

IFTEKHAR IBNE BASITH

Assistant Professor

Department of Agricultural Sciences and Engineering Technology
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CURRICULUM VITAE

1. EDUCATION

Ph.D. - University of Windsor, Windsor, ON, Canada

Faculty of Applied Science

August 2016

NSERC CGS Scholar (2012-2015), OGS Scholar (2011-2012, 2015-2016)

- Major: Electrical and Computer Engineering (ECE)
- Thesis: ‘Contactless test access mechanisms for 3D IC’
- Supervisors: Dr. Esam Abdel-Raheem and Dr. Rashid Rashidzadeh
- Grade: 98.33%, A+ in all four required courses.

Master of Applied Science (M.A.Sc.) - University of Windsor, Windsor, ON, Canada

Faculty of Applied Science

August 2011

- Major: Electrical and Computer Engineering (ECE)
- Thesis: ‘A Built-In Self-Test Solution for CMOS MEMS Sensors’
- Supervisors: Dr. Majid Ahmadi and Dr. Rashid Rashidzadeh
- Grade: 91.5%, three A and one A+ for the four courses.

B.Sc. Engg. - Shajalal University of Science and Technology (SUST), Bangladesh

School of Applied Science and Technology

December 2004

- Major: Computer Science and Engineering (CSE)
- Final Year Thesis: ‘Diskless cluster computing’
- Supervisors: Dr. M. Zafar Iqbal and Md. Masum
- Result: 1st class 1st with *honors* in a group of 62 students, CGPA: 3.85/4.00 (A)

2. PUBLICATIONS

- Published IEEE Transaction
 - a. **Iftekhhar Ibne Basith**, Rashid Rashidzadeh, “Contactless Test Access Mechanism via Capacitive Coupling for TSV Based 3D ICs”, in IEEE Transactions on Instrumentation and Measurement (TIM), 65(1): 88-95 (2015).
 - b. **Iftekhhar Ibne Basith**, Nabeeh Kandalraft, Rashid Rashidzadeh, Majid Ahmadi, “Charge-Controlled Readout and BIST Circuit for MEMS Sensors”, IEEE Transactions on CAD (TCAD) of Integrated Circuits and Systems, 32(3): 433-441 (2013).
 - c. Nabeeh Kandalraft, **Iftekhhar Ibne Basith** and Rashid Rashidzadeh, “Low-Contact Resistance Probe Card using MEMS Technology”, IEEE Transaction for Instrumentation and Measurement (TIM), 63(12): 2882-2889 (2014).
- Elsevier Journal (Accepted)
 - d. **Iftekhhar Ibne Basith**, Esrafil Jedari, and Rashid Rashidzadeh, “A Contactless Probe for Utilizing Inductive Coupling”, accepted for publication in the Elsevier Microelectronics Journal, February 2017.

- Elsevier Journal (Submitted)

Tareq Mohammad Supon, **Iftekhar Ibne Basith**, Esam Abdel-Raheem, and Rashid Rashidzadeh, “Efficient Integrated Bus Coding Scheme for Low-Power I/O”, submitted for review in February 2017, in the Elsevier AEU – International Journal of Electronics and Communications.
- Published Refereed Conference Publications
 - e. **Iftekhar Ibne Basith**, Tareq Mohammad Supon, Esam Abdel-Raheem, and Rashid Rashidzadeh, “Comparative Study on Bus-Coding Schemes and Improvement on SINV Coding”, in the proceedings of IEEE 28th International Conference on Microelectronics (ICM), December 17-20, 2016, Cairo, Egypt, Page(s): 17-20.
 - f. **Iftekhar Ibne Basith**, Rashid Rashidzadeh, and Esam Abdel-Raheem, “Contactless Detection of Faulty TSV in 3D IC via Capacitive Coupling” in proceedings of the IEEE 58th International Midwest Symposium on Circuits and Systems (MWSCAS), Colorado State University, Fort Collins, Colorado, Aug 2-5, 2015, Page(s): 1-4.
 - g. Mohammed Alamgir, **Iftekhar Ibne Basith**, Tareq Mohammad Supon, Rashid Rashidzadeh, “Improved Bus-Shift Coding for Low-Power I/O” in proceedings of the IEEE International Symposium on Circuits and Systems (ISCAS), May 24-27, 2015, Lisbon, Portugal.
 - h. R. Rashidzadeh, **I.I. Basith**, “A Test Probe for TSV using Resonant Inductive Coupling” in IEEE International Test Conference (ITC), Publication Year: 2013, Page(s): 1- 6.
 - i. **Iftekhar Ibne Basith**, Tareq Muhammad Supon, Ajit Muhury, Rashid Rashidzadeh and Majid Ahmadi, “Performance Enhancement of Single Electron Junction 1-bit Full Adder”, in the 18th IEEE International Conference on Electronics, Circuits and Systems (ICECS), 2011 in Beirut, Lebanon, December 11-14, 2011, Page(s) 157–160.
 - j. N. Kandalaft, **I. Basith**, R. Rashidzadeh, and M. Ahmadi, “High Speed Test Interface Module using MEMS Technology”, accepted in the IEEE International Symposium on Circuits and Systems (ISCAS) in Rio de Janeiro, Brazil, May 15 - 18, 2011. (withdrawn)
 - k. **Iftekhar Ibne Basith**, Nabeeh Kandalaft and Rashid Rashidzadeh, “Built-in Self-Test for Capacitive MEMS using a Charge Control Technique”, published in the 19th IEEE Asian Test Symposium (ATS), Shanghai University, China, December 1-4, 2010, Page(s): 135-140.
 - l. N. Kandalaft, **I. Basith**, R. Rashidzadeh, “A MEMS Based Device Interface Board”, published in the IEEE International Test Conference (ITC) 2010, October 31 - November 05, 2010, Austin, Texas, USA.
- Non-refereed Contributions
 - m. **Iftekhar Ibne Basith**, “Design and Analysis of a Charge Pump Phase Locked Loop (CPPLL) using CMOS 65nm technology”, submitted to the Research

Center for Integrated Microsystems (RCIM) lab at University of Windsor as a technical report.

- n. **Iftekhar Ibne Basith**, ASM Mafizul Islam, Shaikh O. Ali, Asif Iqbal Ahmed and Tareq Muhammad Supon, “Design of a Capacitive Micromachined Ultrasonic Transducer (CMUT) with Silicon Nitride (Si₃N₄) Hexagonal Diaphragm”, presented in the RCIM lab for Advanced MEMS topics.

3. HONORS AND AWARDS

Name of the Honor/ Scholarship/ Award	Level	Type	Location of Tenure	Period
NSERC CGS Award	Federal	Research	University of Windsor	2012/09- 2015/08
Ontario Graduate Scholarship (OGS)	Provincial	Research	University of Windsor	2011/09- 2012/08
Outstanding Honorary Services Award	Institutional	Leadership	University of Windsor Graduate Student Society (GSS)	31/03/2016
Student Solidarity Award	Institutional	Leadership	Organization of Part- time University Students (OPUS)	24/03/2016
Special Recognition Award	Institutional	Leadership	University of Windsor Students' Alliance (UWSA)	08/04/2016
Dr. Ross H. Paul Scholarship	Institutional	Research	University of Windsor	2010/09- 2011/08
Tuition Waiver & Doctoral Entrance Scholarship	Institutional	Academic	University of Windsor	2011/09- 2015/08
Graduate Student Society Councilor	Institutional	Leadership	University of Windsor	2009/09- 2010/08
Best Emerging Youth Leader	International	Leadership	US Consulate, Karachi	2006
Chancellor's Gold Medal	Institutional	Academic	Shahjalal University of Science & Tech. (SUST)	2004
Prime-Minister's Gold Medal Award	National	Research	University Grants Commission (UGC), Bangladesh	2003
ASI Scholarship	International	Leadership	Washington College, MD, USA	2004/06- 2004/07
NUS Research Scholarship	Institutional	Research	National University of Singapore	Declined, 2007
Erasmus Mundus Scholarship	Institutional	Academic	European Union (Germany, Paris)	Declined, 2007
Erasmus Mundus Scholarship (NEBCC)	Institutional	Academic	European Union (UK, Spain, Greece, Ireland)	Declined, 2007

4. INVITED TALKS AND POSTERS

- a. N. Kandalaft, **I. Basith**, R. Rashidzadeh, Majid Ahmadi (October 10-11, 2012) “High Density MEMS Probe Card for High-Speed Wafer Level Testing”, presented in the CMC TEXPO research competition 2012, Toronto, ON, Canada.
- b. **Iftekhar I. Basith**, N. Kandalaft, R. Rashidzadeh and M. Ahmadi, “A New Integrated Readout and BIST Solution for MEMS Sensors”, presented in the CMC TEXPO research competition 2011, October 19-20, 2011, Gatineau, QC, Canada.
- c. **Iftekhar I. Basith**, N. Kandalaft, R. Rashidzadeh and M. Ahmadi, “A New BIST Architecture for MEMS Fault Detection”, presented in the CMC TEXPO research competition 2010, October 4, 5 2010, Ottawa, ON, Canada.
- d. **Iftekhar Ibne Basith**, “Effect of Distance learning and digital divides in South Asia”, in the International Youth Jam, Karachi, Pakistan, organized and sponsored by the US Consulate, Karachi, Pakistan.

5. RESEARCH INTERESTS

- Testing of Analog, Mixed-signal, and RF devices, MEMS devices and testing.
- Low Power CMOS, Nano Electronics.
- Signal and Image Processing, Image Segmentation, VLSI circuit design.
- Software Engineering, Database, and Web applications, Multimedia, Wireless Communications.

6. PROFESSIONAL MEMBERSHIP

Student Member, IEEE: 90902122 (2010-Present)

Vice Chair, IEEE Young Professional – Windsor Section: (2015-2016)

Member, Ontario Society of Professional Engineers (OSPE, 2015-2016)

7. PROFESSIONAL AND TEACHING EXPERIENCES

- a. Start and End dates : January 16, 2017 – Present
Position : Assistant Professor
Department : Agricultural Sciences and Engineering Technology, Sam Houston State University, Huntsville, TX, USA.
Responsibilities :
 - I am currently teaching three courses.
 - Engineering Technology I (DC Electronics) and Engineering Technology II (AC Electronics).
- b. Start and End dates : August 22, 2016 – December 31, 2016
Position : Visiting Assistant Professor
Department : Electrical and Computer Engineering and Computer Science (ECECS), University of New Haven, West Haven, CT, USA.
Responsibilities :
 - I taught Digital Communications I and Wireless Communication for the Masters students. The class was delivered onsite, with lots of real time examples, a group project that needs comprehensive study of IEEE conference and articles, then some hands on simulations and finally a project report in IEEE conference format alongside group presentations to improve the students’ presentation skill.

- I taught Digital System I for the Undergrad students, again lectures were complemented using hands on experiment of gates, flip-flops, encoder/decoder etc. and programming simulation of number system conversion etc.
- c. Start and End dates : September 2011 – August 8, 2016
Position : Graduate Teaching and Research Assistant
Department : Electrical and Computer Engineering, University of Windsor
Responsibilities :
- I worked as a member in sensor team for KSR International from January 2, 2015 until June 6, 2015. During that time I worked on “humidity sensor” design and testing for VOLVO company.
 - Conducting literature review, performing laboratory experiments and simulations, compiling the experimental observations.
 - Analysis of results and preparation of articles for international conferences and journals.
 - My research involves the testing of 3D IC (Three dimensional Integrated Circuits) which is the future of electronics.
 - I have proposed and fabricated a novel test access solution for 3D IC based on capacitive and inductive coupling techniques in Cadence design tool and in PolyMUMPs. Results of my findings have been submitted to IEEE transactions.
- d. Start and End dates : September 2009 – August 2011 (M.A.Sc.)
Position : Graduate Teaching and Research Assistant
Department : Electrical and Computer Engineering
Responsibilities :
- I have proposed and fabricated a novel BIST solution for MEMS sensors based on charge controlled technique in Cadence design tool as my Masters’ thesis. The idea I developed can be used in automotive industries to reduce the power consumption, MEMS antenna, micrometer radar, robot sensors etc.
 - Conducting tutorial classes and laboratory experiments, grading quizzes, assisting instructors in the administration of examinations.
 - Gathering reference materials for 2nd, 3rd and 4th year undergraduate courses.
 - I was teaching assistant for the courses like Circuit Analysis I and II, Digital Logic Design and many other undergraduate and graduate level courses.
- e. Start and end dates : November 2005 - May 2007
Position : Lecturer
Department : Computer Science and Engineering (CSE)
Employer : Shahjalal University of Science and Technology (SUST)
Address : Sylhet, Bangladesh
Responsibilities : Main responsibilities include teaching in undergraduate level, research, administration and management.
- Taught Digital Electronics, Electronic Communications, Digital Signal Processing and Lab using Matlab, Object Oriented Programming in C++ and Java, Numerical Analysis using Matlab, Data Structure and Algorithm, and many other courses.

- Other responsibilities include supervising 3rd year and 4th year student capstone projects, proctoring exams, examination committee member, result processing, grading scripts and working as an advisor for undergrad students.
- Executive Member of the departmental procurement committee and laboratory setup committee that basically deals with purchasing the equipment's of Electrical, Electronics and Computer laboratory.
- Supervise the laboratory officer to setup the laboratory according to the specifications of the departmental laboratory setup committee. The laboratory committee basically collects the specifications from the faculty members who are going to teach the particular courses including the lab.
- Executive member of university website development committee and university computer center.
- Organizing computer fair and computer programming contests for public awareness.

f. Start and end dates : January 2007 - May 2007

Position : Project Local Coordinator

Project : Codewitz Asia-Link Project (Ref. BD Asia-Link/10/095-229)

Funded by : European Union

Department : Computer Science and Engineering (CSE)

Employer : Shahjalal University of Science and Technology (SUST)

Address : Sylhet, Bangladesh

Responsibilities :

Codewitz Asia-Link Project-for better programming skills - a European Union funded project where the main project coordinating partner is the Tampere Polytechnic, Tampere, Finland and other partners are University of Applied Sciences Berlin, Germany and Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.

- Conducting research for this EU funded project for developing programming skills both for undergrad students and teachers. The responsibilities include preparing budget, Equipment purchase, setup research lab, developing plans, designing and implementing learning objects.
- Preparing progress reports to the main coordinating partner Tampere Polytechnic, Finland as well as the European Union.

g. Start and End dates : July 2006 - April 2007

Position : CCNA Instructor

Department : Regional Academy, CSE, SUST

Employer : Shahjalal University of Science and Technology (SUST)

Address : Sylhet, Bangladesh

Responsibilities :

- Was responsible for the configuration and maintenance of official mail server (sust.edu) of my university and my department.
- I have taught students of 3rd and 4th year about server configuration, firewall design, configuring and maintaining routers and gateways.

- h. Start and End dates : October 2006 - December 2006
Position : Project Lead and Network Administrator
Department : Regional Access Centre, SUST
Funded By : The Ministry of Cultural Affairs (MoCA), Bangladesh
Employer : Shahjalal University of Science and Technology (SUST)
Address : Sylhet, Bangladesh
Responsibilities :
 - I led a dynamic team of students that worked to upgrade the whole IT section to Open Source, funded by government of Bangladesh.
 - Was responsible for the installation of server machines on site for the data storage.
- i. Start and End dates : June 2006 - October 2006
Position : Project Member and Network Administrator
Department : Regional Access Centre, SUST
Funded By : The Ministry of Liberation War Affairs, Bangladesh
Employer : Shahjalal University of Science and Technology (SUST)
Address : Sylhet, Bangladesh
Responsibilities :
 - I worked with a group of students and analyzed, processed and prepared a complete database in 'unicode' where all freedom fighter's records (around 144500 entries) are taken from the official gazette of Bangladesh.
 - Was responsible for the installation of server machines on site for the data storage.
- j. Start and End dates : January 2006 - June 2006
Position : Project Coordinator
Project : Post graduate Diploma in Information Technology
Funded by : Ministry of Sc. and Information & Comm. Tech. (SCIT),
Government of People's Republic of Bangladesh
Department : Computer Science and Engineering
Employer : Shahjalal University of Science and Technology (SUST)
Address : Sylhet, Bangladesh
Responsibilities :
Postgraduate Diploma in Information Technology (PGD-IT). A program financed by the Ministry of Science and Information & Communication Technology, Government of the People's Republic of Bangladesh and conducted by the Computer Science and Engineering Department, Shahjalal University of Science and Technology, Sylhet, Bangladesh. Responsibilities include:
 - Monitor performance against project baseline.
 - Maintain project documentation in a central repository.
 - Provide support to quality audits, Make information available to project stakeholders.
 - Establishes a distribution structure for project information.
 - Guide and assist the project team in the development of the project plan.
 - Mentor others who wish to develop competence in project planning and control.
 - Obtain and process status data and maintain an updated plan.

- Evaluate project status and performance. Recommend appropriate corrective actions.
 - Develop and maintain standards for planning and control.
- k. Start and end dates : January 2005 - November 2005
Position : Lecturer
Department : Computer Science and Engineering (CSE)
Employer : Leading University
Address : Sylhet, Bangladesh
Responsibilities : Main responsibilities include teaching in undergraduate level, research, administration and management.
- Taught Fundamentals of Electrical Engineering, Object Oriented Programming (C++), Data Structure and Algorithm, Introduction to Computer Hardware, Database Management and Artificial Intelligence.
 - Other responsibilities include supervising 4th year student projects, proctoring exams, result processing and grading scripts.
 - Executive member of University Program Curriculum Development Committee and University Computer Center.

8. PROFESSIONAL TRAININGS & WORKSHOPS ATTENDED

- Workshop on Radio Network Optimization (2005, by Huawei Technologies, Dhaka, Bangladesh)
- Workshop on System Administration, Networking and ISP Setup with Linux (2006, by The Institute of Engineers, Dhaka, Bangladesh)
- Workshop on Artificial Intelligence and Robot Programming (2006, Dhaka, Bangladesh)
- Workshop on Vehicles & Performance (2010 and 2013, by Windsor Chrysler, University of Windsor)
- Workshop on Design Engineering, Automation and Styling (2010 and 2012, by Centerline Limited, University of Windsor)
- Hands-on MATLAB®, Simulink® and Real-Time Workshop® (2013, by The MathWorks Inc., at University of Windsor)
- Workshop on Engineering & Quality Control (2011 and 2013, by Hydro One, University of Windsor)
- Workshop on Project Management & Efficient Networking (2011, by Research In Motion - RIM, University of Windsor)
- Leadership Skill Symposium (2012 and 2014, University of Toronto, Mississauga Campus, ON, Canada)

9. ACADEMIC PROJECTS

- **SMART-GRID:** A Novel Optimal Real-Time Pricing Algorithm for Smart Grid was proposed and verified through Matlab simulation.
- **CPPLL:** Charge Pump Phase Locked Loop was designed and performance was verified. (2010)

- **CMUT:** Design and implementation of hexagonal CMUT (capacitive micromachined ultrasonic transducer) as part of advanced MEMS project which earned me A+ and huge appraisal. (2010)
- **OpAmp:** Design and performance analysis of an Operational Amplifier (OpAmp). (2009)
- **Full Adder:** Design and implementation of full adder using SET (single electron) devices as part of nanoelectronics project work. (2009)
- **Designing WAP site for e-governance:** My supervised group developed a WAP site which allows the citizens of Sylhet City Corporation to pay governmental bills (Electricity, phone, gas, tax) by pre-paid card using HTML, WML, PHP, JavaScript, MySql. (2006)
- **Face Tracking Software:** Designed and implemented using matlab with a group of students. (2006) and won the second prize in countrywide software competition.
- **Diskless Cluster Computing:** As part of the final year project, using LINUX OS, and net booting concept implemented a diskless cluster of 16 PC's which was highly appreciated. (2004)
- **Designing the Fiber-Optic backbone for SUST:** I and my course teacher laid out the network design for our university and also a portion of small village back in Bangladesh. (2003)
- **Design and Implementation of Admission System in SUST:** One of my supervised groups did this job, which was also highly appreciated. (2006)
- **AIRP: AN IP Anycast Protocol Approach:** One of my supervised groups worked on the inter-domain IP anycast routing for IPv6 network and proposed a modification of existing interior routing protocol. (2007)
- **Banking Database Management System in Java:** Designed and developed a complete database driven system for a bank as a course project. (2002)

10. REVIEWER

IEEE Transactions on Instrumentation & Measurement (TIM)

2014-Present

11. EXTRA-CURRICULAR ACTIVITIES

- **Elected Leadership Positions:**
 - a. **President** in Graduate Student Society (GSS) in 2013-present, University of Windsor, Windsor, ON, Canada.
 - b. **Vice President – Finance, Operations and Human Resources** in Graduate Student Society in 2011-2012, University of Windsor, Windsor, ON, Canada.
 - c. **Graduate Student Representative** in Graduate Student Society in 2009-2010, Electrical and Computer Engineering Department, University of Windsor, Windsor, ON, Canada.
 - d. **General Secretary (GS)** in Bangladesh Canada Association of Windsor-Essex (BCAWE) for 2015-2016.
 - e. **Assistant General Secretary (AGS)** in Bangladesh Canada Association of Windsor-Essex (BCAWE) for 2011-2015.
 - f. **Student Affairs Secretary** in Bangladesh Canada Association of Windsor-Essex (BCAWE) for 2009-2011.

- g. **General Secretary** of Computer Science and Engineering (CSE) Society, SUST, Bangladesh in 2002-2003, elected by huge margin by e-voting.
- **Chairing Committees:** I have chaired numerous technical meetings related to course design, examination committee, and project planning during my endeavors with University of Windsor, SUST and Leading University.
 - **Project Management:** During my university teaching tenure at Shahjalal University of Science and Technology I was team lead for four top priority projects. Three of them were financed by different Ministries in Government of People's Republic of Bangladesh and the other was financed by European Union. I was involved from early stage of procurement of these projects. My responsibility included liaison with management, and different teams within the project, and optimizing man, material, machine, and money involved in the project, cash flow management and risk management.
 - Taught and trained numerous student groups for programming contests focusing on data structures and algorithms design and implementation.
 - I have been the main think tank and prime organizer for various cultural events in Windsor for our BCAWE for years now.
 - I possess excellent interpersonal, communication and leadership skills and collaborative team spirits that helped to perform duties successfully. I have mentored and helped so many students in personal level by academic advising, personal and mental health issue, and environmental change adoption issue.
 - I led departmental football and basketball team to championship once (2000), and runner-up thrice (1999, 2001 and 2002) in SUST, Bangladesh.
 - Was involved in fund-raising and relief distribution activities during floods in 1998 and 2004 in Bangladesh along with local government.