Name: Tareq I Ismail

Title, position: Assistant professor of Engineering Technology

Department of Agricultural Sciences and Engineering Technology

College of Science and Engineering Technology

- **Degrees Earned:**

  - Ph. D. Ocean Engineering, Florida Institute of Technology
  - Master of Science Mechanical Engineering, California State University, Fullerton
  - Bachelor of Science Mechanical Engineering, California State University, Long Beach

- **Professional Licensure and Certifications:**

  - Los Angeles Refinery Safety Overview,
  - Los Angeles Refinery Safety Orientation (LARSO) which is administrated by OSCA Occupational Safety Councils of America Texaco,
  - Humble Oil (now Exxon), Union Oil, Mobil Oil, and Shell Oil (THUMS) Safety Orientation,
  - Passport Refinery Safety Overview (RSO),
  - Transportation worker identification credential (TWIC) which is required by the Maritime Transportation Security Act for workers who need access to secure areas of the nation's maritime facilities and vessels
  - Cal OSHA written exam (Passed)

- **Peer-Review Publications and Artistic Performances/Exhibitions**

  - Hybrid Robot Crawler / Flyer for use in Underwater Archaeology
  - Dropwise condensation on an Ultraphobic ETFE coated copper pipe surface that enhances heat flow and increases fresh water production on a smaller surface area
  - Ocean Thermal Energy Conversion/ Dropwise condensation

- **Research Monographs and Technical Reports**

  - Postdoctoral research in the use of Bio-inspired NANO material coating technology to create an antifouling coating to prevent biofouling from sticking to the hull of ships, marine vehicles, and equipment.

  - The use of NANO coating technology to develop and sustain an alternative water supply, which could be used to solve an increasing environmental impact on water shortages. This technology could be used to increase water cooling in Nuclear and Power plants

  - Ocean turbidity for Sebastian Inlet dredging project to deepen and widen the inlet under the Department of Marine and Environmental Systems

- Engineering research project on developing a Remotely Operated Underwater Crawler and Remotely Operated Underwater flyer (ROV) under the Department of Marine and Environmental Systems

- Research on Operated AUV (Autonomous Underwater Vehicle), ROV (Remotely Operated Vehicles), and Under Water Sea Crawler/Sea flyer

Work or Professional Experiences

Postdoctoral
Florida Institute of Technology, Melbourne, FL August 2015 – July 2016

Postdoctoral research in the use of Bio-inspired NANO material coating technology to create an antifouling coating to prevent biofouling from sticking to the hull of ships, marine vehicles, and equipment.

Graduate Student Assistant
Florida Institute of Technology, Melbourne, FL April 2014 - August 2015

Worked on the use of NANO coating technology to develop and sustain an alternative water supply that solves increasing environmental impact in water shortages. This technology could be used to increase water cooling in Nuclear and Power plants.

Graduate Student Assistant
Florida Institute of Technology, Melbourne, FL January 2014 – April 2014
Worked on ocean turbidity for Sebastian Inlet dredging project to deepen and widen the inlet under the Department of Marine and Environmental Systems

Graduate Student Assistant
Florida Institute of Technology, Melbourne, FL May 2014 – August 2014
Worked on two engineering research projects; developing a Remotely Operated Underwater Crawler and Remotely Operated Underwater flyer (ROV) under the Department of Marine and Environmental Systems

Graduate Student Assistant
Florida Institute of Technology, Melbourne, FL January 2014 – May 2014
Teacher assistant at Department of Mechanical and Aerospace Engineering

Graduate Student Assistant
Florida Institute of Technology, Melbourne, FL January 2013 – August 2014
Operated AUV (Autonomous Underwater Vehicle), ROV (Remotely Operated Vehicles), and Under Water Sea Crawler/Sea flyer

Mechanical Engineer
Gibraltar, Signal Hill, CA December 2002 – December 2010
An engineering design company provides composite molded/layered parts
Experience with lean manufacturing

- Coordinate all manufacturing operations
- Experience in the development of test procedures in an engineering environment Program with CAD/CAM
- Fabricate using CNC machining
- Produce cost estimates and maintain feasibility of project designs so they meet their target function.
- Update corporate safety plans and site security and review and all OSHA rules
- Increase productivities and decrease downtime
- Train assembly workers with the use of new processes to improve productivity

Intern Field Engineer
A T T Infrared Services, Long Beach, CA May 2009 - August 2009
Navy Ships Infrared Thermal Imaging Company

Electrical Infrared Survey on US Navy ships in port of Long Beach California Thermal Imaging Infrared on US. Navy ships in port of Long Beach, California

Field Engineer
AGM, Anaheim, CA August 2001 – December 2002
Producer and distributor of CNC work Machines

- Installation of instrumentation and data acquisition systems and inspection and operation of computer software to ensure system is performing all engineering tasks.
- Experience in field machine set-up, technical support, trouble shooting, problem analysis and solving, maintenance and upkeep, data collection
- Programmed and taught CNC and CAD/CAM software to machine operators.
- Operate test instruments, computers, process, and analyze test data.
- Used digitizer to create CAD drawings; used Laser probe to trace an object on the CNC bed.
- Interface with customers to trouble shoot and resolve all machining malfunctions. Experience on Master CAM.

Manufacturing/Safety Engineer
Rotonics Manufacturing Inc., Gardena, CA November 1999 – August 2001
Rotational molding company

- Served as Lead Design Engineer for new projects Knowledge of polymer materials (Resin, Powder, and Liquid) and mold release
- Experience in the design of Molds
- Experience working in the production line
- Programmed CNC in 2D (X & Y axis), 3D (X, Y, & Z axis), and 5 axis (X, Y, Z, C,& B)
- Experience with two independently moving CNC bed
- Program CNC using command codes
- Manufactured parts for GM cars, military vehicles, clinical & medical devices, marine gears, and water tanks Work with R&D Engineering environment to

develop design verification and validation test procedure and methods as well as coordinate testing activities

- Troubleshot technical problems as they developed during the design or manufacturing process.
- Conduct Root Cause Failure Analysis
- Analyzed Machine Chart Recorders to control downtime and maximize efficiency. Ensures manufacturing parts comply with ISO 9001requirements
- Performed as a Safety Engineer
- Knowledge of OSHA and Cal OSHA

Honors and Awards

✓ PhD's Defense was awarded "Superior and Exceptional"

✓ Master of Science's Defense was awarded "Superior and Exceptional"

✓ Bachelor of Science's president honor list

Other Competencies

❖ **Patent pending** of my Ph.D. Dissertation which introduces a new Bio-inspired NANO material coating, theory and application to enhance heat flow to pipes to produce five times the amount of condensation on pipes without having to change the size of the pipes. This increases fresh water production that could be used for human consumption, farming, and power plant and nuclear energy cooling towers. We have tested this new technology and we were able to show it works. Florida Institute of Technology and I jointly named on the patent.

❖ **Habitat for humanity**, Melbourne, FL
Help building home for needy family with no homes.

❖ **Children's Hunger project**, Cocoa, Florida
Help back lunch boxes for kids who cannot afford to buy food.

❖ **Math tutor**, Long Beach, CA
Help tutor students with learning disability to excel in math

❖ **Math tutor**, Moorpark, CA
Help tutor students with learning disability to excel in math

SOFTWARE:

- ANSYS
- AUTOCAD
- CNC programming using G code commands.
- CNC programming with CAD/CAM software
- I-DEAS Master's Series
- C++
- FORTRAN

- MATLAB
- MATHCAD
- SolidWorks
- MS Power point
- Electrical Infrared Survey
- Thermal Imaging Infrared

Security Clearance

- ✓ TWIC