

## PUBLICATIONS

### *Journal Publications:*

1. **Ayyaz Muhammad**, M. I. Abdul Mutalib, C.D. Wilfred, T. Murugesan, Amir Shafeeq, Thermophysical properties of 1-hexyl-3-methyl imidazolium based ionic liquids with tetrafluoroborate, hexafluorophosphate and bis(trifluoromethylsulfonyl)imide anions, *J. Chem. Thermodyn.*, 40, 1433-1438, **2008**.
2. **Ayyaz Muhammad**, Mohamed I. Abdul Mutalib, Thanabalan Murugesan, and Amir Shafeeq, Density and excess properties of aqueous *N*-methyldiethanolamine solutions from (298.15 to 338.15) K, *J. Chem. Eng. Data*, 53, 2217-2221, **2008**.
3. **Ayyaz Muhammad**, Mohamed I. Abdul Mutalib, Cecilia D. Wilfred, Thanabalan Murugesan, and Amir Shafeeq, Viscosity, refractive index, surface tension, and thermal decomposition of aqueous *N*-methyldiethanolamine solutions from (298.15 to 338.15) K, *J. Chem. Eng. Data*, 53, 2226-2229, **2008**.
4. **Ayyaz Muhammad**, Mohamed I. Abdul Mutalib, Thanabalan Murugesan, and Amir Shafeeq, Thermophysical properties of aqueous piperazine and aqueous (*N*-methyldiethanolamine + piperazine) solutions at temperatures (298.15 to 338.15) K, *J. Chem. Eng. Data*, *In press*, **2009**.

### *Conference Proceedings:*

1. **Ayyaz Muhammad**, M. I. Abdul Mutalib, C. D. Wilfred, T. Murugesan, Amir Shafeeq, Solubility of carbon dioxide and methane in aqueous solutions of

- Piperazine activated *N*-Methyldiethanolamine at high pressure, *Proceedings of 21<sup>st</sup> Symposium of Malaysian Chemical Engineers, Malaysia*, 12-14 December, **2007**.
2. **Ayyaz Muhammad**, M. Ibrahim Abdul Mutalib, T. Murugesan, Zakaria Man, M. Azmi Bustam, Amir Shafeeq, Lattice potential energy and standard absolute entropy of imidazolium based ionic liquids (ILs), *Proceedings of 15th Regional Symposium on Chemical Engineering in Conjunction with 22nd Symposium of Malaysian Chemical Engineers, Malaysia*, 2-3 December, **2008**.
  3. **Ayyaz Muhammad**, M. Ibrahim Abdul Mutalib, T. Murugesan, Zakaria Man, M. Azmi Bustam, Amir Shafeeq, A study on the mutual solubilities and thermal stability of imidazolium based ionic liquids (ILs) and organic solvents, *Proceedings of International Conference on Environment, Malaysia*, 15-17 December, **2008**.
  4. **Ayyaz Muhammad**, M. Ibrahim Abdul Mutalib, T. Murugesan, Amir Shafeeq, Predicting density and surface tension of imidazolium based ionic liquids (ILs), *Proceedings of National Postgraduate Conference on engineering, Science and Technology, Malaysia*, 25-26 March, **2009**.
  5. **Ayyaz Muhammad**, M. I. Abdul Mutalib, T. Murugesan, Zakaria Man, Azmi Bustam, Density and viscosity estimation of 1-hexyl-3-methyl imidazolium based ionic liquids (ILs) with [BF<sub>4</sub>] and [PF<sub>6</sub>] anions at high pressures, *accepted manuscript, for 23<sup>rd</sup> Symposium of Malaysian Chemical Engineers in Conjunction with the 3<sup>rd</sup> International Conference on Chemical and Bioprocess Engineering, Malaysia*, 12-14 August, **2009**.