

Md. Shahinur Rahman

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EDUCATION:

Master of Engineering in Nuclear and Energy Engineering (with research)

Jeju National University, Jeju, Republic of Korea

February 2016

CGPA 3.95 out of 4.30 (95.5/100)

Bachelor of Science in Electrical and Electronic Engineering

International Islamic University Chittagong, Chittagong, Bangladesh

September 2012

CGPA 3.78 out of 4.0

RESEARCH EXPERIENCE:

Jeju National University, Jeju, Republic of Korea

Optimization in Synthesis of ITO Thin Film Deposition for Touch Panel Display Application January 2016 - Present

- Analyzing the optimum conditions for lowest sheet resistance and highest optical reflectivity of ITO thin film.
- Develop a novel method to repair touch panel display using DC magnetron sputtered ITO thin film.

Functional Thin Films Coating Using DC Magnetron for Printed Electronic Devices

September 2015 – Present

- Fabricating printed electronic devices (Memristor and OLED) using functional thin films and its performance analysis will be investigated.

Electron Beam Dose Irradiation for Tribological Properties Improvement

February 2014 – Present

- Develop a novel method for the application of ionizing radiation on polymers to enhance tribological properties.
- Work involves the study of mechanical properties, morphology, chemical properties and radiation induced cross-linking and chain scission mechanisms which required strong analytical skills.

Surface Modification of Polyoxymethylene Copolymer by Ion Implantation

April 2014 – December 2014

- Investigated the Ion Implantation (He, Ar, Ar + He and He + Ne) induced surface modifications for friction coefficient reduction.

International Islamic University of Chittagong, Chittagong, Bangladesh

Analysis of Renewable Hybrid Energy in Coastal Areas of Bangladesh

March 2011 – May 2012

- Feasibility study of renewable hybrid power generation system in Bangladesh and comparison between off grid and grid tie system for Coastal areas.
- Optimization of hybrid renewable energy systems looks into the process of selecting the best components and its sizing with appropriate operation strategy to provide cheap, efficient, reliable and cost effective alternative energy.

PROJECT WORK:

Jeju National University, Jeju, Republic of Korea

Plasma Cleaning of ITER First Mirrors

January 2016 – Present

- Optimize the RF discharge conditions for removing the deposits (Al and W films) from Mo mirror.
- Develop a novel method to recover the optical reflectivity up to 90% after plasma based cleaning.

CO₂ Laser Alignment for Boron Isotope Separation

January 2015– December 2015

- Aligned the CO₂ laser tube (resonant cavity) with mirrors and ZnSe Brewster window using He-Ne laser.
- Controlled the laser beam power using optical chopper.

Diode and Tunable Laser Application for Touch Panel Repair

March 2016– Present

- Deposit Al and ITO droplets array on touch panel display using LIFT method.
- Analyze the performance of touch panel display after Al and ITO droplets array deposition.

JOURNAL PUBLICATIONS:

- **Md. Shahinur Rahman**, Ulugbek Shaislamov, Jong-Keun Yang, Jong-Kuk Kim, Young Hun Yu, Sooseok Choi and Heon-Ju Lee, “Effects of Electron Beam Irradiation on Tribological and Physico-Chemical Properties of Polyoxymethylene Copolymer (POM-C)”, Nuclear Instruments and Methods In Physics Research Section B, 2016 (**Q1-SCI Indexed Journal**, <http://dx.doi.org/10.1016/j.nimb.2016.10.001>).
- **Md. Shahinur Rahman**, Heon-Ju Lee, Jong- Keun Yang, Konstantin Lyakhov and Muhammad Athar Uddin, “Study on Wear and Morphological Behavior of Electron Beam Dose Irradiated Polyoxymethylene Copolymer (POM-C)”, RUJSE , ISSN: 2309-0952 and Print: 2408-8803, Vol. 44, November, 2016.
- **Md. Shahinur Rahman**, Konstantin Lyakhov, Jong- Keun Yang, Muhammad Athar Uddin and Muhammad Sifatul Alam Chowdhury, “ Friction and Structural Responses of Ion Implanted Polyoxymethylene Copolymer (POM-C)”, RUJSE, ISSN: 2309-0952 and Print: 2408-8803, Vol. 44, November, 2016.
- Jong Keun Yang, Seung Hyun Kim, Muhammad Waqar Ahmed, Suresh Rai, **Rahman Md. Shahinur** and Heon- Ju Lee, “Study on the Image Correction Using Gray-Level OPC at Optical Maskless Lithography ”, Journal of Research Institute of Advanced Technology, ISSN: 1598-5849, Vol. 26, December, 2015.

CONFERENCE PROCEEDINGS:

- **Md. Shahinur Rahman**, Heon-Ju Lee, Konstantin Lyakhov and Muhammad Athar Uddin, “Friction and Morphological Properties of Ion Implanted Polyoxymethylene Copolymer (POM-C)”, IC4ME2-2016, March 24-25, 2016, Rajshahi University, Bangladesh.
- **Md. Shahinur Rahman**, Heon-Ju Lee, Konstantin Lyakhov and Muhammad Athar Uddin, “Wear and Morphological Behavior of Electron Beam Dose Irradiated Polyoxymethylene Copolymer (POM-C)”, IC4ME2-2016, March 24-25, 2016, Rajshahi University, Bangladesh.

POSTER PRESENTATIONS:

- **Md. Shahinur Rahman**, Ulugbek Shaislamov, Jong-Keun Yang, Suresh Rai, Konstantin Lyakhov and Heon Ju Lee, “Deposition of ITO Thin Film for Electrochromic (EC) and Flat Panel Display Applications Using DC magnetron Sputtering Technology ”, ICMAP 2016, September 26-29, 2016, Gyeongju, Korea.
- **Md. Shahinur RAHMAN** , Heon-Ju LEE, Ulugbek SHAISLAMOV, Jong-Keun YANG and Rai SURESH, “Optimization for Electrical and Structural Properties of Aluminium Thin Films Deposited on Glass by DC Magnetron Sputtering”, IVC-20, August 21-26, 2016, Busan, Korea.
- Jong-Keun Yang, Rai Suresh , **Rahman Md. Shahinur** and Heon Ju Lee, “Progress of the Laser Development for Plasma Diagnostics”, KAPRA, July 1, 2016, Korea.
- **Md. Shahinur Rahman** and Heon-Ju Lee, “Tribological and Physico-Chemical Properties of Electron Beam Irradiated Polyoxymethylene Copolymer (POM-C)”, AEPSE 2015, September 20-24, 2015, Jeju, Korea.
- **Md. Shahinur Rahman**, Ulugbek Shaislamov , Jong –Keun Yang, Rai Suresh and Heon- Ju Lee, “Effect of Electron Beam Irradiation on Tribological and Physico-Chemical Properties of Polyoxymethylene (POM)”, CoMMET 2015, July 29-30, 2015, Seoul, Korea.
- Ulugbek Shaislamov, Jong-Keun Yang, **Rahman Md. Shahinur** and Heon-Ju Lee, “Study of Field-Emission Properties of Cu Nanowire Arrays Grown Directly on Cu Substrate”, ISPlasma2015, March 26-31, 2015, Nagoya University, Japan.
- Ulugbek Shaislamov, Jong-Keun Yang, **Rahman Md. Shahinur** and Heon-Ju Lee, “Growth of Vertically Aligned Cu Nanowires for Improved Heat Transfer”, ISPlasma2015, March 26-31, 2015, Nagoya University, Japan.
- Ulugbek Shaislamov, Jong-Keun Yang, **Rahman Md. Shahinur** and Heon-Ju Lee, “Facile Fabrication of Hierarchical Cu/ZnO Nanorod/Nanobranched Photoelectrode for Solar Hydrogen Generation”, ISPlasma2015, March 26-31, 2015, Nagoya University, Japan.
- Ulugbek Shaislamov, Rai Suresh, **Rahman Md. Shahinur** and Lee Heon-Ju, “Growth of Vertically Aligned Cu Nanowires for Improved Heat transfer”, The 47 th Annual Conference of The KVS, August 18-20, 2014, Korea.
- Suresh Rai, **Rahman Md. Shahinur** and Heon-Ju Lee, “Application of DBD Plasma Treatment on Surface Modification of Stainless Steel Sheet at Atmospheric Pressure”, The 47 th Annual Conference of The KVS, August 18-20, 2014, Korea.
- Muhammad Waqar Ahmed, **Rahman Md. Shahinur** and Lee Heon-Ju, “Underwater DC Discharge for Generating OH Radicals”, The 47 th Annual Conference of The KVS, August 18-20, 2014, Korea.

WORK EXPERIENCE:

Research Assistant

February 2014 - Present

Plasma Applications Research Group, Jeju National University, Jeju, Republic of Korea

- Conduct research on several research projects and assist undergraduate students in labwork.
- Hands experience (operation and maintenance) on Physical vapor deposition, Chemical vapor deposition, Atomic Layer deposition, Spin coating, Thermal evaporation coating, Diode laser, CO₂ Laser etc.
- Analytical hands experience of instrumentation on SEM, XRD, FTIR, Raman spectroscopy, 3D Surface profiler, Nano-indentation, Tribotester, 4 Point probe, UV-visible spectroscopy, Optical microscope, Water contact angle analyzer etc.

Lecturer (Part time)

International University of Business Agriculture and Technology, Dhaka, Bangladesh

January 2013 - December 2013

- Planned lessons and assignments on Opto-electronics, Power electronics, Power system protection and Solid state physics.
- Supervised students in power system protection lab based on my industrial experience in Akij Group (Dhaka, Bangladesh).

Assistant Electrical Engineer

AKIJ Group of Company, Dhaka, Bangladesh

April 2012 - January 2014

- Responsibility for operation and maintenance on Tracer programmable M/C, PLC (Siemens, Omron, Schenider electric) programming, 500 KVA diesel generator and Compressor (Atlas Copco GA37+).
- Circuit design and layout for AVR, MCCB, ACB and VCB.

TRAINING SUMMARY

- Attended in industrial automation control systems training on “PLC & HMI programming” organized by International Automation Technologies (IAT, Dhaka, Bangladesh) from 1.04.13 to 28.06.13.
- Completed three months training in 2012 provided by AKIJ group on Relay, Timer, Magnetic Contact, Over Load, PFI, 3 – Phase connection, Star to Delta Conversion, DIAC, TRIAC, SCR, Electrical Machines Fault checking & Servicing etc.
- Participated in an industrial training on “Transmission & Distribution” Power Grid Company Bangladesh Ltd (An enterprise of Bangladesh Power Development Board) from 230/132/33 KV Super Grid Control Room, Tongi, Gazipur, Bangladesh in 2011.

TECHNICAL SKILLS:

C, MATLAB, Auto CAD, OriginLab 9, HOMER, PSPICE, PLC etc.

REFERENCES

1. Anil Kumar Khambampati

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Institute for Nuclear Science and Technology,
Jeju National University, Republic of Korea.
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2. Muhammad Athar Uddin

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Department of Electrical and Electronic Engineering,
International Islamic University Chittagong, Bangladesh.
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