

# ABDULLAH ARAFAT



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He is a dedicated, compassionate and enthusiastic learner. He is highly creative and knowledgeable in problem assessment and has the ability to excel in a fast-paced working environment. He also has a strong educational background.

## EDUCATION

Khulna, 9203	Khulna University of Engineering and Technology (KUET)	2017 - Now
<ul style="list-style-type: none"><li>• <b>Materials Science and Engineering, B. Sc</b></li><li>• <b>CGPA: 3.62/4.00</b> (class position: top 10%)</li><li>• <b>Dean List Award: 2018</b></li><li>• <b>Notable Courses:</b> Computational Materials Science   Crystallography   Phase Diagram   Thermodynamics of Materials   Extractive Metallurgy   Corrosion and Surface Engineering   Materials Manufacturing Process   Welding and Metal joining Process   Mechanical Behavior of Materials   Physical Metallurgy of Materials</li></ul>		

## RESEARCH PUBLICATIONS

- **“Effects of the Substrate Structure on the CVD Growth of Two-Dimensional Hexagonal Boron Nitride”**  
Authors: Md. Mosarof Hossain Sarkar, Md. Sherajul Islam\*, **Abdullah Arafat**, A. S. M. Jannatul Islam, Naim Ferdous, Md. Tawabur Rahman, Minhaz Uddin Sohag, Md. Al Imran Fahim, Catherine Stampfl, and Jeongwon Park  
Published on: The Journal of Physical Chemistry C, Apr. 2020  
DOI: 10.1021/acs.jpcc.2c01707
- **“Fingerprint and password controlled Automatic Garage operating system using belt pulley and power screw driven mechanism.”**  
Authors: Md. Mostafizur Rahman Komol, Md. Karimul Joarder, **Abdullah Arafat**, Amit Kumer Podder.  
Published on: International Journal of Advanced Mechatronic Systems (IJAMECHS), Volume 8, No. 1, PP.36–45, Sep. 2020  
DOI: 10.1504/IJAMECHS.2020.109908
- **“Numerical Investigation on Fatigue Life Estimation of Aluminum Structure for Uniaxial Cyclic Loading by Finite Element Modeling.”**  
Authors: Md. Jarir Hossain, Md. Mahbubur Rahman, Fahim Islam Anik, MD Ikramul Hasib, **Abdullah Arafat**, Dewan Wardy Hasan.  
Published on: International Conference on Mechanical Engineering and Renewable Energy 2019 (ICMERE2019)  
Paper ID: PID059
- **“Remote Sensing Global Ranged Door Lock Security System via Mobile Communication”**  
Authors: Md Mostafizur Rahman Komol, Amit Kumer Podder, **Abdullah Arafat**, Tanzim Nabeed.  
Published on: International Journal of Wireless and Microwave Technologies (IJWMT), Volume 9, No.5, PP.25-37, Sep. 2019  
DOI: 10.5815/ijwmt.2013.01.01

## BOOK CONTRIBUTIONS

- **“Extending and Modifying LAMMPS: Writing Your Own Source Code”**  
Authors: Dr. Shafat Mubin and Jichen Li  
Contribution: **Appendix A: Building LAMMPS with CMake** Page: 304-311

## RELEVANT PROFESSIONAL EXPERIENCES

Operator (on-campus job)	Fab Lab KUET	Aug 2019 - Now
Machines Operated <ul style="list-style-type: none"><li>• <b>CNC Milling Machine</b> (Roland MDX-540)   <b>Laser Cutter</b> (Epilog Laser MINI 18)   <b>3D Printer</b> (Ultimaker 3)</li></ul>		
Design Engineer, Part-time	Emprotec Limited	Nov 2018 – Now
Projects: <ul style="list-style-type: none"><li>• <b>Autogas P&amp;ID</b> for underground and aboveground tanks.</li><li>• <b>Reticulation system</b> for 4 apartments.</li><li>• <b>P &amp; ID of a centrifugal pump system</b> for Delta LPG limited.</li><li>• <b>Bill of Materials</b> of valves (Delta LPG Plant and Baraka LPG Plant)</li><li>• <b>LPG Plant layout</b> for Meghna LPG, Faridpur AM Industry.</li><li>• <b>Fire Safety layout</b>   <b>Firewater P&amp;ID</b>   <b>Instrument air system</b> for LPG Terminals   <b>Complete P&amp;ID</b> for LPG Terminal.</li></ul>		

## TEST SCORES

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- **Duolingo English Test (DET)**  
**Score:** 135/160 | **Organization:** Duolingo | **Credential link:** [certs.duolingo.com/7b97a1a4e3e85414886c5c28ae4461b0](https://certs.duolingo.com/7b97a1a4e3e85414886c5c28ae4461b0)
- **Certified SOLIDWORKS Associate (CSWA) Examination**  
**Score:** 240/240 | **Organization:** Dassault Systèmes | **Credential ID:** C-49FPLUKRNS
- **Certified SOLIDWORKS Professional (CSWP) Examination**  
**Score:** 318/318 | **Organization:** Dassault Systèmes | **Credential ID:** C-A6HWVU5MSB

## RESEARCH INTERESTS

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- **Scientific Approaches:** Computational materials science, Computational Fluid Mechanics, Condensed matter physics, High dimensional Neural Network Potential, Atomistic simulation, Chemical Vapor Deposition, Nanomechanics, High Throughput Materials Development (HTMD).
- **Techniques and Tools:** Molecular Dynamics (MD) Simulation, Finite Element Method (FEM), Density Functional Theory (DFT), Materials modeling, Computer-Aided Design (CAD)

## SOFTWARE SKILLS

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**Technical:** LAMMPS, Python, C++, Bash Scripting, VMD, Ovito, VESTA, Materials Studio, ANSYS, SOLIDWORKS, AutoCAD Plant 3D.  
**Others:** Key Shot 8, Adobe Illustrator CC19, Adobe Photoshop CC19, Microsoft Word, Microsoft PowerPoint, Microsoft Excel.

## ONLINE COURSES

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- **Course Title:** Using Python for Research | **Institution:** HarvardX | **Platform:** Edx | **Status:** Ongoing
- **Course Title:** From Atoms to Materials: Predictive Theory and Simulations | **Institution:** PurdueX | **Platform:** Edx | **Status:** Completed
- **Course Title:** Materials Data Sciences and Informatics | **Institution:** Georgia Institute of Technology | **Platform:** Coursera | **Duration:** 1 month. (August 2019) | **Grade:** 91.1% | **Credential ID:** 4NJG5524REYV
- **Course Title:** Python for Data Science and AI | **Company:** IBM | **Platform:** Coursera | **Duration:** 1 month. (February 2020) | **Grade:** 98% | **Credential ID:** MBAN9P4DZGBD
- **Course Titles:** Design for Machining, Design for Additive Manufacturing, Abaqus Heat Transfer, Abaqus Stress Analysis, Abaqus Thermal Stress and Deformation, SOLIDWORKS Efficient Modeling and Design Intent, SOLIDWORKS Mold Tools and Plastic Design | **Platform:** SOLID professor | **Duration:** 2-3 months
- And a few other courses on **nanoHUB**

## KEY ACHIEVEMENTS

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- **Competition:** Wash Innovation Challenge 2018 | **Organized by** UNICEF and BRAC | **Finalist (South Asia Region)**
- **Competition:** 9<sup>th</sup> International Olympiad On Astronomy and Astrophysics (IOAA) | **Bangladesh National Team**
- **Competition:** Ignition 2018 CAD Contest | **Champion**
- **Competition:** ASME CUET Extrusion CAD Contest | **1<sup>st</sup> Runner up**
- **Competition:** IPE Fest 2018 CAD Contest | **2<sup>nd</sup> Runner Up**
- **Competition:** Bangladesh Astro Olympiad | **2<sup>nd</sup> and 1<sup>st</sup> in Divisional Round (2013, 2015)**

## VOLUNTEERING EXPERIENCES

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- **Organization:** Youth Opportunities (YO) | **Position:** Campus Ambassador | **Duration:** 1 year
- **Organization:** YSI Bangladesh | **Position:** Head of Campus Representatives | **Duration:** 1 year
- **Club:** CADers | **Position:** Head of IT and Resource | **Duration:** 2 years
- **Club:** Spectrum (Professional Skill Development Club of KUET) | **Position:** Chief Technology Officer (CTO) | **Duration:** 1 year
- **Club:** KUET Career Club | **Position:** Head of IT and Resource | **Duration:** 2 years

## REFERENCES

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**Dr Sazzad Ahmad**  
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Head of Department of Materials Science and Engineering  
Chittagong University of Engineering and Technology (CUET)  
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