

# Tahmid Hassan TALUKDAR

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OFFICE: ROOM C103, DUKE ENERGY INNOVATION CENTER, ANDERSON, SC

Semiconductor Physics, Anti-Lasers, Silicon Photonics, Porous Silicon Biosensors, Processor Architecture, Optoelectronic Devices, Machine Learning, Control Systems, Cyber Security.

## EDUCATION

- AUG 2017 – PRESENT Ph.D. in ELECTRICAL ENGINEERING  
**Clemson University**, United States  
Thesis: “TBD” | Advisor: Prof. Dr. Judson D. RYCKMAN  
GPA: 4.0/4.0
- JAN 2011 – MAR 2016 B.Sc. in ELECTRICAL ENGINEERING  
**Shahjalal University of Science and Technology**, Sylhet  
Thesis: “High Efficiency Multijunction Solar Cells”  
CLASS POSITION: 5th

## EXPERIENCE

- Current*  
AUG 2017 Graduate Research Assistant  
*Nanophotonics Lab, Clemson University*  
I perform research related to designing and implementation of photonic waveguides, biosensors, photonic cavities and microring resonators, computational electromagnetics and porous silicon photonics.
- FEB-AUG 2017 Lecturer  
*Department of EEE, Sylhet Engineering College*  
Involved mostly in teaching, conducting labs, setting assignments and exams (Circuits I and II.) Graded Electrical Technology, Circuits II and Electrical Drives and Instrumentation.

## SKILLS

- Circuits: EMBEDDED SYSTEMS, FILTERS, SENSORS, Access, LINUX, ubuntu,  
Programming: Assembly, C, C++, Python, MATLAB, JAVA, HTML-CSS, CUDA, ~~LaTeX~~  
Instrumentation: SEM, Oscilloscope, Signal Generator, Soldering, Microscope, Fume Hood  
Porous Silicon Etching (HF), Microcontroller (Arduino MEGA, UNO)  
Software: MATLAB, Lumerical MODE – FDTD – Interconnect, LABVIEW, Orcad (Spice, Capture and Layout), Simulink, COMSOL, SolidWorks, LTSpice, SigmaPlot  
AutoCAD, KLayout  
OS: MACOS, Linux (Ubuntu, Mint, Kali), Windows

## CONFERENCE PROCEEDINGS

- 1 T.H. Talukdar, S. H. Parvez, “Small Scale Data Transmission via Light,” in International Conference on Engineering, Research, Innovation and Education, Sylhet, Bangladesh, Jan 2017.
- 2 T.H. Talukdar, “32.325% Efficiency PIN Junction Gallium Arsenide Solar Cell with Reduced Thickness and Textured Front Surface,” in International Conference on Engineering, Research, Innovation and Education, Sylhet, Bangladesh, Jan 2017.
- 3 T.H. Talukdar, R. Siddique, and M. Hasan, “Study of Single Junction Solar Cell Characteristics Varying Different Parameters,” in The 2nd International Conference on Electrical Engineering and Information & Communication Technology, Dhaka, Bangladesh, May 2015.
- 4 T.H. Talukdar, R. Siddique, and M. Hasan, “Study of Single Junction Si Solar Cells for Maximum Efficiency,” in Student Conference on Informatics, Electronics & Vision, Dhaka University, Bangladesh, May 2016.

## LANGUAGES

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BILINGUAL IN ENGLISH AND BENGALI. LIMITED PROFICIENCY IN HINDI.

## PROJECTS

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- 1 Machine learning training algorithm for rainfall forecast based off past 50 years of data
- 2 Implementation of submarine robot for underwater navigation and communication
- 3 T.H. Talukdar, "Low cost data transmission system via LED lighting with over 50 Bps speed
- 4 Remote controlled robot car (Pioneer) using Atmel AVR
- 5 Boolean equation generator from arbitrary logic input using Quine-McCluskey algorithm (using C programming language)
- 6 Construction of a 200VA power transformer
- 7 Designing a fire security system in a market floor on architectural drawing.
- 8 Construction of a three-phase inductive load
- 9 Remote home appliance control using DTMF Technology in cellphones
- 10 Designing of electrical service system of a student hall

## TRAINING AND CERTIFICATIONS

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- 1 Information Technology Passport Examination , ITEE, Information Technology Promotion Agency, Japan (IPA).  
Oct 2016. Merit Position:2nd
- 2 Industrial Technology on Electrical Engineering & Instrumentation, Training Institute for Chemical Industries (TICI), Narsingdi.  
Duration: 1 Month (Apr 2015- May 2015). Grade: A
- 3 The Technology Workshop: Empowering Students With Telecommunication Technology,  
Jun 2012

## EXTRACURRICULAR

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I played lead guitars in two Metal bands named Radium is Dying and Nordic Shadows. I played a fund-raising concert for SAVAR Building Collapse victims. Also, I was a semi-pro gamer who played League of Legends and Call of Duty.