

Curriculum Vitae

Yahia Zakaria Mohammad Rawash.

Personal information:

Nationality: Jordanian
Date of Birth: 12/01/1982
Marital Status: Single
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Research Interests:

My research interests range over a wide spectrum of areas. More specifically, I am fascinated by Cell & Tissue Engineering, Neural Engineering, Biomechanics, Biomedical Sensors, Biomedical Imaging (Magnetic Resonance Imaging, CT, and X-ray) and NMR spectroscopy, Digital Image Processing, Digital Signal Processing and Pattern Recognition, Control Systems and Biomaterial.

Education:

08/2007-08/2015: **M.Sc. Degree in Bioengineering** with honors from The University of Illinois at Chicago - UIC. (Chicago-USA).

01/2000-06/2005: **B.Sc. Degree in Biomedical Engineering** with honors from Jordan University of Science and Technology - JUST. (Irbid-Jordan).

Computer Skills:

- Excellent knowledge in Matlab, Autocad, Pspice, C++, Mathcad, Minitab , ANSYS, COMSOL and Labview.
- Comprehensive knowledge in using Windows, Word, Excel, Power point and other Microsoft applications.
- Excellent knowledge in Computer Maintenance Software and Hardware.
- Computational Methods: Finite Element, Finite Difference, and Control Volume Finite Element.

Engineering Training and Professional Experience:

➤ **MEDICAL INSTRUMENTS MAINTANENCE SESSION**

Royal Scientific Society (Amman –Jordan) 01/01/2005 to 31/12/2005

Comprehensive sessions on the frequently used medical instruments and devices like: Dental, Endoscopy, DC-Shock, Ultrasound, CT, MRI, and Hemodialysis machines. During each session, regular field visits to the major hospitals and medical centers in Jordan were carried out.

➤ **BIOMEDICAL ENGINEER- SUPERVISION AND MAINTENANCE**

Qaser Shapeep Hospital (Zarqa – Jordan) 01/01/2004 to 31/12/2004

Provide technical assistance and engineering evaluations for health facilities. Identifies researches and suggests resolution processes for emergent problems. Establishes and maintains preventative maintenance and other facilities operation programs.

➤ **TEACHING ASSISTANT**

Jordan University of Science and Technology –JUST (Irbid-Jordan) 01/01/2006 to 25/08/2007.

Provide clerical and instructional support in classrooms, allowing certified professors to devote more time to lesson planning and teaching. Teaching and developing lab classes at Jordan University of Science and Technology at Biomedical Engineering Dept.

➤ **RESEARCH ASSISTANT**

Jordan University of Science and Technology –JUST (Irbid-Jordan) 01/01/2006 to 25/08/2007.

Design and implement an interface circuit that will take signal from amperometric glucose micro sensor, sensor or biosensor, and process it by current to voltage converter then by continuous to discrete converter which is an analog to digital converter. After data has been converted to zeros and ones by encoder, it will be entered to computer and capture by data acquisition unit in labview or matlab. Then data will be processed again to identify many things like maximum, minimum, average and compare data to normal level of glucose in human body.

➤ **RESEARCH ASSISTANT**

University of Illinois at Chicago – UIC (Chicago-USA) 28/08/2007 to30/08/2010

Fractional Analysis Development of the Bloch Equations to classify anomalous diffusion in tissues with developing pathology using Diffusion weighted MRI. Some model like diffusion stretched exponential model is tested and new methods are developed to solve Bloch Equations, during research process regular field visits to The Center for MR Research at University of Illinois at Chicago were carried out.

➤ **RESEARCH ASSISTANT**

University of Illinois at Chicago – UIC (Chicago-USA) 28/08/2007 to30/08/2010

Develop optical imaging systems for quantitative assessment of eye diseases. As well as develop a novel system for three-dimensional imaging of the oxygen tension in the eye by measurement of phosphorescence lifetime of an oxygen-sensitive molecular probe,

during research process regular field visits to The Lions of Illinois Eye Research Institute at University of Illinois at Chicago were carried out.

WORK EXPERIENCE:

➤ **Graduate student at the University of Illinois at Chicago**

08/2009 to 12/2015.

By the 08/ 2009 I complete all the course work for the MS degree at UIC, from 08/2009 to 08/2011 I worked under Dr. Magin supervision, and then it was necessary to go to Canada.

➤ **Research Intern**

08/2010 to 01/2012.

In Canada, I received funding from the University to complete the graduate program at UIC under Dr. Andreas Linninger. In addition, I attended conferences and visited the University of Toronto (2010-2011).

➤ **Research Intern**

01/2012 to 08/2016.

I have worked as a research associate in the German Jordanian University (2012-2014) and the Hashemite University (2014-now) and obtained support from Hashemite University to be included in the PhD program.

➤ **Full time lecturer**

08/2016 to now.

I have worked as a full time lecturer in the Hashemite University (2016-now) and I teach many courses like Electrical Circuits Analysis, Electronics and Applied Mathematics for biomedical engineering student.

FUNDING, HONORS AND AWARDS.

- Hashemite University Ph.D. Fellowship, Jordan.
- UIC Student Travel Presenter Award University of Illinois at Chicago Graduate College to Austin Convention Center, Austin, TX, 2010.
- UIC Graduate Student Council Travel Award University of Illinois at Chicago Graduate College to Austin Convention Center, Austin, TX, 2010.
- Graduate Research Scholarship from the University of Illinois at Chicago, 2007-2010 (Total amount is \$150,000 over three years, \$50,000 each year, 50% Research assistance-ship with \$2000 stipend each month).
- The undergraduate honors degree in graduation at the department of Biomedical Engineering, Jordan University of Science & Technology, 2005.
- Undergraduate scholarship from the Jordan Ministry of Higher Education, 2000-2005 (Total amount is \$7500 over five years, \$1500 each year).

Publication:

- Yahia Z. Rawash, Three-Dimensional Imaging of Oxygen Tension in a Rat Retina. (UIC Bioengineering Student Journal Editor: Sylvester Rozario, Vol. 1 No 1 Fall 2008, Pages 26-31, (Online): ISSN 2329-5341 (Print): ISSN 2329-5333)
- Computer Modeling of Drug Delivery to the Brain, Gangopadhyay **et al.** Andreas Linninger, Yahia Rawash, Oleksandr Ivanchenko. (March 2011 Journal of Young Investigators, ISSN: 1539-4026)

Submitted Papers:

- Fractional-order models to describe anomalous NMR relaxation, review paper. Yahia Z. Rawash. (J. Magn. Reson. Imaging)
- Characterizing Anomalous Diffusion in NMR by a Distribution of Rate Constants". Richard L. Magin*, Yahia Z. Rawash** and Mario N. Berberan-Santos. FDA'10 4th IFAC Workshop on Fractional Differentiation and Its Applications

Presentation and Conferences:

- 2012 ISRRT World Congress and CAMRT Annual General Conference TORONTO (ON) June 7-10 2012 .
- Y. Rawash, O. Ivanchenko, N. Sindhvani, and A. Linninger, Computational Model for Predicting Drug Distribution in the Human Brain Using DTI. Poster Presentation. Track: Biomedical Imaging and Optics. BMES 2010 Annual Fall Meeting, October 6–9, 2010, Austin Convention Center, Austin, TX, 2010.
- O. Ivanchenko, E. Lueshen, N. Sindhvani, Y. Rawash and A. Linninger. Design of Backflow-Free Catheters Based on Micro-fluid Dynamics. Poster Presentation. Track: Systems Biology, Bioinformatics and Computational Biology. BMES 2010 Annual Fall Meeting, Oct 6–9, 2010, Austin Convention Center, Austin, TX, 2010.

Text book:

- R.L. Magin, Y.Z. Rawash, and M.N. Berberan-Santos, “Analyzing Anomalous Diffusion in NMR Using a Distribution of Rate Constants,” Chapter 22 pp. 263-274 in Fractional Dynamics and Control, D. Baleanu, J.A.T. Machado and A.C.J. Luo (editors), Springer, London, 2012.

Significant Undergraduate Projects:

- Computer Interface Design for I/P, And Signal Analysis from a Potentiostat for Biosensor Applications.
- Design and simulation of an Artificial Pancreas.
- Design and simulation of a pacemaker.

Undergraduate Courses: 01/01/2000 to 30/06/2005

- Biomedical Engineering Courses: Bio-fluid Mechanics, Biomechanics of Movement, Biomaterial Application, Biomedical Instrumentations, Medical Imaging, Biomedical Transport, Biomedical Computer Simulation Methods, and Artificial Organs, Magnetic Resonance Imaging, Digital Image Processing, Digital Signal Processing and Pattern Recognition, Biomedical Sensors.
- Electrical Engineering Courses: Advanced Electric Circuits, Advanced Electronic Circuits (Amplifiers), Digital Electronics, Microprocessors & Assembly language, and Signal Analysis.
- General Engineering Courses: Control Systems, Transducers, Numerical Methods, Physiology, Bio-Chemistry, Differential Equations, and Statistics.

Membership:

- BMES: Biomedical Engineering Society.
- IEEE-EMBS: Institute of Electrical and Electronics Engineers, Medicine and Biology Society.
- JEA: Jordan Engineers Association, Jordan.
- JBEA: Jordan Biomedical Engineers Association, Jordan.

References:

Available Upon Request.