Dr. Zhao Guo Ying

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Research Interest

Organ metallic catalysis, Green chemistry(supercritical fluids, ionic liquid, aqueous medium, Fixation and transform of small molecular(especially CO_2)

Education and Research Experience

- **Jul.2006- Now** **Marie Curie Postdoctoral Fellow**
  Supervisor: Prof. Joó, Ferenc

Transition Metal Chemistry and Catalysis in Aqueous Media: fixation and transform of carbon dioxide.

- **Oct.2004-Jun 2006 (Visiting) Research fellow**

Supervisor: Prof. D.J. Cole-Hamilton

Continuous Flow Hydrofoymylation of alkene in supercritical fluids: Design and set-up of high pressure equipment, Phase behaviour study of supercritical reaction system, Supported ionic liquid phase (SILP) hydroformylation.

- **Sep.2001-Jul. 2004 PhD**

Supervisor: Prof. Han Buxing

Electro-chemical synthesis and Catalysis in supercritical fluids and /or ionic liquid medium: Build-up of high pressure electro-chemical equipment , electro-oxidation of benzyl alcohol and electro-reduction of carbon dioxide, acidic ionic liquid catalyzed Mannich reaction

- **Sep.1998-July 2001 MS**

High pressure phase behaviour and interfacial phenomenon investigation

Honours and Awards

2006-2007. Marie Curie fellowship

2004-2005 Royal Society Chemistry Britain Petroleum fellowship

1997 Award of Science and Technology for the Promotion of chemical Industry awarded by Chemical Industry Society, P.R. China

1994-1998 First-rank scholarship for many times from 1994 to 1998

Publications

1. Mannich reaction using acidic ionic liquids as catalysts and solvents, Guoying Zhao, et.al, ***Green Chem***., 2004, 75-77.

2. Electrochemical reduction of supercritical carbon dioxide in ionic liquid 1-n-butyl-3-methylimidazolium Hexafluorophosphate, Guoying Zhao, et.al, ***J. of Supercritical Fluid***, 2004, 32, 287

3. Electro-Oxidation of Benzyl Alcohol in Biphasic System Consisting of Supercritical CO_2 and Ionic Liquids, Guoying Zhao, et.al.. ***J. Phys. Chem. B***, 2004, 108, 13052.

4. Measurement and calculation about the interfacial tension of (methane +nitrogen)+water system. Guoying Zhao, et.al, ***Acta Scientiarum naturalium Universitatis of Petroleum***, 2002,1 (in Chinese).

5. Interfacial Tension of (Methane + Nitrogen) + Water and (Carbon Dioxide + Nitrogen) + Water Systems Wei Yan, Guoying Zhao, et.al., ***J. Chem. Eng. Data***, 2001, 46, 1544.

6. Transesterification between isoamyl acetate and ethanol in supercritical CO2, ionic liquid, and their mixture L. Gao , T. Jiang , Guoying Zhao , et.al., ***J. of Supercritical Fluids***, 2004, 29,107.

7. Effect of Ionic Liquids on the Chemical Equilibrium of Esterification of Carboxylic Acids with Alcohols T. Jiang, Y. Chang, Guoying Zhao, et.al.. ***Synthetic Commun***., 2004, 34, 225.

8. Oxidative carbonylation of methanol to dimethyl carbonate in ionic liquid 1-butyl-3-methylimidazolium hexafluorophosphate T. Jiang, B. Han, Guoying Zhao, et.al., ***J Chem.Res-s***, 2003,9,549.

9. Oxidation of Styrene with Molecular Oxygen in Supercritical CO_2 T. Jiang, Y. Chang, Guoying Zhao, et.al., ***Chinese Chemical Letters***, 2004,15, 296.

10. Ionic liquid catalyzed Henry reactions
T. Jiang, H.Gao, B. Han, Guoying Zhao, et.al.,***Tetrahedron Letters***,2004,45, 2699.

11. Study on the Phase Behaviors, Viscosities, and Thermodynamic Properties of CO_2/[C_4mim][PF_6]/Methanol System at Elevated Pressures
Z. Liu, W. Wu, B. Han, Z. Dong, Guoying Zhao, et.al,. ***Chemistry - A European Journal***, 2003, 9, 3897.

12. Tautomeric equilibrium of ethyl acetoacetate in compressed CO2+ethanol and CO2+methanol mixtures
Z. Li,Ti. Mu,T. Jiang, J. Du, Guoying Zhao,et.al, ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy***, 2004,60(5),1055.

13. Supported ionic liquid phase catalysis: continuous hydroformylation of long-Chain alkene in supercritical carbon dioxide, **in preparation**

Symposium Papers:

1. Electrochemical Reduction of High Pressure CO2 in Ionic Liquids
Guoying Zhao, ***The 4th national Symposium on Supercritical fluids***, 2002, 99.

2. Continuous flow homogeneous cataysis using supercritical fluids
P.B. Webb, G. Zhao, T. E. Kunene and D. j. Cole-Hamilton***, Internatioanl Symposium on Supercritical Fluids, Orlando, Florida, March, 2005***

3. Continuous \Flow Synthesis using Supercritical Fluids (or and ionic liquids)
P.B. Webb, T.E.Kunene, A.C. Frisch, G. Zhao, T.I.Qintas, M.J. Muldoon and D.J. Cole-Hamilton, ***Interantional Symposium on relations between Homogeneous and Heterogeneous catalysis- XII, Florence, July 2005***

4. Continuous flow homogeneous cataysis using supercritical fluids
P.B. Webb, G. Zhao, T. E. Kunene and D. J Cole-Hamilton, ***Scientific Update meeting on Laboratory Automation, London, September, 2005.***