

Hongkai Wu

Department of Chemistry

Hong Kong University of Science and Technology

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Educational and Professional Experiences

Associate Professor, Chemistry Department, The Hong Kong University of Sci.&Tech., since 2012

Assistant Professor, Chemistry Department, The Hong Kong University of Sci.&Tech., 2007-2012.

Junior Principle Investigator, WPI-AIMR, Tohoku University (Japan), 2009-2015.

Professor, Chemistry Department, Tsinghua University, 2005-2007.

Postdoctoral Fellow, Stanford University, 2002-2005.

Ph.D., Harvard University, 2002.

M.S. in Chemistry, University of Sci.&Tech. of China, 1997

B.S. in Chemistry; University of Sci.&Tech. of China, 1995

Relevant research work

Microfluidics

Tissue engineering

Biomaterials

Bioanalytical chemistry

Publication records (selected)

Section A – Five most representative publications in recent five years.

1. Ren, K.; Dai, W.; Zhou, J.; Su, J.; **Wu, H.*** Whole-Teflon Microfluidic Chip. *Proc. Natl.Acad. Sci., USA*, 2011, 108, 8122-8126.
2. Shi, X.; Fujie, T.; Saito, A.; Takeoka, S.; Hou, Y.; Shu, Y.; Chen, M.; **Wu, H.***; Khademhosseini, A.* Periosteum-mimetic structures made from freestanding microgrooved nanosheets. *Adv. Mater.*, 2014, 26, 3290-3296.
3. Chen, Y.; Dai, X.; Huang, L.; Sun, Y.; Chan, H. N.; Shen, B.; Zeng, X.; Wu, Z.; Hsing, I. M.; Guo, Z.; **Wu, H.*** A Universal and Facile Approach for the Formation of a Protein Hydrogel for 3D Cell Encapsulation. *Adv. Funct. Mater.*, 2015, (DOI: 10.1002/adfm.201502942).
4. Xiong, B.; Chen, Y.; Shu, Y.; Shen, B.; Chan, H. N.; Chen, Y.; Zhou, J.; **Wu, H.***, Highly emissive and biocompatible dopamine-derived oligomers as fluorescent probes for chemical detection and targeted bioimaging. *Chemical Communications* 2014, 50, 13578-

13580.

- Shi, X.; Chang, H.*; Chen, S.; Lai, C.; Khademhosseini, A.; **Wu, H.*** Regulating cellular behavior on few-layer reduced graphene oxide films with well-controlled reduction states. *Adv. Funct. Mater.*, 2012, 22, 751-759.

Section B – Five representative publications beyond the recent five-year period.

- Yu, H. J.; Wang, J. Q.; Shi, X. T.; Louzguine-Luzgin, D. V.; **Wu, H. K.***; Perepezko, J. H.*, Ductile Biodegradable Mg-Based Metallic Glasses with Excellent Biocompatibility. *Adv. Funct. Mater.* 2013, 23, 4793-4800.
- Fang, C.; Shao, L.; Zhao, Y.; Wang, J.*; **Wu, H.***, A gold nanocrystal/poly (dimethylsiloxane) composite for plasmonic heating on microfluidic chips. *Advanced Materials* 2012, 24, 94-98.
- Ren, K.; Zhou, J.; **Wu, H.***, Materials for microfluidic chip fabrication. *Accounts of Chemical Research* 2013, 46, 2396-2406
- Wu, H.***; Huang, B.; Zare, R. N. Generation of complex, static solution gradients in microfluidic channels. *J. Am. Chem. Soc.* 2006, 128, 4194-4195.
- Huang, B.; **Wu, H.***; Bhaya, D.; Grossman A. R.; Zare, R. N.* Counting low-copy-number proteins in a single cell. *Science*, 2007, 315, 81-84.

Patents

- Jeon, N.L.; Chiu, D.T.; Wargo, C.J.; Wu, H.; Anderson, J.R.; McDonald, J.C.; Stone, H.A.; Choi, I.S.; Whitesides, G.M. Valves and pumps for microfluidic systems and methods for making microfluidic systems. PCT Int. Appl. WO 2002053290, 2002, 62 pp.
- Jackman, R.J.; Brittain, S.T.; Schueller, O.J.A.; Adams, A.W.; Wu, H.; Whitesides, S.H.; Whitesides, G.M. Three-dimensional microstructures. U.S. Patent 20050154567, 2005.

Awards and Honors

DuPont Young Professor Grant, 2007-2010

Li Foundation Heritage Prize, 2006-2007

Tsinghua “Hundred Talents” award, 2005

Guo Moruo Prize, University of Sci.&Tech. of China, 1995

Part of Fundings

Name of Co-I(s) and Capacity	Project Title	Project/Proposal Ref No.	Funding Source(s) and Amount(\$)	Start Date	Estimated Completion Date

Hongkai Wu

Prof Wu, Hongkai (PI)	Generation of well-defined 3D artificial tissues and exploration of their applications in biomedical study and tissue engineering	16325116	GRF HK\$ 540,824	01-01- 2017	31-12-2019
Prof Wu, Hongkai (PI)	Quantitative Single-Cell Proteome Study with Microfluidic Chips	16306115	GRF HK\$ 501,255	01-01- 2016	31-12-2018
Prof Wu, Hongkai (PI)	Vascularized hydrogel microfluidic network as the circulation system for three-dimensional cell culture and tissue	604712	GRF HK\$ 775,000	01-01- 2013	30-06-2016