

Hend Abdelhafez Mostafa

Contact

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Professional Summary

Mechanical Engineering Lecturer with a PhD in Mechanical Engineering from Assiut University and over 15 years of academic experience in teaching, research, and laboratory instruction. Specialized in materials science, nanofluids, nano-coolants, machining processes, machine design, finite element analysis, and erosion mechanisms. Experienced in nanofluid synthesis, CNC machining, SEM and XRD characterization.

Research Interests

Materials Science; Finite Element Analysis; Nanofluids; Nano-coolants; Cavitation Erosion; Slurry Erosion; Machine Construction; Machine Design.

Education

PhD in Mechanical Engineering, Assiut University (2026). Dissertation: Ultrasonication-Guided Design of Carbon-Based and Oxide Nanofluids for Solar Absorption and Machining Coolant.

MSc in Mechanical Engineering, Assiut University (2018).

BSc in Mechanical Engineering, Assiut University (2010).

Academic Appointments

Lecturer (2026–Present).

Assistant Lecturer (2018–2026).

Teaching Assistant (2011–2018).

Teaching Experience

Engineering Mechanics (Statics), Mechanical Drawing, Machine Construction, Machine Design, Mechanics of Materials, Metal Cutting, Metrology, Die Design, Tribology.

Publications

3 peer-reviewed journal articles.

Software Skills

ANSYS, SolidWorks, AutoCAD, OriginPro, ImageJ.

Laboratory Skills

Nanofluid preparation, Probe ultrasonication, Stability evaluation, Viscosity measurement, Solar absorption characterization, CNC milling, MQL, Cutting temperature measurement, Surface roughness measurement, Optical Microscopy, SEM, XRD, Tribological and Mechanical Testing.

Professional Membership

Egyptian Engineers Syndicate.

Languages

Arabic (Native); English (Professional Working Proficiency).

References

Available upon request.