

Wei-Chuan Shih, Ph. D.

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PROFESSIONAL PREPARATION

National Taiwan University (Taipei, TW)	Mechanical engineering/MEMS	B.S., 1997
National Chiao Tung University (Hsinchu, TW)	Mechanical engineering /MEMS	M.S., 1999
Massachusetts Institute of Technology (Cambridge MA)	Mechanical engineering/Biophotonics	Ph.D., 2007
Schlumberger-Doll Research (Cambridge MA)	Sensor physics	2007-2009

APPOINTMENTS

Associate Professor	2015-present
Assistant Professor	2009-2015
Department of Electrical and Computer Engineering, UH	
Department of Biomedical Engineering, UH	
Department of Chemistry, UH	
Program of Materials Science and Engineering, UH	

PRODUCTS (selected from 70+ publications including 42 refereed journal papers)

Five products most closely related to the proposed project:

1. Wei-Chuan Shih, Gregg Santos, Fusheng Zhao, Oussama Zenasni, and Masud Arnob, Simultaneous chemical and refractive index sensing in 1-2.5 μm wavelength range on nanoporous gold disks, *Nano Letters*, 16 (7): 4641–4647 2016.
2. Jae Won Jeong, Md Masud Parvez Arnob, Kwang-Min Baek, Seung-Yong Lee, Wei-Chuan Shih, and Yeon Sik Jung, Three-dimensional cross-point plasmonic nano-architectures containing dense and regular hot spots for surface-enhanced Raman spectroscopy analysis, *Advanced Materials*, 2016. (DOI: 10.1002/adma.201602603)
3. Suyan Qiu, Fusheng Zhao, Oussama Zenasni, Jingting Li, and Wei-Chuan Shih, Nanoporous gold disks functionalized with stabilized G-quadruplex moieties for sensing small molecules, *ACS Applied Materials & Interfaces* 2016. (DOI: 10.1021/acsami.6b09767)
4. Ming Li, Yong Du, Fusheng Zhao, Jianbo Zeng, Chandra Mohan, and Wei-Chuan Shih, Reagent- and separation-free measurements of urine creatinine concentration by stamping surface-enhanced Raman scattering (S-SERS), *Biomedical Optics Express* 6(3): 849-858 2015.
5. Ji Qi, Jianbo Zeng, Fusheng Zhao, Steven Hsesheng Lin, Balakrishnan Raja, Ulrich Strych, Richard C. Willson, and Wei-Chuan Shih, “Label-free, *in situ* SERS monitoring of individual DNA hybridization in microfluidics,” *Nanoscale* 6: 8521-8526, 2014.

Other significant products:

6. Fusheng Zhao, Jianbo Zeng, Md Masud Parvez Arnob, Po Sun, Ji Qi, Pratik Motwani, Mufaddal Gheewala, Chien-Hung Li, Andrew Paterson, Uli Strych, Balakrishnan Raja, Richard C. Willson, John C. Wolfe, T. Randall Lee, and Wei-Chuan Shih, “Monolithic nanoporous gold disks with large specific surface area, tunable plasmon resonance, and high-density, internal plasmonic hot-spots,” *Nanoscale* 6: 8199-8207, 2014.6.
7. Ji Qi, Pratik Motwani, Mufaddal Gheewala, Christopher Brennan, John C. Wolfe, and Wei-Chuan Shih, “Surface-enhanced Raman spectroscopy using monolithic nanoporous gold disk substrates,” *Nanoscale* 5: 4105-4109, 2013.

8. Ming Li, Jing Lu, Ji Qi, Fusheng Zhao, Jianbo Zeng, Jorn Chi-Chung Yu, and Wei-Chuan Shih, "Stamping surface-enhanced Raman spectroscopy for label-free, multiplexed, molecular sensing and imaging," *Journal of Biomedical Optics* 19(5): 050501, 2014.
9. Gregg Santos and Wei-Chuan Shih, Zepto-mole cancer marker detection by surface-enhanced fluorescence on nanoporous gold disk substrates, *Journal of Biophotonics* 2015.
10. Wei-Chuan Shih, Kate L Bechtel, and Mihailo Rebec, Non-invasive glucose sensing by transcutaneous Raman spectroscopy, *Journal of Biomedical Optics* 20(5): 051036 2015.

SYNERGISTIC ACTIVITIES

1. NASA Early Career Faculty Award, 2012.
2. NSF CAREER Award, 2012.
3. NIH Instrument and System Development (ISD) study section ad hoc member, 2011-2015.
4. NSF Nano-Biosensing panelist, 2014-.
5. IEEE Senior Member.

COLLABORATORS & OTHER AFFILIATIONS

Collaborators and Co-Editors (Total: 7):

John A Dani, Chair and Professor, Department of Neuroscience, University of Pennsylvania
 Kirill Larin, Associate Professor of Biomedical Engineering, University of Houston
 T Randall Lee, Professor of Chemical and Biomolecular Engineering, University of Houston
 Steven H Lin, Assistant Professor of Radiation Oncology, MD Anderson Cancer Center
 Chandra Mohan, Professor of Biomedical Engineering, University of Houston
 Richard C Willson, Professor of Chemical and Biomolecular Engineering, University of Houston
 John C Wolfe, Professor of Electrical and Computer Engineering, University of Houston

Graduate Advisors and Postdoctoral Sponsors (Total: 4):

PhD advisors: Late Prof. Michael Feld (MIT Physics)
 Postdoc mentors: A Ballard Andrews, Yi-Qiao Song, Martin Poitzsch (Schlumberger Sensor Physics)

Thesis Advisor and Postgraduate-Scholar Sponsor (Total: 20) (** MINORITY or FEMALE)

Current students advised and Postdoc sponsored: (Current total: 9)
 Hoang Nguyen, PhD student, 2015-present; Jingting Li**, PhD student, 2012-present; Fusheng Zhao, PhD student, 2012-present; Yulung Sung, PhD student, 2013-present; Masud Arnob, PhD student, 2013-present;
 Dr. Yuankai Yue (7/2015-present); Dr. Gregg Santos (6/2013-present); Dr. Oussama Zenasni (1/2015-present); Dr. Suyan Qiu** (1/2015-present)
 Past students advised and Postdoc sponsored: (Past total: 11)
 Dr. Pratik Motwani, PhD student, 2011-2015 (Co-advised with Jack Wolfe).
 Dr. Ji Qi**, PhD student, 2010-2014, now at Schlumberger.
 Dr. Lanchao Liu, PhD student, 2011-2014 (Co-advised with Zhu Han).
 Dr. Mufaddal Gheewala, PhD student, 2010-2013, now at Intel (Co-advised with Jack Wolfe).
 Dr. Rui Lu, Postdoc, 1/2015-8/2015; Dr. Jianbo Zeng, Postdoc, 12/2012-4/2015, now at Clariant.
 Dr. Gauri Bhave**, Postdoc, 1/2015-6/2015; Dr. Ming Li**, Postdoc, 9/2013-10/2014.
 Dr. Po Sun, Postdoc, 12/2012-5/2013.
 Dr. Jinwei Li, Postdoc, 12/2012-5/2013.
 Dr. Siva Kund, 9/2015-12/2015.