MD. SAIDUL ISLAM

Materials Engineer

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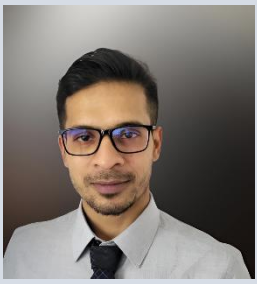

Profile Summary

Materials scientist, specialized in data-driven methods and characterization techniques. Experience with ML pipelines, FEM, materials informatics, and databases. Goal: Development of data-driven methods for materials discovery in industrial R&D environments.

Professional Experience

Timeline	Position	Task/achievement
09/2022 - 05/2023	**Student Assistant,** Multicomponent Materials, CAU, Kiel.	• Simulation of EM sensor (~2 mT). • Magnetostriction measured & analyzed (OriginPro). • Experiments designed with MATLAB. • AFM/TEM/profilometer characterization.
11/2021 - 12/2021	**Student Assistant,** CAU, Kiel.	• Produced copper electrodes for implants and analyzed their light reaction with MATLAB.
03/2018 - 09/2019	**Quality Engineer**, Bandar Steel, Dhaka.	• Led production & quality control. • Reduced losses & alloy consumption by ~5%. • Analyzed breakdowns in CCM/rolling mills.
12/2016 - 01/2018	**Quality Engineer**, , Rahim Group,Dhaka.	• Tests with universal testing machine. • Introduced scrap metal management. • Executive Engineer in furnace installation (30 t).

Education

Timeline	Degree	Details
10/2019 - 03/2024	**M.Sc.**, Materials Science & Engg., CAU, Kiel.	GPA: 2.2 / 5.0 (Best-GPA: 1.0) **Master-thesis**: Modeling of source nonlinearity in Electro-magnetic systems with SINDy & ANN.
02/2011 - 02/2017	**B.Sc. Engg.**, Materials & Metallurgical Engg., BUET, Dhaka.	GPA: 2.94 / 4.0 (Best-GPA: 4.0) **Bachelor-thesis:** Reduction kinetics of mill scale analysis.
06/2008 – 07/2010	**Higher Secondary (HSC)**, Stamford College, Dhaka. GPA: 2.2/5.0 (Best-GPA :1.0)	

Professional Development & Research Projects (Selected)

Timeline	Theme	Description
03/2024 - Heute	**Materials Database** (Flask/SQLite, Fly.io)	Proof of concept for a research database with automatic ETL pipeline and deployment. [Git, DEMO]
	Melting-point prediction	Two-level stacking (RF, XGBoost, LightGBM, MLP), R^2 = 0.83. [Git] (Citrination, 3.041k samples).
	Oxidation-state Assignment	Soft-Voting-Ensemble (LGBM, RF,GB, ExtraTrees), R^2 = 0.91. [Git] (OQMD, ~7k samples).
	Semantic Modelling (LLM integrated)	OLLAMA (local)-coupled semantic knowledge graph for custom-featurized band gap data. [Git]
	Coursera-Certificates (Auswahl)	*Introduction to High-Throughput Materials Development* *Materials Data Science & Informatics* *Machine Learning Specialization*

Computer & Analytical Skills

Programming & Data Analysis:	Python (good); MATLAB, SQL; Basic: HTML, Fortran, C++, CSS, RegEx.
AI & ML:	Ensemble-Methods, PINN, SINDy, AutoML (PyCaret), SHAP; Generative AI; Knowledge graph (RDF, SPARQL).
Materials Informatics:	Matminer, Pymatgen, RDKit, OQMD, Materials Project, Semantic Web.
Simulation & FEM:	COMSOL, Abaqus, SimScale.
Characterisation:	AFM, TEM, SEM, XRD, VSM, DSC/TGA.
Web & Databases:	Flask, Jinja, Docker, SQLite.

Conference

- Poster presentation, AIMSE 2023, Saarbrücken – SINDy + ANN for magnetoelectric sensors.

Languages

- Deutsch (Telc B1).
- Englis (fluent).
- Bengali (Native).

Engagement & Interests

- Organization of student programs, club activities, and sports tournaments.
- Sport (Cricket, Football, Badminton).
- Musik (Guitar), Traveling