Bin Li

Work Address
409 Dana Building
Northeastern University
Boston, MA 02115
Phone: (617) 373-2039
Email: *binli@ece.neu.edu*

Home Address
117 Summer St. # 31
Malden, MA 02148
Phone: (617) 324-9376

Summary

- Experienced in analog, digital IC design and test
- Proficient in the characterization of devices and circuits
- Working knowledge in RF circuit design, analysis and measurement
- Working knowledge in device physics, process technology and mask design
- Experienced in numerical techniques and software development

Computer

Programming languages: C, C++, Fortran, Basic and Perl

Operating systems: UNIX, DOS, Window 95, X Window

Application software : Matlab, LabView, HPIB programming, VLSI design and simulation tools (MAGIC, KIC, OCTTOOL, HSPICE, LIBRA, MEDICI, TSUPREM and VHDL).

Education

NORTHEASTERN UNIVERSITY — Boston, MA
Ph.D in Electrical Engineering (Sept.'97). G.P.A 3.8/4.0
Thesis Title: Large signal and self-heating characterization of heterojunction bipolar transistors
Courses: VLSI design, VHDL, Computer Architecture, Software Engineering, Semiconductor Physics, VLSI Architecture, Digital System Design, Microwave Engineering, Solid State Devices, Semiconductor Process Technology, Digital Signal Processing, Digital Communication

NANJING INSTITUTE OF TECHNOLOGY — Nanjing, CHINA
M.S.E.E in Electrical Engineering, July 1988. G.P.A 3.8/4.0
Thesis title: A fully integrated silicon flow sensor
BS in Electrical Engineering, July 1985. G.P.A 3.9/4.0

Experience

NORTHEASTERN UNIVERSITY — Boston, MA
Research assistant — 1993 - present

- Worked on the small signal and large signal model of the HBT (heterojunction bipolar transistor), developed the model parameter extraction procedure and a large signal Gummel-Poon model for the HBT
- Analyzed the interactions and contributions of the nonlinear elements to the nonlinearity of HBT's by using Volterra series
- Developed a mathematical model (nonlinear integral method) for HBT's based on DC and small signal characteristics

- Characterized the self-heating effect of the power HBT
- Measured the power characteristic of the HBT (harmonic distortion and two-tone intermodulation), skilled in using network analyzer, spectrum analyzer and semiconductor parameter analyzer for the device characterization
- Worked on the design and process development for micromachining microspectrometers, built a simple electrical-mechanical feedback model and designed a set of mask.

CHINA HUAJIN ELECTRONICS GROUP CO. — WuXi, P.R.CHINA
Circuit design and test engineer — 1988 - 1993

- Maintained a 10MHz, 96 pin digital IC test system (Ando's DIC 8032)
- Involved in the design and test of ASIC circuits, including the digital pulse dial telephone circuit and the electronic organ circuit
- Collaborated with process development teams in the circuit failure analysis
- Motivated and developed test data recording, sampling and analyzing system
- Developed the test algorithm and program for various memory circuits ranging from 16 K to 1MB
- Involved in the design and test of 1M bit DRAM

NANJING INSTITUTE OF TECHNOLOGY — Nanjing, CHINA
Research assistant — 1985 - 1988

- Worked on the design of a semiconductor flow sensor based on constant chip temperature mechanism
- Designed a two-stage CMOS differential amplifier for the silicon flow sensor
- Worked on the noise model of the switch capacitor circuit

Publications

- *Harmonic and Two-tone intermodulation distortion analysis of the inverted InGaAs/InAlAs/InP HBT*, IEEE transaction on MTT, July 1997
- *Intermodulation analysis of the inverted InGaAs/InAlAs/InP HBT using Volterra series*, 1996 Asia - Pacific Microwave Conference
- *A large signal HBT model for two-tone intermodulation analysis*, 1995 International Semiconductor Device Research Symposium
- *A large signal model of the inverted InGaAs/InAlAs/InP HBT for harmonic distortion analysis*, 1995 IEEE/Cornell University Conference on Advanced Concept in High Speed Semiconductor Devices
- *A fully integrated silicon flow sensor*, China Semiconductor Journal, 1990

References

Professor Sheila Prasad, Northeastern University, *prasad@hilbert.cdsp.neu.edu*
Professor Mankuan Vai, Northeastern University, *vai@gateway.ece.neu.edu*