

# CURRICULUM VITAE

## Dr. K.M. PONVEL, M.Sc., Ph.D.,

Assistant Professor,  
Nanoscience,  
Department of Chemistry,  
V.O. Chidambaram College,  
Thoothukudi 628008.



## PERSONAL

Indian national, Married, Born on 5<sup>th</sup> June, 1975.

## EDUCATION

- 2009 Postdoctoral Research Fellow (Three Years)  
Dept. of Chemical & Biomolecular Engineering  
Yonsei University  
Seoul, Korea  
**Specialization:** Synthesis and application of nanoparticles  
**Advisor:** Professor Chang-Ha Lee
- 2006 Ph.D in Chemistry  
School of Chemistry  
Madurai Kamaraj University, Madurai, India  
**Thesis Title:** Synthesis, characterization and applications of metal complexes of Schiff bases  
**Advisors:** Professor PR. Athappan & Professor K. Pitchumani
- 1998 M.Sc. in Chemistry (65.31%)  
School of Chemistry  
Madurai Kamaraj University, Madurai.
- 1995 B.Sc. in Chemistry (69.72%)  
V.O.C. College, Tuticorin,  
Manonmaniam Sundaranar University, Tirunelveli.

## RESEARCH EXPERIENCE

- 2006-2009 Postdoctoral Research Fellow, Yonsei University, Seoul, Korea
- Synthesis, characterization and application of magnetic nanoparticles
  - Synthesis of multi-core magnetite-silica core/shell nanoparticle and its enzyme immobilization
  - Synthesis of lithium modified mesoporous materials for denitrogenation of fuel
  - Bismuth sulfide nanoparticles as a probe for X-ray computed tomography
  - MgO nanoparticles for destroying Toxic chemicals
  - Modified activated carbon for the adsorption of hazardous materials
- 2000- 2006 Ph.D. Madurai Kamaraj University, India
- DNA interaction studies of copper complexes of curcumin derivatives; development of anti-cancer drug
  - Preparation and biomimetic studies of non-heme iron(III)-Schiff base complexes
  - Oxidative cleavage of DNA by Fe-salen complexes

## TEACHING EXPERIENCE

- Assistant Professor, August 2010 – June 2012, Department of Chemistry, Noorul Islam University, Kumaracoil, Kanyakumari District, Tamil Nadu, India.
- Assistant Professor, August 2012 – Till Now, Nanoscience, Department of Chemistry, V.O. Chidambaram College, Thoothukudi 628008.

## TECHNIQUES ACQUAINTED WITH

- Synthesis of nanoparticles and enzyme immobilization
- Synthesis of mesoporous materials
- Preparation and handling of homogeneous and heterogeneous catalysis
- Synthesis and purification of ligand/metal complex
- UV-Vis, FT-IR, Cyclic Voltammetry, Circular Dichroism and Thermogravimetric analyzer

## ACADEMIC HONORS

2008-2009	Fellowship sponsored by Brain Korea 21, Korea
2007-2008	Fellowship sponsored by Brain Korea 21, Korea
2006-2007	Fellowship sponsored by Korean Research Foundation, Korea
2000- 2003	University Research Fellowship sponsored by Madurai Kamaraj University, India

## MEDIA/NEWS PUBLISHED ABOUT MY WORK

- *VerticalNews* (Chemical Engineering), Studies finding from Yonsei University broaden understanding of chemical engineering, March 4<sup>th</sup> 2009.
- *VerticalNews* (Materials Physics), Research from Yonsei University provides new data about materials physics, July 16<sup>th</sup> 2010.

## PUBLICATIONS

1. **K.M. Ponvel**, T. Narayanaraja and J. Prabakaran, Biosynthesis of Silver nanoparticles using root extract of the medicinal plant *Justicia adhatoda*: Characterization, electrochemical behavior and applications. *Int. J. Nano Dimens.* 6 (2015) 339. ISSN No. 2008-8868.
2. S. Alwin David, **K.M. Ponvel**, M. Anis Fathima, S. Anita, J. Ashli and A. Athilakshmi, Biosynthesis of silver nanoparticles by *Momordica charantia* leaf extract: Characterization and their antimicrobial activities, *J. Nat. Prod. Plant Resour.* 4 (2014) 1. ISSN No. 2231-3184.
3. Anton Koriakin, **K.M. Ponvel** and Chang-Ha Lee, Denitrogenation of raw diesel fuel by lithium modified mesoporous silica. *Chem. Engn. J.* 162 (2010) 649. ISSN No. 0020-1693, Impact factor 4.32.
4. **K.M. Ponvel**, YooHan Kim and Chang-Ha Lee, Incorporation of Nano-Sized Magnetite Particles into Mesoporous Materials via -COOH Groups. *Materials Chemistry and Physics*, 122 (2010) 397. ISSN No. 0254-0584, Impact factor 2.25.
5. Eun Ji Woo, **K.M. Ponvel** Ik-Sung Ahn and Chang-Ha Lee, Synthesis of Magnetic/Silica Nanoparticles with a Core of Magnetic Clusters and Their Application for the Immobilization of His-tagged Enzymes. *J. Mater. Chem.* 20 (2010) 1511. ISSN No. 0959-9428, Impact factor 6.6.
6. Dong-Geun Lee, **K.M. Ponvel**, Mir Kim, Sangpill Hwang, Ik-Sung Ahn and Chang-Ha Lee, Immobilization of lipase on hydrophobic nano-sized magnetite particles. *Journal of Molecular Catalysis B. Enzymatic*, 57 (2009) 62. ISSN No. 1381-1177, Impact factor 2.12.

7. **K.M. Ponvel**, Dong-Geun Lee, Eun Ji Woo, Ik-Sung Ahn and Chang-Ha Lee, Immobilization of lipase on surface modified magnetite nanoparticles using alkyl benzenesulfonate. *Korean J. Chem. Eng.* 26 (2009) 127. ISSN No. 0256-1115, Impact factor 1.16.
8. **K.M. Ponvel**, D. Kavitha, K-M. Kim and C-H. Lee, Adsorption of 2,4-Dichlorophenol using metal-nitrate modified activated carbon. *Korean J. Chem. Eng.* 26 (2009) 1379. ISSN No. 0256-1115, Impact factor 1.16.
9. S.H. Byeon, D. Kavitha, **K.M. Ponvel**, K-M. Kim and C-H. Lee, Surface modified granular activated carbon for enhancement of nickel adsorption from aqueous solution. *Korean J. Chem. Eng.* 26 (2009) 1748. ISSN No. 0256-1115, Impact factor 1.16.
10. J. Annaraj, S. Srinivasan, **K.M. Ponvel** and PR. Athappan, Mixed ligand copper(II) complexes of phenanthroline/bipyridyl and curcumin diketimines as DNA intercalators and their electrochemical behavior under Nafion<sup>®</sup> and clay modified electrodes. *J. Inorg. Biochem.* 99 (2005) 669. ISSN No. 0162-0134, Impact factor 3.44.
11. J. P. Annaraj, **K.M. Ponvel**, S. Srinivasan and PR. Athappan, Synthesis, spectra and redox behavior of copper(II) complexes of curcumin diketimines as models for blue copper proteins. *Trans. Met. Chem.* 29 (2004) 722. ISSN No. 0340-4285, Impact factor 1.3.

## PROCEEDINGS

1. **K.M. Ponvel**, E.-J. Woo, C.-H. Lee, Surface modified superparamagnetic particles for immobilization of lipase, *AICHE Conference Proceeding*, Philadelphia, US, 2008.
2. Anton Koriakin, **K.M. Ponvel**, Eun-Ji woo, C.-H. Lee, Li-Modified Mesoporous Silica Adsorbents for Adsorptive/Regenerative Denitrogenation of Raw Diesel Fuel, *AICHE Conference Proceeding*, Nashville, US, 2009.

## SEMINARS & CONFERENCES

### NATIONAL

1. Seminar on current trends in chemistry, M.K. University, Madurai, 2003.
2. UGC sponsored national seminar on frontiers in chemistry (FIC-06), CUSAT, Cochin, 2006.
3. UGC sponsored national seminar on emerging trends in chemistry (ETC-06), C.P.A. College, Bodinayakanur, 2006.

### INTERNATIONAL

4. **K.M. Ponvel**, C.-H. Lee, Enzymatic activity of immobilized lipase on surfactant binding magnetite nanoparticles, *KICHE Conference*, Ulsan, South Korea, 2007.
5. Dong-Geun Lee, Seol Hee Lim, **K.M. Ponvel**, D. Kavitha, C.-H. Lee, Optimization of luciferin-binding nano sized magnetite by two step transformation, *KICHE Conference*, Ulsan, South Korea, 2007.
6. **K.M. Ponvel**, C.-H. Lee, Impregnation of Fe<sub>3</sub>O<sub>4</sub> nanoparticles into mesoporous materials via –COOH groups, *KICHE Conference*, Jeju, South Korea, 2008.
7. E.-J. Woo, **K.M. Ponvel**, C.-H. Lee, *KICHE Conference*, Jeju, South Korea, 2008.
8. **K.M. Ponvel**, E.-J. Woo, C.-H. Lee, Surface modified superparamagnetic particles for immobilization of lipase, *AICHE Conference*, Philadelphia, US, 2008.
9. Anton Koriakin, **K.M. Ponvel**, Eun-Ji woo, C.-H. Lee, Li-Modified Mesoporous Silica Adsorbents for Adsorptive/Regenerative Denitrogenation of Raw Diesel Fuel, *AICHE Conference*, Nashville, US, 2009.
10. Anton Koriakin, **K.M. Ponvel**, C.-H. Lee, Mesoporous materials modified by metal ion for denitrogenation and desulfurization of raw diesel fuel, *KICHE Conference*, Ilsan, South Korea, 2009.