Prof. Dr. Mashhour M. Bani Amer

I. Personal & Contact Information

Personal Information

Nationality: Jordanian
Marital status: Married

Contact Information:

Prof. Mashhour Bani Amer
Department of Biomedical Engineering,
Faculty of Engineering,
Jordan University of Science and Technology,
P.O. Box 3030,
22110 Irbid, JORDAN

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II. Awards

1. Shoman Innovation Award, Shoman Organization, March 2019
2. Phi1ladelphia Best Invention Award, Philadelphia University, April 2019
3. G1old Medal for the Invention: Intelligent Device and Method for Noninvasive Measurement of Blood Total Hemoglobin, International Invention Fair, Istanbul September 2018.
4. Arab Creativity Award in Technology, Arab Thought Foundation, December 2014
5. Arab Innovation Award, Arab Foundation for Science and Technology, 2015

6. Appreciation Letter from the Dean of Engineering Faculty, JUST, May 2005
7. Appreciation Letter from the President of Jordan University of Science and Technology (JUST) for supervising the creative graduation projects in JUST, March 2006.
8. Dean Award for the Excellency in Teaching, King Saud University, May 2009.

9. Gold Medal for the Invention: “Intelligent Vibration Therapeutic System”, First Saudi Innovation Exhibition (Ibtikar), March 200
10. Hisham Hijjawi Scientific Award for Applied Sciences, January 2011.
11. Gold Medal for the Invention: "System with Cable-less transducers for monitoring and analyzing biosignal", The 4th International Fair in the Middle East", October 2011.
12. MIT (Massachusetts Institute of Technology) Enterprise Forum Award for the project ”Intelligent Mobile-Based Expert System for Self-Management of Diabetes’’, 2012.

III. Research Interests

Development of innovative mobile-based tools for education, Fuzzy and neuro-fuzzy-ba1sed modeling of biomedical systems, development of healthcare information system, design of signal conditioning systems for biomedical sensors, medical expert systems, design of intelligent medical systems, and development of mobile phone based medical systems, intelligent medical sensors, intelligent therapeutic systems and remote monitoring of physiological signals.

IV. Patents

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1. Patent Title: "Mobile-Based System with Intelligent Cable-less Transducer for Monitoring and Diagnosis of Biosignals", Inventors: **Mashhour Bani Amer** and Mahmoud Izraiq, European Patent Office, Patent No.: EP1815784A1, 2007.

2. Patent Title: "Intelligent Therapeutic System", **Inventor: Mashhour Bani Amer**, Jorda1nian Patent Office, Patent No. 2388, Patent examined by: World Intellectual Property Office (WIPO), International Application No.: IC/06/2716/JO-FI, International Classification IPC8: A61H 23/00, A61H 1/00, 2007.

3. Patent Title: Mobile-Enabled Bloodless Glucose Measuring Device and Method, **Inventor: Mashhour Bani Amer**, American Patent Office, Application No: 62/377,542, August 2016.

4. Patent Title: Intelligent Device and Method for Noninvasive Measurement of Blood Total Hemoglobin, **Inventor: Mashhour Bani Amer**, American Patent Office, Application No: 62/377,544, July 2017

5. Patent Title: Smart Pocket Science Lab, **Inventor: Mashhour Bani Amer**, Filed to American Patent Office, March 2019.

V. Products

Big efforts were made to transfer the research results into commercial products and as a result the following products are available in the market:

a. Mobile Science Lab (mScienceLab): The mScienceLab represents the world's first lab product which works on smartphone and combines five high-tech instruments connected to education cloud. The cost of such high-tech instruments is expensive and not affordable for most students, teachers, engineers and makers which limits the efficiency of education in science field and leads to their losing interest in studying science courses. Thus, by giving everyone access to a quality development and debugging instruments using the Smart ScienceLab1, we hope to contribute to the increasing speed at which amazing projects are making the transition from ideas to prototypes. Connecting the mScienceLab to the education cloud will also add a great value for learning and teaching process. Teachers and course instructors can upload their class tutorials, assignments, and tests on the cloud server and school and university students will be able to access all the teaching materials provided by teachers via internet using their smartphone regardless of their location (at home, school, university). The students can also upload the results of experience obtained using the mScienceLab and their teachers and supervisors can provide feedback for them. Currently, this product is available in the markets of more than 10 countries and we expect to reach additional market this year.

b. Intelligent Mobile-Based for Bloodless monitoring of glucose level: Diabetes is a leading cause of death and disability worldwide and it kills one man every 10 seconds; 400 million will become sick in diabetes in the coming 10 years, especially in the Third World where the diffusion of this disease has no serious obstacles. Diabetes can lead to severe complications over time, including blindness, kidney failure, heart failure, high blood pressure, and nerves damage with the estimated total cost to the United States economy alone exceeding $90 billion per year. These complications are largely due to years of poor glucose monitoring and control. Thus, frequent self-monitoring and management of blood glucose is crucial for effective treatment and reduction of the morbidity and mortality of diabetes. But unfortunately the lack of accurate, painless, comfortable and low cost blood glucose monitoring devices and efficient management tools are certainly major reasons for such high prevalence of diabetes. Therefore, new painless, accurate and low-cost methods for monitoring of blood glucose are required to improve the prospects for more rigorous monitoring and control of blood glucose in diabetic patients. This product offers new innovative solution for measurement of blood glucose without a need for blood sample an thus overcomes the problems of available convention glucometers.

c. Smart Mobile Phone-Based Approach for Diet Planning and Obesity treatment: This product was developed exclusively for ZAIN Mobile Company in Jordan to aid millions of subscribers in Zain Company to plan their diet without a need for frequent visits to their dietitians.

b. 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 –August 2012, **Associate Professor**, Biomedical Engineering Department, Jordan University of Science and Technology (JUST), Irbid, Jordan.
- Sept. 2012 –Now, **Professor**, Biomedical Engineering Department, Jordan University of Science and Technology (JUST), Irbid, Jordan.
- Head of Intelligent Sensors Lab since October 2011.
- Founder and CEO of companies: MobiHealth-JO and mSensoCare, Since June 2015.

VI. Committee Membership

1. Head of Committee for Creative Projects at Jordan University of Science and Technology
2. National Committee Member: Accreditation criteria for Biomedical (BME) Engineering in Jordanian Private Universities.
3. Head of Committee for writing the specifications of biomedical instrumentation labs in JUST and Hashemite University.
4. 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)
5. Head of Committee for writing the M.Sc study plan in Biomedical Engineering

VII. Research Papers

Publications in Indexed, Refereed and Specialized Journals and International Conferences

1. **Bani Amer M.,** Fuzzy-Based Framework for Diagnosis of Acid-Base Disorders, *Computers in Biology and Medicine,*Vol. 41, pp. 737–741*, May 2011 (**Publisher: Elsevier, UK).***

2. M. A. Al-Mahasneh, **Bani Amer M.**, T. M. Rababah, Modeling Moisture Sorption Isotherms in Roasted Green Wheat Using Least Square Regression and Neural- Fuzzy Techniques, *Food and Bioproducts Processing, Article in Press (a soft copy of the proofs is available on the CD) , April 2011 (**Publisher: Elsevier, UK).***

3. **Bani Amer M.,** A New Intelligent Approach for Estimation of Blood Potassium Concentration, *Computer Methods in Biomechanics and Biomedical Engineering,* Vol. 14, No. 1, pp.1–7, February 2011 ***(Publisher: Taylor and Francis, UK)*** .

4. **Bani Amer M.,** M. Al-Amawi, El-Khatib, A Novel Neural Fuzzy System for Diagnosis of Potassium Disturbances, *International Journal of Healthcare Information Systems and Informatics*, Vol. 6, No. 3, pp. 20-31, July-September 2011 ***(Publisher: IGI Global, USA).***

5. **Bani Amer M.**, Novel Design of Low Noise Preamplifier for Medical Ultrasound Transducers, *Journal of Medical Systems,* Vol. 35, pp.71–77, 2011 *(**Publisher: Springer New York LLC, USA)*.*

6. **Bani Amer M.**, Hussam M. Mousa, Banan M. Al-Salem, Amany K. Rashaideh**,** Development of a Web-Based Healthcare Information System, *International Journal of Medical Engineering and Technology, Article in Press (a soft copy of the proofs is available on the CD), May 2011**(Publisher: Inderscience, UK)**.*

7. M. A. Al-Mahasneh, T. M. Rababah, **Bani Amer M.,** Fuzzy and Conventional Modeling of Open Sun Drying Kinetics for Roasted Green Wheat, *International Journal of Food Properties*, *Accepted for Publication (A soft copy of the acceptance letter is available on the CD), September 2010* ***(Publisher: Taylor and Francis, UK)*** .

8. **Bani Amer M.** 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 *(**Publisher: Springer New York LLC, USA)**.*

9. **Bani Amer M.,** Riyad Az- Zaqah, Abdulrrahman 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 ***(Publisher: Taylor and Francis, UK)***.

10. **Bani Amer M.,** Assessment of Liver Function using Hybrid Neuro-fuzzy Model of Blood Albumin, *International Journal of Healthcare Information Systems and Informatics,* Vol. 5*,* No.4, pp. 50 – 60, 2010 ***(Publisher: IGI Global, USA).***

11. **Bani Amer M.**, Reliable Design of Digitally Programmable Gain Amplifier for Ultrasound Diagnostic Applications, *International Journal of Medical Engineering and Informatics,* Vol. 2, No. 4, pp. 417 – 425, 2010 ***(Publisher: Inderscience, UK)***.

12. **Bani Amer M.,** An Adaptive Neurofuzzy technique for determination of blood acidity, *Computer Methods in Biomechanics and Biomedical Engineering,* Vol. 13, No. 6, pp. 685–691, December 2010 ***(Publisher: Taylor and Francis, UK).***

13. **Bani Amer M.**, Yasser Qtait , Lina Al-Ebbini, Sammer Ammary, Maher Awwad, Design of a User-friendly LabVIEW-based Toolbox for Real-time Monitoring and Diagnosis of Vital Signals, *International Journal of Medical Engineering and Informatics,* Vol. 2, No. 3, pp. 307 – 318, 2010 ***(Publisher: Inderscience, UK)***.

14. **Bani Amer M.**, Adaptive Modeling of Creatinine Concentration in Human Blood, *International Journal of Biomedical Engineering and Technology,* Vol. 2, No. 10, pp. 417 - 425, 2010 ***(Publisher: Inderscience, UK)***.

15. **Bani Amer M**. and Najjar,Y.S.H., The Role of Neuro-fuzzy Modeling as a Greening Technique, in Improving the Performance of Vehicular Spark Ignition Engines, *International Journal of Artificial Intelligence and Soft Computing(IJAISC),* Vol. 2, No. 3, pp. 199- 210, 2010 ***(Publisher: Inderscience, UK)***.

16. **Bani Amer M.**, S. Ammary, L. AL-Ebbini, M. Awwad and Y. Qtait, Novel Design of Multichannel Electrotherapeutic System, *Journal of Medical Engineering and Technology*, Vol. 33, No. 5, pp. 394 – 402, 2009 ***(Publisher: Taylor and Francis, UK)***.

17. L. Fraiwan, O. Al-Bataineh, J. Matouq, S. Haddad, **Bani Amer M.**, ECG-based Wireless Home Infant Apnoea Monitor, *Journal of Medical Engineering and Technology*, Vol. 33, No. 2, pp. 309 – 313, 2009 ***(Publisher: Taylor and Francis, UK)***.

18. **Bani Amer M.**, and L. Al-Ebbini, Fuzzy Model of Artificial Kidney, *Innovation and Knowledge Management in Twin Track Economics: Challenges & Solutions (IBIMA) Conference,* pp. 1592 – 1599, January 4-6, 2009, Egypt. (Organized by: International Business Information Management Association).

19. **Bani Amer M.** and Abed Alghouly, A Hybrid Intelligent System for Diagnosis of Diabetes, *The International Conference on Information Technology (ICIT'2009)*, June 3-5, 2009.

20. **Bani Amer M.**, and S. Ammari, Management of Medical Technology in Jordan, *Innovation and Knowledge Management in Twin Track Economics: Challenges & Solutions (IBIMA) Conference,* pp. 1600 – 1610, January 4-6, 2009, Egypt.

21. Najjar Y.S.H. and **Bani Amer M.**, "Fuel Saving as a Greening Measure, by Using a Smart Device and Neuro-fuzzy Control System with Spark Ignition Engines in Vehicles", Submitted to: *International Journal of Artificial Intelligence and Soft Computing (IJAISC)*, *May 2014.* **(Publisher: Inderscience, UK).**

22. Najjar Y.S. H. and **Bani Amer M**., Using Smart Device and Intelligent Control to Reduce Green Vehicles Emissions, *Journal of Sustainable Energy, Accepted for Publication, December 2013.* **(Publisher: Scrivener Publishing , UK).**

23. **Bani Amer M**. and Najjar Y.S., The Road Towards Greener Cars by Using Neuro-Fuzzy Modelling of Spark Ignition Engines with Variable Valve Overlap, *Journal of Sustainable Energy, Accepted for Publication, June 2013.* **(Publisher: Scrivener Publishing , UK).**

24. **Bani Amer M.,** Mathematical Model of Chloride Concentration in Human Blood, *Journal of Medical Engineering & Technology,* Vol. 30, No.1, January/February 2006. ***(Publisher: Taylor and Francis, UK)***.

25. **Bani Amer M.**, New High Frequency CFOA-Based Differential Integrator, *Third IEEE International Conference on Systems, Signals and Devices (SSD'05)*, Sousse, March 22-25, 2005.

26. **Bani Amer M.** 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.

27. **Bani Amer M.**, Samer Ammari, Basheer Alshamiri, New Optical Glucose Sensor, *IASTED International Conference on Biomedical Engineering (BIOMED 2005)*, February 2005, Austria.

28. M. Ibbini, M. A. Masadeh, and **Bani Amer M.**, 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. ***(Publisher: Taylor and Francis, UK)***.

29. **Bani Amer M.**, 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. ***(Publisher: Institute of Electrical and Electronics Eng, USA)***.

30. **Bani Amer M.**, Reliable and Low-Cost Capacitance-to-Voltage Converters, *International Journal of Engineering Science and Technology*, Vol. 3, No. 2, pp.19-29, 2003. ***(Publisher: Taylor and Francis, UK)***.

31. M. S. Ibbini, M. S. Masadeh, and **Bani Amer M.**, A Fuzzy Logic Control Technique For blood Glucose Level In Diabetics, *International Conference on Biomechanics*, pp. 77-80, June 2003, Greece.

32. **Bani Amer M.,** 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. ***(Publisher: Inderscience, UK)***.

33. **Bani Amer M.,** Novel Design of Bioelectric Amplifier with Minimized Magnitude and Phase Errors, *Journal of Electronics*, Vol. 18, No. 3, pp. 242-254, July 2001. ***(Publisher: Institute of Electrical Eng, UK)***.

34. **Bani Amer M.**, Analysis of Internally Generated Noise of Bioelectric Amplifiers, *International Journal of Engineering Science and Technology,* Vol.2, pp. 39-49, 2002. ***(Publisher: Inderscience, UK)***.

35. **Bani Amer M.**, Optimal Design of Experiment for Medical Sensors Calibration, *IEEE Conference on Biomedical Engineering*, October 2001, Istanbul, Turkey.

36. **Bani Amer M.**, An Accurate Microcontroller-based System for Capacitance Measurement, *Mu'tah Lil-Bhuth wad-Dirasat,* Vol. 15, No. 4, 2000.

37. **Bani Amer M.**, A Computer-based System for Identification of Static Characteristic of Medical Sensors, *Journal of Medical Engineering and Technology*, Vol. 37, pp. 240-245, 1999. ***(Publisher: Inderscience, UK)***.

38. **Bani Amer M.,** A Closed-loop system for Intravenous and Continuous Insulin Infusion, *IEE International Conference on Electrical and Electronic Engineering*, 1998.

39. **Bani Amer M.**, Development of New Method for Indirect Measurement of Blood Oxygen Saturation, *Conference in Computational Aspects and their Applications in Electrical Applications (CATAEE),* Jordan, 1995.

40. **Bani Amer M.**, Repeatability and Accuracy Analysis of the Results of Biomedical Measurements, *(CATAEE*), Jordan, 1995.

41. **Bani Amer M.**, Mathematical Model of Blood Oxygen Partial Pressure, *Archivum Immunologate et Therapiae Experimentalis*, Vol. 17, No. 3, pp. 12-17, 1993.

42. **Bani Amer M..**, Metrological Assessment of Blood Oxygen Saturation SO_2. *Archivum Immunologate et Therapiae Experimentalis*, Vol. 17, No. 8, pp. 23-29, 1993.

43. **Bani Amer M.**, Measurement and Analysis of Human Blood Hydrogen Ion Concentration pH, *Journal of Acta Biochemica Polonica*, Vol. 9, No. 5, pp. 90-97, 1993.

44. **Bani Amer M.**, Metrological Assessment of the Analyzers for the Measurement of Blood Gasometric Parameters, *CAM'93 Conference in Computer - Aided Metrology,* pp. 113-121, 1993.

45. **Bani Amer M.**, Statistical Analysis of the Result of Measurements of Oxygen Partial Pressure pO_2 in Human Blood, *CAM'93 Conference in Computer - Aided Metrology,* pp.121-129, 1993.

46. **Bani Amer M.**, Metrological Model of Capillary Blood Oxygen Partial Pressure pCO_2, *International Conference in Measurement Systems*, pp.159-165, 1993.

45. J. Fraczek, **Bani Amer M.**and P. Walichiewicz, Analysis of Homogeneity of the Results of Biomedical Measurements in Clinical Laboratories, *CAM'93 Conference on Computer - Aided Metrology*, pp. 53-54, 1993.

46. **Bani Amer M.**, A Reliable and Accurate Capnometer for Medical and Didactical Use, *The 2nd IEEE Conference on Measurement Systems and Networks*, Poland, 1992.

VIII. Courses Taught

- 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
- Introduction to Biomedical Instruments
- Fault Fixation and Maintenance
- Filters and Networks Synthesis
- Electrical Instrumentation and Measurements
- Electronic Engineering Software (Orcad, PSpice, Pcad)
- Biomedical Instrumentation 1 and 2
- Diagnostic Techniques
- 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
- Microcontrollers Lab.

X. Supervised Graduation Projects

More than 100 projects in most area of interest in biomedical and electrical engineering were supervised. Examples of these projects:

1. Web-Based Patient Information System
2. Fuzzy-based system for diagnosis of cardiovascular disorders
3. Design of a blood glucose measuring device using optical technique
4. Home Apnea Detection and Treatment System
5. Non-Contacting respiratory monitoring using IR with Apnea alarm
6. Design of low power and low noise wireless analog front- end for portable medical system.
7. Non-Contacting wireless ECG electrode
8. C#-based Toolbox for Management of Medical Devices
9. Heart sound analysis and diagnosis
10. Wireless system for infant apnea monitoring
11. Heart rate monitoring system
12. Portable electronic Stethoscope
13. Electronic blood group analyzer
14. Programmable Pace Maker
15. Development of optical glucose sensor with improved parameters
16. Fatigue Detection system
17. Artificial Kidney

XI. Workshops

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, 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 Commercialization, King Abdul Aziz & His Companions Foundation for Giftedness and Creativity, March 2008.
8. Workshop on "The EU 7th Framework Program 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, January 28-30, 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)
3. Samaher Mashahreh, Hydrogen Sensing and Control, June 2014, (Committee Member)

*The above Master thesis was done in the Electrical Engineering Departments at JUST. Till now the M.Sc program in Biomedical Engineering is unavailable.

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
Annals of Biomedical Engineering (Transaction)
Mutah Journal for Research and Studies
Jordan International Electrical and Electronic Engineering Conference : JIEEE 2001

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.

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