

MOHAMMED MOUSTAFA HASSAN

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CAREER OBJECTIVE

Looking for the opportunities to learn more and more, gain experience, and improve my knowledge.

Fields of interest:

Occupational Biomechanics, Human Body Skeleton Biomechanics, Solid Mechanics, Material Science, Metallurgy, Biomaterials, Fracture Mechanics, Finite Element Analysis.

PERSONAL INFORMATION

First Name: Mohammed

Last Name : Hassan

Sex: Male

Marital status: Married

Nationality: Egyptian

Passport No.: A00057112

Birth date: 03-26-1979 (mm-dd-yyyy)

Country of current residence: Egypt

Military Status: Exempted

Driving License: Available and Valid

SUMMARY OF QUALIFICATIONS

1996 - 2001 Faculty of Engineering - Helwan University
Helwan, Egypt

B.SC. IN PRODUCTION ENGINEERING

Very Good (81.61%) - (The Second with Honor Degree)

Excellent grade in the graduation project.

2002 - 2007 Faculty of Engineering - Helwan University
Helwan, Egypt

M. Sc. IN PRODUCTION ENGINEERING

M.Sc RESEARCH SUBJECT

DYNAMIC ANALYSIS OF BACK PAIN PROBLEM FOR INDUSTRIAL WORKERS

This work aims at analyzing the reaction of the human body at the main joints of the skeleton during some biomechanical activities; lifting and pushing of loads. Emphasis in this research was placed on the study of the lower region of the back located between the fifth lumbar vertebra and the first sacral vertebra (L5/S1). Two models were developed in this work; static and dynamic biomechanical models. Two additional rigid body segments were added in the dynamic model to enable accounting for relative motion arising from considering the relative velocity and acceleration as well as the Coriolis acceleration in the kinematics equation of the human back. The inclusion of these terms has enabled a more accurate computation of the forces generated at the L5/S1 region.

**WORK
EXPERIENCE**

From 21-1-2002 to 28-6-2007
MECHANICAL ENGINEERING DEPARTMENT
FACULTY OF ENGINEERING - HELWAN UNIVERSITY
TEACHING ASSISTANT

From 28-6-2007
MECHANICAL ENGINEERING DEPARTMENT
FACULTY OF ENGINEERING - HELWAN UNIVERSITY
ASSISTANT LECTURER

Job Description :

- Working on my PhD degree.
- Assisting in the teaching activities and laboratory tutorials.
- Supervising on workshop training programs.
- Teaching experience include the following courses:
 1. Theory of Machines.
 2. Mechanics of Machinery.
 3. Solid Mechanics.
 4. Material science.
 5. Metallurgy.
 6. Finite Element Analysis (FEA).
 7. Fracture Mechanics

**RESEARCH
EXPERIENCE**

From 16-7-2008 to 15-9-2008
VISITING RESEARCH ASSISTANT
ORTHOPEDIC TISSUE ENGINEERING AND BIOMATERIALS LAB
DEPARTMENT MECHANICAL ENGINEERING AND ENGINEERING SCIENCE
UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE (UNCC)
Charlotte, NC 28223-0001 USA

LANGUAGES

| Language | Level |
|----------|-----------------|
| Arabic | Native language |
| English | Excellent |

**COMPUTER
SKILLS**

| Software | Level |
|---------------------------------|-----------|
| Finite Element Analysis (FEA) | Excellent |
| Matlab | Excellent |
| AutoCAD | Excellent |
| Microsoft Office family | Excellent |
| Internet Searching and Browsing | Excellent |

REFERENCES

- 1- **Prof. Abdel Aziz Hegazy**
Mechanical Engineering Department, Helwan University
 - 2- **Prof. Mokhtar Bakr**
Vice-Dean for Graduate Studies and Research, Faculty of Engineering, Helwan University
 - 3- **Prof. Osama Monir Dawood**
Mechanical Engineering Department, Helwan University
 - 4- **Dr. Ahmed El-Ghannam**
Director of Orthopedic Tissue Engineering and Biomaterials Lab, Dept. of Mechanical Engineering and Engineering Science, The University of North Carolina at Charlotte
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PUBLICATIONS

Mohammed M. Hassan, E. M. Bakr, Hegazy A. A., 2009, “*On the Inclusion of Sliding Kinematical Effects on the Biodynamical Modeling of Symmetrical Lifting Activities,*” *Proceedings of IDETC/CIE*, San Diego, CA, USA, Paper No. DETC2009-86498.

RESEARCH INTERESTS

I was working during my master in the Biomechanics field, especially in the modeling of Human Body skeleton. My master thesis was entitled “*Dynamic Analysis of Back Pain Problem for Industrial Workers*”.

The work in this thesis was concentrated on analyzing the reaction of the human body at the main joints of the skeleton during some biomechanical activities such as lifting and pushing of loads. Emphasis in this research was placed on the study of the lower region of the back located between the fifth lumbar vertebra and the first sacral vertebra (L5/S1), known as the lumbosacral disc region..

I will be so pleased if I can continue during my PhD in the field of Biomechanical Engineering and the Biomaterials Science. Anyhow the research areas that I will be interested during my PhD are the applications of Mechanical Engineering in Biomedical science.