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CONTACT INFORMATION

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ACADEMIC TRAINING

B.S., Department of Biochemistry, Nanjing University (1992-1996)
Ph.D., School of Life Sciences, Nanjing University (1996-2000)
Postdoctoral fellow, Institute of Polymer and Organics Solids/California Nanosystem Institute,
University of California, Santa Barbara (2001-2003)

PROFESSIONAL EXPERIENCE

2004-present, Professor, Shanghai Institute of Applied Physics (SINAP), Chinese Academy of
Sciences (CAS)
2009-2018, Chief, Division of Physical Biology, SINAP
2012-2018, Chief, Bioimaging Center, Shanghai Synchrotron Radiation Facility, SINAP
2015-present, CAS Distinguished Professor
2016-present, Adjunct Professor, The Biodesign Institute, Arizona State University
2018-present, SJTU Chair Professor, School of Chemistry and Chemical Engineering,
Shanghai Jiao Tong Univeristy

HONORS AND AWARDS

Shanghai Rising Star for Young Scientists (2005)
CCS Award for Young Scientists (Chinese Chemical Society, 2006)
NSFC Award for Outstanding Young Scientists (National Science Foundation of China, 2007)
1st-class CAIA Prize for Science and Technology (Chinese Association for Instrumental
Analysis, 2007-2009)
National Award for Young Scientists of China (2011)
CAS Award for Young Scientists (Chinese Academy of Sciences, 2012)
Award for Shanghai Leading Scientists (2013)
High Cited Researchers (Thomson Reuters, 2014, 2015, 2016)
ISE Fellow (International Society of Chemistry, 2014)
FRSC (Fellow of Royal Society of Chemistry, 2015)
The Natural Science Prize (1st class) in Shanghai (2014)
The National Natural Science Prize (2nd class) of China (2016)
AAAS Fellow (American Association for the Advancement of Science, 2017)
Advances in Measurement Science Lecture Award (American Chemical Society, 2019)

MEMBERSHIP

American Association for the Advancement of Science (AAAS, Elected Fellow)--2011
American Chemical Society (ACS)--2003
Chinese Chemical Society (CCS)--2004
Royal Society of Chemistry (RSC, Fellow)--2010
International Society of Chemistry (ISE, Elected Fellow)--2012
Chinese Institute of Electronics (CIE, Fellow) --2010
Chinese Society of Biomedical Engineering (Vice chair of the Division of Nanobiomedical Engineering)--2015
Faculty of 1000--2015

SERVICE

Scientific Advisory Board, Shanghai Institute of Applied Physics, CAS
Scientific Advisory Board, State Key Laboratory of Sensor Technologies
Core member, International Center for Sensor Science and Engineering (ICSSE), Illinois Institute of Technology

EDITOR & REVIEW ACTIVITIES

ACS Applied Materials & Interfaces (Associate Editor)

Editorial Board or Editorial Advisory Board: *ChemBioChem*, *ChemPhysChem*, *Scientific Reports*; *ACS Sensors*; *Journal of Materials Chemistry*; *Advanced Healthcare Materials*; *ChemNanoMat*; *Particle & Particle Systems Characterization*; *Electroanalysis*; *Chemical Sensors*; *Chinese Journal of Analytical Chemistry*; *Acta Chimica Acta*, *Science China-Chemistry*, *Progress in Chemistry*

Guest Editor: *Advanced Materials*; *PLOS Computational Biology*; *Current Organic Chemistry*; *Biotechnology Journal*

Regular reviewer for over 20 peer-reviewed journals including Nature Nanotechnology, Nature Chemistry, Nature Photonics, Nature Communications, JACS, Angew. Chem. Int. Ed., Adv. Mat., Anal. Chem., Nucleic Acids Res., Biomaterials, Biosensors and Bioelectronics.

Grant reviewer for National Science Foundation (NSF), Research Grant Council (RGC, Hong Kong), Czech Science Foundation, Agency for Science (Singapore), Austrian Science Fund, Croatian Science Foundation, National Science Centre (Poland), Ho-Am Prize Award (Korea), National Science Foundation of China (NSFC), Ministry of Science and Technology of China (MOST).

RESEARCH INTERESTS

Biosensors; Biophotonics; DNA nanotechnology & computation

SELECTED PUBLICATIONS (From >400 papers; ~30,000 google citations; H-index: 85)

1. X. Liu, F. Zhang, X. Jing, M. Pan, P. Liu, W. Li, B. Zhu, J. Li, H. Chen, L. Wang, J. Lin, Y. Liu, D. Zhao, H. Yan*, **C. Fan***, Complex silica composite nanomaterials templated with DNA origami. *Nature* **559**, 593 (2018).
2. J. Li, A. A. Green*, H. Yan*, **C. Fan***, Engineering nucleic acid structures for programmable molecular circuitry and intracellular biocomputation. *Nature Chem.* **9**, 1056 (2017).
3. H. Zhang, J. Chao*, D. Pan, H. Liu, Y. Qiang, K. Liu, C. Cui, J. Chen, Q. Huang, J. Hu, L. Wang, W. Huang, Y. Shi* and **C. Fan***, DNA origami-based shape IDs for single-molecule nanomechanical genotyping. *Nature Commun.* **8**, 28341 (2017).
4. M. Liu, Q. Li, L. Liang, J. Li, K. Wang, J. Li, M. Lv, N. Chen, H. Song, J. Lee, J. Shi, L. Wang, R. Lal*, **C. Fan***, Realtime visualization of clustering and intracellular transport of gold nanoparticles by correlative imaging. *Nature Commun.* **8**, 15646 (2017).
5. X. Qu, D. Zhu, G. Yao, S. Su, J. Chao, H. Liu, X. Zuo, L. Wang, J. Shi, L. Wang, W. Huang, H. Pei*, **C. Fan***, An Exonuclease III-Powered on-particle Stochastic DNA Walker. *Angew. Chem. Int. Ed.* **56**, 1855 (2017).
6. Y. Zhang, Z. Cui, H. Kong, K. Xia, L. Pan, J. Li, Y. Sun, J. Shi, L. Wang, Y. Zhu* and **C. Fan***, One-shot immunomodulatory nanodiamond agents for cancer immunotherapy. *Adv. Mater.* **28**, 2699 (2016).
7. H. Liu, J. Wang, S. Song, **C. Fan*** and K. V. Gothelf*, A DNA-based system for selecting and displaying the combined result of two input variable. *Nature Commun.* **6**, 10089 (2015).
8. M. Lin, J. Wang, G. Zhou, J. Wang, N. Wu, J. Lu, J. Gao, X. Chen, J. Shi, X. Zuo*, **C. Fan***, Programmable engineering of biosensing interface with tetrahedral DNA nanostructures for ultrasensitive DNA detection. *Angew. Chem. Int. Ed.* **54**, 2151 (2015).
9. G. Yao, J. Li, J. Chao, H. Pei, H. J. Liu, Y. Zhao, J. Y. Shi, Q. Huang, L. H. Wang, W. Huang and **C. Fan***, Gold-Nanoparticle-Mediated Jigsaw-Puzzle-like Assembly of Supersized Plasmonic DNA Origami. *Angew. Chem. Int. Ed.* **54**, 2966 (2015).
10. L. Liang, J. Li, Q. Li, Q. Huang*, J. Y. Shi, H. Yan and **C. Fan***, Single-Particle Tracking and Modulation of Cell Entry Pathways of a Tetrahedral DNA Nanostructure in Live Cells. *Angew. Chem. Int. Ed.* **53**, 7745 (2014).
11. F. Yang, X. L. Zuo, Z. H. Li, W. P. Deng, J. Y. Shi, G. J. Zhang, Q. Huang, S. P. Song and **C. Fan***, A Bubble-Mediated Intelligent Microscale Electrochemical Device for Single-Step Quantitative Bioassays. *Adv. Mater.* **26**, 4671 (2014).
12. Y. Fu, D. Zeng, J. Chao, Y. Q. Jin, Z. Zhang, H. Liu*, D. Li, H. W. Ma, Q. Huang, K. V. Gothelf and **C. Fan***, Single-Step Rapid Assembly of DNA Origami Nanostructures for Addressable Nanoscale Bioreactors. *J. Am. Chem. Soc.* **135**, 696 (2013).
13. H. Pei, L. Liang, G. B. Yao, J. Li, Q. Huang and **C. Fan***, Reconfigurable Three-Dimensional DNA Nanostructures for the Construction of Intracellular Logic Sensors. *Angew. Chem. Int. Ed.* **51**, 9020 (2012).
14. H. Pei, F. Li, Y. Wan, M. Wei, H. Liu*, Y. Su, N. Chen, Q. Huang and **C. Fan***, Designed Diblock Oligonucleotide for the Synthesis of Spatially Isolated and Highly Hybridizable Functionalization of DNA-Gold Nanoparticle Nanoconjugates. *J. Am. Chem. Soc.* **134**, 11876 (2012).

15. N. Lu, H. Pei, Z. L. Ge, C. R. Simmons, H. Yan* and **C. Fan***, Charge Transport within a Three-Dimensional DNA Nanostructure Framework. *J. Am. Chem. Soc.* **134**, 13148 (2012).
16. P. Chen, D. Pan, **C. Fan***, J. Chen, K. Huang, D. F. Wang, H. L. Zhang, Y. Li, G. Y. Feng, P. J. Liang, L. He and Y. Shi*, Gold nanoparticles for high-throughput genotyping of long-range haplotypes. *Nature Nanotechnol.* **6**, 639 (2011).
17. H. Pei, N. Lu, Y. L. Wen, S. P. Song, Y. Liu, H. Yan* and **C. Fan***, A DNA Nanostructure-based Biomolecular Probe Carrier Platform for Electrochemical Biosensing. *Adv. Mater.* **22**, 4754 (2010).
18. S. Song, Z. Liang, J. Zhang, L. Wang, G. Li* and **C. Fan***, Gold-Nanoparticle-Based Multicolor Nanobeacons for Sequence-Specific DNA Analysis. *Angew. Chem. Int. Ed.* **48**, 8670 (2009).
19. G. Liu, Y. Wan, V. Gau, J. Zhang, L. Wang, S. Song and **C. Fan***, An enzyme-based E-DNA sensor for sequence-specific detection of femtomolar DNA targets. *J. Am. Chem. Soc.* **130**, 6820 (2008).
20. J. Zhang, S. Song, L. Zhang, L. Wang, H. Wu, D. Pan and **C. Fan***, Sequence-specific detection of femtomolar DNA via a chronocoulometric DNA sensor (CDS): Effects of nanoparticle-mediated amplification and nanoscale control of DNA assembly at electrodes. *J. Am. Chem. Soc.*, **128**, 8575 (2006).

~20 invited reviews in Chem. Rev., Acc. Chem. Res., Chem. Soc. Rev. etc.

More papers: <http://physbio.sinap.ac.cn/publication-e.htm>

PATNETS

8 US/International patents; 50+ Chinese patents

INVITED BOOKS/CHAPTERS

1. "DNA Nanotechnology: From Structure to Function", 2013, Springer, Editor: Chunhai Fan (eds.)
2. "DNA Nanotechnology", 2011, Science Press (China), Editors: Chunhai Fan, Dongsheng Liu (eds.)
3. Hui Xu, Lihua Wang, Chunhai Fan, "Bioanalysis and bioimaging with fluorescent conjugated polymers and conjugated polymer nanoparticles", in "Functional Nanoparticles for Bioanalysis, Nanomedicine and Bioelectronic Devices", 2012, ACS Books, Maria Hepel, C.J. Zhong (eds.)
4. Wenbing Hu, Qing Huang, Chunhai Fan, "Nanomaterial-Based Antibacterial Paper" (chapter 15), P427-464, in "Nano-Antimicrobials, Progress and Prospects", 2012, Springer-Verlag (Berlin), Nicola Cioffi, Mahendra Rai (eds.)
5. Di Li, Chunhai Fan, "Optical Detection of Non-amplified Genomic DNA" (Chapter 6), in "Detection of Non-Amplified Genomic DNA", 2012, Springer, G. Spoto and R. Corradini (eds.)
6. Hui Xu, Lihua Wang, Chunhai Fan, "Bioanalysis and Bioimaging with Fluorescent Conjugated Polymers and Conjugated Polymer Nanoparticles" (Chapter 4), in "Functional Nanoparticles for Bioanalysis, Nanomedicine, and Bioelectronic Devices", 2012, Symposium Series 1112, Maria Hepel, Chuan-Jian Zhong (eds.)

CONFERENCEES AND INVITED SPEAKER

Founding chair and co-chair for “The International Workshop for DNA Nanotechnology (Annual meeting, 2009, 2012, 2013, 2014, 2015, 2016)

Future Trends in DNA-based Nanotechnology (DNAtech 17), co-chair (Chunhai Fan, Michael Mertig, Hao Yan), 2017

More than 100 PLENARY, KEYNOTE AND INVITED talks in international and national conferences.

Invited talks at Stanford University (SystemX Seminars), University of California-San Diego, University of California-Santa Barbara, Cologne University (Germany), Aarhus University (Denmark), Seoul National University (Korea), Osaka University (Japan) and a number of Chinese Universities.