Khaled Besher Abdelfattah Ali

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EDUCATION

M.Sc. Materials and Metallurgical Engineering, Suez University (April 2025)

Thesis title: Development of Biodegradable Magnesium Based Alloys Using Multi-Channel Spiral Twist Extrusion Process

- Conducted advanced research on the mechanical and corrosion behavior of biodegradable magnesium alloys for biomedical applications.

-Employed severe plastic deformation techniques (MCSTE) to enhance microstructural properties and biodegradability of the alloys.

Publication: "Corrosion and Degradation Behavior of MCSTE-Processed AZ31 Magnesium Alloy", published in Scientific Reports (Q1 journal, Nature Portfolio) — peer-reviewed article derived from thesis research.

B.Sc. Materials and Metallurgical Engineering, Suez University (July 2019)

Graduation Project: Production and Characterization of a High Entropy Alloy System
Total Grade: Excellent with honors

ACADEMIC PROFESSIONAL EXPERIENCE

Assistant Lecturer, Suez University (SU) (June 2020 – Present)

- Teach the following courses: Mechanical Behavior of Materials, Materials Testing, Heat Treatment, Materials Science and Engineering, Metallurgical Thermodynamics, Corrosion of Materials and Failure Analysis.
- Supervise graduation projects during the academic year.
- Organize field trips, industrial training and scientific seminars.
- Participate in scientific events and conferences related to metallurgy and materials engineering.

Teaching Assistant, Suez University (SU) (March 2020 – June 2025)

-Provided tutorials for undergraduate students both in faculty buildings and online using MS Teams and other online learning platforms, also performing quizzes during the semester.

- Performed materials' characterization tests (including mechanical tests, metallographic examination, and reporting).

-Performed administrative work within the department (labs reports, study schedules, quality department reports, etc).

Research Assistant, The American University in Cairo (AUC) (June 2022 – June 2024)

-Processed Magnesium (Mg) alloy billets (AZ31 and ZX30) via Multi-Channel Spiral Twist Extrusion (MCSTE) assembly.

-Conducted mechanical tests for materials (compression and microhardness)

-Investigated materials microstructure using Optical Microscopy (OM)

-Assessed materials microstructure evolution via Scanning Electron Microscopy (SEM)

RESEARCH ACTIVITIES HIGHLIGHTS

Finished M.Sc. thesis titled: "**Development of Biodegradable Magnesium Based Alloys Using Multi-Channel Spiral Twist Extrusion Process**" which is a mutual research project between Suez University and the American University in Cairo investigating the ability of Magnesium biodegradable alloys to be severely deformed and the influence on their properties.

PUBLICATIONS

- Abdelfattah, K.B., Abbas, M.A., El-Garaihy, W.H. et al. Corrosion and degradation behavior of MCSTE-Processed AZ31 magnesium alloy. Sci Rep 15, 4072 (2025). Doi: https://doi.org/10.1038/s41598-025-88161-7

OTHER RELATED EXPERIENCE

Senior Data and Information Specialist, University Center for Career Development (UCCD) (October 2022 – Present)
-Responsible for the marketing plan on social media (Facebook, Instagram and LinkedIn pages)
-Review the MMP system used for registration and reservation for the center services
-Design fliers, brochures and banners for the center
-Conduct interviews for students who apply for courses
-Monitor the media volunteers posts and designs
-Trained to give career services to students
-Conduct workshops in: "Resume Writing" – "Interviewing Skills" – "Job Search"
-Review resumes for graduates and students

IT member at Faculty of Petroleum and Mining Engineering (December 2020 – September 2023)
-Dealt with the academic emails' registrations and problems
-Developed the faculty website and organizing data within it
-Solved the problems of "SIS" system registration for postgraduate students

INDUSTRIAL EXPERIENCE

Production Engineer at El-Garhy Steel [ECISP Suez Branch] (November 2019 – February 2020)
-Organized production of steel rebar process
-Solved production problems during the shifts
-Prepared proposals for preventing or decreasing the problems in the future
-Used SAP for handling miscellaneous production inputs

LANGUAGES

Arabic: Native Language
English: Professional Working Proficiency

COMPUTER SKILLS

- Microsoft Office
- SolidWorks
- Adobe Photoshop