Curriculum Vitae of **Saima Sharmin**

Lecturer
Department of Electrical & Electronic Engineering,
Bangladesh Univ. of Engineering & Technology, Bangladesh

+(880)-1675939063
saima_sharmin@eee.buet.ac.bd
sharmin.saima@yahoo.com

EDUCATION:

B.Sc. in Electrical & Electronic Engg., Bangladesh Univ. of Engg. & Technology, Feb 2011
GPA: 3.98/4.00, Rank: 2/134 (in EEE Dept.).

Higher Secondary School Certificate Examination, Viqarunnisa Noon College, Bangladesh
GPA: 5.0/5.0.

Secondary School Certificate Examination, Ideal School & College, Bangladesh
GPA: 5.0/5.0.

RESEARCH INTERESTS:

Modeling and characterization of solid state devices.
Nanoscale devices: Physics and application. Nano-elecronics & photonics.
Renewable energy source: photovoltaic cells.

ACADEMIC HONORS:

- ◊ Dean's list award at all four levels and University Merit Scholarship at all semesters.
- ◊ University Admission Test Excellency Scholarship, Rank:5/800.
- ◊ Imdad-Sitara Khan Foundation Scholarship (2005 to 2008), for academic excellence.
- ◊ Momtaj Uddin Foundation Scholarship (2006-07), for academic excellence.

PUBLICATION:

S. Sharmin, U. Sikder, R. Ferdous, Quazi D. M. Khosru, *Characterization of interface trap density of In-rich InGaAs nMOSFETs with ALD Al_2O_3 as gate dielectric,*
IEEE Nanotechnology Materials and Devices Conference (**NMDC** 2010), Monetery, California, USA, pp. 352-355, Oct. 2010.

AWARD:

Best undergraduate thesis work.
1st prize, Group: Electronics.
2nd EEE Undergraduate Project Workshop (EUProW 2011),
Department of EEE,
Bangladesh University of Engineering and Technology.

RESEARCH EXPERIENCES:

Quantum mechanical modeling & characterization of III-V MOSFETs

- ◊ Characterization of interface trap density of In-rich surface channel $In_xGa_{1-x}As$ MOSFETs for various In contents in the channel.
- ◊ Using ballistic current model, comparative study of transport property of In-rich surface channel $In_xGa_{1-x}As$ MOSFETs for various channel In content and channel thickness.
- ◊ Determination of direct gate tunneling current of In-rich surface channel $In_xGa_{1-x}As$ MOSFETs.
- ◊ Developed a 1-D self-consistent Schrödinger-Poisson solver for high-κ/III-V heterostrucure MOSFETs with proper consideration of the strain effect between different layers.

Characterization of Heterojunction with Intrinsic Thin layer (HIT) solar cells

Currently developing a model to characterize interface properties of HIT solar cells.

PROFESSIONAL EXPERIENCES:

Lecturer, Dept. of Electrical & Electronic Engg., BUET, (March 2011-present)

- ◊ Courses instructed (Theory): Electrical Devices and Circuits (EEE 263).
- ◊ (Laboratory): Digital Electronics (EEE 304), Microprocessor & Interfacing (EEE 316), Digital Signal Processing (EEE 312), Electrical Devices and Circuit Laboratory (EEE 264), Microprocessor System Design (EEE 494), Electrical Simulation (EEE 110).

LEADERSHIP EXPERIENCES:

Member, Organizing committee, 2nd EEE Undergraduate Project Workshop 2011 (30 April-2 May)

- ◊ Organized a 3-day long workshop with project display, poster presentation, oral presentation and a prize giving ceremony.

Group leader of undergraduate projects

PROFESSIONAL AFFILIATION:

- ◊ The Institute of Electrical and Electronic Engineers, Inc. (IEEE)
- ◊ IEEE Electron Devices Society
- ◊ nanoHUB.org (registered user)

COMPUTER SKILLS:

- ◊ Programming Language: Verilog, Assembly, C, C++
- ◊ Simulation and Design Tools: MATLAB, SPICE, Cadence Tools.

RELEVANT COURSEWORK:

Undergraduate Courses

◊ Solid State Devices ◊ Analog Integrated Circuit ◊ Processing and Fabrication Technology ◊ Compound Semiconductor and Heterojunction Devices ◊ Optoelectronics ◊ Electrical Properties of Materials ◊ Electronics ◊ Microprocessor and Interfacing ◊ Physics (Heat and Thermodynamics, Optics, Quantum Physics) ◊ Continuous Signals and Linear ◊ Engineering Electromagnetics ◊ Linear Algebra

Postgraduate courses (Ongoing)

◊ LASER Theory ◊ Applied EM (Electromagnetics) Theory.

UNDERGRADUATE PROJECTWORKS:

- ◊ Synthesis and simulation of a high-speed, low power two-stage CMOS amplifier with HSPICE
- ◊ Design and Simulation of a 4-bit ALU with Cadence Virtuoso Tools.
- ◊ Design and implementation of an automated toll collection system.
- ◊ Development of a voice-to-text conversion program using MATLAB.

SYNERGIC ACTIVITIES:

- ◊ 3rd prize, **SPARKS Quiz Contest**, Electrical Day 2007
  jointly organized by IEEE Bangladesh Section & Department of EEE, BUET.
- ◊ Participation in Bangladesh Television Quiz Contest, "Quiz Quiz", 2005.
- ◊ Participation in Math and physics Olympiads in college science fairs, 2005.
- ◊ Ex-member- Viqarunnisa Noon Science Club (2005-2006).

REFERENCES:

Dr. Quazi D. M. Khosru
Professor,
Dept. of Electrical & Electronic Engg.,
Bangladesh Univ. of Engg. & Tech.,
Email: qdmkhosru@eee.buet.ac.bd

Dr. Anisul Haque
Professor and Chairperson,
Dept. of Electrical & Electronic Engg.,
East West University, Bangladesh.
Email: ahaque@ewubd.edu