

## Biographical Sketch of Dr. Z. Hugh Fan, University of Florida

### I. Professional Preparation

- Yangzhou Teachers' College (China) Chemistry B.Sc., 1985
- University of Alberta (Canada) Analytical Chemistry Ph.D., 1994
- Ames Lab, Iowa State University Bioanalytical Chemistry Postdoc, 1995

### II. Appointments

- Associate Professor, Biomedical Engineering, University of Florida (2004 - present)
- Associate Professor, Mechanical and Aerospace Engineering, UF (2003 - present)
- Affiliated faculty member, McKnight Brain Institute, UF (2003 – present)
- Principal Scientist, ACLARA BioSciences, Inc. (2000 - 2002)
- Member of Technical Staff, Sarnoff Corporation (1995 - 2000)
- Assistant Teacher, Chemistry, Yangzhou Teachers' College (1985-1989)

### III. Publications

#### Five Publications Related to the Proposed Project

1. Q. Mei, C. K. Fredrickson, S. Jin, Z. H. Fan, "Toxin Detection by Miniaturized in vitro Protein Expression Array", *Analytical Chemistry*, 77, **2005**, 5494-5500.
2. Z. H. Fan, A. J. Ricco, "Plastic microfluidic devices for DNA and protein analyses", in *Micro/Nano Technologies for Genomics and Proteomics*, edited by M. Ozkan and M. Heller, Kluwer Academic Publishers, Netherlands, **2005**, 315-333.
3. B.J. Lutz, Z. H. Fan, T. Burgdorf, B. Friedrich, "Hydrogen sensing by enzyme-catalyzed electrochemical detection", *Analytical Chemistry*, 77, **2005**, 4969-4975.
4. C. Das, Z. Xia, A. Stoyanov, Z. H. Fan, "A laser-induced fluorescence imaging system for isoelectric focusing", *Instrumentation Science and Technology*, 33, **2005**, 379-389.
5. C. K. Fredrickson, Z. H. Fan, "Macro-to-micro interfaces for microfluidic devices", *Lab on a chip*, 4, **2004**, 526-533.

#### Five Other Significant Publications

1. A. V. Stoyanov, C. Das, C. K. Fredrickson, Z. H. Fan, "Conductivity properties of carrier ampholyte pH gradients in isoelectric focusing", *Electrophoresis*, 26, **2005**, 473-479.
2. C. G. Koh, W. Tan, M. Zhao, A. J. Ricco, and Z. H. Fan, "A plastic microfluidic device integrating PCR with electrophoresis for bacterial detection", *Analytical Chemistry*, **75**, **2003**, 4591-4598.
3. T. D. Boone, Z. H. Fan, H. H. Hooper, A. J. Ricco, H. Tan, S. J. Williams, "Plastic advances microfluidic devices", *Analytical Chemistry*, 74, **2002**, 78A-86A.
4. Z. H. Fan, S. Mangru, R. Granzow, P. Heaney, W. Ho, Q. Dong, R. Kumar, "Dynamic DNA hybridization on a chip using paramagnetic beads", *Analytical Chemistry*, 71, **1999**, 4851-4859.
5. D. J. Harrison, K. Fluri, K. Seiler, Z. Fan, C. S. Effenhauser, A. Manz, "Micromachining a miniaturized capillary electrophoresis-based chemical analysis system on a chip", *Science*, 261, **1993**, 895-897.

## IV. Synergistic Activities

### Contributions to the Science of Learning

- As an instructor to teach a course “Microfluidics and Lab-on-a-Chip” for The American Society of Mechanical Engineers (ASME) in 2002 and 2003. (Course #: PD439).

### Service to the Scientific Community

- Chairman of the invited symposium “Microfluidics: New Directions and Applications” in the Pittsburgh Conference, Feb. 27 – Mar. 4, 2005, Orlando, FL
- Ad hoc panel reviewer Ad hoc panel reviewer for the National Cancer Institute (2005), National Institute of Allergy and Infectious Diseases (2004, 2005), National Institute of Dental and Craniofacial Research (2004), and NIH’s Center for Scientific Review (Study section: Bioanalytical, Engineering & Chemistry) (2003)
- Project Reviewer for NASA (ISGEN project in Ames Research Center) (2003, 2005)
- Ad hoc proposal reviewer for Department of the Army (Physical Sciences Directorate) (2003), and for National Science Foundation (Inorganic, Bioinorganic and Organometallic Chemistry Program, 2003; Analytical and Surface Chemistry Program, 2004 & 2005)
- Journal reviewer of *Science*, *Journal of American Chemical Society*, *Nano Letters*, *Analytical Chemistry*, *Langmuir*, *Lab on a Chip*, *Journal of MicroEletroMechanical Systems*, *Journal of Electrochemical Society*, and others

### Awards and Scholarships

- Sarnoff Corporation Achievement Award, 09/1998.
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- David Sarnoff Research Center Achievement Award, 09/1996.
- Mary Louise Imrie Graduate Award, University of Alberta, 03/1993.
- Alberta Microelectronic Center Graduate Research Scholarship, University of Alberta, 09/1989--09/1992.

## V. Collaborators & Other Affiliations

### Collaborators

- Drs. Nancy Denslow, Shouguang Jin, Renwei Mei, and Roger Tran-son-tai, Univ. of FL
- Dr. Rajan Kumar, Genome Data Systems, Inc., NJ

### Graduate and Postdoctoral Advisors

- Graduate advisor: D. Jed Harrison, University of Alberta
- Postdoctoral advisor: Cheng S. Lee, University of Maryland

### Thesis Advisor and Postgraduate-Scholar Sponsor

- Postgraduate scholars supervised: Dr. Woei Tan (BioRad Laboratories), Dr. Charmaine Qiu (MJ Research), Mr. Chee Koh (BioArray Solutions), Ms. Shakuntala Mangru (Sarnoff Corp.), Dr. Alexander Stoyanov (Purdue University)
- Undergraduate students supervised: Fernando Tavares, Ryan Ferguson, Matt Bennett
- Current graduate students: Carl Fredrickson, Champak Das, Brent Lutz, Qian Mei, Zheng Xia
- Current undergraduate student: Andrew Simon, Corey Walker