

# Xiaobei Li

## Curriculum Vita

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### Education

**University of Washington**, Seattle, WA, August 2003 — now (due to graduate late 2005 or early 2006)  
**Ph.D.** in Electrical Engineering

**University of Washington**, Seattle, WA, October 2001 — August 2003  
**M.S.** in Electrical Engineering  
Thesis advisor: Prof. Alexander Mamishev  
Thesis title: *Impedance spectroscopy for manufacturing control of material physical properties*

**Northwestern Polytechnic University**, Xi'an, China, September 1995 — July 1999  
**B.S.** in Control Engineering

### Research Experience

July 02 – Now  
**Graduate Research Assistant**, Sensors, Energy, and Automation Laboratory (SEAL), Department of Electrical Engineering, University of Washington.  
*Graduate research in fringing electric field dielectric spectroscopy. Experience includes designing sensors and signal conditioning circuits, programming data acquisition and device control interfaces, and developing parameter estimation algorithms.*

Sep 99 – Aug 01  
**Graduate Research Assistant**, Department of Electrical Engineering, Northwestern Polytechnic University, Xi'an, China.  
*Optimal and adaptive control system theory and its application to flight control systems.*

### Teaching Experience

June - Aug 04  
**Instructor**, EE 361 **Applied Electromagnetics**, University of Washington.  
*Responsible for developing the syllabus, lectures, homeworks, exams, and labs. The course focuses on transmission line theory, plane wave propagation, wave transmission and reflection, Maxwell equations, and antenna basics.*

Oct01- May 02  
**Teaching Assistant**, Graduate and undergraduate level courses in controls and power engineering. (EE448, EE449, EE510, and EE548), University of Washington.  
*Quiz and lab sessions. Lab projects include temperature control, DC motor control, reactive mass actuator control, and inverted pendulum control.*

## **Publications**

- X. B. Li, S. D. Larson, A. S. Zyuzin, and A. V. Mamishev "Design Principles for Multi-Channel Fringing Electric Field Sensors," *accepted by the IEEE Sensors Journal*.
- X. Li, A. S. Zyuzin, and A. V. Mamishev "Impedance Spectroscopy Sensing of Moisture Content in Cookie Dough," *submitted to the IEEE Transactions on Dielectrics and Electrical Insulation*.
- X. B. Li, C. Kato, S. D. Larson, A. S. Zyuzin, and A. V. Mamishev "Design of Multi-channel Fringing Electric Field Sensors for Imaging – Part I: General Design Principles," *IEEE International Symposium on Electrical Insulation, Indianapolis, IN, 2004*.
- X. B. Li, C. Kato, S. D. Larson, A. S. Zyuzin, and A. V. Mamishev "Design of Multi-channel Fringing Electric Field Sensors for Imaging - Part II: Figures of Merit Analysis of Two Concentric FEF Sensors," *IEEE International Symposium on Electrical Insulation, Indianapolis, IN, 2004*.
- X. Li, A. S. Zyuzin, A. V. Mamishev "Measuring Moisture Content in Cookies Using Dielectric Spectroscopy," *IEEE Conference on Electrical Insulation and Dielectric Phenomena, Albuquerque, NM, 2003*.
- K. Sundara-Rajan, X. Li, and A. V. Mamishev "Moisture Measurement in Paper Pulp Using Fringing Field Dielectrometry," *IEEE Sensors Meeting, Toronto, Canada, 2003*.
- X. Li, C. Zrybko, R. Magaletta, and A. V. Mamishev "Dielectrometry Based Sensing of Moisture Content Distribution in Cookie Dough," *IFT International Food Safety and Quality Control Conference and Expo Orlando, FL, 2003*.

## **Presentations**

- "Real-time Noninvasive Imaging of Material Physical Properties," *Center for Process Analytical Chemistry (CPAC), University of Washington, May 8<sup>th</sup>, 2004*.
- "Non-invasive Measurement of Material Properties," *Center for Process Analytical Chemistry (CPAC), University of Washington, May 6<sup>th</sup>, 2003*.

## **Awards and Activities**

- IEEE International Symposium on Electrical Insulation student award, 2004
- Graduate School Fund for Excellence and Innovation Graduate Student Travel Award, UW, 2003
- IEEE Conference on Electrical Insulation and Dielectric Phenomena student award, 2003
- Editor of the official Newsletter of SEAL Lab.

## **Software Skills**

- Matlab, C, LabView, Cadence, SpectraRF, HSpice, Verilog, Maple, Maxwell 2D simulator, Femlab.

## **Design or Simulation Projects**

- Simulation of single cycle and pipeline processor (Verilog).
- A wide-band common-gate LNA (SpectraRF)
- Even Harmonic Mixer (Spectra RF)
- A 2.14 GHz voltage controlled oscillator (Spectra RF)
- Multiple wave scattering by dielectric cylinders (Matlab)
- A surface plasmon resonator (Matlab)
- Radiation of horizontal (vertical) electric dipole in layered medium (Matlab)
- Simulation of Recursive Least Square (RLS) adaptive control and parameter estimation (Matlab).
- Phoneme recognition for speech signal processing (Matlab).
- Simulation of QPSK/DQPSK modulation and demodulation scheme (Matlab).

## **Hobbies**

- badminton, tennis, table tennis, Latin dance, foreign languages and literature.