# APPENDIX 1

**Chemical composition of car engine base oil**

| Component | (%) |
|---|---|
| **Saturated fractions** | **90.9** |
| Normal paraffin | 15.5 |
| Cyclic paraffin | 75.4 |
| **Aromatic fraction** | **9.1** |
| Naphthalene | 1.7 |
| Fluorene | 1.2 |
| Benzene | 1.1 |
| Dibenzofuran | 1.0 |
| Dinaphthenebenzene | 0.8 |
| Dibenzanthracene | 0.6 |
| Naphthobenzothiophene | 0.3 |
| Perylene | 0.2 |
| Benzothiophene | 0.2 |
| Chrysene | 0.1 |
| Unknown | 1.9 |

(Koma *et al.*, 2001)

# APPENDIX 2

**PUBLICATIONS**

1. Abioye, O. P, Abdul Aziz, A, Agamuthu, P. (2010). Enhanced Biodegradation of Used Engine Oil in Soil Amended with Organic Wastes. Water Air and Soil Pollution. 209: 173 – 179.
2. Agamuthu, P., Abioye, O.P., Abdul Aziz, A. (2010). Phytoremediation of soil contaminated with used lubricating oil using *Jatropha curcas*. Journal of Hazardous Materials 179: 891 – 894.
3. Abioye, O. P, Abdul Aziz, A, Agamuthu, P. (2009). Stimulated biodegradation of used lubricating oil in soil using organic wastes. Malaysian Journal of Science. 28(2): 127 – 133.
4. Abioye, O. P, Agamuthu, P., Abdul Aziz, A. (2010) Phytotreatment of soil contaminated with used lubricating oil using *Hibiscus cannabinus*. Manuscript submitted to "Biodegradation".
5. Abioye, O. P, Agamuthu, P., Abdul Aziz, A. (2010) Biodegradation of used lubricating oil in soil amended with organic wastes. Manuscript submitted to "Chemosphere".
6. Abioye, O. P, Agamuthu, P., Abdul Aziz, A. (2010) Phytoaccumulation of zinc and iron by *Jatropha curcas* in used lubricating oil-contaminated soil. Manuscript submitted to "Malaysian Journal of Science".