

## CURRICULUM VITAE

### Tien-Sung Tom Lin

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**Birth:** January 9, 1938, Taiwan  
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**Education:** B.S. Chemical Engineering, Tunghai University, Taiwan 1960  
M.S. Physical Chemistry, Syracuse University, Syracuse, NY 1966  
Ph.D. Physical Chemistry, University of Pennsylvania, Philadelphia, PA 1969  
Postdoctoral, Department of Chemistry, Harvard University, Cambridge, MA 1970

**Professional History**

2001 - 2011 summers	Visiting Professor, Department of Chemistry, National Taiwan University, Taipei, Taiwan.
2007 Feb – March	Visiting Professor, Institute of Physical and Chemical Research (RIKEN), Wako-shi, Japan
2006 May – June & 2005 March-April	Visiting Professor, Institute of Physical Chemistry University of Freiburg, Germany
2001, 2 months	Visiting Professor, Institute of Physical and Chemical Research, Wako-shi, Japan (under Eminent Scientist Program)
2000, 6 months	Visiting Professor, Department of Chemistry, National Taiwan University, Taipei, Taiwan.
1998 - 99, 8 months	Visiting Professor, Institute of Physical and Chemical Research, Wako-shi, Japan (under Eminent Scientist Program)
1997 - 98, summers	Visiting Professor, Department of Chemistry, National Taiwan University, Taipei, Taiwan.
1993 – 96, summers	Visiting Professor, Institute of Atomic and Molecular Sciences Academia Sinica, Taipei, Taiwan.
1996- Present	Professor of Neurology (Secondary appointment), School of Medicine, Washington University, St. Louis, MO
1985 - Present	Professor of Chemistry, School of Arts and Sciences Washington University, St. Louis, Missouri
1989 - 1990	Visiting Professor, Huygens Laboratory (Physics Department), University of Leiden, The Netherlands
1976 - 1985	Associate Professor of Chemistry, Washington University
1980 - 1981	Scientist-in-Residence, Chemistry Division, Argonne National Laboratory, Illinois
1970 - 1976	Assistant Professor of Chemistry, Washington University

**Professional**

**Affiliation:** Member of American Chemical Society

**Honors:** Fellow of FOM, The Netherlands, 1989  
Research Opportunity Award, Research Corporation, 1997.  
Visiting Professorship (Eminent Scientist Program), Institute of Physical and Chemical Research (RIKEN), Japan, 1998.  
Chancellor's Visiting Professorship, University of Freiburg, Germany, March – April, 2005 and May – June, 2006.  
Distinguished Alumni Lectureship, Tunghai University, Taiwan, June 7- 17, 2005

**Research Interests:** Free radical chemistry and biochemistry, electron spin echo spectroscopy of organic triplets; dynamic nuclear polarization; photo physical and photochemical processes; structural aspects of organometallic complexes, mesoporous materials and zeolites; nanoscience and nanobiotechnology.

**Patents:** (1) Electrolytic Coatings of Polymeric Film on Metals with Ray J. Ehrig (USA patent #3,464,849).  
(2) Method for Treating Neuronal Injury with Carboxyfullerenes with Laura Dugan, Dennis Choi and Tien-Yau Luh (USA #6,265,443).

**Publications:**

1. T.-S. Lin and E. Fishman, "Enthalpies of Intramolecular Hydrogen Bonds of Orthohalophenols and Deuterated Orthohalophenols in the Vapor Phase", *Spectrochim. Acta*, **23A**, 491 (1967).
2. R.M. Hochstrasser and T.-S. Lin, "Magnetic and Electric Field Spectra of Organic Crystals: Optical Measurements of Zero-Field Splittings", *J. Chem. Phys.*, **49**, 4929 (1968).
3. R.M. Hochstrasser and T.-S. Lin, "The Zeeman Effect of Oriented Molecules in Solids at Low Temperatures", *Symposium of the Faraday Society*, **3**, 100, (1969).
4. R. J Ehrig and T.-S. Lin, "Electrolytic Coatings of Polymeric Film on Metals", *US Patent* #3,464,849 (Sept. 2, 1969).
5. T.-S. Lin, "Magnetic and electric field spectra of organic crystals" 133 pp., Diss. Abstr. Int. B 1970, 30(11), 4996. PhD thesis, University of Pennsylvania, Philadelphia, Pennsylvania.
6. R.M. Hochstrasser and T.-S. Lin, "Optical and Magnetic Field Studies of the Lowest Triplet State of the Pyrazine Crystal", *J. Chem. Phys.*, **53**, 2676 (1970).
7. R.M. Hochstrasser, T.-S. Lin and A.H. Zewail, "Mixed Magnetic and Electric Dipole Transition in S-Triazine", *J. Chem. Phys.*, **56**, 637 (1972).
8. T.-S. Lin, "EPR Study of Diphenylnitroxide in Benzophenone", *J. Chem. Phys.* **57**, 2260 (1972).  
"Erratum: EPR Study of Diphenylnitroxide in Benzophenone", *J. Chem. Phys.* **58**, 3534 (1973).
9. T.-S. Lin, "Primary Photochemical Processes of Tetraphenylmethane Solids", *Chem. Phys. Letters*, **19**, 410 (1973).
10. F.P. Burke, G.J. Small, J.R. Braun and T.-S. Lin, "The Polarized Absorption, Fluorescence and Phosphorescence Spectra of 1,3-Diazaazulene", *Chem. Phys. Letters*, **19**, 574 (1973).
11. T.-S. Lin, "Polarized Absorption Spectra of Diphenylnitroxide", *J. Mol. Spectrosc.*, **46**, 448 (1973).
12. T.-S. Lin, S.H. Mastin and N. Ohkaku, "Photochemical Reactions of Oximes with Quinones. A New Method for the Preparation of Iminoxy Radicals", *J. Amer. Chem. Soc.*, **95**, 6845 (1973).

13. J.R. Braun, T.-S. Lin, F.P. Burkner and G.J. Small, "Electric Field Spectra and Dipole Moments of 1,3-Diazaazulene", *J. Chem. Phys.*, **59**, 3595 (1973).
14. T.-S. Lin, "Hyperfine Interactions of the Phosphorescent state of 1,3-Diazaazulene", Abstract of papers of the American Chemical Society, (AUG26): 33 (1973).
15. T.-S. Lin, "Electron Paramagnetic Resonance Measurements and Transient Effects of the Phosphorescent State of 1,3-Diazaazulene", *Chem. Phys. Letters*, **28**, 77 (1974).
16. T.-S. Lin, "Studies of the Phosphorescent State of Tetraphenyl Group IV Compounds", *Chem. Phys.*, **6**, 235 (1974).
17. T.-S. Lin, "An Electron Spin Resonance Study of the Diphenyliminoxy Radical. A Photo-produced Radical from Benzophenone Oxime in Benzophenone Crystals", *J. Chem. Phys.*, **63**, 384 (1975).
18. J. R. Braun, T.-S. Lin, "Polarized Absorption and Electric Field Spectra of 2,1,3-Benzoselenadiazole", Abstract of papers of the American Chemical Society, 170 (AUG24): 99-99 (1975).
19. T.-S. LIN, "ESR Study of Diphenyliminoxy Radical in Benzophenone", Abstract of papers of the American Chemical Society, 169: 38 (1975).
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21. C.-P. Cheng, T.-S. Lin and D.J. Sloop, "Electron Spin-Echo Experiments of a Ground Organic Triplet State in a Single Crystal. Diphenylmethylenes in Benzophenone", *Chem. Phys. Letters*, **44**, 576 (1976).
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23. T.-S. Lin and J.R. Braun, "The Polarized Electronic Spectra and Electric Field Spectra of Benzodiazoles. II. 2,1,3-Benzothiadiazole", *Chem. Phys.*, **28**, 379 (1978).
24. C.-T. Yu and T.-S. Lin, "The Singlet-Triplet Absorption Spectra of Electron-Donor-Acceptor Complex Crystals: Naphthalene-Tetrachlorophthalic Anhydride and Naphthalene-Tetrabromophthalic Anhydride", *Chem. Phys. Letters*, **60**, 122 (1978).
25. C.-P. Cheng, T.-S. Lin and D.J. Sloop, "Electron Spin-Echo Experiments of Diphenylnitroxide in Benzophenone Crystals", *J. Magnetic Resonance*, **33**, 71 (1979).
26. C.-T. Yu and T.-S. Lin, "Electron Paramagnetic Resonance of the Photoexcited Triplet State of Electron-Donor-Acceptor Complex Crystals. Naphthalene-Tetrachlorophthalic Anhydrides", *Chem. Phys.*, **39**, 293 (1979).
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29. D.J. Sloop, H.-L. Yu, T.-S. Lin and S.I. Weissman, "Electron Spin Echoes of a Photoexcited Triplet: Pentacene in *p*-Terphenyl Crystals", *J. Chem. Phys.*, **75**, 3746 (1981).
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33. H.-L. Yu, T.-S. Lin and D.J. Sloop, "An Electron Spin Echo Study of the Photoexcited Triplet State of Tetracene in *p*-Terphenyl Crystals at Room Temperature", *J. Chem. Phys.*, **78**, 2184 (1983).

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36. T.-S. Lin, "Electron Spin Echo Spectroscopy of Organic Triplets", *Chemical Reviews*, **84**, 1-15 (1984).
37. D.J. Sloop, H.-L. Yu and T.-S. Lin, "ESR Imaging via Electron Spin Echo and Pulsed Field Gradient Techniques", *Chem. Phys. Letters*, **124**, 456 (1986).
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39. T.-S. Lin, W. Froncisz and L.G. Sobotka, "Superconductivity and Non-Resonant Microwave Absorption", *Nature*, **333**, No. 6168, 21 (1988).
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53. J.-L. Ong, D.J. Sloop and T.-S. Lin, "Peculiar Spin Dynamics of the Photo-Excited Triplet State of Pentacene in Benzoic Acid Crystals", *Applied Magnetic Resonance*, **6**, 359-371 (1994).
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63. V. Kouskov, D.J. Sloop, S.B. Liu and T.-S. Lin, "Pulsed Transient Nutation Experiments of the Photoexcited Triplet State" , *J. Mag. Reson.*, **A 117**, 9 (1995).
64. L. L. Dugan, S. L. Sensi, L. M. T. Canzoniero, S. D. Handran, S. M. Rothman, T.-S. Lin, M. P. Goldberg and D. W. Choi, "Mitochondrial Production of Reactive Oxygen species in Cortical Neurons following Exposure to N-Methyle-D-Aspartate", *J. Neuroscience*, **15**, 6377 - 6388 (1995).
65. L. L. Dugan, J. K. Gabrielsen, S. P. Yu, T.-S. Lin, and D. W. Choi, "Buckminsterfullerenol Free Radical Scavengers Reduce Excitotoxic and Apoptotic Death of Cultured Cortical", *Neurobiology of Disease*, **3**, 129 -135 (1996).
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67. J. Burke, C.A. Schmitt, C. Miller, S.W. Li, T.S. Lin, J.Barg, B.S. Kristal and B.P. Yu, "Mechanism of toxicity of 3,4-dihydroxyphenylglycolaldehyde in differential P12 cells: A model for adrenergic neuronal death in Alzheimer's disease", *Neurology*, **46**, 3133 (1996 Suppl).
68. L. L. Dugan, D. M. Turetsky, C. Du, D. Lobner, M. Wheeler, R. Almli, C. K.-F.Shen, T.-Y. Luh, D. W. Choi, and T.-S. Lin, "Carboxyfullerenes as Neuroprotective Agents", *Proc. Natl. Acad. Sci.*, **94**, 9434 - 9439 (1997).
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  101. Chia-Hung Lee, She-Tin Wong, Tien-Sung Lin, and Chung-Yuan Mou, “Characterization and Biomimetic Activity of a Hydroxo-Bridged Binuclear Phenanthroline–Cupric Complexes Encapsulated in Mesoporous Silica: Models for Catechol Oxidases” *J. Phys. Chem. -B*. **109**, 775-784 (2005).
  102. Aiqin Wang, Jun-Hong Liu, S.D. Lin, Tien-Sung Lin, Chung-Yuan Mou, “A Novel Efficient Au-Ag Alloy Catalyst System: Preparation, Activity and Characterization” *J. of Catalysis* **233**, 186 – 197 (2005).
  103. Chia-Hung Lee, Jun Lang, Chun-Wan Yen, Pei-Chun Shih, Tien-Sung Lin, and Chung-Yuan Mou, “Enhancing Stability and Oxidation Activity of Cytochrome c by Immobilization in the Nanochannels of Mesoporous Aluminosilicates” *J. Phys. Chem. -B*. **109**, 12277 -12286 (2005).



104. Jun Lang, D.J. Sloop, and T.-S. Lin, "Orientation Anisotropic Studies by Field Rotation Technique: Near Zero-Field Pulsed EPR Experiments of Pentacene Doped in *p*-Terphenyl" *J. Magnetic Resonance* **176**, 249 -256 (2005).
105. T.-S. Lin, D.J. Sloop and C.-Y. Mou, "Utilization of Polarized Electron Spin in Quantum Computing" *International Journal of Quantum Information*, **3**, 205-213 Suppl. (2005).
106. Chia-Hung Lee, Chung-Yuan Mou, Shyue-Chu Ke, and Tien-Sung Lin, "Effect of spin configuration on the reactivity of cytochrome c immobilized in mesoporous silica" *Molecular Physics*, **104**, 1635-1641 (2006).
107. Jun Lang, David J. Sloop, and Tien-Sung Lin, "Mapping the molecular axes of pentacene-*d*<sub>14</sub> doped in *p*-terphenyl single crystal using pulsed EPR technique in near zero magnetic field", *Molecular Physics*, **104**, 1643-1648 (2006).
108. Chia-Hung Lee, Tien-Sung Lin, and Chung-Yuan Mou, "Synthesis and Characterization of a Highly Reactive Vanadium Oxide Species Supported on Mesoporous Silica for the Hydroxylation of Benzene", *J. Phys. Chem. – C*, **111**, 3873-3882 (2007).
109. Tomoaki Yago, Jörg-Ulrich Weidner, Gerhard Link, Tien-Sung Lin, Gerd Kothe, "Quantum oscillations in photo-excited triplet states in an external magnetic field", *Chem. Phys. Letters*, **438**, 351- 357 (2007).
110. Jun Lang, David J. Sloop, and Tien-Sung Lin, "Dynamics of *p*-terphenyl crystals at the phase transition temperature: A zero-field EPR study of the photo-excited triplet state of pentacene in *p*-terphenyl crystals" *J. Phys. Chem. – A*, **111**, 4731- 4736 (2007).
111. Tomoaki Yago, Tien-Sung Lin, Gerhard Link, and Gerd Kothe, "Pulsed Electron Nuclear Double Resonance Studies of the Photo-excited Triplet State of Pentacene in *p*-Terphenyl Crystals at Room Temperature" *J. Chem. Phys.* **127**, 114503 ( 2007)
112. Chia-Hung Lee, Tien-Sung Lin, and Chung-Yuan Mou, "Mesoporous Materials for Encapsulating Enzymes", *NanoToday* **4**, 165-179 (2009).
113. Chia-Hung Lee, Han-Chou Lin, Tien-Sung Lin, and Chung-Yuan Mou, " Reactivity Study of Hydroxo-Bridged Dinuclear Cupric Complexes Encapsulated in Mesoporous Silica: Model Compounds for Catechol Oxidases", *J. Phys. Chem. - C* **113**, 16058-16069 (2009).
114. David J. Sloop and Tien-Sung Lin, "Guest Molecules in Organic Crystals: Study of Molecular Motion of Organic Crystals by Zero-Field EPR Techniques" in *The Treasures of Eureka, Electron Paramagnetic Resonance*, pp128, edited by Kev Salikhov (AXAS Publishing Inc. Wellington, New Zealand, 2009).
115. Kun-Che Kao, Chia-Hung Lee, Tien-Sung Lin, and Chung-Yuan Mou, "Cytochrome c covalently immobilized on mesoporous silicas as a peroxidase: Orientation effect", *J. Mater. Chem.* **20**, 4653 - 4662 (2010).
116. Gerd Kothe, Tomoaki Yago, Jörg-Ulrich Weidner, Gerhard Link, Michail Lukaschek, and Tien-Sung Lin, "Quantum Oscillations of Nuclear Spins in Photo-excited Triplet States", *J. Phys. Chem. B*, **114**, 14755-14762 (2010).
117. Ya-Cheng Fang, Chia-Hung Lee, I-Jui Hsu, Tien-Sung Lin, and Chung-Yuan Mou, "Bio-inspired Design of a Cu-Zn-Imidazolate Mesoporous Silica Catalyst System for Superoxide Dismutation", *J. Phys. Chem. C*, **115**, 20639-20652 (2011).
118. Amolkumar Karwa, Amruta R. Poreddy, Bethel Asmelash, Tien-Sung Lin, Richard B. Dorshow, and Raghavan Rajagopalan, "Type I Phototherapeutic Agents Part 1: Preparation and Cancer Cell Viability Studies of Novel Photolabile Thiaza Compounds", *ACS Medicinal Chemistry Letters*, **2**, 828 – 833 (2011). Erratum: **3**, 347-347 (2012)..



119. Raghavan Rajagopalan, Tien-Sung Lin, Amolkumar S. Karwa, Amruta R. Poreddy, Bethel Asmelash, and Richard B. Dorshow, "Type 1 Phototherapeutic Agents, Part II: Cancer Cell Viability and ESR Studies of Tricyclic Diarylamines", *ACS Medicinal Chemistry Letters*, **3**, 284-288 (2012).
120. Xiaoyan Liu, Ming-Han Liu, Yi-Chia Luo, Chung-Yuan Mou, Shawn Lin, Hong Cheng, Jin-Ming Chen, Jyh-Fu Lee, Tien-Sung Lin, "Strong metal-support interactions between gold nanoparticles and ZnO nanorods in CO oxidation", *JACS* (accepted for publication).

### Invited Talks and Seminars:

- 2011 a) National Saitama University, Department of Physical Chemistry, Japan, June 6, 2011  
Title: Biocatalysis: Enzymes and Biomimic Complexes Encapsulated in Mesoporous Materials  
b) Department of Physics, Donghua University, Taiwan, June 24, 2011  
Title: 40 Years of Research in EPR and Photo excitation Spectroscopy
- 2010 a) Mesoporous Materials Workshop, National Taiwan University, Taipei, Taiwan, June 25,  
Title: Mesoporous Silicas for Biocatalytic Applications.  
b) EPR Workshop, Milwaukee, Wisconsin, August 20-21, 2010  
Title: Low-field EPR Techniques: Zero-field, Near Zero-field, Fast-field Switching.
- 2007 a) Surface Chemistry Group, Riken, Japan. March 9, 2007  
Title: Spectroscopic Studies of Pentacene – Magnetic Resonance and Emission  
b) 10<sup>th</sup> International Symposium on Spin and Magnetic Field Effects in Chemistry and Related Phenomena, Venice, Italy, June 18-23  
Title: Small Magnetic Fields Makes Big Differences in Polarization, Coherence and Emission at Level Anti-Crossing  
c) 16<sup>th</sup> ISMAR (International Society for Magnetic Resonance), Taiwan, October 14 – 19  
Title: Coherence and Polarization at Level Anti-crossing Region of Organic Triplet
- 2006 Taiwan- USA Nanoscience Workshop, National Taiwan University, Dec. 15-18, 2006  
Title: Enzyme Confined in Nanospace: Applications of Nanotechnology in Biocatalysis
- 2005 a) Department of Physical Chemistry, University of Freiburg, April 26, 2005  
Title: Electron Spin Resonance of Photo-excited Triplet States of Organic Molecules  
b) Department of Chemistry, Tunghai University, June 8, 2005  
Title: Nanotechnology and Chemistry  
c) Department of Chemistry, Tunghai University, June 13, 2005  
Title: Chemistry in Confined Spaces  
d) Department of Chemistry, Tunghai University, June 14, 2005  
Title: Applications of Spectroscopic Techniques in Biomedical Research  
e) Taiwan and Mainland Conference on Biological Chemistry and Biotechnology, Taichung, July 18, 2005  
Title: Applications of Nanotechnology in Biomimetics and Biocatalysis  
f) 9<sup>th</sup> International Symposium on Spin and Magnetic Field Effects in Chemistry and Related Phenomena, St John's College, Oxford, UK, September 11-17  
Title: Structure and Dynamics of the Photo-excited Triplet State of Organic Molecules in Zero-field and Near Zero-field Experiments

- 2004 a) International Symposium on Advanced Materials, National Taiwan University, August 9, 2004  
 Title: Catalyst Confined in Mesoporous Silica
- b) 15<sup>th</sup> Triennial Conference for the International Society for Magnetic Resonance, Jacksonville, FL, October 24 – 28, 2004  
 Title: Pulsed EPR Experiments in Zero-Field and Near Zero-Field of the Photo-Excited Triplet State of Organic Molecules
- c) 1st Asia-Pacific Conference on Quantum Information Science, National Cheng Kung University, Tainan, Taiwan, December 10 – 13, 2004  
 Title: Utilization of Polarized Electron Spin in Quantum Computer
- 2003 a) Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai, China, March 3  
 Title: Free radical reactions in mesoporous materials
- b) Department of Chemistry, Tsinghua University, Beijing, China, March 6  
 Title: Free radical reactions in mesoporous materials
- c) Department of Applied Chemistry, Hong Kong Polytechnic University, Hong Kong, March 7  
 Title: Neurodegenerative Disorders and Neuroprotective Agents
- d) 9<sup>th</sup> Sendai Symposium for Advanced EPR Spectroscopy, Tohoku University, Sendai, Japan, March 25-26  
 Title: Dynamic Nuclear Polarization in Low Magnetic Fields
- e) Institute of Physical and Chemical Research (RIKEN), Tokyo, Japan, March 27  
 Title: Free radical reactions in confined space
- f) 10<sup>th</sup> International Workshop on Biomedical ESR Spectroscopy and Imaging, Fukuoka, Japan, March 31 – April 3  
 Title: Low Field EPR Spectroscopy and Applications
- g) Institute of Chemistry, Academia Sinica, Taiwan, August 7  
 Title: Chemistry in the Nanochannels of Mesoporous Materials
- h) 8<sup>th</sup> Spin Chemistry Conference, University of North Carolina, September 21-26  
 Title: Organic Molecules Have Memory: Electron Spin Polarization Created by Laser and Microwave pulses
- 2002 a) Conference on nanotechnology-catalysis, Tainan, Taiwan, June 19  
 Title: Mesoporous MCM-41 solids as nanoreactors: The syntheses and ESR studies of C60 in aqueous solution
- b) Spectroscopy symposium in honor of Alvin L. Kwiram, Department of Chemistry, University of Washington, Seattle, August 8  
 Title: Mesoporous MCM-41 Solids as Nanoreactors and Zero-field Pulsed EPR Studies of Organic Triplet States
- 2001 a) Department of Chemistry, Nanjing University, China, March 13  
 Title: Free Radical Chemistry of Fullerene Derivatives
- b) Department of Chemistry, Fudan University, China, March 15  
 Title: Therapeutic Applications of Fullerene Derivatives
- c) Department of Chemistry, Tunghai University, Taichung, Taiwan, May 14  
 Title: Applications of EPR Techniques in Chemistry and Biology
- d) Department of Chemistry, Donghua University, Taiwan, May 28  
 Title: Applications of EPR Spectroscopy in Chemistry and Biology
- e) The VIIth International Symposium on Magnetic Field and Spin Effects in Chemistry and Related Phenomena, Tokyo, Japan, July 15 – 20

- Title: Magnetic Effects on the Spin Dynamics of the Photo-excited Triplet State of Organic Molecules at the Level Anti-Crossing Region
- f) The Sendai 7<sup>th</sup> Advanced EPR Conference, Sendai, Japan, July 23 – 24  
 Title: Zero-Field FID Measurements of Organic Triplets at Room Temperature
- 2000 a) Department of Chemistry, Peking University, China, March 9  
 Title: Spin dynamics of the photo-excited triplet state of organic molecules
- b) Institute of Chemistry, Academia Sinica, Taiwan, April 27  
 Title: Studies of photochemical reactions by time-resolved EPR spectroscopy
- c) The International Conference on Organic Synthesis and Materials, sponsored by Department of Chemistry, Tamkang University, Taiwan, June 2  
 Title: Free radical reactions and medicinal applications of carboxyfullerenes
- d) Tzu Chi University, Medical School, Hualien, Taiwan, June 15  
 Title: Stresses and neurodegenerative diseases
- e) Department of Chemistry, Donghua University, Taiwan, June 16  
 Title: Free radical reactions and therapeutic applications of C<sub>60</sub> derivatives
- 1999 a) Department of Chemistry, Peking University, Beijing, China, March  
 Title: Free Radical Reactions of Carboxyfullerenes
- b) Department of Chemistry, Tsinghua University, Beijing, China, March  
 Title: Free Radical Reactions in Confined Space
- c) Sixth International Symposium on Magnetic and Spin Effects in Chemistry and Related Phenomena, Emmetten, Switzerland, August 21 – 26  
 Title: Probing Spin Dynamics at the Level Anti-crossing Region by Fast Magnetic Field Sweeping Techniques.
- d) 1999 Joint International Meeting of the Electrochemical Society (USA-Japan), Honolulu, Hawaii, October 17 – 22  
 Title: Radical Scavenging Reactions of Carboxyfullerenes.
- e) Chang Gung University, School of Medicine, Taiwan, June  
 Title: Carboxyfullerenes as Neuroprotective Agents
- 1998 a) Department of Chemistry, National Tsinghua University, Hsintsu, Taiwan, May 25  
 Title: Free Radical Chemistry of Fullerene Derivatives.
- b) International Symposium on Frontier of Magnetic Resonance, The Institute of Physical and Chemical Research (RIKEN), Japan, October 28-29, 1998  
 Title: Probing Spin Dynamics of Photo-excited Triplet States by Pulsed Microwave and Radiofrequency.
- c) Sendai Symposium on Advanced EPR, Tohoku University, Sendai, Japan, November 4-5,  
 Title: Transient Magnetic Resonance without RF-- Fast Field Switching Experiments.
- d) Department of Chemistry, Kyoto University, Kyoto, Japan, November 14, 1998  
 Title: EPR and Biophysical Studies of Fullerene Derivatives
- e) Department of Applied Chemistry, Kyoto Institute of Technology, Kyoto, Japan, November 15, 1998.  
 Title: Therapeutic Applications of Water-Soluble Fullerene Derivatives.
- f) Chemistry Forum, The Institute of Physical and Chemical Research (RIKEN), Japan, December 12, 1998  
 Title: Free Radical Chemistry and Therapeutic Applications of Fullerene Derivatives.
- g) Institute of Atomic and Molecular Sciences, Sinica Academia, Taipei, Taiwan, December 22, 1998.

- Title: Studies of Photochemical Reactions by Time-Resolved EPR Spectroscopy
- 1997 a) 5th International Symposium on Magnetic Field and Spin Effects in Chemistry and Related Phenomena, Jerusalem, Israel, October 26 - 30, 1997  
 Title: EPR and Biophysical Measurements of Carboxyfullerenes as Neuroprotective Agents.
- b) The Institute of Physical and Chemical Research (RIKEN), Molecular Photo-chemistry Laboratory, June 19, 1997.  
 Title: Electron Paramagnetic Resonance Studies of Carboxyfullerenes in Biological Systems
- c) Workshop on Free Radicals and Medicine, School of Medicine, National Taiwan University, June 29.  
 Title: Detection of Reactive Free Radicals in Neurodegenerative Diseases by EPR Technique
- 1996 Frontier Research on New Material (Workshop sponsored by National Science Council, Taiwan), June 23-25, 1996.  
 Title: Biomedical applications of fullerene derivatives
- 1995 a) 18th International EPR Symposium, July 24 - 27, 1995, Denver, Colorado  
 Title: From conventional to pulsed transient nutation of the photo-excited triplet state.
- b) Department of Chemistry, National Taiwan University, Taipei, Taiwan  
 Title: Free Radical Chemistry of Buckminsterfullerenols
- c) Department of Chemistry, Tunghai University, Taichung, Taiwan  
 Title: Biomedical Applications of Buckyball Derivatives
- d) Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan  
 Title: Transient Effects in Magnetic Resonance
- 1994 a) Department of Chemistry, National Tsinghua University, Hsintsu, Taiwan  
 Title: Free Radical Chemistry and Functions of Antioxidants
- b) Department of Chemistry, Tunghai University, Taichung, Taiwan  
 Title: Roles of Free Radicals in Biophysical and Biochemical Pathways
- c) Department of Chemistry, Tamkang University, Tamsui, Taiwan  
 Title: Free Radicals and Antioxidants in Health: an Overview
- 1993 a) Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan.  
 Title: Free Radicals and Physical Disorders.
- b) Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan.  
 Title: Roles of Nitric Oxide in Biological Chemistry.
- c) National Symposium of New Frontiers in NMR Spectroscopy, Taipei, Taiwan.  
 Title: Dynamical Nuclear Polarization by Optical Pumping.
- 1992 Institute of Atomic and Molecular Science, Academia Sinica, Taipei, Taiwan.  
 Title: Enhancing NMR Sensitivity by Optical Pumping.
- 1991 Department of Chemistry, University of Missouri-St. Louis.  
 Title: High Dynamic Nuclear Polarization at Room Temperature.
- 1990 a) The Netherlands Molecular Spectroscopy Conference, Amsterdam, the Netherlands, January 29-30, 1990.  
 Title: High Dynamic Nuclear Spin Polarization at Room Temperature: The System of Pentacene in Naphthalene.
- b) Department of Chemistry, Spectroscopy Lab., University of Groningen, Groningen, The Netherlands (June 21). Title: Dynamic Nuclear Polarization and Electron Spin Echo Spectroscopy of Photo-excited Organic Triplets.
- c) Department of Molecular Spectroscopy, University of Nijmegen, Nijmegen, The Netherlands (May 3).

- Title: The Effects of Electron and Nuclear Spin Polarization by Optical Pumping.
- d) Institute of Physical Chemistry, Stuttgart University, Stuttgart, Germany (March 27).  
 Title: Spin Dynamics and Polarization Transfer in the Photo-excited Triplet States of Organic Solids.
- 1989 a) The Netherlands' Solid State Physics Conference, Veldhoven, December 19-20, 1989. Title: Optical Nuclear Spin Polarization at Room Temperature: MilliKelvin without Liquid Helium.  
 b) Department of Physics, Huygens Lab., Leiden University, Leiden, The Netherlands (September 25).  
 Title: Research Activities of the EPR Group at Washington University.
- 1988 The Electron Spin Echo Spectroscopy Workshop, Royal Netherlands Academy of Arts and Sciences, Amsterdam, the Netherlands, March 29-31, 1988.  
 Title: Spin Echo ENDOR Studies of Organic Triplets at Room Temperature.
- 1986 Department of Chemistry, University of West Virginia, Morgantown, West Virginia.  
 Title: Pulsed EPR Spectroscopy of Organic Triplets.
- 1985 The Symposium on Applications of ESR to Chemical Problems. ACS Southeast-Southwest Regional meeting, Memphis, Tennessee, October 9-11, 1985.  
 Title: Transient Effects via Pulsed EPR Technique.
- 1984 Session Chairman and invited speaker at 7th International Electron Paramagnetic Resonance Symposium, Denver, Colorado, August 5-9, 1984.  
 Title: Electron Spin Echo Studies of Organic Triplets at Room Temperature.
- 1983 The 4th International Conference on Dynamic Processes in the Excited States of Solids, Stanford, California, July 11-14, 1983.  
 Title: Electron Spin Echo Studies of Photo-excited Organic Solids.
- 1982 The 10th Molecular Crystal Symposium, Quebec, Canada, September 20-24, 1982.  
 Title: Pulsed Electron Paramagnetic Resonance of Organic Triplets.
- 1981 International Symposium on Molecular Spectroscopy and Dynamics, Philadelphia, Pennsylvania, April 8-11, 1981.  
 Title: Electron Spin Echo Studies of Randomly Oriented Triplets.
- 1979 Department of Chemistry, Iowa State University, Ames, Iowa.  
 Title: EPR Studies of Charge Transfer Complexes.