



Professor Gary D. Christian

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Research Interests

- Flow and sequential injection analysis and related techniques.
- Electroinjection analysis (EIA).

Education

- B.S. University of Oregon, 1959
- Ph.D. University of Maryland, 1964

Honors and Awards

- ACS Fisher Award in Analytical Chemistry
- ACS Division of Analytical Chemistry Award for Excellence in Teaching
- Fulbright-Hays Scholar, Belgium
- Medal of Honor, Universite Libre de Bruxelles
- Talanta Gold Medal
- Charles University Commemorative Medal
- Geoff Wilson Medal, Deakin University (inaugural recipient)
- Special Issue of *Electroanalysis* dedicated to GDC on the occasion of his 65th birthday (invited papers), 2002
- JAFIA Scientific Honor Award Medal, Japan Society for Analytical Chemistry
- Thailand Research Fund Senior Scholar Silver Award
- Honorary Doctorate Degree, Chiang Mai University
- Co-Editor-in Chief, *Talanta*
- Past Chair, Division of Analytical Chemistry, American Chemical Society

Representative Publications

"Characterization and Use of a Raman Liquid-Core Waveguide Sensor Using Preconcentration Principles," S. Tanikkul, J. Jakmunee, M. Rayanakron, K. Grudpan, B. J. Prenzen, L. W. Burgess, G. D. Christian, R. E. Synovec. *Talanta* **2003**, *59*, 809.

"Flow Methods for Analytical Solutions," G. D. Christian. *Annals of West University of Timisoara* (Proceedings of 2nd Romanian International Conference on Analytical Chemistry) **2002**, *11*, 165.

"Determination of Trace Iron in Beer using Flow Injection Systems with In-Valve Column and Bead Injection," P. Ampan, S. Lapanantnoppakhun, J. Jakmunee, S. Kradtap Hartwell, S. Jayasvati, G. D. Christian, K. Grudpan. *Talanta* **2002**, *58*, 1327.

"International Meeting Examines Analytical Curricula," G. D. Christian. *Anal. Chem.* **2002**, *74*, 219A.

"Stopped-Flow Injection Simultaneous Determination of Phosphate and Silicate Using Molybdenum Blue," K. Grudpan, P. Ampan, Y. Udan, S. Jayasvati, S. Lapanantnoppakhun, J. Jakmunee, G. D. Christian, J. Ruzicka. *Talanta* (ICFIA 2001 Special Issue) **2002**, *58*, 1319.

"Reagents for Lithium Electrodes and Sensors for Blood Serum Analysis," G. D. Christian. *Sensors* (Special Issue on Ion Sensors) **2002**, *2*, 432.

"Sequential Injection Redox or Acid-Base Titration for Determination of Ascorbic Acid or Acetic Acid," N. Lenghor, J. Jakmunee, M. Vilen, R. Sara, G. D. Christian, K. Grudpan. *Talanta* (ICFIA 2001 Special Issue) **2002**, *58*, 1139.

"Principles and Capabilities of Electroinjection Analysis," V. P. Andreev, G. D. Christian. *Anal. Lett.* **2001**, *34*, 1569.

"A Bead Injection System for Copper Determination," C. C. Oliveira, E. A. G. Zagatto, J. Ruzicka, and G. D. Christian. *Anal. Lett.* **2000**, *33*, 929.

"Measurement of Cellular Stimulates Through Monitoring pH Changes by Bead Injection Fluorescence Microscopy," I. Lädesmäki, C. Beeson, G. D. Christian, J. Ruzicka. *Talanta* **2000**, *51*, 497.

"Postmortem Forensic Toxicology of Selective Serotonin Reuptake Inhibitors: A Review of Pharmacology and Report of 168 Cases," K. E. Goeringer, L. Raymon, G. D. Christian, B. K. Logan. *J. Forensic Sci.* **2000**, *45*, 633.

"Hydrodynamics and Mass Transfer of the Coaxial Jet Mixer in Flow Injection Analysis," V. P. Andreev, S. B. Kolesko, D. A. Holman, L. D. Scampavia, G. D. Christian. *Anal. Chem.* **1999**, *71*, 2199.

"Experimental Study of Kinematic Focusing: Comparison of Electroinjection and Sequential Injection Determination of Copper," V. P. Andreev, N. B. Ilyina, D. A. Holman, L. D. Scampavia, G. D. Christian. *Talanta* **1999**, *48*, 485.

"Optosensing Determination of Parts-per-Billion of Metals," N. L. Lacy, G. D. Christian, J. Ruzicka. *Microchem. J.* (Special Issue, Benedetti-Pichler Award Symposium) **1999**, *62*, 5.

"Automated Solid Phase Extraction of Theophylline by Sequential Injection on Renewable Column," B. Dockendorff, D. A. Holman, G. D. Christian, J. Ruzicka. *Analyst* **1998**, *35*, 357.

"Flow Injection Renewable Surface Immunoassay for Real Time Monitoring of Biospecific Interactions," B. Willumsen, G. D. Christian, J. Ruzicka. *Anal. Chem.* **1997**, *69*, 3482.

"Sequential Injection Wetting Film Extraction Applied to the Spectrophotometric Determination of Chromium(VI) and Chromium(III) in Water," Y. Luo, S. Nakano, D. A. Holman, J. Ruzicka and G. D. Christian. *Talanta* (Special Issue in Honor of G.E. Baiulescu) **1997**, *44*, 1563.

"Titration Without Mixing or Dilution: Sequential Injection of Chemical Sensing Membranes," D. A. Holman, G. D. Christian, J. Ruzicka. *Anal. Chem.* **1997**, *69*, 1763.

"Sequential Injection Extraction Without Phase Separation for Sample Preparation and Drug Analysis," Proceedings of the 5th International Symposium on Pharmaceutical Sciences (ISOP-5)," G. D. Christian. *J. Fac. Pharm. Ankara* **1997**, *76*, 32.

"Sequential Injection Extraction for Sample Preparation," K. L. Peterson, B. K. Logan, G. D. Christian, J. Ruzicka. *Anal. Chim. Acta* **1997**, *337*, 99.



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Research Interests

- nanoscale analytical techniques and explore their use in the measurement of neurotransmitters and hormones both in vivo and at single cells.

Education

- University of Florida, Chemistry, B.S., 1984
- University of North Carolina-Chapel Hill, Chemistry, Ph.D., 1988
- University of North Carolina-Chapel Hill, Chemistry and Neurobiology, 1988-1991

Honors and Awards

- Presidential Faculty Fellowship
- ACS Findeis Award
- Benedetti-Pichler Award for Microchemical Chemistry
- Beckman Foundation Young Investigator
- NSF National Young Investigator
- Alfred P. Sloan Fellowship

Representative Publications

Gee, K.; Qian, W.J.; Kennedy, R.T. "A novel Zn^{2+} selective fluorophore and application to pancreatic beta-cells", *Journal of the American Chemical Society*, 2002, 124, 776-778.

Haskins, W.E.; Wang, Z.; Watson, C.J.; Rostand, R.R.; Witowski, S.R.; Powell, D.H.; Kennedy, R.T. "Capillary LC-MS² at the attomole level for monitoring and discovering endogenous peptides in vivo", *Analytical Chemistry*, 2001, 73, 5005-5014.

Kennedy, R.T.; Kauri, L.; Dahlgren, G. "Metabolic oscillations in pancreatic beta-cells", *Diabetes*, 2002, 51, S152-S161.

Deng, Q.; Buchanan, D.M.; German, I.; Kennedy, R.T. "Selective retention and separation of adenosine and its analogs by affinity LC using an aptamer stationary phase", *Analytical Chemistry*, 2001, 73, 5415-5421.

Bowser, M.T.; Kennedy, R.T. "In vivo monitoring of amine neurotransmitters using microdialysis with on-line capillary electrophoresis", *Electrophoresis*, 2001, 22, 3668-3676.

German, I. and Kennedy, R.T. "Reversed-phase Capillary Liquid Chromatography Coupled On-line to Capillary Electrophoresis Immunoassays", *Analytical Chemistry*, 2000, 72, 5365-5372.

Jung, S. K.; Aspinwall, C. A.; Kauri, L.; Gorski, W.; Kennedy, R. T. "Oxygen microsensor and its application to single cells and single islets of Langerhans", *Analytical Chemistry*, 1999, 71, 3642-3649.

Battersby, T.R.; Darwin, Ang; Burgstaller, P.; Held, H.A.; Jurczyk, S.; Bowser, M.T.; Buchanan, D.D.; Kennedy, R.T. and Benner, S.A. "Quantitative analysis of receptors for adenosine nucleotides obtained via in vitro selection from a library incorporating a cationic nucleotide analog" *Journal of the American Chemical Society*, 1999, 121, 9781-9789.



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Research Interests

- Fundamental studies in analytical chemistry as well as the development and application of new methods (chemical, instrumental and mathematical), for analytical measurements.
- The improvement of methodology for the analyses of complex systems.
- Environmental analyses.

Education

- B.S. Southern University, 1968
- Ph.D. University of Washington, 1977

Honors and Awards

- LSU Distinguished Faculty Award, 2000
- LSU Distinguished Faculty Award, 2000
- CASE Professor of the Year, 2000
- AAAS Lifetime Mentor Award, 2000
- Eastern Analytical Symposium Award for Achievements in Analytical Sciences, 2000
- Listed in 18th Edition of Who's Who in the World, 2000
- Award for Achievements in Analytical Sciences, 2000
- Eastern Analytical Symposium Award for Achievements in the Fields of Analytical Sciences, 2000
- Carnegie Foundation for the Advancement of Teaching/CASE Louisiana Professor of the Year, 2000
- Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring, 1997

- 2003 - Council for Chemical Research Diversity Award,
- 2003 - American Association for the Advancement of Science Fellow,
- 2002 - Howard Hughes Medical Institute Professors Award,
- 2003 - ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences

Representative Publications

- J. Thibodeaux, E. Billiot and I.M. Warner. Enantiomeric Separations Using Poly (L-valine) and Poly (L-leucine) Surfactants. Investigation of Steric Factors Near the Chiral Center. *Journal of Chromatography A*, **2002**, 966(1-2), 179-186
- S.A. Shamsi, C.P. Palmer and I.M. Warner. Molecular Micelles: Novel Pseudostationary Phases for CE. *Analytical Chemistry*, **2001**, 73(5), 140A-149A
- M.E. McCarroll, Billiot and I.M. Warner. Fluorescence Anisotropy as a Measure of Chiral Recognition. *Journal of the American Chemical Society*, **2001**, 123(13), 3173-3174
- C. Akbay, S. Shamsi and I.M. Warner. Separation of Monomethyl-Benz[a]Anthracene Isomers Using Cyclodextrin-Modified Electrokinetic Chromatography. *Journal of Chromatography A*, **2001**, 910, 147-155
- F. Haddadian, E. Billiot and I.M. Warner. Comparison of Monomeric and Polymeric Amino Acid Based Surfactants for Chiral Separations. *Journal of Chromatography A*, **2001**, 922, 329-338
- C.W. Henry III, M.E. McCarroll and I.M. Warner. Separation of the Insecticidal Pyethin Esters by Use of Capillary Electrochromatography. *Journal of Chromatography A*, **2001**, 905, 319-327
- I.M. Warner, M.E. McCarroll and F.H. Billiot. Fluorescence Anisotropy as a Measure of Chiral Recognition. *Journal of the American Chemical Society*, **2001**, 123(13), 3173-3174
- J.A. Rugutt, F.R. Fronczek, S.G. Franzblau and I.M. Warner. Dihydroparthenolide Diol, a Novel Sesquiterpene Lactone. *Acta Crystallographica Section E*, **2001**, E57, o323-o325
- J. Haynes III, E. Billiot, H. Yarabe, S. Shamsi and I.M. Warner. Chiral Separations with Dipeptide Terminated Polymeric Surfactants: The Effect of an Extra Heteroatom on the Polar Head Group. *Electrophoresis*, **2000**, 21, 1587-1605
- E. Billiot and I.M. Warner. Examination of Structural Changes of Polymeric Amino Acid-Based Surfactants on Enantioselectivity: Effect of Amino Acid Order, Steric

Factors, and Number and Position of Chiral Centers *Analytical Chemistry*, **2000**, *72*(8), 1740-1748

J. Haynes III, S. Shamsi and I.M. Warner. Polymeric Surfactants as Pseudo-Stationary Phases for Separations in Electrokinetic Chromatography (EKC). *Reviews in Analytical Chemistry*, **2000**, *18*(6), 317-382

Y. Yarabe, E. Billiot and I.M. Warner. Enantiomeric Separations by Use of Polymeric Surfactant Electrokinetic Chromatography. *Journal of Chromatography A*, **2000**, *875*:(1-2) , 179-206

J.K. Rugutt, E.J. Billiot and I.M. Warner. An NMR Study of Chiral Recognition Relevant to Capillary Electrophoresis Separation of Enantiomers by Polymeric Surfactants. *Langmuir*, **2000**, *16*:(7) , 3022-3029

I.M. Warner. Analytical Solid-Phase Extraction. *Journal of American Chemical Society*, **2000**, *122*(11), 2676

J. Rugutt, H. Yarabe, S. Shamsi, Billodeaux, F. Fronczek and I.M. Warner. GR 24 Enantiomers: Synthesis, NMR Spectroscopy, X-ray Crstallography and Separation by Chiral Electrokinetic Capillary Chromatography. *Analytical Chemistry*, **2000**, *72*(16), 3887-3895

P.B.Oldham, M.E. McCarroll, L.B. McGown and I.M. Warner. Molecular Fluorescence, Phosphorescence and Chemiluminescence Spectrometry *Analytical Chemistry*, **2000**, *72*(12) , 197R-209R

K. Agnew-Heard, S. Shamsi and I.M. Warner. Optimizing Enantioseparation of Phenylthiohdantoin Amino Acids with Polymerized Sodium N-Undecanoyl L-Valinate in Chiral Electrokinetic Chromatography. *Journal of Liquid Chromatography & Related Technologies*, **2000**, *23*:(9) , 1301-1317

S. Thiam, S. Shamsi, C. Henry, J. Robinson and I.M. Warner. Capillary Electrochromatography of Cholesterol and its Ester Derivatives. *Analytical Chemistry*, **2000**, *72*:(11) , 2541-2546

H. Yarabe, J.K. Rugutt, M.E. McCarroll and I.M. Warner. Capillary Electrophoretic Separation of Binaphtyl Enatiomers with Two Polymeric Surfactants: a ¹H Nuclear Magnetic Resonance Study. *Electrophoresis*, **2000**, *21*:(10) , 2025-2035

E. Billiot, R. Agbaria, S. Thibodeaux, S.A. Shamsi and I.M. Warner. Amino Acid Order in Polymerized Dipeptide Surfactants: Effect on Physical Properties and Enantioselectivity. *Analytical Chemistry*, **1999**, *71*:(7) , 1252-1256

- J.K. Rugutt, S. Thiam, C.W. Henry, III, P.K. Ndalut and I.M. Warner. An NMR and Molecular Mechanics Study of Pyrethrins I and II. *Journal of Agricultural & Food Chemistry*, **1999**, *47*, 3402-3410
- F. Haddadian, S.A. Shamsi and I.M. Warner. Separation of Saturated and Unsaturated Free Fatty Acids Using Capillary Electrophoresis with Indirect Photometric Detection . *J. of Chrom. Sci.*, **1999**, (37), 103-107
- J. Macossay, S.A. Shamsi and I.M. Warner. Synthesis of Polymerized N-Undecylenyl-L-Amino Acid and N-Undecylenyl-L-Peptide Derivatives. *Tetrahedron Letters*, **1999**, *40*, 577-580
- H. Yarabe, S.A. Shamsi and I.M. Warner. Characterization and Thermodynamic Studies of the Interactions of Two-Chiral Polymeric Surfactants with Model Substances: Phenylthiodantoin Amino Acids. *Analytical Chemistry*, **1999**, *71*(18) , 3992-3999
- S.A. Shamsi, N.D. Danielson and I.M. Warner. Flavin Mononucleotide for Indirect Laser-Induced Fluorescence Detection of Anions Separated by Capillary Electrophoresis. *Journal of Chromatography*, **1999**, *835*, 159-168
- E. Billiot, S. Thibodeaux, S. Shamsi and I.M. Warner. Evaluating Chiral Separation Interactions by Use Diastereomeric Polymeric Dipeptide Surfactants . *Analytical Chemistry*, **1999**, *71* (18), 4044-4079
- J.K. Rugutt, F.R. Fronczek, H.H. Yarabe, S.A. Shamsi, C.W. Henry, III, E.J. Billiot and I.M. Warner. A Racemic Strigol Analogue at 100K. *Acta Crystallographica, Section C*, **1999**, *55*, 759-761 part 5
- S. Thibodeaux, M.S. Pena, Y. Zhang, S.A. Shamsi and I.M. Warner. Separation and Identification of Chiral N-acylcalix[x] Amino Acid Derivatives by Use of Reversed-Phase HPLC. *Chromatographia*, **1999**, *49*(3-4), 142-146
- C.W. Henry, III, S.A. Shamsi and I.M. Warner. Separation of Natural Pyrethrum Extracts Using Micellar Electrokinetic Capillary Chromatography. *Journal of Chromatography*, **1999**, *863*:(1) , 89-103
- C. Akbay, S.A. Shamsi and I.M. Warner. Electrokinetic Chromatography of Twelve Mono-methylbena[a]anthracene Isomers Using a Polymerized Anionic Surfactant. *Electrophoresis*, **1998**, *21*(5), 611-624
- J. Dey and I.M. Warner. The pH-Dependent Fluorescence Spectra of 9-Aminocamptothecin: Ground and Excited-State-Ionization Behavior in Aqueous Medium. *Journal of Photochemistry and Photobiology A*, **1998**, *116*, 27-37

S.A. Shamsi, C. Akbay and I.M. Warner. Polymeric Anionic Surfactant for Electrokinetic Chromatography: Separation of 16 Priority Pollutants Polycyclic Aromatic Hydrocarbons Article . *Analytical Chemistry*, **1998**, 70(14) , 3078-3083

E.L. Roberts, S. Burguieres and I.M. Warner. Spectroscopic Studies of Indigo Carmine Dye in Organized Media . *Applied Spectroscopy*, **1998**, 52(10) , 1305-1313

J. Dey and I.M. Warner. Charge-Transfer Effects on the Fluorescence Spectra of 9-Aminocamptothecin. Steady-State and Time-Resolved Fluorescence Studies . *Journal of Photochemistry & Photobiology*, **1998**, (116) , 27-37

J. Haynes, S. Shamsi, J. Dey and I.M. Warner. Use of a New Diaminobutane Dendrimer in Electrokinetic Capillary Chromatography , *Journal of Liquid Chromatography*, **1998**, 21(5) , 611-624

Y. Zhang, T.H. Pham, M.S. Pena, R.A. Agbaria and I.M. Warner. Spectroscopic Studies of Brilliant Cresyl Blue (BCB)/Water-Soluble Sulfonated Calix[4]arene Complex . *Applied Spectroscopy*, **1998**, 52(7) , 952-957

J. Dey, E. Roberts and I.M. Warner. Effect of Sodium Perchlorate on the Binding of 2-(4'-aminophenyl)-and 2-(4'-N,N'-dimethylaminophenyl)-benzothiazole with B-Cyclodextrin in Aqueous Solution . *Journal of Physical Chemistry*, **1998**, 102(1) , 301-305

H.H. Yarabe, S.A. Shamsi and I.M. Warner. Capillary Zone Electrophoresis of Bile Acids with Indirect Photometric Detection . *Analytical Chemistry*, **1998**, 70(7) , 1412-1418

J.L. Haynes,III, S.A. Shamsi, F. O'Keefe, R. Darcey and I.M. Warner. A Cationic B-Cyclodextrin Derivative for Chiral Separations . *Journal of Chromatography A.*, **1998**, 803 , 261-271

C. Williams, J. Dey, S.A. Shamsi, J.P. Foley and I.M. Warner. Enhanced Separation of Antidepressant Drugs Using a Polymeric Surfactant as a Transient Capillary Coating . *Electrophoresis*, **1998**, 19 , 712-718



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Research Interests

- Organized Media; Molecular Spectroscopy; Chemical Analysis; Analytical; Environmental

Education

- BS, Kent State University, 1990
- PhD, University of North Texas, 1994

Honors and Awards

- 2003 Quality Recognition Award, Girl Scouts of the USA, awarded to the Girl Scouts – Heart of Missouri Council for the “Magic of Chemistry” Program
- 2002 ChemLuminary Award, “Best Single Event in a Local Section Promoting Women in Chemistry”, American Chemical Society Women Chemists Committee, awarded to the University of Missouri Local ACS Section for November 2001 “Magic of Chemistry” Program
- 2002 Alliance Award, Girl Scouts – Heart of Missouri Council
- 2002 Woman of Distinction Award, Columbia Area Girl Scouts
- 2002 Wyvern Pin (blue), Alpha Chi Sigma recognition of outreach activities
- 1999 Cottrell Scholar Award, Research Corporation
- 1998 CAREER Award, National Science Foundation
- 1996 Young Alumni Achievement Award, Kent State University Alumni Association
- 1994 Iota Sigma Pi Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research
- 1993 American Chemical Society Analytical Division Graduate Fellowship
- 1993 Tomas Hirschfeld Student Award, Federation of Analytical Chemistry and Spectroscopy Societies

- 1993 Association for Women in Science Predoctoral Award
- 1990 University of North Texas Doctoral Fellowship
- 1989 I. M. Kolthoff Enrichment Award, Analytical Division of the American Chemical Society
- 1989 Kent State University Undergraduate Award in Analytical Chemistry
- 1987 CRC Press Freshman Achievement Award
- 1986 Kent State University Alumni Reach for Excellence Scholarship
- 1986 Ohio Board of Regents Scholarship
- 1990 National Science Foundation Doctoral Fellowship

Representative Publications

C. Mao and S.A. Tucker. High Performance Liquid Chromatographic Separation of Polycyclic Aromatic Hydrocarbons Using Pyridinium Chloride as a Selective Fluorescence Quencher to Aid Detection. *J. Chromatogr. A* 2002, 966, 53.

C. Mao, C.L. Larson and S.A. Tucker. Spectrochemical Evaluation of Diisopropylamine as a Selective Fluorescence Quenching Agent of Polycyclic Aromatic Hydrocarbons in Acetonitrile. *Polycyclic Aromat. Compds.* 2002, 22, 99.

D.L. Richter-Egger, A. Tesfai and S.A. Tucker. Spectroscopic Investigations of Poly(Propyleneimine) Dendrimers Using the Solvatochromic Probe Phenol Blue and Comparisons to Poly(Amidoamine) Dendrimers. *Anal. Chem.* 2001, 73, 5743.

D.L. Richter-Egger, J.C. Landry, A. Tesfai and S.A. Tucker. Spectrofluorometric Investigations of Polyamido Amine Starburst Dendrimers Using the Solvatochromic Probe Phenol Blue. *J. Phys. Chem. A* 2001, 105, 6826.

C. L. Larson and S. A. Tucker. Intrinsic Fluorescence of Carboxylate Terminated Polyamido Amine Dendrimers. *Appl. Spectrosc.* 2001, 55, 679.

D. A. Wade, C. Mao, A. C. Hollenbeck and S. A. Tucker. Spectrochemical Investigations in Molecularly Organized Solvent Media: Evaluation of Pyridinium Chloride as a Selective Fluorescence Quenching Agent of Polycyclic Aromatic Hydrocarbons in Aqueous Carboxylate-Terminated Poly(amido) Amine Dendrimers and Anionic Micelles. *Fresenius' J. Anal. Chem.* 2001, 369, 378.

D. L. Richter-Egger, H. Li, and S. A. Tucker. Spectroscopic Investigations of Polyamido Amine Starburst Dendrimers with Reichardt's ET-30 Dye. *Appl. Spectrosc.* 2000, 54, 1151.

D. A. Wade and S. A. Tucker. Spectrochemical Evaluation of Pyridinium Chloride as a Possible Selective Fluorescence Quenching Agent of Polycyclic Aromatic Hydrocarbons in Water and Neat Acetonitrile. *Talanta* 2000, 53, 571.

D.A. Wade, P.A. Torres and S.A. Tucker. Spectrochemical Investigations in Dendritic Media: Evaluation of Nitromethane as a Selective Fluorescence Quenching Agent in Aqueous Carboxylate-Terminated Polyamido Amine (PAMAM) Dendrimers. *Anal. Chim. Acta* 1999, **397**, 17.



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Research Interests

- Fluid flow in thin films, Thin film specific chemical sensors.
- Measurement of trace atmospheric species and atmospheric chemistry, Air Pollution Toxicology, Automated intelligent analyzers, Microscale analytical systems, Automated process analysis in the chemical industry, Novel approaches to ionic chromatography and electrophoresis.

Education

- 1977 Louisiana State University, Baton Rouge, Ph.D. in Analytical Chemistry with minors in Inorganic Chemistry and Electrical Engineering.
- 1976 Bell and Howell Diploma in Advanced Electronics, DeVry Institute of Technology, Chicago, IL.

Honors and Awards

- National Science Talent Search Scholar, Government of India, 1965-1968.
- Atomic Energy Commission of India Graduate Fellow in Chemistry, 1969-1970.
- Government of India Doctoral Research Fellow, 1972.
- Frank R. Blood Award for best annual publication, Society of Toxicology and Pharmacology, 1981.
- Institute Medal, Institute of Industrial Sciences, University of Tokyo, 1987.
- P. A. Traylor Creativity Award, Analytical Sciences, Dow Chemical Company, Midland, MI, 1989.
- Barney E. Rushing, Jr. 1990 Faculty Distinguished Research Award. Texas Tech University, Dads and Moms Association, 1991.

- A. Benedetti-Pichler Memorial Award for contributions to Microchemistry, American Microchemical Society, 1998.

Representative Publications

"Light at the End of the Tunnel: Recent Analytical Applications of Liquid Core Waveguides", Dallas, T.; Dasgupta, P.K. *TrAC: Trends Anal. Chem.* **2004**, 23, 385-392.

"Fast Durable Microfabricated Humidity Sensors", Kuban, P.; Berg, J.M.; Dasgupta, P.K. *Anal. Chem.* **2004**, 76, 2561-2567.

"Field Instrument for Simultaneous Large Dynamic Range Measurement of Atmospheric Hydrogen Sulfide, Methylmercaptan and Sulfur Dioxide", Toda, K.; Ohira, S.-I.; Tanaka, T.; Nishimura, T.; Dasgupta, P.K. *Environ. Sci. Technol.* **2004**, 38, 1529-1536.

"A Membrane Based Parallel Plate Denuder for the Collection and Removal of Soluble Atmospheric Gases", Takeuchi, M.; Li, J.; Morris, K.J.; Dasgupta, P.K. *Anal. Chem.* **2004**, 76, 1204-1210.

"Microfabrication and Characterization of Teflon AF Coated Liquid Core Waveguide Channels in Silicon", Datta, A.; Eom, I.-Y.; Dhar, A.; Kuban, P.; Manor, R.M.; Ahmad, I.; Gangopadhyay, S.; Dallas, T.; Holtz, M.; Temkin, H.; Dasgupta, P.K. *IEEE Sensors Journal* **2003**, 3, 788-795.



Professor Joseph Wang

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Research Interests

- The development of microfluidic ("Lab-on-Chip") biochip devices, nanomaterials-based sensors, enzyme electrodes, DNA and proteins recognition and diagnostics, bioelectronics, nanobiotechnology, electrochemical sensing devices for environmental, security, and clinical monitoring, design of nanostructures, microfabrication and miniaturization, counterterrorism-detection, the development of new interfaces, sensor/recognition coatings, and remote sensing.

Education

- Ph.D., Technion, 1978

Honors and Awards

He was the recipient of the 1994 Heyrovsky Memorial Medal (of the Czech Republic) for his contributions to voltammetry, of the 1999 American Chemical Society Award for Analytical Instrumentation, and the ISI 'Citation Laureate' Award for being the Most Cited Scientist in Engineering in the World (during 1991-2001). He was awarded a Honorary Professor from National University (Cordoba, Argentina) in 2003. The Westhafer Award for Research (NMSU's highest academic award) was awarded to him in 1990. Between 2001 and 2004 he held the Manasse Chair and a Regent Professorship of NMSU. He was ranked as the most cited electrochemist in the world in 1995, and at the 17th place in the ISI's list of 'Most Cited

Researchers in Chemistry' for the 1992-2002 period. He is currently serving as the Chief-Editor of the international journal Electroanalysis and has been a member of the 12 other international journals.

Representative Publications

"Nanocrystal-based Bioelectronics Coding of SNP", G. Liu, T. Lee and J. Wang, *J. Am. Chem. Soc.*, 127(2005)38.

"Nanomaterial-based Electrochemical Biosensors", J. Wang, *Analyst*, 139(2005)421.

"On-Chip Integration of Enzyme and Immunoassays: Simultaneous Measurements of Insulin and Glucose", J. Wang, A. Ibez, and M. P. Chatrathi, *J. Am. Chem. Soc.*, 2003,125, 8444.

"Oxygen-Rich Carbon Paste Enzyme Electrodes for Operation in Oxygen-Deficient Solutions", J. Wang and F. Lu, *J. Am. Chem. Soc.*, 1998, 120, 1048.

"Real-Time Electrochemical Monitoring: Towards Green Analytical Chemistry", J. Wang, *Accounts for Chem. Res.* 35(2002) 811.

"DNA-based Amplified Bioelectronic Detection and Coding of Proteins," J. Wang, G. Liu, B. Munge, L. Lin and Q. Zhu, *Angew Chemie Int. Ed.*, 2004,43,2158.



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Research Interests

- Addressing the problems that are at the interface of nanochemistry and bio-analytical chemistry.
- Combinations of biological and material components with complementary properties will be developed as powerful tools for fabricating functional nanostructures and characterizing the biological world.
- nanocrystal synthesis, nanocrystal assembly, and nanocrystals for use as biological markers.

Education

- Ph.D., Jilin University, 1996

Honors and Awards

- Exemplary Graduate Advisor and Mentor in the NSF AGEP Program (2004)
- Collegiate Inventors Award (2003)

Representative Publications

"One-Pot Synthesis of High-Quality Zinc-Blende CdS Nanocrystals." Cao, Y. C.; Wang, J.J. *Am. Chem. Soc.* 2004, 126, 14336.

"Synthesis of Square Gadolinium-Oxid Nanoplates" Cao, Y. C. *J. Am. Chem. Soc.* 2004, 2004, 126, 7456.

"Raman Dye-Labeled Nanoparticle Probes for Proteins" Cao, Y. C.; Jin, R.; Nam, J.-M.; Thaxton, C. S.; Mirkin, C. A.; *J. Am. Chem. Soc.*, 2003, 125, 14676.

"Controlling Anisotropic Nanoparticle Growth Through Plasmon Excitation", Jin, R.;

Cao, Y. C.; Hao, E.; Mtraux, G. S.; Schatz, G. C.; Mirkin, C. A. *Nature*, 2003, 425, 478.

"Nanoparticles with Raman spectroscopic fingerprints for DNA and RNA detection", Cao, Y.C.; Jin, R.; Mirkin, C.A. *Science* 2002, 297, 1536.

"Photoinduced conversion of silver nanospheres to nanoprisms", Jin, R.; Cao, Y.; Mirkin, C.A.; Kelly, K.L.; Schatz, G.C.; Zheng, J.G. *Science* 2001, 294, 1901.

"DNA-modified core-shell Ag/Au nanoparticles", Cao, Y.; Jin, R.; Mirkin, C.A. *J. Am. Chem. Soc.* 2001, 123, 7961.

"Growth and properties of semiconductor core/shell nanocrystals with InAs cores", Cao, Y.; Banin, U. *J. Am. Chem. Soc.* 2000, 122, 9692.

"Synthesis and characterization of InAs/InP and InAs/CdSe core/shell nanocrystals", Cao, Y.; Banin, U. *Angew. Chem. Int. Ed.* 1999, 38, 3692.

"Identification of atomic-like electronic states in indium arsenide nanocrystal quantum dots", Banin, U.; Cao, Y.; Katz, D.; Millo, O. *Nature* 1999, 400, 542



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Research interests

- The understanding and development of electrochemical and optical sensor principles for clinical, bioanalytical and environmental applications.
- Currently, the principal directions include the study of trace level potentiometric sensors, pulsed chronopotentiometric sensors, and microsphere-based fluorescent detection principle

Education

- Diploma of Chemistry, 1989, Swiss Federal Institute of Technology (ETH) Zurich; Doctor of Natural Sciences, 1993, ETH Zurich; Postdoctoral Scholar, 1993-1995, The University of Michigan.

Honors and Awards

- Roche Prize for Sensor Technology, 2004
- Talanta Gold Medal
- Alumni Professor, Auburn University, 2001-2005
- Young Investigator Award, Society for Electroanalytical Chemistry, 2001

Representative Publications

Wygladacz, K.; Bakker, E., Imaging Fiber Microarray Fluorescent Ion Sensors Based on Bulk Optode Microspheres. *Anal. Chim. Acta* 2005, 532, 61-69.

Makarychev-Mikhailov, S.; Shvarev, A.; Bakker, E., Pulstrodes: Triple Pulse Control of Potentiometric Sensors. *J. Am. Chem. Soc.* 2004, 126, 10548-10549.

Qin, Y.; Bakker, E., Elimination of Dimer Formation in In(III) Porphyrin-Based Anion-Selective Membranes by Covalent Attachment of the Ionophore. *Anal. Chem.* 2004, 76, 4379-4386.



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Research Interests

- Biophysical characterization of the factors responsible for specificity in ligand-protein interactions, addressed in a proteome-wide manner.
- Applications include understanding and minimizing the toxic side effects of drugs as well as environmental toxins such as endocrine disruptors.
- Biophysical methods employed include enzymology, NMR (nuclear magnetic resonance) spectroscopy, fluorescence and chemo/bioinformatics.

Education

- B.S. degree, UW-Milwaukee, 1986
- Ph.D. degree, UW-Madison, 1990.

Representative Publications

Pellecchia, M., Huang, X., Meininger, D. and Sem, D.S. (2003) NMR-based drug design: applications to very large proteins. In "BioNMR in drug discovery" Zerbe O. Ed.

Kho, R, Baker, BL, Newman, JV, Jack, RM, Sem, DS, Villar, HO and Hansen, MR (2003) A Path from Primary Protein Sequence to Ligand Recognition Proteins: Structure, Function, and Genetics 50, 589-599.

Pellecchia, M., Sem, D.S. and Wuthrich, K. (2002) Nuclear Magnetic Resonance in Drug Discovery. Nature Reviews Drug Discovery. 1, 211-219.

Plesniak, L, Horiuchi, Y, Sem, DS, Meininger, D, Stiles, L, Shaffer, J, Jennings, PA and Adams, JA (2002) Probing the Nucleotide Binding Domain of the Osmoregulator EnvZ Using Fluorescent Nucleotide Derivatives Biochemistry 41, 13876-13882.

- Pellecchia, M., Meininger, D., Dong, Q., Chang, E., Jack, R. and Sem, D.S. (2002) NMR-based Structural Characterization of Large Protein-Ligand Complexes *J. Biom. NMR* 22, 165.
- Sem, D.S. and Pellecchia, M. (2001) NMR in the Acceleration of Drug Discovery. *Current Opinion in Drug Discovery and Development* 4, 479.
- Pellecchia, M., Meininger, D., Shen, A.L., Jack, R., Kasper, C.B. and Sem, D.S. (2001) SEA-TROSY (Solvent Exposed Amides with TROSY): A Method to Resolve the Problem of Spectral Overlap in Very Large Proteins. *J. Am. Chem. Soc.* 123, 4633.
- Jack, R., Sem, D.S., Yu, L. (2001) Real-time Structure-Based Drug Development. *Genetic and Engineering News*. 21, 34.
- Sem, D.S., Yu, L., Coutts, S.M. and Jack, R. (2001) Object-oriented Approach to Drug Design Enabled by NMR SOLVE: First Real-Time Structural Tool for Characterizing Protein-Ligand Interactions. *J. Cellular Biochemistry. Suppl.* 37, 99-105.
- Shen, A.L., Sem, D.S. and Kasper, C.B. (1999) Mechanistic Studies on the Reductive Half Reaction of NADPH Cytochrome P450 Oxidoreductase. *J. Biol. Chem.* 274, 5391.
- Sem, D.S., McNeeley, P. and Linnik, M. (1999) Antibody Affinities and Relative Titers in Polyclonal Populations *Arch. Biochem. Biophys.* 372, 62.
- Sem, D.S. and McNeeley, P. (1998) Steady State Enzyme Kinetic Fluorescence Polarization Assay Applied to Calpain II. *FEBS Letters* 443, 17.
- Sem, D.S., Baker, B.L., Victoria, E.J., Jones, D.S., Marquis, D., Yu, L., Parks, J., and Coutts, S.M. (1998) Structural Characterization and Optimization of Antibody-Selected Phage Library Mimotopes of an Antigen Associated with Autoimmune Recurrent Thrombosis. *Biochemistry* 37, 16081.
- Holmbeck, S.M.A., Foster, M.P., Casimiro, D.R., Sem, D.S., Dyson, H.J. and Wright, P.E. (1998) High Resolution Solution Structure of the Retinoid X Receptor DNA Binding Domain *J. Mol. Biol.* 281, 271.
- Sem, D.S., Casimiro, D.R., Kliewer, S.A., Provencal, J., Evans, R.M. and Wright, P.E. (1997) NMR Spectroscopic Studies of the DNA-Binding Domain of the Monomer-binding Nuclear Orphan Receptor, Human Estrogen Related Receptor-2. *J. Biol. Chem.* 272, 18038.



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Research Interests

- Analytical Science
- Materials Synthesis and Characterization
- Surface Science

Education

- Ph.D. 1981, University of North Carolina, Chapel Hill
- B.S. 1977, University of Delaware (Chemistry)
- B.A. 1977, University of Delaware (Biology)

Honors and Awards

- Award in Analytical Chemistry, 2004
- National Science Foundation Creativity Award, 1998
- University of Arizona College of Science Distinguished Teaching Award, 1996
- Iota Sigma Pi Agnes Faye Morgan Research Award, 1994
- National Science Foundation Creativity Award, 1990
- IBM Faculty Development Award, 1985

Representative Publications

A.M. Hawkrigde, J.E. Pemberton, *J. Am. Chem. Soc.*, 2003, 125, 624-625. "Model Aluminum-Poly(p-phenylenevinylene) Interfaces Studied by Surface Raman Spectroscopy."

- C.J. Orendorff, M.W. Ducey, J.E. Pemberton, L.C. Sander, *Anal. Chem.*, 2003, 75, 3360-3368. "Structure-Function Relationships in High-Density Octadecylsilane Stationary Phases by Raman Spectroscopy. 3. Effects of Highly Ordering Solvents."
- C.J. Orendorff, M.W. Ducey, J.E. Pemberton, L.C. Sander, *Anal. Chem.*, 2003, 75, 3369-3375. "Structure-Function Relationships in High-Density Octadecylsilane Stationary Phases by Raman Spectroscopy. 4. Effects of Model Aromatic Solutes and Bases."
- D.J. Tiani, J.E. Pemberton, *Langmuir*, 2003, 19, 6422-6429. "Emersion of 11-Mercapto-1-undecanol-Modified Ag Substrates from Aqueous and Nonaqueous Solvents: The Effect of Emersion Velocity on the Emerged Solvent Layer Thickness."
- S. P. Pasilis, J.E. Pemberton, *Inorg. Chem.*, 2003, 42, 0000. "Speciation and Coordination Chemistry of Uranyl(VI)-Citrate Complexes in Aqueous Solution."
- C.J. Orendorff, M.W. Ducey, J.E. Pemberton, *J. Phys. Chem. A*, 2002, 106, 6991-6998. "Quantitative Correlation of Raman Spectral Indicators in Determining Conformational Order in Alkyl Chains."
- M.W. Ducey, C.J. Orendorff, J.E. Pemberton, L.C. Sander, *Anal. Chem.*, 2002, 74, 5576-5584. "Structure-Function Relationships in High-Density Octadecylsilane Stationary Phases by Raman Spectroscopy: 1. Effects of Temperature, Surface Coverage and Preparation Procedure."
- M.W. Ducey, C.J. Orendorff, J.E. Pemberton, L.C. Sander, *Anal. Chem.*, 2002, 74, 5585-5592. "Structure-Function Relationships in High-Density Octadecylsilane Stationary Phases by Raman Spectroscopy: 2. Effects of Common Mobile Phase Solvents."
- C.D. Zangmeister, J.A. Turner, J.E. Pemberton, *Geophys. Res. Lett.*, 2001, 28, 995-998. "Segregation of NaBr in NaBr/NaCl Crystals Grown from Aqueous Solutions: Implications for Sea Salt Surface Chemistry."
- J.W. Robertson, M. Cai, J.E. Pemberton, *Adv. Mater.*, 2001, 13, 662-667. "Perfectly Insulating Ultrathin Silica Films Formed by a Room Temperature Sol-Gel Process."
- C.D. Zangmeister, J.E. Pemberton, *J. Phys. Chem. A*, 2001, 105, 3788-3795. "Raman Spectroscopy of the NaCl + HNO₃ Reaction: NaNO₃ Growth and Effect of H₂O Exposure."
- M. Cai, J.E. Pemberton, *Fresenius' J. Anal. Chem.*, 2001, 369, 328-334. "Vibrational Spectroscopy of Dimethylchlorooctadecylsilane Covalently Bonded to Ultrathin Silica Films Immobilized on Ag Surfaces."
- D.K. Kambhampati, T.A.M. Jakob, J.W. Robertson, M. Cai, J.E. Pemberton, W. Knoll, *Langmuir*, 2001, 17, 1169-1175. "Surface Plasmon Resonance Studies of Polymer Brushes and DNA Hybridization Interactions on a Novel Silicon Oxide Sol-Gel Sensing Surface."

J.E. Pemberton, M. Ho, C.J. Orendorff, M.W. Ducey, *J. Chromatogr. A*, 2001, 913, 243-252. "Raman Spectroscopy of Octadecylsilane Stationary Phase Conformational Order: Effect of Solvent."

C.D. Zangmeister, J.E. Pemberton, *J. Am. Chem. Soc.*, 2000, 122, 12289-12296. "Raman Spectroscopy and Atomic Force Microscopy of the Reaction of Sulfuric Acid with Sodium Chloride"

M.H. Schoenfisch, M. Ovadia, J.E. Pemberton, *J. Biomed. Mater. Res.*, 2000, 51, 209-215. "Covalent Surface Organochemical Modification of Noble Metal Electrodes for Cardiac Biomaterial Applications."

J. Gailer, G.N. George, I.J. Pickering, R.C. Prince, S.C. Ringwald, J.E. Pemberton, R.S. Glass, H.S. Younis, D.W. DeYoung, H.V. Aposhian, *J. Am. Chem. Soc.*, 2000, 122, 4637-4639. "A Metabolic Link Between Arsenite and Selenite: The Seleno-bis(S-glutathionyl) Arsinium Ion."



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Research Interests

- bioanalytical chemistry, and focus on developing new methods for assaying nanoliter volume samples, and applying these methods to study the distribution and dynamic release of neurotransmitters and neuropeptides from individual neurons.
- the roles that peptide hormones, neurotransmitters and neuromodulatory agents play in behavior, learning and memory.

Education

- B.S. degree , Chemistry from the University of California , Davis , 1983
- Ph.D., the University of Arizona , 1989.

Honors and Awards

- ACS Analytical Division Award in Chemical Instrumentation
- The Merck Prize
- Fellow, American Association for the Advancement of Science
- The Gill Prize in Instrumentation and Measurement Science
- Benedetti-Pichler Award in Microanalysis
- ACS Arthur Fideis Award for Young Analytical Scientists
- Packard Fellowship
- Alfred P. Sloan Fellowship
- Dreyfus Teacher-Scholar Award

Representative Publications

"Vitamin E Imaging and Localization in the Neuronal Membrane," Monroe EB, Jurchen JC, Lee J, Rubakhin SS, Sweedler JV., *J. Am. Chem. Soc.*, **127**, 12152-12153 (2005).

"Imaging Mass Spectrometry: Fundamentals and Applications to Drug Discovery," S. S. Rubakhin, J. C. Jurchen, E. B. Monroe, and J. V. Sweedler, *Drug Discovery Today*, **10**, 823-837 (2005).

"Monitoring Activity-dependent Peptide Release from the CNS Using Single-Bead Solid-Phase Extraction and MALDI TOF MS Detection," N. G. Hatcher, T. A. Richmond, S. S. Rubakhin, and J. V. Sweedler, *Analytical Chemistry*, **77**, 1580-1587 (2005).

"Nanocapillary Arrays Effect Mixing and Reaction in Multilayer Fluidic Structures," T. C. Kuo, H. K. Kim, D. M. Cannon, M. A. Shannon, J. V. Sweedler, and P. W. Bohn, *Angewandte Chemie-International Edition*, **43**, 1862-1865 (2004).

"Systemic Serotonin Sulfate in Opisthobranch Mollusks," J. N. Stuart, J. D. Ebaugh, A. L. Copes, N. G. Hatcher, R. Gillette, and J. V. Sweedler, *J. Neurochem.* **90**, 734-742 (2004).

"Engineering the Morphology and Electrophysiological Parameters of Cultured Neurons by Microfluidic Surface Patterning," E.V. Romanova, K.A. Fosser, S.S. Rubakhin, R.G. Nuzzo, and J.V. Sweedler, *FASEB J.* **18**, 1267-1269 (2004).

"The Chemistry of Thought: Neurotransmitters in the Brain," J.N. Stuart, A.B. Hummon and J.V. Sweedler, *Anal. Chem.* **76**, 121A-128A (2004).

Kristin A. Fletcher, Ph.D.

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Research Interests:

- Optical Spectroscopy
- Room-Temperature Ionic Liquids as Green Solvents
- Molecularly Organized Solvent Systems
- Capillary Electrophoresis Separations
- Chemical Sensing
- Environment-Related Chemicals and Processes
- Polycyclic Aromatic Compounds
- Photophysics of Polymers, Biomolecules, and Pharmaceuticals
- Chemical/Solution Thermodynamics
- Chemical Education

Education:

2000 – 2004	New Mexico Institute of Mining and Technology Socorro, New Mexico Research Supervisor: Siddharth Pandey	Ph.D. in Chemistry
1997 – 1998	University of North Carolina, Chapel Hill Chapel Hill, North Carolina	Research Assistant
1995 – 1997	University of North Texas Denton, Texas Research Supervisor: William E. Acree, Jr.	Masters of Science
1990 – 1995	University of North Texas, Denton, Texas Mathematics	Bachelor of Science: Bachelor of Arts: Chemistry

Selected Peer-Reviewed Research Publications:

“Detection of Homocysteine and Cysteine”, Weihua Wang, Oleksandr Russin, Xiangyang Xu, Kyu Kwang Kim, Jorge O. Escobedo, Sayo O. Fakayode, **Kristin A. Fletcher**, Mark Lowry, Corin M. Schowalter, Candace M. Lawrence, Frank R. Fronczek, Isiah M. Warner, Robert M. Strongin, *Journal of the American Chemical Society*, **127**, pp. 15949-15958 (2005).

"Influence of Polydispersity of Polymeric Surfactants on Enantioselectivity of Chiral Compounds in Micellar Electrokinetic Chromatography", Jepkoech Tarus, Rezik A. Agbaria, Kevin Morris, Simon Mwongela, Abdulqawi Numan, Linda Simuli Wabuye, **Kristin A. Fletcher**, Isiah M. Warner, *Langmuir*, **20**, pp. 6887-6895 (2004).

"Generation and pH Dependent Superquenching of Poly(amido) Carboxylate Dendrons Hosting a Single 'Focal Point' Pyrene", Siddharth Pandey, Rebecca A. Redden, **Kristin A. Fletcher**, Darryl Y. Sasaki, Angel E. Kaifer, Gary A. Baker, *Chemical Communications*, pp. 1318-1319 (2004).

"Correlation between the Fluorescent Response of Microfluidity Probes and the Water Content and Viscosity of Ionic Liquid + Water Mixtures", Siddharth Pandey, **Kristin A. Fletcher**, Sheila N. Baker, Gary A. Baker, *Analyst*, **129**, pp. 569-573 (2004).

"Surfactant Aggregation Within Room-Temperature Ionic Liquid 1-Ethyl-3-Methylimidazolium bis(trifluoromethylsulfonyl)imide", **Kristin A. Fletcher** and Siddharth Pandey, *Langmuir*, **20**, pp. 33-36 (2004).

"Solvatochromic Probe Behavior Within Ternary Room-Temperature Ionic Liquid bmimPF₆ + Ethanol + Water Solutions", **Kristin A. Fletcher** and Siddharth Pandey, *Journal of Physical Chemistry B*, **107**, 13532-13539 (2003).

"Selective Fluorescence Quenching of Polycyclic Aromatic Hydrocarbons by Nitromethane Within Room Temperature Ionic Liquid 1-Butyl-3-Methylimidazolium Hexafluorophosphate", **Kristin A. Fletcher**, Shubha Pandey, Isaiah K. Storey, Ashley E. Hendricks, Siddharth Pandey, *Analytica Chimica Acta*, **453**, pp. 89-96 (2002).

Reviews and Book Chapters:

"Capillary Electrochromatography using Polyelectrolyte Multilayer Coatings", Mary W. Kamande, **Kristin A. Fletcher**, Mark Lowry, and Isiah M. Warner, *Journal of Separation Science*, **28**, pp 710-718 (2005).

"Molecular Fluorescence, Phosphorescence, and Chemiluminescence Spectrometry", Aleeta M. Powe, **Kristin A. Fletcher**, Nadia N. St. Luce, Mark Lowry, Sharon Neal, Matthew E. McCarroll, Philip B. Oldham, Linda B. McGown, Isiah M. Warner, *Analytical Chemistry*, **76**, pp. 4614-4634 (2004).

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Research Interests

Environmental systems involve remediation of metal contaminants. Current explored areas include the use of bacterial produced metabolites such as rhamnolipid biosurfactants for bioremediation purposes. Rhamnolipid-metal speciation and adsorption at the solid-liquid and liquid-air interfaces at different environmental conditions will provide vital information about fate and transport of metal contaminants in soil.

Education and Awards

University of Arizona, Department of Chemistry, 2002-present

- National Science Foundation Graduate Fellowship - 2003-2006
- Graduate Minority Fellowship - 2001

University of Puerto Rico at Cayey, 1997-2001, B.A., Chemistry

- Graduated Magna Cum Laude
- Active member of Chemistry Club; 2nd Place 2001 Team Chemistry Competition

Publications

- Lebrón-Paler, A.; Becker, B.; Otto, W.; Larive, C.K.; Pemberton, J.E., Spectrochemical Determination of the Acid Dissociation Constant of the Biosurfactant Monorhamnolipid in Aqueous Solution. *Anal. Chem.* to be submitted.
- Lebrón-Paler, A.; Pemberton, J.E., Adsorption Behavior of Monorhamnolipid at γ -Alumina using ATR-FTIR. *Environ. Sci. Tech.*, in preparation.



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Research Interests

- Flow-based analysis, cost effective instrumentation/ analysis

Brief Education

- B.S. (Chemistry), Chiang Mai University, Thailand, 1974
- Ph.D. Liverpool John Moores University (Liverpool Polytechnic), England (Scholarship by Liverpool Education Authority), 1981
- Alexander von Humboldt Research Fellow at the Centre for Advanced Technological and Environmental Training, Karlsruhe Research Centre, Germany, 1991-92 and other post-doc fellow ships by DAAD in different periods
- The Royal Society (UK) visiting research fellow at Liverpool John Moores University, 1998

Honors and Awards

- Award for Outstanding Researcher of the Year in Chemical and Pharmaceutical Sciences, by The National Research Council of Thailand (NRCT)
- Award for Outstanding ex-student of Chiang Mai University Alumni Association
- Thailand Research Fund (TRF) Senior Research Scholar Award
- Award for Outstanding Scientist of the Year, by Foundation for the Promotion of Science and Technology under the Patronage of His Majesty the King
- "JAFIA Scientific Award" by The Japanese Association for Flow Injection Analysis (JAFIA), JAPAN
- "Thailand Outstanding Person in Science and Technology" by the Office of Thailand Uniqueness, The Office of the Prime Ministry
- Currently: Advisory Editorial Board: Talanta (Elsevier) J. Flow Injection Analysis (JAFIA); Associate Editor: Water Research (Elsevier); Formerly: Editorial Board-Laboratory Robotics and Automation (Wiley)

Representative Publications

- Tue-Ngeun O, Jakmunee J and Grudpan K (2005) A novel stopped flow injection-amperometric procedure for the determination of chlorate. *Talanta*, **68**(2),459-464.
- Burakham R, Lapanantnoppakhun S, Jakmunee J and Grudpan K (2005) Exploiting sequential injection analysis with lab-at-valve (LAV) approach for on-line liquid-liquid micro-extraction spectrophotometry. *Talanta*, **68**(2),416-421.
- Settheeworrit T, Hartwell SK, Lapanantnoppakhun S, Jakmunee J, Christian GD and Grudpan K (2005) Exploiting guava leaf extract as an alternative natural reagent for flow injection determination of iron. *Talanta*, **68**(2),262-267 .
- Tue-Ngeun O, Ellis P, McKelvie ID, Worsfold P, Jakmunee J and Grudpan K (2005) Determination of dissolved reactive phosphorus (DRP) and dissolved organic phosphorus (DOP) in natural waters by the use of rapid sequenced reagent injection flow analysis. *Talanta*, **66** (2), 453-460.
- Jakmunee J, Pathimapornlert L, Hartwell SK and Grudpan K (2005) Novel approach for mono-segmented flow micro-titration with sequential injection using a lab-on-valve system: a model study for the assay of acidity in fruit juices. *Analyst*, **130** (3), 299-303.
- Chantiwas R, Beckett R, Grudpan K (2005),Size-based speciation of iron in clay mineral particles by gravitational field-flow fractionation with electrothermal atomic absorption spectrometry, *Spectrochim Acta B*, **60**(1), 109-116.
- Hartwell S, Kradtap, Srisawang B, Kongtawelert P, Jakmunee J and Grudpan K (2005) Sequential injection-ELISA based system for online determination of hyaluronan. *Talanta*, **66**(2), 521-527.
- Jakmunee, J, Patimapornlert L, Suteerapataranon S, Lenghor N, Grudpan K (2005) Sequential injection with lab-at-valve (LAV) approach for potentiometric determination of chloride. *Talanta*, **65**(3), 789-793.
- Chailapakul O, Amatongchai M, Wilairat P, Grudpan K, Nacapricha D (2004) Flow-injection determination of iodide ion in nuclear emergency tablets, using boron-doped diamond thin film electrode. *Talanta*, **64**(5), 1253-1258.
- Burakham R, Higuchi K, Oshima M, Grudpan K, Motomizu S (2004) Flow injection spectrophotometry coupled with a crushed barium sulfate reactor column for the determination of sulfate ion in water samples. *Talanta*, **64**(5), 1147-1150.
- Tanikkul S, Jakmunee J, Lapanantnoppakhun S, Rayanakorn M, Sooksamiti P, Synovec RE, Christian GD, Grudpan K (2004) Flow injection in-valve-mini-column pretreatment combined with ion chromatography for cadmium, lead and zinc determination. *Talanta*, **64**(5), 1241-1246.
- Grudpan K (2004) Some recent developments on cost-effective flow-based analysis. *Talanta*, **64**(5), 1084-1090.

Hartwell S, Kradtap, Grudpan K and Christian G D (2004) Bead injection with a simple flow-injection system: an economical alternative for trace analysis. *Trends in Analytical Chemistry*, **23**(9), 619-623.

Grudpan K (2003) Development of Cost-Performance Flow-based Chemical Analysis Systems. *Journal of Flow Injection Analysis*, **20** (2), 153.

Pattanapong A, Ruzicka J, Atallah R, Christian G D, Jakmunee J and Grudpan K (2003) Exploiting Sequential Injection Analysis with Bead Injection and Lab-On Valve for Determination of Lead Using Electrothermal Atomic Absorption Spectrometry. *Anal. Chim. Acta*, **499** (1-2), 167-72.

Lenghor N, Grudpan K, Jakmunee J, B. A. Staggemeier, W.W.C. Quigley, Bryan J. Prazen, Christian GD, Ruzicka J. and Synovec RE (2003) Sequential Injection Analysis with Dynamic Surface Tension Detection: High Throughput Analysis of the Interfacial Properties of Surface Active Samples. *Talanta*, **59**, 1153 – 63.

Ampan P, Lapanantnoppakhun S, Sooksamiti P, Jakmunee J, Hartwell SK, Jayasvati S, Christian GD and Grudpan K (2002) Determination of trace iron in beer using Flow Injection Systems with in-valve column and bead injection. *Talanta* **58**, 1327-34.

Nacapricha D, Maungkaew S, Ratanawimarnwong N, Shiowatana J and Grudpan K (2001) Continuous and Stopped Flow Injection for Catalytic Determination of Total Iodine in Urine. *Analyst* **126**, 121-6.

Grudpan K, Kamfoo K and Jakmunee J (1999) Flow Injection Spectrophotometric or Conductometric determination of Ascorbic Acid in a Vitamin C Tablet Using Permanganate or Ammonia. *Talanta* **49**, 1023-26.

Grudpan K, Jakmunee J and Sooksamiti P (1999) Flow Injection Dialysis for the Determination of Anions using Ion Chromatography. *Talanta* **49**, 215.

Grudpan K and Thanasarn T (1993) Overhead Projector Flow Injection Analysis. *Anal. Proc.* **30**, 10-3.

Sooksamiti P, Geckeis H and Grudpan K (1996) Determination of Lead in Soil Samples by In-valve Solid Phase Extraction Flow Injection Flame Atomic Absorption Spectrometry. *Analyst* **121**, 1413-17.

Grudpan K, Nacapricha D and Wattanakanjana Y (1991) Radiometric Detectors for Flow Injection Analysis. *Anal. Chim. Acta* **246**, 325-8.



Dr. Adisorn Tuantranont

Position: Group leader and researcher
Nanoelectronic and MEMS Laboratory
National Electronics and Computer Technology Center (NECTEC)
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Dr. Adisorn Tuantranont received the Ph.D. degree in electrical and computer engineering from University of Colorado at Boulder, Colorado, in 2001.

Since 2001, he joined National Electronic and Computer Technology Center (NECTEC) and established Nanoelectronics and MEMS laboratory. He is a pioneer in the research field of Micro-Electro-Mechanical Systems (MEMS) in Thailand. He has published approximately 50 journals and conference proceeding papers related to the MEMS, Optical MEMS, Microactuator, BioMEMS, Microfluidics, and Lab-on-a-chip fabrication and holds 5 patents. He is currently a member of the founding committee of National Nanotechnology Center (NANOTEC). He received a Young Technologist award in 2004 from Foundation the Promotion of Science and Technology under the Patronage of His Majesty the King and the best thesis award in 2005 from the National Research Council of Thailand.



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Research interest

- Trace Elements Determination by Atomic Spectrometry
- Size Characterization by Field-Flow Fractionation
- Elemental Speciation by Hyphenated Techniques

Education

- B.Sc. (Chemistry), 1994, Mahidol University, Bangkok, Thailand
- M.Sc. (Applied Analytical and Inorganic Chemistry), 1996, Mahidol University, Bangkok, Thailand (under the supervision of Associate Professor Juwadee Shiowatana)
- Ph.D. (Chemistry), 2002, University of Massachusetts at Amherst, U.S.A. (under the supervision of Professor Ramon M. Barnes)

Grants/ Awards

- Research Grant, September 1996 – August 1997, “Direct Electrothermal Atomic Absorption Spectrometric Determination of Heavy Metals in Seafood Samples by Slurry Introduction”, National Science and Technology Development Agency, Thailand
- Research Grant, July 2003 – June 2005, “Size Based Elemental Speciation of Airborne Particles by Field-Flow Fractionation-Inductively Coupled Plasma Mass Spectrometry”, The Thailand Research Fund
- Outstanding Poster Award, Flow Field-Flow Fractionation-Inductively Coupled Plasma-Mass Spectrometry (Flow FFF-ICP-MS) for Sediment Bound Trace Metal Characterization, A. Siripinyanond, R. Barnes, and D. Amarasiriwardena, TP 56, *2002 Winter Conference on Plasma Spectrochemistry*, Scottsdale, Arizona, Jan 6-12, 2002.

Publications (in scientific journals)

- K. Judprasong, M. Ornthai, A. Siripinyanond and J. Shiowatana, "A Continuous-Flow Dialysis System with Inductively Coupled Plasma Optical Emission Spectrometry for *in vitro* Estimation of Bioavailability", *J. Anal. Atom. Spectrom.*, 2005, **20**, 1191-1196.
- U. Kumtabtim, J. Shiowatana and A. Siripinyanond, "Sedimentation Field-Flow Fractionation-Inductively Coupled Plasma Optical Emission Spectrometry: Size-Based Elemental Speciation of Air Particulates", *J. Anal. Atom. Spectrom.*, 2005, **20**, 1185-1190.
- S. Saeseaw, J. Shiowatana and A. Siripinyanond, "Sedimentation Field-Flow Fractionation: Size Characterization of Food Materials", *Food Res. Int.*, 2005, **38**, 777-786.
- A. Siripinyanond, S. Worapanyanond and J. Shiowatana, "Field-Flow Fractionation-Inductively Coupled Plasma Mass Spectrometry: An Alternative Approach to Investigate Metal-Humic Substances Interaction", *Environ. Sci. Technol.*, 2005, **39**, 3295-3301.
- A. Siripinyanond and R. M. Barnes, "Flow Field-Flow Fractionation-Inductively Coupled Plasma Mass Spectrometry of Chemical Mechanical Polishing Slurries", *Spectrochim. Acta, Part B*, 2002, **57**, 1885-1896.
- A. Siripinyanond, D. Amarasiriwardena and R. M. Barnes, "Flow Field-Flow Fractionation-Inductively Coupled Plasma Mass Spectrometry for Sediment Bound Trace Metal Characterization", *J. Anal. Atom. Spectrom.*, 2002, **17**, 1055-1064.
- D. Amarasiriwardena, A. Siripinyanond and R. M. Barnes, "Trace Elemental Distribution in Soil and Compost-Derived Humic Acid Molecular Fractions and Colloidal Organic Matter in Municipal Wastewater by Flow Field-Flow Fractionation-Inductively Coupled Plasma Mass Spectrometry (Flow FFF-ICP-MS)", *J. Anal. At. Spectrom.*, 2001, **16**, 978-986.
- A. Al-Ammar, A. Siripinyanond and R. M. Barnes, "Simultaneous Sample Preconcentration and Matrix Removal Using Field-Flow Fractionation Coupled to Inductively Coupled Plasma Mass Spectrometry", *Spectrochim. Acta, Part B*, 2001, **56**, 1951-1962.
- J. Shiowatana, K. Benyatian and A. Siripinyanond, "Determination of Cd, Co, Hg, and Ni in Seawater After Enrichment on Activated Carbon by Slurry Sampling Electrothermal AAS", *Atom. Spectrosc.*, 2000, **21**, 179-186.
- J. Shiowatana, A. Siripinyanond, Waiyawat W and Nilmanee S, "Determination of Total Mercury in Natural Gas Liquid and Condensate by Carbon Adsorption and Slurry Sampling ETAAS", *Atom. Spectrosc.*, 1999, **20**, 224-229.
- A. Siripinyanond and R. M. Barnes, "Flow Field-Flow Fractionation-Inductively Coupled Plasma Mass Spectrometry and Metal Speciation in Proteins: A Feasibility Study", *J. Anal. Atom. Spectrom.*, 1999, **14**, 1527-1531.

J. Shiowatana and A. Siripinyanond, "Rapid Determination of Cd in Flour by Electrothermal AAS Using the Slurry Technique", *Atom. Spectrosc.*, 1996, **17**, 122-127.

Charter in a textbook

R. M. Barnes and A. Siripinyanond, in "Advances in Atomic Spectroscopy", J. Sneddon, ed., Elsevier, Amsterdam, 2002, Vol. 7, pp.179-235.



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Research interest

- Development of flow-based systems including microfluidics for chemical analysis.
- Method development for iodine analysis.
- Investigation and application of kinetic determination methods.
- Remote sensing system for chemical analysis
- Phosphorus in soil and sediments: studies of continuous extraction and analytical method development.

Educations

1987 B.Sc. (Hons), Prince of Songkla University, Songkla, Thailand
1989 M.Sc.* (Anal. Chem.), Chiang Mai University, Chiang Mai, Thailand
1993 Ph.D.* (Anal. Chem.), Liverpool John Moores University, Liverpool, UK

* sponsored by the Thai government under "The Development and Promotion of Science and Technology Talents Project (DPST)"

Awards

- **First prize for research presentation** in "1992 Young Researchers' Meeting" held at the University of Salford, Manchester by the Radiochemical Methods Group, Analytical Division, **Royal Society of Chemistry, UK.**
- Topic: "Trapping of Radioiodine on Charcoal: Particles, Precision and Performance"
- **Second prize for research presentation** in "1991 Young Scientists" held at UMIST
- Manchester by Analytical Division, **Royal Society of Chemistry, UK.**
- Topic: Impregnant in a Segment : KI in C by FIA"
- **Outstanding presentation in the first postdoctoral research presentation 2000**, organized by the **Thailand Research Fund (TRF).**

- **Medal and certificate for "2003 JAFIA Best Article Award"** from the paper entitled "**Simple flow injection system for colorimetric determination of iodate in iodized table salt, *Talanta*, 58, 1195-1201 (2002)**". The award was given on the 6th November 2003 at Okayama University, Japan. This award is from The Japanese Association for Flow Injection Analysis (JAFIA), The Division of the Japanese Society for Analytical Chemistry
- **Outstanding Lecturer of the year 2005**, Faculty of Science, Mahidol University.

Selected of international publications

"Continuous and stopped flow injection for catalytic determination of total iodine in urine", **D. Nacapricha**, S. Muangkaew, N. Ratanawimarnwong, J. Shiowatana and K. Grudpan, *Analyst*, 126, 121-126(2001).

"A flow system for the determination of metal speciation in soil by sequential extraction", J. Shiowatana, N. Tantidanai, S. Nookabkeaw and **D. Nacapricha**, *Environ. Inter.*, 26, 381-387(2001).

"A novel continuous-flow sequential extraction procedure for metal speciation in solid", J. Shiowatana, N. Tantidanai, S. Nookabkaew and **D. Nacapricha**, *J. Environ. Qual.*, 30, 1195-1205(2001).

"A reverse-flow injection analysis method for the determination of dissolved oxygen in fresh and marine waters", S. Muangkaew, I. D. McKelvie, M. R. Grace, M. Rayanakorn, K. Grudpan, J. Jakmunee and **D. Nacapricha**, *Talanta*, 58, 1285-1291 (2002).

"Simple flow injection system for colorimetric determination of iodate in iodized salt", N. Choengchan, K. Uraisin, K. Choden, W. Veerasai, K. Grudpan and **D. Nacapricha**, *Talanta*, 58, 1195-1201(2002).

"Sequential extraction of phosphorus in soil and sediment using a continuous-flow system", W. Tiyaongpatana, P. Pongsakul, J. Shiowatana and **D. Nacapricha**, *Talanta*, 62(2004)765-771.

J. Shiowatana, N. Tantidanai, S. Nookarbkaew, R. Chomchoei, **D. Nacapricha** and P. Pongsakul "Development of a continuous-flow sequential extraction", *Soil and Fertilizer*. 25, 2-19 (2003), (in Thai).

"Use of pseudo-first order kinetics in flow injection for determination of trace inorganic iodine", N. Choengchan, K. Lukkanakul, N. Ratanawimarnwong, W. Waiyawat, P. Wilairat and **D. Nacapricha**, *Anal. Chim. Acta.*, 499, (2003)115-122.

"Simple and selective method for determination of iodide in pharmaceutical products by flow injection using iodine-starch reaction", **D. Nacapricha**, K. Uraisin, N. Ratanawimarnwong and K. Grudpan, *Anal. Bioanal. Chem.*, 378(2004) 816-821.

"Flow-injection determination of iodide ion in nuclear emergency tablets, using boron-doped diamond thin film electrode", O. Chailapakul, M. Amatongchai, P. Wilairat,

K. Grudpan and **D. Nacapricha**, *Talanta*, 64(2004)1253-1258.

“Determination of iodide by detection of iodine using gas-diffusion flow injection” and chemiluminescence N. Ratanawimarnwong, N. Amornthammarong^a, N. Choengchan, P. Chaisuwan, M. Amatatongchai, P. Wilairat, I.D. McKelvie, and **D. Nacapricha**, *Talanta*, 65(2005) 756-761.

“Determination of trace amounts of bromide by flow injection/stopped-flow detection technique using kinetic-spectrometric method”, K. Uraisin, **D. Nacapricha**, S. Lapanantnoppakhun, K. Grudpan and S. Motomizu, *Talanta*, 68(2005)274-280.

“Method development based on all injection analysis for determination of phosphorus in soil and sediment extracts” N. Amornthammarong, P. Anujaravat, K. Sereenonchai, P. Chaisuwan, P. Sastranurak, P. Wilairat and **D. Nacapricha**, *Talanta*, . 68(2005)480-487.



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Research interests

- Metallocene-based polymerization catalysis
- Nitrogen fixation
- Applications of NMR in chemistry and biology
- Metal-based drugs

Education

- **Ph.D. (Chemistry)**, August 2001, University of Wisconsin-Madison, U.S.A. **Mentor:** Prof. Clark R. Landis.
Dissertation: NMR-Based Solution Structures and Mechanisms of Metallocene Olefin Polymerization Catalysis.
- **B.Sc. (Chemistry) (First Class Honors)**, March 1994, Mahidol University, Bangkok, Thailand.

Honors/Affiliations

- Prof. Tab Nilaniti Outstanding Undergraduate Chemistry Student with Highest GPA Award (1994).
- Outstanding Undergraduate Chemistry Student with Highest GPA from Faculty of Science, Mahidol University, Bangkok, Thailand (1994).
- Outstanding Chemistry Student with Highest GPAX among 2nd and 3rd-Year Students from Faculty of Science, Mahidol University, Bangkok, Thailand (1992).
- Prof. Tab Nilaniti Outstanding 1st-Year Undergraduate Student with Highest GPA Award (1991).
- Outstanding Science and Mathematics Student of Thailand (1990 and 1991).
- Member of the Thai national team (1990) at the 22nd International Chemistry Olympiad in Paris, France. .
- The Development and Promotion of Science and Technology talent project scholar (1987-2001), Thailand.

Publications

- Kimmich, B. F. M.; **Somsook, E.**; Landis, C. R. "Oxidative Addition of Dihydrogen to [Ir(1,5-cyclooctadiene)(bisphosphine)]BF₄ complexes," *J. Am. Chem. Soc.* **1998**, *120*, 10115-10125.
- Landis, C. R.; Sawyer, R. A.; **Somsook, E.** "Synthesis and Characterization of a Chiral, Aza-15-Crown-5-Functionalized Ferrocenyldiphosphine Ligand for Asymmetric Catalysis," *Organometallics* **2000**, *19*, 994-1002.
- Liu, Z.; **Somsook, E.**; Landis, C.R. "A ²H-Labeling Scheme for Active Site Counts in Metallocene-Catalyzed Alkene Polymerization," *J. Am. Chem. Soc.* **2001**, *123*, 2915-2916.
- Liu, Z.; **Somsook, E.**; White, C. B.; Rosaaen, K. A.; Landis, C. R. "Kinetics of Initiation, Propagation, and Termination for the [(*rac*-C₂H₄(1-indenyl)₂)ZrMe][MeB(C₆F₅)₃]-Catalyzed Polymerization of 1-Hexene," *J. Am. Chem. Soc.* **2001**, *123*, 11193-11207.
- Somsook, E.**; Rujeeratanavorapan, V.; Pisitsak, P.; Suriyarak, S.; Prabpai, S.; Kongsaree, P.; Pohmakotr, M. "Crystal Structure of Hexaaquamagnesium(II) bis(hydrogen *cis*-9,10-dihydro-9,10-ethanoanthracene-11,12-dicarboxylate) dihydrate," *Z. Kristallogr. NCS* **2004**, *219*, 319-320.
- Somsook, E.**; Hinsin, D.; Buakhrong, P.; Teanchai, R.; Mophan, N.; Pohmakotr, M.; Shiowatana, J. "Interactions between iron(III) and sucrose, dextran, or starch in complexes" *Carbohydr. Polym.* **2005**, *61*, 281-287.
- Thammakan, N.; **Somsook, E.** "Synthesis and thermal decomposition of cadmium dithiocarbamate complexes" *Mater. Lett.* accepted.



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Research Interests

- Development of cost-effective instrumentation of flow based analysis and electroanalysis.
- Analytical method development based on flow based and electroanalysis for solving various local problems of Thailand.

Education

- B.S., Prince of Songkhla University, 1990
- Ph.D., Chiang Mai University, 1997

Honors and Awards

- Award for Outstanding Young Scientist of the Year 2003, by Foundation for the Promotion of Science and Technology under the Patronage of His Majesty the King

Representative Publications

Hartwell, S. K.; Srisawang, B.; Kongtawelert, P.; Jakmunee, J.; Grudpan, K. *Talanta* **2005**, *66*, 521-27.

Hartwell, S. K.; Boonmalai, A.; Jayasvati, S.; Lapanantnoppakhun, S.; Jakmunee, J.; Grudpan, K. *Analytical Sciences* **2005**, *21*, 437-39.

Jakmunee, J.; Pathimapornlert, L.; Hartwell, S. K.; Grudpan, K. *Analyst* **2005**, *130*, 299-303.

Lenghor, N.; Staggemeier, B. A.; Hamad, M. L.; Udnan, Y.; Tanikkul, S.; Jakmunee, J.; Grudpan, K.; Prazen, B. J.; Synovec, R. E. *Talanta* **2005**, *65*, 722-29.

Tue-Ngeun, O.; Ellis, P.; McKelvie, I. D.; Worsfold, P.; Jakmunee, J.; Grudpan, K. *Talanta* **2005**, *66*, 453-60.

- Udnan, Y.; McKelvie, I. D.; Grace, M. R.; Jakmunee, J.; Grudpan, K. *Talanta* **2005**, *66*, 461-66.
- Burakham, R.; Duangthong, S.; Patimapornlert, L.; Lenghor, N.; Kasiwad, S.; Srivichai, L.; Lapanantnoppakhun, S.; Jakmunee, J.; Grudpan, K. *Analytical Sciences* **2004**, *20*, 837-40.
- Tanikkul, S.; Jakmunee, J.; Lapanantnoppakhun, S.; Rayanakorn, M.; Sooksamiti, P.; Synovec, R. E.; Christian, G. D.; Grudpan, K. *Talanta* **2004**, *64*, 1241-46.
- Udnan, Y.; Jakmunee, J.; Jayasavati, S.; Christian, G. D.; Synovec, R. E.; Grudpan, K. *Talanta* **2004**, *64*, 1237-40.
- Ampan, P.; Ruzicka, J.; Atallah, R.; Christian, G. D.; Jakmunee, J.; Grudpan, K. *Analytica Chimica Acta* **2003**, *499*, 167-72.
- Grudpan, K.; Worakijcharoenchai, N.; Sooksamiti, P.; Jakmunee, J.; Christian, G. D. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical & Analytical Chemistry* **2003**, *42*, 2939-44.
- Jakmunee, J.; Udnan, Y.; Morrison, R.; Beckett, R.; McKinnon, I.; Grudpan, K. *Analytical Sciences* **2003**, *19*, 1495-98.
- Lenghor, N.; Grudpan, K.; Jakmunee, J.; Staggemeier, B. A.; Quigley, W. W. C.; Prazen, B. J.; Christian, G. D.; Ruzicka, J.; Synovec, R. E. *Talanta* **2003**, *59*, 1153-63.
- Srisawang, B.; Kongtawelert, P.; Hartwell, S. K.; Jakmunee, J.; Grudpan, K. *Talanta* **2003**, *60*, 1163-70.
- Tanikkul, S.; Jakmunee, J.; Rayanakorn, M.; Grudpan, K.; Marquardt, B. J.; Gross, G. M.; Prazen, B. J.; Burgess, L. W.; Christian, G. D.; Synovec, R. E. *Talanta* **2003**, *59*, 809-16.
- Ampan, P.; Lapanantnoppakhun, S.; Sooksamiti, P.; Jakmunee, J.; Hartwell, S. K.; Jayasvati, S.; Christian, G. D.; Grudpan, K. *Talanta* **2002**, *58*, 1327-34.
- Chantiwas, R.; Beckett, R.; Jakmunee, J.; McKelvie, I. D.; Grudpan, K. *Talanta* **2002**, *58*, 1375-83.
- Grudpan, K.; Ampan, P.; Udnan, Y.; Jayasvati, S.; Lapanantnoppakhun, S.; Jakmunee, J.; Christian, G. D.; Ruzicka, J. *Talanta* **2002**, *58*, 1319-26.
- Jitmanee, K.; Hartwell, S. K.; Jakmunee, J.; Jayasvasti, S.; Ruzicka, J.; Grudpan, K. *Talanta* **2002**, *57*, 187-92.
- Lenghor, N.; Jakmunee, J.; Vilen, M.; Sara, R.; Christian, G. D.; Grudpan, K. *Talanta* **2002**, *58*, 1139-44.
- Muangkaew, S.; McKelvie, I. D.; Grace, M. R.; Rayanakorn, M.; Grudpan, K.; Jakmunee, J.; Nacapricha, D. *Talanta* **2002**, *58*, 1285-91.

Suteerapataranon, S.; Jakmunee, J.; Vaneesorn, Y.; Grudpan, K. *Talanta* **2002**, *58*, 1235-42.

Tipparat, P.; Lapanantnoppakhun, S.; Jakmunee, J.; Grudpan, K. *Journal of Pharmaceutical and Biomedical Analysis* **2002**, *30*, 105-12.

Jakmunee, J.; Grudpan, K. *Analytica Chimica Acta* **2001**, *438*, 299-304.

Tipparat, P.; Lapanantnoppakhun, S.; Jakmunee, J.; Grudpan, K. *Talanta* **2001**, *53*, 1199-204.



Dr. Juwadee Shiowatana

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Research interest

- Analytical atomic spectroscopy, environmental analytical chemistry

Educations

- B.Eng (1973), Tokyo Institute of Technology, Japan (Mombusho Scholarship)
- M.Sc. (1975), Tokyo Institute of Technology, Japan (Mombusho Scholarship)
- Ph.D. (1986) (Analytical Chemistry), University of New South Wales, Australia (Columbo Plan scholarship).

Recent research grants awarded as principle investigator

Source	Research topic	Year
Petroleum Authority of Thailand	Development of determination method for mercury in natural gas liquid	1998-1999
Thailand Research Fund (TRF)	Development of novel continuous-flow sequential extraction for speciation of heavy metals in solid	1999-2003
UNICEF research grant	Develop a low-cost field test kit for arsenic at low levels	2000
National Science and Technology Development Agency(NSTDA)	Production of rice flour reference material for quality control of determination of trace metals	2000-2001
UNICEF research grant	Develop a low-cost test kit for arsenic	2002
Pollution Control Department	Develop field test kits for environmental testing	2002-2003
UNICEF research grant	Develop a low-cost test kit for water quality monitoring	2004
Pollution Control Department	Develop field test kits for environmental monitoring	2004
Thailand Research Fund (TRF)	Development and application of continuous systems for study of bioavailability of minerals and heavy metals	2004-2007

Recent International Publications

D.Nacapricha, S. Muangkaew, N. Ratanawimarnwong, **J. Shiowatana** and K. Grudpan, "Continuous and stopped flow injection for catalytic determination of total iodine in urine", *The Analyst*, **126**, 121-126 (2001).

D.Nacapricha, N. Ratanawimarnwong, S. Suwannachot, P. Wilairat, **J. Shiowatana** and K. Grudpan, "Kinetic determination of iodine in urine using stopped-flow injection for catalytic determination of total iodine in urine", *Analytical Sciences*, **17** Supplement, 133-136 (2001).

J. Shiowatana, N. Tantidanai, S. Nookarbkaew and D.Nacapricha "A flow system for the determination of metal speciation in soil by sequential extraction", *Environ.Intern.*, **26**, 381-387 (2001).

J. Shiowatana, N.Tantidanai, S. Nookarbkaew and D.Nacapricha "A novel continuous-flow sequential extraction procedure for metal speciation in solid materials", *J. Environ.Qual.*, **30**, 1195-1205 (2001).

J. Shiowatana, R.G. McLaren, N. Chanmekha and A. Samphao "Fractionation of arsenic in soils by a continuous-flow sequential extraction", *J. Environ.Qual.*, **30**, 1940-1949 (2001).

D.Hinsin, L.Pdungsap and **J. Shiowatana** "Continuous-flow extraction system for elemental association study: a case of synthetic metal-doped iron hydroxide", *Talanta*, **58**, 1365-1373 (2002).

R. Chomchoei, **J. Shiowatana** and P. Pongsakul "A continuous-flow system for reduction of metal readsorption during sequential extraction of soil", *Anal. Chim.Acta*. **472**, 147-159 (2002).

C. W. Gray, R. G. McLaren and **J. Shiowatana** "The determination of labile cadmium in some biosolids-amended soils by isotope dilution plasma mass spectrometry", *Aust. J. Soil Res.* **41**, 589-597 (2003).

Gray CW, McLaren RG, **Shiowatana J.** "The determination of labile cadmium in some biosolids-amended soils by isotope dilution plasma mass spectrometry" *Aust. J. Soil Res.* **41**: 589-597 (2003).

W.Tiyapongpatana, **J.Shiowatana**, P.Pongsakul and D. Nacapricha, "Sequential extraction of phosphorus in soil and sediment using a continuous-flow system" *Talanta*, **62**, 765-771 (2004).

N. Tongtavee, **J. Shiowatana**, R.G. McLaren and C.W. Gray, "Assessment of lead availability in contaminated soil using isotope dilution techniques" *The Sc. Tot. Environ.*, in press.

N. Tongtavee, **J. Shiowatana** and R.G. McLaren, "Evaluation of association of Co and Mn in soil samples by continuous-flow sequential extraction" *Commun. Soil Sci Plant*, in press.

Chomchoei R, Hansen EH, **Shiowatana J** , "Utilizing a sequential injection system furnished with an extraction microcolumn as a novel approach for executing sequential extractions of metal species in solid samples", *Anal. Chim. Acta.* 526, 177-184 (2004).

Shitangkoon A, Yanchinda J, **Shiowatana J**. "Thermodynamic study on the gas chromatographic separation of the enantiomers of aromatic alcohols using heptakis(2,3-di-O-methyl-6-O-tert-butyl-dimethylsilyl)-beta-cyclodextrin as a stationary phase" *J. Chromatography A* 1049: 223-226 (2004).

Chomchoei R, Hansen EH, **Shiowatana J** , " Utilizing a sequential injection system furnished with an extraction microcolumn as a novel approach for executing sequential extraction of metal species in solid samples" *Anal.Chim.Acta*, 526: 177-184 (2004) .

Chomchoei R, Miro M, Hansen EH, **Shiowatana J** , " Sequential injection system incorporating a micro-extraction column for automatic fractionation of metal ions in solid samples. Comparison of the extraction profiles when employing uni, bi, and multi-bi-directional flow plus stopped-flow sequential extraction modes" *Anal.Chim.Acta*, 536: 183-190 (2005).

Chomchoei R, Miro M, Hansen EH, **Shiowatana J** , "Automatic sequential injection-microcolumn approach with online flame atomic absorption spectrometric detection for implementing metal fractionation schemes of homogeneous and nonhomogeneous solid samples of environmental interest" *Anal.Chem*, 77:2720-2726 (2005).

Janya Buanuam, Juwadee Shiowatana and Pichit Pongsakul, Fractionation and elemental association of Zn Cd and Pb in soils contaminated by Zn minings using a continuous-flow sequential extraction, **J. Environ. Monitoring**, 7(7): 778-784 (2005).

Namfon Tongtavee, Juwadee Shiowatana, Ron McLaren and Colin Gray, Assessment of lead availability in contaminated soils using isotope dilution techniques, **Sc. Total Environ.**, 348: 244-256 (2005).

Namfon Tongtavee, Juwadee Shiowatana and Ron McLaren, Fractionation of lead in soils affected by smelter activities using a continuous-flow sequential extraction system, **Intern J Environ Anal Chem**, 85(8): 567-583 (2005).

Juwadee Shiowatana, Wutthika Kitthikhun, Upsorn Sottimai, Jeerawan Promchan, Kanokwan Kunajiraporn, Dynamic continuous-flow dialysis method for in vitro simulation of gastrointestinal digestion to predict mineral bioavailability of food, **Talanta**, in press.

Jeerawan Promchan and Juwadee Shiowatana, A dynamic continuous-flow dialysis system with online electrothermal atomic absorption spectrometric and pH measurements for in vitro determination of iron bioavailability by simulated gastrointestinal digestion, **Anal Bioanal Chem.**, 382: 1360-1367 (2005).

Kanchit Judprasong, Mathuros Ornthai, Atitaya Siripinyanond and Juwadee Shiowatana, A continuous-flow dialysis system with online inductively coupled plasma optical emission spectrometric detections for in vitro estimation of bioavailability, **J.Anal Atom.Spectrom.**,20(11): 1191-1196 (2005).

Patents

- Thailand, Device and method for field testing of arsenic, pending
- Thailand, Gas trapping device for gas detection, pending

Products

- Arsenic field test kit for water at low level detection
- Field test kits for water quality monitoring



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Research Interests

- Optimization of chromatographic parameters for analytical applications
- Applications of modern chromatography-mass spectrometry

Educational Background

- | | |
|------|---|
| 1966 | High School Diploma, Eisenhower High School, Rialto, California, U.S.A. |
| 1967 | Upper Secondary Education Certificate, The Prince Royal's College, Chiang Mai, Thailand |
| 1972 | B.S. (Chemistry), Chiang Mai University, Chiang Mai, Thailand |
| 1975 | M.Sc. (Analytical Chemistry), University of Salford, U.K. |
| 1980 | Ph.D. (Chemistry), University of Wales Swansea, U.K. |

Selected publications

R. Karnka, M. Rayanakorn*, S. Watanesk and Y. Vaneesorn, "Optimization of High Performance Liquid Chromatographic Parameters for the Determination of Capsaicinoid Compounds Using the Simplex Method", *Anal. Sci.*, 18 (2002)1.

S. Muangkaew, I. D. McKelvie, M. R. Grace, M. Rayanakorn, K. Grudpan, J. Jakmunee and D. Nacapracha, "A Reverse-Flow Injection Analysis Method for the Determination of Dissolved Oxygen in Fresh and Marine Waters", *Talanta*, 58 (2002) 1285.

S. Tanikkul, J. Jakmunee, M. Rayanakorn, K. Grudpan, B.J. Marquardt, G.M. Gross, B. Prazewn, L.W. Burgess, G.D. Christian, R.E. Synovec, "Characterization and Use of a Raman Liquid-Core Waveguide Sensor Using Preconcentration Principles", *Talanta*, 59 (2003) 809.

K. Kuppathayanant, M. Rayanakorn, S. Wongpornchai, T. Prapamontol, R'L' Deming, "Enhanced Sensitivity and Selectivity in the Detection of Polycyclic Aromatic Hydrocarbons Using Sequential Simplex Optimization, the Addition of an Organic Modifier and Wavelength Programming", *Talanta*, 61 (2003) 879.

S. Tanikkul, J. Jakmunee, S. Lapanantnoppakhun, M. Rayanakorn, P. Sooksamiti, R.E. Synovec, G.D. Christian, K. Grudpan, "Flow Injection In-valve-mini-column Pretreatment Combined with Ion Chromatography for Cadmium, Lead and Zinc Determination", *Talanta*, 64 (2004) 1241.

Sunanta Wangkarn, Phimpha Soisungnoen, Mongkon Rayanakorn and Kate Grudpan "Determination of Linear Alkylbenzene Sulfonates in Water Samples by Liquid Chromatography-UV Detection and Confirmation by Liquid Chromatography-Mass Spectrometry" *Talanta*, 58, (2005), 686.



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Research interest

- Development of electrochemical methods
- Diamond Sensor
- Chemical and Biosensor
- Lab on chip

Education

- 1994 Ph.D. (Analytical Chemistry), The University of New Mexico, U.S.A
- 1985 M.Sc. (Analytical Chemistry), Chulalongkorn University, Thailand
- 1981 B.Sc. (Chemistry), Mahidol University, Thailand

Scholarship and Awards:

- Rachadapiset award
- ทุนวิจัยหลังปริญญาเอก
- ทุนพัฒนานักวิจัย (เมธีวิจัย สกว.)

Selected publications:

Treetepvijit, S.; Chuanuwatanakul, S.; Einaga Y.; Sato, R and Chailapakul, O
Electroanalysis of tetracycline using nickel-implanted boron-doped diamond thin film electrode applied to flow injection system *Analytical Sciences*, **2005**, *21*, 531.

Kanokporn, B.; Chuanuwatanakul, S.; Wangfuengkanagul, N and Chailapakul, O.;
Electroanalysis of lincomycin using boron-doped diamond thin film electrode applied to flow injection system *Sensors and Actuators B: Chemical*, **2005**, *108*, 627.

Charoenraks, T.; Chuanuwatanakul, S.; Honda, K.; Yamaguchi, Y.; and Chailapakul, O.; Analysis of Tetracycline Antibiotics Using HPLC with Pulsed Amperometric Detection *Analytical Sciences*, **2005**, *21*, 241.

Chailapakul, O.; Amatatongchai, M.; Wilairat, P.; Grudpan, K. and Nacapricha, D. Flow-injection determination of iodide ion in nuclear emergency tablets, using boron-doped diamond thin film electrode *Talanta*, **2004**, *64*, (5), 1253-1258.

Wangfuengkanagul, N.; Siangproh, W.; Chailapakul, O., Electrochemical analysis of Tetracycline using an Anodized boron-doped diamond thin film electrode. *Talanta* **2004**, *64*, (5), 1183-1188

Charoenraks, T.; Palaharn, S.; Siangproh, W.; Grudpan, K.; Chailapakul, O., Flow injection analysis of Doxycycline, Chlorotetracycline in pharmaceutical formulation with pulsed amperometric detection. *Talanta* **2004**, *64*, (5), 1247-1252.

Palaharn, S.; Charoenraks, T.; Wangfuengkanagul, N.; Grudpan, K. and Chailapakul, O. "Flow injection analysis of tetracycline in pharmaceutical formulation with pulsed amperometric detection." *Anal Chim Acta* **2003**, *499*(1-2), 191-197.

Siangproh, W.; Ngamukot, P. and Chailapakul, O. "Electrochemical determination of captopril at boron-doped diamond thin film electrode applied to a flow injection system." *Sensors and Actuators B-Chemical* **2003**, *91*(1-3), 60-66.

Siangproh, W.; Wangfuengkanagul, N. and Chailapakul, O. "Electrochemical oxidation of tiopronin at diamond film electrodes and its determination by amperometric flow injection analysis." *Anal Chim Acta* **2003**, *499*(1-2), 183-189.

Sukwattanasinitt, M.; Nantalaksakul, A.; Potisatityuenyong, A.; Tuntulani, T.; Chailapakul, O. and Praphairakait, N. "An electrochemical sensor from a soluble polymeric Ni-salen complex." *Chemistry of Materials* **2003**, *15*(23), 4337-4339.

Tantrakarn, K.; Ratanatawanate, C.; Pinsuk, T.; Chailapakul, O. and Tuntulani, T. "Synthesis of redox-active biscalix 4 quinones and their electrochemical properties." *Tetrahedron Letters* **2003**, *44*(1), 33-36.

Tomapatanaget, B.; Tuntulani, T. and Chailapakul, O. "Calix 4 arenes containing ferrocene amide as carboxylate anion receptors and sensors." *Organic Letters* **2003**, *5*(9), 1539-1542.

Chailapakul, O.; Siangproh, W.; Sarada, B.V.; Terashima, C.; Rao, T.N.; Tryk, D.A. and Fujishima, A. "The electrochemical oxidation of homocysteine at boron-doped diamond electrodes with application to HPLC amperometric detection." *Analyst* **2002**, *127*(9), 1164-1168.

Wangfuengkanagul, N. and Chailapakul, O. "Electrochemical analysis of D-penicillamine using a boron-doped diamond thin film electrode applied to flow injection system." *Talanta* **2002**, *58*(6), 1213-1219.

Wangfuengkanagul, N. and Chailapakul, O. "Electrochemical analysis of acetaminophen using a boron-doped diamond thin film electrode applied to flow injection system." J of Pharm and Bio **2002**, 28(5), 841-847.

Chailapakul, O.; Aksharanandana, P.; Frelink, T.; Einaga, Y. and Fujishima, A. "The electrooxidation of sulfur-containing compounds at boron-doped diamond electrode." Sensors and Actuators B-Chemical **2001**, 80(3), 193-201.



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Education

B.Sc. (1972) [Chemistry], Chulalongkorn University, Bangkok

M.Sc. (1974) [Physical Chemistry], Chulalongkorn University, Bangkok

Ph.D. (1980) [Analytical Chemistry], The Queen's University of Belfast, N-Ireland.

Post-Doctoral Training (1982-1984), Alexander von Humboldt Fellow, Paderborn University, Federal Republic of Germany

Fellowship/Grants/Awards:

1982 - 1984 Alexander von Humboldt Stiftung

1982-84 Alexander von Humboldt Stiftung

1990 Alexander von Humboldt Stiftung

1997 University Development Program, Ministry of University Affairs

1998 Alexander von Humboldt Stiftung Kasetsart University Research and Development

1989 Outstanding Scientific Research Award in 27th Kasetsart University Conference, Bangkok, Thailand.

2002 Kasetsart University Research and Development

Selected publications

Confirmatory determination of organochlorine pesticides in surface waters using LC/APCI/Tandem mass spectrometry, S. Chusaksri, S. Sutthivaiyakit and P. Sutthivaiyakit, *Anal. Bioanal. Chem.*, *in press*.

LC-MS/MS Method for the Confirmatory Determination of Aromatic Amines and Its Application in Textile Analysis, P. Sutthivaiyakit, S. Achatz, J. Lintelmann, T. Aungpradit, R. Chanwirat, S. Chumanee and A. Kettrup, *Anal Bioanal Chem*, **381**, 268-276(2005)

Constituents of The Leaves of *Macaranga tanarius*", Phommart, P. Sutthivaiyakit, N. Chimnoi, S. Ruchirawat, and S. Sutthivaiyakit *J. Nat. Prod*, **68**, 927-930.,(2005).

A novel 29-*nor*-3,4-*seco*-friedelane triterpene and a new guaiane sesquiterpene from the roots of *Phyllanthus oxyphyllus*" S. Sutthivaiyakit, N. Na Nakorn, W. Kraus and P. Sutthivaiyakit " *Tetrahedron* , **59**, 9991, (2003).

Diterpenylated and prenylated flavonoids from *Macaranga denticulata*, S. Sutthivaiyakit, S. Unganont, P. Sutthivaiyakit, A. Suksamran, *Tetrahedron* **58**, 3619(2002).

Sulphur Dioxide Indicator Tube Using Copper (II) Complex of 1-[5'-nitro-2'-Thiazolyl]azo]-2-naphthol, P. Sutthivaiyakit and N. Nittitham, *Fresenius Envir. Bull* **9**, 152 (2000).

Book:

"Quantitative Chemical Analysis" and "Compleximetric Titration" Pakawadee Sutthivaiyakit in (14 pages) "Quantitative Chemical Analysis Laboratory", Chemistry Department, Kasetsart University, 1999 [in Thai].



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Research interest

- Biosensors
- Biocurrents: The role of bioelectricity in plant development

Education

- B.Sc. (Physics), 1978, University of Waikato, Hamilton, New Zealand
- M.Sc. (Physics (Biophysics)) (First Class Honours), 1980, University of Waikato, Hamilton, New Zealand (under the supervision of Dr Robert A. Sherlock)
- D.Phil. (Physics (Biophysics)), 1985, University of Waikato, Hamilton, New Zealand (under the supervision of Dr Robert A. Sherlock)

Awards

- Taguchi Prize for Outstanding Research Achievements by a Young Scientist in the Field of Biotechnology. Awarded by the Foundation for the Promotion of Biotechnology (FPB) in Thailand (TAGUCHI FUND), 1998.
- Faculty of Science Outstanding Lecturer in Research, 2003.
- Prince of Songkla University Exemplary Lecturer in Research, 2003.
- Faculty of Science Outstanding Lecturer in Teaching, 2005.

Selected publications

S. Suwansa-ard, P. Kanatharana, P. Asawatreratanakul, C. Limsakul, B. Wongkittisuksa and **P. Thavarungkul**, Semi disposable reactor biosensors for detecting carbamate pesticides in water. *Biosensors and Bioelectronics*, 2005, **21**, 445-454.

J. Jantra, H. Zilouei, J. Liu, B. Guieysse, **P. Thavarungkul**, P. Kanatharana and B. Mattiasson, Microbial biosensor for the analysis of 2,4-dichlorophenol. *Analytical Letters*, 2005, **38**, 1071-1083.

C. Thammakhet, **P. Thavarungkul**, R. Brukh, S. Mitra and P. Kanatharana, Microtrap modulated flame ionization detector for on-line monitoring of methane. *Journal of Chromatography A*, 2005, **1072**, 243-248.

W. Limbut, **P. Thavarungkul**, P. Kanatharana, P. Asawatratanakul, C. Limsakul and B. Wongkittisuksa, Comparative study of controlled pore glass, silica gel and Poraver[®] for the immobilization of urease to determine urea in a flow injection conductimetric biosensor system. *Biosensors and Bioelectronics*, 2004, **19**, 813-821.

P. Thavarungkul, C. Muangdit and K. Sunbhanich, Ionic currents associated with primary root growth of sunflower seedlings and the effect of external pH. *ScienceAsia*, 2003, **29**, 265-274.



Dr. Pornanong Aramwit

Pharm.D, Ph.D.

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Research interests

Formulation Development

Develop the injectable formulation for:
Eplerenone Solution for Intravenous Injection (Anti-hypertensive agent).
Parecoxib Suspension for Sustained-Release Intramuscular Injection (Cox-II Inhibitor).
A-2 Peptides Solution for Intravenous Injection (Anticancer Agent).
SU-5416 Suspension/Solution for Intramuscular Injection (Anticancer Agent).

Analytical

Evaluating the aggregation state, stability and solubility of Polyene Macrolides, using UV/VIS, Fluorescence spectrophotometry, and High performance liquid chromatography (HPLC).

Evaluated the dissolution (USP dissolution apparatus) and stability (HPLC) of anti-seizure formulations.

Evaluated the chemical stability of liposomal formulations of Topotecan and intravitreal injections of ganciclovir using UV/VIS and HPLC.

Have expertise on Gel and paper Chromatography, Gel electrophoresis, Ultrafiltration, Ultracentrifugation, Transmission electron microscopy, Circular dichroism, and Coulter counter.

Pharmacokinetics

Evaluated the distribution of Polyene Macrolides in blood components, as well as their toxicity, half-life, organ distribution and disposition in rats.

Responsible Care and Use of Laboratory Animals course and was certified, University of Wisconsin-Madison.

Intravenous Administration Plasma compatibility study of SU-5416 (anticancer drug) NanoCrystal Colloidal Suspension.

Evaluation of serum albumin utilization in in-patient at Payathai 2 hospital.

Computer Completed Information Systems course, Chulalongkorn University.
Advanced training from Abbott Laboratories, covering a variety of computer programs, word processing, spreadsheet, data analysis, and statistics on a variety of operating systems.

Others Tablet and capsule manufacturing, dissolution apparatus, familiar with cGMP, Sterile techniques and biological techniques including cell culture, and protein purification.

Education

1995 to 2001 Ph.D. in Pharmaceutical Sciences, University of Wisconsin-Madison, USA.
1993 to 1995 Doctor of Pharmacy (Pharm.D.), University of Illinois-Chicago, USA.
1986 to 1992 B.S. in Pharmacy, Chulalongkorn University, Bangkok, Thailand (Honors).

Patent

P. Aramwit and H. Qi, Storage Stable Eplerenone Formulation, Pub. App. No. 20040072797, United States of America.

Award and Recognition

- Article and Abstract Selection Committee, AAPS Organization for Pharmaceutical Research Journal and Pharm Sci Journal, 2000-2001.
- Research Grant from Pharmacia-Upjohn Corporation, Kalamazoo, MI, USA, June 2000-September 2001.
- Research Assistantship, Graduated School Department, University of Wisconsin-Madison, Madison, Wisconsin, USA June 1997-October 2000.
- National Institute of Health (NIH) with Dr. Glen S. Kwon, University of Wisconsin-Madison, Madison, Wisconsin, USA June 1999-August 2000.
- Vilas Professional Development Fellowship, Graduate Student Council, University of Wisconsin-Madison, Madison, Wisconsin, USA May 1999.
- Scholarship from Kinetana Inc, Edmonton, Alberta, Canada, 1998.

- Travel Grant from Controlled Release Society, Inc. for the 25th International Symposium on Controlled Release of Bioactive Materials, Las Vegas, Nevada, USA June 1998.
- Teaching Assistantship, Graduated School Department, University of Wisconsin-Madison, Madison, Wisconsin, USA September 1995-May 1997.
- Scholarship in Clinical Pharmacy from Thai Government, Bangkok, Thailand, 1993.
- Scholarship in Immunology from the Government of Pharmaceutical Organization (GPO), Bangkok Thailand, 1993.
- Academic Honor from Chulalongkorn University, Bangkok, Thailand, 1992.

Selected publications

Book

A. Hemajudha, P. Aramwit. Vertigo-Dizziness, 2002. Printing Place, Bangkok, Thailand.

T. Wattanavijitkul, P. Aramwit. Medical Internet Handbook, 2004. Printing Place, Bangkok, Thailand

Selected articles

P. Aramwit, X. Liu, X. Cong, L. Lam and Y. Cao, Biospecific Antibodies as Emerging Pharmaceuticals for Tumor Immunotherapy, *Drugs of the Future*. 2005 Oct 30(10).

P. Aramwit and N. Kasettratrat, Evaluation of Serum Albumin Utilization in Inpatient at a Private Hospital in Bangkok, *Yakugaku Zasshi*. 2004 Sep 124(9): 631-634.

P. Aramwit and S. Assawawitoontip, Evaluation of Patient Counseling on Blood Pressure Control of Out-Patients with Hypertension at Chulalongkorn Hospital, *J. Med. Assoc. Thai* . 2003 Jun 86 Suppl 2: S 496-500.



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Research interest

- Ultra-trace and Trace Analysis
- Develop of the Sensors for medical, industries and environmental application.

Educations

- B. Sc. (Chemistry), 1971, Chulalongkorn University, Thailand
- M.S. (Analytical Chemistry), 1973, Saint Joseph's University, Philadelphia, Pennsylvania, U.S.A.
- Ph.D.(Analytical Chemistry), 1982, Villanova University, Villanova, Pennsylvania, U.S.A.

Award

- Faculty of Science, Prince of Songkla University Exemplary Lecturer in Research, 2002.

Selected publications

Chongdee Thammakhet, Panote Thavarungkul, Roman Brukh, Somenath Mitra and **Proespichaya Kanatharana** (2005). Microtrap Modulated Flame Ionization Detector for On-Line Monitoring of Methane. *J. Chromatography A*, 1072, 243-248.

Siriwan Suwansa-ard, **Proespichaya Kanatharana**, Punnee Asawatreratanakul, Chusak Limsakula, d, Booncharoen Wongkittisuksaa, d, Panote Thavarungkul, (2005). Semi disposable reactor biosensors for detecting carbamate pesticides in water. *Biosensors and Bioelectronics*, 21, 445-454.

Jongjit Jantra, Hamid Zilouei, Jing Liu, Benoit Guieysse, Panote Thavarungkul, **Proespichaya Kanatharana** and Bo Mattiasson (2005). Microbial Biosensor for the analysis of 2, 4-dichlorophenol. *Analytical Letters*, 38 (7), 1071-1084.

Chiraporn Chaibundit, Panita Sumanatrakul, Supaporn Chinchew, **Proespichaya Kanatharana**, Carin E. Tattershall, Colin Booth and Xue-Feng Yuan (2005). Associate properties of diblock copolymer of ethylene oxide and 1,2-butylene oxide: E₁₇B₁₂ in aqueous solution. *J. Colloid and Interface Science*, 283, 544-554.

Limbut W, Thavarungkul P, **Kanatharana P**, Asawatreratanakul P, Limsakul C and Wongkittisuksa B. (2004). Comparative study of controlled pore glass, silica gel and Poraver^R for immobilization of urease to determine urea in a flow injection conductimetric biosensors system. *Biosensors and Bioelectronics*, 19, 813 – 821.

Textbook

- **Kanatharana, P.** (1983). Gas Chromatographic Analysis In Soil Chemistry Chromatographic Analysis of Environment, 2nd., Edition, Grob, R.L., Editor Marcel Dekker, Inc., New York.
- **Kanatharana, P.** (1984). Course Notes :Gas Liquid Chromatography. Thai Unique Co., Bangkok, Thailand.
- **Kanatharana, P.** (1983). Theory of Gas Chromatography. Odean Store Printing Ltd., Bangkok, Thailand (in Thai).
- **Kanatharana P**, Matsubara T (eds.) (1998). DIWPA (Diveristas Western Pacific and Asia): 3rd. International Field Biology, Thailand.



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Research interest

- Analytical Chemistry (electroanalytical chemistry , separation techniques etc.)
- Automated analysis (especially flow injection analysis, FIA, SIA)
- Development of novel low-cost instrumentation.
- Environmental /analysis.
- Pharmaceutical analysis.
- Instrumentation with specially designed automated systems.
- Intelligence analytical tools.
- Lab-on-a-chip.
- Natural product chemistry.
- Chemical / biosensors.
- New ceramics.

Education

- B.S. [Chemistry], Chiang Mai University, Chiang Mai, Thailand
- M.Sc.[Analytical Chemistry], The University of Birmingham, U.K.
- Ph.D.[Analytical Chemistry], The University of Birmingham, U.K.
- Post-Doctoral Training at The University of London, U.K.
- Post-Doctoral Training at The University of Tasmania, Australia.

Selected International Publications

C. Thongpoon, S. Liawruangrath, B. Liawruangrath, R. Alan Wheatley, A. Townshend, "Flow Injection Chemiluminescence Determination of Cephalosporins in Pharmaceutical Perparations using Tris (2,2'-bipyridyl) ruthenium (II)- Potassium permanganate system" *Anal. Chim.Acta.* 553, 2005, 123.

- A. Townshend, W. Ruengsitagoon, C. Thongpoon, **S. Liawruangrath**, "Flow Injection Chemiluminescence determination of tetracycline" *Anal. Chim. Acta.* 541, 2005, 105.
- J. Makchit, S. Kruanetr, P. Prasertgitwatana, T. Lelasattarathkul, **S. Liawruangrath**, S. Upalee, W. Oungpipat, "An Inexpensive Sequential Injection Analyser for Analytical Laboratory" *Instrumentation Science & Technology*, 33, 2005, 565.
- S. Liawruangrath**, J. Makchit, W. Sirisungworawong and B. Liawruangrath, "A Simple Flow Injection Spectrophotometric Procedure for Determination of Diazepam in Pharmaceutical Formulation", *Anal. Sci.*, 2006 (In Press).
- S. Liawruangrath**, B. Liawruangrath, S. Wattanesk, W. Ruengsitagoon, "Flow Injection Spectrophotometric Determination of Tetracycline in a Pharmaceutical Preparation by Complexation with Aluminum (III)", *Anal. Sci.*, 2006 (In Press).
- C. Thongpoon, **S. Liawruangrath**, B. Liawruangrath, R. Alan Wheatley, A. Townshend, "Flow Injection Chemiluminescence Determination of cefadroxil Using Potassium Permanganate and Formaldehyde System", *J. Pharm. Biomed. Anal.*, 2006 (accepted).
- W. Ruengsitagoon, **S. Liawruangrath**, A. Townshend, "Flow Injection Chemiluminescence Determination of Paracetamol" *Talanta*, 2006 (accept).
- N. Pisutthanan, **S. Liawruangrath**, B. Liawruangrath, J.B. Bremner, "A New Flavonoid from *Chromolaena odorata*", *Natural Product Research*, 2006 (accepted).
- N. Pisutthanan, **S. Liawruangrath**, B. Liawruangrath, J.B. Bremner, "Composition and Antituberculosis Activity of the Volatile Oil of *Heliotropium indicum* Linn. Growing in Phitsanulok Thailand", *Flavor and Fragrance Journal*, 2006 (accepted).
- N. Pisutthanan, **S. Liawruangrath**, B. Liawruangrath, A. Baramsee, A. Apisariyakul, J. Korth, J.B. Bremner, "Constituents of the Essential Oil from Aerial Parts of *Chromolaena odorata*", *Natural Product Research*, 2006 (accepted).



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Research interests

- Fourier Transform Infrared Spectroscopy
- Surface Plasmon Resonance and Surface Plasmon Fluorescence Spectroscopy
- Computer Programming on Optical Theory for Solving Spectroscopic Problems

Educations

- **Ph.D. (Polymer Science and Engineering, 1996)** Case Western Reserve University, USA
- **M.Eng. (Polymer Technology, 1992)** Chulalongkorn University, THAILAND
- **B.Sc. (Chemistry, 1989)** Chulalongkorn University, THAILAND

Professional Experience and Training

2005 - Present: Associate Professor, Chulalongkorn University
 2000 - 2005: Assistant Professor, Chulalongkorn University
 1998 - 2000: Lecturer, Chulalongkorn University
 2003 - 2004: Alexander von Humboldt Research Fellow at Max-Planck-Institut für Polymerforschung, Mainz, Germany
 1997 - 1998: Researcher, Thailand Institute for Science and Technology Research
 1996 - 1997: Postdoctoral Research Fellow, University of Essen, Germany
 1996: Postdoctoral Research Fellow, Case Western Reserve University, USA

Scholarship and Research Awards:

2006: **Innovation Awards**
 the National Research Council of Thailand
 2005: **Research Award in Chemistry and Pharmacy**
 the National Research Council of Thailand
 2005: **Outstanding Research Awards**
 Chulalongkorn University
 2005: **Innovation Awards**
 the National Research Council of Thailand

2005 - 2008:	TRF Basic Research Grant the Thailand Research Fund
2003 - 2004:	Alexander von Humboldt Research Fellow Alexander von Humboldt Foundation, Germany
2002 - 2005:	TRF Research Career Development Grant the Thailand Research Fund
2000:	Research Award in Chemistry and Pharmacy the National Research Council of Thailand
1999:	1999 Young Scientist Awards Foundation for the Promotion of Science and Technology under the Patronage of His Majesty the King
1999:	Science and Technology Research Awards Thailand Toray Science Foundation

Book

S. Ekgasit and H. Ishida, *Depth Profiling by ATR In: Handbook of Vibrational Spectroscopy*, Chalmers, J. M and Griffiths, P. R., Eds., (John Wiley & Sons, 2001), pp. 1508-1520.

Selected publications

S. Ekgasit and A. Padermshoke, *Optical Contact in ATR FT-IR Spectroscopy*, Appl. Spectrosc. **55**, 1352 (2001).

J. Vongsvivut, S. V. Shilov, **S. Ekgasit**, and M. S. Braiman, *Symmetrically-Tapered < 30- μ m-thick Quasi Planar Ge Waveguides as Chemical Sensors for Microanalysis*, Appl. Spectrosc. **56**, 1552 (2002).

S. Ekgasit, C. Thammacharoen, and W. Knoll, *SPR Based on Evanescent Field Treatment*, Anal. Chem. **76**, 561 (2004).

S. Ekgasit, C. Thammacharoen, F. Yu, and W. Knoll, *Evanescent Field in Surface Plasmon and Surface-Plasmon Field-Enhanced Spectroscopies*, Anal. Chem. **76**, 2210 (2004).

S. Ekgasit, G. Stengel, and W. Knoll, *Concentration of Dye-Labeled Nucleotides Incorporated into DNA Determined by SPR-SPFS Biosensor*, Anal. Chem. **76**, 4747 (2004).

J. Vongsvivut, Shilov, **S. Ekgasit**, and M. S. Braiman, *Characterization of <30 μ m-thick Symmetrical Tapered Ge Waveguides with Synchrotron IR Radiation*, Appl. Spectrosc. **58**, 143 (2004).

A. Padermshoke, Y. Katsumoto, H. Sato, **S. Ekgasit**, I. Noda, and Y. Ozaki, *Surface Melting and Crystallization Behavior of Polyhydroxyalkanoates Studied by Attenuated Total Reflection Infrared Spectroscopy*, Polymer **45**(19), 6547 (2004).

A. Padermshoke, H. Sato, Y. Katsumoto, **S. Ekgasit**, I. Noda, and Y. Ozaki, *Crystallization Behavior of Poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) Studied by 2D IR Correlation Spectroscopy*, Polymer **45**(21), 7159 (2004).

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- P. Thongnopkun and **S. Ekgasit**, *FT-IR Spectra of Diamonds and Diamond Simulants*, *Diam. Relat. Mater.* **14**, 1592 (2005).
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Research Interest:

- Developments of Food and Pharmaceutical Analysis by Flow-based Techniques

Education:

- Ph.D. (Chemistry), Chiang Mai University, Thailand, 2001

Research Grants:

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- The Commission on Higher Education (CHE), 2004-2006

Publications:

Tipprat, P., Lapanantnoppakhun, S., Jakmunee, J. and Grudpan, K., Determination of Ethanol in Liquor by Near-infrared Spectrophotometry with flow injection. *Talanta*, 53 (2001) 1199.

Tipprat, P., Lapanantnoppakhun, S., Jakmunee, J. and Grudpan, K., Determination of Diphenhydramine Hydrochloride in Pharmaceutical Preparations by Flow Injection Spectrophotometry, *J. Pharm. Biomed.*, 30 (2002) 105.

Ampan, P., Lapanantnoppakhun, S., Jakmunee, J., Kradtap Hartwell, S., Christian, G.D., and Grudpan, K., Determination of Trace Iron in Beer Using Flow Injection Systems with In-valve Column and Bead Injection, *Talanta*, 58 (2002) 1327.

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and Sequential Injection Determination of Paracetamol in Pharmaceutical Preparations using Nitrosation Reaction, *Analytical. Sci.*, 20 (2004) 837.

Tanikkun, S., Jakmunee, J., Lapanantnoppakhun, S., Rapanakron, M., Sooksamiti, P., Synovec, R.E. , Christian, G.D. , and Grudpan, K., Flow Injection In-valve-mini-column Pretreatment Combined with Ion Chromatography for Cadmium, Lead and Zinc Determination, *Talanta*, 64 (2004) 1241.

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Settheeworrit, T., Hartwell, S.K., Lapanantnoppakhun, S., Jakmunee, J., Christian , G.D., and Grudpan, K., Exploiting Guava Leaf Extract as an Alternative Natural Reagent for Flow Injection Determination of Iron, *Talanta*, 68 (2005) 262.

Uraisin, K., Nacapricha, D., Lapanantnoppakhun, S., Grudpan, K., and Motomizu, S., Determination of Trace Amounts of Bromide by Flow Injection/Stopped-flow Determination Techniques Using Kinetic-spectrophotometric Method, *Talanta*, 68 (2005) 274.

Burakhum, R., Lapanantnoppakhun, S., Jakmunee, J., and Grudpan, K., Exploiting Sequential Injection Analysis with Lab-at-valve (LAV) Approach for On-line Liquid-liquid Micro-extraction Spectrophotometry, *Talanta*, 68 (2005) 416.

Lapanantnoppakhun, S., Kasuwas, S., Ganranoo, L., Jakunee, J., and Grudpan, K., Simple Spectrophotometric Flow Injection System with an In-valve Minicolumn for the Enhancement in the Determination of Chromium(III) using EDTA, *Analytical. Sci.*, Inpress.



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Research Interests

- Application of combined chromatography (gas chromatography: GC, liquid chromatography: HPLC and supercritical fluid chromatography: SFC) / mass spectrometry (MS) to studies of some natural products.

Education

- Ph.D., Cardiff University, UK. 1990

Awards

- KAWAKUCHI AWARD : KU-JICA, Kasetsart University, 1995

Selected Publications

Wongpornchai, S., Dumri, K., Jongkaewwattana, S. and Siri, B. Effects of Drying Methods and Storage Time on the Aroma and Milling Quality of Rice (*Oryza sativa* L.) cv. Khao Dawk Mali 105, *Food Chem.*, 2004, 87(3), 407-414.

Gangopadhyay, G., Bandyopadhyay, T., Modak, B.K., Wongpornchai, S. and Mukherjee, K.K. Micropropagation of Indian pandan (*Pandanus amaryllifolius* Roxb.), a rich source of 2-acetyl-1-pyrroline, *Cur. Sci.*, 2004, 87(11), 1589-1592.

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aromatic hydrocarbons using sequential simplex optimization, the addition of an organic modifier and wavelength programming, *Talanta*, 2003, 61, 879-888.

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Research Interest

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- Computational Chemistry

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Selected Publications

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S. Suramitr, T. Kerdcharoen, T. Srihirin and Supa Hannongbua*, "Quantum Chemical Calculations on Electronic Structures and Electronic Properties of Conductive Polymers.: The Alkoxy Derivatives of Poly(para-phenylenevinylene)", *Synthetic Metals* 155 (2005) 27.

Lawtrakul L., Beyer A., Hannongbua S., Wolschann P. Quantitative Structural Rearrangement of HIV - 1 Reverse Transcriptase on binding to Non - Nucleoside Inhibitors Mh. Chem (2004).

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- S. Krishtal, M. Kiselev, Y. Puhovski, T. Kerdcharoen, S. Hannongbua and K. Heinzinger*, "The Study of Hydrogen Bonds Network in Sub- and Supercritical Water by Molecular Dynamics Simulation", *Zeitschrift fuer Naturforschung* 56a (2001) 579.
- M. Kiselev, T. Kerdcharoen, S. Hannongbua* and K. Heinzinger, "Structural Properties of Sub- and Supercritical Ammonia as Studied by Molecular Dynamics Simulations", *Chemical Physics Letters* 327 (2000) 425.
- T. Kerdcharoen* and S. Hannongbua, "Ab Initio Study of Ion-Ammonia Complexes: Geometry and Many-Body Interactions", *Chemical Physics Letters*, 310 (1999) 333.
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Research Interests

- Environmental analytical chemistry : spectroscopy and chromatography
- Trace metal analysis using solid chelating phase extraction
- Capillary electrophoresis

Education

1975-1979	Khon Kaen University, Thailand B.Sc.Hons. (Chemistry)
1979-1982	Chulalongkorn University, Thailand M.Sc. (Analytical Chemistry)
1986-1990	University College Cork, Ireland Ph.D. (Analytical Chemistry)

Scholarships

1979-1981	University Development Commission Scholarship, Thailand
1986-1999	Teaching Assistantship, University College Cork, Ireland
1999 (3 months)	Visiting scientist, University College Cork, Ireland

Selected publications

Srijaranai, S., Chanpaka, S., Kukusamude, C. and Grudpan, K. (2005)
Flow-injection in-line complexation for ion-pair reversed phase high performance liquid chromatography of some metal-4-(2-pyridylazo) resorcinol chelates, *Talanta* (in press)

Srijaranai, S., Siriengkawut, W., Srijaranai, S., Ruksakulpiwat, C and Deming, R. L. (2004) Effect of bound copper(II) on the LC separation of selected phenols using an aminophosphonic acid silica stationary phase, *Analytical Letters*. 37, 2577-2594.

Healy, L.O., Owens, V.P., O'Mahony, T., Srijaranai, S., Holmes, J.D., Glennon, J.D., Fischer, G., Albert, K. (2003) Supercritical fluid generated stationary phases for

liquid chromatography and capillary electrochromatography. *Analytical Chemistry* **75**, 5860-5869.

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Glennon, J.D., O'Connor, K., Srijaranai, S., Manley, K., Harris, S.J., McKervery, M.A. (1993) Enhanced chromatographic selectivity for sodium (1+) ions on a calixarene-bonded silica phase, *Analytical Letters* **26** (1), 153-62.



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Research interests

- Analytical chemistry
- Flow injection analysis
- Immunoassay

Education background

1993	B.S. Hons (Chemistry) Chiang Mai University, Chiang Mai, Thailand
1996	M.S. (Analytical Chemistry) University of Massachusetts at Amherst, Massachusetts, USA
2000	Ph.D. (Analytical Chemistry) University of Cincinnati, Ohio, USA

Awards and grants

1989-2000	scholarship from Institution for Promotion of teaching Science and Technology (IPST), Bangkok, Thailand to study in colleges both in Thailand and in the USA
1998-2000	teaching assistantship at the Chemistry Dept., University of Cincinnati
August 2001	two years research grant from PERCH 265,000 Baht "Development of FI-BI system"
September 2001	join three years research grant from TRF (Dr. Kate Grudpan) 158,933 Baht / year (co-with Dr. Prachya Kongtawelert, Biochemistry Dept., Medical school CMU) "Flow based technique in clinical application"
July 2002	two years research grant from TRF and CHE 480,000 Baht "Development of FIA/SIA for bead based immunoassay"
October 2003	one year research grant for small project from Chemistry Dept. Chiang Mai Univ. 40,000 Baht "Study and evaluation of the method to covalently link antibodies or antigens onto the capillary surface via a spacer arm"

January 2005	Outstanding research output award from TRF and CHE research grant (golden medal)
February 2005	The best poster presentation for small research project undergraduate level "Development of flow injection technique for study of rupture rate of red blood cell", undergraduate presentation day, Feb 11, 2005, Faculty of Science, Chiang Mai University
February 2005	one year research grant for small project from Chemistry Dept. Chiang Mai Univ. 40,000 Baht "Development of flow injection technique for study of rupture rate of red blood cell"

Selected publications

Development of Small Volume Bead Assay for Ovalbumin, Shoba Purushothama, Supaporn Kradtap, Brian Halsall, and William Heineman, *Analyst*, 2001, **126**, 337-341.

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Determination of Trace Iron in Beer Using Flow Injection Systems with in-valve Column and Bead Injection, P. Ampan, S. Lapanantnoppakhun, P. Sooksamiti, J. Jakmunee, S. Kradtap Hartwell, S. Jayasvati, G.D. Christian, K. Grudpan, *Talanta*, 2002, **58**, 1327-1344.

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Sequential Injection-ELISA Based System for On-line Determination of Hyaluronan, Supaporn Kradtap Hartwell, Boonraksa Srisawang, Prachya Kongtawelert, Jaroon Jakmunee, Kate Grudpan, *Talanta*, , 2005, **66**, 521-527.

Mono-segmented Flow Micro-titration with Sequential Injection Using Lab-on-

Valve: A Model Study on Assay of Acidity in Fruit Juices, Jaroon Jakmunee, Lop Patimapornlert, Supaporn Kradtap Hartwell, Kate Grudpan, *Analyst*, 2005, **130**, 99-303.

A Simple Bead Injection-Flow Injection System for Determination of Copper, Supaporn Kradtap Hartwell, Apichart Boonmalai, Subhachai Jayasvati, Somchai Lapanantnoppakhun, Jaroon Jakmunee, Kate Grudpan, *Anal. Sci.*, May 2005, **21**, 437-439.

Exploiting Guava Leaf Extract as an Alternative Natural Reagent for Flow Injection Determination of Iron, *Talanta*, 2005, **68**, 262-267.



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Education

- 1981 B.Sc.(Chemistry), Khon-Kaen University, Khon-kaen, Thailand
- 1983 M.Sc.(Physical Chemistry), Mahidol University, Bangkok, Thailand
- 1985 Ph.D.(Computational Chemistry), Innsbruck University, Austria

Award/Honor

- 1989-1990 Junior Outstanding Research Award
(Faculty of Science, Chulalongkorn University).
- 1990 Outstanding Research Project
(Chulalongkorn University)
- 1991 Outstanding Research Project
(National Research Council of Thailand)
- 1992 Young Scientist Award
(Foundation for the Promotion of Science and
Technology under the Patronage of his Majesty the King).
- 1998 Outstanding Research Project
(Chulalongkorn University)
- 1999 1998 TWAS Prize for Young Scientists in Thailand
(Third World Academy of Science)
- 2001 The National Award for the Distinguished Researcher in the Field of
Physical Science and Mathematics
(National Research Council of Thailand)
- 2003 2003 Outstanding Scientist
(Foundation for the Promotion of Science and
Technology under the Patronage of his Majesty the King).
- 2003 The TRF Senior Scholarship
(The Thailand Research Fund)
- 2003 Most Cited TRF-Research Publication Award in the Field of

Selected publication

Loisruangsin, A., Fritzsche, S. and Hannongbua, S. "Newly developed ab initio Fitted Potentials for Molecular Dynamics Simulations of *n*-Pentane in the Zeolite Silicalite-1", *Chem. Phys. Lett.* **390**, 485 (2004).

Muangsin, N., Prajuabsook, M., Chimsook, P., Chantarasiri, N., Siraleartmukul, K., Chaichit, N., and Hannongbua, S. "Structure determination of diclofenac in a diclofenac-containing chitosan matrix using conventional X-ray powder diffraction data", *J. Appl. Cryst.* **37**, 288 (2004).

Bussai C., Fritzsche S., Haberlandt R. and **Hannongbua S.** "A Novel Møller-Plesset Perturbation Based Potential to Determine the Structural and Dynamical Properties of Methane in Silicalite-1: A Molecular Dynamics Study", *J. Phy. Chem*, **108**, 2104(2004).

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Fritzsche, S., Osotchan, T., Hannongbua, S. and Kaerger, J. "Is there a Coupling of Rotational and translational motion of methane in silcalite-1 and AlPO_{4.5}", *Chem. Phys. Lett.*, **411**, 423, (2005).

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- Kongsuk S., Kerdcharoen, T. and **Hannongbua, S.** "The hydration Structure of 18-crown-6/K⁺ Complex as Studied by Monte Carlo Simulation Using *Ab-initio* Fitted Potential", *J. Mol. Graph. Mod. Accepted* (2005)
- Kongsuk, S., Kerdcharoen, T., Kiselev, M. and **Hannongbua S.** "Solvation Structures of the 18-Crown-6 in Carbon Tetrachloride As Studied by Monte Carlo Simulation Based on *Ab Initio* Potential Models", *Chem. Phys. Accepted* (2005)
- Aruksakunwong, O., Wittayanarakul, K., Sompornpisut, P., Lee, V. S., Parasuk, V. and **Hannongbua, S.** "Structure and Dynamic Properties of Different Protonated states of Mutant HIV-1 Protease Complexed with the Saquinavir Inhibitor Studied by Molecular Dynamic Simulations" *JMGM. submitted* (2005)
- Lee, V. S., Wittayanarakul, K., Remsungnen, T., Parasuk, V., Sompornpisut, P., Chantratita, W., Sangma, J., Vannarat, S., Srichaikul, P., Hannongbua, S., Saparpakorn, P., Treesuwan, W., Aruksakulwong, O., Pasomsub, E., Promsri, S., Chuakheaw, D., **Hannongbua, S.** "Dimer of SARS Coronavirus Main Protease as studied by Molecular Dynamics Simulations", *submitted*
- Muangsin N., Prajaubsook M., Siritaedmukul K., Chaichit N. and **Hannongbua S.**, "Accurate Molecular Structure Determination using Conventional X-ray Powder Diffraction data of Small Organic Molecule in Polymer Mixture", *J. Struct. Chem., submitted*.
- Laohpongspaisan, J., Wijitkosoom, A., Pinitglang, S. Parasuk, V. and **Hannongbua, S.** "Quantum Chemical Calculations on the Structure and Binding of Water Molecules in the HIV-1 Protease (PR) Enzyme", *J. Chem. Inf. Com. Sci, submitted*.
- Wijitkosoom, A., Tonmunpuean, S., Hannongbua, S. And Truong, T. N. "Full-length HIV-1 Integrase: Structure and Molecular Dynamics Simulations", *submitted*.
- Remsungnen, T., Kormilets, V., Loisuangsinsin, A., Schuring, A., Fritzsche, S., Haberlandt, R. and **Hannongbua, S.** "The Optimal Binding Site of a Methane Molecule on the silanol Covered (010) Surface of Silicalite-1: ONION Calculations" *submitted*
- Aruksakunwong, O., Sompornpisut, P., Wolschann, P. And Hannongbua, S. :Computational Studies of the Primary Resistance of Mutant HIV-1 Protease

Against Ritonavir Using Molecular Dynamics and Free Energy Calculations”*J.Mol. Loq.* submitted.(2005)

Sanghiran, V., Nimmanpipug, P., Aruksakunwong, O., Promsri, S., Sompornpisut, P. and Hannongbua, S. “Structural Analysis of Lead Fullerene-Based Inhibitor Bound to Human Immunodeficiency Virus Type 1 Protease in Solutions from Molecular Dynamics Simulations” *J.Biophys* submitted (2005)

Panich, N., Hannongbua, S. And Sun, Y. “Structure, Hardness and Adhesion Studies of Multilayer Ti/TiB₂ Coatings on Hight Speed Steel” submitted(2005)



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Research & Career Path

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| • Cherry L. Emerson Fellow, Emory University, USA | 2001 |
| • Thailand Outstanding Young Scientist Award | 2001 |
| • DFG Visiting Fellow | 2001 |
| • Thailand Toray Science & Technology Research Fellow | 2005 |

Education

University or equivalent Name and place	Years attended from to	Degrees
Chulalongkorn University, THAILAND	1986 1989	B.Sc. (Chemistry)
Chulalongkorn University, THAILAND	1990 1991	M.Sc. (Physical Chemistry)
University of Innsbruck, AUSTRIA	1992 1995	Dr.rer.nat (Physical Chemistry)

Selected publications

M. Kiselev, S. Noskov, Y. Puhovski, T. Kerdcharoen and S. Hannongbua, "The Study of Hydrophobic Hydration in Supercritical Water-Ammonia Mixture", *Journal of Molecular Graphics and Modeling* 19 (2001) 412.

S. Krishtal, M. Kiselev, Y.Puhovski, T. Kerdcharoen, S.Hannongbua and K.Heinzinger, "The Study of Hydrogen Bonds Network in Sub- and Supercritical Water by Molecular Dynamics Simulation", *Zeitschrift fuer Naturforschung* 56a (2001) 579.

T. Kerdcharoen and K. Morokuma, "ONIOM-XS: An Extension of ONIOM Method for Molecular Simulation in Condensed Phase", *Chemical Physics Letters* 355 (2002) 257.

T. Kerdcharoen, U. Birkenheuer, S. Krueger, A. Woitersky and N. Roesch, "Implementation of a QM/MM Approach in the Parallel Density Functional Program ParaGauss and Applications to Copper Thiolate Clusters", *Theoretical Chemistry Accounts* 109 (2003) 285.

S. Kongsuk, T. Kerdcharoen and S. Hannongbua, "How Many Water Molecules in the Hydration Shell of 18-crown-6? Monte Carlo Simulations Based on Ab Initio Derived Potential Energy Surface", *Journal of Physical Chemistry B* 107 (2003) 4175.

T. Kerdcharoen and K. Morokuma, "Combined QM/MM Simulation of Ca²⁺/Ammonia Solution based on ONIOM-XS Method: Octahedral Coordination and Implication to Biology", *Journal of Chemical Physics* 118 (2003) 8856.

M. Kiselev, D. Ivlev, Y. Puhovski and T. Kerdcharoen, "Preferential Solvation and Elasticity of the Hydrogen Bonds Network in Tertiary Butyl Alcohol-Water Mixture", *Chemical Physics Letters* 379 (2003) 581.

A. Udomvech, T. Kerdcharoen, V. Parasuk, Y. Tantirungrotechai and T. Osotchan, "Electronic Structure of the Finite-Sized Single Walled Carbon Nanotube", *International Journal of Nanoscience* 2 (2003) 141.

C. Angsuthanasombat, P. Uawithya, S. Leetachewa, W. Pornwiroon, P. Ounjai, T. Kerdcharoen, G. Katzenmeier and S. Panyim, "Bacillus thuringiensis Cry4A and Cry4B Mosquito-Larvicidal Proteins: Homology-Based 3D Model and Implications for Toxin Activity", *Journal of Biochemistry and Molecular Biology* 37 (2004) 304.

A. Udomvech, T. Osotchan and T. Kerdcharoen, "A DFT Study of Li/Li⁺ Adsorbed on Carbon Nanotube: Variation of Tubule Diameter and Length", *Chemical Physics Letters*, 406 (2005) 161.

P. Wutticharoenmongkol, P. Supaphol, T. Sriksirin, T. Kerdcharoen and T. Osotchan, "Electrospinning of Polystyrene/Poly(2-Methoxy-5-(2'-Ethylhexyloxy)-1,4-Phenylene Vinylene) Blends", *Journal of Polymer Science B* 43 (2005) 1881.

Y. Kanintrunkul, T. Sriksirin, C. Angsuthanasombat and T. Kerdcharoen, "Insertion behavior of the Bacillus thuringiensis Cry4Ba insecticidal protein into lipid monolayers", *Archive of Biochemistry and Biophysics* 442 (2005) 180.

S. Suramitr, T. Kerdcharoen, T. Sriksirin and S. Hannongbua, "Electronic Properties of Alkoxy Derivatives of Poly(para-phenylenevinylene), Investigated by Time Dependent Density Functional Theory Calculations", *Synthetic Metals* 155 (2005) 27.

S. Krongsuk, T. Kerdcharoen, M. Kiselev and S. Hannongbua, "Solvation Structures of the 18-Crown-6 in Carbon Tetrachloride as Studied by Monte Carlo Simulation Based on Ab Initio Potential Models", *Chemical Physics*, in press.

S. Krongsuk, T. Kerdcharoen and S. Hannongbua*, " The Hydration Structure of 18-crown-6/K⁺ Complex as Studied by Monte Carlo Simulation Using Ab Initio Potential", submitted to *Journal of Molecular Graphics and Modeling*, in press.

In Progress:

T. Udommaneethanakit, T. Kerdcharoen, S. Hannongbua, V. Parasuk, T. Osotchan and T. Srihirin, "Photoisomerization of 4-(4'-Hydroxyphenylazo) Nitrobenzene: Kinetics and Theoretical Studies", submitted.

C. Suwattanasophon, M. Kiselev, T. Taveecharoenkool, C. Angsuthanasombat, T. Kerdcharoen, "Molecular Dynamics Simulations of the Bacillus thuringiensis Cry4Ba Mosquito-Larvicidal Protein: Implications for Pore Formation", submitted.

A. Tongraar*, T. Kerdcharoen and S. Hannongbua, "Simulations of liquid ammonia based on combined quantum mechanical/molecular mechanical (QM/MM) approach", submitted.

S. Krongsuk, T. Kerdcharoen*, A. Borodin and M. Kiselev, "Concentration effects of porphyrine monolayer at the air-water interface as studied by molecular dynamics simulations", submitted.

R. Traiphol*, T. Srihirin, T. Kerdcharoen, T. Osotchan, N. Scharnagl, R. Willumeit, "Local pi-pi Interaction Control Dynamics of Phenyl Ring Rotation in Conjugated Polymer in Solution", submitted.



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Qualifications

- February 1989 B.Eng. Mining Engineering, Chiang Mai University, Thailand
- August 1995 Ph.D. Chemistry, Texas A&M University, U.S.A.
- May-August 1996 Postdoctoral Fellow with Prof. Jean-Marie Lehn, Université Louis Pasteur, Strasbourg, France.

Honors and Distinctions

- 2002, Science and Technology Awards, Thailand Toray Science Foundation
- 1998, Young Scientist Award, Foundation for the Promotion of Science and Technology under the Patronage of His Majesty the King
- 1998, Professor Fund Award, Faculty of Science, Chulalongkorn University

Selected publications

Tuntulani, T.; Tumcharern, G.; Ruangpornvisuti, V. "Recognition Studies of a Pyridine-Pendant Calix[4]arene with Neutral Molecules: Effects of Non-Covalent Interactions on Supramolecular Structures and Stabilities" *J. Incl. Phenom.* **2001**, 39, 47-53.

Sukwattanasinitt, M.; Rojanathanes, R.; Tuntulani, T.; Sritana-Anant, Y.; Ruangpornvisuti, V. "Synthesis of Stilbene Crown Ether *p*-*tert*-Butylcalix[4]arenes" *Tetrahedron Lett.* **2001**, 42, 5291-5293.

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Tomapatanaget, B.; Tuntulani, T. "Lower Rim Tetra-Substituted and Upper Rim Ferrocene Amide Calix[4]Arenes: Synthesis, Conformation and Anion Binding Properties" *Tetrahedron Lett.* **2001**, 42, 8105-8109.

Sukwattanasinitt, M.; Rojanathanes, R.; Tuntulani, T.; Ruangpornvisuti, V. "Selective Oxidation of 25, 27-Di-(3'-formylphenoxyethoxy)-*p*-*tert*-butylcalix[4]arene" *ScienceAsia* **2002**, 28, 25-28.

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Wanno, B.; Sang-aroon, W.; Tuntulani, T.; Polpoka, B.; Ruangpornvitsuti, V. "Conformational and energetical structures of sulfonylcalix[4]arene, *p*-tert-butylsulfonylcalix[4]arene and their zinc complexes" *J. Mol. Struct.-Theochem.* **2003**, *629*, 137-150.

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Suksai, C.; Tuntulani, T. "Chromogenic Anion Sensors" *Top. Curr. Chem.* **2005**, *255*, 163-198.

Harding, D. J.; Adams, H.; Tuntulani, T. "B-N Bond Cleavage by Cobalt(II) in Acetato(3,5-diphenylpyrazole)[tris(3,5-diphenylpyrazolyl)borato]Cobalt(II)" *Acta Cryst.* **2005**, *C61*, m301-m303.

Kerdpaiboon, N.; Tomapatanaget, B.; Chailapakul, O.; Tuntulani, T. "Calix[4]quinones Derived from Double Calix[4]arenes: Synthesis, Complexation and Electrochemical Properties towards Alkali Metal Ions" *J. Org. Chem.* **2005**, *70*, 4797-4804.

Rojanathanes, R.; Tuntulani, T.; Bhanthumnavin, W.; Sukwattanasinitt, M. "Stilbene-Bridged *tert*-Butylcalix[4]arene as Photoswitchable Molecular Receptors" *Org. Lett.* **2005**, *7*, 3401-3404.

Morakot, N.; Tomapatanaget, B.; Aeungmaitripirom, W.; Ngeon-tae, V. "Synthesis and Fluorescence Sensing Properties of Calix[4]arenes Containing Fluorophores" *Supramol. Chem.* **2005** in press.



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Research interests

- Fundamental studies in capillary electrophoresis, especially in chiral separation and microemulsion electrokinetic chromatography
- Methodology and applications of capillary electrophoresis for analyses of food, pharmaceuticals, natural products, herbal medicines, and agricultural chemicals
- Microchip electrophoresis

Education

- B.Sc. (Chemistry), Chulalongkorn University, Thailand, 1992
- M.Sc. (Petrochemistry), Chulalongkorn University, Thailand, 1995
- Ph.D. (Analytical Chemistry), University of York, UK, 2001

Representative Publications

T. Nhujak, W. Saisuwan, M. Srisa-art, A. Petsom "Microemulsion electrokinetic chromatography for separation and analysis of curcuminoids in turmeric samples" *Journal of Separation Science*, 2006, Accepted.

T. Nhujak, C. Sastravaha, C. Palanuvej, and A. Petsom "Chiral separation in capillary electrophoresis using dual cyclodextrins: Theoretical models of electrophoretic mobility difference and separation selectivity" *Electrophoresis*, 26 (2005), 3814-3823.

T. Nhujak, M. Srisa-art, K. Kalampakorn, V. Tolieng, and A. Petsom "Determination of gibberellic acid in fermentation broth and commercial products by micellar electrokinetic chromatography" *Journal of Agricultural and Food Chemistry*, 53 (2005), 1884-1889.

T. Nhujak and D.M. Goodall "Comparison of binding of tetraphenylphosphate and tetraphenylborate ions to cyclodextrins studies by capillary electrophoresis" *Electrophoresis*. 22 (2001), 117-212.

T. Nhujak and D.M. Goodall "Trace analysis of β -cyclodextrin in a sample of β -cyclodextrin by capillary electrophoresis" *Journal of Chromatography A*. 970 (2001), 313-320.



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Major Research Interests

- Biosynthesis and production of secondary products in plants and in cell cultures
- Detection, purification and characterization of biosynthetic enzymes of active constituents in plants
- Quantitative analysis of active constituents in herbs and species by HPLC, GC and GC-MS
- Standardization and Specification of herbs and spices

Educations

- B.Sc. (Biochemistry) 1974-1978, Chulalongkorn University, Bangkok, Thailand
- M.Sc. (Biochemistry) 1978-1980, Mahidol University, Bangkok, Thailand
- Ph.D. (Plant Biochemistry) 1982-1987, University of Guelph, Guelph, Canada
- Post doc. with Prof. M.H. Zenk 1989-1990, University of Munich, Munich, Germany (Alexander von Humboldt Research fellow)

Honors and Awards

- Distinguished Ph.D. thesis entitled "Rosmarinic Acid Production and Biosynthesis in *Anchusa officinalis* Cell Cultures (Advisor : Brian E. Ellis), University of Guelph, 1987
- Ontario Graduate Scholarship 1982-1987
- Alexander von Humboldt Post-doc. Fellowship, 1989-1990
- JSPS-UNESCO Visiting Scientist (University of Tokyo), 1994
- The Thailand Research Fund Research Scholar, 1995-1997 and 1999-present

Selected publications

- **PATENTS**

De-Eknamkul W. and P. Tansakul. Geranylgeraniol-18-hydroxylase from *Croton sublyratus* US patent no. 5, 879, 916, March 9, 1999

De-Eknamkul W. and P. Tansakul. Production of an Anti-Peptic Ulcer Plaunotol by an Enzymatic Reaction. Thai Patent no. 9858, September 15, 2000

- **ORIGINAL RESEARCH REPORTS**

De-Eknamkul, W. and C. Thongruang. Possibility of *Pueraria mirifica* to affect breast enlargement. J. Pharm. Sci., 25, 1-9 (2001).

Samappito, S., J.E. Page, Jurgen S., W. De-Eknamkul and T.M. Kutchan. Molecular characterization of root-specific chalcone synthases from *Cassia alata*. Planta, 216, 64-71(2002).

Samappito, S., J.E. Page, Jurgen S., W. De-Eknamkul and T.M. Kutchan. Aromatic and pyrone polyketides synthesized by a stilbene synthase from *Rheum tataricum*. Phytochemistry, 62, 313-323 (2003).

De-Eknamkul, W. and B. Potduang. Biosynthesis of β -sitosterol and stigmasterol in *Croton sublyratus* proceeds via a mixed origin of isoprene units. Phytochemistry, 62, 389-398 (2003).

Wungsintaweekul, J. and De-Eknamkul, W. Biosynthesis of plaunotol in *Croton stellatopilosus* proceeds via the deoxyxylulose phosphate pathway. Tetrahedron Letters, 46, 2125-2128 (2005).

Monthakantirat, O., De-Eknamkul, W., Umehara, K., Yoshinaga, Y. Miyase, T., Warashina, T. and Noguchi, H. Phenolic Constituents of the Rhizomes of the Thai Medicinal Plant *Belamcanda chinensis* with Proliferative Activity for Two Breast Cancer Cell Lines. J. Nat. Prod. 68, 361-364 (2005).

Nualkaew N., De-Eknamkul W., Kutchan T.M., and Zenk M.H. Geranylgeraniol formation in *Croton stellatopilosus* proceeds via successive monodephosphorylations of geranylgeranyl diphosphate. Tetrahedron Letters. 46, 8727 - 8731 (2005).

Nualkaew N., De-Eknamkul W., Kutchan T.M., and Zenk M.H. Membrane-bound geranylgeranyl diphosphate phosphatases : purification and characterization from *Croton Stellatopilosus* Leaves. Phytochemistry (2005) (accepted)



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Key qualifications

Dr. Waret Veerasai (WV) is a senior lecturer in physical, inorganic and analytical chemistry at Mahidol University, with 30 years experience. Particularly relevant is his service during 1975 - 2005 as the task leader in both physical and analytical aspects of electrochemistry. His major interests are related to the fundamental understanding on the charge transfer processes in redox flow systems and phenomena at modified electrode/electrolyte interfaces, which can be applied for novel sensors, electrochemical energy storage and fuel cell systems.

In 1989-1990, **WV** was a postdoctoral research fellow in the laboratories of Prof. A. Aramata and Prof. M. Ichikawa at Research center for Catalysis, Hokkaido University. **WV** contributed both on preparation and characterizations of the electrodes in collaborations with Prof. Enyo (EC/MS) and Prof. Toyoshima (STM&XPS).

WV involved as a scientific consultant for the redox flow system on "Baan Thai High Tech. project", the complete demonstration solar house with fish farm and water treatment system. The novel Vanadium Redox flow cell, as "Chemo-electricity storage" and several electrochemical sensors were established in this project.

In recent year, **WV** and his students (4 Ph.D. and 6-8 M.Sc.) at Mahidol University have focused on two research areas: (i) Size-based analysis of water borne particles and (ii) Interfacial electrochemistry, especially on electrochemistry at nano-level on electro-catalysts for sensors, electrochemical energy storage and alternative energy sources.

Educations

- **Post-Doctoral Research fellow**, "Electrocatalysts design and electrode surface Characterization", at Research Center for Catalysis, Hokkaido University, Japan, 1988-1989
- **Dr.rer.nat.** (Physical Inorganic Chemistry), University of Innsbruck, Austria, 1981
- **M.Sc.** (Physical Chemistry), Mahidol University, Thailand, 1975
- **B.Sc.Hons.** (Chemistry), Chiangmai University, Thailand, 1973

Professional Affiliations

Dr. Waret Veerasai had served as an executive committee of the Chemical Society of Thailand, and Chemical Division of the Science Society of Thailand for more than ten years.

He is a scientific reviewer for several projects, related to electrochemistry those were submitted for TRF or MTEC research funds, and also as a scientific reviewer of Science Asia Journal and of some university journals, in the field related to physical chemistry and electrochemistry

He is a permanent member of the Science Society of Thailand, the Society of Toxicology, a member of Thai Fuel Cell Research Group, an also as a member of PES user group at National Synchrotron Research Center.

Some selected publications

“Electrocatalytic effects of Tin and Ruthenium on modified platinum electrodes for Electro_oxidation of methanol” **W. Veerasai**, P. Amornpitaosuk and T. Ratana (preparing for publications)

“Sol-Emulsion-Gel preparation and characterization for ZrO_2 and V/ZrO_2 ”, **W. Veerasai** and T. Ratana (preparing for publications)

“Electrochemical conversion of Oxovanadium in acidic media” **W. Veerasai** and T. Kanyanee (preparing for publications)

“Production and Certification of In-house Rice Flour Reference Material”; Wipharat Chuachud, Juwadee Shiowatana, Niorn Chukanchanapituk, **Waret Veerasai**, Scott Willie and James Walker McLaren. Science Asia 28(2002) 351-358.

"Simple flow injection system for colorimetric determination of iodate in iodized salt", N. Choengchan, K. Uraisin, K. Choden, **W. Veerasai**, K. Grudpan and D. Nacapricha, *Talanta*, 58, 1195-1201(2002).

“Sensitivity Enhancement of Differential Pulse Polarographic technique by Simplex Optimization method” Buabarn Poonperm, **Waret Veerasai** and Prapin Wilairat, Chiang Mai J. Sci. 2000; 27(2):71-81.



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Education

Doctor of Philosophy

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Organic/Physical Organic Chemistry.

University of Utah, Salt Lake City, U.S.A.

Bachelor of Science

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Chemistry. Chulalongkorn University, Bangkok, Thailand.

Honors/ Fellowships

- Henry Eyring Research Fellowship: June-September 1990
- Department of Chemistry University of Utah Research Presentation Award: spring 1994
- Department of Chemistry University of Utah Research Presentation Award: spring 1995
- Department of Chemistry University of Utah Research Presentation Award: summer 1995
- 7th Asian Chemical Congress Grant for Young Chemists: May 1997
- Young Scholar Travel Grant (The International Chemical Congress of Pacific Basin Societies, PacifiChem2000): December 2000
- Science and Technology Research Grant – Thailand Toray Science Foundation: February 2005

Selected publications

Bhanthumnavin, W.; Bentrude, W.G. "Photo-Arbusov Rearrangements of 1-Arylethyl Phosphites: Stereochemical Studies and the Question of Radical-Pair Intermediates" *J. Org. Chem.* **2001**, 66, 980-990.

Phuwapraisirisan, P.; Tip-pyang, S.; Sowanthip, P.; Supudompol, B.; Bhanthumnavin, W.; Sathanasaowapak, S. "4-Phenylcoumarins and Antibacterial Phenolic Compounds from *Mammea siamensis*" *ACGC Chemical Research Communications* **2001**, 13, 28-32.

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Vilaivan, T.; Bhanthumnavin, W.; Sritana-anant, Y. "Recent Advances in Catalytic Asymmetric Addition to Imines and Related C=N Systems" *Curr. Org. Chem.* **2005**, *9*, 1315-1392.

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กำลังมหาวิทยาลัยเชียงใหม่

ที่ 3605 /2548

เรื่อง แต่งตั้งคณะกรรมการจัดประชุม Interfaces of Analytical Sciences: Workshop of U.S. and Thai Analytical Scientists

ตามที่ มหาวิทยาลัยเชียงใหม่ โดยคณะวิทยาศาสตร์ ได้กำหนดจัดประชุมเชิงปฏิบัติการ Interfaces of Analytical Sciences: Workshop of U.S. and Thai Analytical Scientists ระหว่างวันที่ 4-8 มกราคม 2549 โดยมีวัตถุประสงค์เพื่อให้เกิดการร่วมมือทางวิชาการของนักวิทยาศาสตร์ไทยทั่วประเทศทางวิทยาศาสตร์การวิเคราะห์และแขนงวิชาที่เกี่ยวข้องกับกลุ่มนักวิทยาศาสตร์ชั้นนำของสหรัฐอเมริกา โดยได้รับการสนับสนุนจากสำนักงานคณะกรรมการการอุดมศึกษา(สกอ.) สำนักงานกองทุนสนับสนุนการวิจัย(สกว.) และโครงการพัฒนาบัณฑิตศึกษาและการวิจัยทางเคมี(PERCH) National Science Foundation (NSF) สหรัฐอเมริกานั้น

เพื่อให้การดำเนินการจัดประชุมดังกล่าว เป็นไปอย่างเรียบร้อย อาศัยความในมาตรา 18 และ 21(1) แห่งพระราชบัญญัติ มหาวิทยาลัยเชียงใหม่ พ.ศ. 2530 จึงเห็นสมควรแต่งตั้งคณะกรรมการฝ่ายต่างๆเพื่อรับผิดชอบการจัดประชุมฯ ดังนี้

คณะกรรมการอำนวยการ

- | | |
|---|-----------|
| 1. เลขาธิการสำนักงานคณะกรรมการการอุดมศึกษา
(ศาสตราจารย์พิเศษ ภาวิช ทองโรจน์) | ที่ปรึกษา |
| 2. อธิการบดีมหาวิทยาลัยเชียงใหม่
(ศาสตราจารย์ ดร.พงศักดิ์ อังกลสิทธิ์) | ที่ปรึกษา |
| 3. ผู้อำนวยการ โครงการพัฒนาบัณฑิตศึกษาและการวิจัยทางเคมี
(ศาสตราจารย์ ดร. วิชัย รวีตระกูล) | ที่ปรึกษา |
| 4. ผู้อำนวยการสำนักงานกองทุนสนับสนุนการวิจัย
(ศาสตราจารย์ ดร.ปิยะวัติ บุญหลง) | ที่ปรึกษา |
| 5. รองผู้อำนวยการสำนักงานกองทุนสนับสนุนการวิจัย
(ผู้ช่วยศาสตราจารย์ วุฒิพงษ์ เตชะดำรงสิน) | ที่ปรึกษา |
| 6. ผู้อำนวยการฝ่ายวิชาการสำนักงานกองทุนสนับสนุนการวิจัย
(ศาสตราจารย์ ดร.วิชัย บุญแสง) | ที่ปรึกษา |

7. รองอธิการบดีฝ่ายวิชาการ	ประธานกรรมการ
8. รองอธิการบดีฝ่ายวิจัย	กรรมการ
9. รองอธิการบดีฝ่ายวิเทศสัมพันธ์	กรรมการ
10. ผู้ช่วยอธิการบดีฝ่ายวิจัยและเทคโนโลยีสารสนเทศ	กรรมการ
11. ผู้อำนวยการสถาบันวิจัยและพัฒนาวิทยาศาสตร์และเทคโนโลยี	กรรมการ
12. คณบดีบัณฑิตวิทยาลัย	กรรมการ
13. คณบดีคณะวิทยาศาสตร์	กรรมการ
14. รองคณบดีฝ่ายวิจัยและวิเทศสัมพันธ์ คณะวิทยาศาสตร์	กรรมการ
15. รองคณบดีฝ่ายวิชาการคณะวิทยาศาสตร์	กรรมการ
16. หัวหน้าภาควิชาเคมี	กรรมการ
17. ผู้อำนวยการกองวิเทศสัมพันธ์	กรรมการ
18. ศาสตราจารย์ ดร.เกตุ กรุดพันธ์	กรรมการและเลขานุการ
19. อาจารย์ ดร.จรรยา จักรมณี	กรรมการและผู้ช่วยเลขานุการ
20. เจ้าหน้าที่กองวิเทศสัมพันธ์	ผู้ช่วยเลขานุการ

หน้าที่ วางแผนจัดการประชุมและติดตามการดำเนินการของคณะกรรมการฝ่ายต่างๆ

คณะกรรมการดำเนินงาน

1. ฝ่ายเลขานุการ

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2. รองศาสตราจารย์ ดร. ประศักดิ์ ถาวรยุคิการต์	กรรมการ
3. นางสาวจิราวรรณ อุปนันท์	กรรมการ
4. อาจารย์ ดร.จรรยา จักรมณี	กรรมการ
5. อาจารย์ ดร.สมชัย ลาภอนันต์นพคุณ	กรรมการ
6. อาจารย์ ดร.พิชญา มังกรอัสวกุล	กรรมการ

หน้าที่ ติดต่อประสานงานกรรมการฝ่ายต่าง ๆ วิทยาการและผู้เข้าร่วมประชุม และอื่นๆที่เกี่ยวข้อง

2. ฝ่ายการเงิน

1. รองศาสตราจารย์ ดร. เรืองศรี วัฒนศักดิ์	ประธานกรรมการ
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3. นางสาวจิราวรรณ อุปนันท์	กรรมการ
4. นางสาวปรีศนีย์ สนิทิมลบุญ	กรรมการ

หน้าที่ จัดทำงบประมาณค่าใช้จ่ายในการประชุมและ บัญชีค่าใช้จ่ายให้เป็นไปตามระเบียบทางการเงิน และอื่นๆ ที่เกี่ยวข้อง

3. ฝ่ายวิชาการและเอกสาร

- | | |
|--|---------------|
| 1. อาจารย์ ดร.จรรยา จักรมณี | ประธานกรรมการ |
| 2. อาจารย์ ดร.พิชญา มังกรอัสกุล | กรรมการ |
| 3. ผู้ช่วยศาสตราจารย์ ดร.สุภาภรณ์ ทรัพย์ | กรรมการ |
| 4. นางสาวกาญจนา วัฒนะเอียด | กรรมการ |
| 5. นางสาววิศกา ศิริอังกาฐ | กรรมการ |

หน้าที่ จัดทำเอกสารประกอบการประชุม รับลงทะเบียนการประชุม และอื่น ๆ ที่เกี่ยวข้อง

4. ฝ่ายสถานที่ โสตทัศนศึกษาและยานพาหนะ

- | | |
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| 3. อาจารย์ ทินกร กันยานี | กรรมการ |
| 4. นายมงคล สุภา | กรรมการ |
| 5. นายรักสกุล แก่นธนู | กรรมการ |
| 6. นายวสิน วงศ์วิไล | กรรมการ |
| 7. นายสมบัติ คงวิทยา | กรรมการ |
| 8. นายสราวุธ สมนาม | กรรมการ |

หน้าที่ จัดเตรียมสถานที่ สิ่งอำนวยความสะดวกในการประชุม จัดยานพาหนะสำหรับวิทยากรและผู้เข้าร่วมประชุมและอื่น ๆ ที่เกี่ยวข้อง

5. ฝ่ายต้อนรับเพื่อเยี่ยมชมห้องวิจัยภาควิชาเคมี

- | | |
|--|---------------|
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| 7. อาจารย์ ดร.สุนันทา ว่างนาค | กรรมการ |
| 8. อาจารย์ ดร.ฐปณีย์ สาครศรี | กรรมการ |
| 9. อาจารย์ ดร.วินิตา บุญโยคม | กรรมการ |

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6. ฝ่ายประสานงานทั่วไป

- | | |
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| 2. ดร.สมชัย ลาภอนันต์พคุณ | กรรมการ |

- | | |
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| 3. นางสาวทิพวรรณ ตระการศิรินนท์ | กรรมการ |
| 4. อาจารย์ ดร.จรูญ จักรมณี | กรรมการ |
| 5. นางสาวจิราวรรณ อุปนันท์ | กรรมการ |
| 6. นางสาวรัชฎา วงศ์สุวรรณ | กรรมการ |
| 7. นางสาวปรีศนีย์ สันติมลบูรณ์ | กรรมการ |

หน้าที่ คัดต่อประสานงานในการจัดประชุมโดยทั่วไป ประสานงาน/อำนวยความสะดวกแก่วิทยากรและผู้ร่วมประชุม และ อื่น ๆ ที่เกี่ยวข้อง

ทั้งนี้ ตั้งแต่บัดนี้เป็นต้นไป

ลง ณ วันที่ ๑ ธันวาคม พ.ศ. 2548



(รองศาสตราจารย์ ดร.จิตต์ อูมมานราชชน)
รองอธิการบดีฝ่ายวิเทศสัมพันธ์
รักษาราชการแทนอธิการบดีมหาวิทยาลัยเชียงใหม่