

Publication List 張煥宗 (Huan-Tsung Chang)

Papers:

1. Wu, C.-W.; Unnikrishnan, B.; Chen, I.-W. P.; Harroun, S. G.; Chang, H.-T.*; Hung, C.-C.* “Excellent Oxidation Resistive MXene Aqueous Ink for Micro-supercapacitor Application” *Energy Storage Mater.* **2019**. (just accepted)
2. Wei, S.-C.; Chang, L.; Huang, C.-C.*; Chang, H.-T.* “Dual-functional Gold Nanoparticles with Antimicrobial and Proangiogenic Activities Improve the Healing of Multidrug-Resistant Bacteria-Infected Wounds in Diabetic Mice” *Biomater. Sci.* **2019**. (just accepted)
3. Wei, S.-C.; Lin, Y.-W.*; Chang, H.-T.* “Carbon Dots as Artificial Peroxidases for Analytical Applications” *J. Anal. Test.* **2019**. (just accepted).
4. Daengmankhong, J.; Ross, S.; Mahasaranon, S.; Chang, H.-T.; Ross, G. M.* “Effect of Precursor Structure on Unibody Core-Shell Properties and the in-vitro Study of a Dual Anti-drug/Drug System” *Mater. Today: Proc.* **2019**, *17*, 1964–1970.
5. Yen, Y.-T.; Lin, Y.-S.; Chen, T.-Y.; Chyueh, S.-C.; Chang, H.-T.* “Carbon Dots Functionalized Papers for High-Throughput Sensing of 4-Chloroethcathinone and Its Analogues in Crime Sites” *R. Soc. Open sci.* **2019**, *6*, 191017.
6. You, Y.-H.; Lin, Y.-F.; Nirosha, B.; Chang, H.-T.; Huang, Y.-F.* “Polydopamine-Coated Gold Nanostar for Combined Antitumor and Antiangiogenic Therapy in Multidrug-Resistant Breast Cancer” *Nanotheranostics* **2019**, *3*, 266–283.
7. Yen, Y.-T.*; Chen, T.-Y.; Chen, C.-Y.; Chang, C.-L.; Chyueh, S.-C.; Chang, H.-T. “A Photoluminescent Colorimetric Probe of Bovine Serum Albumin-Stabilized Gold Nanoclusters for New Psychoactive Substances: Cathinone Drugs in Seized Street Samples” *Sensors* **2019**, *19*, 3554.
8. Lien, C.-W.; Yu, P.-H.; Chang, H.-T.; Hsu, P.-H.; Wu, T.; Lin, Y.-W.*; Huang, C.-C.; Lai, J.-Y.** “DNA Engineered Copper Oxide-Based Nanocomposites with Multiple Enzyme-Like Activities for Specific Detection of Mercury Species in Environmental and Biological Samples” *Anal. Chim. Acta* **2019**, *1084*, 106–115.
9. Xu, D.; Lin, Q.*; Chang, H.-T.* “Recent Advances and Sensing Applications of Carbon Dots” *Small Methods* **2019**, 1900387.
10. Lin, Y.-S.; Lin, Y.; Periasamy, A. P.; Cang, J.; Chang, H.-T.*; “Parameters Affecting Synthesis of Carbon Dots for Quantitation Copper Ions” *Nanoscale adv.* **2019**, *1*, 2553–2561.
11. Periasamy, A. P.; Sriram, P.; Chen, Y.-W.; Wu, C.-W.; Yen, T.-J.; Chang, H.-T.*; “Porous Aluminum Electrodes with 3D Channels and Zig-Zag Edges for Efficient Hydrogen Evolution” *Chem. Commun.* **2019**, *55*, 5447–5450.

12. Xu, D.; Lin, Q.*; Chang, H.-T.* “Chiral Ag and Au Nanomaterials Based Optical Approaches for Analytical Applications” *Part. Part. Syst. Charact.* **2019**, 1800552.
13. Li, Y.-J.; Luo, L.-J.; Harroun, S. G.; Wei, S.-C.; Unnikrishnan, B.; Chang, H.-T.; Huang, Y.-F.; Lai, J.-Y.; Huang, C.-C.* “Synergistically Dual-Functional Nano Eye-Drops for Simultaneously Anti-Inflammatory and Anti-Oxidative Treatment of Dry Eye Disease” *Nanoscale* **2019**, *11*, 5580–5594.
14. Šišulins, A.; Bucevičius, J.; Tseng, Y.-T.; Novosjolova, I.; Traskovskis, K.; Bizdēna, Ē.; Chang, H.-T.; Tumkevičius, S.; Turks M.* “Synthesis and Fluorescent Properties of N(9)-Alkylated 2-Amino-6-Triazolylpurines and 7-Deazapurines” *Beilstein J. Org. Chem.* **2019**, *15*, 474–489.
15. Wu, W.-C.; Chen, H.-Y. T.; Lin, S.-C.; Chen, H.-Y.; Chen, F.-R.; Chang, H.-T.*; Tseng, F.-G.* “Nitrogen-Doped Carbon Nanodots Prepared from Polyethylenimine for Fluorometric Determination of Salivary Uric Acid” *Microchim. Acta* **2019**, *186*, 166.
16. Wu, C.-W.; Unnikrishnan, B.; Tseng, Y.-T.; Wei, S.-C.; Chang, H.-T.*; Huang, C.-C.* “Mesoporous Manganese Oxide/Manganese Ferrite Nanopopcorns with Dual Enzyme Mimic Activities: A Cascade Reaction for Selective Detection of Ketoses” *J. Colloid Interf. Sci.* **2019**, *541*, 75–85.
17. Yen, Y.-T.; Chen, T.-Y.; Lai, P.-J.; Liu, Y.-H.; Huang, M.-S.; Chyueh, S.-C.; Chang, H.-T.* “Linking Opiate Metabolites to Heroin Through Gas Chromatography-Combustion-Isotope Ratio Mass Spectrometry” *Anal. Methods* **2019**, *11*, 712–716.
18. Chen, Y.-W.; Periasamy, A. P.; Chen, C.-F.*; Chang, H.-T.* “Quantification of Glucose via in situ Growth of Cu₂O/Ag Nanoparticles” *Sens. Actuators. B Chem.* **2019**, *285*, 224–231.
19. Yang, Z.; Zhang, S.; Zhao, H.; Niu, H.; Wu, Z.-S.*; Chang, H.-T. “Branched DNA Junction-Enhanced Isothermal Circular Strand Displacement Polymerization for Intracellular Imaging of MicroRNAs” *Anal. Chem.* **2018**, *90*, 13891–13899.
20. Cang, J.; Chen, L.-Y.; Lin, Y.-S.; Chang, H.-T.* “Detection of Metabolites in Cells through Surface-Assisted Laser Desorption/Ionization Mass Spectrometry” *ACS Omega* **2018**, *3*, 17386–17391.
21. Ou, Y.-M.; Kuo, S.-Y.; Lee, H.; Chang, H.-T.; Wang, Y.-S.* “An Efficient Sample Preparation Method to Enhance Carbohydrate Ion Signals in Matrix-assisted Laser Desorption/Ionization Mass Spectrometry” *J. Vis. Exp.* **2018**, *137*, 57660.
22. Sriram, P.; Su, D.-S.; Periasamy, A. P.; Manikandan, A.; Wang, S.-W.; Chang, H.-

- T.; Chueh, Y.-L.; Yen, T.-J.* “Hybridizing Strong Quadrupole Gap Plasmons Using Optimized Nanoantennas with Bilayer MoS₂ for Excellent Photo-Electrochemical Hydrogen Evolution” *Adv. Energy Mater.* **2018**, *8*, 1801184.
23. Periasamy, A. P.; Ravindranath, R.; Senthil Kumar, S. M.*; Wu, W.-P.; Jian, T.-R.; Chang, H.-T.* “Facet- and Structure- Dependent Catalytic Activity of Cuprous Oxide Polypyrrole Particles Towards the Efficient Reduction of Carbon Dioxide to Methanol” *Nanoscale* **2018**, *10*, 11869–11880.
24. Ravindranath, R.; Periasamy, A. P.; Prathik, R.; Chen, Y.-W.; Chang, H.-T.* “Smart App-Based on-Field Colorimetric Quantification of Mercury via Analyte-Induced Enhancement of the Photocatalytic Activity of TiO₂–Au Nanospheres” *Anal. Bioanal. Chem.* **2018**, *410*, 4555–4564.
25. Lai, P.-X.; Mao, J.-Y.; Unnikrishnan, B.; Chu, H.-W.; Wu, C.-W.; Chang, H.-T.; Huang, C.-C.* “Self-Assembled, Bivalent Aptamers on Graphene Oxide as an Efficient Anticoagulant” *Biomater. Sci.* **2018**, *6*, 1882–1891.
26. Tseng, Y.-T.; Chang, H.-Y.; Harroun, S. G.; Wu, C.-W.; Wei, S.-C.; Yuan, Z.; Chou, H.-L.*; Chen, C.-H.; Huang, C.-C.*; Chang, H.-T.* “Self-Assembled Chiral Gold Supramolecules with Efficient Laser Absorption for Enantiospecific Recognition of Carnitine” *Anal. Chem.* **2018**, *90*, 7283–7291.
27. Hsu, C.-L.; Li, Y.-J.; Jian, H.-J.; Harroun, S. G.; Wei, S.-C.; Ravindranath, R.; Lai, J.-Y.*; Huang, C.-C.; Chang, H.-T.* “Green Synthesis of Catalytic Gold/Bismuth Oxyiodide Nanocomposites with Oxygen Vacancies for Treatment of Bacterial Infections” *Nanoscale* **2018**, *10*, 11808–11819.
28. Huang, J.-Y.; Lin, H.-T.; Chen, T.-H.; Chen, C.-A.; Chang, H.-T.*; Chen, C.-F.* “Signal Amplified Gold Nanoparticles for Cancer Diagnosis on Paper-Based Analytical Devices” *ACS Sens.* **2018**, *3*, 174–182.
29. Kuo, P.-C.; Lien, C.-W.; Mao, J.-Y.; Unnikrishnan, B.; Chang, H.-T.; Lin, H.-J.*; Huang, C.-C.* “Detection of Urinary Spermine by Using Silver-Gold/Silver Chloride Nanozymes” *Anal. Chim. Acta* **2018**, *1009*, 89–97.
30. Wei, S.-C.; Fan S.; Lien, C.-W.; Unnikrishnan, B.; Wang, Y.-S.; Chu, H.-W.; Huang, C.-C.; Hsu, P.-H.*; Chang, H.-T.* “Graphene Oxide Membrane as an Efficient Extraction and Ionization Substrate for Spray-Mass Spectrometric Analysis of Malachite Green and its Metabolite in Fish Samples” *Anal. Chim. Acta* **2018**, *1003*, 42–48.
31. Lien, C.-W.; Unnikrishnan, B.; Harroun, S. G.; Wang, C.-M.; Chang, J.-Y.; Chang, H.-T.*; Huang, C.-C.* “Visual Detection of Cyanide Ions by Membrane-based Nanozyme Assay” *Biosens. Bioelectron.* **2018**, *102*, 510–517. (104-2113-M-002-008-MY3, 104-2628-M-019-001-MY3, 105-2627-M-019-001-MY3, and 105-2622-M-019-001-CC2)

32. Harroun, S. G.; Zhang, Y.; Chen, T.-H.; Hsu, C.-L.; Chang, H.-T.* “Adsorption Orientation of 8-azaadenine on Silver Nanoparticles Determined by SERS and DFT” *J. Raman Spectrosc.* **2018**, *49*, 376–382. (NSC101-2113-M-002-002-MY3)
33. Chen, T.-H.; Chang, H.-T.* “Stable and Photoswitchable Carbon-Dot Liposome” *ACS Appl. Mater. Inter.* **2017**, *9*, 44259–44263. (NSC 103-2923-M-002-002-MY3, 104-2923-M-002 -006 -MY3, and 104-2113-M-002 -008 -MY3)
34. Hu, H.-W.; Haider, G.; Liao, Y.-M.; Roy, P. K.; Ravindranath, R.; Chang, H.-T.; Lu, C.-H.; Tseng, C.-Y.; Lin, T.-Y.; Shih, W.-H.; Chen, Y.-F.* “Wrinkled 2D Materials: A Versatile Platform for Low-Threshold Stretchable Random Lasers” *Adv. Mater.* **2017**, *29*, 1703549–1703558.
35. Jian, T.-R.; Periasamy, A. P.; Hsu, N.-Y.; Wu, W.-P.; Harroun, S. G.; Chang, H.-T.* “Quantitation of β -galactosidase and E. Coli Through Electrochemical Oxidation of Glucose on CuO/Cu₂O/Ppy Paper Electrode” *Sens. Actuators, B Chem.* **2017**, *253*, 1063–1070. (MOST 104-2113-M-002-008-MY3 and 104-2811-M-002-153)
36. Haider, G.; Ravindranath, R.; Chen, T.-P.; Roy, P.; Roy, P. K.; Cai, S.-Y.; Chang, H.-T.; Chen, Y.-F.* “Dirac Point Induced Ultralow-Threshold Laser and Giant Optoelectronic Quantum Oscillations in Graphene-Based Heterojunctions” *Nat. Commun.* **2017**, *8*, 256–264.
37. Ravindranath, R.; Roy, P.; Periasamy, A. P.; Chen, Y.-W.; Liang, C.-T.; Chang, H.-T.* “Fe₂O₃-Al₂O₃ Microboxes for Efficient Removal of Metal Ions” *New J. Chem.* **2017**, *41*, 7751–7757. (MOST 103-2923-M-002-002-MY3, 104-2811-M-002-154 and 104-2811-M-002-153)
38. Chang, H.-Y.; Tseng, Y.-T.; Yuan, Z.; Chou, H.-L.*; Chen, C.-H.; Hwang, B.-J.; Tsai, M.-C.; Chang, H.-T.*; Huang, C.-C.* “The Effect of Ligand–Ligand Interactions on the Formation of Photoluminescent Gold Nanoclusters Embedded in Au(I)–Thiolate Supramolecules” *Phys. Chem. Chem. Phys.* **2017**, *19*, 12085–12093. (MOST 104-2113-M-002-008-MY3, 104-2923-M-002-006-MY3, and 104-2628-M-019-001-MY3)
39. Tseng, Y.-T.; Harroun, A. G.; Wu, C.-W.; Mao, J.-Y.; Chang, H.-T.*; Huang, C.-C.* “Satellite-like Gold Nanocomposites for Targeted Mass Spectrometry Imaging of Tumor Tissues” *Nanotheranostics* **2017**, *1*, 141–153. (MOST 104-2923-M-002-006-MY3, 104-2113-M-002-008-MY3 and 104-2628-M-019-001-MY3)
40. Harroun, S. G.; Zhang, Y.; Chen, T.-H.; Ku, C.-R.; Chang, H.-T.* “Biomarkers of Cigarette Smoking and DNA Methylating Agents: Raman, SERS and DFT Study of 3-Methyladenine and 7-Methyladenine” *Spectrochim. Acta A Mol. Biomol.*

- Spectrosc.* **2017**, *176*, 1–7. (MOST 101-2113-M-002-002-MY3)
41. Hsu, C.-L.; Lien, C.-W.; Harroun, S. G.; Ravindranath, R.; Chang, H.-T.*; Mao, J.-Y.; Huang, C.-C.* “Metal-Deposited Bismuth Oxyiodide Nanonetworks with Tunable Enzyme-like Activity: Sensing of Mercury and Lead Ions” *Mater. Chem. Front.* **2017**, *1*, 893–899. (MOST 104-2113-M-002-008-MY3, 104-2628-M-019-001-MY3, 103-2314-B-182-013, and 103-2627-M-007-002-MY3)
 42. Periasamy, A. P.; Wu, W.-P.; Ravindranath, R.; Roy, P.; Lin, G.-L.; Chang, H.-T.* “Polymer/Reduced Graphene Oxide Functionalized Sponges as Superabsorbents for Oil Removal and Recovery” *Marine Poll. Bull.* **2017**, *114*, 888–895. (MOST 104-2113-M-002-008-MY3)
 43. Wu, B.-Y.; Wang, C.-W.; Chen, P.-C.; Chang, H.-T.* “Glutathione Assisted Preparation of Gold Nanoclusters Using Minimum Amount of Protein” *Sens. Actuators B Chem.* **2017**, *238*, 1258–1265. (MOST 104-2113-M-002-008-MY3)

Book Chapters

1. Chang, H.-T.*; Chiu, T.-C.; Huang, C.-C. “Laser-Induced Fluorescence Detection for Capillary Electrophoresis” *Encyclopedia of Chromatography*, CRC Press:Florida, **2005**; *2*, 914-920.
2. Hu, C.-C., Chiu, T.-C., Hsieh, M.-M., Chang, H.-T.* “Separation and Stacking of Polycyclic Aromatic Hydrocarbon by Micellar Electrokinetic Chromatography” *Environmental Impact of Polynuclear Aromatic Hydrocarbons* **2007**; *14*, 379–401. Eds: Anyakora C., Research Signpost, Kerala, India.
3. Yang, Z., Huang, C.-C., Lee, K.-H., Chang, H.-T.* “Rodlike Gold Nanoparticles and Nanocomposites” *Encyclopedia of Nanoscience and Nanotechnology* **2007**; *22*, 391–410. Eds: Nalwa, H. S.
4. Lin, Y.-W.; Lin, Z.-H.; Huang, C.-C.; Chang, H.-T. * “Multielemental Nanorods (Nanowires): Synthesis, Characterization and Analytical Applications.” *Nanomaterials for the Life Sciences; Mixed Metal Nanomaterials*; WILEY-VCH Verlag GmbH & Co. KGaA: Weinheim, **2010**; *3*, 241-279.
5. Chen, W.-Y.; Shiang, Y.-C.; Li, C.-L.; Periasamy, A.; Chang, H.-T.* “DNA Functional Gold and Silver Nanomaterials for Bioanalysis” *Functional Nanoparticles for Bioanalysis, Nanomedicine, and Bioelectronic Devices Volume 2*, American Chemical Society: Washington, **2012**; Vol. 1113, 287-322.
6. Chau, L.-K.; Chang, H.-T.* “From Bioimaging to Biosensors: Noble Metal Nanoparticles in Biodetection” Pan Stanford Pub: Singapore, **2013**; 1–322.

7. Chen, P.-C.; Roy, P.; Chen, L.-Y.; Chen, Y.-N.; Chang, H.-T.* “Gold Nanomaterials Based Absorption and Fluorescence Detection of Mercury, Lead, and Copper” *Interactions of Nanomaterials with Emerging Environmental Contaminants*, American Chemical Society: Washington; **2013**; Vol. 1150, PP. 39-62.
8. 曾于庭, 吳建緯, 張煥宗, 黃志清* “螢光金奈米量子點合成及環境檢測與生物醫學之應用” *化學*, **2017**, 75, 45–53.
9. 程祖衡, 曾韋斌, 汪嘉偉, 張煥宗* “碳量子點的合成、光學性質與生物影像與癌症治療上的應用” *化學*, **2017**, 75, 37–43.
10. 林于鈞、林雅玲、林裕軒、張煥宗* “奈米/團簇實驗課程設計與應用：以電化學法合成用於銅離子檢測之碳點” *台灣化學教育*, 2019, 31,

Patents

1. Yeung, E. S.; Chang, H.-T.; Fung, E. N.; Lu, X; Li, Q. “Multiplexed Capillaries Electrophoresis System” U.S. Patent 5582,705, Dec. 10, 1996.
2. Yeung, E. S.; Chang, H.-T.; Fung, E. N. “Capillaries for Use in a Multiplexed Capillary Electrophoresis System” U.S. Patent 5,695,626, Dec. 9, 1997.
3. Chang, H.-T.; Chen, P.-C.; Shih, C.-C. “Synthesis of Wavelength Tunable Graphene Quantum Dot and their Potential Application” U.S. Patent 20160023241A1, Jan. 28, 2016.
4. Chang, H.-T.; Periasamy, A. P.; Wu, W.-P.; Lin, G.-L. “Reduced Graphene Oxide Composite Material” U.S. Patent 20160121299A1, May 5, 2016.
5. Chang, H.-T.; Chen, T.-H.; Periasamy, A. P. “Process for forming a substance with a superstructure and Application Thereof” U.S. Patent Application 20170354612, Dec, 14, 2017
6. Chang, H.-T.; Chen, T.-H.; Periasamy, A. P.; “Janus particles and Application Thereof” U.S. Patent Application 20180221292, Aug, 08, 2018.
7. Chang, H.-T.; Chen, T.-H.; Periasamy, A. P.; “Process for forming Janus particles and Application Thereof” U.S. Patent Application 20180221291, Aug, 08, 2018.
8. Chang, H.-T.; Yen, Y.-T.; Lin, Y.-S.; “Sensing paper and method of sensing abused drugs” U.S. Patent 10041962, Aug, 07, 2018.