

Prof. TAYFUN AKIN

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: O-6924-2015

ScopusID: 7004435753

Yoksis Researcher ID: 104090

Education Information

Doctorate, University of Michigan, Electrical Engineering, United States Of America 1989 - 1994

Postgraduate, University of Michigan, Electrical Engineering, United States Of America 1987 - 1989

Undergraduate, Middle East Technical University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1982 - 1987

Research Areas

Electrical and Electronics Engineering, Electronic, Sensing Devices and Transducers, MEMS, Optoelectronic Materials and Devices, Semiconducting Materials and Devices, Engineering and Technology

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 2004 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 1999 - 2004

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 1995 - 1999

Academic and Administrative Experience

Manager of Research and Application Center, Middle East Technical University, Presidency Office, 2008 - Continues

Head of Department, Middle East Technical University, Graduate School of Natural and Applied Sciences, Mikro Ve Nanoteknoloji (YI) (Tezli), 2013 - 2017

Courses

DIGITAL ELECTRONICS, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018

Supervised Theses

- Akın T., DEVELOPMENT OF PBS COLLOIDAL QUANTUM DOT BASED FPAS FOR SWIR IMAGING, Doctorate, E.DİRİCAN(Student), Continues
- Akın T., DEVELOPMENT OF ULTRA LOW-DRIFT MEMS GYROSCOPE, Doctorate, H.DOĞAN(Student), Continues
- Akın T., Turan R., DEVELOPMENT OF SMALL SIZE UNCOOLED INFRARED MICROBOLOMETER, Postgraduate, B.UTKU(Student), Continues
- Akın T., A LOW-POWER,HIGH-PERFORMANCE ANALOG-TO-DIGITAL CONVERTER INTEGRATED CIRCUIT FOR BIOMEDICAL APPLICATIONS, Doctorate, S.KOÇAK(Student), Continues
- Akın T., DIGITALLY CONTROLLED MEMS GYROSCOPE AND ITS MULTIVARIATE CALIBRATION, Doctorate, F.YEŞİL(Student), Continues
- Akın T., DEVELOPMENT OF SMALL PIXEL PITCH AND HIGH PERFORMANCE UNCOOLED INFRARED DETECTOR ARRAY, Doctorate, S.KESKİN(Student), Continues
- Akın T., HIGH PERFORMANCE READOUT CIRCUIT FOR RESONATOR BASED MEMS ACCELEROMETER USING DIGITAL CONTROL LOOP, Doctorate, M.ALI(Student), Continues
- Akın T., A wafer level vacuum packaging technologyfor MEMS based long-wave infrared sensors, Doctorate, G.DEMİRHAN(Student), 2022
- Akın T., Column parallel incremental zoom adc for uncooled imaging applications, Postgraduate, A.BEYENİR(Student), 2022
- Akın T., HIGH PERFORMANCE MEMS INERTIAL SENSORS, Postgraduate, U.ÇEKMEZ(Student), 2022
- AKIN T., Low-power low-noise highly programmable digital accelerometer readout for high performance MEMS accelerometers, Postgraduate, B.ENGİN(Student), 2022
- AKIN T., High-performance readout circuit for resonator-based MEMS accelerometer using digital control loop, Doctorate, M.ALI(Student), 2022
- Akın T., A NEW APPROACH TO SHUTTERLESS OPERATION OF MICROBOLOMETER BASED INFRARED CAMERAS, Postgraduate, S.ÇAVDAR(Student), 2021
- AKIN T., Development of small size uncooled infrared microbolometer pixel, Postgraduate, B.UTKU(Student), 2021
- Akın T., 125PS LSB COLUMN PARALLEL TIME TO DIGITAL CONVERTER INTEGRATED CIRCUIT FOR LIDAR APPLICATIONS, Postgraduate, O.ÖZPINAR(Student), 2021
- AKIN T., 125PS LSB column parallel time to digital converter integrated circuit for lidar applications, Postgraduate, O.ÖZPINAR(Student), 2021
- Akın T., Demir Ş., PACKAGING OF RF MEMS SWITCHES AND PERFORMANCE IMPROVEMENT, Doctorate, İ.COMART(Student), 2019
- Akın T., REAL-TIME FPGA FIRMWARE FOR VGA RESOLUTION INFRARED CAMERA, Postgraduate, K.ÇEVİK(Student), 2019
- AKIN T., A low power integrated temperature sensor with digital outputsfor on-chip temperature monitoring applications, Postgraduate, Ö.TURAN(Student), 2017
- AKIN T., Advanced circuit architectures for readout electronics of low-cost microbolometer focal plane arrays, Postgraduate, M.HALUK(Student), 2017
- AKIN T., Low-cost microbolometer infrared detectors utilizing cmos resistive layers, Postgraduate, H.ÖZTÜRK(Student), 2017
- AKIN T., A small-format microbolometer imaging sensor with digital video outputs, Postgraduate, C.YALÇIN(Student), 2016
- AKIN T., A low-power analog-to-digital converter integrated circuit for data acquisition applications, Postgraduate, S.KOÇAK(Student), 2016
- AKIN T., TURAN R., Novel metal assisted etching technique for enhanced light management in black crystalline si solar cells, Doctorate, F.ES(Student), 2016
- KALAY Y. E., AKIN T., BONDING MATERIAL DEVELOPMENT AT WAFER LEVEL VACUUM PACKAGING FOR MEMS DEVICES BY TRANSIENT LIQUID PHASE (TLP) METHOD, Postgraduate, E.CAN(Student), 2016
- AKIN T., A readout circuit for resonant mems temperature sensors, Postgraduate, H.ASADI(Student), 2016
- AKIN T., Design and implementation of perforation on high fill factor structures for uncooled infrared sensors,

Postgraduate, R.ÇETİN(Student), 2016

AKIN T., Resonance-based MEMS temperature sensors for temperature compensation of mems capacitive accelerometer, Postgraduate, G.DEMİRHAN(Student), 2016

AKIN T., AZGIN K., Development of an integrated resonant mems temperature sensor, Postgraduate, T.KÖSE(Student), 2016

AKIN T., TURAN R., Light trapping micro and nanostructures fabricated by top down approaches for solar cell applications, Doctorate, H.SERRA(Student), 2016

DEMİR Ş., AKIN T., Design of an x-band 3-bit rf mems constant phase shifter, Postgraduate, A.KUZUBAŞLI(Student), 2016

AKIN T., A high performance closed-loop analog readout circuit for capacitive MEMS accelerometers, Postgraduate, Y.TERZİOĞLU(Student), 2015

AKIN T., High speed LVDS digital input/output interface circuitries for high resolution imaging sensors /, Postgraduate, S.TUNCER(Student), 2015

AKIN T., CMOS readout electronics for mismatched and mode-matched mems gyroscopes, Postgraduate, F.YEŞİL(Student), 2015

AKIN T., ARIKAN M. A. S., Development of new, simple, and robust wafer level hermetic packaging methods for MEMS sensors, Doctorate, M.MERT(Student), 2015

AKIN T., Design and implementation of high fill factor structures on low-cost uncooled infrared sensors, Postgraduate, O.ERTÜRK(Student), 2015

AKIN T., High performance closed-loop analog readout circuit for capacitive MEMS accelerometers, Postgraduate, Y.Terzioğlu(Student), 2015

AKIN T., 5th order sigma delta MEMS accelerometer system with enhanced linearity, Postgraduate, U.AYKUTLU(Student), 2015

AKIN T., A low-power memory CMOS integrated circuit for image sensors, Postgraduate, M.CEM(Student), 2015

AKIN T., CMOS readout electronics for mis-matched and mode-matched MEMS gyroscopes, Postgraduate, F.Yeşil(Student), 2015

AKIN T., A versatile 5th order sigma-delta modulation circuit for MEMS capacitive accelerometer characterization, Postgraduate, T.ASGARLI(Student), 2014

AKIN T., EMİNOĞLU S., A Digitally programmable application specific integrated circuit for drive and data acquisition of imaging sensorsMethod of moments analysis of slotted waveguide antenna arrays, Postgraduate, N.Bayhan(Student), 2014

AKIN T., A Versatile 5th order sigma-delta modulation circuit for MEMS capacitive accelerometer characterization /, Postgraduate, T.Asgarli(Student), 2014

AKIN T., AZGIN K., Compensation methods for quasi-static acceleration sensitivity of MEMS gyroscopes, Postgraduate, H.DOĞAN(Student), 2014

AKIN T., ARIKAN M. A. S., A THREE AXIS CAPACITIVE MEMS ACCELEROMETER ON A MULTI-STACK SUBSTRATE, Doctorate, S.TEZ(Student), 2014

AKIN T., AZGIN K., Correction of temperature and acceleration effects on MEMS gyro output signals /, Postgraduate, M.ALI(Student), 2014

AKIN T., A digitally programmable application specific integrated circuit for drive and data acquisition of imaging sensors, Postgraduate, N.BAYHAN(Student), 2014

AKIN T., Development and characterization of low-cost uncooled infrared sensors for commercial applications, Postgraduate, F.TANKUT(Student), 2013

AKIN T., Camera electronics for low-cost microbolometer type infrared detectors, Postgraduate, C.TÜFEKÇİ(Student), 2013

AKIN T., A low-power capacitive integrated CMOS readout circuitry for high performance MEMS accelerometers, Postgraduate, O.SAMET(Student), 2013

AKIN T., EMİNOĞLU S., Low---cost uncooled infrared imaging sensor using mems and a modified standard cmos process, Postgraduate, M.Ali(Student), 2013

AKIN T., A low-cost uncooled infrared imaging sensor using MEMS and a modified standard CMOS process, Postgraduate, M.ALI(Student), 2013

DURUCAN C., AKIN T., A microbolometer detector based on a sol-gel technology, Doctorate, Ö.DERVİŞOĞLU(Student),

2013

- AKIN T., TURAN R., A Three Axis Capacitive MEMS Accelerometer On A Single Substrate, Doctorate, A.AYDEMİR(Student), 2013
- AKIN T., TURAN R., Electrical, optical, and noise characterizations of mwir type-ii inas/gasb superlattice single pixel detectors, Postgraduate, K.KUTLUER(Student), 2012
- AKIN T., A fully-differential bulk-micromachined MEMS accelerometer with interdigitated fingers, Postgraduate, O.AYDIN(Student), 2012
- AKIN T., A successive approximation register analog-to-digital converter for low-cost microbolometers, Postgraduate, Y.UYGAR(Student), 2012
- AKIN T., A high performance automatic mode-matched MEMS gyroscope, Postgraduate, S.SÖNMEZOĞLU(Student), 2012
- AKIN T., Camera electronics and image enhancement software for infrared detector arrays, Postgraduate, A.KÜÇÜKKÖMÜRLER(Student), 2012
- AKIN T., A dual-band uncooled infrared microbolometer detector with a tunable micro-mirror, Postgraduate, S.KESKİN(Student), 2012
- DURUCAN C., AKIN T., Vanadium oxide (VOx) thin films elaborated by sol-gel method for microbolometer applications, Postgraduate, K.KARSLI(Student), 2012
- AKIN T., An integrated imaging sensor for rare cell detection applications, Postgraduate, Ç.ALTINER(Student), 2012
- AKIN T., A low-cost uncooled infrared detector array and its camera electronics, Postgraduate, D.AKÇÖREN(Student), 2011
- AKIN T., TURAN R., Development of high performance uncooled infrared detector materials, Postgraduate, B.KEBAPÇI(Student), 2011
- AKIN T., ARIKAN M. A. S., Wafer level vacuum packaging of MEMS sensors and resonators, Postgraduate, M.MERT(Student), 2011
- AKIN T., CMOS integrated sensor readout circuitry for DNA detection applications, Postgraduate, J.MUSAYEV(Student), 2011
- AKIN T., Development of high fill factor and high performance uncooled infrared detector pixels, Postgraduate, Ş.ESRA(Student), 2011
- AKIN T., Control electronics for MEMS gyroscopes and its implementation in a CMOS technology, Postgraduate, B.EMİNOĞLU(Student), 2011
- KÜLAH H., AKIN T., Capacitive CMOS readouts for high performance MEMS accelerometers, Postgraduate, U.SÖNMEZ(Student), 2011
- AKIN T., TURAN R., Development of high performance active materials for microbolometers, Postgraduate, N.EROĞLU(Student), 2011
- AKIN T., A tactical grade MEMS accelerometer, Doctorate, İ.ENDER(Student), 2010
- AKIN T., Quadrature error compensation and its effects on the performance of fully decoupled mems gyroscopes, Postgraduate, E.TATAR(Student), 2010
- DEMİR Ş., AKIN T., Reliability improvement of RF MEMS devices based on lifetime measurements, Postgraduate, O.DOĞAN(Student), 2010
- AKIN T., Development of High Thermal Performance Uncooled Infrared Detector Pixels with Enhanced Resistor Structures, Postgraduate, Ş.UFUK(Student), 2010
- AKIN T., A monolithic readout circuit for large format uncooled infrared detector focal plane arrays, Doctorate, M.TEPEGÖZ(Student), 2010
- AKIN T., TURAN R., Development and Characterization of High TCR Material For Surface Micromachined Microblometers, Postgraduate, E.CANGA(Student), 2010
- DEMİR Ş., AKIN T., Development of MEMs technology based microwave and millimeter-wave components, Postgraduate, Ç.ÇETİNTEPE(Student), 2010
- AYDIN ÇİVİ H. Ö., AKIN T., Dual frequency reconfigurable reflectarray antenna of split ring elements with RF MEMS switches, Postgraduate, C.GÜÇLÜ(Student), 2010
- AKIN T., A tactical grade MEMS accelerometer, Doctorate, İ.Ender(Student), 2010
- DEMİR Ş., AKIN T., Zero-level packaging of microwave and millimeterwave mems components, Postgraduate, İ.COMART(Student), 2010

DEMİR Ş., AKIN T., NOVEL IMPEDANCE TUNER, PHASE SHIFTER, AND VECTOR MODULATORS USING RF MEMS TECHNOLOGY, Doctorate, M.ÜNLÜ(Student), 2009

AKIN T., CMOS readout electronics for microbolometer type infrared detector arrays, Postgraduate, A.TOPRAK(Student), 2009

AKIN T., ADVANCED CMOS READOUT ELECTRONICS FOR UNCOOLED INFRARED DETECTOR ARRAYS, Postgraduate, A.OĞUZ(Student), 2009

AKIN T., High performance readout and control electronics for MEMS gyroscopes, Postgraduate, E.ŞAHİN(Student), 2009

AKIN T., A Low Cost 128x128 Uncooled Infrared Detector Array in a Standard SOI CMOS Technology, Postgraduate, E.İNCETÜRKMEN(Student), 2008

AKIN T., A wide-bandwidth high-sensitivity MEMS gyroscope, Postgraduate, K.ŞAHİN(Student), 2008

AKIN T., Development of High Fill Factor Uncooled Infrared Detector Pixels, Postgraduate, F.ÇİVİTÇİ(Student), 2008

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

DEMİR Ş., AKIN T., Design and fabrication of RF MEMS switches and instrumentation for performance evaluation, Postgraduate, H.İBRAHİM(Student), 2007

AKIN T., An uncooled infrared microbolometer detector array using surface micromachined mems technology, Doctorate, M.YUSUF(Student), 2007

AKIN T., AYDIN ÇİVİ H. Ö., Beam switching reflectarray with RF MEMS technology, Postgraduate, Ö.BAYRAKTAR(Student), 2007

AKIN T., TURAN R., Deep-trench Rie optimization for high performance MEMS microsensors, Postgraduate, A.AYDEMİR(Student), 2007

AKIN T., High performance MEMS gyroscopes, Postgraduate, K.AZGIN(Student), 2007

AKIN T., Advanced readout and control electronics for MEMS gyroscopes, Postgraduate, Y.TEMİZ(Student), 2007

AKIN T., AYDIN ÇİVİ H. Ö., A monolithic phased array using RF MEMS technology, Doctorate, K.TOPALLI(Student), 2007

AKIN T., Development of electrochemical etch-stop techniques for integrated MEMS sensors, Postgraduate, G.CEREN(Student), 2006

AKIN T., High performance CMOS capacitive interface circuits for MEMS gyroscopes, Postgraduate, K.MİTHAT(Student), 2006

AKIN T., High performance readout electronics for uncooled infrared detector arrays, Postgraduate, Ö.ÖZGÜR(Student), 2006

DEMİR Ş., AKIN T., Design and implementation of microwave lumped components and system integration using MEMS technology, Postgraduate, E.UFUK(Student), 2006

AKIN T., KOÇ S. S., A novel modeling methodology and performance improvement technique for dmtl phase shifters, Postgraduate, İ.İSTANBULLUOĞLU(Student), 2006

AKIN T., MEMS gyroscopes for tactical-grade inertial measurement applications, Doctorate, S.EMRE(Student), 2005

AKIN T., Development of test structures and methods for characterization of mems materials, Postgraduate, E.YILDIRIM(Student), 2005

AKIN T., MemS gyroscopes for tactical-grade inertial measurement applications, Doctorate, S.Emre(Student), 2005

AKIN T., MEMS accelerometers and gyroscopes for inertial measurement units, Postgraduate, M.AKİF(Student), 2004

DEMİR Ş., AKIN T., An adjustable impedance matching network using RF MEMS technology, Postgraduate, M.ÜNLÜ(Student), 2003

AKIN T., A 64x64 CMOS integrated readout circuit for infrared photodetector focal plane arrays, Postgraduate, M.Tepeöz(Student), 2003

AKIN T., Humidity sensors using MEMS and standard CMOS technologies, Postgraduate, B.OKCAN(Student), 2003

AKIN T., Uncooled infrared focal plane arrays with integrated readout circuitry using MEMS and standard CMOS technologies, Doctorate, S.EMİNOĞLU(Student), 2003

AKIN T., A frost sensor system using MEMS technology, Postgraduate, Z.SALMAN(Student), 2003

AKIN T., Surface micromachined capacitive accelerometers using MEMS technology, Postgraduate, R.FIRAT(Student), 2003

AKIN T., A 64X64 CMOS integrated readout circuit for infraret photodetector focal plane arrays, Postgraduate,

M.TEPEGÖZ(Student), 2003

AKIN T., A high fill factor CMOS uncooled infrared microbolometer detector., Postgraduate, M.Yusuf(Student), 2002

AKIN T., A High fill factor CMOS uncooled infrared microbolometer detector, Postgraduate, M.YUSUF(Student), 2002

AKIN T., A CMOS compatible uncooled infrared detector focal plane array for night vision applications using MEMS technology, Doctorate, D.SABUNCUOĞLU(Student), 2002

AKIN T., A Piezoresistive pressure and temperature sensor cluster, Postgraduate, Ö.ZORLU(Student), 2002

AKIN T., A silicon micromachined frost sensor for industrial applications, Postgraduate, S.MUTAKA(Student), 2001

AKIN T., Silicon surface micromachined gyroscopes using mems technology, Postgraduate, S.EMRE(Student), 2000

AKIN T., VLSI implementation of low-power current mode CMOS algorithmic analog-to-digital converters, Postgraduate, A.TEZEL(Student), 1999

AKIN T., VLSI implementation of low-power current-mode,cmos algorithmic analog-to-digital convertes, Postgraduate, A.Tezel(Student), 1999

Akın T., Silisyum mikroişleme yöntemi ile üretilen endüstriyel ve biomedikal uygulamalar için kapasite basınç sensörleri, Postgraduate, O.ŞEVKET(Student), 1998

Akın T., Infrared thermopile structures using any standart CMOS integrated circuit process, Postgraduate, Z.OLGUN(Student), 1998

Akın T., Analog-digital mixed-signal VLSI modules for audio signal processing applications, Postgraduate, S.EMİNOĞLU(Student), 1998

Akın T., A CMOS Integrated PtSi Schottky-Barrier Infrared Detector for Night Vision Applications, Postgraduate, H.KÜLAH(Student), 1998

AKIN T., Infrared thermopile structures using any standard cmos integrated circuit process, Postgraduate, Z.Olgun(Student), 1998

AKIN T., Analog-digital mixed-signal, VLSI modules for audio band signal processing applications, Postgraduate, S.Eminoğlu(Student), 1998

AKIN T., Infrared thermopile structures using any standart CMOS integrated circuit process, Postgraduate, Z.OLGUN(Student), 1998

AKIN T., Analog-digital mixed-signal VLSI modules for audio signal processing applications, Postgraduate, S.EMİNOĞLU(Student), 1998

AKIN T., A CMOS integrated PtSi schottky-barrier infrared dedector for night applications, Postgraduate, H.KÜLAH(Student), 1998

AKIN T., Silicon micromachined capacitive pressure sensors for industrial and biomedical applications, Postgraduate, O.Şevket(Student), 1998

AKIN T., A CMOS integrated PtSi schottky-barrier infrared detector for night vision applications., Postgraduate, H.Külah(Student), 1998

Jury Memberships

Appointment to Academic Staff - Associate Professorship, Appointment to Academic Staff - Associate Professorship, İzmir Yüksek Teknoloji Enstitüsü, December, 2022

Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, September, 2020

Appointment to Academic Staff-Assistant Professorship, Appointment Academic Staff, Abdullah Gül Üniversitesi, July, 2020

Appointment to Academic Staff-Assistant Professorship, Appointment Academic Staff, Abdullah Gül Üniversitesi, February, 2019

Published journal articles indexed by SCI, SSCI, and AHCI

1. **Temperature-dependent evolution of Al-Ge microstructures for wafer-level vacuum packaging of MEMS devices**

Dimez B. G., AKIN T., KALAY Y. E.

Sensors and Actuators A: Physical, vol.384, 2025 (SCI-Expanded)

- II. **Wafer Level Vacuum Packaging of MEMS-Based Uncooled Infrared Sensors**
Demirhan Aydin G., Akar O. S., AKIN T.
Micromachines, vol.15, no.8, 2024 (SCI-Expanded)
- III. **Energy-efficient switching method using input-swapping for high-resolution successive approximation register analog-to-digital converters**
Kocak S., AKIN T.
Electronics Letters, vol.60, no.9, 2024 (SCI-Expanded)
- IV. **Tuning structural, electrical, and THz optical properties of VxOy films with W-doping**
Atik B., Dirican E., Demirors O., Altan H., Esenturk O., Yildirim M., Akin T.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.903, 2022 (SCI-Expanded)
- V. **An all-silicon process platform for wafer-level vacuum packaged MEMS devices**
Torunbalci M. M., Gavcar H. D., Yesil F., Alper S. E., AKIN T.
IEEE Sensors Journal, vol.21, no.13, pp.13958-13964, 2021 (SCI-Expanded)
- VI. **Interband optical absorption obtained by pseudopotential method for type-II InAs/GaSb SL photodetectors**
Akel K., HOŞTUT M., AKIN T., Ergun Y.
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.54, no.19, 2021 (SCI-Expanded)
- VII. **Wafer-Level Low-Temperature Solid-Liquid Inter-Diffusion Bonding With Thin Au-Sn Layers for MEMS Encapsulation**
Temel O., KALAY Y. E., AKIN T.
JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.30, no.1, pp.64-71, 2021 (SCI-Expanded)
- VIII. **Realization of Single Layer Microbolometer Detector Pixel Using ZnO Material**
Tanrikulu M. Y., Yildizak C., Okyay A. K., Akar O., Sarac A., AKIN T.
IEEE SENSORS JOURNAL, vol.20, no.17, pp.9677-9684, 2020 (SCI-Expanded)
- IX. **Development and Modeling of a Wafer-Level BCB Packaging Method for Capacitive RF MEMS Switches**
Comart I., Cetintepe C., Sagioglu E., DEMİR Ş., AKIN T.
JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.28, no.4, pp.724-731, 2019 (SCI-Expanded)
- X. **The detailed analysis of wavefunction overlaps for InAs/AlSb/GaSb based N-structure type-II SL pin photodetectors**
Hostut M., Tansel T., Kilic A., Akin T., Ergun Y.
PHYSICA SCRIPTA, vol.94, no.7, 2019 (SCI-Expanded)
- XI. **Numerical and Experimental Investigation into LWIR Transmission Performance of Complementary Silicon Subwavelength Antireflection Grating (SWARG) Structures**
Cetin R., AKIN T.
SCIENTIFIC REPORTS, vol.9, 2019 (SCI-Expanded)
- XII. **Microwave Engineering Expertise in Turkey**
Yarman B. S., Palamutcuogullari O., Kaya I., Kizilbey O., Aksen A., Akin T., Ozkan Z. L., Oksar I., Nesimoglu T.
IEEE MICROWAVE MAGAZINE, vol.19, no.3, pp.135-140, 2018 (SCI-Expanded)
- XIII. **A folded leg Ka-band RF MEMS shunt switch with amorphous silicon (a-Si) sacrificial layer**
Demirel K., Yazgan E., Demir Ş., Akin T.
MICROSYSTEM TECHNOLOGIES-MICRO-AND NANOSYSTEMS-INFORMATION STORAGE AND PROCESSING SYSTEMS, vol.23, pp.1191-1200, 2017 (SCI-Expanded)
- XIV. **A new design and a fabrication approach to realize a high performance three axes capacitive MEMS accelerometer**
Aydemir A., Terzioglu Y., AKIN T.
SENSORS AND ACTUATORS A-PHYSICAL, vol.244, pp.324-333, 2016 (SCI-Expanded)
- XV. **Design and fabrication of a high performance resonant MEMS temperature sensor**
Kose T., AZGIN K., Akin T.

- JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.26, no.4, 2016 (SCI-Expanded)
- XVI. **A New Temperature-Tolerant RF MEMS Switch Structure Design and Fabrication for Ka-Band Applications**
Demirel K., Yazgan E., Demir Ş., Akin T.
JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.25, pp.60-68, 2016 (SCI-Expanded)
- XVII. **A method for wafer level hermetic packaging of SOI-MEMS devices with embedded vertical feedthroughs using advanced MEMS process**
Torunbalci M. M., Alper S. E., Akin T.
JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.25, 2015 (SCI-Expanded)
- XVIII. **A Bulk-Micromachined Three-Axis Capacitive MEMS Accelerometer on a Single Die**
TEZ S., Aykutlu U., Torunbalci M. M., AKIN T.
JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.24, no.5, pp.1264-1274, 2015 (SCI-Expanded)
- XIX. **Cantilever type radio frequency microelectromechanical systems shunt capacitive switch design and fabrication**
Demirel K., Yazgan E., Demir Ş., Akin T.
JOURNAL OF MICRO-NANOLITHOGRAPHY MEMS AND MOEMS, vol.14, 2015 (SCI-Expanded)
- XX. **Advanced MEMS Process for Wafer Level Hermetic Encapsulation of MEMS Devices Using SOI Cap Wafers With Vertical Feedthroughs**
Torunbalci M. M., Alper S. E., Akin T.
JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.24, pp.556-564, 2015 (SCI-Expanded)
- XXI. **Wafer level hermetic sealing of MEMS devices with vertical feedthroughs using anodic bonding**
Torunbalci M. M., Alper S. E., AKIN T.
SENSORS AND ACTUATORS A-PHYSICAL, vol.224, pp.169-176, 2015 (SCI-Expanded)
- XXII. **Atomic-layer-deposited zinc oxide as tunable uncooled infrared microbolometer material**
Battal E., Bolat S., TANRIKULU M. Y., OKYAY A. K., AKIN T.
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE, vol.211, no.11, pp.2475-2482, 2014 (SCI-Expanded)
- XXIII. **A Sigma Delta micro accelerometer with 6 μ g/ $\sqrt{\text{Hz}}$ resolution and 130 dB dynamic range**
Sonmez U., Kulah H., Akin T.
ANALOG INTEGRATED CIRCUITS AND SIGNAL PROCESSING, vol.81, no.2, pp.471-485, 2014 (SCI-Expanded)
- XXIV. **A fabrication process based on structural layer formation using Au-Au thermocompression bonding for RF MEMS capacitive switches and their performance**
Cetintepe C., Topalli E. S., Demir Ş., Civi O. A., Akin T.
INTERNATIONAL JOURNAL OF MICROWAVE AND WIRELESS TECHNOLOGIES, vol.6, pp.473-480, 2014 (SCI-Expanded)
- XXV. **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 (SCI-Expanded)
- XXVI. **Microwave Characterization of a Wafer-Level Packaging Approach for RF MEMS Devices Using Glass Frit Bonding**
Comart I., Topalli K., DEMİR Ş., AKIN T.
IEEE SENSORS JOURNAL, vol.14, no.6, pp.2006-2011, 2014 (SCI-Expanded)
- XXVII. **Label-Free DNA Detection Using a Charge Sensitive CMOS Microarray Sensor Chip**
Musayev J., Adiguzel Y., KÜLAH H., Eminoglu S., AKIN T.
IEEE SENSORS JOURNAL, vol.14, no.5, pp.1608-1616, 2014 (SCI-Expanded)
- XXVIII. **An Automatically Mode-Matched MEMS Gyroscope With Wide and Tunable Bandwidth**
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- ASİL ALPTEKİN D., ERTÜRK O., AKIN T., Project Supported by Higher Education Institutions, PbSe Koloidal Kuantum Noktacık Tabanlı Yüksek Çözünürlüklü, Kısa Dalga Boylu Kızılötesi Görüntüleme Sensörleri için Detektör Dizini Geliştirilmesi, 2017 - 2019
- Külâh H., Akın T., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, ODTÜ MEMS Biyomedikal Uygulamalara Yönelik Altyapı, 2016 - 2019
- Akın T., EU Supported Other Project, (SEERS) Snapshot spEctral imagEr for cost effective IR Surveillance, 2015 - 2018
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- Akın T., Külâh H., Industrial Thesis Project, SANTEZ 01375 STZ 2012 1 Düşük Frekanslı Çevresel Titreşimleri ve Radyo Dalgalarını Kullanan Hibrit Bir Enerji Üretici Geliştirilmesi, 2012 - 2015
- Akın T., Project Supported by Defense Industry, TURKUAZ, 2011 - 2015
- Akın T., Other International Funding Programs, MEMS Based Phase Shifter for X band Radar Applications, 2013 - 2014
- AKIN T., Industrial Thesis Project, Yüksek Performanslı 17 um Piksel Boyutlu Soğutmasız Kızılötesi Dedektör Geliştirilmesi, 2012 - 2014
- AKIN T., Industrial Thesis Project, Vakum Paketlenmiş MEMS Dönüölçer Duyargası ve CMOS Okuma Devresi Geliştirilmesi, 2011 - 2013
- AKIN T., Industrial Thesis Project, Yüksek Etkin Alanlı ve Yüksek Performanslı Soğutmasız Kızılötesi Dedektör Geliştirilmesi, 2011 - 2013
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- AKIN T., Other International Funding Programs, Methodolgy Development and Interface Design Based on Empirical

Evaluation of Low Voltage Low Power MEMS Modules for Mobile Electronic System Integration, 2009 - 2012
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AKIN T., Project Supported by Other Private Institutions, Lastik Basıncı Gözlemeleme Sistemleri Tire Pressure Monitoring Systems TPMS için Mikro Enerji Üretici Geliştirilmesi TOFAŞ, 2009 - 2012
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Akin T., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, Endüstriyel Mikro Elektro Mekanik Sistemler MEMS, 2002 - 2012
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AKIN T., TUBITAK Project, MEMS Yapılar ve InP Tabanlı HEMT Transistörlerle Ayarlanabilir Yükselteç Hibrid Üretimi, 2007 - 2009
AKIN T., TUBITAK Project, Yonga Üzerinde Sistem Olarak Almaç Birimi Tasarımı ve Üretimi, 2005 - 2009
AKIN T., Project Supported by Other Official Institutions, Optik Okumalı Soğutmasız Dedektör Teknolojileri Geliştirme, 2007 - 2008
AKIN T., TUBITAK Project, MEMS Based Energy Scavenging, 2005 - 2008
AKIN T., TUBITAK Project, Electrophoretic DNA Mutation Analysis Based on MEMS Technology, 2005 - 2008
Aydın Çivi H. Ö., Akin T., Koç S. S., Demir Ş., FP6 Project, AMICOM Advanced MEMS For RF and Millimeter Wave Communications Network of Excellence FP6, 2004 - 2007
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AKIN T., TUBITAK Project, MEMS Teknolojisi ile RF Devre Elemanları Geliştirilmesi, 2001 - 2003
Akin T., TUBITAK Project, A Silicon Micromachined Gyroscope, 2000 - 2002
Akin T., TUBITAK Project, Uncooled Infrared Detector Development using MEMS and CMOS Technologies, 1999 - 2000
Beşikci C., Akin T., NATO Supported Research Project, Integrated Sensors and Sensor Systems for Industrial Applications, 1996 - 2000
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Patent

Azgin K., Gavcar H. D., Akin T., Method for Suppression Of G-Sensitivity of MEMS Gyroscope, Patent, CHAPTER B Implementation of Operations; Transport, The Invention Registration Number: 2020 17869 T4 , 2020

Alper S. E., Torunbalcı M. M., Akin T., Hermetic packaging method for soi-mems devices with embedded vertical feedthroughs, Patent, CHAPTER B Implementation of Operations; Transport, The Invention Registration Number: TR

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Ardanuç M. S., Zorlu Ö., Külah H., Akın T., METHOD OF ENERGY HARVESTING USING BUILT-IN POTENTIAL DIFFERENCE OF METAL-TO-METAL JUNCTIONS AND DEVICE THEREOF, Patent, CHAPTER H Electricity, The Invention Registration Number: US10027254B2 , 2018, 2016

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Akın T., Eminoğlu S., Uncooled Infrared Detector And Methods For Manufacturing The Same, Patent, CHAPTER G Physics, The Invention Registration Number: 2,800,847 , 2015, 2018

Kuzubaşlı A., Demir Ş., Akın T., Microfluidic channel integrated microwave mems biosensor, Patent, CHAPTER H Electricity, The Invention Recourse Number: EP15777752.5 , Standard Registration, 2015

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Akın T., Ünlü M., Demir Ş., SIMULTANEOUS PHASE AND AMPLITUDE CONTROL USING TRIPLE STUB TOPOLOGY AND ITS IMPLEMENTATION USING RF MEMS TECHNOLOGY, Patent, CHAPTER H Electricity, The Invention Registration Number: 2012 02917 , 2012, 2013

Scientific Refereeing

Completed Thesis Study, TÜRKİYE TEKNOLOJİ GELİŞTİRME VAKFI 2018 DR. AKIN ÇAKMAKÇI ÖDÜLÜ, TTGV, Turkey, November 2018

Completed Thesis Study, TÜRKİYE TEKNOLOJİ GELİŞTİRME VAKFI TTGV ÖDÜLLERİ 2018 DR. AKIN ÇAKMAKÇI ÖDÜLÜ, TTGV, Turkey, November 2018

Completed Thesis Study, TÜRKİYE TEKNOLOJİ GELİŞTİRME VAKFI 2018 DR. AKIN ÇAKMAKÇI ÖDÜLÜ, TTGV, Turkey, November 2018

Tasks In Event Organizations

Akın T., SPIE Defense & Commercial Sensing Symposium, Infrared Technology and Applications XLV, Scientific Congress, Maryland, United States Of America, Nisan 2019

Akın T., SPIE Defence and Commercial Sensing Symposium, Infrared Technology and Applications XLIV, Scientific Congress, Florida, United States Of America, Nisan 2018

Mobility Activity

Improving Competencies and Qualifications, Other, NTHU, Taiwan, 2018 - 2018

Metrics

Publication: 254

Citation (WoS): 2825

Citation (Scopus): 3931

H-Index (WoS): 27

H-Index (Scopus): 31

Congress and Symposium Activities

“MEMS 2020 , The 33rd IEEE International Conference on Micro Electro Mechanical Systems “, Invited Speaker, Vancouver, Canada, 2020
21 st Milipol Paris 2019, Audience, Paris, France, 2019
ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ KONGRESİ 2019 , Invited Speaker, İstanbul, Turkey, 2019
ELEKTRİK-ELEKTRONİK MÜHENDİSLİĞİ KONGRESİ 2019, Session Moderator, İstanbul, Turkey, 2019
30th AMC-Asian Advanced Materials , Attendee, Singapore, Singapore, 2019
TEKNOFEST 2019, Attendee, İstanbul, Turkey, 2019
20th International Conference on Solid-State Sensors, Actuators and Microsystems, Transducers 2019, Audience, Berlin, Germany, 2019
2018 43rd International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), Attendee, Nagoya, Japan, 2018
International Security and Defence Conference, Invited Speaker, Ankara, Turkey, 2018
SEDEC (SECURITY & DEFENCE CONFERENCE) 2018, Working Group, Ankara, Turkey, 2018
National NanoFab Center” da gerçekleştirilecek olan 3. Eureka Project’in “Development and Implementation of MEMS and CMOS based on the uncooled infrared detectors” konulu çalıştay, Working Group, Seoul, South Korea, 2018
SPIE Photonics West, Audience, California, United States Of America, 2018

Invited Talks

Çukurova Üniversitesi 2019-2020 Akademik Yılı açılış töreninde, açılış dersini vermek üzere davetli olarak katılım,
Seminar, Çukurova Üniversitesi, Turkey, September 2019
Turkey-Taiwan Electronics and Optoelectronics Semiconductor, Seminar, TÜBİTAK, Turkey, June 2019
BURSA ULUDAĞ ÜNV. PROF. DR. FUAT SEZGİN VIII. BİLGİLENDİRME VE AR-GE GÜNLERİ, Seminar, Bursa Uludağ Üniversitesi, Turkey, March 2019
18th China International Optoelectronic Expo 2016” içindeki “1st Executive Infrared Imaging Forum : From Niche to Large Volume Applications” isimli etkinlik, Seminar, Yole Development , China, September 2016
20th NanoEngineering and MicroSystem Technology Conference (NMC’16) , Conference, 20th NanoEngineering and MicroSystem Technology Conference (NMC’16) , Taiwan, August 2016
Infrared Array Sensor Forum, Seminar, Ritsumeikan Üniversitesi, Japan, July 2016

Awards

Akın T., Mikroelektronik ve Mikrosensörler Konusundaki Özgün Çalışmalar, Orta Doğu Teknik Üniversitesi, June 1996

Non Academic Experience

METU

METU

ASELSAN

TUBITAK-BILTEN

METU

METU

The University of Michigan Electrical

The University of Michigan Electrical

ASELSAN Inc.