

Curriculum Vitae

Hsian-Rong Tseng

Assistant Professor

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QUALIFICATIONS/ADVISORS

B Sc	(1989-1993)	Chemistry, Tunghai University/Taichung/Taiwan
Ph D	(1993-1998)	Organic Chemistry, National Taiwan University/Taipei/Taiwan
Undergraduate Advisor		Prof. Cheng-Tung Lin (Tunghai University)
Graduate Advisors		Prof. Ta-shue Chou (Academia Sinica) Prof. Tien-Yau Luh (National Taiwan University)
Postdoctoral Advisors		Prof. Tien-Yau Luh Prof. Sir J. Fraser Stoddart (UCLA) Prof. Jim R. Heath (UCLA/Caltech)

APPOINTMENTS

2003-	Assistant Professor, Department of Molecular and Medical Pharmacology David Geffen School of Medicine at UCLA
2000-2003	Postdoctoral Researcher, Department of Chemistry and Biochemistry University of California at Los Angeles
2000	Postdoctoral Researcher, Department of Chemistry at National Taiwan University/Taipei/Taiwan
1998-2000	Second Lieutenant of the Combined Service Force, Taipei, Taiwan

AWARDS/HONORS

1998	"Ph D Dissertation Award", Chinese Chemistry Society/Taipei/Taiwan
2003	Chancellor's Award for Postdoctoral Research, University of California at Los Angeles
2004	Seed Grant – Faculty Development Award David Geffen School of Medicine at UCLA
2004	Participant in the N.A.S. Symposium for Frontiers in Science
2005	Arthur K. Doolittle Award, PMSE Division, American Chemical Society

PROFESSIONAL SOCIETIES

Academy of Molecular Imaging (AMI)
American Association for the Advancement of Science (AAAS)
American Chemical Society (ACS)
Material Research Society (MRS)

AREAS OF RESEARCH INTEREST

Our research interests are to develop microfluidics-based technology platforms and to utilize these technology platforms to address important issues in the fields of molecular imaging, cancer biology and chemistry.

PROFESSIONAL ACTIVITIES

Internal

Member, Crump Institute for Molecular Imaging	2003-
Medical Scientist Training Program (MSTP) Admissions Committee	2004-
Faculty, ACCESS Program	2004-
UCLA/DOE Institute for Molecular Medicine	2005-
Pharmacology Seminar Organization Committee	2005-2006
Pharmacology Graduate Training Committee	2005-
Member, UCLA's Jonsson Comprehensive Cancer Center	2005-
Faculty, Biomedical Physics Interdepartmental Graduate Program at UCLA	2006-
NIH-NanoSystems Biology Cancer Center	2006-
Pharmacology Retreat Organization Committee	2006-2007

External

Co-Founder, Momentum BioSciences, LLC.	2007-
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Consultantships

Consultant for Siemens Biomarker Solution, Inc.	2004-2006
Reviewer for National Genomic Program (NRPGM Review) Taiwan	2005
Osmetech Molecular Diagnostics	2007-

Peer Reviewing of Research Papers

Angewandte Chemie	Chemistry of Materials
Journal of Combinatorial Chemistry	Journal of Electroanalytical Chemistry
Journal of Organic Chemistry	Journal of Physical Chemistry B
Journal of Solid State Electrochemistry	Langmuir
Material Research Society Meeting Proceedings	Nano Letters
Organic Letters	Small

Peer Reviewing of Research Grant Applications

Department of Energy
Department of Defense (Army Research Office)
U.S. Civilian Research & Development Foundation (CRDF)
The Kentucky Science and Engineering Foundation
National Science Foundation
UC Discovery Grants

RESEARCH COLLABORATORS

Visiting Scholar

Prof. Anchi Yeh	Chengshiu University (Taiwan)	2006-2007
Prof. KiBum Lee	Rutgers, the State University of New Jersey	2007

Postdoctoral Researchers

Current Positions

Dr. Jun Wang	Postdoc, DOE Pacific Northwest National Lab.	2004-2005
Dr. Maksudul M. Alam	Research Scientist, InnoSense LLC.	2004-2005
Dr. Guodong Sui	Assistant Professor, Florida Atlantic University	2004-2006
Dr. Jinyi Wang	Professor, Northwest A&M University, China	2004-2006
Dr. Weixing Lu	Senior Research Scientist, Physical Optics Corp.	2005-2006
Dr. Yanju Wang		2005-
Dr. Jing Sun		2006-
Dr. Ken-ichiro Kamei		2006-
Dr. Clifton Kuang-Fu Shen	Assistant Professor, UCLA	2006-2007
Dr. Weiyu Lin		2006-
Dr. Kan Liu		2007-
Dr. Hao Wang		2007-
Dr. Shutao Wang		2007-
Dr. Sebastian Omar		2007-

Graduate Students

Richard R. Carlson (ACCESS Rotation)		2004
Yuguo Lei (Pharmacology Rotation)		2004
Calvin Peng (ACCESS Rotation)		2004
Karla Coti (Department of Chemistry and Biochemistry)		2004-2006
Zeta Teh For Yu (Aerospace and Mechanical Engineering Department)		2004-
Kishin Gupta (MSTP Rotation)		2005
David Nathanson (Pharmacology Rotation)		2005
Dan Rohle (Pharmacology Rotation)		2006
Esther Richler (ACCESS Rotation)		2006
Golan Kfir (ACCESS Rotation)		2006
Shuang Hou (Visiting student, Institute of Chemistry, Chinese of Academy of Science)		2006-2007
Jun Feng (Pharmacology Rotation)		2006
Michael Masterman Smith (Pharmacology Rotation)		2007
Yi-Chun Chen (Visiting student from National Taiwan University)		2007
Cha-Chun Chen (Visiting Student from Tungkang University, Taiwan)		2007-

Undergraduate Students

Samuel Chan (Department of Chemistry & Biochemistry)		2004-2005
Stephanie Lee (Department of Bioengineering, Columbia University)		2004
Yaoyao (Jessie) Guo (Department Chemistry & Biochemistry)		2004-2005
Stavros Savvas (Department of Psychology)		2004-2006
Jun Feng (Polymer Engineering, Zhenjiang University)		2005
Lillian Chang (Department Chemistry & Biochemistry)		2005-2006
Rachel Lin (Department Chemistry & Biochemistry)		2005-2006
Wanfu He (Mechanical Engineering, Zhenjiang University)		2006
Canny Yen-Ning Chang (Department of Chemistry & Biochemistry)		2006-
Irene Ying Jian Li (Department of Chemistry & Biochemistry)		2006-
Nicole Q. Zhu (Materials Engineering, Zhenjiang University)		2007

Research Assistants

Hiroko Takahashi (B.S. UCLA)	2006-
Minori Ohashi (B.S. Cornell University)	2006-

High School Students

Carol Suh (Palos Verdes Peninsula High School)	2005-2007
Jane Suh (Palos Verdes Peninsula High School)	2007-

RESEARCH SUPPORTS

1. Oct 03-Sep 06 UCLA Start-up Fund
Microfluidic Technology for Molecular Imaging, Biology and Chemistry
2. Jul 04-Jun 05 Faculty Developmental Award Seed Grant
Conducting Nanofibers as New Materials for Electronic Sensing in Biological Systems
3. Jan 05-Dec 07 NIH-National Cancer Institute
Conducting Polymer Nanowire Sensors for Detection of Prostate Cancer Marker (PSCA)
UCLA SPORE in Prostate Cancer (PI: de Kernion)
4. Jan 05-Dec 05 DOE
Integrated Microfluidic Circuitry as an Enabling Technology for Molecular Imaging Probe
Development (PI: Heath)
UCLA Institute for Molecular Medicine (Director: Phelps)
5. Apr 05-Mar 07 Siemens Molecular Solution Inc.
Producing PET Probes in Chemical Reaction Circuits (CRCs)
6. May 05-Apr 06 DOD-Army Research Office
Scanning Probe Microscope (SPM) for Research on Conducting Polymer Nanowires and
Biointerfaces
7. Jun 05-May 06 Accelerate Brain Cancer Cure/ABC²
Micro-Pathology-Lab Chips for Glioblastoma Research (PI: Mischel)
8. Jul 05-Jun 06 UC Cancer Research Coordinating Committee
Conducting Polymer Nanowire Sensors for Detection of Cancer Marker – CEA
9. Sep 05-Aug 06 NIH-National Cancer Institute
Chemical Reaction Circuits (CRCs) for Radiolabeling of PET Imaging Probes
UCLA Center for In Vivo Imaging in Cancer Biology (Director: Herschman)
10. Jan 06-Dec 10 NIH-National Cancer Institute
Nanotechnology Driven Probes for Molecular Imaging (PI: Phelps)
Nanotechnology Tools for Pathologic Analysis of Glioblastoma (Brain Cancer) and Other
Cancers (PI: Mischel)
Nanosystems Biology Cancer Center (Director: Heath)
11. Feb 06-Jan 08 UC Discovery Grant
Integrated Microfluidics for Performing Quantitative In Vivo Imaging of Biological and
Pharmacologic Processes in Mice with micro-PET (PI: Wu)
12. Jun 06-May 08 DOE
Enabling Technology for PET Imaging Probe (PI: Heath)
UCLA Institute for Molecular Medicine (Director: Phelps)
13. Jul 06-Jun 09 DOD-DTRA
Hydrodynamic Focusing-Templated Electrochemical Fabrication of High Density Conducting
Polymer Nanowire Sensor Arrays
14. May 07-April 09 UCLA Institute of Stem Cell Biology and Medicine

- An Integrated Microfluidic Platform for Screening hESC Culture Conditions
15. September 07-August 11 Transdisciplinary Award, UCLA Jonsson Comprehensive Cancer Center
An Integrated Microfluidics Platform for the Systems Biology of Cancer (PI: Graeber)
 16. Mar 08-Feb 10 Dana Neuroimmunology Award
New Positron Emission Tomography Approaches to Visualize T Cell-Mediated Autoimmune
Demyelination (PI: Radu)

PUBLICATIONS

Peer-Reviewed Papers

1. Cotí, K. K.; Wang, Y.; Chen, C.-C.; Yu, Z. T. F.; Selke, M.; Lu, W.; Lin, W.-Y.; Shen, C. K.-F.; Yeh, A.; Tseng, H.-R. "Dynamic Micro-/Nano-Reactor." Submitted.
2. Lin, W.-Y.; Chen, Y.-C.; Liu, K.; Wang, Y.; Olma, S.; Faull, K.; Satyamurthy, N.; Phelps, M. E.; van Dam, R. M.; Shen, C. K.-F.; Tseng, H.-R. "Radiochemical Syntheses of 3'-Deoxy-3'-[¹⁸F]Fluoro-L-Thymidine and 2-(1-{6-[(2 [¹⁸F]Fluoroethyl)Methylamino]-2-Naphthyl} Ethylidene) Malononitrile Using an Integrated Microfluidic Device." Submitted.
3. Yu, Z. T. F.; Kamei, K.; Shu, C. J.; Silverman, R.; Radu, C. G.; Witte, O. N.; Tseng, H.-R. "An Integrated Microfluidic Chip for Parallel Culture and Multiparametric Analysis of Murine and Human Cell Lines." *Lab on a Chip*, under revision.
4. Hou, S.; Shen, C. K.-F.; Zeta T. F. Yu, Wang, S.; Fang, X.; Tseng, H.-R. "Hydrodynamically Focused Stream as a Dynamic Template for Electrochemical Growth of Single Conducting Polymer Nanowires." *Angew. Chem. Int. Ed.* **2008**, *47*, xxxx-xxxx.
5. Coti, K. K.; Wang, Y.; Wang, J.; Alam, M. M.; Shyue, J.-J.; Yeh, A.; Lu, W.; Padture, N. P.; Tseng, H.-R. "Individually Addressable Crystalline Conducting polymer Nanowires in a Microelectrode Sensor Array." *Nanotechnology*, **2007**, *18*, 424021 (7 pp).
6. Sui, G.; Lee, C.-C.; Kamei, K.; Li, H.-J.; Wang, J.-Y.; Wang, J.; Herschman, H. R.; Tseng, H.-R. "A Microfluidic Platform for Sequential Ligand Labeling and Cell Binding Analysis." *Biomedical Microdevices*, **2007**, *9*, 301-305.
7. Sui, G.; Tseng H.-R. "Reactions in Hand." *Nano Today* **2006**, *1*, 6-7.
8. Sui, G.; Wang, J.; Lee, C. C.; Lee, S. P.; Leyton, J. V.; Wu, A. M.; Tseng, H.-R. "Solution-Phase Surface Modification in Intact Poly(dimethylsiloxane) Microfluidic Channels." *Anal. Chem.* **2006**, *78*, 5543-5551.
9. Wang, J.; Sui, G.; Mocharla, V. P.; Lin, R. J.; Phelps, M. E.; Kolb, H. C.; Tseng H.-R. "Integrated Microfluidics for Parallel Screening of In Situ Click Chemistry Library." *Angew. Chem. Int. Ed.* **2006**, *45*, 5276-5281.
10. Wang, J.; Bunimovich, Y. L.; Sui, G.; Savvas, S.; Guo, Y.; Heath, J. R.; Tseng, H.-R. "Electrochemical Fabrication of Conducting Polymer Nanowires in an Integrated Microfluidic System." *Chem. Commun.* **2006**, 3075-3077.
11. Lee, C.-C.; Sui, G.; Elizarov, A.; Shu, C. J.; Shin, Y.-S.; Doole, A. N.; Huang, J.; Darion, A.; Wyatt P.; Stout, D.; Kolb, H. C.; Witte, O. N.; Satyamurthy, N.; Heath, J. R.; Phelps, M. E.; Quake, S. R.; Tseng, H.-R. "Multistep Synthesis of a Radiolabeled Imaging Probe Using Integrated Microfluidics." *Science* **2005**, *310*, 1793-1796.
12. Alam, M. M.; Wang, J.; Guo, Y.; Lee, S. P.; Tseng, H.-R. "Electrolyte-Gated Transistors Based on Conducting Polymer Nanowire Junction Arrays." *J. Phys. Chem. B*, **2005**, *109*, 12777-12784.
13. Wang, J.; Chen, S.; Carlson, R. R.; Luo, Y.; Ge, G.; Ries, R. S.; Heath, J. R.; Tseng, H.-R. "Electrochemically Fabricated Conducting Polymer Nanoframework-Electrode Junctions for Electronic Sensing." *Nano Lett.* **2004**, *4*, 1693-1697.

14. Green, J. E.; Choi, J. W.; Boukai, A. Bunimovich, Y.; Johnston-Halperin, E., DeIonno, E.; Luo, Y.; Sheriff, B. A. Xu, K.; Shin, Y. S.; Tseng, H.-R.; Stoddart, J. F.; Heath, J. R. "A 160-Kilobit Molecular Electronic Memory Patterned at 10^{11} Bits per Square Centimeter" *Nature* **2007**, *445*, 414-417.
15. Ferrer, B.; Rogez, G.; Credi, A.; Ballardini, R.; Gandolfi, M. T.; Balzani, V.; Liu, Y.; Tseng, H.-R.; Stoddart, J. F. "Photoinduced Electron Flow in a Self-Assembling Supramolecular Extension Cable." *Proc. Natl. Acad. Sci. USA*. **2006**, *103*, 18411-18416.
16. Leung, K. C.-F.; Mendes, P. M.; Magonov, S. N.; Northrop, B. H.; Kim, S.; Patel, K.; Flood, A. H.; Tseng, H.-R.; Stoddart, J. F. "Supramolecular Self-Assembly of Dendronized Polymers: Reversible Control of the Polymer Architectures through Acid-Base Reactions." *J. Am. Chem. Soc.* **2006**, *128*, 10707-10715.
17. Brough, B.; Northrop, B. H.; Schmidt, J. J.; Tseng, H.-R.; Houk, K. N.; Stoddart, J. F.; Ho, C.-M. Evaluation of Synthetic Linear Motor-molecule Actuation Energetics. *Proc. Natl. Acad. Sci. USA*. **2006**, *103*, 8583-8588.
18. DeIonno, E.; Tseng, H.-R.; Harvey, D. D.; Stoddart, J. F.; Heath, J. R. "Infrared Spectroscopic Characterization of [2]Rotaxane Molecular Switch Tunnel Junction Devices." *J. Phys. Chem. B*, **2006**, *110*, 7609-7612.
19. Balzani, V.; Clemente-León, M.; Credi, A.; Semeraro, M.; Venturi, M.; Tseng, H.-R.; Wenger, S.; Saha, S.; Stoddart, J. F. "A Comparison of Shuttling Mechanisms in Two Constitutionally Isomeric Bistable Rotaxane-Based Sunlight-Powered Nanomotors" *Aust. J. Chem.* **2006**, *59*, 193-206.
20. Mendes, P. M.; Lu, W.; Tseng, H.-R.; Shinder, S.; Iijima, T.; Miyaji, M.; Knobler, C. M.; Stoddart, J. F. "A Soliton Phenomenon in Langmuir Monolayers of Amphiphilic Bistable Rotaxanes." *J. Phys. Chem. B*, **2006**, *110*, 3845-3848.
21. Nørgaard, K.; Laursen, B. W.; Nygaard, S.; Kjaer, K.; Tseng, H.-R.; Flood, A.H.; Stoddart, J. F.; Bjørnholm T. "Structural Evidence of Mechanical Shuttling in Condensed Monolayers of Rotaxane Molecules." *Angew. Chem., Int. Ed.* **2005**, *43*, 7035-7039.
22. Nguyen, T. D.; Tseng, H.-R.; Celestre, P. C.; Flood, A. H.; Liu, Y.; Stoddart, J. F.; Zink, J. I. "A Reversible Molecular Valve." *Proc. Natl. Acad. Sci. USA*. **2005**, *102*, 10029-10034.
23. Saha, S.; Johansson L. E.; Flood, A. H.; Tseng, H.-R.; Zink, J. I.; Stoddart, J. F. "A Photoactive Molecular Triad as a Nanoscale Power Supply for a Supramolecular Machine." *Chem. Eur. J.* **2005**, *11*, 6846-6858.
24. Liu, Y.; Flood, A. H.; Bonvallet, P. A.; Vignon, S. A.; Northrop, B. H.; Tseng, H.-R.; Jeppesen, J. O.; Huang, T, J.; Brough, B.; Baller, M.; Magonov, S.; Solares, S. D.; Goddard, W. A.; Ho, C.-M.; Stoddart, J. F. "Linear Artificial Molecular Muscles." *J. Am. Chem. Soc.* **2005**, *127*, 9745-9759.
25. Jang, S. S.; Jang, Y. H.; Kim, Y.-H.; Goddard, W. A., III; Flood, A. H.; Laursen, B. W.; Tseng, H.-R.; Stoddart, J. F.; Jeppesen, J. O.; Choi, J. W.; Steuerman, D. W.; DeIonno, E.; Heath, J. R. "Structures and Properties of Self-Assembled Monolayers of Bistable [2]Rotaxanes on Au (111) Surfaces from Molecular Dynamics Simulations Validated with Experiment." *J. Am. Chem. Soc.* **2005**, *127*, 1563-1575.
26. Flood, A. H.; Peters, A. J.; Vignon, S. A.; Steuerman, D. W.; Tseng H.-R.; Kang, S. K.; Heath, J. R.; Stoddart, J. F. "The Environmental Responsive Electrochemical Switching Mechanism Displayed by Bistable Donor-Acceptor Catenanes and Rotaxanes." *Chem. Eur. J.* **2004**, *10*, 6558-6564.
27. Steuerman, D. W.; Tseng, H.-R.; Peters, A. J.; Flood, A. H.; Jeppesen, J. O.; Nielsen, K. A.; Stoddart, J. F.; Heath, J. R. "The Dynamics of Molecular Mechanical Switches within Solid-State Polymer Electrolytes." *Angew. Chem. Int. Ed.* **2004**, *43*, 6486-6491.

28. Huang, T. J.; Brough, B.; Ho, C.-M.; Liu, Y.; Flood, A. H.; Bonvallet, P. A.; Tseng, H.-R.; Stoddart, J. F.; Baller, M.; Magonov S. "A Nanomechanical Device Based on Linear Molecular Motors." *Appl. Phys. Lett.* **2004**, *85*, 5391-5393.
29. Marchioni, F.; Venturi, M.; Ceroni, P.; Balzani, V.; Belohardsky, M.; Elizarov, A. M.; Tseng, H.-R.; Stoddart J. F. "Complete Charge Pooling is Prevented in Viologen-based Dendrimers by Self-Protection." *Chem. Eur. J.* **2004**, *10*, 6361-6368.
30. Iijima, T.; Vignon, S. A.; Tseng, H.-R.; Jarrosson, T.; Sanders J. K. M.; Marchioni, F.; Venturi, M.; Apostoli, E.; Balzani, V.; Stoddart, J. F. "Redox-Controllable Donor-Acceptor Neutral [2]Rotaxanes." *Chem. Eur. J.* **2004**, *10*, 6375-6392.
31. Saha, S.; Johansson, E.; Flood, A. H.; Tseng H.-R.; Zink, J. I.; Stoddart, J. F. "Powering a Supramolecular Machine with a Photoactive Molecular Triad." *Small* **2004**, *1*, 87-90.
32. Huang, T. J.; Tseng, H.-R.; Sha, L.; Lu, W.; Brough, B.; Flood, A. H.; Yu, B.-D.; Celestre, P. C.; Chang, P. J.; Stoddart, J. F.; Ho, C.-M. "Mechanical Shuttling of Linear Motor-Molecules in Condensed Phases on Solid Substrates." *Nano Lett.* **2004**, *4*, 2065-2071.
33. Vignon, S. A.; Jarrosson, T.; Iijima, T.; Tseng, H.-R.; Sanders J. K. M.; Stoddart, J. F. "Switchable Neutral Bistable Rotaxanes." *J. Am. Chem. Soc.* **2004**, *126*, 9884-9885.
34. Lee, C.; Frank, C. W.; Yamamoto, T.; Tseng, H.-R.; Flood, A. H.; Stoddart J. F. "Langmuir and Langmuir-Blodgett Films of Amphiphilic Bistable [2]Rotaxanes." *Langmuir*, **2004**, *20*, 5809-5828.
35. Kang, S.; Vignon, S. A.; Tseng, H.-R.; Stoddart, J. F. "Molecular Shuttles Based on Tetrathiafulvalene Units and 1,5-Dioxynaphthalene Ring Systems." *Chem. Eur. J.* **2004**, *10*, 2555-2564.
36. Vignon, S. A.; Wong, J.; Tseng, H.-R.; Stoddart, J. F. "Technicality in Donor-Acceptor Catenanes." *Org. Lett.* **2004**, *6*, 1095-1098.
37. Hernandez, R.; Tseng, H.-R.; Wong, J. W.; Stoddart, J. F.; Zink, J. I. "An Operational Supramolecular Nanovalve." *J. Am. Chem. Soc.* **2004**, *126*, 3370-3371.
38. Marchioni, F.; Venturi, M.; Credi, A.; Balzani, V.; Behloradsky, M.; Elizarov, A. M.; Tseng, H.-R.; Stoddart J. F. "Polyvalent Scaffold. Counting the Number of Seats Available for Eosin Guest Molecules in Viologen-Based host Dendrimers." *J. Am. Chem. Soc.* **2004**, *126*, 568-573.
39. Tseng, H.-R.; Wu, D.; Zhang, X.; Stoddart, J. F. "The Kinetics and Thermodynamics of an Electrochemically Controlled Nanoscale Machine on Gold Surfaces." *ChemPhysChem* **2004**, *5*, 111-116.
40. Tseng, H.-R.; Celestre, P. C.; Perkins, J.; Stoddart, J. F.; Di Fabio, P.A.; Ballardini, R.; Balzani, V.; Gandolfi, M. T.; Venturi, M. "Redox-Controllable Amphiphilic [2]Rotaxanes." *Chem. Eur. J.* **2004**, *10*, 155-172.
41. Yu, H.; Luo, Y.; Beverley, K.; Tseng, H.-R.; Stoddart, J. F.; Heath, J. R. "The Molecule / Electrode Interfaces in Single-Molecule Transistors." *Angew. Chem. Int. Ed.* **2003**, *42*, 5706-5711.
42. Diehl, M. R.; Steuerman, D. W.; Tseng, H.-R.; Vignon, S. A.; Star, A.; Stoddart, J. F.; Heath, J. R. "Single-Walled Carbon Nanotube-Based Molecular Switch Tunnel Junctions." *ChemPhysChem* **2003**, *4*, 1335-1339.
43. Bryce, M. R.; Cooke, G.; Dunclairoir, F. M. A.; John, P.; Perepichka, D. F.; Polwart, N.; Rotello, V. M.; Tseng, H.-R.; Stoddart, J. F. "Electrochemically Controllable Surfaces with Three-Pole Binding Properties." *J. Mater. Chem.* **2003**, *13*, 2111-2117.
44. Yamamoto, T.; Tseng, H.-R.; Stoddart, J. F.; Balzani, V.; Credi, A.; Marchioni, F.; Venturi M. "Redox-Induced Ring Shuttling and Evidence for Folded Structures in Long and Flexible Two-Station Rotaxanes." *Collect. Czech. Chem. Comm.* **2003**, *68*, 1488-1514.
45. Tseng, H.-R.; Vignon, S. A.; Stoddart, J. F. "Toward Chemically Controlled Nanoscale Molecular Machinery." *Angew. Chem. Int. Ed.* **2003**, *2*, 1491-1495.

46. Tseng, H.-R.; Vignon, S. A.; Celestre, P. C.; Stoddart, J. F. "Dynamic Chemistry: Keen Selection in the Face of Stereochemical Diversity in Mechanically Bonded Compounds." *Chem. Eur. J.* **2003**, *9*, 543-556.
47. Ballardini, R.; Balzani, V.; Clemente-León, M.; Credi, A.; Gandolfi, M. T.; Ishow, E.; Perkins, J.; Stoddart, J. F.; Tseng, H.-R.; Wenger, S. "Photoinduced Electron Transfer in a Triad That Can Be Assembled / Disassembled by Two Different External Inputs. Toward Molecular-Level Extension Cables." *J. Am. Chem. Soc.* **2002**, *124*, 12786-12795.
48. Luo, Y.; Collier, C. P.; Jeppesen, J. O.; Nielsen, K. A.; DeFonno, E.; Ho, G.; Perkins, J.; Tseng, H.-R.; Yamamoto, T.; Stoddart, J. F.; Heath, J. R. "Two-Dimensional Molecular Electronics Circuits." *ChemPhysChem* **2002**, *3*, 519-525.
49. Stoddart, J. F.; Tseng, H.-R. "Chemical Synthesis Gets a Fillip from Molecular Recognition and Self-Assembly Processes." *Proc. Natl. Acad. Sci. USA* **2002**, *99*, 4797-4800.
50. Tseng, H.-R.; Lee, C.-F.; Yang, L.-M.; Luh, T.-Y. "Umpolung of the Carbon-Sulfur Bonds. Novel Synthesis of Substituted Allenes from Propargylic Dithioacetals." *J. Org. Chem.* **1999**, *64*, 8582-8587.
51. Tseng, H.-R.; Luh, T.-Y. "Novel Coupling Reaction of Dithioacetals with Organocuprate Reagents. Propargylic Dithioacetal as a Allene-1,3-Zwitterion Synthone." *J. Org. Chem.* **1997**, *62*, 4560-4563.
52. Lin, C.-T.; Wang, N.-J.; Tseng, H.-R.; Chou, T.-C. "Synthesis and Transannular Reactions of a Polycyclic Compound Containing Three Parallel Face-to-Face Double Bonds." *J. Org. Chem.* **1997**, *62*, 4857-4861.
53. Tseng, H.-R.; Luh, T.-Y. "Propargylic Dithioacetal as an Allene 1,3-Dication Synthone. Nickel-Catalyzed Cross-Coupling Reactions of Propargylic Dithioacetals with Grignard Reagents." *J. Org. Chem.* **1996**, *61*, 8685-8686.
54. Tseng, H.-R.; Luh, T.-Y. "Reactions of Geminal Dication Synthones with Geminal Dianionic Species. Cross-Coupling of Benzylic Dithioacetals with Nickel-Bimetallic Reagents." *Organometallics*. **1996**, *15*, 3099-3102.
55. Tseng, H.-R.; Chou, T.-S. "Regioselective Substitution Reactions of Zinc Sulfolenylates." *Tetrahedron Lett.* **1995**, *36*, 7105-7108.

Book Chapters

1. Tseng, H.-R. "Microfluidic Circuitry for Sequential and Parallel Reactions." In: *Biological Applications of Microfluidics*. (Gomez, F. A. Ed.) Wiley-VCH, Weinheim, **2007**, in press.
2. Tseng, H.-R.; Celestre, P. C.; Stoddart, J. F. "An Integrated System-Oriented Approach to Molecular Electronics." In: *Macromolecular Nano-Structure Materials*. (Ueyama, N.; Harada, A. Eds.) Kodansha Ltd., Tokyo, **2004**, 1-25.
3. Tseng, H.-R.; Stoddart, J. F. "Molecular Switches and Machines Using Arene Building Blocks." In: *Modern Arene Chemistry*, (Astruc, C. Ed.) Wiley-VCH, Weinheim, **2002**, 574-599.

Conference Proceedings

1. Cho, J. S.; Vu, N. T.; Chung, Y. H.; Yu, Z. T.; Silverman, R. W.; Taschereau, R.; Tseng, H.-R.; Chatziioannou, A. F. "Detection of Beta Particles in a Microfluidic Chip Using a Scintillator and CCD." *IEEE-Medical Imaging Conference and Nuclear Science Symposium (October)*, **2006**, *4*, 1977 – 1981.
2. Vu, N. T.; Chung, Y. H.; Yu, Z. T. F.; Silverman, R. W.; Taschereau, R.; Farrell, R.; Shah, K. S.; Tseng, H.-R.; Chatziioannou, A. F. "Direct Detection of Beta Particles on a Microfluidic Chip

- using Position Sensitive APDs.” *IEEE-Medical Imaging Conference and Nuclear Science Symposium* (October), **2006**, 4, 3536 -3539.
3. Sui, G.; Tseng H.-R. “Integrated Microreactors for sequential and Parallel Reactions.” *MicroTAS 2006*, 1023-1025.
 4. Tseng H.-R. “Integrated Microfluidic Circuits for Sequential and Parallel Chemical Reactions.” *FNANO6 2006*, 68-79.
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 12. Wu, D.; Yin, X.; Zhang, X.; Tseng, H.-R.; Stoddart, J. F. “Calligraphy on Self-Assembled Monolayer of Supramolecules.” *IEEE-NANO 2003*, 2, 606-608.
 13. Stoddart, J. F.; Tseng, H.-R. “Molecular Electronics Based on Mechanically Interlocked Molecules.” *Polymer Preprints 2003*, 44, 381-382.
 14. Tseng, H.-R.; Vignon, S. A.; Stoddart, J. F. “Molecular Muscles Based on Mechanically Interlocked Molecules.” *Polymer Preprints 2003*, 44, 377-378.

Patents

1. Patent Application “Electrochemically fabricated conducting polymer nanowire sensors” PCT Int. Appl. (2006), WO 2006042276.
2. Patent Application “Microfluidic devices with chemical reaction circuits” PCT Int. Appl. (2006), WO 2006071470.
3. Provisional Application, “An Integrated Microfluidic Blood Sampler for Mice” UCLA Case No. 2005-659-1. (Disclosure date: May 09, 2005)
4. Provisional Application, “Development of High-Affinity PET-Probes for High Performance Molecular Imaging” PCT Int. Appl. (2006), WO 2006778430.
5. Provisional Application, “A Simplified Approach for Surface Modification of Polymer-Based Microfluidic Devices” UCLA Case No. 2005-685-1. (Disclosure date: May 31, 2005)
6. Provisional Application, “Dynamic Micro- and Nano-scale Mixer and Reactors on Isolated Multi-Phase Hydrodynamic Focusing” UCLA Case No. 2006-387-1. (Disclosure date: January 06, 2006)

7. Provisional Application, "Device for High Sensitivity Quantitation of Radioisotope Concentrations in a Microfluidic Platform" UCLA Case No. 2006-388-1. (Disclosure date: January 11, 2006)
8. Provisional Application, "Microfluidic Platform for Cell Culture and Assay" UCLA Case No. 2007-067. (Disclosure date: August 4, 2006)
9. Provisional Application, "Microfluidic Cell Culture Array for Drug Screening and Imaging Probe Discovery" UCLA Case No. 2007-562. (Disclosure date: April 13, 2007)
10. Provisional Application, "Integrated Microfluidics for Parallel Screening of Chemical Reactions" UCLA Case No. 2007-570. (Disclosure date: May 23, 2007)

INVITED LECTURES and SEMINARS

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|---------|--|
| 07/2002 | NanoTriangle (UCLA/UCSB/Caltech) Meeting, Los Angeles, CA |
| 10/2002 | CeNS/CNSI Workshop, Munich, Germany |
| 08/2003 | Institute of Chemistry, Academia Sinica, Taipei, Taiwan |
| 08/2003 | Department of Chemistry, National Taiwan University, Taipei, Taiwan |
| 10/2003 | ACS Southern Regional Meeting, Long Beach, CA |
| 12/2003 | Institute of Chemistry, Chinese Academy of Science, Beijing, China |
| 06/2004 | Norma Stoddart Memorial Symposium, Los Angeles, CA |
| 01/2005 | Workshop of the Center for Integrated Nanotechnology, Albuquerque, NM |
| 04/2005 | Fluidigm Corp., San Francisco, CA |
| 04/2005 | The 2nd Annual Conference Foundations of Nanoscience (FNANO05), Snowbird, UT |
| 05/2005 | UCLA SPORE Annual Meeting in 2005, Los Angeles, CA |
| 11/2005 | DOE Workshop on Frontiers in Imaging Science: Imaging Low Abundance Targets
Cambridge, MA |
| 12/2005 | Institute of Chemistry, Chinese Academy of Science, Beijing, China |
| 12/2005 | Department of Chemistry & Center for Nanotechnology and Nanomaterials Joint Seminar
Hong Kong University of Science and Technology (HKUST), Hong Kong |
| 01/2006 | Frontier researches on Chemical Science—A Symposium in Honor of Professor
Tien-Yau Luh at his 60th Birthday, Taipei, Taiwan |
| 04/2006 | Cancer Affinity Group, the Scripps Research Institute, La Jolla, CA |
| 04/2006 | The 3rd Annual Conference Foundations of Nanoscience (FNANO06), Snowbird, UT |
| 10/2006 | Department of Materials Science and Engineering, University of Florida, Gainesville, FL |
| 11/2006 | Tateshina Conference on Organic Chemistry, Tateshina, Japan |
| 12/2006 | Institute of Bioengineering and Nanotechnology, Singapore |
| 12/2006 | Department of Chemistry, Nanyang Technology University, Singapore |
| 12/2006 | ISCIC-6 & ISOC-9, Singapore |
| 12/2006 | Department of Chemistry, National Taiwan University, Taipei, Taiwan |
| 01/2007 | Research Center for Applied Science, Academia Sinica, Taipei, Taiwan |
| 04/2007 | Shanghai Institute of Organic Chemistry, Chinese Academy of Science, Shanghai, China |
| 04/2007 | Liquidia Technologies, Inc., Morrisville, NC |
| 06/2007 | ECI Conference on "Nanoscience & Nanotechnology for Biological/Biomedical/Chemical
Sensing", Hong Kong |
| 06/2007 | Department of Chemistry, Hong Kong Chinese University, Hong Kong |
| 06/2007 | DuPont, Wilmington, DE |
| 08/2007 | Division of Organic Chemistry, 2007 ACS National Meeting, Boston |
| 09/2007 | 2007 Materials Today Asia Conference, Beijing, China |
| 09/2007 | National Institute of NanoScience and Technology, Beijing, China |
| 10/2007 | 2007 Nuclear Science Symposium and Medical Imaging Conference, Honolulu, Hawaii
(Plenary Lecture) |
| 01/2008 | Department of Chemistry, University of California, Irvine, CA |
| 03/2008 | California NanoSystems Institute, University of California, Santa Barbara, CA |

03/2008 Department of Biomedical Engineering, Duke University, NC
04/2008 Department of Biomedical Engineering, Cornell University, Ithaca