Aparna Prabhakar

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OBJECTIVE

A challenging position in an environment focused on professional development which utilizes my interdisciplinary knowledge and skill set.

SKILLS

Operational:

- Over 2 years experience in class-100 clean room at Center for advanced microstructures and devices (CAMD).
- Electrodeposition techniques: Rota Hull cell, 4-electrode system and 3-electrode system, Proficient in thin film deposition of Bi-Te alloys, Au, Cu and Ni-Cu on silicon wafer
- Lithography and processing equipment: Aligner and DUV Exposure Station, Pattern Generator,, 4' VA Stainless Steel Hood, 6' VA Polypropylene Hoods, 8' AC Polypropylene Hood, Convection oven/Hot plates,
- Metrology equipment: Energy dispersive X-ray fluorescence (EDXRF) spectrometer, Tencor Alpha-Step 500 Surface Profiler, Nikon Measuring Microscope MM-40. SEM, Differential scanning calorimeter.
- Proficient in operational techniques of X-ray/UV Lithography (SU-8, SPR, AZ resist), resist processing (wet chemical etching, photolithography), Electroforming, Lift-off, DRIE, Chemical/Plasma Etching, Oxidation and Spin coating.

Computational:

- Office tools: MS office applications, XP
- Engineering Software: ANSYS, MATLAB, AutoCAD, LabVIEW, SIM20, Micro SIM.
- Languages: C/C++ (Working knowledge)
- Operating Systems: Windows 9x/ 2000/ NT

EDUCATION

Louisiana State University, Baton Rouge, LA May 2006
Master of Science in Mechanical Engineering Major: Micro Systems GPA: 3.8

Coursework: Fundamentals of microfabrication, Electrochemical engineering principles, Advanced system dynamics, Intermediate dynamics, Advanced vibrations, Engineering in biology, Tissue engineering, Advanced material analysis.

Vishveshwariah Technological University, Bangalore, India July 2003
Bachelor of Engineering in Electronics and Communications GPA: 3.9

Coursework: Analog and digital electronics, Controls and circuit analysis, Computer organization and architecture, Microprocessor based system design, VLSI, VHDL, Digital and advanced communication systems, Mechatronics, Microwaves and radar.

EXPERIENCE

Research Assistant, MEMS Design and Fabrication, 08/2003-Present
Center for advanced microstructures and devices, Louisiana State University

- Modeled the Bio-thermal system to optimize the required parameters in MEMS actuator (thermoelectric cooler) using MatLab and ANSYS simulations.
- Fabricated and analyzed the materials utilized in the microstructures
- Fabricated the actuator using multi-step LIGA process.

Teaching Assistant, System Dynamics 08/2004-01/2005
Mechanical Engineering Department, Louisiana State University

- Tutored 92 students on SIM-20. Prepared assignments and projects pertaining to a variety of mechanical/ electrical applications. *Gained* experience in bond graph modeling and applications.

Instructor, Instrumentation Lab 08/2005-12/2005
Mechanical Engineering Department, Louisiana State University

- Instructed lab sessions on fundamentals of instrumentation to undergraduate students. Evaluated student performance based on reports and quizzes. Gained experience in instructing class and teaching.

Undergraduate Summer Intern

· Fabrication of the UPS, Amaraja Power Systems, India 05/2002 – 07/2002
· Design and development of SCADA, Efftronics, Vijayawada, India 05/2001 – 07/2001

PROJECTS

Senior-Year Design Project

Design and implementation of Triguard SC300E, Asea Brown Boveri Ltd. (ABB), Bangalore, India

· Worked as a part of team on a live project for Kuwait national petroleum corporation (KNPC).
· Learned to implement a fully triplicated (TMR) system architecture and an RTTS operating system.
· Involved in the design of safety controller customized Triguard SC300E.

Sophomore Project

64 bit Arithmetic logic unit in VHDL using FPGA, Indian Institute of Science (IISc), Bangalore, India

· Developed a 64-bit fixed and floating point ALU performing all the basic mathematical and trigonometric operations.
· Implemented the functions on standard FPGA kit using VHDL.

PUBLICATIONS

· A. Cygan, A. Prabhakar, E.J. Podlaha-Murphy, M.C. Murphy and R.V. Devireddy. *"Fabrication of Micro Scale Arrays of Thermoelectric Sensors and Actuators for Cryobiological Applications*". ASME IMECE 2004, CD-ROM Publication.
· A. Prabhakar, E.J. Podlaha-Murphy, M.C. Murphy and R.V. Devireddy. "*Electrodeposition Characteristics of Bismuth-Telluride Films*". Proceedings of the MRS Fall Meeting 2004, Boston, MA. Vol. 845, pp. AA5.25.1-AA5.25.6.
· A. Prabhakar, E.J. Podlaha- Murphy, M.C. Murphy and R.V. Devireddy. "*Microfabricated Arrays of Thermoelectric Coolers for Highly Localized Control of Temperature in Biological Systems*". ASME Summer Bioengineering Meeting 2005, CD-ROM Publication.

(Two additional journal papers under review)