

## CURRICULUM VITAE

**YuYe Jay Tong**

Dr. es Sc., Experimental Condensed Matter Physics, Swiss Federal Institute of Technology, Lausanne, Switzerland, 1994

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### I.1. EDUCATION:

- Dr. és sci, 12/1994 Swiss Federal Institute of Technology, Lausanne, Switzerland, in Experimental Condensed Matter Physics. Thesis title: "Metal-Matrix Interactions as Seen by <sup>195</sup>Pt Nuclear Magnetic Resonance"; advisor: Jean-Jacques van der Klink.
- M. Sc., 07/1986 Departments of Nuclear Physics and Chemistry, in Nuclear Physics and Physical Chemistry, Fudan University, Shanghai, China. Thesis title: "A <sup>209</sup>Bi Nuclear Quadrupolar Resonance Investigation of Scintillation Material Bi<sub>4</sub>Ge<sub>3</sub>O<sub>12</sub>"; advisors: Y.-Z. Gu and L. Fei.
- B. Sc. 07/1983 Department of Nuclear Physics, Fudan University, Shanghai, China. Senior thesis title: "Ion Beam and Matter Interaction"; Advisor: F. Q. Lu.

### I.2. POSITIONS HELD:

- 03/2017 – present Director, Georgetown Environmental Metrology & Policy Program.  
(<https://emap.georgetown.edu/>)
- 08/2010 – 06/2017 Chair, Department of Chemistry, Georgetown University
- 08/2010 – present Professor, Department of Chemistry, Georgetown University
- 08/2006 – 07/2010 Associate Professor, Department of Chemistry, Georgetown University.
- 08/2001 – 07/2006 Assistant Professor, Department of Chemistry, Georgetown University.
- 07/2009 – present Guest Scientist, Division of Chemical Sciences, National Institute of Standards and Technology, Gaithersburg, Maryland.
- 05/2009 – 07/2009 Visiting Professor, Laboratoire "Systèmes Interfaciaux à l'Echelle Nanométrique", Université Pierre et Marie Curie - Paris VI, Paris, France.
- 09/2008 – 06/2009 Visiting Professor, Division of Chemical and Biochemical Reference Data, National Institute of Standards and Technology, Gaithersburg, Maryland.
- 11/2008 – 12/2008 Visiting Professor, Department of Chemistry, Xiamen University, Xiamen, China.
- 09/2006 – 08/2012 Principle Investigator, Nanoscale Imaging and Spectroscopy and Properties Laboratory, University of Maryland, College Park, MD.
- 01/2008 – present Key Oversea Member, State Key Laboratory of Physical Chemistry of Solid Surfaces, Xiamen University, Xiamen, China.
- 11/1996 – 07/2001 Post-doctoral Research Associate, Department of Chemistry, University of Illinois, Urbana-Champaign; advisors: Eric Oldfield and Andrzej Wieckowski.
- 01/1995 – 12/1996 Visiting Staff Scientist, Institut de Recherches sur la Catalyse, CNRS, Villeurbanne, France.
- 10/1989 – 12/1994 Graduate Research Assistant, Swiss Federal Institute of Technology, Lausanne, Switzerland.
- 08/1986 – 10/1989 Junior faculty member, NMR Laboratory, Research Center for Analysis & Measurement, Fudan University, Shanghai, China
- 09/1983 – 07/1986 Graduate Teaching and Research Assistant, Fudan University, Shanghai, China.

### I.3. PROFESSIONAL SOCIETY MEMBERSHIPS:

The American Chemical society (current)  
The American Physical Society  
International Society of Electrochemistry (current)  
The Electrochemical Society  
American Association for the Advancement of Science (current)

### I.4. HONORS & AWARDS:

- 2020-21 Fulbright Global Scholar Award
- Chair, Experts Committee for the Canada Foundation for Innovation Projects Review, **2020**.
- **2017** Distinguished Georgetown Investigator
- Chair, Experts Committee for the Canada Foundation for Innovation Projects Review, **2017**.
- Member of the National Academy of Inventors, **2016 - present**
- **2016** Georgetown Distinguished Investigator
- On the Editorial Board, *ChemistrySelect* (Wiley), **2015 – present**.
- On the Canada Foundation for Innovation Projects Review Panel, **2014**.
- On the DOE on-site Review Panel of Catalysis Science projects at Brookhaven National Laboratory, **2013**.
- Distinguished Invited Speaker, the fifth ISEAC (Indian Society for ElectroAnalytical Chemistry) Triennial International Conference on Advanced and Recent Trends in Electrochemistry, Romaji Film City, Hyderabad, India, **2013**.
- Paper selected as an important scientific contribution within the DOE-BES Catalysis Science program, **2011**
- On the Editorial Board, *Electrocatalysis* (Springer): **2010 – present**
- On the Review Panel for the DOE's Energy Frontier Research Centers, **2010**
- Key Oversea Member, State Key Laboratory of Physical Chemistry of Solid Surfaces, Xiamen University, Xiamen, China: **01/2008 – 12/2017**
- National Science Foundation of China Oversea Scholar Grants: **01/2009 – 12/2010, 01/2013-12/31/2016**.
- Guest co-Editor, Special Issue on “Theoretical and Computational Electrochemistry”, *Electrochim. Acta* **2013**, *101*, 243-346.
- Co-chair of the Organizing Committee for the 11<sup>th</sup> Spring Meeting of the International Society of Electrochemistry, Georgetown University, Washington DC, USA, May **2012**.
- Vice Chair, Physical Electrochemistry Division, the International Society of Electrochemistry, **2010-2011**.
- Coordinator of the Organizing Committee for Symposium 10 “Interfacial Electrochemistry: Recent Advances from Experiment to Theory” of the 61<sup>st</sup> International Society of Electrochemistry Annual Meeting in Nice, France, September 27 to October 1, **2010**.
- Visiting Professor, National Institute of Standards and Technology, **08/2008 to 05/2009**
- Visiting Professor, University of Pierre and Currie, Paris, **06-09, 2009**
- On the Review Panel for the NSF Science and Technology Centers: Integrative Partnerships Program, **2009**
- Georgetown Senior Research Fellowship: Spring **2008**
- Georgetown Junior Research Fellowship: Spring **2005**.
- Honor Student of Fudan University, Shanghai, P. R. China (**1980, 1982, 1985**).

**I.5.1. LIST OF PUBLICATIONS:**

("†" indicates undergraduate researchers)

122. **YuYe J. Tong**, "A self-promoting growth of sodium microstructures" *Nature Nanotech.* (News & Views), **2020**; DOI: 10.1038/s41565-020-0772-8
121. Haisch, Theresa; Kubanek, Fabian; Chen, Dejun; **Tong, YuYe J.**; Krewer, Ulrike "Origin of the drastic current decay during potentiostatic alkaline methanol oxidation", *ACS Appl. Mater. Interfaces*, **2020**; DOI:10.1021/acsami.0c06547.
120. Rongfeng Zheng, Gianna M. Bevacqua, Nicholas R. Young, Thomas C. Allison, **YuYe J. Tong**, "Site-Dependent Spin Delocalization and Evidence of Ferrimagnetism in Atomically Precise Au<sub>25</sub>(SR)<sub>180</sub> Clusters as Seen by Solution <sup>13</sup>C NMR Spectroscopy", *J. Phys. Chem. A*, **2020**; DOI: 10.1021/acs.jpca.02915z.
119. Safia Z. Jilani, Carter P. Cohen, Esther E. Iyanobor, Daniel Zager, Rongfeng Zheng, Kaitlyn M. Frankenfield, **YuYe J. Tong**, "Surfactant-Free One-Pot Synthesis of Homogeneous Tri-Metallic PtNiCu Nanoparticles with Size Control by Using Glycine", *Langmuir*, **2020**, *36*, 5902-5907; DOI: 10.1021/acs.langmuir.0c00665.
118. De-Jun Chen, Ryan G. Penhullurick, **YuYe J. Tong**, "Versatile and Robust Surface-Poisoning-Resisting Scanning Amperometric Proton Microscopy", *J. Electroanal. Chem.* **2020**, DOI: 10.1016/j.jelechem.2020.113918.
117. Li, J.; Jilani, S. Z.; Lin, H.; Liu, X.; Wei, K.; Jia, Y.; Zhang, P.; Chi, M.; **Tong, Y. Y. J.**; Xi, Z.; Sun, S.-H. "Ternary CoPtAu Nanoparticles as a General Catalyst for Highly Efficient Electro-Oxidation of Liquid Fuels", *Angew. Chem. Int. Ed.* **2019**, 1–8; DOI: 10.1002/anie.201906137.
116. Batrice, R. J.; Wacker, J. N.; Glass, E. N.; Jilani, S. Z.; **Tong, Y. Y. J.**; Nyman, M.; Knope, K. E. "Template-Free Cyclic Hexavanadate: Synthesis, Characterization, Solid-State Structure, and Solution-State Dynamics", *Polyhedron* **2019**, *169*, 266–277; 10.1016/j.poly.2019.05.014
115. Yan-Yan Wang, De-Jun Chen, Thomas C. Allison, **YuYe J. Tong**, "Effect of Surface-Bound Sulfide on Oxygen Reduction Reaction on Pt: Breaking the Scaling Relationship and Mechanistic Insights", **2019**, *150*, 041728; DOI: 10.1063/1.5053815.
114. Hamed Etaee-Esfahani, De-Jun Chen, **YuYe J. Tong**, "Dual-IR Window/Electrode Operando Attenuated Total Reflection-IR Absorption Spectroscopy for Batteries", *Batteries & Supercaps*, **2019**, *2*, 60-65; DOI: 10.1002/batt.201800068.
113. Eric G. Sorte, Nathan Banek, Michael J. Wagner, Todd M. Alam, **YuYe J. Tong**, "In situ Stripline NMR for Batteries", *ChemElectroChem*, **2018**, *5*, 2336-2340; DOI: 10.1002/celec.201800434.
112. **Tong, Y. Y. J.** In Situ Electrochemical Nuclear Magnetic Resonance Spectroscopy for Electrocatalysis: Challenges and Prospects. *Current Opinion in Electrochemistry* **2017**, *4*, 60–68. DOI: 10.1016/j.coelec.2017.09.017.
111. Dejun Chen, **YuYe J. Tong**, "The Bifunctional Electrocatalysis of Carbon Monoxide Oxidation Reaction" in *Encyclopedia of Interfacial Chemistry - Surface Science and Electrochemistry*, **2017**, Elsevier, in press.
110. De-Jun Chen, **YuYe J. Tong**, "An In-situ Electrochemical IR investigation of Solution CO Electro-oxidation on a Polycrystalline Au Surface in an Alkaline Electrolyte: Identification of Active Reaction Intermediates", **2017**, *800*, 39-45. DOI: 10.1016/j.jelechem.2017.04.045
109. Eric G. Sorte, Safia Jilani, **YuYe J. Tong**, "Methanol and Ethanol Electrooxidation on PtRu and PtNiCu as Studied by High-Resolution *In situ* Electrochemical NMR with Interdigitated Electrode", *Electrocatal.* **2017**, *8*, 95-102. DOI: 10.1007/s12678-016-0344-8.
108. **YuYe J. Tong**, "Electrochemical Energy Generation and Storage as Seen by In Situ NMR", *Springer Handbook of Electrochemical Energy*, 331-363, **2017**, ©Springer-Verlag Berlin Heidelberg; DOI: 10.1007/978-3-662-46657-5\_12.
107. De-Jun Chen, Thomas C. Allison, **YuYe J. Tong**, "Mechanistic Insights into Electro-oxidation of Solution CO on Polycrystalline Gold Surface as Seen by in situ IR Spectroscopy", *J. Phys. Chem.*

- C. **2016**, *120*, 16132–16139; DOI: 10.1021/acs.jpcc.6b00024.
106. Yan-Yan Wang, De-Jun Chen, **YuYe J. Tong**, "Mechanistic Insight into Sulfide-Enhanced Oxygen Reduction Reaction Activity and Stability of Commercial Pt Black: an in situ Raman Spectroscopic Study", *ACS Catal.*, **2016**, *6*, 5000-5004; DOI:10.1021/acscatal.6b00907.
  105. Long Huang, Jia-Yu Sun, Shuo-Hui Cao, Mei Zhan, Zu-Rong Ni, Hui-Jun Sun, Zhong Chen, Zhi-You Zhou, Eric G. Sorte, **YuYe J. Tong**, Shi-Gang Sun, "Combined EC-NMR and in situ FTIR spectroscopic studies of glycerol electrooxidation on Pt/C, PtRu/C and PtRh/C", *ACS Catal.* **2016**, *6*, 7686–7695; DOI: 10.1021/acscatal.6b02097.
  104. Eric G. Sorte, **YuYe J. Tong**, "High-Resolution in situ NMR Spectroscopy System with Simple Constructs for Electrochemically-Driven Reactions", *J. Electroanal. Chem.* **2016**, *769*, 1-4; DOI:10.1016/j.jelechem.2016.03.003.
  103. Eric G. Sorte, De-Jun Chen, **YuYe J. Tong**, "Dual-Electrode *in situ* IR Spectroscopy for Fuel Cells", *J. Electrochem. Soc.* **2016**, *163*, H3038-H3042. DOI: 10.1149/2.0121604jes.
  102. De-Jun Chen, Dianne O. Atienza, YuYe J. Tong, "Integrated Studies of Au@Pt and Ru@Pt Core-Shell Nanoparticles by in situ Electrochemical NMR, ATR-SEIRAS, and SERS", in Shaowei Chen and Kenneth I. Ozoemena (Eds) *Nanomaterials for Fuel Cell Catalysis*, Nanostructure Science and Technology. Springer, Cham; **2016**, pp225-251; DOI: 10.1007/978-3-319-29930-3\_5.
  101. De-Jun Chen, **YuYe J. Tong**, "Irrelevance of CO Poisoning in Methanol Oxidation Reaction on PtRu Electrocatalyst", *Angew. Chem. Int. Ed.* **2015**, *54*, 9394–9398.
  100. Long Huang, Eric G. Sorte, Shi-Gang Sun, **YuYe J. Tong**, "A straightforward implementation of *in situ* solution electrochemical <sup>13</sup>C NMR spectroscopy for studying reactions on commercial electrocatalysts: ethanol oxidation", *Chem. Comm.* **2015**, *51*, 8086-8088.
  99. Ying Li, Brian S. Zelakiewicz, Thomas C. Allison, **YuYe J. Tong**, "Level-Alignment at Metal-Molecule Interface as Seen by Electro-Potential-Controlled <sup>13</sup>C NMR", *ChemPhysChem* **2015**, *16*, 747-751.
  98. De-Jun Chen, Shi-Gang Sun, **YuYe J. Tong**, "On the chemistry of activating commercial carbon-supported PtRu electrocatalyst for methanol oxidation reaction", *Chem. Comm.* **2014**, *50*, 12963-12965.
  97. Augusta M. Levendorf, De-Jun Chen, Christopher L. Rom<sup>†</sup>, Yangwei Liu, and **YuYe J. Tong**, "Electrochemical and in situ ATR-SEIRAS Investigation of Methanol and CO Electrooxidation on PVP-Free Cubic and Octahedral/Tetrahedral Pt Nanoparticles", *RSC Adv*, **2014**, *4*, 21284 - 21293.
  96. Augusta M. Levendorf, Shi-Gang Sun and **YuYe J. Tong**, "*In situ* FT-IR Investigation of Methanol and CO Electro-oxidation on Cubic and Octahedral/ Tetrahedral Pt Nanoparticles Having Residual PVP", *Electrocatal.*, **2014**, *5*, 248-255.
  95. **YuYe J. Tong**, "In situ Nuclear Magnetic Resonance Spectroscopy Applied to Understanding Chemical Processes for Electrochemical Energy Generation and Storage", **2014**, accepted; an invited book chapter for the Springer's *Handbook for Electrochemistry*.
  94. Yuan Gao, Yangwei Liu, Ying Li, Oksana, Zaluzhna, **YuYe J. Tong**, "Mechanistic Insights into the Brust-Schiffrin Synthesis of Organochalcogenolate-Stabilized Metal Nanoparticles", in *Functional Nanometer-Sized Clusters of Transition Metals: Synthesis, Properties and Applications*, the RSC Smart Materials Series, **2014**, 1-24.
  93. Ying Li, Oksana Love, **YuYe J. Tong**, "Organotellurolate-Protected Small Gold Nanoparticles", *Nano Bulletin*, **2013**, *2*, 130221.
  92. In-Su Park, YuYe J. Tong, "Sulfide-Adsorption-Enhanced Oxygen Reduction Reaction on Carbon-Supported Pt Electrocatalyst", *Electrocatalysis*, **2013**, *4*, 117-122. (Cover Lett.)
  91. Thomas C. Allison and **YuYe J. Tong**, "Application of the Condensed Fukui Function to Predict Reactivity in Core-Shell Transition Metal Nanoparticles", *Electrochim. Acta*, **2013**, *101*, 334-340.
  90. In-Su Park, De-Jun Chen, Dianne O. Atienza, **YuYe J. Tong**, "Electro-Oxidation of CO Monolayer on Sulfide-Adsorbed Pt Nanoparticles: A Combined Electrochemical and in situ ATR-IR Study", *Catal. Today*, **2013**, *202*, 175-182.

89. Georgeta C. Lica and **YuYe J. Tong**, "Electrochemical Impedance Spectroscopic Measurement of Potential of Zero Charge of Octanethiolate-Protected Au and Pd Nanoparticles", *J. Electroanal. Chem.*, **2013**, *688*, 349-353.
88. **YuYe J. Tong**, "Unconventional Promoters of Catalytic Activity in Fuel Cell Electrocatalysis", *Chem. Soc. Rev.*, **2012**, *41*, 8195-8209.
87. Dianne O. Atienza, Thomas C. Allison, **YuYe J. Tong**, "Spatially-Resolved Electronic Alterations as Seen by in situ <sup>195</sup>Pt and <sup>13</sup>C NMR in Ru@Pt and Au@Pt Core-Shell Nanoparticles", **2012**, *116*, 26480-26486.
86. Oksana Zaluzhna, Ying Li, Thomas C. Allison, **YuYe J. Tong**, "Inverse-Micelle-Encapsulated Water-Enabled Bond Breaking of Dialkyl-Diselenide/Disulfide: a Critical Step for Synthesizing High-Quality Au Nanoparticles", *J. Am. Chem. Soc.*, **2012**, *134*, 17991-17996.
85. Oksana Zaluzhna, Chris Zangmeister, **YuYe J. Tong**, "Synthesis of Au and Ag nanoparticles with alkylselenocyanates", *RSC Advances*, **2012**, *2*, 7396-7399.
84. Augusta M. Hofstead-Duffy, De-Jun Chen, **YuYe J. Tong**, "An in situ ATR-SEIRAS Study of Electrocatalytic Activity on Carbon-Supported Pt Nanoparticles Affected by PVP of Different Weight", *Electrochim. Acta*, **2012**, *82*, 543-549.
83. Ying Li, Oksana Zaluzhna, Chris Zangmeister, Thomas C. Allison, **YuYe J. Tong**, "Different Mechanisms Govern the Two-Phase Brust-Schiffrin Dialkyl-Ditelluride Syntheses of Ag and Au Nanoparticles", *J. Am. Chem. Soc.*, **2012**, *134*, 1990-1992.
82. Augusta M. Hofstead-Duffy, De-Jun Chen, Shi-Gang Sun, **YuYe J. Tong**, "Origin of the current peak of negative scan in the cyclic voltammetry of methanol electro-oxidation on Pt-based electrocatalysts: a revisit to the current ratio criterion", *J. Mater. Chem.* **2012**, *22*, 5205-5208
81. De-Jun Chen, Bolian Xu, Shi-Gang Sun, and **YuYe J. Tong**, "Electroless Deposition of Ultrathin Au film for Surface Enhanced in situ Spectroelectrochemistry and Reaction-Driven Surface Reconstruction for Oxygen Reduction Reaction", *Catal. Today*, **2012**, *182*, 46-53.
80. In-Su Park, Dianne O. Atienza, Augusta M. Hofstead-Duffy, De-Jun Chen, **YuYe J. Tong**, "Mechanistic insights on sulfide-adsorption enhanced activity of methanol electro-oxidation on Pt nanoparticles", *ACS Catalysis* **2012**, *2*, 168-174.
79. Oksana Zaluzhna, Ying Li, Chris Zangmeister, Thomas C. Allison, **YuYe J. Tong**, "Mechanistic insights on the one-phase vs. two-phase Brust-Schiffrin method synthesis of Au nanoparticles with di-actyl-diselenide", *Chem. Comm.* **2012**, *48*, 362-364.
78. Ying Li, Oksana Zaluzhna, **YuYe J. Tong**, "Critical Role of Water and Structure of Inverse Micelles in the Brust-Schiffrin Synthesis of Metal Nanoparticles", *Langmuir* **2011**, *27*, 7366-7370.
77. Ying Li, Oksana Zaluzhna, **YuYe J. Tong**, "Identification of a source of size polydispersity and its solution in Brust-Schiffrin metal nanoparticle synthesis", *Chem. Comm.* **2011**, *47*, 6033 - 6035.
76. Bingchen Du, Oksana Zaluzhna, **YuYe J. Tong**, "Electrocatalytic Properties of Au@Pt Nanoparticles: Effects of Pt Shell Packing Density and Au Core Size", *Phys. Chem. Chem. Phys.*, **2011**, *13*, 11568-11574.
75. Thomas C. Allison\*, **YuYe J. Tong**, "Evaluation of Methods to Predict Reactivity of Gold Nanoclusters", *Phys. Chem. Chem. Phys.*, **2011**, *13*, 12858-12864.
74. Oksana Zaluzhna, Lyndsey Brightfull, Thomas C. Allison, and **YuYe J. Tong**, "Spectroscopic evidence of a bidentate-binding of meso-2,3-dimercaptosuccinic acid on silver nanoclusters", *Chem. Phys. Lett.*, **2011**, *509*, 148-151.
73. De-Jun Chen, Augusta M. Hofstead-Duffy, In-Su Park, Dianne O. Atienza, Ceren Susut, Shi-Gang Sun, and **YuYe J. Tong**, "Identification of the most active sites and surface water species: A comparative study of CO and methanol oxidation reactions on core-shell M@Pt (M=Ru, Au) nanoparticles by in situ IR spectroscopy", *J. Phys. Chem. C*, **2011**, *115*, 8735-8743

72. Ceren Susut, **YuYe J. Tong**, "Size Dependent Methanol Electro-oxidation Activity of Pt Nanoparticles with Different Shapes", *Electrocatalysis*, **2011**, 2, 75-81.
71. Bolian Xu, In-Su Park, Ying Li, De-Jun Chen, **YuYe J. Tong**, "An in situ SERS Investigation of the Chemical States of Sulfur Species Adsorbed onto Pt from Different Sulfur Sources", *J. Electroanal. Chem.*, **2011**, 656, 52-56.
70. Thomas Hsu-Yao†, Kevin P. Browne†, Nicole Honesty†, **YuYe J. Tong**, "Enhanced Oxygen Electro-Reduction Reaction on Polyoxometalate-Stabilized Pt Nanoparticles", *Phys. Chem. Chem. Phys.* **2011**, 13, 7433-7438.
69. Ceren Susut, De-Jun Chen, Shi-Gang Sun, **YuYe Tong**, "Capping Polymer-Enhanced Electrocatalytic Activity on Pt Nanoparticles: A Combined Electrochemical and in situ IR Spectroelectrochemical Study", *Phys. Chem. Chem. Phys.*, **2011**, 13, 7467-7474.
68. In-Su Park, Bolian Xu, Dianne O. Atienza, Augusta M. Hofstead-Duffy, Thomas C. Allison, and **YuYe J. Tong**, "Chemical State of Adsorbed Sulfur on Pt Nanoparticles", *ChemPhysChem*, **2011**, 12, 747-752.
67. Ying Li, Oksana Zaluzhna, Bolian Xu, Yuan Gao†, Jacob M. Modest†, **YuYe J. Tong**, "Mechanistic insights into the Brust-Schiffrin two-phase synthesis of organo-chalcogenate-protected metal nanoparticles", *J. Am. Chem. Soc.*, **2011**, 133, 2092-2095.
66. Bolian Xu, In-Su Park, Ying Li, De-Jun Chen, **YuYe J. Tong**, "In situ Surface-Enhanced Raman Scattering Spectroscopic Study of Sulfur Adsorption on Polycrystalline Platinum Electrode Surface", *Electrochemistry* (Chinese Chemical Society), **2010**, 16, 255-262.
65. Bingchen Du, S. A. Rabb, C. Zangmeister, **YuYe Tong**, "A Volcano Curve: Optimizing Methanol Electro-oxidation on Pt-decorated Ru Nanoparticles", *Phys. Chem. Chem. Phys.* **2009**, 11, 8231-8239.
64. Julie Mertzman, Samuel Lofland, Travis Fleming, Edward Van Keuren, **YuYe Tong**, Srotowini Kar, Sarah L. Stoll, "Manganese oxo clusters as potential contrast agents", *Chem. Commun.* **2009**, 788-790.
63. Kefeng Ma, Astghik A. Shahkhatuni, B. S. Somashekhar, G. A. Nagana Gowda, **YuYe Tong**, C. L. Khetrapal, and Richard G. Weisse, "Room-Temperature and Low-Ordered, Amphotropic-Lyotropic Ionic Liquid Crystal Phases Induced by Alcohols in Phosphonium Halides", *Langmuir*, **2008**, 24, 9843-9854.
62. Ying Li, Latoya C. Silvertont†, George B. Chapman, **YuYe Tong**, "Alkanetelluroxide-Protected Gold Nanoparticles", *Langmuir*, **2008**, 24, 9843-9854.
61. Ceren Susut, George B. Chapman, Gabor Samjeské, Masatoshi Osawa, and **YuYe Tong**, "An Unexpected Enhancement in Methanol Electro-Oxidation on an Ensemble of Pt(111) Nanofacets: A Case of Nanoscale Single Crystal Ensemble Electrocatalysis", *Phys. Chem. Chem. Phys.*, **2008**, 10, 3712 - 3721.
60. Fatang Tan, Bingchen Du, Aaron L. Danberry†, In-Su Park, Yung-Eun Sung, **YuYe Tong**, "A comparative in situ electrochemical-NMR investigating of PtRu nanoparticles supported on diverse carbon nanomaterials", *Faraday Discussion*, **2008**, 140, 139-153.
59. Ceren Susut, Thuy D. Nguyen†, George B. Chapman, **YuYe Tong**, "Shape and Size Stability of Pt Nanoparticles for Methanol Electro-oxidation", *Electrochim. Acta*, **2008**, 53, 6135-6142.
58. Bingchen Du, Aaron L. Danberry†, In-Su Park, Yung-Eun Sung, **YuYe Tong**, "Spatially-Resolved <sup>195</sup>Pt NMR of Carbon-Supported PtRu Electrocatalysts: Local Electronic Properties, Elemental Composition, and Catalytic Activity", *J. Chem. Phys.*, **2008**, 128, 052311.
57. Aaron L. Danberry†, Bingchen Du, In-Su Park, Yung-Eun Sung, **YuYe Tong**, "Probing Spatially-Resolved Pt Distribution in PtRu Nanoparticles with <sup>195</sup>Pt EC-NMR", *J. Am. Chem. Soc.* **2007**, 129, 13806-13807.
56. Ceren Susut, Thuy D. Nguyen†, George B. Chapman, **Y. Y. Tong**, "Particle Size Limit for Concomitant Tuning of Size and Shape of Platinum Nanoparticles", *J. Cluster Sci.*, **2007**, 8, 773-780.
55. **Y. Y. Tong**, "Coupling Interfacial Electrochemistry with Nuclear Magnetic Resonance Spectroscopy: An Electronic Perspective", chapter 14 in *In-Situ Spectroscopic Studies of Adsorption at Electrode*

- and Electrocatalysis, S.-G. Sun, P. A. Christensen, A. Wieckowski, Eds., Elsevier Science, New York, **2007**, 441-469.
54. G. L. Lica, K. P. Brown†, **Y. Y. Tong**, "Interactions between Keggin-Type Lacunary Polyoxometalates and Ag Nanoparticles: A Surface-Enhanced Raman Scattering Spectroscopic Investigation", *J. Cluster Sci.*, **2006**, *17*, 349-359.
  53. Eric Oldfield, **Y. Y. Tong**, Andrzej Wieckowski, "Platinum Nanoparticle Electrode Surfaces: Nuclear Magnetic Resonance Spectroscopy", Encyclopedia of Surface and Colloid Science, 2nd Edition; P. Somasundaran, Ed., Taylor & Francis, New York, **2006**; *6*, pp. 4698 - 4709.
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  51. Morgan L. Deacon†, Brian S. Zelakiewicz, **Y. Y. Tong**, "A Fast and Convenient One-Pot Synthesis of Dioctyl Diselenide at Ambient Temperature and Atmosphere", *Synlett.*, **2005**, 1618-1620.
  50. **Y. Y. Tong**, Brian S. Zelakiewicz, Benzon M. Dy†, Andrew R. Pogozielski†, "Local Quantum Size Effect as Seen by Room-Temperature <sup>195</sup>Pt NMR in Octanethiol-Protected Pt Nanoparticles", *Chem. Phys. Lett.*, **2005**, *406*, 137-142; web-published on March 17, 2005.
  49. Georgeta C. Lica, Brian S. Zelakiewicz, Mariana Constantinescu, **Y. Y. Tong**, "Charge Dependence of Surface Plasma Resonance in 2 nm Octanethiol-Protected Au Nanoparticles: Evidence of a Free-Electron System", *J. Phys. Chem. B*, **2004**, *108*, 19896-19900.
  48. B. S. Zelakiewicz, G. C. Lica, M. Deacon†, **Y. Y. Tong**; "NMR and Infrared Evidence of a Disulfide Structure on Octanethiol-Protected Palladium Nanoparticle Surfaces", *J. Am. Chem. Soc.* **2004**, *126*, 10053-10058.
  47. B.S. Zelakiewicz, T. Yonezawa, **Y. Y. Tong**; "The Observation of Se-77 Nuclear Magnetic Resonance in Octaneselenol-Protected Gold Nanoparticles", *J. Am. Chem. Soc.* **2004**, *126*, 8112-8113.
  46. Georgeta C. Lica, Brian S. Zelakiewicz, **YuYe Tong**, "Electrochemical and NMR Characterization of Octanethiol-Protected Au Nanoparticles", *J. Electroanal. Chem.*, **2003**, *554-555*, 127-132.
  45. Brian S. Zelakiewicz, **Y. Y. Tong**, "Advanced <sup>13</sup>C Nuclear Magnetic Resonance Investigation of Metal-Ligand Interactions in Monolayer-Protected Gold Nanoparticles: NMR Shifts and Relaxations", in Spatially Resolved Characterization of Local Phenomena in Materials & Nanostructures, *Mat. Res. Soc. Symp. Proc.*, **2003**, *738*, G8.2.1-5.
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36. **Y. Y. Tong**, H. S. Kim, B. Panakkattu, P. Waszczuk, A. Wieckowski, and E. Oldfield; "An NMR Investigation of CO-Tolerance in a Pt/Ru Fuel Cell Catalyst", *J. Am. Chem. Soc.*, **2002**, *124*, 468-473.
35. S. H. Park, **Y. Y. Tong**, A. wieckowski, M. J. Weaver; "Infrared Absorption-Reflection Properties of Platinum Nanoparticle Film on Metal Electrode Substrates: Control of Anomalous Optical Effects", *Electrochem. Comm.*, **2001**, *3*, 509-513.
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31. **Y. Y. Tong**, C. Rice., A. Wieckowski, E. Oldfield; "195Pt NMR of Platinum Electrocatalysts: Friedel-Heine Invariance and Correlations between Platinum Knight Shifts, Healing Length and Adsorbate Electronegativity", *J. Am. Chem. Soc.*, **2000**, *122*, 11921-11924.
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29. **Y. Y. Tong**, C. Rice, A. Wieckowski, and E. Oldfield; "A Detailed NMR-Based Model for CO on Pt Catalysts in an Electrochemical Environment: Shifts, Relaxation, Back-Bonding and the Fermi-level Local Density of States", *J. Am. Chem. Soc.* **2000**, *122*; 1123-1129.
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27. **Y. Y. Tong**, C. Rice, N. Godbout, A. Wieckowski, and E. Oldfield; "Correlation between the Knight Shift of Chemisorbed CO and the Fermi Level Local Density of States at Clean Platinum Catalyst Surfaces", *J. Am. Chem. Soc.* **1999**, *121*, 2996-3003.
26. **Y. Y. Tong**, E. Oldfield, and A. Wieckowski; "Exploring Electrochemical Interfaces with Solid-State NMR", A-page article; *Anal. Chem.*, **1998**, *70*, 518A-527A.
25. C. Rice, **Y. Y. Tong**, E. Oldfield, and A. Wieckowski; "Cyclic Voltammetry and 195Pt Nuclear Magnetic Resonance Characterization of Graphite-supported Commercial Fuel Cell Grade Platinum Electrocatalysts", *Electrochimica Acta*, **1998**, *43*, 2825 - 2830.
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23. **Y. Y. Tong\***, P. Meriaudeau, A. J. Renouprez, and J. J. van der Klink; "Tailoring the Frontier Orbitals at the Surfaces of Platinum Catalysts", *J Phys. Chem. B.* **1997**, *101*, 10155 - 10158.
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20. **Y. Y. Tong\***; "Inadequacy of a Simple Curie-Weiss Approximation for Nuclear Magnetic Resonance in Paramagnetic Transition Metal Oxides", *J. Chem. Soc., Chem. Commun.* **1996**, 2317.
19. **Y. Y. Tong\***; "Nuclear Spin-Echo Fourier-Transform Mapping Spectroscopy for Broad NMR lines in Solids", *J. Magn. Res., Series A* **1996**, *119*, 22 - 28.
18. **Y. Y. Tong\***, A. J. Renouprez, G. A. Martin, and J. J. van der Klink; "Electron Availability and the Surface Fermi Level Local Density of States: an Alternative Way to See Catalytic Activity of Metals", *Studies in Surface Science and Catalysis*, **1996**, *101*, 901 - 910.
17. **Y. Y. Tong**, J. J. Bercier, and J. J. van der Klink; "Loss of Metallic Character in Zeolite-Encaged Platinum Particles at Low Temperatures", in the Proceedings of the International Symposium on the Science and Technology of Atomically Engineered Materials, P. Jena, S.N. Khanna, B.K. Rao, Editors, World Scientific, Singapore, **1996**.
16. **Y. Y. Tong**, T. Yonezawa, N. Toshima and J. J. van der Klink; "195Pt NMR of polymer-protected Pt/Pd bimetallic catalysts", *J. Phys. Chem.*, **1996**, *100*, 730 -733.
15. **Y. Y. Tong**, D. Laub, G. Schulz-Ekloff, A. J. Renouprez, and J. J. van der Klink; "Indications from 195Pt NMR for a Temperature-dependent Metal-nonmetal Transition of Small Platinum Particles in Zeolites", *Phys. Rev. B*, **1995**, *52*, 8407 - 8413.
14. **Y. Y. Tong** and J. J. van der Klink; "Local metal-nonmetal transition on oxygen-covered platinum particles from 195Pt NMR", *J. Phys. C: Condens. Matter*, **1995**, *7*, 2447 - 2459.
13. **Y. Y. Tong** and J. J. van der Klink; "Hydrogen adsorption on Platinum Particles studied by 195Pt NMR", *J. Phys. Chem.* **1994**, *98*, 11011 - 11014.
12. **Y. Y. Tong**, G. A. Martin and J. J. van der Klink; "195Pt NMR Observation of Local Density of States Enhancement on Alkali-Promoted Platinum Catalyst Surfaces", *J. Phys. C: Condens Matter*, **1994**, *6*, L533 - L538.
11. **Y. Y. Tong**, J. J. van der Klink, G. Clugnet, A. J. Renouprez, D. Laub and Ph. Buffat; "Electron Microscopy and 195Pt Nuclear Magnetic Resonance of Platinum Particles in a Zeolite-Y Matrix", *Surface Science*, **1993**, *292*, 276 - 288.
10. **Y. Y. Tong\***, H. Du and L. Fei; "Comparison Between the Hydration Processes of Tricalcium Silicate and Beta-Dicalcium Silicate", *Cement and Concrete Research*, **1991**, *21*, 509-514.
9. **Y. Y. Tong\***, H. Du and L. Fei; "Hydration Process of Beta-Dicalcium Silicate Followed by MAS and CP/MAS Nuclear Magnetic Resonance", *Cement and Concrete Research*, **1991**, *21*, 355 - 358.
8. **Y. Y. Tong\***, H. Du and L. Fei; "CP/MAS NMR Studies of the Initial Hydration Processes of Activated and Ordinary Beta-Dicalcium Silicates", *Cement and Concrete Research*, **1990**, *20*, 986 - 991.
7. W.-W. Dai, **Y. Y. Tong**, L. Fei and P. Lu; "A Mechanistic Study of C3S Hydration Reaction Influenced by VTES", *J. Chinese Ceramic Soc.*, **1990**, *18*, 547-550.
6. W.-W. Dai, **Y. Y. Tong**, and L. Fei; "Hydration Reaction of CH<sub>2</sub>CHSi(OEt)<sub>3</sub> Studied by NMR", *Chinese J. Appl. Chem.*, **1990**, *7*, 76-78.
5. W.-W. Dai, **Y. Y. Tong**, L. Fei and P. Lu; "The Influence of VTES on the Hydration Process of C3S", the Proceedings of the 2<sup>nd</sup> International Symposium on Cement & Concrete, Beijing, China, **1989**, *Vol. 1*, 238 - 243.
4. Q.-F. Shao, **Y. Y. Tong**, Y.-M. Shen, J.-G. Hu and X.-L. Xu; "An NMR Study on the 63Cu in High T<sub>c</sub> Superconductor Y1Ba2Cu3O7-d", *J. of Fudan University (Nature Science)*, **1991**, *30*, 235 -238.
3. **Y. Y. Tong\***; "Theoretical Calculation and Computer Simulation of Powder Pattern of Solid State NMR under Anisotropic Chemical Shift and Quadrupolar Interactions", *J. of Fudan University (Nature Science)*, **1987**, *26*, 428.

2. **Y. Y. Tong**, Y.-Z. Gu and L. Fei; "NMR Powder Pattern of Solid under Anisotropic Chemical Shift and Quadrupolar Interactions: a Computer Simulation", *J. Spectroscopy* (China), **1986**, 4, 34.
1. **Y. Y. Tong**, Y.-Z. Gu and L. Fei; "Zero Field NMR of  $^{209}\text{Bi}$  in Bismuth Germanite ( $\text{Bi}_4\text{Ge}_3\text{O}_{12}$ )", *J. Spectroscopy* (China), **1986**, 4, 20.

### I. 5. 2. Patents

8. **Y. Y. J. Tong**, E. G. Sorte; US Application No: 62/377,906 filed on 08/22/**2016**  
"Stripline Detector for in situ Battery and Fuel Cell NMR"
7. **Y. Y. J. Tong**, D.-J. Chen; US Application No: 62/340,855 filed on 03/07/**2016**  
"Surfactant-Free Synthesis of Nanomaterials Using Silicon Nanopowder as Sacrificial Reductant"
6. **Y. Y. J. Tong**, E. G. Sorte, D.-J. Chen; US Application No: 62/261,218 filed on 11/30/**2015**  
"Dual-Electrode in situ Infrared Spectroscopy for Fuel Cells and Batteries"
5. **Y. Y. J. Tong**, E. G. Sorte; US Application No: 62/236,772 filed on 10/02/**2015**  
"High Resolution in situ Electrochemical NMR with Interdigitated Electrodes"
4. **Y. Y. J. Tong**, D.-J. Chen; US Application No. 62/013,318 filed on 06/17/**2014**  
"Electrocatalysts, Fuel Cells Containing Them"
3. **Y. Y. J. Tong**, H.-H. Wang; U.S. Application No. 61/867,351 filed on 08/19/**2013**  
"PtCu and PtNi Electrocatalysts Doped with Iodine"
2. **Y. Y. Tong**, A. M. Hofstead-Duffy; US Application No. 61/601,257 filed on 02/21/**2012**  
"Polyvinylpyrrolidone (PVP) for Enhancing the Activity and Stability of Platinum-Based Electrocatalysts"
1. **Y. Y. Tong**, B. Du; US Patent 9105934, file on 04/07/**2011**, issued on August 11, **2015**  
"Platinum Adlayered Ruthenium Nanoparticles, Method for Preparing, and Uses Thereof"

### I. 5. 3. Book Translation

**Y. Y. Tong**, Q.-F. Shao, and L. Fei,  
"Experimental Pulse NMR" (in Chinese), Fudan University Press, Shanghai, 1995; translated from the monograph of E. Fukushima and S. B. W. Roeder, 539 pages, Addison-Wesley Publishing Company, 1981.

### I.6. INVITED ACADEMIC AND CONFERENCE TALKS:

106. "In situ/Operando Electrochemical Spectroscopies for Studying Electrocatalysis and Batteries: from IR to NMR to Scanning Probe Microscopy", Department of Chemistry, Wuhan University, China, March 8, **2019**.
105. 2018 International Symposium on Electrocatalysis, "A Water-Mediated Proton-Switch Reaction Step as the Linchpin for Understanding Formic Acid Electro-Oxidation on Platinum-Group Electrocatalysts", Szczyrk, Poland, August 23, **2018**
104. Graduate Student Organized Symposium "Enabling Spectroscopies for Nanomaterial Applications: Energy Conversion to Therapeutics", the 256th ACS Meeting, Boston, MA, August 23, 2018.
103. Department of Chemical & Biological Engineering, Drexel University, Philadelphia, PA, April 28, **2017**.
102. Department of Chemistry, American University, Washington DC, March 7, **2017**
101. Department of Chemistry, George Washington University, Washington DC, November 20, **2015**
100. Department of Chemical & Biochemical Engineering, University of Maryland, College Park, MD, October 27, **2015**.
99. Department of Chemistry and Geochemistry, Colorado School of Mines, September 4, **2015**.
98. The Career Day at Ridgeview Middle School, Gaithersburg, MD; May, 8, **2015**.

97. The Department of Chemistry, Carnegie Mellon University, Pittsburg, PA; April 30, **2015**.
96. The ACS Symposium on "Physical Electrochemistry of Electrocatalytic Processes" at the 249th ACS Annual Meeting, Denver, CO; March 25, **2015**.
95. Thomas Jefferson High School, Alexandria, VA, March 10, **2015**.
94. Honored speaker at the 2015 Junior Science and Humanities Symposium at Georgetown University, January 9, **2015**.
93. The International 2014 Summer School on Energy Chemistry: Characterization Techniques of Electrochemistry and in situ Spectroscopy in Xiamen, China, July 15, **2014**.
92. Keynote Talk, Symposium on Nanomaterials for Catalysis, the Nanotech 2014 Conference in Washington, DC, USA, June 18, **2014**
91. Symposium H2 in Honor of Andrzej Wieckowski, 225<sup>th</sup> Meeting of The Electrochemical Society in Orlando, Florida, May 12, **2014**.
90. Symposium of Molecular-like Metal Nanoparticles: New Opportunities for Energy and Healthcare technologies", the 247<sup>th</sup> ACS National Meeting in Dallas, Texas, March 19, **2014**.
89. Keynote talk @ Symposium 13 (PEFC), the 224<sup>th</sup> ECS Meeting, San Francisco, CA, November 30, **2013**.
88. TUM (Technical University of Munich) –CREATE, Singapore, July 2, **2013**.
87. Symposium H, Synthesis and Architecture of Nanomaterials, the 7<sup>th</sup> International Conference on Materials for Advanced Technologies (ICMAT2013), Singapore, July 1, **2013**.
86. Keynote Talk @ Symposium I3, Ethanol Oxidation, the 223<sup>rd</sup> ECS Annual Meeting in Toronto, Canada, May 13, **2013**.
85. Distinguished Invited Speaker, The 5th Triennial ISEAC International Conference on Advances and Recent Trends in Electrochemistry (ELAC2013), Ramoji Film City, India; January 16, **2013**.
84. Institute of Chemistry at Sao Carlos, University of Sao Paulo at Sao Carlos, Sao Carlos, SP, Brazil, November 9, **2012**.
83. Department of Chemistry, Federal University of Sao Carlos, Sao Carlos, SP, Brazil; November 9, **2012**.
82. The 2nd International Symposium on Electrocatalysis: New Concepts & Approaches; Hotel Salinas do Maragogi, Brazil; November 6, **2012**.
81. Keynote talk at the ISE 64th Annual Meeting Satellite Symposium: Spectroelectrochemistry 2012, Dresden, Germany, August 28, **2012**.
80. ACS 244th Annual Meeting, Symposium on Structure, Dynamics, and Reactivity at Charged Interfaces, Philadelphia, August 23, **2012**.
79. Department of Chemistry, Wuhan University, Wuhan, China, July 3, **2012**.
78. Department of Chemistry, Nanjing University, Nanjing, China, June 19, **2012**.
77. DOE-BES 2011 Catalysis Science Program Meeting "Frontiers in Catalysis at Interfaces and Condensed Media", Annapolis, October 5, **2011**.
76. Keynote talk at Symposium 13: Kinetics and Mechanisms of Electrode Reactions, the 62nd ISE Annual Meeting, Niigata, Japan September 16, **2011**.
75. The 7th Potter's Lodge Meeting on Electrochemistry, Minnowbrook Conference Center, Blue Mountain Lake, NY, September 10, **2011**
74. Department of Chemistry and State Key Lab of Physical Chemistry of Solid Surfaces, Xiamen University, Xiamen, China, June 1, **2011**.
73. Department of Mechanical and Materials Engineering, University of West Ontario, London, Canada, April 15, **2011**
72. Department of Chemistry, Temple University, Philadelphia, April 7, **2011**
71. Department of Chemistry, Texas A&M University, College Station, February 22, **2011**.
70. The 3rd Annual Workshop on Electrochemistry, Center for Electrochemistry, University of Texas, Austin, February, 20, **2011**
69. Department of Materials Science and Engineering, University of Maryland, College Park, MD, April 30, **2010**
68. The US Navy Research Lab, Washington, DC; March 10, **2010**

67. Graduate School, University of Leipzig, Leipzig, Germany, November 24 to 26, **2009**.
66. Annual Meeting of American Separation & Filtration Society, Ann Arbor, MI, October 8, **2009**
65. International symposium on nanoelectrochemistry and spectroelectrochemistry, Xiamen, China, August 25, 2009.
64. Annual Meeting of International Society of Electrochemistry, Beijing, China, August 16, 2009.
63. Laboratoire de Matériaux, Surfaces et Procédés pour la Catalyse, Université Louis Pasteur in Strasbourg, France, June 19, 2009.
62. l'Institut de recherches sur la catalyse et l'environnement de Lyon, France, June 10, 2009
61. Department of Physical Chemistry, Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands, June 11, 2009
60. Leiden Institute of Chemistry, University of Leiden, Leiden, Netherlands, June 12, 2009
59. Faculty of Physics and Earth Science, University of Leipzig, Leipzig, Germany, June 9, 2009
58. Laboratoire "Systèmes Interfaciaux à l'Echelle Nanométrique", Université Pierre et Marie Curie - Paris VI, Paris, France, June 3, 2009
57. Central Regional Meeting of ACS 2009, Symposium of Energy Storage and Energy Conversion: Electrocatalysis, Cleveland, Ohio, May 20, 2009
56. Department of Chemistry, George Washington University, DC, April 3, 2009
55. Division of Chemical and Biochemical Reference Data, National Institute of Standards and Technology, Gaithersburg, MD, February, 9, 2009
54. Department of Chemical and Biochemical Engineering, Seoul National University, Seoul, Korea, November 14, 2008.
53. The 6th Asian Forum on Carbon to Save the Earth/The 3rd International Carbon Festival, Jeonju, Korea, November 13, 2008.
52. The 3rd Asian Conference on Electrochemical Power Sources (ACEPS-3), Korean University, Seoul, Korea, November 10, 2008.
51. Department of Chemistry, Xiamen University, Xiamen, China, June 27, 2008.
50. Department of Chemistry, Fudan University, Shanghai, China, June 19, 2008.
49. Colloquium Spectroscopicum Internationale XXXV, Symposium 5: Spectroscopy for Nanomaterials, Xiamen, China, September 25, 2007
48. Department of Chemistry, Fudan University, Shanghai, China, September 28, 2007
47. ACS Annual Meeting, Symposium of Polyoxometalates and Related Clusters in Chemistry and Nanoscience, Boston, MA, August 22, 2007
46. Department of Chemistry, Bloomsburg University of Pennsylvania, Bloomsburg, PA, March 23, 2007
45. Department of Physics, Fudan University, Shanghai, China, January 5, 2007
44. Department of Chemistry, Xiamen University, Xiamen, China, January 2, 2007
43. Department of Chemistry, Fudan University, Shanghai, China, December 27, 2006
42. Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, VA, October 17, 2006
41. Department of Chemistry, Lehigh University, Bethlehem, PA, September 6, 2006
40. International Symposium on Surface Imaging/Spectroscopy at the Solid/Liquid Interface, May 31, Krakow, Poland
39. Department of Chemistry, Virginia Commonwealth University, Richmond, VA, May 2, 2006
38. Department of Chemistry and Biochemistry, University of Maryland, College Park, MD, April 14, 2006
37. Electrochemistry Gordon Research Conference, Santa Ynez Valley, Buellton, CA, February, 2006.
36. Pacifichem 2005 Congress, Symposium on Structures, Dynamics and Reactivity at the Electrochemical Interface, Honolulu, December 2005.
35. Pacifichem 2005 Congress, Symposium on Polyoxometalate Chemistry for Molecular Design and Nano-engineering, Honolulu, Hawaii, December 2005.
34. Department of Chemistry and Biochemistry, Miami University, Oxford, Ohio, June, 2005.
33. Electrochemical Society Annual Meeting, Symposium on Electrocatalysis, Quebec City, Canada, May, 2005.
32. Department of Chemistry, University of Wyoming, May, 2005.
31. Department of Materials Science, Nagoya Institute of Technology, Nagoya, Japan, November, 2004.

30. Department of Chemistry, the University of Tokyo, Tokyo, Japan, November, 2004.
29. International Symposium on Nanostructures and Physicochemical Properties of Polyoxometalate Supercusters and Related Colloid Particles, Shonan Village Center, Kanagawa, Japan, November, 2004.
28. Particles 2004, Orlando, FL, March, 2004.
27. Washington Area NMR Group Meeting, NIH, Bethesda, MD, December, 2003.
26. Department of Chemistry, Drew University, Madison, NJ, November, 2003.
25. Department of Chemistry, Fordham University, New York City, NY, October, 2003.
24. Electrochemical Society Annual Meeting, Orlando, FL, October, 2003.
23. American Chemical Society Annual Meeting, New Orleans, LA, March 2003.
22. Faraday Discussions 121, Berlin, Germany; April, 2002.
21. Department of Chemistry, George Washington University, Washington DC; February, 2002.
20. Department of Chemistry, Howard University, Washington DC; November, 2001.
19. Department of Physics, the Commonwealth University of Virginia, Richmond; February, 2001.
18. Department of Chemistry, Georgetown University, Washington DC; February, 2001.
17. Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC; December, 2000.
16. Department of Chemistry, North Carolina State University, Raleigh, NC; November, 2000.
15. Chevron Petroleum Technology Company; August, 2000.
14. Department of Chemistry, University of Missouri at Rolla, Rolla, Missouri; June, 2000.
13. Department of Chemistry, Michigan State University, East Lansing, MI; February, 2000.
12. Department of Chemistry, University of Pittsburgh, Pittsburgh, PA; December, 1999.
11. The 1999 Joint International Meeting of the Electrochemical Society and the Electrochemical Society of Japan, Honolulu, Hawaii, October, 1999.
10. Symposium on Theoretical Modeling of the Solid/Liquid Interface: Electronic Perspective and Comparison with Experiment; 218th ACS National Meeting, New Orleans, LA, August, 1999;
9. Department of Chemistry and Biochemistry, Utah State University, Logan, Utah; February, 1999.
8. Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC; January, 1999.
7. Workshop on NMR in Electronic Conductors, Mijoux, France, September, 1998.
6. Institut de Recherches sur la Catalyse, CNRS, April, 1996.
5. Ecole des Houches d'hiver (France), March, 1996.
4. Institut de Recherches sur la Catalyse, CNRS, Villeurbanne, France, July, 1995.
3. Institut de Physique Experimentale, EPFL, November, 1994.
2. Institut de Recherches sur la Catalyse (IRC), CNRS, Villeurbanne, France; December, 1994.
1. Institut de Physique Experimentale, EPFL, November, 1994.

#### **I.7. CONTRIBUTED PRESENTATIONS AT CONFERENCES (Presenters are underlined):**

118. Rongfeng Zheng (poster), YuYe J. Tong, "Atomically Precise Thiolate-Stabilized PtAu Nanoclusters: Synthesis, Characterization & Application", the 2020 American Chemical Society Virtual Annual Meeting, August 18, 2020
117. Safia Z. Jilani (poster), Carter P. Cohen, Esther E. Iyanobor, Daniel Zager, Rongfeng Zheng, Kaitlyn M. Frankenfield, and YuYe J. Tong, "Designing a one-pot synthesis of PtNiCu nanoparticles with size control by using glycine" the 2020 American Chemical Society Virtual Annual Meeting, August 17, 2020
116. Safia Z. Jilani (oral), Dejun Chen, Carter P. Cohen, and Dr. YuYe J. Tong, "Investigating the role of Ni and Cu in PtNiCu catalysts for the ethanol oxidation reaction using in-situ electrochemical surface enhanced infrared absorption spectroscopy (SEIRAS)", In Situ & Operando Spectroscopy Session of the Symposium of the Catalysis Division, the 258<sup>th</sup> American Chemical Society National Meeting, August 29, 2019, San Diego, CA.
115. Carter P. Cohen (oral), Safia Z. Jilani, and YuYe J. Tong, "Analysis of Synthesized PtNi, PtCo, and PtNiCo for the ethanol electrooxidation reaction", General Catalysis Session of the Symposium of the

- Catalysis Division, the 258<sup>th</sup> American Chemical Society National Meeting, August 29, 2019, San Diego, CA.
114. YuYe J. Tong (oral), Eric G. Sorte, De-Jun Chen, Hamed Ataee-Esfahani, “Novel Operando NMR and IR Methods for Studying Battery Chemistries”, Symposium 16 Spectroscopy, Microscopy and Theory for the Rational Design of Electrochemical Interfaces, the 70<sup>th</sup> Annual Meeting of the International Society of Electrochemistry, August 5, 2019, Durban, South Africa.
  113. Safia Jilani (oral), De-Jun Chen, Carter Cohen, YuYe J. Tong, “Investigation of the role of Ni and Cu in PtNiCu Catalysts for the Study of the Ethanol Oxidation Reaction”, Symposium 3 Fuel Cells, Bio-fuel Cells and Electrolyzers, the 70<sup>th</sup> Annual Meeting of the International Society of Electrochemistry, August 6, 2019, Durban, South Africa.
  112. Safia Jilani (oral), Esther Iyanobor, Daniel Zager, YuYe J. Tong, “Insights into the Effect of Metal Mole Ratio in PtNiCu Catalysts for the Study of the Ethanol Oxidation Reaction”, the 256<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 21, **2018**
  111. Eric Glenn Sorte (oral), YuYe Jay Tong, and Todd M Alam, “In Situ Battery Spectroscopy: A Novel Approach to Investigate Unmodified Working Batteries”, Symposium A01 – Battery and Energy Technology Joint General Session, the 233<sup>rd</sup> Electrochemical Society Meeting, May 15, 2018, Seattle, WA.
  110. De-Jun Chen (oral), Yanyan Wang, Thomas C. Allison and YuYe J. Tong, “Investigation on Sulfide Enhanced Oxygen Reduction Reaction Activity By in-Situ Electrochemical Infrared Spectroscopy”, Symposium Spectroelectrochemistry 4, the 232<sup>nd</sup> Electrochemical Society Meeting, National Harbour, MD, October 3, **2017**.
  109. Ryan Penhallurick (oral), Dejun Chen, YuYe J. Tong, “Novel Scanning Electrochemical Microscope Based Method for Studying Enzymatic Proton-Coupled Electron Transfer”, Symposium on Physical Chemistry, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 23, **2017**.
  108. Ryan Penhallurick (poster), Dejun Chen, YuYe J. Tong, “Novel Scanning Electrochemical Microscope Based Method for Studying Enzymatic Proton-Coupled Electron Transfer”, Symposium Sci-Mix, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 21, **2017**.
  107. Safia Jilani (oral), Daniel Zager, Esther Iyanobor, YuYe J. Tong, “Synthesis and Mechanistic Study of Pt-based Tri-metal Catalysts for the Ethanol Oxidation Reaction”, Symposium on Fuel Cells and Electrolyzers, the 68<sup>th</sup> Meeting of International Society of Electrochemistry, Providence, RI August 31, **2017**.
  106. Safia Jilani (oral), Daniel Zager, Esther Iyanobor, YuYe J. Tong, “Synthesis and Mechanistic Study of Pt-based Tri-metal Catalysts for the Ethanol Oxidation Reaction”, Symposium of the Division of Catalysis Science and Technology, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 22, **2017**.
  105. Safia Jilani (poster), Daniel Zager, Esther Iyanobor, YuYe J. Tong, “Synthesis and Mechanistic Study of Pt-based Tri-metal Catalysts for the Ethanol Oxidation Reaction”, Symposium Sci-Mix, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 22, **2017**.
  104. Thomas C. Allison (oral), YuYe J. Tong, “Computational Study of the Effect of Surface-Bound Disulfide on the Oxygen Reduction Reaction”, Symposium on Advances in Computational Catalysis-II, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 22, **2017**.
  103. YuYe J. Tong (oral), Dejun Chen<sup>1</sup> & Thomas C. Allison, “New Mechanistic Insights into Solution CO Electro-oxidation on Au Surface in Acidic vs Alkaline Electrolyte by Surface-Enhanced IR Spectroscopy”, Symposium 15 Physical Interfacial. Electrochemistry: Structural, Spectroscopic, & Theoretical Studies of the EC Interfaces, the 68<sup>th</sup> Meeting of International Society of Electrochemistry, Providence, RI, August 30, **2017**.
  102. Hamed Ataee-Esfahani (poster), Dejun Chen, YuYe J. Tong, “Electrocatalysis of Direct Methane Oxidation on Transition Metal Catalysts”, Symposium: S11 Synthesis and Applications of Electrochemically Active Materials, the 68<sup>th</sup> Meeting of International Society of Electrochemistry, Providence, RI August 29, **2017**.

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100. De-Jun Chen (oral), Hamed Ataee-Esfahani, YuYe J. Tong, “In-situ Electrochemical ATR-SEIRAS Investigation of the Solid-Electrolyte Interphase in a Lithium-ion Battery Configuration”. Symposium 05 Novel Materials and Devices for Energy Storage: Batteries for Tomorrow's World, the 68<sup>th</sup> Meeting of International Society of Electrochemistry, Providence, RI, August 29, **2017**.
99. De-Jun Chen (poster), Yanyan Wang, Thomas C. Allison and YuYe J. Tong, “Insights into sulfide-enhanced oxygen reduction reaction activity by in-situ electrochemical infrared spectroscopy and theoretical simulations”, Symposium PHYS Poster Session, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 23, **2017**.
98. Yanyan Wang (oral), Dejun Chen, Laura M. Woollst, YuYe J. Tong, “Iodine-stabilized PtCo C as Highly Stable and Active Electrocatalyst for Oxygen Reduction Reaction”, Symposium 06 Fuel Cells and Electrolyzers, the 68<sup>th</sup> Meeting of International Society of Electrochemistry, Providence, RI, August 28, **2017**.
97. Yanyan Wang (poster), Dejun Chen, YuYe J. Tong, “Mechanistic insight into sulfide-enhanced oxygen reduction reaction activity and stability of commercial Pt black: An in situ Raman spectroscopic study”, Symposium Sci-Mix, the 254<sup>th</sup> ACS Meeting, Washington, DC, August 21, **2017**.
96. Yanyan Wang (oral), Dejun Chen, YuYe J. Tong, “Mechanistic insight into sulfide-enhanced oxygen reduction reaction activity and stability of commercial Pt black: An in situ Raman spectroscopic study”, The 254<sup>th</sup> ACS Meeting, Symposium on Advanced Electrocatalysis for Energy Conversion & Storage, Washington, DC, August 21, **2017**.
95. De-Jun Chen (oral, EC Travel Grant Award for Young Electrochemist), YuYe J. Tong, “New Mechanistic Insights on Methanol and Formic Acid Electro-oxidation as Investigated by In-situ Surface Enhanced Infrared Adsorption Spectroscopy”, the S16 - Physical and Interfacial Electrochemistry: Progress in Spectroscopy, Imaging and Theoretical Analysis of the 67<sup>th</sup> Annual Meeting of the International Society of Electrochemistry, Hague, Netherlands, August 22, **2016**.
94. Eric G. Sorte, De-Jun Chen, YuYe J. Tong (oral), “New in situ Methods for Fuel Cells and Batteries: Dual-Electrode IR Spectroscopy and Stripline NMR spectroscopy”, the S16 - Physical and Interfacial Electrochemistry: Progress in Spectroscopy, Imaging and Theoretical Analysis of the 67<sup>th</sup> Annual Meeting of the International Society of Electrochemistry, Hague, Netherlands, August 23, **2016**.
93. Eric G. Sorte, De-Jun Chen, YuYe J. Tong (poster), “New Operando Methods for Fuel Cells and Batteries: Dual-Electrode IR Spectroscopy and Stripline NMR spectroscopy”, the 19<sup>th</sup> Topical Meeting of the International Society of Electrochemistry in Auckland, New Zealand, April 18, **2016**
92. De-Jun Chen, YuYe J. Tong (oral), “New Insights into Electrocatalysis of Methanol and Formic Acid Oxidation: from the Anodic vs Cathodic Peak Current Ratio Criterion to the Bifunctional Mechanism and to the Debate on the Intermediate”, the 19<sup>th</sup> Topical Meeting of the International Society of Electrochemistry in Auckland, New Zealand, April 20, **2016**.
91. YuYe J. Tong (oral), “Irrelevance of CO Poisoning of Pt in Methanol and Formic Acid Oxidation on PtRu Surfaces”, the Symposium on *Molecular Perspectives on Interfacial Electrochemistry and Electrocatalysis*, Pacificchem 2015, Honolulu, HI, December 19, **2015**.
90. Yanyan Wang, YuYe J. Tong (oral), “Unexpected Good Deed of a Traditional Poison: Sulfur-Adsorption Enhanced Activity and Stability of Pt for Oxygen Reduction Reaction”, the Symposium on *Electrocatalytic Materials* at the 66<sup>th</sup> Annual ISE Meeting, Taipei, Taiwan, Monday, October 4, **2015**.
89. Long Huang, Eric G. Sorte, Shi-Gang Sun, YuYe J. Tong (oral), “In-situ <sup>13</sup>C NMR spectroscopy study of ethanol electro-oxidation on Pt and PtRu”, the Symposium on Novel *in Situ* in Operando Methods at the 66<sup>th</sup> Annual ISE Meeting, Taipei, Taiwan, Monday, October 4, **2015**.
88. Eric G. Sorte, YuYe J. Tong (Oral), “Innovations in In situ Electrochemical Nuclear Magnetic Resonance”, the Symposium on Novel *in Situ* in Operando Methods at the 66<sup>th</sup> Annual ISE Meeting, Taipei,

Taiwan, Monday, October 4, **2015**.

87. Laura Woolls, Yanyan Wang, YuYe J. Tong (Poster), “Increasing Catalyst Stability and Activity While Reducing Cost with PtCo Nanoparticles”, the Symposium for Undergraduate Research at Georgetown; April 16, **2015**.
86. Yangwei Liu and YuYe J. Tong (Poster), “Synthesis of Highly Monodispersed Alkanethiolate-Protected Silver Nanoparticles by Modified Aging Process”, the Faraday Discussions on Nanoparticles Synthesis and Assembly, Argonne National Laboratory, Chicago; April 21, **2015**.
85. Honghui Wang, De-jun Chen, Yanyan Wang, Shi-Gang Sun, and YuYe J. Tong (poster) “Highly Active and Stable Iodide-Modified PtCu and PtNi Alloy Nanoparticles for ORR”, the Symposium S04 - Electrochemical Energy Conversion and Storage: Fuel Cells and Electrolysts, the 65th Annual Meeting of the International Society of Electrochemistry, Lausaane, Switzerland, September 1, **2014**.
84. DeJun Chen, Dianne O. Atienza, Thomas C. Allison, and YuYe J. Tong (Oral), “In situ SEIRAS Investigation of MOR on PtRu and FAOR on PtPb at Low Electrode Potential: a Re-visit of CO Poisoning and Bi-functional Mechanism”, the Symposium S13 - Synergizing Theory and Experiment in Electrochemistry: State-of-the Art Developments, the 65th Annual Meeting of the International Society of Electrochemistry, Lausaane, Switzerland, September 4, **2014**.
83. Yangwei Liu (oral), YuYe J. Tong, "Controlling size and homogeneity of thiolate-protected sub-5nm silver nanoparticles by modified digestive ripening process", the 88th ACS Colloid and Surface Science Symposium, Philadelphia, PA, June 25, **2014**
82. DeJun Chen (oral), Yangwei Liu, YuYe J. Tong, "Organic-Stabilizer-Free Synthesis of Shape-Controlled Platinum Nanocrystals by Interfacial Galvanic Exchange Reactions", the 88th ACS Colloid and Surface Science Symposium, Philadelphia, PA, June 25, **2014**.
81. Yanyan Wang (oral) YuYe J. Tong, "Activity Enhancement of Oxygen Reduction Reaction by Sub-monolayer Sulfide Adsorption on Pt nanoparticles", the 88th ACS Colloid and Surface Science Symposium, Philadelphia, PA, June 23, **2014**.
80. Dianne O. Atienza, DeJun Chen, Thomas C. Allison, and YuYe J. Tong (oral), “In situ SEIRAS Investigation of Methanol Oxidation Reaction on PtRu Alloy and Ru@Pt Core-Shell NPs: New Insights on an Old Story”, the 15<sup>th</sup> Topical Meeting of the International Society of Electrochemistry, Niagra Falls, Canada, April 29, **2014**
79. Yuan Gao, Ying Li, Oksana Zaluzhna, YuYe J. Tong (poster), “An Ethanol-Based Brust-Schiffrin Synthesis of Au Nanoparticles: a Study of EtOH/TOAB/Benzene Inverse Micelle System”, the 2013 International Symposium on Monolayer-Protected Clusters (ISMPC13) in Pingree Park, Colorado, August 2, **2013**.
78. Yangwei Liu, YuYe J. Tong (poster), “Mechanistic Study on the Growth of Chalcogenolate-Protected Ag Nanoparticles during Purification”, the 2013 International Symposium on Monolayer-Protected Clusters (ISMPC13) in Pingree Park, Colorado, August 2, **2013**.
77. Augusta M. Hofstead-Duffy (oral), Christopher L. Rom, Dejun Chen, Honghui Wang and YuYe J. Tong, "Making use of surfactants as stabilizers and unconventional promoters in electrocatalysis", Zing Conference in Electrochemistry, Lanzarote, Spain, February, 27, **2013**.
76. Dianne Atienza (oral), De-Jun Chen, Thomas Allison, Shi-Gang Sun, YuYe J. Tong, "Insights on Oxygen Reduction Reaction on Pt Polycrystalline Surface as Seen by in situ Surface Enhanced IR Absorption Spectroscopy", Zing Conference on Electrochemistry, Lanzarote, Spain, February, 25, **2013**.
75. Augusta M. Hofstead-Duffy (poster), Dejun Chen, YuYe J. Tong, “Fundamental Behavior of Poly(vinylpyrrolidone) – In situ ATR-SEIRAS Investigation with Pt-based Electrocatalysts”, Symposium 13: Physical Electrochemistry: from Fundamentals to Smart Materials and New Catalysts, the 63rd Annual Meeting of the International Electrochemical Society, Prague, Czech Republic, August 21, **2012**.
74. De-Jun Chen (oral), Shi-Gang Sun and YuYe J. Tong, “Dissolved CO electro-oxidation on Au investigated by ATR-SEIRAS”, the Symposium on Energy and Fuels, the 244<sup>th</sup> National ACS Meeting,



- Philadelphia, PA, August 22, **2012**.
73. Yangwei Liu (oral), Oksana Zaluzhna, Ying Li, YuYe J. Tong, "Effect of Precipitation Solvents on Size, Homogeneity and Yield in the Two-Phase Brust-Schiffrin Synthesis of Octanethiolate-Protected Silver Nanoparticles", the Symposium on Basic Research in Colloids, Surfactants, and Nanomaterials, the 244<sup>th</sup> National ACS Meeting, Philadelphia, PA, August 23, **2012**.
  72. Yuan Gao (oral), Ying Li, Oksana Zaluzhna, YuYe J. Tong, "On Using Ethanol Solution of Au[III] Salt in the Brust-Schiffrin Synthesis of Thiolate-Protected Gold NPs", the Symposium on Basic Research in Colloids, Surfactants, and Nanomaterials, the 244<sup>th</sup> National ACS Meeting, Philadelphia, PA, August 22, **2012**.
  71. Thomas C. Allison (poster), YuYe J. Tong, "Evaluation of Methods to Predict Reactivity of Gold Nanoparticles", 152 Faraday Discussions, Cardiff University, UK, July, **2011**.
  70. Bolian Xu (oral), In-Su Park, Ying Li, Dejun Chen, Thomas C. Allison, and YuYe J. Tong, "In situ Surface-Enhanced Raman Scattering Spectroscopic Study of Sulfur Adsorption on Polycrystalline Platinum Electrode Surface", Symposium of Nanostructures for Energy Conversion, the 219<sup>th</sup> ECS Annual Meeting, Montreal, Canada, May, 3, **2011**.
  69. Dejun Chen (oral), T. C. Allison, Shi-Gang Sun, Y. Y. J. Tong, "Concerted proton-electron transfer reaction for ORR on Au in acid solution: An ATR-SEIRAS investigation", the 241<sup>st</sup> ACS National Meeting, Anaheim, CA Symposium of Spectroscopic Techniques to Elucidate Reaction Mechanisms, March 30, **2011**.
  68. O. Zaluzhna (oral), Y. Li, C. Zangmeister, Y. Y. J. Tong, "Characterization and interface study of the alkaneselenolate-protected gold nanoparticles synthesized from the organic selenocyanates", Symposium of Nanoscience, the 241<sup>st</sup> ACS National Meeting, Anaheim, CA; March 31, **2011**.
  67. Y. Li (oral), O. Zaluzhna, B. Xu, J. M. Jacob, Y. Gao, T. C. Allison, Y. Y. J. Tong, "Insight into the mechanism of Brust-Schiffrin method for metal nanoparticle synthesis", Symposium of Chemistry of Materials, the 241<sup>st</sup> ACS National Meeting, Anaheim, CA; March 31, **2011**.
  66. In-Su Park (oral), Bolian Xu, Dianne O. Atienza, Augusta M. Hofstead-Duffy, De-Jun Chen, Thomas C. Allison, YuYe J. Tong (winner of the *Electrochimica Acta* Travel Award for Young Electrochemists), in Symposium 4, the 61<sup>st</sup> ISE Annual Meeting, Nice, France, September 28, **2010**.
  65. Dianne O. Atienza (oral), In-Su Park, Bingchen Du, YuYe J. Tong, "<sup>195</sup>Pt & <sup>13</sup>C NMR Investigation of Ru@Pt & Au@Pt Core-Shell NPs", in Symposium 10, the 61<sup>st</sup> ISE Annual Meeting, Nice, France, September 28, **2010**.
  64. Augusta M. Hofstead-Duffy (poster), De-Jun Chen, Ceren Susust, YuYe J. Tong, "An in situ Surface-Enhanced IR Investigation of Poly(vinylpyrrolidone) on Pt Nanoparticles", in Symposium 10, the 61<sup>st</sup> ISE Annual Meeting, Nice, France, September 28, **2010**.
  63. Dejun Chen (poster) Augusta M. Hofstead-Duffy, In-Su Park, Dianna, O. Atienza, Ceren, Susut, Shi-Gang Sun, YuYe J. Tong, "In Situ ATR-SEIRAS Investigation of Adsorbed CO Oxidation and Methanol Oxidation on M@Pt(M= Ru, Au)", in Symposium 10, the 61<sup>st</sup> ISE Annual Meeting, Nice, France, September 28, **2010**.
  62. In-Su Park (oral), Dianne O. Atienza, Augusta Hofstead-Duffy, YuYe J. Tong, "Effect of Adsorbed Sulfur (S) on Electrocatalytic Behavior of Pt-based Nanoparticles", the ACS 84<sup>th</sup> Surface Science and Colloid Symposium, Akron, OH, June 22, **2010**.
  61. Oksana Zaluzhna (oral) Ying Li, Chris Zangmeister, YuYe J. Tong, "Synthesis and chain length effect on sizes of alkaneselenolate-protected gold nanoparticles", the ACS 84<sup>th</sup> Surface Science and Colloid Symposium, Akron, OH, June 22, **2010**.
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- YuYe J. Tong, “ATR-FTIR spectroscopy investigation for CO electro-oxidation reaction on core-shell M@Pt (M=Ru, Au) nanoparticles”, the ACS 84<sup>th</sup> Surface Science and Colloid Symposium, Akron, OH, June 22, **2010**
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  57. Bingchen Du (oral), Steven M. Ryckbosch, Dianne O. Atienza, YuYe Tong, “An Investigation of Sulfur Poisoning and Potential Remedies of Pt-Based Electrocatalysts”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 19, **2009**.
  56. Augusta M. Hofstead-Duffy (oral), Ceren Susut, and YuYe Tong (oral), “Synthesis and Characterization of Metal-Oxides@Pt Nanoparticles”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 18, **2009**.
  55. Ying Li (oral), Oksana Zaluzhna, Chris Zangmeister, YuYe Tong, “Langmuir Thin Films of Alkyl Chain-Protected Gold Nanoparticles Anchored with a New Chalcogen Element (Se or Te)”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 17, **2009**.
  54. Thomas Hsu-Yao (oral), Kevin P. Browne, Nicole Honesty, and YuYe Tong, “Enhanced Oxygen Electro-Reduction Reaction on Polyoxometalate Stabilized Pt Nanoparticles”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 16, **2009**.
  53. Oksana Zaluzhna (oral) Ying Li, Chris Zangmeister, YuYe Tong, “Attachment Chemistry between Gold Nanoparticles and Chalcogen-Containing Alkyl Ligands”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 20, **2009**.
  52. Dianne O. Atienza (oral), Bingchen Du, Steven M. Ryckbosch, Savelas Rabb, YuYe Tong (oral), “Electrochemical <sup>195</sup>Pt NMR Investigation of Ru@Pt and Au@Pt Core-Shell Nanoparticles”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 16, **2009**.
  51. Ceren Susut (oral) and YuYe Tong, “Capping Polymer Induced Enhancements in the Electrocatalytic Activity of Pt Nanoparticles”, the 238<sup>th</sup> ACS National Meeting, Washington, D.C., August 19, **2009**.
  50. Badri Shyam (oral), David Ramaker, Ceren Susut, YuYe Tong, “Probing the Influence of Polyvinyl Pyrrolidone (PVP) on Platinum Electrocatalysts Using In Situ X-Ray Absorption Spectroscopy”, the 216<sup>th</sup> ECS Meeting, Vienna, Austria, June 23, **2009**
  49. Badri Shyam (oral), Ceren Susut, Thomas Arruda, Sanjeev Mukerjee, YuYe Tong, David Ramaker, “In situ XAS Studies on PVP Stabilized and Specifically Shaped Pt Nanoparticles in 1M HClO<sub>4</sub>”, the 214<sup>th</sup> ECS Meeting - Honolulu, HI, October 15, **2008**.
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  47. Ceren Susut (poster), Bingchen Du, YuYe Tong, “Tuning the Activity of Pt-Based Electrocatalysts by Shape Control and by Surface Decoration”, Faraday Discussions 140, July 7 – 9, **2008**, Southampton, UK.
  46. YuYe Tong (oral), “*In situ* Spatially-Resolved <sup>195</sup>Pt NMR of Pt-Based Bimetallic Nanoparticles”, Electrochemistry Gordon Research Conference, Ventura, CA, January 8, **2008**.
  45. Georgeta C. Lica, Kevin P. Browne, YuYe Tong (oral), “A SERS Investigation of Polyoxometalate (POM)-Protected Ag Nanoparticles”, Colloquium Spectroscopicum Internationale XXXV, Xiamen, China, September 27, **2007**
  44. Kevin P. Browne (oral) Nicole R. Honesty, YuYe Tong, “Synthesis and Electrochemical Characterization of Polyoxometalated-Protected Pt Nanoparticles”, at the ECS 212<sup>th</sup> Annual Meeting, Washington, DC, October, **2007**.

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42. Bingchen Du (oral), Paul C. Kenyan, P. J. Lukac, Jennifer Landon, YuYe Tong, "A Coverage-Dependent Electrochemical Study of Pt-Coated Au Nanoparticles", at the ECS 212<sup>th</sup> Annual Meeting, Washington, DC, October, **2007**.
41. Ira A. Weinstock (poster), Ofir Snir, YuYe Tong, "Electron Transfer Reactions of Soluble Metal Nanoparticles: Kinetic Interrogation by Polyoxometalate Cluster Anions", at the 234<sup>th</sup> ACS Annual Meeting, Boston, August **2007**.
40. Ceren Susut (poster), Thuy D. Nguyen, George Chapman, YuYe Tong, "Stability Studies of Pt Nanoparticles with Tunable Shape and Size", International Conference on Electrified Interfaces 2007, Sakhoro, Hokkaido, Japan, June 24 -29, **2007**.
39. Bingchen Du, YuYe Tong (oral), "A Coverage-Dependent Study of Methanol Electro-oxidation on Pt-covered Ru Nanoparticles", at the 210<sup>th</sup> ECS Annual Meeting, Chicago, IL, May, **2006**.
38. Ceren Susut, Thuy Nguyen, George Chapman, Y. Y. Tong (oral), "An Investigation of Electrocatalytic Activities and Stability of Pt Nanoparticles of Different Size and Shape", at the 232<sup>nd</sup> ACS National Meeting, San Francisco, CA, September, **2006**
37. Georgeta C. Lica (poster), Y. Y. Tong, "Tunable Charge-Transfer Properties Across Thin-Layers of Au Nanoparticles", at the 231<sup>st</sup> ACS National Meeting, Atlanta, GA, March **2006**
36. Ying Li (poster), M. L. Deacon, Y. Y. Tong, "An Investigation of Alkaneselenol- and Alkanetellurol-Protected Gold Nanoparticles: Syntheses and Characterizations", the Electrochemistry Gordon Research Conference, Santa Ynez Valley, Buellton, CA, February, **2006**
35. B. Du (poster), C. Susut, Y. Y. Tong, "Tuning the Activity of Pt Electrocatalysts by Alloying and Shape Control", at the *230<sup>th</sup> Annual Meeting of the American Chemical Society*, Washington, DC, USA; Aug. **2005**.
34. Y. Li (poster), M. L. Deacon, B. S. Zelakiewicz, Y. Y. Tong, "Coupling Electrochemical Coulomb Blockade with Nuclear Magnetic Resonance: Mapping out the Electronic Properties of Alkanechalcogenol SAM–Noble Metal Interfaces in Monolayer-Protected Nanoparticles", at the *230<sup>th</sup> Annual Meeting of the American Chemical Society*, Washington, DC, USA; Aug. **2005**.
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30. B. S. Zelakiewicz (poster), G. C. Lica, and Y. Y. Tong, "<sup>13</sup>C NMR and Infrared Evidence of a Dioctyl-Disulfide Structure on Octanethiol-Protected Pd Nanoparticle Surfaces", at the Rocky Mountain Conference, Denver, CO, USA; Aug. **2004**.
29. B. S. Zelakiewicz and Y. Y. Tong (poster), "Metallic <sup>77</sup>Se and Local Quantum Size Effect as Seen by <sup>77</sup>Se and <sup>195</sup>Pt NMR in Alkanechalcogenol-Protected Metal Nanoparticles", at the *Rocky Mountain Conference*, Denver, CO, USA; Aug. **2004**.
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10. Y. Y. Tong (poster), "Nuclear Spin-Echo Fourier-Transform Mapping Spectroscopy and its Application to Paramagnetic Catalysts of Transition Metal Oxides", at *the 13<sup>th</sup> European Experimental NMR Conference*, Paris, France; May 19 - 24, **1996**.
9. N. Essayem (poster), Y. Y. Tong, G. Coudurier, and J. C. Védrine, " $^1H$  and  $^{31}P$  MAS NMR Studies of the Dehydration Effects on the Acidity of Tungsten Based Heteropolyanion Catalysts", at *the 28<sup>th</sup> Congress Ampere*, University of Kent, Canterbury, England; Sept. 1 - 7, **1996**.
8. Y. Y. Tong (oral), A. J. Renouprez, G. A. Martin, and J. J. van der Klink (oral)  
"Electron Availability and the Surface Fermi Level Local Density of States: an Alternative Way to See Catalytic Activity of Metal Surface", at *the 11<sup>th</sup> International Congress on Catalysis*, Baltimore, MA, USA; June 30 - July 5, **1996**.
7. Y. Y. Tong, J. J. Bercier, and J. J. van der Klink (poster), "Loss of Metallic Character in Zeolite-Encaged Platinum Particles at Low Temperatures", at *the International Symposium on the Science and Technology of Atomically Engineered Materials*, Richmond, VA, USA; Oct. 30 - Nov. 4, **1995**.
6. Tetsu Yonezawa (poster), Y. Y. Tong, J. J. van der Klink, M. Grätzel, and N. Toshima, "Pt NMR Investigation of Polymer-Protected Pt Monometallic and Pd/Pt Bimetallic Clusters", at *the 67<sup>th</sup> Spring Meeting of Chemical Society of Japan*, Tokyo, Japan; March **1994**.
5. Y. Y. Tong (oral), D. Laub, and J. J. van der Klink, "Electronic Properties of Zeolite-X and -Y matrix-Encaged Ultrafine Platinum Particles as Seen by  $^{195}Pt$  NMR", at *the 7<sup>th</sup> International Symposium on Small Particles and Inorganic Clusters*, Kobe, Japan, 16, Sept., **1994**.
4. Y. Y. Tong (poster) and J. J. van der Klink, "Strong Metal-Zeolite Matrix Interaction and Size Effect as Seen by  $^{195}Pt$  NMR", at *the 11<sup>th</sup> Specialized Colloque Ampère on Magnetic Resonance in Homogenous and Heterogeneous Catalysis*, Menton, France; Sept. 6-10, **1993**.
3. Y. Y. Tong (poster), A. J. Renouprez, and J. J. van der Klink, "An NMR Study of Ultrafine Platinum Particles Encaged in Zeolite", at *the 6<sup>th</sup> International Symposium on Magnetic Resonance in Colloid and Interface Science*; Firenze, Italy; June, **1992**.
2. J.-J. Bercier, J.-P. Bucher, Y.Y. Tong and J. J. van der Klink (oral), "Paramagnetism of Small Metal Particles Studies by NMR", at *the XXV<sup>th</sup> Congress Ampère on Magnetic Resonance and Related Phenomena*; Stuttgart, West Germany, Sept. 9-14, **1990**.
1. W.-W Dai, Y. Y. Tong (oral), L. Fei and P. Lu, "The Influence of VTES on the Hydration Process of  $C_3S$ ", at *the 2nd International Symposium on Cement & Concrete*, Beijing, China, **1989**.

## I.8 FUNDING TRACK RECORD

### I.8.1 Current Extramural Grants (PI otherwise indicated)

#### 1. DOE-BES Catalysis Program:

DE-SC0021218, "Exploring Electrocatalysis of Methane on Transition Metal Surface"  
\$550,000; 09/01/20–08/31/24

### 1.8.2 Expired Extramural Grants (PI otherwise indicated)

#### 19. Army Research Office (ARO)-Chemical Science Program:

66191-CH, "Parsing the New Chemistry of Methanol and Formic Acid Oxidation Reactions on Pt-based Electrocatalysts by in situ Spectroelectrochemistry and Density Functional Theory"  
\$449,776; 05/01/15–04/30/19

**18. NSF-the Macromolecular, Supramolecular and Nanochemistry (MSN) Program:**

CHE-1413429, "On Heavier Chalcogen (Se and Te) Interfacial Chemistry and Charge Transfer in Monolayer-Protected Metal Nanoparticles"

\$490,000; 08/15/14–08/14/18.

**17. NSF-MRI Program:**

CHE-1429079, "MRI: Acquisition of an Integrated Raman Microscopy Instrument" (co-PI)

\$196,444; 07/15/14–07/14/17

**15. DOE-BES Catalysis Program:**

DE-FG02-07ER15895, "Exploring Electrocatalysis of Methane on Transition Metal Surface"

\$340,000; 08/15/16–08/14/19

**14. NSF of China-Oversea Foundation:**

In Situ NMR and IR Investigation of Single Crystal Ensemble Electrocatalysis.

RMB 2,000,000; 01/01/13-12/31/16

**13. DOE-BES Catalysis Program:**

DE-FG02-07ER15895, "In Situ NMR/IR/Raman and ab initial DFT Investigations of Unconventional Promoters of Catalytic Activity on Pt-Based Electrocatalysts: from Sulfur to Polymers to Iodine"

\$510,000; 08/15/13–08/14/16

**12. NSF of China-Oversea Foundation:**

In Situ NMR and IR Investigation of Single Crystal Ensemble Electrocatalysis.

RMB 400,000; 01/01/10-12/31/12

**10. NSF-International:**

In Situ Ultra Fast Time-Resolved Infrared Spectroscopic Study on Shape Controlled Pt Nanoparticles.

\$15,000; 04/01/2011-03/30/2013

**9. NSF-ECCS MRI:**

Acquisition of an Atomic Layer Deposition (ALD) System (co-PI).

\$221,900; 10/2010-09/2013

**7. DOE-BES Catalysis Program:**

In Situ NMR/IR/Raman and ab initial DFT Investigations of Pt-Based Mono- and Bi-metallic Nanoscale Electrocatalysts: from Sulfur-Poisoning to Polymer Promoters to Surface Activity Indexes.

\$510,000; 08/15/10–08/14/13

**6. NSF-CHE ICC:**

Nanoscale Single-Crystal Ensemble Electrocatalysis for Fuel Cell Applications.

\$450,000; 09/01/09-08/31/12

**5. DOE-PNNL-EMSL:**

ab initio Quantum Calculations of <sup>195</sup>Pt Knight Shifts in Pt-based Bimetallic Nanoparticles.

132k node-hours on supercomputer Chinook, 10/01/09 - 09/30/10; 120k node-hours on supercomputer Chinook, 10/01/10 - 09/30/11

150k node-hours on supercomputer Chinook, 10/01/11 - 09/30/12

**4. DOE-PNNL-EMSL:**

Combined Experimental and Theoretical Investigations of Nanoscale Structure-Activity Relationships for Fuel Cell Applications (co-PI).

120k node-hours on supercomputer Chinook, 10/01/11 - 09/30/12

150k node-hours on supercomputer Chinook, 10/01/12 - 09/30/13

### **3. DOE-Hydrogen Fuel Initiative:**

An in situ Electrode-Potential-Controlled Nuclear Magnetic Resonance Investigation of Sulfur-Poisoning Effect on Platinum Based Mono- and Bi-metallic Nanoscale Electrocatalysts.

\$450,000; 09/01/07–08/31/10

### **12. NSF-CHE:**

An Electrochemical NMR Investigation of Ligand-Protected Metal Quantum Dots; Metal-Ligand Interactions and Ramifications in Molecular Electronics.

\$405,000, 07/01/2005–06/30/2009.

### **1. PRF G type:**

Surface Electrochemical NMR and Infrared Spectroscopic Investigation of Catalytic Properties at Real-World Bimetallic Surfaces.

\$35,000, 07/01/2002–06/30/2004.

### **I.8.3 Intramural Grants**

#### **Georgetown Environment Initiative grant:**

Towards Submission of an IGERT Proposal Georgetown Focusing on Chemical Catalysis for Energy, Environment, and Sustainability

\$25,000; 2013

#### **Georgetown Infrastructural grant:**

Acquisition of an Urgently Needed ICP-MS (Inductive Coupled Plasma-Mass Spectrometer) for Further Empowering the (Trace) Elemental Analysis Capability at Georgetown

\$45,000; 2012

#### **Provost Conference Grant:**

\$12,500 for the 11<sup>th</sup> Spring Meeting of the International Society of Electrochemistry at Georgetown University, Washington DC, USA, May 2012.

#### **Georgetown Conference Grant for the 2<sup>nd</sup> Georgetown-Fudan Symposium at Georgetown**

\$4,500; 2009

#### **Georgetown Infrastructural grant:**

Acquisition of an Urgently Needed EDS (Energy Dispersive X-Ray Spectrometer) for Further Empowering the Nanoscale Research Capability at Georgetown

\$40,000; 2009

#### **Georgetown Senior Faculty Research Fellowship:**

\$15,000; Spring 2008.

#### **Georgetown Conference Grant for the 1<sup>st</sup> Georgetown-Fudan Symposium at Fudan University**

\$20,000; 2008

#### **Georgetown Undergraduate Learning Initiative Faculty Innovation Grant:**

Enhancing Active Learning in Analytical Chemistry (Chem 211) by Combining Student-Centered and Research-Based POGIL and Case Study Approaches:

\$25,000; academic years 06/07 and 07/08

**Georgetown International Initiative Collaboration Grant**

\$5,000; 2005

**Georgetown Junior Faculty Research Fellowship:**

\$15,000; Spring 2005.

**Georgetown International Initiative Collaboration Grant**

\$5,000; 2002

**Georgetown Infrastructural grant:**

Upgrade Chemistry Departmental Bruker AM300 NMR Spectrometer

\$35,000; 2002

**Georgetown Start-up fund:**

\$340,000; 07/01/2001–06/30/2006.

**Georgetown Pilot Research Project Grant:**

\$10,000, 2002/2003; \$10,000, 2004/2005.

**Georgetown Summer Research Grant:**

\$8,000, 2002; \$8,500, 2003; \$9,000, 2004; \$9000, 2005.

**Georgetown International Initiatives Collaborative Research Grant:**

\$3,000, 2002; \$5,000, 2005.

**Georgetown Grant-in-Aid:**

\$1,500, Fall 2001; \$1,500, Spring 2002; \$2,000, Fall 2002; \$2,000, Fall 2003; \$2000, Spring 2004; \$2000, Fall 2004; \$2,000, Spring 2005; \$2,000, Fall 2005; \$2,000, Spring 2006; \$2,000, Fall 2006; \$2000, Fall 2008; \$2000, Fall 2009; \$2000, Spring, 2011