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Education Information

Doctorate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Elektrik-Elektronik Mühendisliği (Dr), Turkey 2013 - Continues

Postgraduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Elektrik Ve Elektronik Mühendisliği (YI) (Tezli), Turkey 2011 - 2013

Undergraduate, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 2007 - 2011

Foreign Languages

English, C1 Advanced

Dissertations

Postgraduate, A fully-integrated and battery-free interface electronics for low voltage vibration-based electromagnetic energy harvesters, Middle East Technical University, Graduate School of Natural and Applied Sciences, Elektrik Ve Elektronik Mühendisliği (YI) (Tezli), 2013

Academic Titles / Tasks

Research Assistant, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2011 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Single Supply PWM Fully Implantable Cochlear Implant Interface Circuit with Active Charge Balancing**

Yigit H. A., Ulsan H., Koc M., YÜKSEL M. B., Chamanian S., KÜLAH H.

IEEE Access, vol.9, pp.52642-52653, 2021 (SCI-Expanded)

II. **Fully Implantable Cochlear Implant Interface Electronics With 51.2- μ 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, no.7, pp.1504-1512, 2019

(SCI-Expanded)

- III. **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, no.7, pp.2784-2793, 2019 (SCI-Expanded)
- IV. **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, no.3, pp.2739-2747, 2019 (SCI-Expanded)
- V. **A Sub-500 μ W Interface Electronics for Bionic Ears**
Ulsan H., Muhtaroglu A., KÜLAH H.
IEEE ACCESS, vol.7, pp.132140-132152, 2019 (SCI-Expanded)
- VI. **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 (SCI-Expanded)
- VII. **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, no.1, 2018 (SCI-Expanded)
- VIII. **Highly Integrated 3 V Supply Electronics for Electromagnetic Energy Harvesters With Minimum 0.4 V-peak Input**
Ulsan H., Zorlu O., Muhtaroglu A., KÜLAH H.
IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, vol.64, no.7, pp.5460-5467, 2017 (SCI-Expanded)
- IX. **A Highly Integrated 3 V Supply Electronics for Electromagnetic Energy Harvesters with Minimum 0.4 Vpeak Input**
Uluşan H., Zorlu Ö., Muhtaroglu A., KÜLAH H.
IEEE Transactions On Industrial Electronics, vol.64, pp.5460-5467, 2017 (SCI-Expanded)
- X. **Wearable battery-less wireless sensor network with electromagnetic energy harvesting system**
Chamanian S., Ulsan H., Zorlu O., Baghaee S., UYSAL BIYIKOĞLU E., KÜLAH H.
SENSORS AND ACTUATORS A-PHYSICAL, vol.249, pp.77-84, 2016 (SCI-Expanded)
- XI. **A Fully Integrated and Battery-Free Interface for Low-Voltage Electromagnetic Energy Harvesters**
Ulsan H., Gharehbaghi K., Zorlu O., Muhtaroglu A., KÜLAH H.
IEEE TRANSACTIONS ON POWER ELECTRONICS, vol.30, no.7, pp.3712-3719, 2015 (SCI-Expanded)
- XII. **Powering-up Wireless Sensor Nodes Utilizing Rechargeable Batteries and an Electromagnetic Vibration Energy Harvesting System**
Chamanian S., Baghaee S., Ulsan H., Zorlu O., KÜLAH H., UYSAL BIYIKOĞLU E.
ENERGIES, vol.7, no.10, pp.6323-6339, 2014 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **An Adaptive Converter for Current Neural Stimulators Achieving up to 79% Power Dissipation Reduction**
Koc M., Chamanian S., Yigit H. A., ULUŞAN H., KÜLAH H.
IEEE International Symposium on Circuits and Systems (IEEE ISCAS), Daegu, South Korea, 22 - 28 May 2021
- II. **13.56 MHz Mixed Mode Rectifier Circuit for Implantable Medical Devices**
Engur Y., ULUŞAN H., Yigit H. A., Chamanian S., KÜLAH H.
19th International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (Power MEMS), Krakow, Poland, 2 - 06 December 2019
- III. **A Pulse-Width Modulated Cochlear Implant Interface Electronics with 513 μ W Power Consumption**
Yigit H. A., Ulsan H., YÜKSEL M. B., Chamanian S., Ciftci B., Koyuncuoglu A., Muhtarolu A., KÜLAH H.

IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED), Lausanne, Switzerland, 29 - 31 July 2019

- IV. **An Autonomous Interface Circuit Based on Self-Investing Synchronous Energy Extraction for Low Power Piezoelectric Energy Harvesters**
ÇİFTÇİ B., Chamanian S., Uluşan H., KÜLAH H.
18th International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, Florida, United States Of America, 4 - 07 December 2018, vol.1407
- V. **Charge Balance Circuit for Constant Current Neural Stimulation with Less than 8 nC Residual Charge**
Yigit H. A., Uluşan H., Chamanian S., KÜLAH H.
IEEE International Symposium on Circuits and Systems (IEEE ISCAS), Sapporo, Japan, 26 - 29 May 2019
- VI. **Low-Cost Fully Autonomous Piezoelectric Energy Harvesting Interface Circuit with up to 6.14x Power Capacity Gain**
ÇİFTÇİ B., Chamanian S., Uluşan H., Yigit H. A., Koyuncuoglu A., Muhtaroglu A., KÜLAH H.
40th Annual IEEE Custom Integrated Circuits Conference (CICC), Texas, United States Of America, 14 - 17 April 2019
- VII. **WirelessEnergySim: A Discrete Event Simulator for an Energy-Neutral Operation of IoT Nodes**
Baghaee S., Chamanian S., Uluşan H., Zorlu O.
IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Batumi, Georgia, 4 - 07 June 2018, pp.122-126
- VIII. **Neural stimulation interface with ultra-low power signal conditioning circuit for fully-implantable cochlear implants**
Uluşan H., Chamanian S., Zorlu O., Muhtaroglu A., KÜLAH H.
2017 IEEE Biomedical Circuits and Systems Conference, BioCAS 2017, Torino, Italy, 19 - 21 October 2017, pp.1-4
- IX. **Neural Stimulation Interface with Ultra-Low Power Signal Conditioning Circuit for Fully-Implantable Cochlear Implant Applications**
ULUŞAN H., Chamanian S., Zorlu O., MUHTAROĞLU A., KÜLAH H.
BioCAS 2017, 19 - 21 October 2017
- X. **An Adaptable Interface Circuit for Low Power MEMS Piezoelectric Energy Harvesters with Multi-Stage Energy Extraction**
Chamanian S., ULUŞAN H., Zorlu Ö., MUHTAROĞLU A., KÜLAH H.
Biomedical Circuits and Systems (BIOCAS) 2017, Torino, Italy, 19 - 21 October 2017
- XI. **Thin Film PZT Acoustic Sensor for Fully Implantable Cochlear Implants**
İlik B., Koyuncuoğlu A., Uluşan H., Chamanian S., Işık Akçakaya D., Şardan Sukas Ö., KÜLAH H.
EuroSensors 2017, Paris, France, 3 - 06 September 2017, vol.1, no.4, pp.366
- XII. **Bulk PZT Cantilever Based MEMS Acoustic Transducer for Cochlear Implant Applications**
Koyuncuoğlu A., İlik B., Chamanian S., Uluşan H., Ashrafi P., Işık D., KÜLAH H.
EuroSensors 2017, Paris, France, 3 - 06 September 2017
- XIII. **Optimized Electromagnetic Harvester with a Non-Magnetic Inertial Mass**
Uluşan H., Yasar O., Zorlu O., KÜLAH H.
Conference on EUROSENSORS, Freiburg, Germany, 6 - 09 September 2015, vol.120, pp.337-340
- XIV. **Stage Optimization in Regulated Step-Up for Low Voltage Electromagnetic Energy Harvesters**
Uluşan H., Zorlu O., KÜLAH H., Muhtaroglu A.
5th International Conference on Energy Aware Computing Systems & Applications (ICEAC), Cairo, Egypt, 24 - 26 March 2015
- XV. **A Self-Powered and Efficient Rectifier for Electromagnetic Energy Harvesters**
Uluşan H., Zorlu O., Muhtaroglu A., KÜLAH H.
13th IEEE Sensors Conference, Valencia, Spain, 2 - 05 November 2014
- XVI. **A 180 nm Self-Powered Rectifier Circuit for Electromagnetic Energy Harvesters**
Uluşan H., Zorlu O., KÜLAH H., Muhtaroglu A.
4th Annual International Conference on Energy Aware Computing Systems and Applications (ICEAC), İstanbul, Turkey, 16 - 18 December 2013, pp.29-33

- XVII. **An efficient integrated interface electronics for electromagnetic energy harvesting from low voltage sources**
Ulusan H., Gharehbaghi K., Zorlu O., Muhtaroglu A., KÜLAH H.
2013 17th International Conference on Solid-State Sensors, Actuators and Microsystems, TRANSDUCERS and EUROSENSORS 2013, Barcelona, Spain, 16 - 20 June 2013, pp.450-453
- XVIII. **Towards a Vibration Energy Harvesting WSN Demonstration Testbed 24th Tyrrhenian International Workshop on Digital Communications**
BAGHAEE S., ULUŞAN H., SORAYA C., OZGE Z., KÜLAH H., BIYIKLIOĞLU ÜNSAL E.
Green ICT (TIWDC), CENOVA, Italy, 23 - 25 September 2013
- XIX. **An Efficient Integrated Interface Electronics for Electromagnetic Energy Harvesting from Low Voltage Source**
ULUŞAN H., Gharehbaghi K., Zorlu Ö., MUHTAROĞLU A., KÜLAH H.
International Conference on Solid-State Sensors, Actuators, and Microsystems, Transducers, BARCELONA, Spain, 16 - 20 July 2013
- XX. **A Fully Integrated Power Management Circuit for Electromagnetic Energy Harvesting Applications**
Gharehbaghi K., Uluslan H., Zorlu O., Muhtaroglu A., KÜLAH H.
International Conference on Energy Aware Computing, CYPRUS, 3 - 05 December 2012
- XXI. **A Self-Powered Rectifier Circuit for Low-Voltage Energy Harvesting Applications**
Uluslan H., Gharehbaghi K., Zorlu O., Muhtaroglu A., KÜLAH H.
International Conference on Energy Aware Computing, CYPRUS, 3 - 05 December 2012

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