

# Curriculum Vitae

## PERSONAL INFORMATION

**Surname** Saad  
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**Nationality** Egyptian  
**Date of birth** September 17th, 1988  
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**Status** Married

## ACADEMIC QUALIFICATIONS

**PhD researcher at State Key Laboratory of Coal Combustion (SKLCC), School of Energy and Power Engineering, Sept. 2016 – Present.**

Huazhong University of Science and Technology, China

**Master of Science in Mechanical Power Engineering, Jan. 2015**

Zagazig University, Zagazig, Egypt

**GPA** 3.8  
**Course Work** Focused coursework on Biomass Combustion and Dust Explosion, Advanced Heat and Mass Transfer, Design and Performance of Combustion Systems, Fuel and Combustion Theory, Internal Combustion Engines, Computational Fluid Dynamics and Gas Dynamics.  
**Thesis Title** “Combustion of Agricultural Residues”  
**Thesis Abstract** Egyptian sugarcane bagasse and cotton stalks, powders were burned in a Bubbling Fluidized Bed Combustor (BFBC). Particle Size Distribution (PSD) for the two materials was studied carefully to determine their physical characteristics. The evaluation of design parameters of the fluidized bed combustor, the analysis of the fluidizing phenomena, the combustion and emission characteristics, for the two materials were investigated and discussed.  
**Thesis Advisor** Professor **Saad. Abd El-Hameed El-Sayed Hamad**, Prof. of Combustion, Heat transfer, Thermal explosion, and Energy and Director of clean combustion and explosion Lab in Mechanical Power Eng. Dept., Zagazig University.

**Bachelor of Science in Mechanical Power Engineering, May 2010, with Honor (GPA 85.75/100)**

Zagazig University, Zagazig, Egypt

|                                    |   |
|------------------------------------|---|
| <b>Grade</b>                       | <b>Excellent with honor (85.75%)</b> , Ranked <b>first</b> in a class of ~152   |
| <b>Graduation Project</b>          | “Simulating and Evaluating of Talkha (750MW) Combined Gas Turbine Power Plant”  |
| <b>Graduation Project Abstract</b> | This project aimed to design a program to simulate and evaluate the performance of Talkha 750 MW combined cycle gas turbine power plant using Engineering Equation Solver (EES) software that includes a database for many substances. Types of Talkha power plant components were studied and their performance was analyzed. The evaluation of the steam power plant was performed at different operating conditions. |
| <b>Faculty Advisor</b>             | Dr. Tarek Khass   |

**RESEARCH INTERESTS**

- Area of combustion, heat transfer and dust explosion. Also experimental work especially in sizing distribution analysis of biomass powders, thermal gravimetric analysis, hot plate ignition and fluidized bed combustion. Working in the field of "Clean Combustion" applications especially in the field of pulverized coal and biomass combustion. Biomass powders and pellets oxy-fuel combustion.

**WORKING HISTORY:****Demonstrator Sept. 2010 – Jan. 2015**

Department of Mechanical Power Engineering, Zagazig University, Zagazig, Egypt

**Assistant. Lecturer Jan. 2015 – Sept. 2016**

Department of Mechanical Power Engineering, Zagazig University, Zagazig, Egypt

**PhD researcher at State Key Laboratory of Coal Combustion (SKLCC), School of Energy and Power Engineering, Sept. 2016 – Present.**

Huazhong University of Science and Technology, China

- Teaching**
- Teaching some basic courses in mechanical engineering (**Thermodynamics, Fluid Mechanics, and Heat Transfer**). Planned tutorial and revision sessions, graded papers and exams, designed oral exams. Taught in an effective and interactive way (making the lesson as a story telling) to deepen the understanding of the basics and the concept and relate these concepts with some applications which made students very eager to know these concepts.
  - Teaching some applied courses in mechanical engineering (**Internal Combustion Engines and Power Plants**). Planned tutorial and lab sessions, graded papers and exams, designed oral exams. Taught in an effective and interactive way which made all students in the class involved in the lesson taken. Focused on lab experiments that enable students to understand the basics and applications.

- Teaching **Thermo-fluid** course for electrical students to give them brief concepts (to help electrical students in studying thermal power plants).

- Research** ➤ **Graduate Research Assistant** Sept. 2010 - Jan. 2015
- Fluidized bed combustion analysis
  - Combustion experimental analysis (Facility Design/Emission measurements)
  - Chemical Kinetics

### **Mentoring Experience**

Department of Mechanical Power Engineering, Zagazig University, Zagazig, Egypt

- Mentorship** ➤ **Jan. 2014 – Present**
- Assistant in supervision of Zagazig University Formula Student (ZUFS) team that participates in the most established Europe's Formula Student (FS) educational Motorsport competition, run by the Institution of Mechanical Engineers. I accompanied the team in traveling to the UK to participate in the Formula Student educational Motorsport competition, which was held on 9-12 July 2015 at Silverstone Racing Circuit, UK.
- **Sept. 2010 – Dec. 2015**
- Mentored many undergraduate students in Mechanical Power Engineering in their mini projects of ICE course. I helped them in the search, preparation and writing the report.
- **Sept. 2010 – Dec. 2010**  
The study was about different types of engines as (Gasoline hybrid car, fuel cell car, Formula one racing car, Rotary engine, biodiesel car, hydrogen car and natural gas car.
  - **Sept. 2011 – Dec. 2011**  
Design of internal combustion engine components (studying force and stress analysis) as (piston design, connecting rod design, camshaft design, crankshaft design, etc.)
  - **Sept. 2012 – Dec. 2012**  
Internal combustion engine model by making a suitable section on different types of engines as (single overhead camshaft, double overhead camshaft, side camshaft, two stroke engine, turbocharger and rotary engine). Working model for cooling system simulation, ignition circuit and turbo charger.
  - **Sept. 2013 – Dec. 2013**  
Buying and running of the two real engines in the combustion lab, one of them is the gasoline engine and the other one is diesel.
  - **Sept. 2014 – Dec. 2014**  
Studying the performance of gasoline and diesel engine by using hydraulic brake on the flywheel and different measurement devices on

the engines as thermocouples, flow meter and piezoelectric pressure sensor and so on.

• **Sept. 2015 – Dec. 2015**

Collecting data about Ignition system in SIE using electronic ignition circuit, cooling system, lubrication system, Intake and exhaust system, injection, bearing, power transmission system, Electronic Control Unit "ECU", measurements in Internal combustion engines and different types of combustion chambers. Also design of the crank shaft and connecting rod of a four cylinder inline engine and a six cylinder V-engine.

## PUBLICATIONS AND ARTICLES SUBMITTED

### Journal Publications

1. Saad A. El-Sayed and **M.E. Mostafa**, Pyrolysis characteristics and kinetic parameters determination of biomass fuel powders by differential thermal gravimetric analysis (TGA/DTG), *Energy Conversion and Management* 85 (2014) 165–172.
2. Saad A. El-Sayed and **M. E. Mostafa**, Analysis of grain size statistic and particle size distribution of biomass powders, *Waste and Biomass Valorization* 5 (2014) 1005–1018.
3. Saad A. El-Sayed and **M. E. Mostafa**, Kinetic Parameters Determination of Biomass Pyrolysis Fuels Using TGA and DTA Techniques, *Waste and Biomass Valorization* 6 (2015) 401–415.
4. Saad A. El-Sayed and **M. E. Mostafa**, Estimation of thermal and kinetic parameters of sugarcane bagasse and cotton stalks dust layers from hot surface ignition tests, *Combustion Science and Technology* 188 (2016) 1655–1673.

### Submitted (Journal)

5. Saad A. El-Sayed and **M. E. Mostafa**, Thermal Degradation and Kinetic Parameters Estimation of Most Famous Egyptian Mango Leaves Using TG/DTG Analysis, (**Submitted for publication**).
6. Saad A. El-Sayed and **M. E. Mostafa**, Combustion and emissions characteristics of Egyptian sugarcane bagasse and cotton stalks powders in a pilot-scale bubbling fluidized bed combustor, (**Submitted for publication**).
7. Saad A. El-Sayed, Tarek M. Khass, and **Mohamed E. Mostafa**, Thermo-physical and kinetics parameters determination and gases emissions of self-ignition of sieved rice husk of different sizes on a hot surface, (Submitted for publication).

## Awards and Honors:

- Zagazig university prize for international publication in Class (A) IF journals in 2014.
- Zagazig university prize for international publication in Class (A) IF journals in 2015.

## SKILLS

**Programming** C: Basic knowledge  
Matlab, EES : Basic knowledge

**Software Packages** Windows: Excellent knowledge (in particular: 8/7/XP/Vista)  
Microsoft Office: Excellent knowledge (in particular: Word, Excel, PowerPoint)  
Solid Works: Good knowledge (3D CAD Design Software)  
Fluent: Basic knowledge  
SPSS: Basic knowledge  
La Tex: Basic knowledge

**Languages** **Arabic:** native language.  
**English:** IELTS 5.5 total band [Reading (5.5)– Listening (5) – speaking (5.5) – writing (6.5)], Date of attainment (18/6/2016).  
**French:** beginner oral skills and writing ability.

**Social skills and competences** Excellent ability to team-working, gained in many situations in which the collaboration between different people is essential; excellent ability to relate with people of different nationalities and cultures gained by attending the formula student competition in London.

## ADDITIONAL INFORMATIONS

**CONTACT PERSONS** **Professor Saad. Abd El-Hameed El-Sayed Hamad**

- **Position:** Director of Clean Combustion and Explosion Research Laboratory (CCERL), Mechanical Power Engineering Department, Faculty of Engineering, Zagazig University, Zagazig, 44519, Egypt.
- **Email:** shamad53@hotmail.com
- **Phone:** 002-01062707071

**Associate Professor Osama M.S. Mesalhy**

- **Position:** Exchange visiting professor, Mechanical Power Engineering Department, University of central florida, USA.
- **Email:** osama.mesalhy@ucf.edu, mesalhy\_osa@yahoo.com
- **Phone:** +1-321-305-0099

**Assistant Professor Tarek M. Khass**

- **Position:** Assistant professor, Mechanical Power Engineering Department, Faculty of Engineering, Al-Jouf University, KSA.
- **Email :** tmkhass@zu.edu.eg , tarek\_khass@yahoo.com
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