
β-phellandrene	Ambient	.272	4	.	.891	4	.390
	35	.301	4	.	.812	4	.126
	40	.212	4	.	.965	4	.812
	45	.331	4	.	.793	4	.091
	50	.271	4	.	.855	4	.243
linalool	Ambient	.258	4	.	.916	4	.517
	35	.203	4	.	.971	4	.847
	40	.272	4	.	.885	4	.361
	45	.149	4	.	.994	4	.978
	50	.271	4	.	.949	4	.708
Benzenepropanal	Ambient	.298	4	.	.875	4	.319
	35	.269	4	.	.900	4	.433
	40	.271	4	.	.871	4	.301
	45	.232	4	.	.910	4	.481
	50	.233	4	.	.970	4	.843
terpinen-4-ol	Ambient	.201	4	.	.951	4	.725
	35	.386	4	.	.770	4	.059
	40	.222	4	.	.979	4	.896
	45	.255	4	.	.879	4	.335
	50	.202	4	.	.966	4	.816
cinnamaldehyde	Ambient	.303	4	.	.806	4	.113
	35	.254	4	.	.922	4	.546
	40	.204	4	.	.968	4	.832
	45	.256	4	.	.849	4	.222
	50	.175	4	.	.995	4	.983
cinnamaldehyde-E	Ambient	.267	4	.	.875	4	.318

81

	35	.366	4	.	.768	4	.056
	40	.242	4	.	.968	4	.827
	45	.237	4	.	.930	4	.594
	50	.241	4	.	.968	4	.828
eugenol	Ambient	.266	4	.	.870	4	.296
	35	.296	4	.	.923	4	.555
	40	.269	4	.	.917	4	.522
	45	.264	4	.	.860	4	.260
	50	.227	4	.	.949	4	.708
caryophyllene	Ambient	.271	4	.	.890	4	.383
	35	.259	4	.	.881	4	.345
	40	.289	4	.	.867	4	.286
	45	.267	4	.	.884	4	.355
	50	.156	4	.	.994	4	.976
cinnamyl acetate	Ambient	.198	4	.	.963	4	.795
	35	.211	4	.	.934	4	.616
	40	.260	4	.	.955	4	.748
	45	.298	4	.	.784	4	.077
	50	.248	4	.	.905	4	.455
2-methoxy-cinnamaldehyde	Ambient	.142	4	.	.997	4	.989
	35	.227	4	.	.957	4	.760
	40	.194	4	.	.976	4	.879
	45	.142	4	.	.997	4	.991
	50	.333	4	.	.828	4	.163
benzyl benzoate	Ambient	.233	4	.	.967	4	.822
	35	.276	4	.	.870	4	.298
	40	.218	4	.	.938	4	.640
	45	.240	4	.	.875	4	.316
	50	.219	4	.	.954	4	.743

a. Lilliefors Significance Correction

Table F.3: Descriptives table

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
p-xylene	ambient	4	.95100	.018815	.009407	.92106	.98094	.927	.972
	35	4	.87025	.030739	.015370	.82134	.91916	.827	.897
	40	4	.81975	.022111	.011056	.78457	.85493	.795	.848
	45	4	.88175	.020288	.010144	.84947	.91403	.859	.903
	50	4	.66450	.012662	.006331	.64435	.68465	.652	.679
	Total	20	.83745	.100448	.022461	.79044	.88446	.652	.972
styrene	ambient	4	.11700	.029017	.014509	.07083	.16317	.099	.160
	35	4	.17900	.015122	.007561	.15494	.20306	.165	.199
	40	4	.14075	.004856	.002428	.13302	.14848	.136	.147
	45	4	.20425	.015305	.007653	.17990	.22860	.189	.225
	50	4	.15200	.013191	.006595	.13101	.17299	.137	.167
	Total	20	.15860	.034701	.007759	.14236	.17484	.099	.225
benzene, 1,2,3-trimethyl	ambient	4	.19400	.020199	.010100	.16186	.22614	.172	.218
	35	4	.15550	.019672	.009836	.12420	.18680	.132	.175
	40	4	.20925	.004573	.002287	.20197	.21653	.204	.215
	45	4	.19700	.017378	.008689	.16935	.22465	.174	.215
	50	4	.23775	.030934	.015467	.18853	.28697	.204	.275
	Total	20	.19870	.032714	.007315	.18339	.21401	.132	.275
α-phellandrene	ambient	4	.75550	.089363	.044681	.61330	.89770	.662	.877
	35	4	.94175	.099033	.049517	.78417	1.09933	.837	1.063
	40	4	.50425	.013426	.006713	.48289	.52561	.492	.523
	45	4	.26450	.012557	.006278	.24452	.28448	.254	.282
	50	4	.16200	.025232	.012616	.12185	.20215	.135	.184
	Total	20	.52560	.304681	.068129	.38300	.66820	.135	1.063
p-cymene	ambient	4	1.49125	.042789	.021395	1.42316	1.55934	1.463	1.555
	35	4	1.78875	.016701	.008350	1.76218	1.81532	1.769	1.807
	40	4	.73825	.010689	.005344	.72124	.75526	.728	.751
	45	4	.59300	.026646	.013323	.55060	.63540	.562	.619
	50	4	.52700	.014514	.007257	.50390	.55010	.507	.541
	Total	20	1.02765	.527133	.117871	.78094	1.27436	.507	1.807
β-phellandrene	ambient	4	1.66350	.166874	.083437	1.39797	1.92903	1.522	1.876
	35	4	2.55275	.188772	.094386	2.25237	2.85313	2.389	2.748
	40	4	1.24525	.023386	.011693	1.20804	1.28246	1.214	1.269
	45	4	.96975	.035255	.017628	.91365	1.02585	.918	.994
	50	4	.54525	.043254	.021627	.47642	.61408	.512	.607
	Total	20	1.39530	.709065	.158552	1.06345	1.72715	.512	2.748
linalool	ambient	4	4.51850	.310145	.155072	4.02499	5.01201	4.230	4.894
	35	4	5.17375	.073794	.036897	5.05633	5.29117	5.082	5.250
	40	4	4.14900	.010708	.005354	4.13196	4.16604	4.139	4.161
	45	4	4.59775	.226170	.113085	4.23786	4.95764	4.345	4.878
	50	4	3.69675	.081439	.040719	3.56716	3.82634	3.588	3.785
	Total	20	4.42715	.528227	.118115	4.17993	4.67437	3.588	5.250
Benzenepropanal	ambient	4	.33400	.016733	.008367	.30737	.36063	.320	.358
	35	4	.46675	.020726	.010363	.43377	.49973	.441	.485
	40	4	.46600	.009416	.004708	.45102	.48098	.456	.475
	45	4	.44625	.032786	.016393	.39408	.49842	.418	.491
	50	4	.37200	.022949	.011475	.33548	.40852	.343	.399
	Total	20	.41700	.058841	.013157	.38946	.44454	.320	.491
terpinen-4-ol	ambient	4	.49225	.030347	.015173	.44396	.54054	.463	.533
	35	4	.46150	.027343	.013672	.41799	.50501	.421	.481
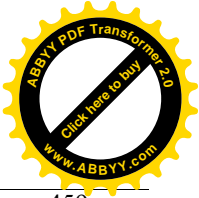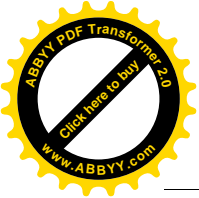
	40	4	.44100	.014024	.007012	.41869	.46331	.425	.459
	45	4	.47375	.018464	.009232	.44437	.50313	.459	.499
	50	4	.39125	.023157	.011579	.35440	.42810	.368	.421
	Total	20	.45195	.041172	.009206	.43268	.47122	.368	.533
cinnamaldehyde	ambient	4	.66650	.034083	.017042	.61227	.72073	.617	.690
	35	4	.56075	.019973	.009986	.52897	.59253	.542	.585
	40	4	.50175	.014477	.007238	.47871	.52479	.487	.520
	45	4	.62625	.020516	.010258	.59360	.65890	.611	.655
	50	4	.53200	.021150	.010575	.49835	.56565	.507	.558
	Total	20	.57745	.065478	.014641	.54681	.60809	.487	.690
Cinnamaldehyde-E	ambient	4	63.75025	.280284	.140142	63.30426	64.19624	63.352	63.977
	35	4	67.17075	.395313	.197656	66.54172	67.79978	66.585	67.437
	40	4	73.33625	.188850	.094425	73.03575	73.63675	73.122	73.581
	45	4	76.27800	.081976	.040988	76.14756	76.40844	76.194	76.370
	50	4	78.64375	.195606	.097803	78.33250	78.95500	78.420	78.896
	Total	20	71.83580	5.725439	1.280247	69.15621	74.51539	63.352	78.896
eugenol	ambient	4	4.35200	.187302	.093651	4.05396	4.65004	4.169	4.546
	35	4	3.70725	.072131	.036066	3.59247	3.82203	3.635	3.807
	40	4	3.33450	.010344	.005172	3.31804	3.35096	3.325	3.349
	45	4	3.50875	.089842	.044921	3.36579	3.65171	3.420	3.599
	50	4	2.23775	.055036	.027518	2.15018	2.32532	2.168	2.291
	Total	20	3.42805	.711164	.159021	3.09521	3.76089	2.168	4.546
caryophyllene	ambient	4	1.67875	.042836	.021418	1.61059	1.74691	1.618	1.715
	35	4	1.38375	.010308	.005154	1.36735	1.40015	1.373	1.394
	40	4	1.04925	.063751	.031876	.94781	1.15069	.995	1.125
	45	4	.75850	.011676	.005838	.73992	.77708	.743	.768
	50	4	.64300	.012410	.006205	.62325	.66275	.628	.657
	Total	20	1.10265	.396882	.088746	.91690	1.28840	.628	1.715
cinnamyl acetate	ambient	4	14.34250	.283688	.141844	13.89109	14.79391	14.025	14.656
	35	4	10.24900	.219218	.109609	9.90017	10.59783	9.952	10.450
	40	4	8.25650	.256721	.128360	7.84800	8.66500	7.913	8.532
	45	4	5.88650	.166144	.083072	5.62213	6.15087	5.738	6.044
	50	4	8.06425	.132193	.066096	7.85390	8.27460	7.930	8.206
	Total	20	9.35975	2.929241	.654998	7.98882	10.73068	5.738	14.656
2-methoxy-cinnamaldehyde	ambient	4	.92250	.023302	.011651	.88542	.95958	.896	.951
	35	4	.28400	.017010	.008505	.25693	.31107	.261	.301
	40	4	.21575	.007411	.003705	.20396	.22754	.208	.225
	45	4	.27225	.008921	.004460	.25805	.28645	.262	.283
	50	4	.24600	.014376	.007188	.22312	.26888	.235	.267
	Total	20	.38810	.275535	.061612	.25915	.51705	.208	.951
benzyl benzoate	ambient	4	2.14775	.100234	.050117	1.98825	2.30725	2.028	2.273
	35	4	.98125	.117854	.058927	.79372	1.16878	.813	1.076
	40	4	.75800	.013880	.006940	.73591	.78009	.743	.773
	45	4	.66750	.013229	.006614	.64645	.68855	.657	.686
	50	4	.73300	.008602	.004301	.71931	.74669	.724	.743
	Total	20	1.05750	.573052	.128138	.78930	1.32570	.657	2.273
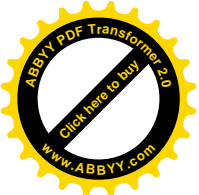
Table F.4: ANOVA table

		Sum of Squares	df	Mean Square	F	Sig.
p-xylene	Between Groups	.185	4	.046	97.800	.000
	Within Groups	.007	15	.000		
	Total	.192	19			
styrene	Between Groups	.018	4	.005	15.284	.000
	Within Groups	.005	15	.000		
	Total	.023	19			
benzene, 1,2,3-trimethyl	Between Groups	.014	4	.004	8.501	.001
	Within Groups	.006	15	.000		
	Total	.020	19			
α-phellandrene	Between Groups	1.707	4	.427	113.724	.000
	Within Groups	.056	15	.004		
	Total	1.764	19			
p-cymene	Between Groups	5.270	4	1.318	2094.795	.000
	Within Groups	.009	15	.001		
	Total	5.280	19			
β-phellandrene	Between Groups	9.351	4	2.338	174.093	.000
	Within Groups	.201	15	.013		
	Total	9.553	19			
linalool	Between Groups	4.823	4	1.206	37.788	.000
	Within Groups	.479	15	.032		
	Total	5.301	19			
benzenepropanal	Between Groups	.059	4	.015	30.514	.000
	Within Groups	.007	15	.000		
	Total	.066	19			
terpinen-4-ol	Between Groups	.024	4	.006	10.930	.000
	Within Groups	.008	15	.001		
	Total	.032	19			
cinnamaldehyde	Between Groups	.074	4	.018	34.844	.000
	Within Groups	.008	15	.001		
	Total	.081	19			
cinnamaldehyde-E	Between Groups	621.886	4	155.471	2464.070	.000
	Within Groups	.946	15	.063		
	Total	622.832	19			
eugenol	Between Groups	9.455	4	2.364	229.521	.000
	Within Groups	.154	15	.010		
	Total	9.609	19			
caryophyllene	Between Groups	2.974	4	.743	590.460	.000
	Within Groups	.019	15	.001		
	Total	2.993	19			
cinnamyl acetate	Between Groups	162.310	4	40.578	847.059	.000
	Within Groups	.719	15	.048		
	Total	163.029	19			
2-methoxy-cinnamaldehyde	Between Groups	1.439	4	.360	1532.758	.000
	Within Groups	.004	15	.000		
	Total	1.442	19			
benzyl benzoate	Between Groups	6.166	4	1.542	316.176	.000
	Within Groups	.073	15	.005		
	Total	6.239	19			
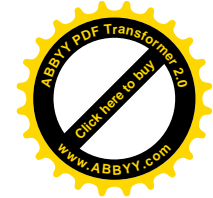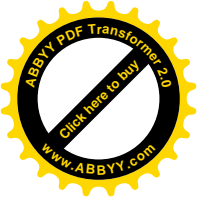
F.5: Post hoc test

Student-Newman-Keuls (SNK) -Uses Harmonic Mean Sample Size = 4.000
Means for groups in homogeneous subsets are displayed.

Table F.5.1: Multiple comparisons of p-xylene

Temperature	N	Subset for alpha = 0.05			
		1	2	3	4
50	4	.66450			
40	4		.81975		
35	4			.87025	
45	4			.88175	
Ambient	4				.95100
Sig.		1.000	1.000	.466	1.000

Table F.5.2: Multiple comparisons of styrene

Temperature	N	Subset for alpha = 0.05		
		1	2	3
Ambient	4	.11700		
40	4	.14075	.14075	
50	4		.15200	
35	4			.17900
45	4			.20425
Sig.		.072	.373	.057

Table F.5.3: Multiple comparisons of benzene, 1,2,3-trimethyl

Temperature	N	Subset for alpha = 0.05		
		1	2	3
35	4	.15550		
Ambient	4		.19400	
45	4		.19700	
40	4		.20925	.20925
50	4			.23775
Sig.		1.000	.553	.067

Table F.5.4: Multiple comparisons of α-phellandrene

Temperature	N	Subset for alpha = 0.05				
		1	2	3	4	5
50	4	.16200				
45	4		.26450			
40	4			.50425		
Ambient	4				.75550	
35	4					.94175
Sig.		1.000	1.000	1.000	1.000	1.000

86

Table F.5.5: Multiple comparisons of p-cymene

Temperature	N	Subset for alpha = 0.05				
		1	2	3	4	5
50	4	.52700				
45	4		.59300			
40	4			.73825		
Ambient	4				1.49125	
35	4					1.78875
Sig.		1.000	1.000	1.000	1.000	1.000

Table F.5.6: Multiple comparisons of β-phellandrene

Temperature	N	Subset for alpha = 0.05				
		1	2	3	4	5
50	4	.54525				
45	4		.96975			
40	4			1.24525		
Ambient	4				1.66350	
35	4					2.55275
Sig.		1.000	1.000	1.000	1.000	1.000

Table F.5.7: Multiple comparisons of linalool

Temperature	N	Subset for alpha = 0.05			
		1	2	3	4
50	4	3.69675			
40	4		4.14900		
Ambient	4			4.51850	
45	4			4.59775	
35	4				5.17375
Sig.		1.000	1.000	.540	1.000

Table F.5.8: Multiple comparisons of benzene-propanal

Temperature	N	Subset for alpha = 0.05		
		1	2	3
Ambient	4	.33400		
50	4		.37200	
45	4			.44625
40	4			.46600
35	4			.46675
Sig.		1.000	1.000	.405

87

Table F.5.9: Multiple comparisons of terpinen-4-ol

Temperature	N	Subset for alpha = 0.05		
		1	2	3
50	4	.39125		
40	4		.44100	
35	4		.46150	.46150
45	4		.47375	.47375
Ambient	4			.49225
Sig.		1.000	.152	.185

Table F.5.10: Multiple comparisons of cinnamaldehyde

Temperature	N	Subset for alpha = 0.05			
		1	2	3	4
40	4	.50175			
50	4	.53200	.53200		
35	4		.56075		
45	4			.62625	
Ambient	4				.66650
Sig.		.082	.097	1.000	1.000

Table F.5.11: Multiple comparisons of cinnamaldehyde-E

Temperature	N	Subset for alpha = 0.05				
		1	2	3	4	5
Ambient	4	63.75025				
35	4		67.17075			
40	4			73.33625		
45	4				76.27800	
50	4					78.64375
Sig.		1.000	1.000	1.000	1.000	1.000

Table F.5.12: Multiple comparisons of eugenol

Temperature	N	Subset for alpha = 0.05				
		1	2	3	4	5
50	4	2.23775				
40	4		3.33450			
45	4			3.50875		
35	4				3.70725	
Ambient	4					4.35200
SiH.		1.000	1.000	1.000	1.000	1.000

Table F.5.13: Multiple comparisons of caryophyllene

Temperature	N	Subset for alpha = 0.05				
		1	2	3	4	5
50	4	.64300				
45	4		.75850			
40	4			1.04925		
35	4				1.38375	
Ambient	4					1.67875
Sig.		1.000	1.000	1.000	1.000	1.000

Table F.5.14: Multiple comparisons of cinnamyl acetate

| Temperature | N | Subset for alpha = 0.05 | | | |
		1	2	3	4
45	4	5.88650			
50	4		8.06425		
40	4		8.25650		
35	4			10.24900	
Ambient	4				14.34250
Sig.		1.000	.233	1.000	1.000

Table F.5.15: Multiple comparisons of 2-methoxy-cinnamaldehyde

| Temperature | N | Subset for alpha = 0.05 | | | |
		1	2	3	4
40	4	.21575			
50	4		.24600		
45	4			.27225	
35	4			.28400	
Ambient	4				.92250
Sig.		1.000	1.000	.295	1.000

Table F.5.16: Multiple comparisons of benzyl Benzoate

| Temperature | N | Subset for alpha = 0.05 | | |
		1	2	3
45	4	.66750		
50	4	.73300		
40	4	.75800		
35	4		.98125	
Ambient	4			2.14775
Sig.		.193	1.000	1.000