

## Dr. Abdullah Al Amin

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CONTACT INFORMATION Department of Electrical Engineering, Hörsalsvägen 11, +46 0769 358 809  
Chalmers University of Technology, SE-412 96 Gothenburg. alamina@chalmers.se

PERSONAL WEB PORTFOLIO <https://abdullahalamin.pb.online/>

RESEARCH INTERESTS Measurements of Physiological and Pathological parameters for medical diagnosis, Early detection of cancer and prognostic stage determination, Machine Learning, Data Analysis and Classification, Development of portable and end user medical devices, Development of Sensors for biomedical applications, Biomedical Instrumentation, Bio-Impedance, Brain Machine Interface, Medical Electronics.

EDUCATION **Doctor of Philosophy (PhD)** 2018

Department of Biomedical Physics and Technology, University of Dhaka.

- Thesis Title: *Development of Electrical Control System through Human Brain Signal Analysis.*, Supervised by Professor Dr. K Siddique-e Rabbani.

**Degree of Master of Science in Engineering with a major in Electronics** 2006

Department of Applied Physics and Electronics, Umeå University, Sweden.

- Thesis Title: *Antenna's for High Frequency Applications, Design and Simulation of Radiation Pattern and Electrical Characteristics.* supervised by Ulf Holmgren, CI, Universitetsadjunkt, Department of Applied Physics and electronics, Umeå University, Umeå, Sweden.

**B.Sc. (Honors) in Physics** Examination of 2002(Held in 2005)

University of Dhaka, Dhaka, Bangladesh.

**Higher Secondary Certificate Examination, Science** 1998

Government Science College, Dhaka, Bangladesh.

**Secondary School Certificate Examination, Science** 1996

Sherebangla Nagor Govt. Boys High School, Dhaka, Bangladesh.

### BOOK CHAPTER

1. K Siddique-e Rabbani, **Abdullah-Al Amin**, Ahmed Raihan Abir, A K M Bodiuzzaman, Ahamad Imtiaz Khan, M Zihad Tarafdar. “ *A Rural Health Monitor with Telemedicine*”, Biomedical Engineering, Editors – Ramesh R. Galigekere et. al., Narosa Publishing House, India, p. 77-82, 2011. ISBN: 978-81-8487-195-1

1. **Abdullah-Al Amin**, Abdullah Abu Sied and S. K., & Rabbani. “ *A novel active AC coupled input stage of instrumentation amplifier for bioelectrical applications* ”, Engineering Research Express, 1(2), 2019.
2. **Abdullah-Al Amin**, Parvin, S., Kadir, M. A., Tahmid, T., Alam, S. K., & Rabbani. “ *Classification of breast tumour using electrical impedance and machine learning techniques* ”, Physiological measurement, 35(6), 965, 2014.
3. **Abdullah-Al Amin**, A K M Bodiuzzaman, Ahamad Imtiaz Khan, K Siddique-e Rabbani. “ *Design and Development of a PC based ECG Equipment* ”, Bangladesh Journal of Medical Physics, 2013, Vol.6, No.1, pp. 39-54.
4. **Abdullah-Al Amin**. “ *A Feasibility Study of Employing EOG Signal in Combination with EEG Based BCI System for Improved Control of a Wheelchair* ”, Bangladesh Journal of Medical Physics, 2017, Vol.10, No.1, pp. 47-58.
5. **Abdullah-Al Amin**, K Siddique-e Rabbani. “ *Development of Low Cost Miniature USB Based Data Acquisition System for Biomedical Instrumentation* ”, Bangladesh Journal of Medical Physics, 2017, Vol.10, No.1, pp. 1-11.
6. K M Talha Nahiyani, **Abdullah-Al Amin**. “ *Removal of ECG Baseline Wander using Savitzky-Golay Filter Based Method* ”, Bangladesh Journal of Medical Physics, 2015, Vol.8, No.1, pp. 32-45.

1. K Siddique-e Rabbani, **Abdullah-Al Amin**, A K M Bodiuzzaman, Ahamad Imtiaz Khan, Ahmed Raihan Abir, Zihad Tarafdar and M Obaidur Rahman. “ *An Indigenously Developed and Sustainable Telemedicine System* ”, The 7th International Conference on Appropriate Healthcare Technologies for Developing Countries, London, UK, 2012.
2. K Siddique-e Rabbani, **Abdullah-Al Amin**, Ahmed Raihan Abir, A K M Bodiuzzaman, Ahamad Imtiaz Khan, M Zihad Tarafdar. “ *A Rural Health Monitor with Telemedicine* ”, International Conference on Biomedical Engineering (ICBME), Manipal, India, 2011.

1. **Abdullah-Al Amin**, Shahnaj Parvin, M A Kadir, Tasmia Tahmid, S Kaisar Alam, K Siddique-e Rabbani. “ *Classification of Breast Tumour Using Electrical Impedance* ”, XV th International Conference on Electrical Bio-Impedance (ICEBI), Heilbad Heiligenstadt, Germany, 2013.
2. **Abdullah-Al Amin**, ShahnajParvin, M A Kadir, Tasmia Tahmid, S Kaisar Alam, K Siddique-e Rabbani. “ *Breast Tumour Classification Using Electrical Impedance* ”, 19 th Islamic World Academy of Sciences Conference, Dhaka, Bangladesh, 2012 (Poster).
3. **Abdullah-Al Amin**, A K M Bodiuzzaman, Ahamad Imtiaz Khan, Ahmed RaihanAbir, K Siddique-e Rabbani. “ *Indigenous development of a Computerised 12 lead diagnostic ECG Equipment* ”, Conference of Bangladesh Physical Society, Dhaka, Bangladesh, 2012.
4. K Siddique-e Rabbani, **Abdullah-Al Amin**, A K M Bodiuzzaman, Ahamad Imtiaz Khan, Ahmed RaihanAbir, Zihad Tarafdar. “ *A Rural Health Monitor with Telemedicine* ”, Conference of Bangladesh Physical Society, Dhaka, Bangladesh, 2012.

5. K Siddique-e Rabbani, **Abdullah-Al Amin**, Ahamad Imtiaz Khan, A K M Bodiuzzaman, Ahmed Raihan Abir. “ *Indigenous development of Computerised 12 lead diagnostic ECG equipment*”, Conference of Bangladesh Asiatic Society, Dhaka, Bangladesh, 2011.
6. K Siddique-e Rabbani, **Abdullah-Al Amin**, Ahamad Imtiaz Khan, A K M Bodiuzzaman, Ahmed Raihan Abir. “ *Indigenous development of a Rural Healthcare system through Telemedicine* ”, Conference of Bangladesh Asiatic Society, Dhaka, Bangladesh, 2011.

PAPERS  
SUBMITTED  
FOR REVIEW

1. **Abdullah-Al Amin**, K Siddque-e Rabbani, *A Non-Saturating Stable Driven Right Leg (DRL) Circuit with Improved Performance*
2. **Abdullah-Al Amin**, K Siddque-e Rabbani, *Development of a Novel Self-Biased Low-Noise Two-Wired Active Electrode.*

PAPERS  
UNDER  
PREPARATION

1. **Abdullah-Al Amin**, K Siddque-e Rabbani, *An Individual Skin-Electrode Contact Impedance Measurement System.*
2. **Abdullah-Al Amin**, K Siddque-e Rabbani, *A Two Electrode ERD Based Motor Imaginary BCI System with Single Trial Online Classification.*

POSITIONS AND  
EMPLOYMENT

- Postdoc Researcher** *Sep 2019 - present*  
Dept. of Electrical Engineering, Biomedical Electromagnetics, Chalmers University of Technology, Gothenburg, Sweden.
- Postdoc Research Fellow** *March 2018 - Aug 2019*  
Dept. of Biomedical Physics & Technology, University of Dhaka, Dhaka, Bangladesh.
- Ph.D Studies** *Sep, 2012, - March, 2018*  
Fellowship of the International Science Programme (ISP) of Uppsala University, Sweden. Supervised by Professor Dr. K Siddique-e Rabbani  
Conducted in Dept. of Biomedical Physics & Technology, University of Dhaka, Dhaka, Bangladesh.
- Part Time Lecturer** *Feb 2013 - Dec, 2016*  
BPT-M-06, Computers & Microcontrollers in Healthcare  
Dept. of Biomedical Physics & Technology, University of Dhaka, Dhaka, Bangladesh.
- Post Graduate Research Fellow** *Jan, 2012 - Aug, 2012*  
School of Computing, Blekinge Institute of Technology (BTH), Blekinge, Sweden.
- Post Graduate Research Fellow** *Jan, 2011 - Dec, 2011*  
Dept. of Biomedical Physics & Technology, University of Dhaka, Dhaka, Bangladesh
- Faculty (Lecturer)** *Apr, 2010 - Dec, 2010*  
EN345: Electronics III  
EN473: Microprocessor Systems and Interfacing  
Department of Electrical and Electronics Engineering, International University of Business Agriculture and Technology (IUBAT), Dhaka, Bangladesh.
- Lecture and Lab Instructor** *Jan, 2008 - Mar, 2010*  
EERT Ltd. (Embedded Engineering and Robotic Technology) Baridhara, Dhaka.

## Hardware Design Engineer

*Jan, 2007 - Dec, 2009*

Visual Magic Corporation Ltd. (VMCL), Dhaka, Bangladesh, A Sister Concern of Gridmark Inc., Japan.

### SUPERVISION & CO-SUPERVISION (MPHIL AND MASTER THESIS TITLES)

- Development of Telemedicine Software
- Indigenous development of Ultrasound Doppler based fetal heart monitor
- Instrumentation for detecting cervical cancer using electrical impedance method
- Producing vector cardiogram in 3D from standard ECG data
- Development of Electrical Impedance based Spirometer
- Characterization of Lipoma using bio-impedance measurement technique: preliminary study

### AWARDS & HONORS

**Global mHealth Research Training Institute**, Fogarty's Center for Global Health Studies (CGHS) of the National Institutes of Health (NIH), 2016, Bethesda, Maryland, USA.

**Gold Medal Award, Best young scientist**, Bangladesh Cancer Congress 2014, Bangladesh Oncology Society.

**Scholarships for International Students**, 2006, Awarded by Rotary Club of Umeå University, Sweden.

### PROFESSIONAL AFFILIATION & SERVICES

**Member**, Bangladesh Medical Physics Association (BMPA).

**Member**, Relevant Science & Technology Society, Bangladesh (RSTS).

### TECHNICAL SKILLS

**Hands-on Expertise:** Biomedical Instrumentation, Electronic Circuit Design (Analogue and Digital), Signal Processing and Data Analysis, Machine Learning and Data Classification, Brain-Computer Interfacing, Computer Interfacing, Embedded Systems (Microcontroller based Instrumentation)

**Programming Languages:** C, C++, Java

**Design and Simulation Tools:** Matlab, LabVIEW, COMSOL Multiphysics, Proteus

### LANGUAGES

**Bangla:** Mother Tongue

**Swedish:** Basic

**English:** IELTS Score: 8 ( Listening: 8, Reading: 9, Writing: 7, Speaking: 7.5 )

Exam Date: 16 August 2014

## REFERENCES

### **Dr. Khondkar Siddique-e-Rabbani**

Honorary Professor (post retirement)  
Department of Biomedical Physics & Technology  
University of Dhaka, Bangladesh

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### **Prof. Adrian Wilson**

Professor Emeritus  
Medical and Biological Physics  
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Coventry, UK

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### **Dr. Craig A. Lindley**

Former Professor  
Blekinge Institute of Technology (BTH)  
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Project Leader  
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