DITERIMA

14 DEC 2011

AKADEMI SAINS MALAYSIA

LEE Hian Kee
Department of Chemistry
National University of Singapore
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Email: chmleehk@nus.edu.sg

Personal: Born in Kepala Batas, Penang, Malaysia. Citizenship: Malaysian

Education: University

University of Canterbury, New Zealand - PhD in Chemistry, 1982; Teaching Fellow, 1979; Winner, *Ralph P. Earle PhD Prize*, 1979. University of Canterbury - BSc (Honours) in Chemistry, 1978.

Primary and Secondary

St. Xavier's Institution, Penang, Malaysia - Malaysian Certificate of

Education, 1971; Higher School Certificate, 1973.

Kepala Batas Secondary School, Province Wellesley, Malaysia - Lower

Certificate of Education, 1969.

Kepala Batas Primary School, Province Wellesley, Malaysia.

Career: National University of Singapore

Head of Department, 2003 - 2005

Deputy Head of Department, 1998 - 2003, 2005 - 2009

1983 - present: Visiting Teaching Fellow, Lecturer, Senior Lecturer,

Associate Professor, Professor

NUS Provost's Chair Professor (2011-2014)

National Institutes of Health, Bethesda, MD, USA

Special Volunteer/Visiting Fellow, 1991/1992

University of Brunei

Invited Visiting Lecturer, 1989/1990

Toyohashi University of Technology, Japan

Japan Society for the Promotion of Science Visiting Fellow, 1989

Vietnam National University, Hanoi

ASEAN Universities Network Distinguished Professor, 2001/2002

Huazhong University of Science and Technology, Wuhan

Visiting Professor in the Department of Pharmaceutical Sciences, Tongji

Medical School

Membership of professional organisations:

International Association of Environmental Analytical Chemistry

New Zealand Institute of Chemistry Singapore National Institute of Chemistry Chemistry Honours - Advances in Nuclear Magnetic Resonance Spectroscopy and Mass Spectrometry

Chemistry Direct Honours - (i) Organic Spectroscopy; (ii) Organic Chemistry; (iii) Extractions and Separations

Chemistry "A" - Separate courses on (i) Organic Rearrangements; (ii) Spectroscopic Techniques; (iii) Non-Benzenoid Aromatic Compounds.

Chemistry "B" - (i) Environmental Aspects of Industrial Chemistry; (ii) Environmental Chemistry.

Third Year BSc - (i) Spectroscopic and Spectrometric Methods; (ii) Instrumental Analysis; (iii) Environmental Chemistry

First Year BSc - Organic Chemistry (tutorials only)

First Year BEng (Chemical Engineering) - Organic Chemistry

1998 - current Level 2 BSc - Quantitative Analysis

Level 4 BSc - (i) Advanced Analytical Techniques; (ii) Trace Analysis

Level 5 (Graduate) (i) Modern Analytical Techniques; (ii) Graduate Analytical Chemistry

NUS-Technical University of Munich (Germany) Joint MSc (Industrial Chemistry) - Water Chemistry and Industrial Requirements

General Education Courses (cross-faculty) – (i) Chemistry and Society; (ii) Living with Chemistry

Teaching awards

1998: "Honourable Mention" in the university's "Information Technology in Teaching" Award.

Research students supervised

Graduate students:

27 PhD students, 16 MSc students supervised;

Currrently: 11 PhD students 2 MSc students

In addition, since 1984, I have supervised Honours and MSc (Coursework) students too numerous to list.

Twelve overseas students under internship/training visas

Sixteen Undergraduate Research Opportunities in Science (UROPS) students

RESEARCH

Research Programme

My research interests are centred on the development and applications of micro- and nanoscale, environmentally-benign sample preparation and high-resolution separation techniques, with the primary focus on environmental analysis. These techniques include capillary electrophoresis (CE), liquid chromatography (LC) and gas chromatography (GC), GC/mass spectrometry (MS) and LC/MS. In addition to organic and inorganic environmental analysis, I also have an interest in developing and applying these procedures to the determination of biologically-important molecules such as vitamins, drugs and endocrine-disrupting compounds - in matrices like foods and bodily fluids.

The characterisation of analytes, ultimately, represents the major objective in any analytical technique. However, of equal importance are the procedures leading up to the isolation of analytes before the detection and determination. Thus, sample preparation or sample extraction procedures should be accorded equal importance in the overall scheme of chemical analysis. The quality of the final results in an analytical methodology is contingent upon the soundness of each individual step, and possibly the sample preparation step may be the most critical. This is the motivation for focusing significant attention on methods of sample preparation and sample extraction in my research, in addition to the separation and detection aspects as discussed in the first paragraph above. My research in this critical aspect of analytical chemistry has encompassed solid-phase extraction, microwave-assisted solvent extraction, supercritical fluid extraction, solid-phase microextraction and miniaturised approaches to liquid extraction.

My work on the above-mentioned techniques is largely in line with a commitment towards the development and application of environmentally benign miniaturised analytical techniques.

Separation methodologies have been developed for such classes of compounds as phenols (including nonylphenols, suspected to be oestrogen-mimickers or endocrine disrupting compounds), pesticides, polynuclear aromatic hydrocarbons, heterocyclic aromatic amines, organometallics and metal species, and biological compounds like vitamins, antibiotics, antihistamines, amino acids and steroids: the application of capillary electrophoresis and liquid chromatography to these analytes have been of particular interest to our group.

In extraction studies, supercritical fluid extraction, microwave-assisted extraction, solid-phase extraction, solid-phase microextraction and liquid-phase microextraction (the last developed in my group) have been applied, as appropriate, to most of the environmental pollutants mentioned in the preceding paragraph. Of special interest is the application of microwave-assisted extraction to polychlorinated biphenyls (PCBs) present in soil and marine sediment. A new approach being investigated involves the use of novel materials to extract the PCBs, followed by microwave-assisted extraction to desorb the analytes for analysis.

A current interest is the development of liquid-phase microextraction (LPME) procedures in which extraction is carried out in a conventional microsyringe that also subsequently serves as the sample-introduction device (as designed) for GC or GC/MS analysis. Extraction is carried out by using an organic drop (1-2 μ L) immersed in an aqueous sample (static LPME) or by a plug of the solvent within the barrel of the

syringe into which aqueous sample is withdrawn (dynamic LPME). Investigations into applying this technique for CE analysis, incorporating a solvent-exchange step in a microvial, have been developed and ongoing. We have recently introduced a variation of liquid-phase microextraction which we term continuous flow microextraction in which the sample solution is allowed to flow around a static organic solvent drop, permitting extraction to occur. We have been able to achieve >1000-fold enrichment with this process. Another approach to microextraction is to use a hollow fibre membrane to support and stabilize the organic drop or (more accurately) plug, during the extraction process. We have pioneered the semi-automated combination of a syringe needle with a hollow fibre membrane to improve the precision (and alleviate the tedium of manual operation) of the procedure.

We are currently developing fully automated sample preparation procedures based on LPME integrated with chromatography/mass spectrometric analysis.

Additionally, we have been involved with developing approaches to reactions carried out *in situ* within a hollow fibre, for example, derivatisation, ion-pairing, etc. to enhance the detectability of target analytes. The hollow fibre provides a suitable platform as a microreactor.

We have since gone on to develop other LPME approaches such as polymer-coated hollow fibre membrane extraction, micro-solid-phase extraction, nanomembrane extraction, nanoparticle-based microextraction, etc.

An interest on nanomaterials has resulted in the development of magnetized particles for dispersive SPE in combination with LPME. This addresses the issue of needing denser-than-water solvents (which are generally halocarbons and therefore undesirable from an environmental point of view) for a particular mode of LPME.

I have made significant contributions to research involving the use of CE, LC, and various extraction procedures, in particular, microextraction and microwave-assisted extraction, in environmental and biological molecule analyses. I have received international recognition for such work, and have contributed significantly to the attainment of a high level of international standing now enjoyed by the Department of Chemistry.

The impact of my work can best be gauged under "National/international recognition for research" below. Indicators include invitations to international conferences as plenary/keynote/invited lecturer, invitations to membership of international advisory boards of conferences, appointment to editorships of *Analytica Chimica Acta*, *Journal of Chromatography A*, invitations to review for top-rated journals and funding organizations, and service as editorial and advisory board member of top-rated analytical chemistry journals

Citation statistics (as of October, 2011)

ca. 6,400 citations (excluding self-citations); h-index = 45

Support for research

Funding from NUS, Environmental and Water Industry Development Council (EWI) and National Science and Technology Board (NSTB)/Agency for Science, Technology and Research (A*STAR)

As principal investigator

Jun, 2011 – May, 2015: \$4,685,207 (direct \$3,513,905.65) (Advanced Methodologies for Assessing Occurrences of Contaminants of Emerging Concern in Water) (under EWI Visiting Professor Programme)

Aug, 2010 – July 2014: \$1,344,600 (Onsite microscale sample preparation of aqueous matrices for the determination of environmental contaminants particularly pharmaceuticals and personal care products by gas and liquid chromatography/mass spectrometry) (EWI)

Aug, 2006 - July, 2009: \$61,000 (Design and development of novel, environmentally-friendly and miniaturized analyte extraction techniques using functional polymers) (NUS)

Oct 1999 - January 2005 (extended): \$94,550 (Laser-induced fluorescence detection in trace analysis) (NUS)

Jul 1998 - Mar 2004 (extended): \$125,100 (Novel extraction and microextraction procedures) (NUS)

Jan 1997 - Jun 2001 (extended): \$131,420 (Development of capillary electrophoresis and electrospray ionisation mass spectrometric techniques for environmental and biomedical applications (NUS)

Jan 1996 - Sep 1999: \$120,000 (Capillary electrophoresis-mass spectrometry for the characterisation of environmental pollutants) (NSTB/NUS Environmental Technology Enterprise)

Mar 1995 - Mar 1998: \$51,000 (Microcolumn chromatography for environmental and biochemical analyses) (NUS)

Aug 1988 - Dec 1995 (extended): \$106,100 (Development of novel methods of extraction and chromatographic separations with electrochemical detection: basic aspects and application to environmental and biochemical analyses) (NUS)

Nov 1984 - Dec 1993 (extended): \$53,325 (Polycyclic aromatic hydrocarbons in the environment) (NUS)

As co-principal investigator

Jan 2002 - Mar 2006: S\$1,562,790 (Reaction engineering with polymeric MEMS technology) (A*STAR)

Jun 2002 - June 2006 \$62,000 (Novel approaches to sample pre-treatment to enhance sensitivity in chromatography and electrophoresis) (NUS)

Nov 1999 - Dec 2001: \$668,000 (Polymeric MEMs (microelectromechanical devices) - an innovation in MEMs and a novel technology for chemosensors) (NSTB)

Jul 1988 - Jan 1996 (extended): \$306,320 (Supercritical fluid processes - applications in extraction and chromatography) (NUS)

As collaborator

July 2007 - June 2010: \$20,000,000 Singapore-Delft Water Alliance - Towards Improved Urban Water Management Through Aquatic Science Centres in Singapore (NUS and Public Utilities Board of Singapore)

May 2001 - Mar 2002 (when one specific component of the project under responsibility was completed): \$2,330,000 (DNA microextraction system) (NSTB)

Mar 1999 - Dec 2003: \$160,000 (Indoor air quality - analysis of volatile organic compounds) (NUS)

Sep 1998 - 2001: \$132,230 (Metal-metal cooperation in catalytic enhancement - design and synthesis of bi- and polymetallic cluster materials as a model for soluble alloys) (NUS)

Feb 1997 - Apr 2002: \$685,719 (Ferrocenyl complexes and derivatives in materials science and catalysis) (NUS)

Dec 1997 - 2001: \$64,180 (Development of metallobuckminsterfullerene materials for catalysis) (NUS)

Sep 1996 - Feb 1998: \$50,000 (Looking for a new and effective polychlorinated biphenyl (PCB) disposal and treatment technology - designing a molecular catalyst for degradation of PCBs and their derivatives) (NUS and NSTB)

Mar 1996 - Jul 1998: \$179,894 (Molecular structure and design of organotransition metal complexes of precious metals) (NUS)

May 1985 - Mar 1996: \$614,400 (Synthesis and characterisation of transition metal complexes with special emphasis on hydrido- and sulphido-complexes) (NUS)

Funding from non-NUS and non-NSTB/A*STAR sources

As principal investigator and National Project Coordinator

1996-2010: US\$7-000-11,000 per year, and grant-in-kind (gas chromatography-mass spectrometry systems) (Programme on Environmental Monitoring and Governance of Persistent Organic Pollutants in the Asian Coastal Hydrosphere) (United Nations University, Japan)

As participant

1994 - 1996: \$3,000 (Member of a team of Singapore-based scientists involved in Canadian-funded ASEAN-Canada Cooperative Programme on Marine Science, on environmental criteria formulation, red tide and marine pollution)

National/international recognition for research

Awards and Prizes

NUS Provost's Chair Professorship (July 2011-June 2014) – an award for research excellence that has enhanced the international profile of the university

NUS Faculty of Science Outstanding Scientist Award 2009 – an award that recognizes excellence in scientific research

Federation of Asian Chemical Societies (FACS) Foundation Lectureship Award 2009 - the biennial award to given to a chemist in Asia-Pacific who has made distinguished contributions to his field of research that have raised the international profile of chemistry research conducted in the region. The notification from the President of FACS reads "...I would like to congratulate you for your excellent work and research in analytical chemistry."

NUS Outstanding Researcher Award 2006 - an award that "recognizes researchers whose work has significantly impacted and expanded the boundary of knowledge, and positioned NUS at the forefront of their particular areas of expertise." (from the University Awards 2006 souvenir booklet)

ASEAN Universities Network Distinguished Professorship, 2001-2002

Membership on institutional, national or international advisory boards

Member, Chemical Standards Committee (CSC), Standards Council of Singapore, administered by SPRING Singapore, (April 1, 2011 – March 31, 2014). Scope of the CSC: Develops, promotes and supports the implementation of standards for chemicals and chemical-related products. Covers test methods and performance assessment techniques, best practices in the manufacture, handling, use and disposal throughout the life cycle of the chemical to safeguard public interest, workers' safety and the environment

Member, Health Sciences (HSA) Authority Technical Assessment Panel (to provide guidance and assistance to the HSA group directors in the formulation of a longer-term sustainable scientific roadmap; identify the shortcomings of existing science and technologies applied in HSA scientific operations and make recommendations to address these shortcomings; help identify themes of R&D that will place HSA laboratories in an anticipatory stance to deal with the challenges ahead; and to advice on new science, computational and technology-based initiatives that will provide innovative approaches/solutions enhancing HSA's capabilities (from 2009)

Member, Technical Committee on Implementation of the National Implementation Plan (NIP) under the Stockholm Convention on Persistent Organic Pollutants (POPs) (September 2008 - August 2009)

Member, Singapore Polytechnic School of Chemical & Life Sciences Advisory Committee (June 2006 - June 2009)

Member, Working Group to Develop a National Implementation Plan (for Singapore) under the Stockholm Convention on Persistent Organic Pollutants (August 2006 - August 2007)

Co-chairman, A*STAR Techscan Panel on Frontiers in Chemicals and Materials, and Member, A*STAR Foresight Committee (2004-2005). These committees have been tasked to conduct a technology scan to determine the direction of chemicals and materials research that Singapore should undertake from 2006-2010 and beyond that will not only be impactful from a global point of view but also generate economic benefits for the country

Member, International External Audit Panel, Water Reclamation (NEWater) Demonstration Plant Study by the Public Utilities Board to monitor the water reclamation operations in producing water via microfiltration/reverse-osmosis (from 2003 - current).

Invited member, Advisory Committee on Hazardous Substances and Toxic Wastes, Ministry of the Environment, Singapore (July 2001 - current). The committee identifies chemicals that need to be controlled and gazetted for regulation, and advises the ministry on the appropriate nature and level of control.

Co-chairman, A*STAR Techscan Panel on Frontiers in Chemicals and Materials, and Member, A*STAR Foresight Committee (2004-2005). These committees have been tasked to conduct a technology scan to determine the direction of chemicals and materials research that Singapore should undertake from 2006-2010 and beyond that will not only be impactful from a global point of view but also generate economic benefits for the country

Invited expert member and rapporteur, "Substances and Analytical Techniques" working group, United Nations Environment Programme Workshop to Develop a Global Monitoring Programme to Support the Effectiveness Evaluation of the Stockholm Convention on Persistent Organic Pollutants (POPs), March 24-27, 2003, Geneva, Switzerland. The working group was asked to discuss and recommend the most appropriate POPs analytes, and to suggest the most suitable analytical techniques for the global monitoring of these toxic environmental pollutants.

Invited member, Joint Veterinary and Analytical Panel for Race Horses. The panel advises on and facilitates working relations amongst the Singapore Turf Club, the Agri-Food and Veterinary Authority and the Health Sciences Authority to improve the standard of race horse care and analytical testing (from February, 2003).

Invited expert, Workshop on Environmental Monitoring of Persistent Organic Pollutants (POPs) in East Asian Countries, December 2-4, 2002, Tokyo and Tsukuba, Japan.

Invited member, International Experts Panel, Water Reclamation Demonstration Plant Study by the Public Utilities Board to advise on physico-chemical aspects of water quality produced via continuous microfiltration and reverse-osmosis. This was a landmark study, the first in Asia, to evaluate the use of reclaimed water ("NEWater") for human consumption (September, 2001 - 2003)

Membership or editorial boards; conference committees

Editor, Journal of Chromatography A (Elsevier)) (from October, 2010)

Editor, Analytica Chimica Acta (Elsevier) (September 2005-January, 2011).

Editorial/Advisory Boards of peer-reviewed journals

Member of the Editorial Board, *Journal of Chromatography A* (Elsevier Science) (2005-2010)

Editorial Advisor, *Analytica Chimica Acta* (Elsevier Science) (2003-2005)

Member, International Advisory Board, Chinese (Taipei) Journal of Chemistry (2011) Member of the International Advisory Board, *Analyst* (Royal Society of Chemistry) (1997-2008)

Member of the Advisory Board, *Analytical Sciences* (Japan Society for Analytical Chemistry)

Member of the Editorial Advisory Board, *LC-GC Asia Pacific* (Advanstar Communications)

Member of the Editorial Advisory Board, *LC·GC Europe* (Advanstar Communications) Member of the Scientific Advisory Council, *Separation Science* (Eclipse)

Member of Editorial Board and Advisory Board, *International Journal of Chemical Sciences*.

Invited Co-Guest Editor, *Innovation* (published by NUS and World Scientific Publishing) of a special issue on water (2007).

Conference committees

Member, International Advisory Committee, 14th International Symposium on Advances in Extraction Technologies (ExTech2012), Messina, Italy, September 24-26, 2012

Member, Scientific Advisory Committee, 11th Asia-Pacific International Symposium on Microscale Separations and Analysis, November 27-30, 2011, Hobart, Australia

Member, Organizing Committee, 37th International Symposium on High-Performance Liquid-Phase Separation Techniques (HPLC2011), Dalian, China, October 9-13, 2011

Co-organiser and Chairman of International Advisory Board/Scientific Committee, 13th International Symposium on Advances in Extraction Technologies (ExTech2011), Kuala Lumpur, Malaysia, September 27-29, 2011

Presiding Chairman, Separation Science Asia 2011, Singapore, July 27-28, 2011

Member, Scientific Advisory Council, Separation Science Asia 2011, Singapore, July 27-28, 2011

Chairman, Organizing Committee, 1st International Collaborative and Cooperative Chemistry Symposium, Singapore, November 15-16, 2010

Member, International Advisory Board, 10th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2010), Hong Kong, China, December 10-13, 2010

Member, International Scientific Committee, 12th International Symposium on Advances in Extraction Technologies (ExTech2010), Poznan, Poland, September 20-22, 2010

Member, Scientific Advisory Council, Separation Science Singapore 2010, Singapore, August 5-6, 2010

Organiser, 2nd NUS-Seoul National University Joint Symposium, Singapore, March 5-6, 2010

Member, International Advisory Board, 9th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2009), Dalian, China, October 28-31, 2009

Member, Scientific Advisory Council, Separation Science Singapore 2009, Singapore, August 26-28, 2009

Member, International Advisory Board, Asianalysis X (10th Asian Conference on Analytical Sciences), Kuala Lumpur, Malaysia, August 11-13, 2009 (Board member since May, 2000)

Member, Organizing Committee; Chairman, Technical Programme, International Symposium on Green and Sustainable Chemistry, Singapore, August 3-5, 2009

Member, International Scientific Advisory Committee, 33rd International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2008), Kyoto, Japan, December 2-5, 2008

Member, International Advisory Board, 8th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2008), Kaohsiung, Taiwan, November 2-5, 2008

Member, International Advisory Board, 1st Singapore International Water Week, Singapore, June 23-27, 2008

Co-Chairman, 7th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2007), Singapore, December 17-19, 2007

Co-Chairman, 5th Singapore International Chemical Conference, Singapore, December 17-19, 2007

Member, International Advisory Board, Asianalysis IX (9th Asian Conference on Analytical Sciences), Jeju Island, S. Korea, November 4-8, 2007 (Board member since May, 2000)

Member of International Scientific Committee, 4th Asia-Pacific International Conference on Pollutants Control and Analysis, Beijing, China, October 10-15, 2007 (Member since May, 2000).

Member, International Advisory Panel, 12th Asian Chemical Congress-20th Malaysian International Symposium on Analytical Science, Kuala Lumpur, Malaysia, August 23-25, 2007.

Invited Co-Presenter, Tutorial on Liquid-Phase Microextraction, 9th International Symposium on Advances in Extraction Techniques (ExTech 2007), June 3-6, 2007, Ålesund, Norway.

Member, International Advisory Board, 6th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2006), Kyoto, Japan, November 12-14, 2006.

Co-organiser of an Analytical Chemistry Symposium for Pacifichem 2005, Hawaii, USA, December 15-20, 2005.

Member of International Scientific Committee, 3rd Asia-Pacific International Conference on Pollutants Control and Analysis, Bangkok, Thailand, December 12-15, 2005 (Member since May, 2000).

Member, International Advisory Committee, Asianalysis VIII (8th Asian Conference on Analytical Sciences), Taipei, Taiwan, October 16-20, 2005. (Board member since May, 2000).

Member of Science Advisory Board, Southeast Asian Environmental Forensics Conference (under the auspices of the International Society of Environmental Forensics), Taipei, Taiwan, September 19-21, 2005.

Member, National Advisory Committee, 3rd International Conference on Materials for Advanced Technologies (ICMAT 2005), Singapore, July 3-8, 2005.

Member, Scientific Committee, 3rd Singapore International Chemical Conference, December 15-17, 2003. Responsible for ensuring a strong programme in analytical and environmental chemistry.

Co-Chairman, and Member of International Organising Committee, 2nd Asia-Pacific International Conference on Pollutants Control and Analysis, Ho Chi Minh City, Vietnam, December 1-3, 2003, organized by the International Association of Environmental Analytical Chemistry, Ho Chi Minh National University, Ecole Polytechnic Federale de Lausanne (Swiss Federal Institute of Technology at Lausanne)/Swiss Development Corporation and Department of Chemistry-National University of Singapore; Member of Advisory Committee (since May, 2000).

Co-organiser, International Workshop on Build-It-Yourself Instrumentation and Microscale Chemistry, Singapore, December 2-3. 2002.

Member of International Scientific Committee, United Nations International Symposium on Tracing Pollutants from Agrochemical Use: Focus on Endocrine Disrupting Compound Pollution, Hanoi, Vietnam, April 15-16, 2002.

Member of International Advisory Board, Asianalysis VII (7th Asian Conference on Analytical Sciences), Hong Kong, July 28-31, 2004. (Board member since May, 2000). I was also invited to chair a mini-symposium on environmental and field analysis.

Chairman of Organising Committee, Japan Society for the Promotion of Science-National University of Singapore Joint Symposium on Analytical Sciences: Challenges of the New Century, Singapore, February 28-March 1, 2002.

Theme Coordinator, 9th Asian Chemical Congress/World Chemical Congress 2001, Brisbane, Australia, July 1-6, 2001.

Member of International Advisory Board, Asianalysis VI (6th Asian Conference on Analytical Sciences, together with the International Conference on Analytical Sciences [ICAS] 2001) (from May, 2000). I was also invited to chair a plenary session.

Member of International Advisory Boards, Eurasia Conference on Chemical Sciences series (from February, 2000).

Co-chairman of Organising Committee, and Member of Fund Raising Sub-Committee, International Conference on Fundamental Sciences: Biological and Chemical Sciences, Singapore, May 21-24, 2001.

Member of International Advisory Committee, International Conference on Fundamental Sciences: Biological and Chemical Sciences, Singapore, May 21-24, 2001. I was also a session chairman.

Member of Organising Committee, and Member of Fund Raising Sub-Committee, 2nd Singapore International Chemical Conference, Singapore December 18-20, 2001.

Member of Organising Committee, 1st Singapore Chemical Conference, Singapore, December 7-9, 1998.

Member of the International Organising Committee, 2nd Asia-Pacific International Symposium on Capillary Electrophoresis and Related Microscale Techniques, China, October 8-11, 1998.

Organiser and Presiding Chairman, International Symposium/Workshop on Environmental Governance and Analytical Techniques: Water Pollution and Water Quality Monitoring, Singapore, February 24-March 1, 1997.

Member of the Organising Committee and Scientific Chairman, 1st Asia-Pacific International Symposium on Capillary Electrophoresis and Other Nano- and Microscale Analytical Techniques, Singapore, December 17-20, 1996; Co-guest editor of conference proceedings (see below).

Co-chairman and Scientific Chairman, 5th Symposium on Our Environment/1st Asia-Pacific Workshop on Pesticides, Singapore, June 6-8, 1995; Co-guest editor of conference proceedings (see below).

Secretary, Organising Committee, 4th Symposium on Our Environment, Singapore, May 21-23, 1990; Chief editor of conference proceedings (see below).

Member of Organising Committee, Japan Society for the Promotion of Science-National University of Singapore Joint Seminar on Analytical Chemistry, Singapore, March 21-23, 1988.

Member of the Organising Committee, 1st Asian Chemical Conference, Singapore, April 8-11, 1985. This was the first event in the Asian Chemical Congress (ACC) series.

Service as a reviewer

International

Manuscript reviewer for the following international refereed journals:

Analytical Chemistry

Trends in Analytical Chemistry

Journal of the American Chemical Society

Electrophoresis

Chemical Communications

Journal of Chromatography A

Journal of Analytical Atomic Spectrometry

The Analyst

Green Chemistry

Analytica Chimica Acta

Journal of the American Society for Mass Spectrometry

Journal of Separation Science

Journal of Chromatography B

Journal of Chromatographic Science

Chromatographia

Talanta

Rapid Communications in Mass Spectrometry

Water Research

Food Chemistry

Journal of Electroanalytical Chemistry

Journal of the Association of Official Analytical Chemists – International

Journal of Pharmaceutical and Biomedical Analysis

Journal of Environmental Monitoring

Analytical and Bioanalytical Chemistry

Journal of Hazardous Materials

International Journal of Environmental Analytical Chemistry

Analytical Letters

Journal of Applied Polymer Science

Chemical Engineering Communications

Inorganic Chemistry Communications

Physical Chemistry Chemical Physics

Microchimica Acta

Chemical Engineering Communications

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy

Food Analytical Methods

Bioelectrochemistry

Electrochimica Acta

Chirality

Archives of Environmental Chemistry and Toxicology

Biotechnology Progress

Bulletin of the Korean Chemical Society

Chemical Engineering Journal

Journal of Environmental Quality

Environmental Science & Technology

Vaccine

European Journal of Pharmaceutical Sciences

Journal of Chemical Technology and Biotechnology

Chemosphere

Supramolecular Chemistry

Advances in Environmental Research

Encyclopaedia of Analytical Chemistry: Instrumentation and Applications

Bioelectrochemistry

Chemical Engineering Journal

Food Chemistry

Food Analytical Methods

Bioanalysis

Encyclopaedia of Analytical Chemistry: Instrumentation and Applications

Regional

Bulletin of the Singapore National Institute of Chemistry (Singapore)

Journal of Bioscience (Malaysia)

ASEAN Journal of Science and Technology for Development (South-East Asia)

Malaysian Journal of Chemistry

Bulletin of the Korean Chemical Society

Journal of the Brazilian Chemical Society

Other reviewing/refereeing duties

International

Reviewer of grant applications for the following organisations:

US National Science Foundation

New Zealand Foundation for Research, Science and Technology (on two areas, separation science and Antarctic research)

Australian Research Council

The Nature Conservancy, USA (Andrew W. Mellon Foundation)

Fonds zur Förderung der wissenschaftlichen Forschung (Austrian Science Fund)

Research Grants Council of Hong Kong

Alberta Ingenuity Fund, Canada

City University of New York's Collaborative Incentive Research Grants Programme

Natural Sciences and Engineering Research Council of Canada

Editorship of peer-reviewed conference proceedings

Co-guest editor of Environmental Toxicology and Health in Singapore: Proceedings of the National University of Singapore-Health Sciences Authority Joint Seminar: Environmental Toxicology and Health in Singapore. Published in *J. Toxicol.* & *Environ.*, *Pt.* A (2006) 69 (no. 21).

Co-guest editor and editorial writer of proceedings of the 1st Asia-Pacific International Symposium on Capillary Electrophoresis and Other Nano- and Microscale Analytical Techniques, Singapore, December 17-20, 1996. Published in *Talanta* (1998) <u>45,</u> 603-773.

Co-guest editor of proceedings of the 5th Symposium on Our Environment/1st Asia-Pacific Workshop on Pesticides, Singapore, June 6-8, 1995. Published in *Environmental Monitoring & Assessment* (1997) <u>44</u>, 1-615.

Editor-in-chief of proceedings of the 4th Symposium on Our Environment, Singapore, May 21-23, 1990. Published in *Environmental Monitoring & Assessment* (1991) <u>19</u>, 1-554 and as separate hardbound volume, "4th Symposium on Our Environment," 547 pages (Kluwer Academic Publishers).

Invited presentations at scientific meetings/workshops

International

Lee, H.K. Use of electrical potential to drive hollow fibre-based microextraction more efficiently. 11th Asia-Pacific International Symposium on Microscale Separations and Analysis, November 27-30, 2011, Hobart, Australia (invited speaker with support)

Lee, H.K. Development of environmentally friendly extraction methods within the framework of the United Nations University Programme on Persistent Organic Pollutants in the Asian Coastal Hydrosphere. United Nations University-Institute of Sustainability and Peace International Symposium on Monitoring and Governance of Asian Coastal Hydrosphere, October 24-25, 2011, Tokyo, Japan (invited speaker with full support)

Lee, H.K. Miniaturized liquid-phase extractions and their potential for onsite sample preparation of environmental aqueous samples. 37th International Symposium on High-Performance Liquid Phase Separations and Related Techniques (HPLC 2011), October 8-11, 2011, Dalian, China (keynote speaker with support)

Lee, H.K. Potential of automated field sample preparation and analysis. 13th International Symposium on Advances in Extraction Technologies, September 26-29, 2011, Kuala Lumpur, Malaysia (keynote speaker with support)

Lee, H.K. (with S. Pedersen-Bjergaard). Liquid-phase microextraction (LPME) (solvent-minimized extraction and related methods): a miniaturized sample preparation approach. 13th International Symposium on Advances in Extraction

- Technologies, September 26-29, 2011, Kuala Lumpur, Malaysia (invited short course co-lecturer, with support)
- Lee, H.K. Potential field applications of microscale sample preparation for aqueous samples. 14th Asian Chemical Congress, August 5-8, 2011, Bangkok, Thailand (invited lecture)
- Lee, H.K. Miniaturized solvent- and sorbent-based sample preparation: considerations for potential onsite applications. International Congress on Analytical Sciences (ICAS 2011), May 22-26, 2011, Kyoto, Japan (invited lecture with support)
- Lee, H.K. Miniaturized sorbent-based and solvent-based sample preparation approaches for environmental analysis. United Nations University International Symposium on Existing and Emerging Chemicals in the Environment, March 8-9, 2011, Shanghai, China (invited lecture with full support)
- Lee, H.K. Monitoring singapore's coastal regions for endocrine-disrupting chemicals such as polybrominated diphenyl ethers. United Nations University International Symposium on Existing and Emerging Chemicals in the Environment, March 8-9, 2011, Shanghai, China (invited lecture with full support)
- Lee, H.K. Active Analyte extraction across a membrane using electrical potential. 10th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2010), December 10-13, 2010, Hong Kong, China (keynote lecture with support)
- Lee, H.K. Miniaturized solvent- and sorbent-based sample preparation: considerations for potential onsite applications. 12th International Symposium on Extraction Technologies (ExTech 2010), September 20-22, 2010, Poznan, Poland (plenary lecture with all local expenses provided)
- Lee, H.K. Solvent-minimized sample preparation approaches for potential onsite applications. Separation Science Singapore 2010, August 5-6, 2010 (invited lecture with honorarium)
- Lee, H.K. Role of materials chemistry in solvent-minimized sample preparation. 35th International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2010), June 20-24, 2010, Boston, Massachusetts, USA (invited lecture with support)
- Lee, H.K. Environmentally friendly solvent-minimized sample preparation. 25th Philippine Chemistry Congress, Zambales, The Philippines, April 8-10, 2010 (plenary lecture, honorarium provided)
- Lee, H.K. Solvent-minimized sample preparation approaches for potential field applications. 11th International Symposium on Hyphenated Techniques in Chromatography (HTC-11), January 26-27, 2010 & International Symposium on Hyphenated Techniques for Sample Preparation (HTSP), Bruges, Belgium, January 27-29, 2010 (keynote lecture, honorarium provided)

- Lee, H.K. Miniaturized sample preparation: Liquid-phase microextraction (LPME) (solvent-minimized extraction and related methods). 11th International Symposium on Hyphenated Techniques in Chromatography (HTC-11), January 26-27, 2010 & International Symposium on Hyphenated Techniques for Sample Preparation (HTSP), Bruges, Belgium, January 27-29, 2010 (invited short course co-lecturer, honorarium provided)
- Lee, H.K. Practical applications of microscale sample preparation for environmental and biological analysis. 9th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2009)/1st Asia-Pacific International Symposium on Lab-on-a-Chip (APLOC2009), Shanghai, China. October 28-31, 2009 (invited lecture)
- Lee, H.K. Microscale sample preparation in biological studies. 24th Microscale Bioseparations, Dalian, China, October 18-22, 2009 (invited lecture)
- Lee, H.K. Materials-based sample preparation: potential for field applications. 11th International Symposium on Advances in Extraction Technologies (ExTech 2009), October 4-7, 2009, Rapid City, South Dakota, USA (plenary lecture)
- Lee, H.K. Education and research of analytical chemistry in the National University of Singapore. 1st Asian Analytical Chemistry Network Symposium, September 25-26, 2009, Sapporo, Japan (invited lecture; all expenses provided)
- Lee, H.K. Towards green and sustainable analytical chemistry: solvent-minimized sample preparation procedures. 13th Asian Chemical Congress (13th ACC), Shanghai, China, September 14-16, 2009 (plenary lecture: Federation of Asian Chemical Societies Foundation Lectureship Award Lecture; all expenses provided)
- Lee, H.K. Solvent-minimized sample preparation in separation science. Separation Science Singapore 2009, August 26-28, 2009 (invited lecture)
- Lee, H.K. Green and sustainable analyte extraction and preconcentration strategies. Asianalysis X (10th Asian Conference on Analytical Sciences), Kuala Lumpur, Malaysia, August 11-13, 2009 (plenary lecture) (all travel, accommodation and other expenses provided)
- Lee, H.K. Water, a critical resource: sample preparation by environmentally friendly microextraction procedures. 33rd International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2008), December 2-5, 2008, Kyoto, Japan (invited lecture)
- Lee, H.K. Singapore: On sampling, seawater and squid. International Symposium on Environmental Monitoring and Governance in the Asian Coastal Hydrosphere: The Role of Academia and the Private Sector for the Stockholm Convention, November 13-14, 2008, Tokyo, Japan (invited lecture)
- Lee, H.K. Development and applications of microscale liquid-phase and solid-phase sample preparation procedures. 8th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2008), November 2-5, 2008, Kaohsiung, Taiwan (invited lecture)

- Lee, H.K. "Green" sample preparation methods for environmental analysis. 3rd International Symposium on Trends in Bio-monitoring, Bio-control and Bio-toxicokinetics for Sustainable Agriculture, October 20, 2008, Gwangju, South Korea (invited lecture)
- Lee, H.K. Microextraction approaches for environmental analysis. 91st Canadian Chemistry Conference and Exhibition, May 24-28, 2008, Edmonton, Alberta, Canada (invited lecture)
- Lee, H.K. Chemical Congress 2008: Chemistry for Sustainable Development, May 23-25, 2008, Kathmandu, Nepal (keynote lecture) (declined due to clash with another conference to which I was also invited)
- Lee, H.K. Miniaturized sample preparation approaches for microseparation techniques. Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon 2008), March 2-6, 2008, New Orleans, Louisiana, USA (invited lecture)
- Lee, H.K. Environmentally-friendly solvent-minimized sample preparation approaches. 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10) and 10th International Symposium on Advances in Extraction Techniques (ExTech 2008), January 28-Febraury 1, 2008, Bruges, Belgium (keynote lecture)
- Lee, H.K. Persistent organic pollutants in the Singapore coastal environment: a country report. International Symposium on Persistent Organic Pollutants: Global Transport, Best Environmental Practice and Risk Perception, November 13-15, 2007, Jakarta, Indonesia (invited lecture) (all travel, accommodation and other expenses provided)
- Lee, H.K. Development of novel microscale extraction procedures for environmental analysis. 9th Asian Conference on Analytical Sciences (Asianalysis IX), Jeju Island, South Korea, November 4-8, 2007 (keynote lecture) (honorarium provided)
- Lee, H.K. Environmentally friendly approaches to sample preparation using hollow fibre membranes. Presented at 27th International Symposium on Halogenated Persistent Organic Pollutants (Dioxin 2007), September 2-7, 2007, Tokyo, Japan (Invited lecture) (air fare, accommodation, other expenses, per diem provided)
- Lee, H.K. Development of environmentally-friendly sample preparation techniques for environmental analytical chemistry. 12th Asian Chemical Congress, Kuala Lumpur, Malaysia, August 22-25, 2007 (keynote lecture)
- Lee, H.K. (with S. Pedersen-Bjergaard & K.E. Rasmussen). Tutorial: Basics of liquid-phase microextraction. 9th International Symposium on Advances in Extraction Techniques (ExTech 2007), June 3-6, 2007, Ålesund, Norway (invited tutorial)
- Lee, H.K. Environmentally-benign extraction techniques for environmental analysis. 9th International Symposium on Advances in Extraction Techniques (ExTech 2007),

- June 3-6, 2007, Ålesund, Norway (plenary lecture)
- Lee, H.K. Hydrogenation reactions in a simple glass capillary-microreactor. 6th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2006), November 12-14, 2006, Kyoto, Japan (invited lecture) (Honorarium to cover accommodation)
- Lee, H.K. 17th International Symposium on Fine Chemistry and Functional Polymers (FCFP-XVII) & 3rd IUPAC International Symposium on Novel Materials and their Synthesis (NMS-III), October 21-25, 2007, Shanghai, China (invitation declined)
- Lee, H.K. Miniaturised and environmentally-benign sample preparation approaches. International Symposium on POPs (Persistent Organic Pollutants) in Asia: Its Status and Future, November 6-8, 2006, Quezon City, The Philippines (invited lecture, all travel, accommodation and other expenses provided)
- Lee, H.K. Miniaturised liquid-phase sample preparation for environmental analysis. 29th International Symposium on Capillary Chromatography. May 29 June 2, 2006, Riva del Garda, Italy (plenary lecture) (honorarium to cover air fare and accommodation provided)
- Lee, H.K. Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon 2006), March 12-17, 2006, Orlando Florida, USA (2 invited lectures, declined due to visa issues)
- Lee, H.K. Novel approaches to solvent-minimised extractions in environmental analysis. 9th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-9) and 8th International Symposium on Advances in Extraction Techniques (ExTech 2006), February 8-10, 2006, York, UK (plenary lecture)
- Lee, H.K. Design and synthesis of polymers for applications to environmental analytical chemistry. Pacifichem 2005, Honolulu, Hawaii, December 15-20, 2005 (invited lecture)
- Lee. H.K. 15th International Symposium on Fine Chemicals and Functional Polymers, Shanghai, China, October 17-20, 2005 (invited lecture) (declined because it clashed with Asianalysis VIII at which I was a keynote lecturer)
- Lee, H.K. Novel approaches to miniaturised extraction for environmental analysis. 8th Asian Conference on Analytical Sciences (Asianalysis VIII), Taipei, Taiwan, October 16-20, 2005 (keynote lecture) (honorarium to cover air fare and accommodation provided)
- Lee, H.K. Novel miniaturised approaches to sample preparation. 11th Asian Chemical Congress, Seoul, South Korea, August 24-26, 2005 (invited lecture) (honorarium to cover air fare and accommodation provided)
- Lee, H.K. Novel approaches to extraction of POPs from aqueous matrices. International Symposium on Ecosystem Impacts of Persistent Organic Pollutants,

Bangkok, Thailand, April 26-27, 2005 (invited lecture, all travel, accommodation and other expenses provided)

Lee, H.K. 5th Dalian Institute of Chemical Physics Symposium on Microscale Analysis for Systems Biology, December 10-11, 2004 (invited lecture) (honorarium to cover air fare and accommodation provided) (declined because dates too close to 3rd Singapore-India Collaborative and Cooperative Symposium 2004)

Lee, H.K. Heterogeneous catalysis in a capillary-microreactor for selective oxidation and Suzuki cross-coupling reactions. 5th Asia-Pacific International Symposium on Microscale Separations and Analysis, Seoul, South Korea, December 5-8, 2004 (invited lecture) (honorarium to cover air fare and accommodation provided)

Lee, H.K. In-house approach to solid-phase microextraction: use of coated hollow fibre membrane and potential for on-site sample preparation. 2nd International Environmental Research Centre Workshop on Environment and Sustainable Development, Gwangju, South Korea, October 27-29, 2004 (invited lecture) (full expenses and per diem provided)

Lee, H.K. Microscale solid-phase and liquid-phase extraction of environmental pollutants from aqueous matrices. 7th Asian Conference on Analytical Sciences (Asianalysis VII), Hong Kong, July 28-31, 2004 (keynote lecture) (honorarium to cover air fare and accommodation provided)

Lee, H.K. An alternative approach to commercial solid-phase microextraction for the extraction of persistent organic pollutants and other contaminants. International Symposium on Impacts on Persistent Organic Pollutants from Urban Areas, Beijing, China, May 24-25, 2004 (invited lecture, all travel, accommodation and other expenses provided)

Lee, H.K. Scientific and Technical Advisory Panel Workshop on the Use of Bioindicators, Biomarkers and Analytical Methods for Persistent Organic Pollutants (POPs) & 2nd Workshop on the Environmental Monitoring of POPs in East Asian Countries, Tsukuba, Japan, December 10-15, 2003 (air fare, accommodation and expenses provided) (invitation declined because this event clashed with the 3rd Singapore International Chemical Conference, December 15-17, 2003)

Lee, H.K. Miniaturised extraction techniques combined with chromatography and electrophoresis: an overview. 2nd Asia-Pacific International Conference on Pollutant Analysis and Control, Ho Chi Minh City, Vietnam, December 1-3, 2003 (invited lecture, accommodation and expenses provided)

Invited to present a lecture at the Indo-USA Science and Technology Forum Workshop on Green Chemistry, New Delhi, India, November 17-20, 2003 (invitation declined)

Lee, H.K. Miniaturised approaches to liquid extractions for environmental analysis. 10th Asian Chemical Congress/8th Eurasia Conference on Chemical Sciences, Hanoi, Vietnam, October 22-24, 2003 (invited lecture) (expenses and accommodation provided)

Lee H.K. Miniaturised extraction techniques in combination with chromatography and electrophoresis. International Chemical Conference (Analytical Chemistry) (ICCT 2003), Taipei, Taiwan, October 29-November 1, 2003 (keynote lecture) (air fare, accommodation and expenses provided)

Lee H.K. A new approach to solid-phase microextraction using polymer-coated hollow-fibre membranes. International Chemical Conference (Analytical Chemistry) (ICCT 2003), Taipei, Taiwan, October 29-November 1, 2003 (pre-conference invited lecture, presented at National Institute of Environmental Analysis, Chung Li City, on October 28, 2003) (air fare, accommodation and expenses provided)

Lee, H.K. Singapore's water guidelines: a brief overview. Workshop on Capacity Development Training for Monitoring Persistent Organic Pollutants in the East Asian Hydrosphere, Tokyo, Japan, September 1-2, 2003 (invited lecture) (air fare, accommodation and other expenses provided)

Muir, D.C.G., Rohwer, E. & <u>Lee. H.K.</u> Substances and analytical techniques, United Nations Environment Programme Workshop to Develop a Global Monitoring Programme to Support the Effectiveness Evaluation of the Stockholm Convention on Persistent Organic Pollutants (POPs), March 24-27, 2003, Geneva, Switzerland (presented by H.K. Lee as rapporteur of "Substances and Analytical Techniques" Working Group) (air fare, accommodation and expenses provided).

Lee, H.K. The development of advanced analytical techniques for persistent organic pollutant monitoring. International Workshop on Regional Environmental Quality in the East Asian Coastal Hydrosphere: Environmental Quality Standards and Capacity Development, Kwangju, Korea, January 26-27, 2003 (invited lecture) (air fare, accommodation and other expenses provided).

Lee, H.K. Persistent organic pollutants in the Singapore environment. Workshop on Environmental Monitoring of Persistent Organic Pollutants (POPs) in East Asian Countries, Tokyo & Tsukuba, Japan, December 2-4, 2002 (invited lecture) (air fare, accommodation and other expenses provided).

Invited by ITP 2002 (13th International Symposium on Capillary Electroseparation Techniques), Helsinki, Finland, September 1-4, 2002 (declined).

Lee, H.K. Approaches to liquid-phase microextraction/capillary electrophoresis for environmental analysis. EnviroAnalysis 2002 (4th Biennial International Conference on Measurement and Monitoring of the Environment), Toronto, Canada, May 27-30, 2002 (invited lecture).

Chanbasha, B., <u>Lee, H.K.</u> & Obbard, J.P. Determination of organochlorine pesticides in seawater using liquid-phase hollow fibre membrane microextraction and gas chromatography/mass spectrometry. United Nations International Symposium on Tracing Pollutants from Agrochemical Use: Focus on EDC Pollution, Hanoi, Vietnam, April 15-16, 2002 (invited lecture) (air fare, accommodation and other expenses provided).

- Chanbasha, B., <u>Lee, H.K.</u> & Tan, K.S. Distribution of endocrine disrupting compounds in the Singapore environment. United Nations International Symposium on Tracing Pollutants from Agrochemical Use: Focus on EDC Pollution, Hanoi, Vietnam, April 15-16, 2002 (invited lecture).
- Lee, H.K. 7th Eurasia Conference on Chemical Sciences (EuAsC₂-S7), Karachi, Pakistan, November 10-13, 2001 (invited lecture) (declined).
- Lee, H.K. Liquid-phase microextraction with hollow fibre membrane for environmental analysis. ExTech 2001 (Symposium on Advances in Extraction Technologies), Barcelona, Spain, September 17-19, 2001 (invited lecture) (air fare, accommodation and expenses provided).
- Lee, H.K. Solvent-minimised extraction of environmental pollutants. Asianalysis VI (6th Asian Conference on Analytical Sciences, together with the IUPAC International Congress on Analytical Sciences [ICAS] 2001), Tokyo, Japan, August 7-10, 2001 (invited lecture) (air fare and accommodation provided).
- Lee, H.K. Miniaturised extraction techniques for environmental analysis. 9th Asian Chemical Congress/World Chemistry Congress 2001, Brisbane, Australia, July 1-6, 2001 (invited lecture).
- <u>Lee, H.K.</u> & Chanbasha, B. Endocrine disrupting compounds in the Singapore environment. United Nations International Symposium and Training Workshop on Endocrine Disrupting Compounds Pollution in East Asia Coastal Hydrosphere, Seoul, Korea, April 16-17, 2001 (invited lecture) (air fare, accommodation and other expenses provided).
- Lee, H.K. Combination of microextraction and capillary electrophoresis for environmental analysis. EnviroAnalysis 2000 (3rd Biennial International Conference on Measurement and Monitoring of the Environment), Ottawa, Canada, May 8-11, 2000 (invited lecture).
- Lee, H.K. Liquid-phase microextraction for environmental organic and inorganic pollutants. ExTech 2000 (Symposium on Advances in Extraction Technologies), Waterloo, Canada, May 1-3, 2000 (plenary lecture).
- <u>Lee, H.K.</u> & Chanbasha, B. Organotins in the Singapore environment. United Nations International Symposium and Training Workshop on Endocrine Disrupting Compounds Pollution in East Asia Coastal Hydrosphere, Kuala Lumpur, Malaysia April 17-21, 2000 (invited lecture) (air fare, accommodation and other expenses provided).
- Lee, H.K. Miniaturised sample preparation for environmental analysis. 6th Eurasia Conference on Chemical Science (EuAsC₂-S6), Brunei, February 27-March 2, 2000 (keynote lecture) (air fare and accommodation provided).
- Lee, H.K. Approaches to environmentally-friendlier extraction techniques. ExTech 99 (Symposium on Advances in Extraction Technologies), Waterloo, Canada, April 26-28, 1999 (invited lecture).

Lee, H.K. Endocrine disrupters: should we be concerned in East Asia? International Symposium on Environmental Issues Related to Endocrine Disrupting Compound Pollution in East Asia, Tokyo, Japan, February 9-10, 1999 (invited lecture) (air fare, accommodation and other expenses provided).

He, Yi. and <u>Lee, H.K.</u> Application of solid-phase microextraction to the analysis of volatile organic compounds in indoor air. 2nd Asia-Pacific International Symposium on Capillary Electrophoresis and Related Microscale Techniques, China, October 8-11, 1998 (invited lecture)

<u>Lee, H.K.</u> & He, Y. Microscale extraction and separation techniques. How far have we come and where are we heading? Symposium on Frontiers in Chemistry, in conjunction with the 2nd Conference for Worldwide Chinese Young Chemists, Hong Kong, December 20-23, 1997 (invited lecture) (air fare and accommodation).

Li N. & Lee, H.K. Pesticides and polychlorinated biphenyls in the Singapore environment. International Symposium/Workshop on Environmental Governance and Analytical Techniques: Water Pollution and Water Quality Monitoring, Singapore, February 24-March 1, 1997 (organised by the United Nations University, Japan) (invited lecture).

Book/monograph chapters

I have contributed to eleven invited chapters on sample preparation and separation science to books/monographs published by international publishers.

Invitation to be external examiner for higher-degree theses (Malaysia)

External examiner for MSc theses submitted to the Department of Pharmacology, University of Malaya (2002)

SERVICE

Long-service awards from NUS in 1997, 2000, 2005 and 2010

Leadership of or service on Department, Faculty or University Committees

Department:

Member of Department Management Committee (2006 - current)

Chairman, Annual Academic Staff Appraisal Committees (for Service) (2010); (for Teaching) (2009, 2011)

Member, Department Executive Committee and Finance Committee (from July 2005 - June 2009)

Head of Department (July 1, 2003 - June 30, 2005)

Deputy Head of Department (from July 1, 1998 - June 30, 2003; July 1, 2005 - June 30, 2009)

Chief Editor, ChemConnections (Department of Chemistry Alumnus newsletter) (from February 2000-current)

Faculty:

Member, Search Committee for Head, Department of Chemistry (2008-2009)

Member, Faculty of Science Research Committee (July 2005-June 2006)

Member, Search Committee for Leader of the Departments of Chemistry/Biological Sciences/Pharmacy Medicinal Chemistry Programme (June 2005)

Member, Search Committee for Head of the Departmental of Biological Sciences (June 2005)

Chairman, Faculty Promotion and Tenure Committee (Appointments/Promotions/Tenure - Professorial Level) (July 2003 - June 2004).

Co-Chairman, Technical University of Munich-NUS Joint MSc (Industrial Chemistry) Examination Board cum Programme Management Committee (July 2003 – June 2009)

Member of Faculty Promotion and Tenure Committee (Appointments/Promotions/Tenure - Professorial Level) (July 2002- une 2003).

University:

Member, Executive Committee, NUS Environmental Research Institute (from July 2009)

Deputy Chairman and Member of Expert Panel, University Research Committee for Engineering, Physical and Chemical Sciences (November 2006 - current)

Member, University Cross-Faculty Research Panel (from 2008)

Member, University Promotion and Tenure Committee (July 1, 2007 - June 30, 2008)

Member, Search Committee for Head of the Division of Environmental Science and Engineering, Faculty of Engineering (June - December 2005)

Member, Search Committee for Head of the Engineering Science Programme, Faculty of Engineering (June 2005)

Member, Coordinating Committee, Division of Environmental Science and Engineering, Faculty of Engineering (January 2005)

National:

See above

Public Service

Government of Singapore (Ministry of Education) Long Service Award (August 2011)

Involvement in Chemistry Communications Challenge (English Section), Singapore Science and Engineering Fair, Singapore National Talent Award, Speech Contest, Science Mentorship Programme, Science Research Programme, etc. as organizer, judge, etc.

<u>Service to International Academic Community</u> See also above

National Project Coordinator for Singapore, United Nations University Programme on Environmental Governance and Analytical Techniques (from 1996)

Service to Profession/Industry

Honorary Secretary, Singapore National Institute of Chemistry (2002-2004)

Coopted Council Member, Singapore National Institute of Chemistry (1998-1999)

Oct, 2011

Lee Hian Kee

REFEREED PUBLICATIONS - INTERNATIONAL

- 1) Lee, H.K., Gnad, P.A., Trebilco, P.R., Wright, G.J. & Pannell, L.K. A Multiple-Scan High Resolution Mass Spectrometer Data System for the Analysis of Mixtures: The Analysis of Morphine in Liver. <u>Biomed. Mass Spectrom.</u> (USA) (1980) 7, 418-423.
- 2) Ang, K.P., Gunasingham, H., Tay, B.T., Lee, H.K., Koh, L.L. The Occurrence of Some PAHs in Ambient Air in Singapore. Intern. J. Environ. Studies. (UK) (1984) 23, 255-259.
- 3) Cretney, J.R., Lee, H.K., Wright, G.J., Swallow, W.H. & Taylor, M.C. Analysis of Polycyclic Aromatic Hydrocarbons in Air Particulate Matter from a Lightly Industrialized Urban Area. <u>Environ. Sci. Technol.</u> (USA) (1985) <u>19</u>, 397-404.
- 4) Lee, H.K., Wright, G.J. & Swallow, W.H. The Use of Parent Compound Distributions (PCD) for a Rapid Determination of the Source-Origins of Polycyclic Aromatic Hydrocarbons. <u>Intern. J. Environ. Studies</u> (UK) (1987) 30, 185-191.
- 5) Lee, H.K., Wright, G.J. & Swallow, W.H. A Qualitative Ultra-Violet Spectroscopic Method as an Initial Guide to Source Origins of Polycyclic Aromatic Hydrocarbons. <u>Environ. Pollut.</u> (UK) (1988) <u>49</u>, 167-175.
- 6) Lee, H.K., Li, S.F.Y. & Tay, Y.H. HPLC of Eleven Priority Substituted Phenols by Isocratic Elution. <u>J. Chromatogr.</u> (The Netherlands) (1988) <u>438</u>, 429- 432.
- 7) Li, S.F.Y. & Lee, H.K. Retention Prediction of Substituted Phenols in Reversed-Phase HPLC. <u>Chromatographia</u> (West Germany) (1988) <u>25</u>, 515-519.
- 8) Ong, C.P., Lee, H.K. & Li, S.F.Y. Optimization of Mobile Phase Composition for High-Performance Liquid Chromatographic Analysis of Eleven Priority Substituted Phenols. J. Chromatogr. (The Netherlands) (1989) 464, 405-410.

- 9) Li, S.F.Y., Lee, H.K. & Ong, C.P. Retention Behaviour of PAH in Reversed- Phase HPLC. J. Liq. Chromatogr. (USA) (1989) 12, 3251-3264.
- 10) Ong, C.P., Lee, H.K. & Li, S.F.Y. Chlorodifluoromethane as the Mobile Phase in Supercritical Fluid Chromatography of Selected Phenols. <u>Anal. Chem.</u> (USA) (1990) <u>62</u>, 1389-1391.
- 11) Li, S.F.Y., Lee, H.K. & Ong, C.P. Optimization of Mobile Phase Composition for High-Performance Liquid Chromatographic Separation by Means of the Overlapping Resolution Technique. J. Chromatogr. (The Netherlands) (1990) 506, 245-252.
- 12) Khan, M.R, Ong, C.P., Li, S.F.Y. Li & Lee, H.K. Optimization of The Isocratic HPLC Separation of Selected Phthalates using the Overlapping Resolution Mapping Technique. <u>J. Chromatogr.</u> (The Netherlands) (1990) <u>513</u>, 360-366.
- 13) Lee, H.K. <u>LC•GC</u> (USA) (1990) <u>8</u>(4), 274; <u>LC•GC Intern.</u> (UK) (1990) <u>3</u>(4), 11. Letters to the Editor.
- 14) Ong, C.P., Lee, H.K. & Li, S.F.Y. Supercritical Fluid Extraction and Chromatography of Cholesterol in Food Samples. <u>J. Chromatogr.</u> (The Netherlands) (1990) <u>515</u>, 509-513.
- 15) Li, S.F.Y., Ong, C.P., Lee, M.L. & Lee, H.K. Supercritical Fluid Extraction and Chromatography of Steroids with Freon-22. <u>J. Chromatogr.</u> (The Netherlands) (1990) <u>515</u>, 515-520.
- 16) Ong, C.P., Ong, H.M., Li, S.F.Y. Li & Lee, H.K. The Extraction of Cholesterol from Solid and Liquid Matrices by Supercritical CO₂ Extraction. <u>J. Microcolumn Separations</u> (USA) (1990) <u>2</u>, 69-73.
- 17) Lee, H.K., Wright, G.J. & Swallow, W.H. The Identification of Sources of Polycyclic Aromatic Hydrocarbons (PAH) by Using Concentration Ratios of Total PAH and Lead. Intern. J. Environ. Studies (UK) (1990) 36, 273-277.

- 18) Hor, T.S.A., Chan, H.S.O., Lee, H.K., Doshi, S.D., Leong, Y.-P., Lian, W.- T., Phang, L.-T., Sim, M.-M. & Tan, M.-M. Solid-State Thermolysis of *trans* Diamminenickel(II) *catena*-Tetra-μ-cyanonickelate(II) Clathrates and their Degradation Intermediates. Thermochimica Acta (The Netherlands) (1990) 167, 57-64.
- 19) Ong, C.P., Ng, C.L., Chong, N.C., Lee, H.K. & Li, S.F.Y. Retention of Eleven Priority Phenols using Micellar Electrokinetic Chromatography. <u>J. Chromatogr.</u> (The Netherlands) (1990) <u>516</u>, 263-270.
- 20) Lim, K.B.H., Phang, L.-T., Khan, M.R., Hor, T.S.A. & Lee, H.K. High- Performance Liquid Chromatographic Separation of Heterometallic 1,1'- bis(diphenylphosphino)ferrocene-substituted Metal Carbonyls. <u>J. Chromatogr.</u> (The Netherlands) (1991) <u>538</u>, 492-496.
- 21) Lee, H.K. Mobile Phase Preparation. <u>LC•GC</u> (USA) (1991) <u>9</u>(1), 12. Letter to the Editor.
- 22) Koo, L.K., Phang, L.-T., Hor, T.S.A. & Lee, H.K. High-Performance Liquid Chromatographic Separation of Metal Carbonyl Complexes Substituted with Bridging and Chelating 1,1-Bis(diphenylphosphino)ferrocene. <u>J. Liq. Chromatogr.</u> (USA) (1991) <u>14</u>, 2079-2087.
- 23) Chong, K.Y., Khoo, T.H., Koo, F.S., Ong, C. P., Li, S.F.Y., Lee, H.K., Venkatesh, B. & Tan, C.H. Optimization of the High-Performance Liquid Chromatographic Separation of Steroids by the Overlapping Resolution Mapping Procedure. <u>J. Liq. Chromatogr.</u> (USA) (1991) 14, 2445-2455.
- 24) Li, S.F.Y., Khan, M.R., Lee, H.K. & Ong, C.P. Application of Iso-Selective Gradient Elution for the Separation of Selected Phthalates. <u>J. Liq. Chromatogr.</u> (USA) (1991) <u>14</u>, 3153-3166.

- 25) Ong, C.P., Khan, M.R., Li, S.F.Y. & Lee, H.K. An Optimization Procedure for the Isocratic High-Performance Liquid Chromatographic Separations of Environmental Pollutants. <u>Environ. Monitor. & Assess.</u> (USA/The Netherlands) (1991) <u>19</u>, 35-46.
- 26) Yeo, S.K., Ong, C.P., Lee, H.K. & Li, S.F.Y. Some Applications of Freon-22 in Supercritical Fluid Chromatographic Analysis of Environmental Pollutants. <u>Environ. Monitor. & Assess.</u> (USA/The Netherlands) (1991) <u>19</u>, 47-53.
- 27) Ong, C.P., Lee, H.K. & Li, S.F.Y. Direct Coupling of Supercritical Fluid Extraction-Supercritical Fluid Chromatography of Selected Polycyclic Aromatic Hydrocarbons in Aqueous Environmental Samples. <u>Environ. Monitor. & Assess.</u> (USA/The Netherlands) (1991) 19, 63-71.
- 28) Yik, Y.F., Ong, C.P., Khoo, S.B., Lee, H.K. & Li, S.F.Y. Separation of Selected Polycyclic Aromatic Hydrocarbons by Using High-Performance Capillary Electrophoresis with Modifiers. Environ. Monitor. & Assess. (USA/The Netherlands) (1991) 19, 73-81.
- 29) Yao, Y.J., Khan, M.R., Ong, C.P., Lee, H.K. & Li, S.F.Y. Optimization of the Gradient High-Performance Liquid Chromatographic Separation of Selected Phthalates By Using the Overlapping Resolution Mapping Technique. <u>Environ. Monitor. & Assess.</u> (USA/The Netherlands) (1991) 19, 83-91.
- 30) Ong, C.P., Ng, C.L., Chong, N.C., Lee, H.K. & Li, S.F.Y. Analysis of Priority Substituted Phenols by Micellar Electrokinetic Chromatography. <u>Environ. Monitor. & Assess.</u> (USA/The Netherlands) (1991) <u>19</u>, 93-103.
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- 87) Li N. & Lee, H.K. Pesticides and Polychlorinated Biphenyls in the Singapore Environment. Presented at the 2nd International Symposium/Workshop on Environmental Governance and Analytical Techniques. February 24 March 1, 1997, Singapore.
- 88) Loong, S.Y., Lee, H.K., Tan, K.L., Zhou, M.S. & Chan, L.H. Effect of Oxygen in Removing Polymers Generated in SiO₂ Etching with Fluorocarbon Gases (CHF₃, CF₄, C₄F₈). Presented at the International Symposium and Education Programme on Microelectronic Manufacturing, September 28-October 2, 1997, Austin, Texas, USA.
- 89) Loong, S.Y., Lee, H.K., Tan, K.L., Zhou, M.S. & Chan, L.H. Characterization of Fluorocarbon Polymers Generated by CHF₃, CF₄, CO and C₄H₈ Chemistries During High Density Plasma SiO₂ Etching. Presented at American Vacuum Society National Symposium, October 20-24, 1997, San Jose, California, USA.
- 90) Lee, H.K. & He, Y. Microscale Extraction and Separation Techniques. How Far Have We Come and Where Are We Heading? Presented at Symposium on Frontiers of Chemistry 2nd Conference for Worldwide Chinese Young Chemists (CWCYC-2), December 20-23, 1997, Hong Kong. (Invited lecture)

- 91) Wang, P., Chua, B.H. & Lee, H.K. Report on the Detection of Volatile Organic Compounds and Organotin Compounds in Singapore Waters. Presented at 3rd International Symposium on Environmental Governance and Analytical Techniques, February 12-20, 1998, Kyoto, Japan. (Invited lecture)
- 92) Lassová, L., Lee, H.K. & Hor, T.S.A. Catalytic Dehalogenation of Polychlorinated Biphenyls (PCBs) and Chlorinated Benzenes A Low-Energy Detoxification Method. Presented at Conference on Environmental Strategies for the 21st Century, April 8-10, 1998, Singapore.
- 93) He, Y. & Lee, H.K. Trace Analysis of Nitroaromatic Compounds in Sea Water by Liquid-Phase Microextraction and Gas Chromatography. Presented at Conference on Environmental Strategies for the 21st Century, April 8-10, 1998, Singapore.
- 94) Lee, H.K. Heterocyclic Aromatic Amines in Rain Collected During Haze Episode. Presented at Workshop on South-East Asian Land/Forest Fires: Science and Policy, April 30-May 2, 1998, Singapore. (Invited Lecture).
- 95) Lee, H.K. Techniques for Analysing Volatile Organic Compounds in Indoor Air. National University of Singapore Inter-Faculty Seminar, September 25, 1998, Singapore (Invited lecture),
- 96) Lassova, L., Lee, H.K. & Hor, T.S.A. Catalytic Dechlorination of PCBs and Chlorobenzenes. Effect of Base and Solvent on Catalytic Performance. Presented at European Research Conference on Inorganic Chemistry Design of Functional Systems and Inorganic Environmental and Medical Challenges, September 4-9, 1998, San Feliu de Guixols, Spain.
- 97) Loong, S.Y., Lee, H.K., Zhou, M.S. & Chan, L.H. Effect of the Pattern Density and the Metal Stack on the Chlorine Content in the Metal Etch Process. Presented at the International Symposium and Continuing Education on Microelectronic Manufacturing, September 20-24, 1998, Santa Clara, California, USA.

- 98) Liu, W. & Lee, H.K. Simultaneous Speciation Analysis of Lead, Mercury and Selenium Species by Capillary Electrophoresis with Combined EDTA-Complexation and Field-Amplified Stacking Injection. Presented at the 2nd Asia-Pacific International Symposium on Capillary Electrophoresis and Related Microscale Techniques, October 8-11, 1998, Dalian, China. (Invited lecture)
- 99) He, Y. & Lee, H.K. Influence of Temperature and Humidity on Solid-Phase Microextraction in the Analysis of Volatile Organic Pollutants in Air. Presented at the 2nd Asia-Pacific International Symposium on Capillary Electrophoresis and Related Microscale Techniques, October 8-11, 1998, Dalian, China.
- 100) Lee, H.K.. A Novel Liquid-Phase Microextraction Technique for Organic Pollutants in Aqueous Samples. Presented at the 4th Technical Conference: Towards Sustainable Development and Integrated Management of the Marine Environment in ASEAN, October 26-30, 1998, Langkawi, Malaysia. (Invited lecture)
- 101) Lassova, L., Lee, H.K. & Hor, T.S.A. Catalytic Dehalogenation Of Polychlorinated Biphenyls (PCBs) And Chlorinated Benzenes A Low-Energy Detoxification Method. Presented at the 1st Singapore Chemical Conference, December 7-9, 1998, Singapore.
- 102) Liu, W. & Lee, H.K. Mobility Description And Parameter Calculations For Speciation Analysis by Capillary Electrophoresis Using Complexation Equilibria. Presented at the 1st Singapore Chemical Conference, December 7-9, 1998, Singapore.
- 103) He, Y. & Lee, H.K. Monitoring And Analysis Of Volatile Organic Compounds In Ambient Air. Presented at the 1st Singapore Chemical Conference, December 7-9, 1998, Singapore.
- 104) Li, N. & Lee, H.K. Evaluation Of Dynamic Ion Exchange Solid Phase Extraction And Tandem C₁₈-Cartridge Extraction System For Preconcentration Of Acid Herbicides From Environmental Aqueous Samples. Presented at the 1st Singapore Chemical Conference, December 7-9, 1998, Singapore.

- 105) Lee, H.K. Endocrine Disruptors: Should We Be Concerned in East Asia? Presented at the 4th International Symposium on Environmental Governance and Analytical Techniques: Environmental Issues Related to Endocrine Disrupting Compound Pollution in East Asia, February 9-10, 1999, Tokyo, Japan. (Invited lecture)
- 106) Lee, H.K. Analysis of Polycyclic Aromatic Hydrocarbons in Environmental Samples Using Microwave Extraction and Gas Chromatography/Mass Spectrometry. Anniversary Seminar of the Vietnam National University-Shimadzu Joint Laboratory for Analytical Sciences, March 2, 1999, Hanoi, Vietnam. (Invited lecture)
- 107) Lee, H.K. Approaches to Environmentally-Friendlier Extraction Techniques. Presented at ExTech'99: Symposium on Advances in Extraction Technologies, April 26-28, 1999, Waterloo, Canada. (Invited lecture)
- 108) Lee, H.K. Miniaturised Sample Preparation for Environmental Analysis. Presented at EuAsC₂S-6 (6th Eurasia Conference on Chemical Sciences), February 28 March 2, 2000, Brunei. (Keynote lecture)
- 109) Yap, A.U.J., Lee, H.K. & R. Sabapathy. Release of Methacrylic Acid from Dental Composite Restoratives. Presented at International Workshop on Advances in Materials Science and Technology, April 3-6, 2000, Singapore.
- 110) Lee, H.K. & Basheer, C. Organotins in the Singapore Environment. Presented at International Symposium and Training Workshop on Endocrine Disrupting Compound Pollution in East Asian Coastal Hydrosphere, April 17-21, 2000, Kuala Lumpur, Malaysia. (Invited lecture)
- 111) Lee, H.K. Liquid-Phase Microextraction for Environmental Organic and Inorganic Pollutants. Presented at ExTech 2000: Symposium on Advances in Extraction Technologies, May 1-3, 2000, Waterloo, Canada. (Plenary lecture)

- 112) Zhou L. & Lee, H.K. Applications of Static Liquid-Phase Microextraction to the Analysis of Organochlorine Pesticides in Water. Presented at 3rd Biennial International Conference on Monitoring and Measurement of the Environment, May 8-11, 2000, Ottawa, Canada.
- 113) Zhu L. & Lee, H.K. Determination of Polycyclic Aromatic Hydrocarbons in Water by Using Continuous-Flow Microextraction. Presented at 3rd Biennial International Conference on Monitoring and Measurement of the Environment, May 8-11, 2000, Ottawa, Canada.
- 114) Lee, H.K. & He, Y. Combination of Microextraction and Capillary Electrophoresis for Environmental Analysis. Presented at 3rd Biennial International Conference on Monitoring and Measurement of the Environment, May 8-11, 2000, Ottawa, Canada. (Invited lecture)
- 115) Reijenga, J. & Lee, H.K. Software and Internet Resources for Capillary Electrophoresis and Micellar. Presented at ITP 2000 (12th International Symposium on Capillary Electroseparation Techniques), September 10-13, 2000, Bratislava, Slovak Republic (Invited lecture).
- 116) Zhu, L., Lee, H.K., Lin, B. & Yeung, E.S. Spatial Temperature Gradient in Capillary Electrophoresis. Presented at the 14th International Symposium on Microscale Separation and Analysis Includes Symposia on Genomics and Proteomics, January 13-18, 2001, Boston, Massachusetts, USA.
- 117) Zhu, L. & Lee, H.K. Analysis of Oligogalacturonic Acids by Online Liquid Chromatography Mass Spectrometry. Presented at the 14th International Symposium on Microscale Separation and Analysis Includes Symposia on Genomics and Proteomics, January 13-18, 2001, Boston, Massachusetts, USA.
- 118) Zhu, L., Zhu, L. & Lee, H.K. Liquid-liquid Microextraction of Nitrophenols with Hollow Fiber Prior to Capillary High Performance Liquid Chromatography, Presented at

the 14th International Symposium on Microscale Separation and Analysis - Includes Symposia on Genomics and Proteomics, January 13-18, 2001, Boston, MA, USA. 119) Lee, H.K., Basheer, C. & K.S. Tan Endocrine disrupting compounds in the Singapore environment. Presented at the United Nations International Symposium and Training Workshop on Endocrine Disrupting Compounds Pollution in East Asia Coastal Hydrosphere, April 16-17, 2001, Seoul, Korea (Invited lecture).

- 120) Gong, Y., Xiang, Y., Yue, B., Xue, G., Bradshaw, J.S., Lee, H.K. & Lee, M.L. Application of 8-Aminoquinoline-2-ylmethyl-Substituted
 Diaza-18-Crown-6-Ether-Capped 3-(β-Cyclodextrin)-2-Hydroxypropylsilyl Silica Gel as Chiral Stationary Phase for Ultrahigh Pressure Capillary Liquid Chromatography.
 Presented at the 24th International Symposium on Capillary Chromatography and Electrophoresis, May 20-24, 2001, Las Vegas, NV, USA.
- 121) Gong, Y. & Lee, H.K. Enantiomeric Separations by Capillary Electrochromatography Using 4'-Aminobenzo-15-Crown-5-Ether-Capped 3-(β-Cyclodextrin)-2-Hydroxypropylpropylsilyl Silica as Chiral Stationary Phase. Presented at the 24th International Symposium on Capillary Chromatography and Electrophoresis, May 20-24, 2001, Las Vegas, NV, USA.
- 122) Sun, L. & Lee, H.K. Study of Microwave-Assisted Extraction Behavior of Nonpolar and Polar Pollutants in Soil by High Performance Liquid Chromatography. Presented at the 24th International Symposium on Capillary Chromatography and Electrophoresis, May 20-24, 2001, Las Vegas, NV, USA.
- 123) Zhu, L., Tham, S.-Y., Sun, L. & Lee, H.K. Field-Amplified Stacking Injection-Capillary Electrophoresis for Quantitative Analysis of Released Fluoride from Dental Restorative Materials. Presented at the 24th International Symposium on Capillary Chromatography and Electrophoresis, May 20-24, 2001, Las Vegas, NV, USA.
- 124) Arockiam, J., Johnson, T., Lee, H.K. & Valiyaveettil, S. A Novel Mercury-Sensing Polymer for Sensor Application. Presented at IUPAC CHEMRAWN XIV Green

Chemistry: Toward Environmentally Benign Processes and Products, June 9-13, 2001, Boulder, Colorado, USA.

- 125) Lee, H.K. Miniaturised Extraction Techniques for Environmental Analysis.

 Presented at the World Chemistry Congress 2001/9th Asian Chemical Congress, July 1-6, 2001, Brisbane, Australia. (Invited lecture).
- 126) Lee, H.K. Solvent-Minimised Extraction of Environmental Pollutants. Presented at Asianalysis VI (6th Asian Conference on Analytical Sciences, together with the IUPAC International Congress on Analytical Sciences [ICAS] 2001), August 7-10, 2001, Tokyo, Japan. (Invited lecture).
- 127) Zhu, L. & Lee, H.K. Liquid-liquid-liquid Microextraction of Aromatic Amines in Water Samples with Analysis by High-Performance Liquid Chromatography. Presented at Asianalysis VI (6th Asian Conference on Analytical Sciences, together with the IUPAC International Congress on Analytical Sciences [ICAS] 2001), August 7-10, 2001, Tokyo, Japan. (Invited lecture).
- 128) Lesaicherre, M.-L., Rodriguez, I., Tie, Y., Zou Q., Chen, Y.U., Singh, J., Lim, T.M. Sridhar, U., Lee, H.K., Li, S.F.Y. & Seluanayagam, Z.E. Functional Integration of Micropolymerase Chain Reaction and Electrophoretic Microchips for Genetic Analysis. Presented at Asianalysis VI (6th Asian Conference on Analytical Sciences, together with the IUPAC International Congress on Analytical Sciences [ICAS] 2001), August 7-10, 2001, Tokyo, Japan. (Invited lecture).
- 129) Basheer, C. & Lee, H.K. Alkylphenols and Bisphenol A in the Coastal Environment of Singapore and Their Rapid Extraction from Seawater and Biological Materials.

 Presented at the 222nd American Chemical Society National Meeting, August 26-30, 2001, Chicago, Illinois, USA.
- 130) Basheer, C. & Lee, H.K. Novel Extraction Methods for Quantification of Endocrine Disrupting Compounds.in Seawater and Marine Organisms. Presented at the 222nd

American Chemical Society National Meeting, August 26-30, 2001, Chicago, Illinois, USA.

- 131) Arockiam, J., Valiyaveettil, S., Lee, H.K. & Johnson, T. Synthesis and Characterization of Thiacrown Ether Incorporated Polymers for Metal Ion Sensors. Presented at the 222nd American Chemical Society National Meeting, August 26-30, 2001, Chicago, Illinois, USA.
- 132) Zhao L., Zhu, L. & Lee, H.K. Analysis of Aromatic Amines in Water Samples by Liquid-liquid-liquid Microextraction with Hollow Fiber and High Performance Liquid Chromatography. Presented at ExTech 2001 (Symposium on Advances in Extraction Technologies), September 17-19, 2001, Barcelona, Spain.
- 133) Zhu, L. & Lee, H.K. Liquid-Phase Microextraction with Hollow Fibre Membrane for Environmental Analysis. Presented at ExTech 2001 (Symposium on Advances in Extraction Technologies), September 17-19, 2001, Barcelona, Spain. (Invited lecture).
- 134) Zhu, L. Ee, K.H., Zhao, L. & Lee, H.K. Liquid-Liquid-Liquid Microextraction of Phenoxy Herbicides with Hollow Fibre Prior to High-Performance Liquid Chromatography. Presented at ExTech 2001 (Symposium on Advances in Extraction Technologies), September 17-19, 2001, Barcelona, Spain. (Invited lecture).
- 135) Lesaicherre, M., Tan, L.P., Rufaihah, A.J., Chen, Y.J.G., Zhu, L., Heng, C.K., Yan, T., Chen, Y., Lim, T.M., Ramadan. Q., Pui, P.D., Samper, V., Lee, H.K. & Yao, S.Q. Fast Nucleic Acid Extraction on a Microchip Device. Presented at BioMedical Asia, September 19-21, 2001, Singapore.
- 136) Arockiam, J., Johnson, T., Valiyaveettil, S. & Lee, H.K. Thiacrown Ether-Incorporated Methacrylate Polymers for Microsensor for Mercury Ions in Solution. Presented at MRS Meeting, November 26, 2001, Boston, Massachusetts, USA.

- 137) Arockiam, J., Johnson, Lee, H.K. T. & Valiyaveettil, S. Synthesis and Recognition Studies of Thiacrown Ether-Immobilised Polymer for Mercury Ion Sensor. Presented at 2nd Singapore International Chemical Conference, December 18-20, 2001, Singapore.
- 138) Lesaicherre, M., Tan, L.P., Rufaihah Abd Jalil, Chen. Y.-J.G., Zhu L., Tan, L.P., Yan, T., Heng, C.K., Chen, Y., Lim, T.M., Samper, V., Lee, H.K. & Yao, S.Q. Fast Nucleic Acid Extraction from Blood on a Microchip Device. Presented at the 2nd Singapore International Chemistry Conference, December 18-20, 2001, Singapore
- 139) Li, H. & Lee, H.K. Solvent Microextraction of Pesticides in Soil with Analysis by GC/MS. Presented at the 2nd Singapore International Chemistry Conference, December 18-20, 2001, Singapore.
- 140) Gong Y. & Lee, H.K. Synthesis of Crown Ether-Capped β-Cyclodextrin-Bonded Silica Particles and their Application as Chiral Stationary Phases for Capillary Electrochromatography. Presented at the 2nd Singapore International Chemistry Conference, December 18-20, 2001, Singapore.
- 141) Hou, L. & Lee, H.K. Semi-Automation of Dynamic Liquid-phase Microextraction in the Determination of Polycyclic Aromatic Hydrocarbon. Presented at the 7th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers, February 6-8, 2002, Brugge, Belgium.
- 142) Hou, L. & Lee, H.K. Application of LPME/HPLC for Polycyclic Aromatic Hydrocarbon Analysis. Presented at the 7th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers, February 6-8, 2002, Brugge, Belgium.
- 143) Hou, L. & Lee, H.K. Automated Dynamic Liquid Phase Microextraction using Hollow Fiber Prior to GC-MS Analysis. Presented at the 7th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers, February 6-8, 2002, Brugge, Belgium.

- 144) Zhu, X.R. & Lee, H.K. Determining Polychlorinated Biphenyls in Soil Samples Using Microwave-Assisted Extraction and Supercritical Fluid Extraction. Presented at the 7th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers, February 6-8, 2002, Brugge, Belgium.
- 145) Zhu, X.R. & Lee, H.K. Monitoring Polychlorinated Biphenyls in Pine Needle Samples Using Supercritical Fluid Extraction as a Pretreatment Method. Presented at the 7th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers, February 6-8, 2002, Brugge, Belgium
- 146) Lee, M.L., Xiang, Y., Gong, Y. & Lee, H.K. Ultrahigh Efficiency Packed Capillary Column Liquid Chromatography. Presented at PittConn (Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy) 2002, March 17-22, 2002, New Orleans, LA, USA.
- 147) Lee, H.K., Basheer, C. & Tan, K.S. Distribution of Endocrine Disrupting Compounds in the Singapore Environment. Presented at the United Nations University International Symposium on Tracing Pollutants from Agrochemical Use: Focus on Endocrine Disrupting Compound Pollution, April 15-16, 2002, Hanoi, Vietnam (Invited lecture).
- 148) Lee, H.K., Basheer, C. & Obbard, J.P. Determination of Organochlorine Pesticides in Seawater using Liquid-Phase Hollow-Fibre Microextraction and Gas Chromatography/Mass Spectrometry. Presented at the United Nations University International Symposium on Tracing Pollutants from Agrochemical Use: Focus on Endocrine Disrupting Compound Pollution, April 15-16, 2002, Hanoi, Vietnam (Invited lecture).
- 149) Tu, C. H., Zhu, L. Y. & Lee, H. K. Base-Aided Large Volume Sample Stacking in Capillary Electrophoresis with Low-pH Buffer to Determine Haloacetic Acids in Drinking Water. Presented at the 15th International Symposium on Microscale Separations and Analysis, April 13-18, 2002, Stockholm, Sweden.

- 150) Hou, L., Tu, C.H. & Lee, H.K. Combination of Liquid Phase Microextraction and On-Column Stacking for Trace Analysis of Aminoalcohols by Capillary Electrophoresis, Presented at the 15th International Symposium on Microscale Separations and Analysis, April 13-18, 2002, Stockholm, Sweden.
- 151) Gong, Y. & Lee, H.K. Application of Crown Ether/Cyclam-Capped β-Cyclodextrin-Bonded Silica as Chiral Stationary Phases in Capillary Electrochromatography for Enantioseparations. Presented at the 15th International Symposium on Microscale Separations and Analysis, April 13-18, 2002, Stockholm, Sweden.
- 152) Hou, L., Shen, G. & Lee, H.K. Determination of Pesticides by Hollow Fibre-Protected Dynamic Solvent Microextraction. Presented at the 25th International Symposium on Capillary Chromatography, May 13-17 2002, Riva del Garda, Italy.
- 153) Shen, G. and Lee, H. K. Determination of Triazines in Soil by Coupling Microwave-assisted Extraction with Solid-Phase Microextraction. Presented at the 25th International Symposium on Capillary Chromatography, May 13-17, 2002, Riva del Garda, Italy.
- 154) Lee, H.K. Approaches to Liquid-Phase Microextraction/Capillary Electrophoresis for Environmental Analysis. Presented at the 4th Biennial International Conference on Monitoring and Measurement of the Environment, May 27-30, 2002, Toronto, Canada (Invited lecture).
- 155) Zhu, L. & Lee, H.K. Analysis of Oligogalacturonic Acid Mixtures by High-Performance Liquid Chromatography and Electrospray Ionization Mass Spectrometry. Presented at the 26th International Symposium on High Performance Liquid Phase Separation and Related Techniques, June 2-7, 2002, Montreal, Canada.
- 156) Sekhar, S.C., Tham, K.W., Amanullah, M.D., Lee, H.K., Cheong, K.W., Wong, N.H.& Zuraimi, M.S. Significance of Individual Response Factors in the DetailedCharacterisation of Volatile Organic Compounds. Presented at 9th International

Conference on Indoor Air Quality and Climate. June 30-July 5, 2002, Monterey, California, USA.

- 157) Tham, K.W., Sekhar, S.C., Amanullah, M.D., Lee, H.K., Cheong, K.W. &Wong, N.H. A Detailed Study of Volatile Organic Compounds of Five Air-Conditioned Office Buildings in Singapore. Presented at 9th International Conference on Indoor Air Quality and Climate. June 30-July 5, 2002, Monterey, California, USA.
- 158) Lee, H.K. Recent Advances in Sample Preparation and its Applications to Chemical Analysis. Presented at the 15th Malaysian Analytical Chemistry Symposium, September 10-12, 2002, Penang, Malaysia (Plenary lecture).
- 159) Lee, H.K. Persistent Organic Pollutants in Singapore Status, Presence and Monitoring. Presented at the Workshop on Environmental Monitoring of Persistent Organic Pollutants (POPs) in East Asian Countries, December 2-4, 2002, Tokyo, Japan, (Invited lecture).
- 160) Sun, L. & Lee, H.K. Stability Studies of Propoxur Herbicide in Environmental Water Samples by Liquid Chromatography-Atmospheric Pressure Chemical Ionization Ion Trap Mass Spectrometry. Presented at 16th International Symposium on Microscale Separations and Analysis (HPCE 2003), January 17-22, 2003, San Diego, California, USA.
- 161) Sun, L. & Lee, H.K. Optimization of Microwave-Assisted Extraction and Supercritical Fluid Extraction of Carbamate Pesticides in Soil by Experimental Design Methodology. Presented at 16th International Symposium on Microscale Separations and Analysis (HPCE 2003), January 17-22, 2003, San Diego, California, USA.
- 162) Lee, H.K. The Development of Advanced Analytical Techniques for POPs Monitoring. International Workshop on Regional Environmental Quality in the East Asian Coastal Hydrosphere: Environmental Quality Standards and Capacity Development, January 26-31, 2003, Kwangju, Korea (Invited lecture).

- 163) Muir, D.C.G., Rohwer, E. & <u>Lee. H.K.</u> "Substances and Analytical Techniques", United Nations Environment Programme Workshop to Develop a Global Monitoring Programme to Support the Effectiveness Evaluation of the Stockholm Convention on Persistent Organic Pollutants (POPs), March 24-27, 2003, Geneva, Switzerland (as rapporteur of workgroup).
- 164) Lee, H.K. Singapore's Water Guidelines: A Brief Overview. Presented at Capacity Development Training for Monitoring of POPs in the East Asian Hydrosphere, September 1-2, 2003, Tokyo, Japan (Invited lecture).
- 165) Lee, H.K. & Basheer, C. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis. Presented at Capacity Development Training for Monitoring of POPs in the East Asian Hydrosphere, September 1-2, 2003, Tokyo, Japan (Invited lecture).
- 166) Lee, H.K. Miniaturised Approaches to Liquid Extractions for Environmental Analysis. Presented at 10th Asian Chemical Congress/8th Eurasia Conference on Chemical Sciences, October 21-24, 2003, Hanoi, Vietnam (Invited lecture).
- 167) Bayen, S., Giusti, P., Lee, H.K. & Obbard, J.P. Bioaccumulation of *p,p'*-DDT iin Asian Seabass in a Controlled Aquaculture Experiment. Presented at the Society of Environmental Toxicology and Chemistry/Australian Society for Ecotoxicology (SETAC-ASE) International Conference, September 28-October 1, 2003, Christchurch, New Zealand.
- 168) Bayen, S., Lee, H.K. & Obbard, J.P. Total Human Daily Intake of OCPs, PCBs and PBDEs from Seafood Consumption in Singapore. Presented at the Society of Environmental Toxicology and Chemistry/Australian Society for Ecotoxicology (SETAC-ASE) International Conference, September 28-October 1, 2003, Christchurch, New Zealand.
- 169) Lee H.K. A New Approach to Solid-Phase Microextraction using Polymer-Coated Hollow-Fibre Membranes. Presented at the International Chemical Conference

- (Analytical Chemistry) (ICCT 2003), Taipeh, Taiwan, October 29-November 1, 2003 (pre-conference lecture, presented at National Institute of Environmental Analysis, Chung Li City, on October 28, 2003) (Invited lecture).
- 170) Lee, H.K. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis. Presented at the International Chemical Conference-Taipei (ICCT 2003), October 29-November 1, 2003, Taiwan (Keynote lecture).
- 171) Lee, H.K. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis (Updated). Presented at the 2nd Asia-Pacific International Symposium on Pollutants Analysis and Control, December 1-3, 2003, Hanoi, Vietnam (Invited lecture).
- 172) Bayen, S., Lee, H.K. & Obbard, J.P. Microwave Assisted Solvent Extraction of Polybrominated Diphenyl Ethers (PBDEs)fFrom Marine Tissues. Presented at 2nd Asia-Pacific International Symposium on Pollutants Analysis and Control, December 1-3, 2003, Hanoi, Vietnam.
- 173) Basheer, C., Valiyaveetil, S. & Lee, H.K. Simple Microfluidic Systems for Reaction Engineering Using Functional Polymers. Presented at Materials Research Society Fall Meeting, December 1-5, 2003, Boston, MA, USA.
- 174) Zuraimi, M.S., Roulet, C.A., Sekhar, S.C., Tham, K.W., Cheong, K.W., Wong, N.H. & Lee, H.K. Concentrations and Emission Rates of Indoor VOCs A Comparative Study Between Singapore and European Office Buildings. Presented at Healthy Buildings 2003 7th International Conference, December 7-11, 2003, Singapore.
- 175) Bayen, S., Li, Q.Q., Lee, H.K. & Obbard, J.P. Extraction of Organochlorine Pesticides from Marine Biological Tissues Using POLE Surfactant Solution. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 176) Chua, L.L., Bayen, S., Lee, H.K. & Obbard, J.P. Determination of

Polybrominated Diphenyl Ethers (PBDES) In Seawater Using Hollow Fiber Liquid-Phase Microextraction. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.

- 177) Fang, A., Wu, J., Valiyaveettil, S. & Lee, H.K. Preparation of β-Cyclodextrin Immobilized Capillaries for Open-Tubular Capillary Electrochromatography. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 178) Jiang, X., Oh, S.Y. & Lee, H.K. A New Dynamic Three-Phase Liquid Microextraction with the Movement of Acceptor Phase. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 179) Jiang, X. & Lee, H.K. Dynamic Hollow Fiber-Supported Headspace Solvent Microextraction. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 180) Jiang, X., Tao S. & Lee, H.K. Two-Phase Microextraction and Capillary Electrophoresis Of Aromatic Amines. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 181) Zhang, J. & Lee, H.K. Headspace Water-Based Liquid Phase Microextraction. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 182) Zhang, J. & Lee, H.K. Comparative Study of Extraction Efficiency of Static And Dynamic Three-Phase Liquid-Phase Microextraction Applied to Very Weak Bases. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 183) Fang, A., Tan, K., Lee, H.K. & Valiyaveettil, S. Immobilisation of Palladium Catalyst in a Microreactor for High Throughput Suzuki Coupling Reactions. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003,

Singapore.

- 184) Basheer, C., Hussain, F.S.J., Valiyaveettil, S. & H.K. Lee. Capillary Microreactor for Efficient Suzuki Coupling Reactions. Presented at the 3rd Singapore International Chemical Conference, December 15-17, 2003, Singapore.
- 185) Lee, H.K. An Alternative Approach to Commercial Solid-Phase Microextraction for the Extraction of Persistent Organic Pollutants and Other Contaminants. Presented at the United Nations University International Symposium on Impacts of Persistent Organic Pollutants from Urban Areas, May 23-25, 2004, Beijing, China (Invited lecture).
- 186) Bayen, S., Lee, H.K. & Obbard, J.P. Bioaccumulation of Persistent Organic Pollutants in Mangrove Ecosystems in Singapore. Presented at 4th International Conference on Marine Pollution and Ecotoxicology, June 1-5, 2004, Hong Kong.
- 187) Basheer C., Vetrichelvan M., Fathima S.J.H., Pramoda A.P, Valiyaveettil S. & Lee H.K. Oxidation of Indene in a Silicon-Microreactor and Glass Capillary-Microreactor: A Novel Approach. Presented at 1st Nano-Engineering & Nano-Science Congress, July 7-9, 2004, Singapore.
- 188) Basheer C., Vetrichelvan M., Fathima S.J.H, Valiyaveettil S. & Lee H.K. Oxidation of Cyclohexene Reaction in a Simple Microfluidic System. Presented at 1st International Conference on Nanotechnology (NANOTECH 2004), July 13-17, 2004, Singapore
- 189) Lee, H.K. Microscale Solid-Phase and Liquid-Phase Extraction of Environmental Pollutants from Aqueous Matrices. Presented at Asianalysis VII (7th Asian Conference on Analytical Sciences), July 27-30, 2004, Hong Kong (Keynote lecture)
- 190) Fang, A., Lee, H.K. & Valiyaveettil, S.
 Polystyrene-Co-Poly(4-Vinylpyridine)-Palladium Nanoparticles as an Efficient
 Catalyst for Continuous Flow Suzuki Reaction. Presented at the 11th International

- Conference on Composites/Nano Engineering (ICCE-11), August 8-14, 2004, Hilton Head Island, SC, USA (Invited lecture).
- 191) Jiang, X., Basheer, C., Zhang, J. & Lee, H.K. Dynamic Hollow Fibre-Supported Headspace Liquid-Phase Microextraction. Presented at 25th International Symposium on Chromatography, October 5-8, 2004, Paris, France (Invited lecture).
- 192) Basheer, C., Zhang, J., Maung, P. & Lee, H.K. Analysis of Aromatic Amines in Sediment Samples Using Microwave-Assisted Headspace Liquid-Phase Microextraction Coupled with HPLC. Presented at 25th International Symposium on Chromatography, October 4-8, 2004, Paris, France.
- 193) Basheer, C., Valiyaveettil, S., Parthiban, A., & Lee, H.K. Analysis of Alkylphenols and Bisphenol A Using Hydrogel Coated Polysulfone Membrane Microextraction Coupled With Online GC/MS Derivatisation. Presented at 25th International Symposium on Chromatography, October 4-8, 2004, Paris, France.
- 194) Basheer, C., Valiyaveettil, S., Subbiah, J., & Lee, H.K. Amphiphilic Monomers as Novel Stationary Phases for SPME. Presented at 25th International Symposium on Chromatography, October 4-8, 2004, Paris, France.
- 195) Basheer, C., Sindhu, S., Fathima Shahitha, J.H., Valiyaveettil, S. & Lee, H.K. Capillary-Microreactor for the Selective Oxidation and Condensation Reactions Using Porous Sponge Gold (0) Catalyst. Presented at 25th International Symposium on Chromatography, October 4-8, 2004, Paris, France.
- 196) Lee, H.K. In-House Approach to Solid-Phase Microextraction: Use of Coated Hollow Fibre Membrane and Potential for On-Site Sample Preparation. Presented at 2nd IERC (International Environmental Research Centre) Workshop on the Environment and Sustainable Development, October 27-29, 2004, Gwangju, South Korea (Invited lecture)
- 197) Basheer, C., Sindhu S., Fathima Shahitha J.H., Valiyaveettil, S. & Lee, H.K.

Heterogeneous Catalysis in a Capillary-Microreactor for Selective Oxidation and Suzuki Cross-Coupling Reactions. Presented at 5th Asia-Pacific International Symposium on Microscale Separation and Analysis. Presented at the 5th Asia-Pacific International Symposium on Microscale Separation and Analysis (APCE 2004) December 5-8, 2004, Seoul, South Korea (Invited lecture)

- 198) Basheer, C., Vetrichelvan, M., Lee, H.K. & Valiyavettil, S. Polymer-Coated Hollow Fiber Microextraction (PC-HFME) as an On-Site Sampling Device for Polychlorinated and Polybrominated Biphenyls in Seawater Samples. Presented at the 229th American Chemical Society National Meeting & Exposition, March 13-17, 2005, San Diego, California, USA.
- 199) Lee, H.K. Novel Approaches to Extraction of POPs from Aqueous Matrices.

 Presented at the United Nations University International Symposium on Ecosystem

 Impacts of Persistent Organic Pollutants, April 26-27, 2005, Bangkok, Thailand (Invited lecture)
- 200) Lee, H.K. Novel Miniaturised Approaches to Sample Preparation. Presented at the 11th Asian Chemical Congress, August 24-26, 2005, Seoul, South Korea (Invited lecture)
- 201) Lim, T.B., Tay, M.M.K. & Lee, H.K. Application of Hollow Fibre-Based Liquid-Phase Microextraction to Forensic Samples. Presented at the Southeast Asian Environmental Forensics Conference, September 19-21, 2005, Taipei, Taiwan
- 202) Basheer, C. & Lee, H.K. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis. Presented at the International Conference on Environmental Monitoring and Governance in the East Asian Coastal Hydrosphere: Future Challenges in POPs Management, September 21, 2005, Tokyo, Japan (Invited poster)
- 203) Lee, H.K. Novel Approaches to Miniaturised Extraction for Environmental Analysis. Presented at the 8th Asian Conference on Analytical Sciences (Asianalysis VIII), October 16-20, 2005, Taipei, Taiwan (Keynote lecture)

- 204) Basheer, C., Promoda, A.P.P., Nurmawati, H.M., Ong, S., Valiyavettill, & Lee, H.K. The Use of Paladium Nanoparticles Incorporated on Multiwalled Carbon Nanotubes in a Glass Capillary Microreactor. Presented at the 8th Asian Conference on Analytical Sciences (Asianalysis VIII), October 16-20, 2005, Taipei, Taiwan (Best poster award winner).
- 205) Basheer, C., Promoda, A.P.P., Nurmawati, H.M., Valiyavettill, & Lee, H.K. Synthesis of Gold Nanoparticles in a Microfluidic Device. Presented at the 8th Asian Conference on Analytical Sciences (Asianalysis VIII), October 16-20, 2005, Taipei, Taiwan.
- 206) Wu, J., Basheer, C. & Lee, H.K. Liquid-Phase Microextraction with *in situ* Derivatisation for the Determination of Acidic Drug Residues in Sewage Water by Gas Chromatography-Mass Spectrometry. Presented at the 8th Asian Conference on Analytical Sciences (Asianalysis VIII), October 16-20, 2005, Taipei, Taiwan.
- 207) Wu, J., Basheer, C. & Lee, H.K. Microwave-Assisted Liquid-Phase Microextraction of Aromatic Amines. Presented at the 8th Asian Conference on Analytical Sciences (Asianalysis VIII), October 16-20, 2005, Taipei, Taiwan.
- 208) He, Y. & Lee, H.K. Continuous Flow Microextraction Combined With High Performance Liquid Chromatography for the Analysis of Pesticides in Natural Waters. Presented at the Eastern Analytical Symposium & Exposition 2005, November 14-17, 2005, Somerset, NJ, USA.
- 209) Lee, H.K. Design and Synthesis of Polymers for Applications in Environmental Analytical Chemistry. Presented at Pacifichem 2005 (International Chemical Congress of Pacific Basin Societies), December 15-20, 2005, Honolulu, HI, USA (Invited lecture).
- 210) Basheer, C., Valiyavettil, S. & Lee, H.K. Novel Micro-Solid-Phase Microextraction Technique for Complex Environmental Analysis. Presented at Pacifichem 2005

(International Chemical Congress of Pacific Basin Societies), December 15-20, 2005, Honolulu, HI, USA.

- 211) Basheer, C., Nurmawati, M.H., Sindhu, S., Perera, A.P.P., Ong, S., Lee, H.K. & Valiyavettil, S. Capillary-Microreactor for Heteregeneously-Catalyzed Reactions. Presented at Pacifichem 2005 (International Chemical Congress of Pacific Basin Societies), December 15-20, 2005, Honolulu, HI, USA.
- 212) Valiyavettill, S., Basheer, C., Nurmawati, M.H., Sindhu, S., Perera, A.P.P., Ong, S. & Lee, H.K. Miniaturized Capillary-Microreactor for Heteregeneously-Catalyzed Reactions. Presented at Pacifichem 2005 (International Chemical Congress of Pacific Basin Societies), December 15-20, 2005, Honolulu, HI, USA.
- 213) Lee, H.K. Novel Approaches to Solvent-Minimised Extractions in Environmental Analysis. Presented at the 9th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-9) and 8th Symposium on Advances in Extraction Techniques (ExTech 2006), February 6-10, 2006, York, UK (Plenary lecture).
- 214) Basheer, C. & Lee, H.K. Application of Hollow Fibre-Protected Liquid-Phase Microextraction Techniques for the Determination of Endocrine Disrupting Compounds. Presented at the 9th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-9) and 8th Symposium on Advances in Extraction Techniques (ExTech 2006), February 6-10, 2006, York, UK.
- 215) Basheer, C., Alnedhary, A.A., Rao, B.S.M. & Lee, H.K. Enhancement in Two-Phase Liquid-Phase Microextraction: A Binary Solvent Approach. Presented at the 9th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-9) and 8th Symposium on Advances in Extraction Techniques (ExTech 2006), February 6-10, 2006, York, UK.

- 216) Basheer, C., Zhang. J., Maung, P. & Lee, H.K. Single-Step Microwave-Assisted Headspace Liquid-Phase Microextraction for the Analysis of Aromatic Amines in Sediment Samples. Presented at the 9th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-9) and 8th Symposium on Advances in Extraction Techniques (ExTech 2006), February 6-10, 2006, York, UK.
- 217) Basheer, C., Maung, P. & Lee, H.K. Room Temperature Ionic Liquid as Solvent in Hollow Fibre-Protected Liquid-Liquid Microextraction Technique for Wastewater Extraction Coupled with High-Performance Liquid Chromatography. Presented at the 9th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-9) and 8th Symposium on Advances in Extraction Techniques (ExTech 2006), February 6-10, 2006, York, UK
- 218) Lee, H.K. Miniaturised Liquid-Phase Sample Preparation for Environmental Analysis. Presented at the 29th International Symposium on Capillary Chromatography. May 29 June 2, 2006, Riva del Garda, Italy (Plenary lecture).
- 219) Lee, H.K. Miniaturised and Environmentally-Benign Sample Preparation Approaches. Presented at the United Nations University International Symposium on Persistent Organic Pollutants in Asia: Its Status and Future. November 7-8, 2006, Manila, The Philippines (Invited lecture)
- 220) Lee H.K., Basheer, C. & Valiyavettill, S. Hydrogenation Reactions in a Simple Glass Capillary-Microreactor. Presented at the 6th Asia-Pacific International Symposium on Microscale Separations and Analysis. November 12-14, 2006, Kyoto, Japan (Invited lecture)
- 221) Lee, H.K. Environmentally-Benign Extraction Techniques for Environmental Analysis. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway (Plenary lecture).
- 222) Lee, H.K., Pedersen-Bjergaard, S. & Rasmussen, K.E. Basics of Liquid-Phase Microextraction. Presented at the 9th International Symposium on Advances in

- Extraction Technologies, June 3-6, 2007, Ålesund, Norway (Invited tutorial).
- 223) Basheer, C., Lee, J., Pedersen-Bjergaard, S., Rasmussen, K.E. & Lee, H.K. Simultaneous Extraction of Acidic and Basic Drugs Using Electrokinetic Extraction Through Polypropylene Membrane. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway
- 224) Basheer, C., S. Kanimozhi, S. Jagadesh, S. Valiyavettil & Lee, H.K. Development and Application of Polymeric-Nanofiber Membrane Microextraction Followed by High-Performance Liquid Chromatography-Ultraviolet Detection for the Determination of Phenoxy Herbicides. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway (Winner of Royal Society of Chemistry best poster award)
- 225) Lee, J., Basheer, C., Neo, S.Y., Pedersen-Bjergaard, S., Rasmussen, K.E. & Lee, H.K. Determination of Phenoxy Herbicides Through Electromembrane Isolation. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway.
- 226) Hii, T.M., Basheer, C. & Lee, H.K. Commercial Polymeric Fiber as Sorbent for Solid-Phase Microextraction Combined with High-Performance Liquid Chromatography for the Determination of Polycyclic Aromatic Hydrocarbons in Water. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway.
- 227) Xu, L., Basheer, C. & Lee, H.K. Solvent Bar Microextraction of Herbicides Combined with Non-Aqueous Field-Amplified Sample Injection Capillary Electrophoresis. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway.
- 228) Alhooshani, K., Basheer, C., M.H. Nurhanim & Lee, H.K. Determination of Polychlorinated Biphenyls in Aqueous Samples Using Multifiber-Polymer Microextraction. Presented at the 9th International Symposium on Advances in Extraction Technologies, June 3-6, 2007, Ålesund, Norway.

- 229) Lee, H.K. Development of Environmentally-Friendly Sample Preparation Techniques for Environmental Analytical Chemistry. Presented at the 12th Asian Chemical Congress, August 23-25, 2007, Kuala Lumpur, Malaysia (Keynote lecture).
- 230) Lee, H.K. Environmentally Friendly Approaches to Sample Preparation Using Hollow Fibre Membranes. Presented at 27th International Symposium on Halogenated Persistent Organic Pollutants (Dioxin 2007), September 2-7, 2007, Tokyo, Japan (Invited lecture).
- 231) lino, F., Sebesvari, Z., Renaud, F., Kitsuwa, T., Morita, M., Shibata, Y., Huang, Y., Rajendran, B.R., Syaful, H., Shim, W.J., Mustafa, A.M., Muhammad, A.T., Santiago, E., Suthamanuswong, B., Lee, H.K., Viet, P.H. & Boonyatumanond, R. POPs Analysis and Monitoring in the Asian Coastal Hydrosphere. Presented at 27th International Symposium on Halogenated Persistent Organic Pollutants (Dioxin 2007), September 2-7, 2007, Tokyo, Japan
- 232) Lee, N.H.S., Sng, M.T., Basheer, C. & Lee, H.K. Hollow Fibre-Protected Liquid-Phase Microextraction for the Analysis of Chemical Warfare Agents and Degradation Products. Presented at Workshop on the Analysis Related to Chemical Weapons to Mark the Tenth Anniversary of the Entry into Force of the Convention September 5-7, 2007, Tuusula, Finland
- 233) Lee, H.K. Development of Novel Microscale Extraction Procedures for Environmental Analysis. Presented at the 9th Asian Conference on Analytical Sciences (Asianalysis IX), November 4-8, 2007, Jeju Island, South Korea (Invited lecture)
- 234) Lee, H.K. Persistent Organic Pollutants in the Singapore Coastal Environment: A Country Report. International Symposium on Persistent Organic Pollutants: Global Transport, Best Environmental Practice and Risk Perception, November 13-15, 2007, Jakarta, Indonesia (Invited lecture)

- 235) Lee, J., Basheer, C., Pedersen-Bjergaard, S., Rasmussen, K.E. & Lee, H.K. Simultaneous Extraction of Basic and Acidic Drugs: A Novel Electro-Extraction Approach. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 236) Guo, L., Lee,H.K. Microwave-Assisted Extraction Combined with Micro-Solid-Phase Extraction for the Extraction of Polychlorinated Biphenyls from Soil. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 237) Hii, T.M., Basheer, C. & Lee, H.K. Application of Commercial Polymeric Fiber as Sorbent for Solid-Phase Microextraction Combined with High-Performance Liquid Chromatography for the Determination of Parabens in Water Samples. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 238) Lee, N.H.S., Sng, M.T., Basheer, C. & Lee H.K. Hollow Fibre-Protected Liquid-Phase Microextraction for the Determination of Basic Degradation Products of Chemical Warfare Agents. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 239) Jagjit, K., Basheer, C. & Lee, H.K. Development and Application of Electromediated Microextraction Followed by High-Performance Liquid Chromatography-Ultraviolet Detection for the Determination of Haloacetic Acids and Aromatic Acetic Acids in Wastewater. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 240) Dhanya, G., Basheer, C. & Lee, H.K. Extraction of Polar and Ionisable Organic Pollutants from Storm Water Sample using Biocompatible Functional-Nanomembrane. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific

International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore

- 241) Lim, S.K., Basheer, C. & Lee, H.K. Application of μ-SPE Followed by Gas Chromatography-Flame Ionization Detection for the Determination of Triazines in Seawater. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 242) Tan, Y.L., Zhang, J., Lee, H.K. & Obbard, J.P. Determination of Acidic Pharmaceutically-Active Compounds in Seawater by On-Site Solid Phase Extraction and Liquid Chromatography-Tandem Mass Spectrometry. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 243) Sabitha P., Basheer, C. & Lee. H.K. Determination of Phthalates using Nanofiber Membrane-Based Solid-Phase Microextraction in Rain Water by Gas Chromatography. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 244) Sini, G., Basheer, C., Loh, K.P. & Lee, H.K. A Novel Conductive Gel of Functionalized Nanodiamond and Ionic Liquid on a Glassy Carbon Electrode for the Determination of Uric Acid. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 245) Basheer, C., Hussain, F.S.J., Mohd Haron, N., Suresh, V. & Lee, H.K. Dechlorination and In-Situ Hydrogenolysis of Persistent Organic Chemicals Using Nanomembrane-Supported Catalysis. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore

- 246) Basheer, C., Suresh, V. & Lee, H.K. Development of Novel Microanalytical Techniques for Environmental Applications. Presented at the 5th Singapore International Chemistry Conference-7th Asia-Pacific International Symposium on Microscale Separation and Analysis. December 16-19, 2007, Singapore
- 247) Lee, H.K. Environmentally-Friendly Solvent-Minimized Sample Preparation Approaches. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium (Plenary lecture)
- 248) Basheer, C., Lee, J., Pedersen-Bjergaard, S., Rasmussen, K.E. & Lee, H.K. Single-Step Extraction for the Determination of Acidic, Basic and Neutral Analytes from Wastewater Samples. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium (Invited lecture)
- 249) Basheer, C., Shin, L., Loh, K.P. & Lee, H.K. Determination of Polar Pesticides from Water Samples Using Functionalized Nanodiamond-Polymer-Coated Microextraction. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium
- 250) Basheer, C., Lim, S.K. & Lee, H.K. On-Site Analysis of Triazine Pesticides in Singapore's Coastal Waters Using Micro-Solid-Phase Extraction Followed by Gas Chromatography-Flame Ionization Detection. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in

Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium

- 251) Basheer C., Jagjit, K., Alhooshani, K., Pedersen-Bjergaard, S., Rasmussen, K.E. & Lee, H.K. Development and Application of Electromediated Microextraction Followed by High-Performance Liquid Chromatography-Ultraviolet Detection for the Determination of Haloacetic Acids and Aromatic Acetic Acids in Wastewater. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium
- 252) Basheer, C., Ankur, D., Kang, H., Suresh, V. & Lee, H.K. Novel Biocompatible Polymorph-CaCO3 as Sorbent for Dispersive Solid-Phase Extraction. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium
- 253) Basheer, B., George, D.P., Fathima, S.J.H., Suresh, V. & Lee, H.K. Application of Biocompatible Nanomembrane for the Determination of Haloacetic Acids and Aromatic Acetic Acids in Stormwater. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10); 10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium
- 254) Basheer, C., Kanimozhi, S., Narasimhan, K., Liu, L., Koh, S., Xue, F., Choolani, M. & Lee, H.K. Application of Porous Membrane-Protected Micro-Solid-Phase Extraction Combined with Gas Chromatography-Mass Spectrometry for the Analysis of Estrogens in Ovarian Cyst Fluid. Presented at the 10th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers (HTC-10);

10th International Symposium on Advances in Extraction Techniques (ExTech 2008) and Public Safety and Security, January 28-February 1, 2008, Bruges, Belgium

255) Lee, H.K. Miniaturized Sample Preparation Approaches for Microseparation Techniques. Presented at PittCon (Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy) 2008, March 1-7, 2008, New Orleans, LA, USA (Invited lecture)

256) Basheer, C., Sivarajan, K., Kothandaraman, N., Liu, L., Koh, S.C.L., Choolani, M. & Lee, H.K. Determination of Estrogens in Cyst Fluids. Presented at the 1st Ovatian Cancer Action International Conference, March 7-8, 2008, London, UK.

257) Hii, T.M., Basheer, C. & Lee, H.K. Use of Commercial Polymeric Fiber for Solid-Phase Microextraction Coupled with High Performance Liquid Chromatography for the Analysis of Parabens in Water Samples. Presented at the American Chemical Society Spring National Meeting and Exposition, April 6-10, 2008, New Orleans, LA, USA

258) Lee, H.K. Microextraction Approaches for Environmental Analysis. Presented at the 91st Canadian Chemistry Conference and Exhibition, May 24-28, 2008, Edmonton, AB, Canada (Invited lecture)

259) George, S. & Lee, H.K. Simultaneous Detection of Ascorbic Acid, Dopamine and Uric Acid on Methylene Blue Functionalized Carbon Nanotube Film. Presented at the 2nd International Conference for Young Chemists, June 18-20, 2008, Penang, Malaysia (Best poster award winner)

260) Lee, H.K. "Green" Sample Preparation Methods for Environmental Matrices. Presented at the 3rd International Symposium on Trends in Biomonitoring, Biocontrol and Biotoxicokinetics for Sustainable Agriculture, October 20, 2008, Gwangju, South Korea (Invited lecture)

261) Lee, H.K. Development and Applications of Microscale Liquid-Phase

and Solid-Phase Sample Preparation Procedures. Presented at the 8th Asia-Pacific International Symposium on Microscale Separations and Analysis, November 2-5, 2008, Kaohsiung, Taiwan (Invited lecture)

262) George, S. & Lee, H.K. Single-Walled Carbon Nanotube-Metallic Nanoparticle Composite for Sensitive Electrochemical Determination of Carcinogenic Aromatic Amines. Presented at the 2008 Asian Conference on Nanoscience and Nanotechnology, November 3-7, 2008, Singapore

263) Wu, M., Basheer, C. & Lee, H.K. Singapore: On Sampling, Seawater and Squid. Presented at the United Nations University International Conference on Environmental Monitoring and Governance in the Asian Coastal Hydrosphere: Roles of Academia and Private Sectors for the Stockholm Convention, November 13-14, 2008, Tokyo, Japan (Invited lecture)

264) Lee, H.K. Water, A Critical Resource: Sample Preparation by Environmentally Friendly Microextraction Procedures. Presented at the 33rd International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2008), December 2-5, 2008, Kyoto, Japan (Invited lecture)

265) Lee, J., Khalilian, F. & Lee, H.K. Selective Electro Membrane Extraction for Pentachlorophenol in Environmental and Biological Samples. Presented at the 34th International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2009), June 28-July 2, 2009, Dresden, Germany

266) Lee, H.K. Green and Sustainable Analyte Extraction and Preconcentration Strategies. Presented at Asianalysis X (10th Asian Conference on Analytical Sciences), August 11-13, 2009, Kuala Lumpur, Malaysia (Plenary lecture)

267) Lee, H.K. Solvent-Minimized Sample Preparation in Separation Science.

Presented at Separation Science Asia 2009, August 26-28, 2009, Singapore (Invited lecture)

268) Lee, H.K. Environmentally Friendly Solvent-Minimized Sample Preparation.

Presented at 13th Asian Chemical Congress, September 14-16, 2009, Shanghai, China (Plenary lecture, in conjunction with Federation of Asian Chemical Societies Foundation Lectureship Award 2009)

269) Lee, H.K. Education and Research of Analytical Chemistry in the National University of Singapore. Presented at the 1st Asian Analytical Chemistry Network Symposium, September 25-26, 2009, Sapporo, Japan (Invited lecture)

270) Lee, H.K. Materials-Based Sample Preparation: Potential for Field Applications. Presented at the 11th International Symposium on Advances in Extraction Technologies (ExTech 2009), October 4-7, 2009, Rapid City, South Dakota, USA (Plenary lecture)

271) Kanimozhi, S., Basheer, C., Ang, K., Xue, F. & Lee, H.K. Determination of Estrogen Concentration in Single Zebrafish (Danio rerio) Liver by Hollow Fibre-Protected Liquid-Phase Microextraction (HF-LPME) Combined with GC/MS. Presented at the11th International Symposium on Advances in Extraction Technologies (ExTech 2009), October 4-7, 2009, Rapid City, South Dakota, USA

272) Lee, H.K. Microscale Sample Preparation in Biological Studies. Presented at the 24th International Symposium on Microscale Bioseparations, October 18-22, 2009, Dalian, China (Invited lecture)

273) Lee, H.K. Practical Applications of Microscale Sample Preparation for Environmental and Biological Analysis. Presented at the 9th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2009)/1st Asia-Pacific International Symposium on Lab-on-a-Chip (APLOC2009), October 28-31, 2009, Shanghai, China (Invited lecture)

274) Lee, H.K. Miniaturized Sample Preparation Methods – Short Course. Presented at the 11th International Symposium on Hyphenated Techniques in Chromatography (HTC11)/International Symposium on Hyphenated Techniques for Sample Preparation (HTSP), January 26-29, 2010, Bruges, Belgium (Invited short course)

275) Lee, H.K. Solvent-Minimized Sample Preparation Approaches for Potential Field Applications. Presented at the 11th International Symposium on Hyphenated Techniques in Chromatography/International Symposium on Hyphenated Techniques for Sample Preparation (HTC-11/HTSP), January 26-29, 2010, Bruges, Belgium (Keynote lecture)

276) Guo, L & Lee, H.K. <u>Ionic Liquid-Based Headspace Liquid-Phase Microextraction for the Extraction of Phenols in Soil.</u> Presented at the 239th American Chemical Society National Meeting and Exposition, March 21-25, 2010, San Francisco, California, USA.

277) Lee, H.K. Environmentally Friendly Solvent-Minimized Sample Preparation. Presented at the 25th Philippine Chemistry Congress, April 8-10, 2010, Subic Bay Freeport Zone-Zambales, The Philippines (Plenary lecture)

278) Lee, H.K. Role of Materials Chemistry in Solvent-Minimized Sample Preparation. Presented at the 35th International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2010), June 20-24, 2010, Boston, Massachusetts, USA (Invited lecture)

279) Lee, H.K. Solvent-Minimized Sample Preparation Approaches for Potential Onsite Applications. Presented at Separation Science Singapore 2010, Singapore, August 5-6, 2010 (Plenary lecture)

280) Lee, H.K. Miniaturized Solvent- and Sorbent-Based Sample Preparation: Considerations for Potential Onsite Applications. Presented at the 12th International Symposium on Advances in Extraction Technologies (ExTech 2010), September 20-22, 2010, Poznan, Poland (Plenary lecture)

281) Lee, H.K. Active Analyte Extraction Across a Membrane using Electrical Potential. Presented at the 10th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE 2010), December 10-13, 2010, Hong Kong, China (Keynote lecture)

- 282) Zhang, Y. & Lee, H.K. Liquid-Phase Microextraction Using Knitting Wool as the Extractant Phase Holder to Determine UV Filters in Swimming Pool Water. Presented at Pacifichem 2010, December 15-20, 2010, Honolulu, HI, USA.
- 283) Ge, D. & Lee, H.K. Ionic Liquid Based Hollow Fiber Supported Liquid Phase Microextraction of UV Filters. Presented at Pacifichem 2010, December 15-20, 2010, Honolulu, HI, USA.
- 284) Lee, H.K. Miniaturized Sorbent-Based and Solvent-Based Sample Preparation Approaches for Environmental Water Analysis. Presented at United Nations International Symposium on Existing and Emerging Chemicals in the Environment, March 8-9, 2011, Shanghai, China (Invited lecture)
- 285) Lee, H.K. Monitoring Singapore's Coastal Regions for Endocrine-Disrupting Chemicals such as Polybrominated Diphenyl Ethers. Presented at United Nations International Symposium on Existing and Emerging Chemicals in the Environment, March 8-9, 2011, Shanghai, China (Invited country report)
- 286) Lee, H.K. Miniaturized Solvent- and Sorbent-Based Sample Preparation: Considerations for Potential Onsite Applications. Presented at International Conference on Analytical Sciences (ICAS 2011), May 22-26, 2011, Kyoto, Japan (Invited lecture)
- 287) Lahey, C.M., Basheer, C., Loo, L.C. & Lee, H.K. Development of Automated Liquid-Phase Microextraction-Gas Chromatography/Mass Spectrometry. Presented at the 59th American Society for Mass Spectrometry (ASMS) Conference on Mass Spectrometry and Allied Topics, June 5-9, 2011, Denver, Colorado, USA
- 288) Lee, H.K. Potential Field Applications of Microscale Sample Preparation for Aqueous Samples. Presented at the 13th Asian Chemical Congress, September 5-9, 2011, Bangkok, Thailand (Invited lecture)
- 289) Zhang, Y. & Lee, H.K. Ionic Liquid-Based Ultrasound-Assisted Dispersive

Liquid-Liquid Microextraction followed by High-Performance Liquid Chromatography for the Determination of UV Filters in Environmental Water Samples. Presented at the 4th International Conference on Challenges in Environmental Science & Engineering, September 25-30, 2011, Tainan City, Taiwan

290) Ge, D. & Lee, H.K. Ionic Liquid Based Hollow Fiber Supported Liquid Phase Microextraction of UV Filters from Environmental Water Samples. Presented at the 4th International Conference on Challenges in Environmental Science & Engineering, September 25-30, 2011, Tainan City, Taiwan

291) Pedersen-Bjergaard, S. & Lee, H.K. Liquid-Phase Microextraction (LPME) (Solvent-Minimized Extraction and Related Methods): A Miniaturized Sample Preparation Approach. Invited Short Course Presented at the 13th International Symposium on Advances in Extraction Technologies (ExTech 2011), September 26-29, 2011, Kuala Lumpur, Malaysia

292) Lee, H.K. Potential of Automated Field Sample Preparation and Analysis. Presented at the 13th International Symposium on Advances in Extraction Technologies (ExTech 2011), September 26-29, 2011, Kuala Lumpur, Malaysia (Keynote lecture)

293) Lee, H.K. Miniaturized Liquid-Phase Extractions and their Potential for Onsite Sample Preparation of Environmental Aqueous Samples. Presented at the 37th International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2011), October 9-13, 2011, Dalian, China (Invited lecture)

294) Lee, H.K. Development of Environmentally Friendly Extraction Methods within the Framework of the United Nations University Programme on Persistent Organic Pollutants in the Asian Coastal Hydrosphere. Presented at the United Nations University-Institute of Sustainability and Peace International Symposium on Environmental Monitoring and Governance in the Asian Coastal Hydrosphere: Past 10 Years and Future of the Stockholm Convention on Persistent Organic Pollutants, October 24-25, 2011, Tokyo, Japan (Invited lecture)

CONFERENCE PROCEEDINGS - EDITORSHIP

1) Lee, H.K. (Editor-in-chief) Proceedings of the *4th Symposium on Our Environment*. Published as a special symposium volume in <u>Environ</u>. Monitor. & Assess. (1991) <u>19</u> (Nos. 1-3, October-December) by Kluwer Academic Publishers (USA/The Netherlands).

Also published as *Fourth Symposium on Our Environment* (Kluwer Academic Publishers (USA/The Netherlands)) (H.K. Lee, Editor-in-Chief) (Hardbound) ISBN 0-7923-1562-6; 547 pages.

- 2) Lee, H.K. (Editor and Compiler) Book of Abstracts, *5th Symposium on Our Environment/1st Asia-Pacific Workshop on Pesticides*, June 5-8, 1995, Singapore.
- 3) Lee, H.K. (Main Guest Editor) Proceedings of the *5th Symposium on Our Environment/1st Asia-Pacific Workshop on Pesticides*. Published as a special symposium volume in <u>Environ. Monitor. & Assess</u>. (1997) <u>44</u> (Nos. 1-3, February) 1-547 by Kluwer Academic Publishers (The Netherlands).
- 4) Lee, H.K. (Co-Guest Editor and Editorial (Preface) Writer) Proceedings of the 1st Asia-Pacific International Symposium on Capillary Electrophoresis and Other Nano- and Microscale Analytical Techniques, Talanta (1998) 45 (no. 4) 603-773 published by Elsevier (The Netherlands).
- 5) Lee, H.K. (Editor) Book of Abstracts, *International Conference on Fundamental Sciences: Biological Sciences and Chemical Sciences*, May 21-24, 2001, Singapore.
- 6) Bloodworth, B.C., Balasubramanian, R., Lee, H.K., Obbard, J.P. (Editors) *Environmental Toxicology and Health in Singapore: Proceedings of the* National University of Singapore-Health Sciences Authority Joint Seminar: Environmental Toxicology and Health in Singapore. <u>J. Toxicol. & Environ.</u>, <u>Pt. A</u> (USA) (2006) <u>69</u> (no. 21).

OTHER EDITORSHIPS

- 1) Lee, H.K. (Invited Co-Editor) & Haddad, P.A., Young Analytical Faculty in Asia Special Issue in <u>Anal. Chim. Acta</u> (The Netherlands) (2006) <u>556</u>
- 2) Lee, H.K. & S.L. Ong (Invited Co-Guest Editors), Special Issue on Water, <u>Innovation</u>

 <u>Magazine</u> (Singapore) (2007) <u>7</u>

A SELECTION OF <u>INVITED</u> LECTURES, SEMINARS, AND OTHER PRESENTATIONS (National and Regional)

- 1) Chee, K.K. & Lee, H.K. Oil and Grease. Presented at 3rd ASEAN Marine Environmental Quality Criteria Task Group (under ASEAN-Canada Cooperative Programme on Marine Science Phase II) Meeting, May 3-5, 1994, Kuala Lumpur, Malaysia
- 2) Lee, H.K. Dissolved Oxygen. Presented at 3rd ASEAN Marine Environmental Quality Criteria Task Group (under ASEAN-Canada Cooperative Programme on Marine Science Phase II) Meeting, May 3-5, 1994, Kuala Lumpur, Malaysia (invited lecture)
- 3) Lee, H.K. Use of Capillary Electrophoresis in Environmental Monitoring. Presented at the Department of Community, Occupational and Family Medicine, NUS, September 10, 1994, Singapore (invited lecture)
- 4) K.L. Sim & Lee, H.K. Development of a High-Performance Liquid Chromatographic Method for Analysing Homogeneous Catalytic Products. Presented at 2nd Undergraduate Science Research Congress, November, 1994, Singapore
- 5) Lim, Y.F., Yeo, K.H., Chee, K.K., Zhou, C.Y. & Lee, H.K. Analysis of Soil Pollutants by Chromatography and Spectrophotometry. 1st Youth Science Conference, August 26, 1995, Singapore

- 6) Tan, W.L., Chee, K.K. & Lee, H.K. Microwave-Assisted Solvent Extraction of Polychlorinated Biphenyls from Marine Sediments and Soils. 3rd Undergraduate Science Research Programme, September 6, 1995, Singapore
- 7) Xiong, P.Q.V., Yeoh, W.W., He, Y. & Lee, H.K. Trace Enrichment of Phenols in Water by Combination of Off-Line and On-Line Concentration for Capillary Electrophoresis. 2nd Youth Science Conference, August 24, 1996, Singapore
- 8) Lee, H.K. Risk Assessment in a Contaminated Oyster Fishery. ASEAN-Canada Cooperative Programme on Marine Science Phase II: Ecological Risk Assessment Workshop, May 12-16, 1997, Penang, Malaysia (Invited lecture)
- 9) Lee, H.K. Formulation of Ecological Risk Assessment: Factory Outfall Leading to Cd, Cu and PCB Contamination of Fish and Cockles and Other Marine Organisms.

 ASEAN-Canada Cooperative Programme on Marine Science Phase II: Ecological Risk Assessment Workshop, May 12-16, 1997, Penang, Malaysia (Invited lecture)
- 10) Lee, H.K. Risk Assessment Management and Communication: Ecological Impact of Upgrading a Power Generation Plant. ASEAN-Canada Cooperative Programme on Marine Science Phase II: Ecological Risk Assessment Workshop, May 12-16, 1997, Penang, Malaysia (Invited lecture)
- 11) Lee, H.K. The Most Pressing Environmental Problems in the ASEAN Region:
 Prioritizing Our Action Plans. ASEAN-Canada Cooperative Programme on Marine
 Science Phase II: Ecological Risk Assessment Workshop, May 12-16, 1997, Penang,
 Malaysia (Invited lecture)
- 12) Lee, H.K. Miniaturisation in Analytical Chemistry. Shimadzu Asia-Pacific Private Limited 10th Anniversary Seminar, October 3, 2000, Singapore (Invited lecture)
- 13) Lee, H.K. Miniaturised Approaches to Sample Preparation for Environmental Analysis. Conference on Advanced Analytical Techniques and Quality Assurance for the

- Challenges of the 21st Century Organised by the Environmental Technology Institute, April 18-19, 2001, Singapore (Invited lecture)
- 14) Lee, H.K. Miniaturised Approaches to Conventional Liquid Extractions. Symposium on Novel Separation and Purification Organised by the Chemical and Process Engineering Centre, National University of Singapore, October 29-30, 2001, Singapore (Keynote lecture)
- 15) Li, H. & Lee, H.K. Liquid-Phase Microextraction of Basic Drugs with Analysis by Capillary Electrophoresis. Symposium on Novel Separation and Purification Organised by the Chemical and Process Engineering Centre, National University of Singapore, October 29-30, 2001, Singapore
- 16) Gong, Y., Xiang, Y., Xue, G., Bradshaw, J., Lee, M.L. & Lee, H.K. Application of Crown Ether-Capped β-Cyclodextrin Bonded Chiral Stationary Phase in Capillary Electrochromatography and Ultrahigh Pressure Liquid Chromatography. Symposium on Novel Separation and Purification Organised by the Chemical and Process Engineering Centre, National University of Singapore, October 29-30, 2001, Singapore
- 17) Lee, H.K. Old Ideas, New Approaches: Miniaturisation of Liquid-Liquid Extraction. National University of Singapore-Japan Society for the Promotion of Science Joint Symposium on Analytical Sciences: Challenges of the New Century. February 28-March 1, 2002, Singapore (Invited lecture)
- 18) Valiyaveettil, S., Arockiam, J., Baskar, C. & Lee, H.K. Multifunctional Polymers for Nano- and Microsensor Applications. Presented at National University of Singapore-Japan Society for the Promotion of Science Joint Symposium on Analytical Sciences, Singapore, February 28-March 1, 2002
- 19) Lee, H.K. Miniaturised Approaches to Conventional Extractions. April 12, 2002, Vietnam National University, Hanoi, Vietnam (Lecture presented as ASEAN Universities Network Distinguished Visiting Professor)

- 20) Lee, H.K. Liquid-Phase Microextraction with Hollow Fibre for Environmental Analysis.

 April 12, 2002, Vietnam National University, Hanoi, Vietnam (Lecture presented as ASEAN Universities Network Distinguished Visiting Professor)
- 21) Lee, H.K. The Importance of Mass Spectrometry to Analytical Chemistry, Shimadzu Asia-Pacific Ltd. Seminar on Mass Spectrometry, May 21, 2002, Singapore (Invited lecture)
- 22) Lee, H.K. Persistent Organic Pollutants: What, Why and How? Seminar on Chemical Pollutants in the Environment, January 21, 2003, University of Malaya, Kuala Lumpur, Malaysia (Keynote lecture)
- 23) Lee, H.K. Advanced Analytical Techniques for Monitoring Persistent Organic Pollutants. Seminar on Chemical Pollutants in the Environment, January 21, 2003, University of Malaya, Kuala Lumpur, Malaysia (Invited lecture)
- 24) Bayen, S., Thomas, G.O., Lee, H.K. & Obbard, J.P. Mussel Watch: Extent of Contamination by Heavy Metals and Persistent Organic Pollutants (POPs) in Singapore's Marine Environment. Health Sciences Authority-National University of Singapore Joint Scientific Seminar: Collaborative Research in Health Sciences, April 9, 2003, Singapore
- 25) Lee, H.K. Miniaturised Approaches to Liquid Extractions for Environmental Analysis. Vietnam National University, October 23, 2003, Hanoi, Vietnam (Invited lecture)
- 26) Lee, H.K.Miniaturised Extraction Techniques for Environmental Analysis. 2nd Singapore-India Collaborative and Cooperative Chemistry Symposium, November 7-9, 2003, Mumbai, India (Invited lecture)
- 27) Lee, H.K. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis. 2nd Singapore-China Collaborative and Cooperative Chemistry Symposium, April 7-8, 2004, Soochow University, Suzhou,

China (Invited lecture)

- 28) Lee, H.K. Department of Chemistry, National University of Singapore: An Overview. 2nd Singapore-China Collaborative and Cooperative Chemistry Symposium, April 7-8, 2004, Soochow University, Suzhou, China (Invited lecture)
- 29) Lee, H.K. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis. Shanghai University, Shanghai, China, April 8, 2004 (Invited lecture)
- 30) Obbard, J.P., Lee, H.K. & Bayen, S. Heavy Metals and Persistent Organic Pollutants in Seafoods Typically Consumed in Singapore. Health Sciences Authority-National University of Singapore Joint Scientific Seminar: Health Through Scientific Research, May 19, 2004, Singapore
- 31) Lee, H.K. A Simple Glass Capillary-Microreactor for Heterogeneous Catalytic Reactions. 3rd Singapore-India Collaborative and Cooperative Chemistry Symposium, December 16-17, 2004, Kanpur, India (Invited lecture)
- 32) Lee, H.K. Miniaturised Approaches to the Extraction of Water-Borne Pollutants. Singapore National Institute of Chemistry-Agilent Technologies Joint Seminar on Water Analysis. August 19, 2005, Singapore (Invited lecture)
- 33) Basheer, C. & Lee, H.K. Miniaturised Extraction Techniques in Combination with Chromatography and Electrophoresis (Updated 2006). Presented at the 3rd Singapore-China Collaborative and Cooperative Chemistry Symposium, January 5-6, 2006, Singapore
- 34) Lee, H.K.. Development of Environmentally-Benign Extraction Procedures for Environmental Analytical Chemistry. Presented at the International Graduate Congress (3rd Mathematical & Physical Sciences Graduate Symposium), December 13-15, 2007, Kuala Lumpur, Malaysia (Invited lecture)

- 35) Xu, L. & Lee, H.K. Development of Miniaturized Sample Preparation Approaches for Nerve Agent Degradation Products. Presented at the 9th Frontier Science Symposium, October 15-17, 2008, Singapore (Invited lecture)
- 36) Lee, H.K. Green Sample Preparation Procedures for Water and Environmental Analysis. Presented at the Department of Chemistry, Seoul National University, South Korea, November 27, 2008 (Invited lecture)
- 37) Lee, H.K. Microscale Sample Preparation for Environmental Analysis. Presented at the 2nd Singapore-Australia Collaborative and Cooperative Chemistry Symposium, December 16-17, 2008, Brisbane, Australia (Invited lecture)
- 38) Lee, H.K. Solvent-Minimized Microextraction Approaches to Sample Preparation. Presented at the 1st National University of Singapore-Seoul National University Joint Symposium: Frontiers in Fundamental and Applied Chemistry, February 27-28, 2009, Seoul, South Korea (Invited lecture)
- 39) Lee, H.K. Sustaining the Tradition of Research Excellence. Presented at University of Malaya Department of Chemistry Annual Retreat/Workshop, June 27-28, 2009, Cherating, Kuantan, Malaysia (Invited lecture)
- 40) Lee, H.K. Microscale Sample Preparation Approaches for Potential On-Site Applications. Presented at the 10th Frontier Science Symposium, November 17-21, 2009, Singapore (Invited lecture)
- 41) Lee, H.K.. Cost-Effective, Practical and Green Approaches to Environmental Sample Preparation. Presented at the International Graduate Congress (5th Mathematical & Physical Sciences Graduate Symposium), December 7-9, 2009, Bangkok, Thailand (Keynote lecture)
- 42) Lee, H.K. Modern Mass Spectrometric Analysis: Doing Away with Sample Preparation? Presented at the Next Era of Mass Spectrometry from Shimadzu Seminar Series 2011. July 26, 2011, Singapore (Plenary lecture)

- 43) Lee, H.K. Miniaturized Sorbent-Based and Solvent-Based Sample Preparation Approaches for Environmental Water Analysis. Presented at Tongji Medical School, Huazong University of Science and Technology, Wuhan, November 23, 2011 (Invited lecture as Visiting Professor)
- 44) Lee, H.K. Miniaturized Onsite Solvent-Based Sample Preparation <u>and</u> Analysis. Presented at Tongji Medical School, Huazong University of Science and Technology, Wuhan, November 23, 2011 (Invited lecture as Visiting Professor)