Mohamed Elsayed Elsoghiar

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Education

M.Sc. in Mechanical Engineering *June, 2015*

Assiut University, Assiut, Egypt.
Thesis title: ***"Study of Performance Parameters of Multi-Vortex Tubes"***
Designed and tested a new geometry for the vortex chamber of a Vortex Tube.
Master courses from September 2009 to September 2010.

- Cumulative Average Grade: "Distinction" (90%) in Master Courses.
- I was the only student who graduated by the Distinction degree between my colleagues.

Graduate course	**Score**	**Grade**	**GPA out of 4**
Advanced Engineering Mathematics	100/100	Distinction	4.0
Applied Electronics and Computations	94/100	Distinction	4.0
Advanced Heat Transfer	94/100	Distinction	4.0
Advanced Fluid Mechanics	69/100	Pass	2.7
Advanced Topics in Mechanical Engineering (Cooling Cycles)	93/100	Distinction	4.0
Total	**450/500**	**Distinction**	3.74

Bachelor of Engineering *June, 2008*

- Department of Mechanical Engineering (Major in Mechanical power engineering), Assiut University, Egypt.
- Cumulative Average Grade: "Distinction" (86.35%). [Ranked 3rdon my class (120 students)].
- Graduation project: ***"Comfort Air Conditioning using novel design of radiant cooling panels".***

Education Year	**Score**	**Percent %**	**Grade**	**GPA out of 4**
Preparatory 2003-2004	1149/1500	76.60	Very Good	3.26
First Year 2004-2005	1322/1500	88.13	Distinction	3.89
Second Year 2005-2006	1310/1500	87.33	Distinction	3.83
Third Year 2006-2007	1369/1500	91.27	Distinction	3.94
Fourth Year 2007-2008	1326/1500	88.40	Distinction	3.94
Total	**6476/7500**	**86.35**	**Distinction**	3.80

Publications

Journal papers

Mohamed S. El-Soghiar, Mohamed F.F. El-Dossoky, Ali K. Abdel-Rahman, Hany A. Mohamed, Mahmoud G. Morsy. ***'Performance study of a modified Ranque-Hilsch vortex tube'*** Journal of Engineering Sciences, Faculty of Engineering-Assiut University- Egypt, vol. 42-no. 6, pp. 1414-1429, November, 2014.

Conference papers

H. A. Ali, W. M. Salman, M. N. Abdelmoez, **Mohamed E. Heragy**, M. S. Abdelsalam, M. F. F. Eldosoky, and M. Abdelgawad***. 'Effect of interfacial electrical shear stresses on hydrodynamic flows inside droplets actuated by electrowetting on dielectric'*** 10thInternational Meeting on Electrowetting, Taipei, Taiwan, June 19-22, 2016.

Research Interests

- Fluid Mechanics and Heat Transfer.
- Wind Turbine.
- Vortex tube Cooling/Heating Systems.
- Internal Combustion Engine.
- Microfluidics.
- Biomass.

Work Experience

Research Assistant *July 2015- July 2016*

Assiut Microfluidics Lab (***AML***)

- Working on characterization of Electrohydrodynamic flows in droplets undergoing Electrowetting.
- Fully trained on fabrication of microchannels using soft lithography.
- Helped in a side project on characterization of sperm motion inside microchannels using ***CASA*** (Computer Assisted Sperm Analysis).
- Fully trained on microfabrication using micro Pattern Generator.

Assistant Lecturer *January 2009 -Present*

- Tutor and marker of some courses in the Mechanical Engineering Department ***(Internal Combustion Engines, Thermodynamics I & II, Fluid Mechanics I & II, Energy Systems& Power Station and their Economics, Renewable Energy Systems, Hydraulic systems, Heat Transfer, Industrial Furnaces Design, Engineering Drawing, Machine Construction, Hydraulic Machine, Stress Analysis and Operation Research).***
  - Average teaching load is 30 hrs/week (not including marking time).
  - Tasks include solving examples, helping students during the office hours, and marking midterms.
  - Class size ranges from 30 to 90 students.
- Worked in a graduation project in design and manufacturing of a vertical axis wind turbine.
- Assisted in teaching ***"Viscosity Evaluation of an Oil - Flash and Firing Points of an Oil - Distillation Characteristics of a Petroleum Fuel - Determination of Higher Heating Value of a Solid Fuel and Gas Fuel - Performance of a Compression Ignition Engine"*** Laboratories.

Technical skills

- Design, construction, and operation of a vortex tube cooling /heating system.
- Hydraulic circuits design.

Computer skills

- Numerical modeling software: ANSYS FLUENT 14.0; GAMBIT 2.4 and SigmaPlot.
- Programming software:Matlab.
- Engineering Design software: Solid Works and CATIA.
- Excellent working knowledge of Microsoft Visio.

Languages

- English: Total IELTS Score: ***6***

Test Date	Reading	Writing	Speaking	listening	Total IELTS Score	Test Report Form Number
25/06/2016	6	6.5	5.5	6	6	16EG002317HERM001A

Projects

Hydraulic Circuit of Caterpillar D10N Dozer

- ***Case study "Redesign of Hydraulic system of Caterpillar D10NDozer":*** *Mech. Eng. Dep. Power sec. Assiut University-2007.*

Analyzed the hydraulic circuit of Caterpillar D10NDozer.

Redesign the different component of the hydraulic circuit.

Industrial Projects

Projects, I co-supervised with Industrial Technology Transfer Unit (ITTU) in Assiut university, which are:

- ***Elastic Refrigerator.***
  A new refrigerator is designed to keep meat, fruits and vegetables fresh. The advantages of our refrigerator are the flexibility, easy construction for assembly and disassembly, easy transportation, while keeping foods in it.
- ***Hybrid Wind Turbine.***
  A hybrid wind turbine is designed with two type of vertical axis wind turbines Savonius VAWT and Darrieus VAWT run at low wind speed. The project objective is to solve the electric energy problem in remote areas in Egypt.
- ***Incinerator for medical waste***.
  An Incinerator is redesigned for medical waste in Assiut university hospital.

Solar Energy Projects

In the solar cooling and heating systems area I co-supervised in many projects one of them is ***design a solar heating system for 150 building in new Assiut city*** to reduce the electric energy used in this new city. For industrial side, we ***design a solar heating system for an Ice Cream Factory at industrial region in Assiut City coupled with natural gas boiler***.

Undergraduate Co-Supervision Projects

In the field of undergraduate projects our professors in my department depend on me and other colleagues to help some student in their projects and I can mention some of these projects. ***Using a new radiant panel in cooling and heating, redesign of a refrigerator working with absorption system coupled with conventional refrigerator working by CFCs, using solar air heating collector in drying of fruits, redesign of pulverized coal boiler for a steam power plant in Assiut city, Stirling engine design using solar concentrator*** and finally ***Development of Vibrating Flow Pump for Artificial Heart Application.*** Some of these projects win with awards from Syndicate of Egyptian Engineers.

Internships

General Petroleum Company (GPC) *July, 2007*

- Observed the whole oil extraction process, and water desalination unit using exhaust gases from a gas power plant.
- Recognized functions and working principles of different pumps, engines, oil pumps, compressors.

Ayaun Moussa Power Plant *August, 2007*

- Observed the operation of the steam power plant and each components of boilers, turbines, generators, heat exchangers, pumps, compressors, oil heating system, water treatment system.
- Attended the maintenance of compressors.

Attended courses and diplomas

Basic Cell Culture Training Program *February, 2016*

- Three days training on the cell culture theoretical study and particular sessions.
- Cell subculture, Banking and counting using Hemocytometer.

Courses organized by FLDC (Faculty and Leadership Development Center) Assiut University-Egypt.

Duration: 15 Hours.

- *Analytical and Creative Thinking.* *July, 2016.*
- *Statistical Analysis in Scientific Research.* *July, 2016.*
- *How to Design the E-Course.* *March, 2016.*
- *Effective Presentation.* *March, 2016.*
- *Strategic Planning.* *March, 2016.*
- *Research Team Management.* *March, 2016.*
- *Conference Organization.* *September, 2014.*
- *Time and Conference Management.* *September, 2014.*
- *Legal and Financial Aspects in University Environment.* *December, 2012.*
- *Electronic Learning (E- Learning).* *December, 2012.*
- *Use of Technology in Teaching.* *November, 2012.*
- *International Publishing of Research.* *December, 2011.*

Courses organized by DAAD (German Academic Exchange Service) Egypt

Duration: One day.

- *Teambuilding for Team Members* *December, 2015*
  - Team dynamics, team objectives, knowing and using your strengths, and developing team spirit.
- *Dealing with Change* *December, 2015*
  - Meaning of change, coping with fear and resistance, stages of change process, and developing strategies to face challenges of change.
- *How to Present Scientific Data* *November, 2015*
  - Using informative and persuasive strategies in speaking.
  - Distinguishing between speaking to persuade and speaking to inform.
  - Finding information relevant to the topic.
  - Using visual aid effectively.
  - Importance of time management skills.
  - How to use body language, voice level and pacing effectively.
- *Scientific Thinking and Argumentation Skills for Problem Solving* *November, 2015*
  - Applying steps of scientific method to solve a problem.
  - Making scientific observations.
  - Distinguish among observations, facts, opinions, inferences, and assumptions.
  - Recognizing good arguments and detecting faulty arguments.
  - Providing a hypothesis for a given problem.

- Analyze information gathered to confirm or reject a hypothesis.

CATIA (Computer Aided Three-dimensional Interactive Application) V5R21 *April, 2015*

- Training three days on the principles of the CATIA V5R21 software, which enables the creation of 3D parts, from 3D sketches, sheet metal, composites, and molded, forged or tooling parts up to the definition of mechanical assemblies.

Introduction to Programmable Logic Controller (PLC) *October, 2007*

- Five days training on the PLC automation studio software, which used in the control systems.
- I got a grade of "Excellent".

Awards and Honors:

- Assiut University's price for academic excellence and getting a general grade of "Very Good" in the academic year [2004].
- Assiut University's price for academic excellence and getting a general grade of "Distinction" in the academic year [2005].
- Assiut University's price for academic excellence and getting a general grade of "Distinction" in the academic year [2006].
- Assiut University's price for academic excellence and getting a general grade of "Distinction" in the academic year [2007].
- The memorial award of Prof. Mahmoud Hassan Seadawy for being distinguished in MP321 Thermodynamics-II and getting a general grade of "Distinction" in the academic year [2006-2007].

Professional Membership

- Syndicate of Egyptian Engineers.