

# Prof. HALUK KÜLAH

## Personal Information

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## Education Information

Doctorate, The University of Michigan, Engineering, EECS, United States Of America 1998 - 2003

Post Graduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Elektrik Ve Elektronik Mühendisliği (YI) (Tezli), Turkey 1996 - 1998

Under Graduate, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1991 - 1996

## Foreign Languages

English, C1 Advanced

## Dissertations

Doctorate, Closed-Loop Electromechanical Sigma-Delta Microgravity Accelerometers, The University Of Michigan, Eecs, 2003

Post Graduate, A CMOS integrated PtSi schottky-barrier infrared dedector for night applications, Middle East Technical University, Graduate School of Natural and Applied Sciences, Elektrik Ve Elektronik Mühendisliği (YI) (Tezli), 1998

## Research Areas

Electrical and Electronics Engineering, Electronic, MEMS, Engineering and Technology

## Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2014 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2009 - 2014

Assistant Professor, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2005 - 2009

Lecturer, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2004 - 2005

Research Assistant, The University of Michigan, Engineering, EECS, 1998 - 2004

Research Assistant, Middle East Technical University, Graduate School of Natural and Applied Sciences, 1996 - 1998

## Courses

Introduction to Analog Integrated Circuits, Under Graduate, 2012 - 2013, 2017 - 2018, 2018 - 2019, 2019 - 2020

## Advising Theses

Külah H., Charge balanced neural stimulation interface circuit for fully implantable cochlear implants, Post Graduate, H.ANDAÇ(Student), 2020

Külah H., Fully autonomous piezoelectric energy harvesting interface circuit utilizing low profile nonlinear switching technique, Post Graduate, B.ÇİFTÇİ(Student), 2020

KÜLAH H., YILDIRIM E., DEVELOPMENT OF AN INTEGRATED LAB-ON-A-CHIP (LOC) PLATFORM FOR MULTIDRUG EFFECT ANALYSIS, Post Graduate, A.CAN(Student), 2019

Külah H., Bat E., Capture of circulating tumor cells from blood on modified gold surfaces inside the microfluidic channels, Post Graduate, D.ÇETİN(Student), 2019

Külah H., Işık Akçakaya D., System integration of mems devices on flexible substrate for fully implantable cochlear implant applications, Post Graduate, A.KAAN(Student), 2019

KÜLAH H., MEMS thin film piezoelectric acoustic transducer for cochlear implant applications, Post Graduate, B.İLİK(Student), 2018

KÜLAH H., Design of a radiation hardened PWM controller built on SOI, Post Graduate, E.KILIÇ(Student), 2018

KÜLAH H., Enrichment of MCF7 Breast Cancer Cells from Leukocytes Through Continuous Flow Dielectrophoresis, Post Graduate, Z.ÇAĞLAYAN(Student), 2018

KÜLAH H., Capture of rare circulating tumor cells from blood on bio-activated oxide surface inside microfluidic channels, Post Graduate, H.CEREN(Student), 2018

KÜLAH H., YILDIRIM E., A mems based drug effect analysis system utilizing droplet microfluidics, Post Graduate, M.DÜNDAR(Student), 2018

KÜLAH H., A lab-on-a-chip system integrating dielectrophoretic detection and impedance counting units for chemotherapy guidance in leukemia, Doctorate, Y.DEMİRCAN(Student), 2018

KÜLAH H., Design and implementation of an interface circuit for piezoelectric energy harvesters, Doctorate, S.CHAMANIAN(Student), 2018

KÜLAH H., A microfluidic system for dielectrophoretic characterization of cancer cells, Post Graduate, K.SEL(Student), 2018

KÜLAH H., Ultra-low power interface electronics design for fully implantable cochlear implants, Doctorate, H.ULUŞAN(Student), 2018

KÜLAH H., Optimization of compact electromagnetic energy harvesters for wireless sensor applications, Post Graduate, O.YAŞAR(Student), 2017

KÜLAH H., Lens-free imaging of DEP manipulated cancer cells, Post Graduate, M.KAMİL(Student), 2017

KÜLAH H., Development of a parylene bonding based fabrication method for MEMS gravimetric resonant based mass sensors, Post Graduate, F.GÖKÇE(Student), 2017

KÜLAH H., Lateral mode resonators for in liquid biosensing applications with a second harmonic based read out method, Post Graduate, E.AYDIN(Student), 2017

KÜLAH H., Mems based resonant mass sensors with feedthrough current elimination for in-liquid cell detection applications, Post Graduate, M.KANGÜL(Student), 2015

KÜLAH H., Rare cell enrichment from blood by using dielectrophoresis, Post Graduate, G.ÖZKAYAR(Student), 2015

KÜLAH H., A HIGH THROUGHPUT PARYLENE MICROCHANNEL COULTER COUNTER FOR CELL SIZING AND CELL COUNTING APPLICATIONS, Post Graduate, Ö.SÜMER(Student), 2014

KÜLAH H., Assessment of changes in the dielectric properties of multidrug resistant cancer cells by electrorotation technique, Post Graduate, G.BAHRİEH(Student), 2014

AZGIN K., KÜLAH H., Development of a high yield fabrication process for MEMS based resonant mass sensors for cell detection applications, Post Graduate, T.BERKİN(Student), 2014

KÜLAH H., A fully-integrated and battery-free interface electronics for low voltage vibration-based electromagnetic energy harvesters, Post Graduate, H.ULUŞAN(Student), 2013

KÜLAH H., Detection of imatinib and doxorubicin resistance in K562 leukemia cells by 3D-electrode contactless dielectrophoresis, Post Graduate, Y.DEMİRCAN(Student), 2013

KÜLAH H., CMOS A/D converter implementation for IMU applications, Post Graduate, Ö.LÜTFİ(Student), 2013

KÜLAH H., ÖZGÜVEN H. N. , MEMS piezoelectric energy harvester for cochlear implant applications, Post Graduate, L.BEKER(Student), 2013

KÜLAH H., Development of a resonant mass sensor for MEMS based cell detection applications, Post Graduate, D.EROĞLU(Student), 2012

KÜLAH H., ÖZGEN C., Development of a new immobilization procedure for detection of staphylococcal enterotoxin B (SEB) and Candida albicans, Post Graduate, D.ERTÜRKAN(Student), 2012

KÜLAH H., Quantification of thermoelectric energy scavenging opportunity in notebook computers, Post Graduate, R.DENKER(Student), 2012

KÜLAH H., Design and implementation of low leakage MEMS microvalves, Doctorate, Y.ENDER(Student), 2011

KÜLAH H., BALKAN R. T. , A MEMS thermoelectric energy harvester for energy generation in mobile systems, Post Graduate, E.TAN(Student), 2011

KÜLAH H., Design and implementation of low power interface electronics for vibration-based electromagnetic energy harvesters, Post Graduate, A.RAHİMİ(Student), 2011

KÜLAH H., AKIN T., Capacitive CMOS readouts for high performance MEMS accelerometers, Post Graduate, U.SÖNMEZ(Student), 2011

KÜLAH H., Design and prototyping of an electromagnetic mems energy harvester for low frequency vibrations, Post Graduate, S.TÜRKYILMAZ(Student), 2011

KÜLAH H., Design and implementation of a MEMS based gravimetric detector for cytometry applications, Post Graduate, E.BAYRAKTAR(Student), 2010

KÜLAH H., Design and implementation of a MEMS based spiral channel dielectrophoretic separator for cytometry applications, Post Graduate, G.YILMAZ(Student), 2010

KÜLAH H., Modelling and noise analysis of closed-loop capacitive sigma-delta MEMS accelerometer, Post Graduate, B.BOĞA(Student), 2009

KÜLAH H., Design and Implementation of a dielectrophoretic Separator and a gravimetric detector for mems based cytometry applications, Post Graduate, A.TUNA(Student), 2008

KÜLAH H., AKIN T., Capacitive cmos readout circuits for high performance MEMS accelerometers, Post Graduate, R.KEPENEK(Student), 2008

KÜLAH H., BALKAN R. T. , Design, fabrication and implementation of a vibration based MEMS energy scavenger for wireless microsystems, Doctorate, İ.SARI(Student), 2008

SERT C., KÜLAH H., Design and fabrication of a DNA electrophoresis chip based on MEMS technology, Post Graduate, S.SUKAS(Student), 2007

## Jury Memberships

Award, IEEE Türkiye Teşvik ve Doktora Ödülleri , IEEE, November, 2018

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **Modeling and fabrication of electrostatically actuated diaphragms for on-chip valving of MEMS-compatible microfluidic systems**  
Atik A. C. , Ozkan M. D. , Ozgur E., Külah H., Yıldırım E.  
JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.30, 2020 (Journal Indexed in SCI)
- **Enhancement of the Start-Up Time for Microliter-Scale Microbial Fuel Cells (mu MFCs) via the Surface Modification of Gold Electrodes**  
Sen-Dogan B., Okan M., Afsar-Erkak N., Ozgur E., Zorlu O., KÜLAH H.  
MICROMACHINES, vol.11, 2020 (Journal Indexed in SCI)

● **A comparative study on EpCAM antibody immobilization on gold surfaces and microfluidic channels for the detection of circulating tumor cells**

Cetin D., Okan M., BAT E., KÜLAH H.

Colloids and Surfaces B: Biointerfaces, vol.188, 2020 (Journal Indexed in SCI)

● **Examination of the dielectrophoretic spectra of MCF7 breast cancer cells and leukocytes**

Çağlayan Z., Demircan Yalçın Y., KÜLAH H.

Electrophoresis, vol.41, pp.345-352, 2020 (Journal Indexed in SCI)

● **A Self-Adapting Synchronized-Switch Interface Circuit for Piezoelectric Energy Harvesters**

Chamanian S., Muhtaroglu A., KÜLAH H.

IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.35, pp.901-912, 2020 (Journal Indexed in SCI)

● **Exploring the relationship between cytoplasmic ion content variation and multidrug resistance in cancer cells via ion-release based impedance spectroscopy**

Demircan Yalçın Y., Sukas S., Töral T. B. , Gündüz U., KÜLAH H.

Sensors and Actuators, B: Chemical, vol.290, pp.180-187, 2019 (Journal Indexed in SCI)

● **Power-Efficient Hybrid Energy Harvesting System for Harnessing Ambient Vibrations**

Chamanian S., ÇİFTÇİ B., Ulsan H., Muhtaroglu A., KÜLAH H.

IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, vol.66, pp.2784-2793, 2019 (Journal Indexed in SCI)

● **Fully Implantable Cochlear Implant Interface Electronics With 51.2- $\mu$ W Front-End Circuit**

Ulsan H., Chamanian S., Ilik B., Muhtaroglu A., KÜLAH H.

IEEE TRANSACTIONS ON VERY LARGE SCALE INTEGRATION (VLSI) SYSTEMS, vol.27, pp.1504-1512, 2019 (Journal Indexed in SCI)

● **Implementation of Energy-Neutral Operation on Vibration Energy Harvesting WSN**

Chamanian S., Baghaee S., Ulsan H., Zorlu O., UYSAL BIYIKOĞLU E., KÜLAH H.

IEEE SENSORS JOURNAL, vol.19, pp.3092-3099, 2019 (Journal Indexed in SCI)

● **An Adaptable Interface Circuit With Multistage Energy Extraction for Low-Power Piezoelectric Energy Harvesting MEMS**

Chamanian S., Ulsan H., Koyuncuoglu A., Muhtaroglu A., KÜLAH H.

IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.34, pp.2739-2747, 2019 (Journal Indexed in SCI)

● **A Sub-500  $\mu$ W Interface Electronics for Bionic Ears**

Ulsan H., Muhtaroglu A., KÜLAH H.

IEEE ACCESS, vol.7, pp.132140-132152, 2019 (Journal Indexed in SCI)

● **Thin film piezoelectric acoustic transducer for fully implantable cochlear implants**

Ilik B., Koyuncuoglu A., Sardan-Sukas O., KÜLAH H.

SENSORS AND ACTUATORS A-PHYSICAL, vol.280, pp.38-46, 2018 (Journal Indexed in SCI)

● **Optimization of AA-Battery Sized Electromagnetic Energy Harvesters: Reducing the Resonance Frequency Using a Non-Magnetic Inertial Mass**

Yasar O., Ulsan H., Zorlu O., Sardan-Sukas O., KÜLAH H.

IEEE SENSORS JOURNAL, vol.18, pp.4509-4516, 2018 (Journal Indexed in SCI)

● **A second harmonic based resonance characterization method for MEMS electrostatic resonators**

Aydin E., GOKCE F., Kangul M., ZORLU O., KÜLAH H.

SENSORS AND ACTUATORS A-PHYSICAL, vol.274, pp.220-230, 2018 (Journal Indexed in SCI)

● **Comparative study on antibody immobilization strategies for efficient circulating tumor cell capture**

ATES H. C. , OZGUR E., KÜLAH H.

BIOINTERPHASES, vol.13, 2018 (Journal Indexed in SCI)

● **A triple hybrid micropower generator with simultaneous multi-mode energy harvesting**

ULUSAN H., CHAMANIAN S., PATHIRANA W. P. M. R. , ZORLU O., MUHTAROGLU A., KÜLAH H.

SMART MATERIALS AND STRUCTURES, vol.27, 2018 (Journal Indexed in SCI)

● **Analysis and Elimination of the Capacitive Feedthrough Current on Electrostatically Actuated and Sensed Resonance-Based MEMS Sensors**

Kangul M., Aydin E., Gokce F., Zorlu O., KÜLAH H.

- JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.26, pp.1272-1278, 2017 (Journal Indexed in SCI)  
**Optimization of Power Conversion Efficiency in Threshold Self-Compensated UHF Rectifiers With Charge Conservation Principle**  
 Gharehbaghi K., KOÇER F., KÜLAH H.  
 IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, vol.64, pp.2380-2387, 2017 (Journal Indexed in SCI)
- **A Highly Integrated 3 V Supply Electronics for Electromagnetic Energy Harvesters with Minimum 0.4 Vpeak Input**  
 Uluşan H., Zorlu Ö., Muhtaroglu A., KulaH H.  
 IEEE Transactions On Industrial Electronics, vol.64, pp.5460-5467, 2017 (Journal Indexed in SCI)
- **Highly Integrated 3 V Supply Electronics for Electromagnetic Energy Harvesters With Minimum 0.4 V-peak Input**  
 Uluşan H., Zorlu O., Muhtaroglu A., KÜLAH H.  
 IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol.64, pp.5460-5467, 2017 (Journal Indexed in SCI)
- **Threshold Compensated UHF Rectifier With Local Self-Calibrator**  
 Gharehbaghi K., Zorlu O., Kocer F., KÜLAH H.  
 IEEE MICROWAVE AND WIRELESS COMPONENTS LETTERS, vol.27, pp.575-577, 2017 (Journal Indexed in SCI)
- **Modelling and efficiency optimisation of UHF Dickson rectifiers**  
 Gharehbaghi K., Zorlu O., Kocer F., KÜLAH H.  
 IET CIRCUITS DEVICES & SYSTEMS, vol.10, pp.504-513, 2016 (Journal Indexed in SCI)
- **Wearable battery-less wireless sensor network with electromagnetic energy harvesting system**  
 Chamanian S., Uluşan H., Zorlu O., Baghaee S., UYSAL BIYIKOĞLU E., KÜLAH H.  
 SENSORS AND ACTUATORS A-PHYSICAL, vol.249, pp.77-84, 2016 (Journal Indexed in SCI)
- **Characterization of the distribution of rotational torque on electrorotation chips with 3D electrodes**  
 Bahrieh G., Ozgur E., Koyuncuoglu A., ERDEM M., GÜNDÜZ U., KÜLAH H.  
 ELECTROPHORESIS, vol.36, pp.1785-1794, 2015 (Journal Indexed in SCI)
- **A Fully Integrated and Battery-Free Interface for Low-Voltage Electromagnetic Energy Harvesters**  
 Uluşan H., Gharehbaghi K., Zorlu O., Muhtaroglu A., KÜLAH H.  
 IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.30, pp.3712-3719, 2015 (Journal Indexed in SCI)
- **Label-free detection of multidrug resistance in K562 cells through isolated 3D-electrode dielectrophoresis**  
 Demircan Y., Koyuncuoglu A., ERDEM M., Ozgur E., GÜNDÜZ U., KÜLAH H.  
 ELECTROPHORESIS, vol.36, pp.1149-1157, 2015 (Journal Indexed in SCI)
- **Breath sensors for lung cancer diagnosis**  
 Adiguzel Y., KÜLAH H.  
 BIOSENSORS & BIOELECTRONICS, vol.65, pp.121-138, 2015 (Journal Indexed in SCI)
- **Reconfigurable Nested Ring-Split Ring Transmitarray Unit Cell Employing the Element Rotation Method by Microfluidics**  
 Erdil E., TOPALLI K., Esmailzad N. S., Zorlu O., KÜLAH H., AYDIN ÇİVİ H. Ö.  
 IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, vol.63, pp.1164-1169, 2015 (Journal Indexed in SCI)
- **A Sigma Delta micro accelerometer with 6 mu g/root Hz resolution and 130 dB dynamic range**  
 Sonmez U., KulaH H., Akin T.  
 ANALOG INTEGRATED CIRCUITS AND SIGNAL PROCESSING, vol.81, pp.471-485, 2014 (Journal Indexed in SCI)
- **Powering-up Wireless Sensor Nodes Utilizing Rechargeable Batteries and an Electromagnetic Vibration Energy Harvesting System**  
 Chamanian S., Baghaee S., Uluşan H., Zorlu O., KÜLAH H., UYSAL BIYIKOĞLU E.  
 ENERGIES, vol.7, pp.6323-6339, 2014 (Journal Indexed in SCI)
- **Capturing and detection of MCF-7 breast cancer cells with a CMOS image sensor**  
 Musayev J., Altiner C., Adiguzel Y., KÜLAH H., Eminoglu S., AKIN T.  
 SENSORS AND ACTUATORS A-PHYSICAL, vol.215, pp.105-114, 2014 (Journal Indexed in SCI)
- **A parylene coating based room temperature wafer-level attachment method for MEMS integration**

**with zero applied force**

Beker L., Zorlu O., KÜLAH H.

SENSORS AND ACTUATORS A-PHYSICAL, vol.215, pp.1-7, 2014 (Journal Indexed in SCI)

● **A Fully Microfabricated Electrochemical Sensor and its Implementation for Detection of Methicillin Resistance in Staphylococcus aureus**

Koydemir H. C. , KÜLAH H., ALP A., ÜNER A., HASÇELİK A. G. , ÖZGEN C.

IEEE SENSORS JOURNAL, vol.14, pp.1844-1851, 2014 (Journal Indexed in SCI)

● **Studies on visual detection and surface modification testing of glass microfiber filter paper based biosensor**

Adiguzel Y., KÜLAH H.

BIOSENSORS & BIOELECTRONICS, vol.54, pp.27-34, 2014 (Journal Indexed in SCI)

● **Solvent Compatibility of Parylene C Film Layer**

Koydemir H. C. , KÜLAH H., ÖZGEN C.

JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.23, pp.298-307, 2014 (Journal Indexed in SCI)

● **Assessment of effects of multi drug resistance on dielectric properties of K562 leukemic cells using electrorotation**

Bahrieh G., ERDEM M., Ozgur E., GÜNDÜZ U., KÜLAH H.

RSC ADVANCES, vol.4, pp.44879-44887, 2014 (Journal Indexed in SCI)

● **Glucose determination based on a two component self-assembled monolayer functionalized surfaceenhanced Raman spectroscopy (SERS) probe**

TORUL H., ÇİFTÇİ H., Dudak F. C. , Adiguzel Y., KÜLAH H., BOYACI İ. H. , TAMER U.

ANALYTICAL METHODS, vol.6, pp.5097-5104, 2014 (Journal Indexed in SCI)

● **A MEMS-based energy harvester for generating energy from non-resonant environmental vibrations**

Zorlu O., KÜLAH H.

SENSORS AND ACTUATORS A-PHYSICAL, vol.202, pp.124-134, 2013 (Journal Indexed in SCI)

● **Dielectrophoresis: Applications and future outlook in point of care**

Demircan Y., Ozgur E., KÜLAH H.

ELECTROPHORESIS, vol.34, pp.1008-1027, 2013 (Journal Indexed in SCI)

● **An electromagnetic energy harvesting system for low frequency applications with a passive interface ASIC in standard CMOS**

Rahimi A., Zorlu O., Muhtaroglu A., KulaH H.

SENSORS AND ACTUATORS A-PHYSICAL, vol.188, pp.158-166, 2012 (Journal Indexed in SCI)

● **CMOS Cell Sensors for Point-of-Care Diagnostics**

Adiguzel Y., KÜLAH H.

SENSORS, vol.12, pp.10042-10066, 2012 (Journal Indexed in SCI)

● **A normally closed electrostatic parylene microvalve for micro total analysis systems**

Yildirim E., ARIKAN M. F. , KÜLAH H.

SENSORS AND ACTUATORS A-PHYSICAL, vol.181, pp.81-86, 2012 (Journal Indexed in SCI)

● **Electrostatic energy harvesting by droplet-based multi-phase microfluidics**

Yildirim E., KÜLAH H.

MICROFLUIDICS AND NANOFUIDICS, vol.13, pp.107-111, 2012 (Journal Indexed in SCI)

● **Heat transfer and pressure drop experiments on CMOS compatible microchannel heat sinks for monolithic chip cooling applications**

Koyuncuoglu A., Jafari R., Okutucu-Ozyurt T., KÜLAH H.

INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.56, pp.77-85, 2012 (Journal Indexed in SCI)

● **Fully Self-Powered Electromagnetic Energy Harvesting System With Highly Efficient Dual Rail Output**

Rahimi A., Zorlu O., Muhtaroglu A., KÜLAH H.

IEEE SENSORS JOURNAL, vol.12, pp.2287-2298, 2012 (Journal Indexed in SCI)

● **Ultrasensitive and selective homogeneous sandwich immunoassay detection by Surface Enhanced Raman Scattering (SERS)**

Pekdemir M. E. , Erturkan D., KÜLAH H., BOYACI İ. H. , ÖZGEN C., Tamer U.

- ANALYST, vol.137, pp.4834-4840, 2012 (Journal Indexed in SCI)
- **MEMS biosensors for detection of methicillin resistant Staphylococcus aureus**  
Ceylan Koydemir H., KÜLAH H., ÖZGEN C., ALP A., Hascelik G.
- BIOSENSORS & BIOELECTRONICS, vol.29, pp.1-12, 2011 (Journal Indexed in SCI)
- **Quality Factor Enhancement of Lateral Microresonators in Liquid Media by Hydrophobic Coating**  
Eroglu D., KÜLAH H.
- JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.20, pp.1068-1070, 2011 (Journal Indexed in SCI)
- **Analysis and characterization of an electrostatically actuated in-plane parylene microvalve**  
Yildirim E., KÜLAH H.
- JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.21, 2011 (Journal Indexed in SCI)
- **A MEMS-based spiral channel dielectrophoretic chromatography system for cytometry applications**  
Yilmaz G., Ciftlik A. T. , KÜLAH H.
- BIOTECHNOLOGY JOURNAL, vol.6, pp.185-194, 2011 (Journal Indexed in SCI)
- **A Vibration-Based Electromagnetic Energy Harvester Using Mechanical Frequency Up-Conversion Method**  
Zorlu O., Topal E. T. , KÜLAH H.
- IEEE SENSORS JOURNAL, vol.11, pp.481-488, 2011 (Journal Indexed in SCI)
- **A high performance Sigma-Delta readout circuitry for mu g resolution microaccelerometers**  
Ocak I. E. , Kepenek R., KÜLAH H., AKIN T.
- ANALOG INTEGRATED CIRCUITS AND SIGNAL PROCESSING, vol.64, pp.137-145, 2010 (Journal Indexed in SCI)
- **An Electromagnetic Micro Power Generator for Low-Frequency Environmental Vibrations Based on the Frequency Upconversion Technique**  
Sari I., Balkan T., KÜLAH H.
- JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.19, pp.14-27, 2010 (Journal Indexed in SCI)
- **An electromagnetic micro energy harvester based on an array of parylene cantilevers**  
Sari I., Balkan T., KÜLAH H.
- JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.19, 2009 (Journal Indexed in SCI)
- **A parylene-based dual channel micro-electrophoresis system for rapid mutation detection via heteroduplex analysis**  
SUKAS S., Erson A. E. , SERT C., KÜLAH H.
- ELECTROPHORESIS, vol.29, pp.3752-3758, 2008 (Journal Indexed in SCI)
- **An electromagnetic micro power generator for wideband environmental vibrations**  
Sari I., Balkan T., KÜLAH H.
- SENSORS AND ACTUATORS A-PHYSICAL, vol.145, pp.405-413, 2008 (Journal Indexed in SCI)
- **Energy scavenging from low-frequency vibrations by using frequency up-conversion for wireless sensor applications**  
Kuelah H., Najafi K.
- IEEE SENSORS JOURNAL, vol.8, pp.261-268, 2008 (Journal Indexed in SCI)
- **Noise analysis and characterization of a sigma-delta/capacitive microaccelerometer**  
Kulah H., Chae J., Yazdi N., Najafi K.
- IEEE JOURNAL OF SOLID-STATE CIRCUITS, vol.41, pp.352-361, 2006 (Journal Indexed in SCI)
- **A monolithic three-axis micro-g micromachined silicon capacitive accelerometer**  
Chae J., Kulah H., Najafi K.
- JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.14, pp.235-242, 2005 (Journal Indexed in SCI)
- **A CMOS-compatible high aspect ratio silicon-on-glass in-plane micro-accelerometer**  
Chae J., Kulah H., Najafi K.
- JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.15, pp.336-345, 2005 (Journal Indexed in SCI)
- **An in-plane high-sensitivity, low-noise micro-g silicon accelerometer with CMOS readout circuitry**  
Chae J., Kulah H., Najafi K.
- JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.13, pp.628-635, 2004 (Journal Indexed in SCI)
- **A current mirroring integration based readout circuit for high performance infrared FPA**

## **applications**

Kulah H., Akin T.

IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS II-ANALOG AND DIGITAL SIGNAL PROCESSING, vol.50, pp.181-186, 2003 (Journal Indexed in SCI)

### ● **An integrated thermopile structure with high responsivity using any standard CMOS process**

Akin T., Olgun Z., Akar O., Kùlah H.

Sensors and Actuators, A: Physical, vol.66, pp.218-224, 1998 (Journal Indexed in SCI)

## **Articles Published in Other Journals**

### ● **Empirically based methodology for thermoelectric generation in notebook systems**

Denker R., Muhtaroglu A., KÙLAH H.

2011 International Conference on Energy Aware Computing, ICEAC 2011, 2011 (Refereed Journals of Other Institutions)

### ● **Improved second generation electromagnetic MEMS energy scavenger**

Turkyilmaz S., Muhtaroglu A., KÙLAH H.

2011 International Conference on Energy Aware Computing, ICEAC 2011, 2011 (Refereed Journals of Other Institutions)

### ● **Piezoelectric cantilever prototype for energy harvesting in computing applications**

Beker L., KÙLAH H., Muhtaroglu A.

2011 International Conference on Energy Aware Computing, ICEAC 2011, 2011 (Refereed Journals of Other Institutions)

### ● **Hybrid energy harvesting from keyboard**

Beker L., Zorlu Ö., KÙLAH H., Muhtaroglu A.

2011 International Conference on Energy Aware Computing, ICEAC 2011, 2011 (Refereed Journals of Other Institutions)

### ● **A Cr-Ni thermoelectric MEMS energy harvester for low profile applications**

Topal E. T. , Zorlu O., KÙLAH H., Muhtaroglu A.

2011 International Conference on Energy Aware Computing, ICEAC 2011, 2011 (Refereed Journals of Other Institutions)

### ● **CMOS Elektronik Devreli PtSi Schottky Bariyer Kızılötesi Gece Görüş Dedektörü**

KÙLAH H., AKIN T.

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## **Books & Book Chapters**

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