

CURRICULUM VITAE

Name, Surname: ÜLGEN Yekta

Date and Place of Birth: Istanbul, 1950

Citizenship: Turkish

Title: Professor

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Dept. of Biomedical Engineering

Besiktas, Istanbul - TURKEY

Spoken Languages

Fluent English and French.

Education

1978	PhD in Electronic Engineering	UNIVERSITY OF SALFORD , England
1976	MSc in Electronic Control	UNIVERSITY OF SALFORD , England
1974	BS in Electrical Engineering	BOGAZICI UNIVERSITY , Turkey
1969	French High-School, Baccalauréat	Lycée SAINT-JOSEPH

Academic Positions

02.2017 - present	Bahcesehir University, Dept. of Biomedical Engineering
02.1992 – 01.2017	B.U., Institute of Biomedical Engineering (Professor).
01.1986 - 02.1992	B.U., Institute of Biomedical Engineering (Associate Prof.)
09.1981 - 10.1985	B.U., Electrical & electronics Eng Department (Assist. Prof.)
09.1980 - 09.1981	Techn. Univ. of Istanbul, Electrical & Electronic Eng Department (Assist. Prof.)
04.1979 - 09.1980	Military Service, Officer at the Navy Academy
09.1978 - 04.1979	Techn. Univ. of Istanbul, Electrical & electronics Eng Department

Administrative Position

2017 -	Head of Dept. of Biomedical Engineering, BAU
2005 - 2017	Director of the Institute of Biomedical Engineering, BU
1982 - 1995	Assistant Director, B.U., Institute of Biomedical Engineering.
1983 - 1985	Department Head, Computer Programming, B.U. School of Vocational Studies

Teaching Experience

Medical Device Design
Clinical Engineering
Human Factors in Medical Device design
Medical Imaging
Electrical Impedance Tomography

Healthcare Facility Guidelines and Standards
Quality Assurance in Diagnostic Radiology
Biomedical Instrumentation and Measurements
Hospital Clinical Engineering

Research Areas

- 3-D Gamma Knife Dose Distribution by Normoxic Gel Dosimetry near Tissue Inhomogeneities
- Comparison of Particle Counting & Microbiological Sampling Methods in the Operating Room
- Alterations in Motor Units in Neurologic Disorders by Scanning Electromyography
- 635nm and 809 nm diode laser biostimulation on cutaneous wounds
- Using a low-amplitude RF pulse at echo time LARFET for device localization in MRI
- Screening Post-Menopausal Women for Osteoporosis by Complex Impedance Measurements of the Dominant Arm
- Electrical Characterization Of Graphene Oxide Coating On The Gold Surfaces
- Medical Equipment Management Software System for Increased Patient Safety
- Bioimpedance Spectroscopy and Extracellular and Intracellular Fluid Shifts in Subjects with Auricular Vagus Nerve Stimulation
- Measurement Uncertainty in Clinical Chemistry
- Modeling of Physiological Properties of Stored Human Blood by Complex Impedance Measurements
- Bioimpedance Spectroscopy of Whole Blood with Various Anticoagulants
- Use of Color Spaces in Determining the Level of Hemolysis in Blood Under Storage
- Modelling diffuse reflectance spectra of donated blood with their haematological parameters

MSc Thesis:

1. Estimation of Cardiac Parameters Using the Thin Tube Model for Arteries, Mustafa Bodur, 1986
2. Frequency Ventilation and Design of Supplementary Units to Control the Heat and Humidification of the inspired Air, Tanju Öngür, 1987
3. Cardiac Parameters Estimation by Simultaneous Solution of Hemodynamics Equation Using the 6800 Microprocessor, Mehmet Kılavuz, 1987
4. Effects of Pulsed Electromagnetic Noise Fields in Treatment of Fresh Fractures in Canine Rabbits, Mustafa Sakallı, 1988
5. Hospital Information Systems, Emre Yusuf Erdi, 1988
6. Electrode Scanning System for Electrical Conductivity Imaging, Bülent Surijon, 1990
7. Intraoperative Cardiac Mapping System, Cem İ. Koçak, 1990
8. Design of a Clinical Chemistry Spectrophotometer, Orhan Murat Köseoğlu, 1990
9. Instrumentation for the EEG and EP Data Acquisition, Reis Burak Arslan, 1991
10. Design of a Microcontroller Based ECG Monitoring System, Değer Solakoğlu, 1991
11. Computer Simulation of Cardiac Muscle Based on Contraction and Relaxation Experiments, Lale Özer, 1992
12. Comparison of ECG Data Compression Methods, Mustafa Dost, 1992
13. Design of a Serial Data Collection System for Electrical Impedance Tomography, Adnan Güler, 1992
14. Estimation of Body Fluid Losses During Abdominal Surgery and Haemodialysis by Impedance Measurement Technique, Günnur Çakmak, 1992
15. Detection of Fetal ECG Using the SVD Technique, Murat Gönen, 1992

16. Image Reconstruction Using the Modified Newton-Raphson Algorithm for Electrical Impedance Tomography Based on a Finite Element Method, Meltem Demirtürk, 1993
17. Simultaneously Monitoring of Standard ECG Leads, Levent A. Atan, 1993
18. A Study of Hospital Information Systems from a Technology Selection Viewpoint, Yavuz Serovaoğulları, 1993
19. Design of an ECG Gated Data Collection System for Electrical Impedance Tomography, Daron Ermen, 1993
20. Development of an Expert System for Medical Diagnosis of Most Common Lung and Ear-Nose-Throat (ENT) Diseases, Cem Cüneyt Kavaslar, 1994
21. Multiple Frequency Bioelectrical Impedance Analysis to Assess Body Fluid Composition Changes with Altitude, Fırat Yeşilleyen, 1995
22. A Flexible Hardware Implementation for Multifrequency EIT Measurements, Fırat Matur, 1995
23. Detection of Sensorineural Hearing Impairment by Classifying Latency and Amplitude Parameters of DPOAE's, Nevcihan Avarisli, 1995
24. Detection of Auditory Brainstem Responses by Adaptive Filtering, Banu Baykara, 1995
25. Electrogastrography and the Analysis Using the Adaptive Spectral Analysis Method, Işıl Soysal, 1995
26. Development of an Ultrasound Doppler Flow meter for Measuring Low Blood Flow Velocities, Ufuk Sovuksu, 1995
27. Electrical Properties of Bone and Isolated Skeletal Muscle, Şule Gündüz, 1995

28. Design of a Vectorcardiography Monitoring and Recording System, H. Kerim Oal, 1996
29. A Reconstruction Algorithm for Dynamic Imaging of Electrical Impedance, İpek Torun, 1996
30. Mass Angular Scattering Pofer Method Applied to the Therapeutical Electron Beams, Fatih İşbakan, 1997
31. Electrical Impedance Spectroscopy of Human Blood, Mana Sezdi, 1998
32. Electrical Stimulation of Hemiplegic Forearm, Burçin Kaynak, 1999
33. Validation of Bioelectrical Impedance to Assess Body Composition Changes at Altitude, Erdem Yavuz, 2000
34. Software Interface Development for Electrical Impedance Tomography, Berke Öncül, 2000
35. In Situ Calibration of Earphone Input Signals Using Inverse Filtering and Implementation of a Feedback System, Tuna Aydın, 2000
36. Analysis of Tongue Motion Using Tagged Cine-MRI, Devrim Ünay, 2001
37. The Effectiveness of UV Radiation on Airborne Particles and Microorganisms in the Operating Theater, Işıl Tezer, 2001
38. Development of a Quality Assurance System for Bone Densitometer (DXA), Murat Sürücü, 2002
39. Managing the Safe Use of Fluoroscopy in Interventional Procedures : A Case Study, Özge Tığdemir, 2014
40. Designing a Phantom for Performance Evaluation of Digital Subtraction Angiography (DSA) Units, Pelin Doğruöz, 2004
41. Design of a Pressure and Flow Measuring Equipment for Medical Use, Gülşah Kaçur, 2005
42. Cross Calibration of (DEXA) by Using European Spine Phantom, Serkan Uğur Bayraktar, 2005
43. Design of the Biomedical Calibration Laboratory Quality Manual for EN 17025:2005, Hande Çakıroğlu Doğu, 2007
44. Design of a Wide Range kVp – Meter, Murat Tümer, 2007
45. Design of a Software Platform for the Quality Control of Main Blood Products, Sıtkı Akyon, 2007
46. Design of a Medical Equipment Management Software, Evrim Ece Yardımcı, 2007
47. A Microcontroller Based 100kHz-1MHz Multifrequency Bio-impedance Measurement Device, Hakan Solmaz, 2008

48. Design Of A Brain Computer Interface Based On EEG
49. Cole Parameters Of Human Blood With Different Anticoagulants, Fatma Gülden Şimşek, 2011
50. Comparison Of Particle Counting And Microbiological Sampling Methods at-Rest and During Surgery, Ahmet Emir Kavak, 2011
51. Analyzing The Efficiency of The Colorimetric Tezhnique in Determining The Degree of Hemolysis of Stored Blood, Osman Melih Can, 2014
52. Network Security Vulnerabilities and Personal Privacy Issues in Healthcare Information Systems: A Case Study in A Private Hospital, Nihan Namoğlu Cengiz, 2014
53. Optimization of fNIRS Probe Geometry to Eliminate Non-Brain Tissue Contamination, Ayşegül Tümer, 2014 (co-adviser)
54. Screening Post-Menopausal Women For Bone Mineral Level By Bioelectrical Impedance Spectroscopy Of Dominant Arm, Nermin Öztürk, (co-adviser with Assist. Prof. Dr. Esin Öztürk Isık), 2018.

PhD Thesis:

1. "Novel Methods to Improve Acquisition of Transient Evoked Otoacoustic Emissions for Hearing Screening", Reis Burak Arslan, 2000.
2. "Modeling of Physiological Properties of Stored Human Blood by Complex Impedance Measurements", Mana Sezdi, 2005.
3. "3-D Gamma Knife Dose Distribution by Normoxic Gel Dosimetry near Tissue Inhomogeneities", Fatih İşbakan, 2005.
4. "Investigation of the Alterations in Motor Units in Neurologic Disorders by Scanning Electromyography", İmran Göker, 2009.
5. "An fMRI Based Method for Characterizing Superficial Layer Contamination in fNIRS Signals", Sinem Burcu Erdoğan, 2014.
6. "An Optoelectronic System for Device Localization in İnterventional MRI", (Co-advisor with Prof. Cengizhan Öztürk) Murat Tümer, 2015.
7. "SOD1 A4V Mutation Increases Nav1.3 Channel Excitability on Xenopus Laevis Oocyte", Elif Kubat Öktem, 2016. (co-adviser with Prof. H. Saybaşılı)
8. "Laser Biostimulation and Monitorization of Wound Healing by Means of Bioimpedance Measurements", (co-advisor with M. Gülsoy), 2016.

Publications (last 6 years)

- S. Akyon, Y. Ülgen, "Blood Bank Automation: A Software Platform for The Quality Control of Main Blood Products" 10th Int. Conf. on Information Communication Technologies in Health (ICICTH), Samos, Greece, 15-17 February 2012
- Y. Ülgen, E. Kavak, "Size-by-Size Comparison of Particle Counting & Microbiological Sampling Methods in the Operating Room", BIOMED 2012, 9th IASTED International Conference on Biomedical Engineering, Innsbruck, Austria, 15-17 February 2012.
- Y. Ülgen, F. Şimşek, "Bioimpedance Spectroscopy of Whole Blood with Various Anticoagulants", ICEBI 15th Int. Conf. on Electrical Bio-Impedance, Book of Abstracts, p.18, Heiligenstadt, Germany, 22-25 Nisan, 2013.
- N. Namoğlu, Y. Ülgen, "Network Security Vulnerabilities and Personal Privacy Issues in Healthcare Information Systems: A Case Study in a Private Hospital in Turkey", ICIMTH 2013, Athens, Greece, 5-7 Temmuz 2013.
- Hakan Solmaz, Murat Gülsoy, Yekta Ülgen, "635nm diode laser biostimulation on cutaneous wounds", SPIE Photonics Europe, Brussels, Belgium, 14-17 April, 2014

- M. Tümer, B. Sarioğlu, Ş. Mutlu, Y. Ülgen, A. Yalçinkaya, C. Öztürk, "Using a low-amplitude RF pulse at echo time LARFET for device localization in MRI", *Med Biol Eng Comp*, vol.52 (10), 885-892, 2014.
- F. Matur, K. Berberoğlu, Y. Ülgen, "Comparison of Body Limbs Cole-Cole Impedance Parameters with (DEXA) in Post Menopausal Women", *MBEC 2014, 6th European Conf. of the Int. Federation for Medical and Biological Engineering*, Dubrovnik, Croatia, 7-11 Sept. 2014.
- O. M. Can, Y. Ülgen and A. Akin "Use of Color Spaces in Determining the Level of Hemolysis in Blood Under Storage", *Proc. of 6th European Conf. of IFMBE*, Vol. 45, 290-293, 2014.
- H. Solmaz, M. Gülsoy and Y. Ülgen "Biostimulative Effects of 809 nm Diode Laser on Cutaneous Skin Wounds" *Proc. of SPIE Vol.9309 93090R-1*, 2015.
- Yekta Ülgen and Fırat Matur, "Screening Post-Menopausal Women for Osteoporosis by Complex Impedance Measurements of the Dominant Arm", *17(9) Part V, Rome, Italy Sep 17-18, 2015*
- Şimşek, Fatma Gulden, Can, Osman Melih, Atasoy, Ahmet, Ülgen Ali Yekta, Garipcan, Bora, Kuralay, Filiz (2015). "Electrical Characterization of Disposable and Lithographically Designed Electrodes". 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Milano, Italy, 25 August 2015.
- Şimşek Fatma Gulden, Dönmez Elif, Ülgen Yekta, Garipcan Bora, Kuralay Filiz, "Electrical Characterization Of Graphene Oxide Coating On The Gold Surfaces. International Workshop on Impedance Spectroscopy", Chemnitz, Germany, 2015.
- Y. Ülgen, "Cost Effectiveness of Medical Equipment Lifecycle, Human Engineering", Arab Health Congress, 26 January 2016.
- N. Namoğlu, Y. Ülgen, "Network Security Vulnerabilities and Personal Privacy Issues in Healthcare Information Systems: A Case Study in a Private Hospital in Turkey", *Informatics, Management and Technology in Healthcare*, eds. J. Mantas and H. Hasman, 126-128, 2013.
- Osman Melih Can, Yekta Ülgen, Ata Akin, "Use of the Color Spaces in Determining the Level of Hemolysis in Blood under Storage" *6th European Conference of the International Federation for Medical and Biological Engineering*, Volume 45, *IFMBE Proceedings* pp 290-293, 2015.
- S. Yalvarmış, A. Ak, Y. Ülgen, "Which Particle Sizes and Nutrient Media Should be Used to Identify The Presence of Microorganisms in the Operating Rooms?", *CMBEBİH 2015, 1st Conf. on Medical and Biological Engineering in Bosnia and Herzegovina*, *Proceedings* pp.197-199, Sarajevo, Bosnia and Herzegovina, 13-15 Mart, 2015.
- H. Solmaz, S. Dervisoglu, M. Gülsoy and Y. Ülgen "Laser Biostimulation of Wound Healing: Bioimpedance Measurements Support Histology", *Lasers in Medical Science*, vol.31 (8), 1547-1555, 2016. Y. Ülgen, "Characterization of Graphene Oxide Coated Gold Electrodes", *ICEBI 16th Int. Conf. on Electrical Bio-Impedance*, *Book of Abstracts*, p.50, Stockholm, Sweden, 19-23 June, 2016.
- O. M. Can, F. Gulden Şimşek, M. Yumak, Y. Ülgen, "Microfluidic Based Impedance Analysis of Stored Whole Blood", *ICEBI 16th Int. Conf. on Electrical Bio-Impedance*, *Book of Abstracts*, p.84, Stockholm, Sweden, 19-23 June, 2016.
- H. Solmaz, M. Gülsoy and Y. Ülgen "Photobiomodulation of wound healing via visible and infrared laser irradiation", *Lasers in Medical Science*, Volume 32 Number 4, pp.903-910, 2017.
- N. Öztürk, E. Öztürk Işık and Y. Ülgen "Screening Post-Menopausal Women for Bone Mineral Level by Bioelectrical Impedance Spectroscopy of Dominant Arm", *Journal of Electrical Bioimpedance*, *J Electr Bioimp*, vol. 9, pp. 39-47, 2018.
- O. M. Can and Y. Ülgen "Estimation of Free Hemoglobin Concentrations in Blood Bags by Diffuse Reflectance Spectroscopy", *Journal of Biomedical Optics*, 23 (12), 127001, 2018.

- N. Akar, E. Öztürk, Y. Ülgen, “A Comprehensive Medical Equipment Management Software System for Increased Patient Safety”, Proc. 14th IEEE International Symposium on Medical Measurements and Applications, June 26-28, 2019, accepted for publication.
- Y. Ülgen; B. Büyüksaraç; B. Tunç and H. Solmaz, “Bioimpedance Spectroscopy in Subjects with Auricular Vagus Nerve Stimulation”, Proc. 14th IEEE International Symposium on Medical Measurements and Applications, June 26-28, 2019, accepted for publication.
- Y. Ülgen, “A Practical Approach to ISO 15189 and Measurement Uncertainty in Clinical Chemistry: Analytic Bias is Still an Important Challenge”, Proc. 14th IEEE International Symposium on Medical Measurements and Applications, June 26-28, 2019, accepted for publication.
- Y. Ülgen; B. Büyüksaraç; B. Tunç and H. Solmaz, “Extracellular and Intracellular Fluid Shifts on the Onset of Transcutaneous Auricular Vagus Nerve Stimulation”, Proc. of 41st International Engineering in Medicine and Biology Conference (EMBC 2019), 23-27 July, 2019, Berlin, accepted for publication.
- O.M. Can and Y. Ülgen, “Modelling diffuse reflectance spectra of donated blood with their haematological parameters”, Proc. of SPIE Diffuse Optical Spectroscopy and Imaging Conf., 23-27 June, Münih, 2019, accepted for publication.

Bilimsel ve Mesleki Kuruluşlara Üyelikler

- IEEE The Institute of Electrical and Electronics Engineers
- EMBS Engineering in Medicine and Biology Society
- EMO Elektrik Mühendisleri Odası

Ödüller

BÜVAK 2015 Öğretimde Üstün Başarı Ödülü

1. Son beş yılda verdiği kurumsal ve mesleki hizmetler

Adana Kamu Hastanelerinde Biyomedikal Mühendisliği Merkezinin Kurulması, 2013,