JASBIR N. PATEL ✉ :- patel_jasbir_n@hotmail.com

Work : ASB 8811, Simon-Fraser University, Burnaby, BC, Canada. ☎ :- (604) 419 0435
Web : http://www.sfu.ca/~jpatel/

OBJECTIVE

To Contribute engineering community with novel research.

RESEARCH INTEREST

Wireless sensors, Bio sensors, micro-fluidics, Lab on a chip, micro-machining, micro electromechanical system etc.

PUBLICATION

1. **Jasbir N. Patel**, Abdul Haseeb Ma, Takaya Ueda, Bonnie Gray, Ash Parmeswaran, Bozena Kaminska, "A Novel 3-way Cell Sorter using Power Efficient Electrolysis based Actuator", *Accepted for oral presentation in 19th Annual Canadian Conference on Electrical and Computer Engineering*, May 2006.
2. **Jasbir N. Patel,** Bonnie Gray and Bozena Kaminska, "Non-Invasive Glucose Sensor", *Annual FAS Graduate Conference*, Simon-Fraser University, March 2006.
3. **Jasbir N. Patel**, Z. E. Abid, "Design of PC Programmable Digital Hearing-Testing Device", *Proceedings of 18th Annual Canadian Conference on Electrical and Computer Engineering*, May 2005.
4. **Jasbir N. Patel**, Z. E. Abid and W. Wang, "VLSI Implementation of a Floating-point Divider", *The 16th International Conference on Microelectronics, ICM 2004 Proceedings,* Dec. 6-8, 2004, pp. 505-508. ISBN: 0-7803-8656-6.
5. **Jasbir N. Patel** and Z. E. Abid, "Design of PC-Controllable Digital Hearing-Testing Device", *Presented in Annual Graduate Symposium in Electrical and Computer Engineering at University of Western Ontario*, June 2005.
6. **Jasbir N. Patel** and Z. E. Abid, "Overview of a Single Chip PC-Controllable Digital Hearing-Testing Device", *Poster presented in Annual Research Day at University of Western Ontario,* January 2005.
7. **Jasbir N. Patel** and Z. E. Abid, "Analog/Digital Mixed Signal Design", Annual Research Day, University of Western Ontario, January 2004.

AWARDS AND SCHOLARSHIPS

Name	Type	Location	Year
Western Graduate Research Scholarship	Academic	University of Western Ontario	2005
Special University Scholarship	Academic	University of Western Ontario	2004 – 2005
Special University Scholarship	Academic	University of Western Ontario	2003 – 2004
Best Employee	Professional Research	Masibus Process Instruments Pvt. Ltd.	2001
Sportsmen of the year	Leadership	Shri Vidyanagar High School	1992 - 1993

EDUCATION

Degree	Institute	Specialization	Academic Comments	Degree Received
Ph.D.	Simon Fraser University, Burnaby, BC, CANADA	Wireless Sensors and Micro-fluidics Group (Supervisor: Dr. Bozena Kaminska & Dr. Bonnie Gray)	In Progress	In Progress
M.E.Sc.	University of Western Ontario,London, Ontario, CANADA.	Elect. And Comp. Engg. with VLSI Group (Supervisor : Dr. Z. E. Abid)	89.5%	August 2005
B.E.	Gujarat University Ahmedabad, Gujarat, INDIA.	Elect. Engg. with Advanced micro-processor and micro-controller	5th in the Class of 73 students	July 1998

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SKILLS

Tools/Utilities	:	Cadence Tools, Stand alone SPICE & HSPICE, Xilinx ISE, Altera Max Plus II and Quartus II, MATLAB, OrCAD, PSPICE.
Technology	:	CMOS 0.35 μm and 0.18 μm. (TSMC)
Hardware Description Language	:	VHDL
Programmable Devices	:	Xilinx CPLDs and FPGAs, Altera FPGAs, Lucent CPLDs and 8 and 16-bits μP and μC.
Programming Languages	:	C++, C, Assembly, Visual C++ 6.0.
Communication Protocol	:	MASIBUS (Developed for Masibus), MODBUS RTU, MODBUS ASCII, OPTOMUX, PROFIBUS

PROFESSIONAL EXPERIENCE

SIMON-FRASER UNIVERSITY (Sept. 2005 – Till Date)
Ph.D. Candidate – Teaching Assistant

- Working on wireless bio-sensors based on micro-machining and micro-fluidics.
- Teaching assistant for course ENSC 350 (Digital Systems Design)
- Responsibilities as a teaching assistant: testing hardware for all labs, troubleshooting hardware or other related problem, solving students' problems in course as well as labs, demonstrating Altera and Xilinx design kits.

UNIVERSITY OF WESTERN ONTARIO (Sept. 2003 – Aug. 2005)
M.E.Sc. Student – Teaching Assistant

- Working on 'Design of Low-Power PC controllable Hearing-Aid Device' as a research topic. CMOS 0.18 micron technology is used for the design. This project involves mixed-signal system-on-a-chip design. Main blocks are Class-D audio amplifier with digital control, active analog filter and smart modulation techniques. These blocks are designed, implemented and tested as required by the specification. Then all the blocks are optimized for ultra-low power.
- New designs of 12-bit adder, clock generator and clock divider were designed, implemented and tested.
- Wireless communication between the device and PC is going to designed.
- MATLAB, Cadence Tools, HSPICE / SPICE, are used for research work.
- Worked on VHDL, Xilinx ISE and Altera Max Plus II during course 616A (Advance FPGA Designs).

HORUS TECHNOLOGIES, New Market, Ontario, Canada. (Apr. 2003 – Jul. 2003)
R & D Engineer

- Main Responsibilities : Troubleshooting hardware and software and correspondence with clients.
- Troubleshooted CPU card for proper logic. The card was originally designed by somebody else. It uses Lucent CPLD and two 16-bit Motorola micro-processors.
- Troubleshooted assembly language software for boiler controller communication. And also corrected software in PC for proper handshaking and operation for modem communication.

WAVETRONICS (2001 - 2002)
Senior Engineer, R & D Department

- Responsibilities mainly include Team Leader, Analog and Digital Hardware Design, Software Design and training to persons from other department.
- Developed PID control algorithm for temperature controller.
- Designed MODBUS RTU protocol based RS232 & RS485 serial communication both for master and slave. VC++, C and Assembly Language are used.
- Designed a product for less than 50 % of market value for same specification using 8-bit μC.

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MASIBUS PROCESS INSTRUMENTS PVT. LTD. (ISO 9001) (2000 – 2001)
Engineer, R & D Department

- Responsibilities : Team leader, Project Planning, Analog and Digital Hardware Design and embedded software development.
- As a team leader, I was responsible for project planning for strict timeframe, economy and higher reliability.
- Designed universal analog signal conditioner cards for any type of transducer input with less than 0.03% non-linearity.
- Designed economical 16-bit accurate and linear DAC circuit using two 8-bit DACs.
- Designed communication cards for RS232 & RS485 for MODBUS RTU, MODBUS ASCII and OPTOMUX slave communication protocol.
- Developed MASIBUS communication protocol for serial communication.

WAVETRONICS (1999 – 2000)
Engineer, R & D Department

- Responsibilities mainly include Analog and digital hardware design, Software Design, Testing and Troubleshooting for Software.
- Worked on 8-bit micro-controllers and micro-processors from Intel and Atmel. Used Assembly Language Programming for Software Development.
- Digital design using off the shelf components available in market for interfacing with μP and μC.
- Analog design using op-amps, transistors and other passive components for transducer analog signal conditioning for process control instruments.

Ambica Consultancy (1998 – 1999)
Trainee Engineer, Software Department

- Main responsibilities includes Assistance in Software by developing small modules for specific object and functions, developing GUI and Data Structures using C and C++.