

M FAISAL RIYAD

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KEY QUALIFICATIONS

- Mechanical Engineering with **8+ years** of extensive research experience in design, synthesis and characterization of ceramic composites, polymer composites, multi-functional materials and additive manufacturing
- Supervised a teaching team of **12 faculty members**, worked on academic curriculum development, prepared performance evaluation of faculties
- Have **1 US patent** (published and granted), Published **13** peer-reviewed journal articles, **4** conference proceedings, and presented research work at **4** different international scientific conferences. Number of total citations are **235** and an h index of **9** (**Google Scholar - M Faisal Riyad**)
- Eligible to work for any US employer (without any sponsorship)

EDUCATION

Arizona State University (ASU)

August 2020 – Present

Ph.D. in Mechanical Engineering

Tempe, AZ

Advisor: Dr. Keng Hsu, Associate Professor, School of Manufacturing Systems and Networks, ASU

The Ohio State University (OSU)

January 2015 – May 2017

M.Sc. in Mechanical Engineering

Columbus, OH

Advisor: Dr. Marat Khafizov, Associate Professor, Mechanical and Aerospace Engineering, OSU

University of North Dakota (UND)

August 2012 – December 2014

M.Sc. in Mechanical Engineering

Grand Forks, ND

Advisor: Dr. Surojit Gupta, Professor, Mechanical Engineering, UND

Khulna University of Engineering & Technology (KUET)

January 2005 – July 2009

B.Sc. in Mechanical Engineering

Khulna, BD

SUMMARY OF SKILLS

Material Synthesis: Freeze Casting, Tape Casting, DLP Printing, Binder Jet Printing, Sintering, CVD, Cermets, Polymer Composites, Cementitious Materials

Material Characterization: Nanoindentation, Raman Spectroscopy, SEM, TEM, TGA/DSC, FTIR, EBSD
Optical Microscopy, Rheology, Tribology, Mechanical Characterization

Programming Languages: MATLAB, Python, LabVIEW

CAD/CAE: SolidWorks, AutoCAD, COMSOL, Abaqus

Other Software: JMP Pro, Minitab, Adobe Illustrator, Figma, WordPress

WORK EXPERIENCE

Arizona State University

August 2020 – Present

Graduate Research Associate

Tempe, AZ

Thermoacoustic Consolidation of Metal Powders

November 2022 - Present

- Designed and constructed ultrasonic die forming test rig for powder consolidation
- Developed a method to consolidate aluminum powders at 300 °C using acoustic energy and investigated the process physics
- Characterized the samples using optical imaging, SEM and EBSD

Development of Bio-inspired Damage-Tolerant Ceramic Composites

January 2022 - September 2022

- Fabricated porous YSZ scaffolds for solid oxide fuel cells by freeze casting method
- Infiltrated Nickel in porous YSZ scaffolds using electro-deposition method for solid oxide fuel cell application
- Investigated mechanical properties 3 point bending test, thermal shock resistance test and SEM analysis

Development of Nickel-Graphene Composite

March 2021 - July 2021

- Developed a standard protocol for CVD growth of Graphene on Nickel foam at 950 °C
- Optimized process parameters to obtain 95% dense Graphene-Nickel composites
- Investigated the thermal stability of CVD grown Graphene for multilayer growth
- Conducted Raman characterization and mechanical testing of Nickel-Graphene composite

Development of 3D Printed MEMS Device

August 2020 - February 2021

- Optimized the 3D printing parameters and 3d printed MEMS based tensile testing device

- Assembled the tensile testing setup for micro-mechanical testing of micro wires of 25 μ m and 10 μ m diameter
- Developed continuous image acquisition system using MATLAB to obtain tensile testing data and digital image correlation (DIC) method for post-processing of tensile testing data

Arizona State University

August 2021 – December 2021

Graduate Teaching Assistant

Tempe, AZ

- Conducted review classes, organized and monitored zoom session, led tutoring sessions, led two graders for grading

University of Creative Technology

August 2018 – December 2019

Lecturer & Program Co-ordinator in Department of Mechanical Engineering

Chittagong, Bangladesh

- Taught ME 4303 – Introduction to Material Science, ME 4703 – Heat Transfer, ME 4305 – Computer Programming
- Led a teaching team of 12 faculty members, worked on academic curriculum development

The Ohio State University

January 2015 – May 2017

Graduate Research Associate

Columbus, OH

Point Defect Modelling of Oxide Ceramics (UO₂)

May 2016 - May 2017

- Developed a point defect model for oxide ceramics for predicting types of point defects, change of lattice parameters
- Developed a model to estimate the point defect concentration and estimate the lattice thermal conductivity
- Introduced an analytical framework to identify the types of defects of ion irradiated UO₂

Development of Laser Based Thermoreflectance Measurement Method

January 2015 - December 2016

- Assembled a laser based thermoreflectance instrument for measuring the thermal conductivity for ion irradiated sample
- Wrote an algorithm in MATLAB for extracting the thermal conductivity of ion irradiated samples from the thermal wave profile of thermoreflectance measurement
- Developed a data analysis framework using a four layer (film-plateau-peak-substrate) model for accurate estimation of thermal conductivity data from the thermal wave profile of the thermoreflectance measurement

University of North Dakota

August 2012 – December 2014

Graduate Research Assistant

Grand Forks, ND

Development of Lignin-HDPE Composites

May 2014 - December 2014

- Fabricated polymer composites of Lignin-HDPE using hot press method
- Characterized samples by mechanical testing, hardness measurement, tribological studies and SEM imaging

Development of MAX Phase reinforced Polymer Matrix Composites

January 2014 - December 2014

- Fabricated composites of MAX Phase and high density polyethylene (HDPE) composite using hot press method
- Characterized samples by compressive testing, XRD analysis, hardness measurement, SEM imaging and tribological analysis

Development of Porous Materials

January 2013 - May 2014

- Developed novel method for making porous oxides and porous ceramics of TiO₂
- Evaluated the properties of porous materials using compressive testing, XRD analysis, SEM imaging

Development of Low Alkali Activated Fly Ash Cement

August 2012 - December 2014

- Invented a novel method to activate the cementitious network of fly ash with low alkali solution
- Designed a method for sequestering CO₂ using class C fly ash-based materials
- Investigated the properties by compressive and flexural strength measurement, XRD, TGA, FTIR analysis and SEM imaging

PATENT & PUBLICATIONS

Published **13** peer reviewed journal articles, **4** conference proceedings and **1** US patent (published and granted).

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LEADERSHIP EXPERIENCE

GradBunker

December 2021 – Present

Founder

Dhaka, Bangladesh

- Working with a tech team to build an web based platform for the social connectivity of international students who move across the borders
- Supervise an active team of **3** members and lead the operation of the organization
- Designed and developed website using WordPress technology
- Led the content management team and wrote 50+ articles for GradBunker