



Mashhour M. Bani Amer
Associate Professor
Ph.D. in Biomedical Engineering

I. Personal & Contact Information

Personal Information

Nationality: Jordanian
Marital status: Married

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II. Education

1. **Ph.D. in Biomedical Eng**, Silesian University of Technology, September 1993.
2. **B.Sc. and M.Sc. in Biomedical Engineering**, Wroclaw University of Technology 1990.

III. Research Interests

Development of healthcare information system, design of intelligent and wireless medical systems, mobile phone- based medical systems, fuzzy and neuro-fuzzy-based medical systems, intelligent medical sensors, intelligent therapeutic systems and remote monitoring of physiological signals.

IV. Patents

1. Patent Title: "Intelligent Therapeutic System", Inventor: Mashhour Bani Amer, International Application No.: IC/06/2716/JO-FI, International Classification IPC8: A61H 23/00, A61H 1/00.
2. Patent Title: "Method of Measuring Oximetric Parameters of Human Blood, Patent No.: EP-299899, International Classification G01N33/50, Inventor: Mashhour Bani Amer.

V. Professional Experience

- ❖ Feb./1994 – April/2000: **Assistant Professor**, Electrical Engineering Department, *Al-Isra University*, Amman, Jordan.
- ❖ Sept./1997 – Oct./1999 **Head** of Electrical Engineering Department, *Al-Isra University*, Amman, Jordan.
- ❖ Sep./2000 – Jan. 2006, **Assistant Professor**, Biomedical Engineering Department, Jordan University of Science and Technology, Irbid, Jordan.
- ❖ Sep. 1, 2004- Sep. 1, 2005 **Head** of Biomedical Engineering Department, Jordan University of Science and Technology, Irbid, Jordan.
- ❖ February 2006 – August 2007, **Associate Professor**, Biomedical Engineering Department, Jordan University of Science and Technology (JUST), Irbid, Jordan.
- ❖ Sep. 2007 – August 2009 – **Associate Professor**, King Saud University, Saudi Arabia, (**Sabbatical Leave**).
- ❖ Sept. 2009 – Now, **Associate Professor**, Biomedical Engineering Department, Jordan University of Science and Technology (JUST), Irbid, Jordan.

VI. Committee Membership

1. National Committee Member: Accreditation criteria for Biomedical (BME) Engineering in Jordanian Private Universities.
2. Head of Committee for writing the specifications of biomedical instrumentation labs in JUST and Hashemite University.
3. Committee Member of: BME study plan, laboratories, research, development, tenders, graduation projects, seminars and workshops (Dept. of Biomedical Engineering, Jordan University of Science and Technology)
4. Head of Committee for writing the M.Sc study plan in Biomedical Engineering

VII. Published Research Papers

Publications in Indexed, Refereed and Specialized Journals and International Conferences

1. **M. Bani Amer** and L. Al-Ebbini, Fuzzy approach for determination the optimum therapeutic parameters in neuromuscular stimulation systems, *Journal of Medical Systems*, Vol. 34, pp. 435-443, 2010.
2. **M. Bani Amer**, Riyad Az- Zaqah, Abdulrahman K. Aldofash, Alaa Y. Mohammad, Abdullah M. Dameer, Contactless method for detection of infant's sleep apnea, *Journal of Medical Engineering and Technology*, Vol. 34, Nos. 5-6, pp. 324-328, July-August 2010.
3. L. Fraiwan, O. Al-Bataineh, J. Matouq, S. Haddad, **M. Bani Amer**, ECG-based wireless home infant apnoea monitor, *Journal of Medical Engineering and Technology*, Vol. 33, No. 2, pp. 309 – 313, 2009.
4. **M. Bani Amer**, Fuzzy Model of Artificial Kidney, International IBIMA Conference, January 4-6, 2009, Egypt.
5. **M. Bani Amer** and Abed Alghouly, A Hybrid Intelligent System for Diagnosis of Diabetes, The International Conference on Information Technology (ICIT'2009), June 3-5, 2009.
6. **M. Bani Amer**, New Less Invasive Approach for Determination of the Sodium Concentration in Human Blood, *Journal of Medical Engineering and Technology*, Vol. 32, No.2, pp. 97 – 102, 2008.
7. **M. Bani Amer**, A Novel Differential Integrator for Bioelectric Events, *IEEE Transactions on Circuits and Systems, Part-I: Fundamentals Theory and Applications*, Vol. 40, No. 5, pp.671-674, May 2002.
8. **M. Bani Amer**, Analysis of Internally Generated Noise of Bioelectric Amplifiers, *International Journal of Engineering Science and Technology*, Vol. 2, pp. 39-49, 2002.
9. **M. Bani Amer**, A Stable Differential Differentiator with High and Controllable Common-Mode Rejection Ratio, *International Journal of Engineering Science and Technology*, vol. 27, pp. 73-81, 2002.
10. **M. Bani Amer**, Novel Design of Bioelectric Amplifier with Minimized Magnitude and Phase Errors, *Journal of Electronics*, Vol. 18, No. 3, pp. 242-254, July 2001.
11. **M. Bani Amer**, Mathematical Model of Chloride Concentration in Human Blood, *Journal of Medical Engineering & Technology (U.K.)*, Vol. 30, No.1, January/February 2006.

12. **M. Bani Amer**, New High Frequency CFOA-Based Differential Integrator, *Third IEEE International Conference on Systems, Signals and Devices (SSD'05)*, Sousse, March 22-25, 2005.
13. **M. Bani Amer** and M. Ibbini, A Novel Single-Element-Controlled CFOA-Based Square Wave Oscillator, *Third IEEE Conference on Systems, Signals and Devices (SSD'05)*, Sousse, March 22-25, 2005.
14. **M. Bani Amer**, Samer Ammari, Basheer Alshamiri, New Optical Glucose Sensor, *IASTED International Conference on Biomedical Engineering (BIOMED 2005)*, February 2005, Austria.
15. M. Ibbini, M. A. Masadeh, and **M. Bani Amer**, A Semiclosed- Loop Optimal Control System for Blood Glucose Level in Diabetes, *Journal of Medical Engineering and Technology*, Vol.28, No.5, pp.189-196, September/ October 2004.
16. **M. Bani Amer**, Reliable and Low-Cost Capacitance-to-Voltage Converters, *International Journal of Engineering Science and Technology*, Vol. 3, No. 2, pp.19-29, 2003.
17. M. S. Ibbini, M. S. Masadeh, and **M. M. Bani Amer**, A Fuzzy Logic Control Technique For blood Glucose Level In Diabetics, *International Conference on Biomechanics*, pp. 77-80, June 2003, Greece.
18. **M. Bani Amer**, An Accurate Amperometric Glucose Sensor Based Glucometer with Eliminated Cross-Sensitivity, *Journal of Medical Engineering & Technology*, Vol. 26, No.5, pp. 208-213, September/October 2002.
19. **M. Bani Amer**, Optimal Design of Experiment for Medical Sensors Calibration, *IEEE Conference on Biomedical Engineering*, October 2001, Istanbul, Turkey.
20. **M. Bani Amer**, A Computer-based System for Identification of Static Characteristic of Medical Sensors, *Journal of Medical Engineering and Technology*, Vol.37, pp. 240-245, 1999.
21. **M. Bani Amer**, A Design Study of Bioelectric Amplifier with Improved Parameters, *Journal of Medical Engineering and Technology*, Vol. 33, pp.15-19, 1999.
22. **M. Bani Amer**, A Closed-loop system for Intravenous and Continuous Insulin Infusion, *IEE International Conference on Electrical and Electronic Engineering*, 1998.
23. **M. Bani Amer**, Development of New Method for Indirect Measurement of Blood Oxygen Saturation, *Conference in Computational Aspects and their Applications in Electrical Applications (CATAEE)*, Jordan, 1995.
24. **M. Bani Amer**, Repeatability and Accuracy Analysis of the Results of Biomedical Measurements, *(CATAEE)*, Jordan, 1995.
25. **M. Bani Amer**, Mathematical Model of Blood Oxygen Partial Pressure, *Archivum Immunologate et Therapiae Experimentalis*, vol. 17, No. 3, pp. 12-17, 1993.

26. **M. Bani Amer**, Measurement and Analysis of Human Blood Hydrogen Ion Concentration pH, *Journal of Acta Biochemica Polonica*, vol. 9, No. 5, pp. 90-97, 1993.
27. **M. Bani Amer**, Statistical Analysis of the Result of Measurements of Oxygen Partial Pressure pO₂ in Human Blood, *CAM'93 Conference in Computer - Aided Metrology*, pp.121-129, 1993.
28. **M. Bani Amer**, Metrological Model of Capillary Blood Oxygen Partial Pressure pCO₂, *International Conference in Measurement Systems*, pp.159-165, 1993.
29. J. Fraczek, **M. Bani Amer** and P. Walichiewicz, Analysis of Homogeneity of the Results of Biomedical Measurements in Clinical Laboratories, *CAM'93 Conference in Computer - Aided Metrology*, pp. 53-54, 1993.
30. **M. Bani Amer**, A Reliable and Accurate Capnometer for Medical and Didactical Use, *The 2nd IEEE Conference in Measurement Systems and Networks*, Poland, 1992.

VIII. Courses Taught

- Fault Fixation and Maintenance
- Biomedical Instrumentation 1 and 2
- Diagnostic Techniques
- Computer Applications in Biomedical Engineering
- Artificial Organs
- Biomedical Sensors
- Medical Electronics 1 & 2
- Electronic Devices
- Electronic Circuits and Amplifiers
- Electrical Circuits 1 & 2
- Digital Electronics
- Instrumentation and Measurements
- Analog Integrated Circuits
- Digital Integrated Circuits
- Filters and Networks Synthesis
- Electrical Instrumentation and Measurements
- Electronic Engineering Software (OrCAD, PSpice, Pcad)
- Special Topics on Biomedical Engineering (two topics were covered: intelligent medical systems and healthcare management systems)

IX. Laboratories Instructed or Taught

- Analog Electronics Lab.
- Digital Electronics Lab.
- Electrical Circuits Lab.
- Biomedical Transducers
- Biomedical Instrumentation
- Biomedical Sensors

X. Supervised Graduation Projects

More than 20 projects in most area of interest in biomedical engineering. These include:

#	Project's Name
1	Non-Contacting respiratory monitoring using IR with Apnea alarm
2	Design of low power and low noise wireless analog front-end for portable bio-potential systems.
3	Non-Contact wireless ECG electrode
4	Management system for medical devices
5	Heart sound analysis and diagnosis
6	Noise in infant's incubator
7	Wireless system for infant apnea monitoring
8	Heart rate monitoring system
10	Total artificial heart
11	Portable electronic Stethoscope
13	Electronic blood group analyzer
14	Programmable Pace-maker
15	Development of optical glucose sensor with improved parameters
16	Artificial Kidney
17	Fatigue Detection system
18	Oxygen Detector
19	Artificial Ear
20	Computer based pH meter
21	Artificial Lung Module
22	Computer Based ECG system
23	Artificial Kidney
24	Programmable Constant current muscle Stimulator

XI. Workshops and Conferences

1. Design Principles of Intelligent Electronic Systems Using PC, Al-Isra University, 1999
2. Course Portfolio: Contents and Guidelines, King Saud University, October 2007.
3. Creativity and Innovation, King Saud University, Alafraj Community College, January 2008.
4. Management of Small Projects, King Fahd University, January 2008.
5. Business Plan, Badir for Information and Technology, King Abdulaziz City For Science and Technology, February 2008.
6. Inventions and Intellectual Properties, King Abdul Aziz & his Companions Foundation For Giftedness and Creativity, Riyadh, March 2008.
7. Knowledge Marketing, King Abdul Aziz & his Companions Foundation for Giftedness and Creativity, March 2008.
8. Workshop on "The EU 7th Framework Programme for Research & Technological Development-Opportunities for Researchers in Saudi Arabia, King Abdulaziz City For Science and Technology, Riyadh, April 15th 2008.
9. Chinese Experience in Nanotechnology Industry, Riyadh, May 4-6, 2008
10. The First Saudi Innovation Exhibition, Kingdom Tour, Riyadh, March 9-13, 2008.

11. International Symposium for Technology Incubators, King Abdulaziz City For Science and Technology, Riyadh, March 16-17, 2009.
12. Development of Academic Programs and their Preparation for Accreditation, King Saud University, Riyadh, 31/1/ -1/2/, 2009.
13. International Conference for Nanotechnology Industry, King Saud University, Riyadh, April 5-7, 2009.
14. Second Conference for Quality in Higher Education, Ministry of Higher Education in Kingdom of Saudi Arabia, Riyadh, May 4-6, 2009.

XII. Supervised Master Thesis or Committee Membership*

1. Mohammad Masadeh, A Closed-Loop Control System for Blood Glucose Level in Diabetics, July 2002, (co-advisor)
2. Zahra Saleh, High Frequency Response of a New Quadruple Darlington Amplifier, May 2001, (Committee Member)

*The above Master thesis were done in the Electrical Engineering Departments at JUST. Till now the M.Sc program in Biomedical Engineering is unavailable (the M.Sc study plan is in preparation).

XIII. Professional Memberships and Activities

1. Institute of Electrical and Electronics Engineers (IEEE)
2. Jordan Engineering Association
3. IEEE Transactions in Medicine and Biology
4. Review papers for the following Journals:

IEEE Transactions on Circuits and Systems Part 1
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Annals of Biomedical Engineering (Transaction)
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Mutah Journal for Research and Studies
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Jordan International Electrical and Electronic Engineering Conference : JIEEE 2001
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5. Member of Scientific Committee for the following Conferences:
 - a. WASET Scientific and Technical Committee on Biological and Life Sciences.
 - b. International Conference on Molecular Biology and Bioengineering, Canary Islands, Spain December 15-17, 2008.

XIV. Awards

1. Distinguished B.Sc and Ph.D. Student
2. Appreciation Letter from the Dean of Engineering Faculty, JUST, May 2005
3. Appreciation Letter from the President of JUST University , March 2006.
4. Gold Medal for the Invention "Intelligent Vibration Therapeutic System", The First Saudi Innovation Exhibition (Ibtikar), March 2008
5. Dean Award for the Excellency in Teaching, King Saud University, May 2008.

XV. Computer Skills

1. Operating Systems:
 - MS Windows
 - MS Windows NT
 - MS-DOS
2. Programming Languages:
 - C/C⁺⁺
 - Pascal
 - Visual Basic
3. Word Processors:
 - WordPerfect
 - LaTeX
 - MS Word
4. Engineering Softwares:
 - Orcad
 - Pspice
 - Matlab
 - LabView