

# Prof. KUTAY İÇÖZ

## Personal Information

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## International Researcher IDs

ScholarID: AOfLBpgAAAAJ

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Publons / Web Of Science ResearcherID: J-2063-2015

ScopusID: 24801985000

Yoksis Researcher ID: 202837

## Education Information

Post Doctorate, Harvard University, Medical School, Neurosurgery, United States Of America 2010 - 2011

Doctorate, Purdue University, College Of Engineering, Biomedical Engineering, United States Of America 2005 - 2010

Postgraduate, Ohio State University, College Of Engineering, Electrical Engineering, United States Of America 2003 - 2004

Undergraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği, Turkey 1998 - 2002

## Foreign Languages

English, C1 Advanced

## Certificates, Courses and Trainings

Quality Management, Lean 6 Sigma, Intel, 2012

## Dissertations

Doctorate, Immunomagnetic Bead Assisted Nanomechanical Biosensor, Purdue University, 2010

## Research Areas

Health Sciences, Medicine, Fundamental Medical Sciences, Microbiology and Clinical Microbiology, Immunology, Biomedical Engineering, Bioengineering and MEMS, Bioinstrumentation and Microelectromechanical Systems (MEMS), Electrical and Electronics Engineering, Electronic, Printed Circuits, Thin Film, Thick Film and Hybrid ICs, Circuit Theory, Sensing Devices and Transducers, Electronic Circuits, Nanotechnology, MEMS, Magnetic Materials and Devices, Engineering and Technology

## Academic Titles / Tasks

Associate Professor, Abdullah Gul University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2018 - Continues  
Assistant Professor, Abdullah Gul University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2014 - 2018

## Academic and Administrative Experience

### Courses

Fundamentals of Biomems, Doctorate, 2022 - 2023

### Advising Theses

İÇÖZ K., Improving Sensitivity of Biosensors By Using Micro/Nano Magnetic Particles, Postgraduate, O.Mzava(Student), 2016

### Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Improved senescent cell segmentation on bright-field microscopy images exploiting representation level contrastive learning**  
ÇELEBİ F., Boyvat D., Ayaz-Guner S., Tasdemir K., İÇÖZ K.  
International Journal of Imaging Systems and Technology, vol.34, no.2, 2024 (SCI-Expanded)
- II. **Respiration monitoring using a paper-based wearable humidity sensor, a step forward to clinical tests**  
Solak İ., Gençer S., Yıldırım B., Öznur E., HAH D., İÇÖZ K.  
Sensors and Actuators A: Physical, vol.355, 2023 (SCI-Expanded)
- III. **Simple Staining of Cells on a Chip**  
Kosker F. B., AYDIN Ö., İÇÖZ K.  
BIOSENSORS-BASEL, vol.12, no.11, 2022 (SCI-Expanded)
- IV. **Deep learning based semantic segmentation and quantification for MRD biochip images**  
ÇELEBİ F., TAŞDEMİR K., İÇÖZ K.  
BIOMEDICAL SIGNAL PROCESSING AND CONTROL, vol.77, 2022 (SCI-Expanded)
- V. **Optical detection of microplastics in water**  
Iri A. H., Shahrah M. H. A., Ali A. M., Qadri S. A., ERDEM T., ÖZDÜR İ. T., İÇÖZ K.  
ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, vol.28, no.45, pp.63860-63866, 2021 (SCI-Expanded)
- VI. **High spatial resolution IoT based air PM measurement system**  
Icoz E., Malik F. M., İÇÖZ K.  
ENVIRONMENTAL AND ECOLOGICAL STATISTICS, vol.28, no.4, pp.779-792, 2021 (SCI-Expanded)
- VII. **Tuning optical properties of self-assembled nanoparticle network with external optical excitation**  
Senel Z., İÇÖZ K., ERDEM T.  
JOURNAL OF APPLIED PHYSICS, vol.129, no.15, 2021 (SCI-Expanded)
- VIII. **Immunomagnetic separation of B type acute lymphoblastic leukemia cells from bone marrow with flow cytometry validation and microfluidic chip measurements**  
İÇÖZ K., EKEN A., Cinar S., Murat A., ÖZCAN S., ÜNAL E., Deniz G.  
SEPARATION SCIENCE AND TECHNOLOGY, vol.56, no.15, pp.2659-2666, 2021 (SCI-Expanded)
- IX. **Parameter investigation of topological data analysis for EEG signals**  
ALTINDIŞ F., YILMAZ B., Borisenok S., İÇÖZ K.  
Biomedical Signal Processing and Control, vol.63, 2021 (SCI-Expanded)
- X. **Microfluidic Chip based direct triple antibody immunoassay for monitoring patient comparative**

**response to leukemia treatment**

İÇÖZ K., Akar U., ÜNAL E.

BIOMEDICAL MICRODEVICES, vol.22, no.3, 2020 (SCI-Expanded)

- XI. **Image-analysis based readout method for biochip: Automated quantification of immunomagnetic beads, micropads and patient leukemia cell**  
Uslu F., İÇÖZ K., TAŞDEMİR K., DOĞAN R. S., YILMAZ B.  
MICRON, vol.133, 2020 (SCI-Expanded)
- XII. **Feedback controller designs for an electromagnetic micromanipulator**  
Boyuk M., Eroglu Y., Ablay G., İçöz K.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, 2019 (SCI-Expanded)
- XIII. **Design, modeling, and control of a horizontal magnetic micromanipulator**  
ABLAY G., Boyuk M., İÇÖZ K.  
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.41, no.11, pp.3190-3198, 2019 (SCI-Expanded)
- XIV. **Automated quantification of immunomagnetic beads and leukemia cells from optical microscope images**  
Uslu F., İÇÖZ K., TAŞDEMİR K., YILMAZ B.  
BIOMEDICAL SIGNAL PROCESSING AND CONTROL, vol.49, pp.473-482, 2019 (SCI-Expanded)
- XV. **Capturing B type acute lymphoblastic leukemia cells using two types of antibodies**  
İÇÖZ K., Gercek T., Murat A., ÖZCAN S., ÜNAL E.  
BIOTECHNOLOGY PROGRESS, vol.35, no.1, 2019 (SCI-Expanded)
- XVI. **Quartz-crystal Microbalance Measurements of CD19 Antibody Immobilization on Gold Surface and Capturing B Lymphoblast Cells: Effect of Surface Functionalization**  
İÇÖZ K., SOYLU M. Ç., Canikara Z., ÜNAL E.  
ELECTROANALYSIS, vol.30, no.5, pp.834-841, 2018 (SCI-Expanded)
- XVII. **Detection of Proteins Using Nano Magnetic Particle Accumulation-Based Signal Amplification**  
İÇÖZ K., MZAVA O.  
Applied Sciences-Basel, vol.6, no.12, 2016 (SCI-Expanded)
- XVIII. **Image Processing and Cell Phone Microscopy to Analyze the Immunomagnetic Beads on Micro-Contact Printed Gratings**  
İÇÖZ K.  
APPLIED SCIENCES-BASEL, vol.6, no.10, 2016 (SCI-Expanded)
- XIX. **Magnetic micro/nanoparticle flocculation-based signal amplification for biosensing**  
MZAVA O., TAS Z., İÇÖZ K.  
INTERNATIONAL JOURNAL OF NANOMEDICINE, vol.11, pp.2619-2631, 2016 (SCI-Expanded)
- XX. **Micro- and nanodevices integrated with biomolecular probes**  
Alapan Y., İÇÖZ K., Gurkan U. A.  
BIOTECHNOLOGY ADVANCES, vol.33, no.8, pp.1727-1743, 2015 (SCI-Expanded)
- XXI. **Using Students' Performance to Improve Ontologies for Intelligent E-Learning System**  
İÇÖZ K., SANALAN V. A., Cakar M. A., Özdemir E. B., Kaya S.  
EDUCATIONAL SCIENCES-THEORY & PRACTICE, vol.15, no.4, pp.1039-1049, 2015 (SSCI)
- XXII. **On-demand weighing of single dry biological particles over a 5-order-of-magnitude dynamic range**  
Chan B., İÇÖZ K., Huang W., Chang C., Savran C. A.  
LAB ON A CHIP, vol.14, no.21, pp.4188-4196, 2014 (SCI-Expanded)
- XXIII. **Selective Weighing of Individual Microparticles Using a Hybrid Micromanipulator-Nanomechanical Resonator System**  
Chan B., Icoz K., Gieseck R. L., Savran C. A.  
IEEE SENSORS JOURNAL, vol.13, no.8, pp.2857-2862, 2013 (SCI-Expanded)
- XXIV. **A Compact Manually Actuated Micromanipulator**  
Chan B., Mateen F., Chang C., Icoz K., Savran C. A.

JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.21, no.1, pp.7-9, 2012 (SCI-Expanded)

**XXV. Nanomechanical biosensing with immunomagnetic separation**

Icoz K., Savran C.

APPLIED PHYSICS LETTERS, vol.97, no.12, 2010 (SCI-Expanded)

**XXVI. Diffractometric Detection of Proteins Using Microbead-Based Rolling Circle Amplification**

Lee J., Icoz K., Roberts A., Ellington A. D., Savran C. A.

ANALYTICAL CHEMISTRY, vol.82, no.1, pp.197-202, 2010 (SCI-Expanded)

**XXVII. Noise analysis and sensitivity enhancement in immunomagnetic nanomechanical biosensors**

Icoz K., Iverson B. D., Savran C.

APPLIED PHYSICS LETTERS, vol.93, no.10, 2008 (SCI-Expanded)

## Articles Published in Other Journals

**I. Microfluidic Devices: A New Paradigm in Toxicity Studies**

BOŞGELMEZ İ. İ., İÇÖZ K., YİĞİT F. E.

Hacettepe Journal of Biology and Chemistry, vol.48, no.3, 2020 (Peer-Reviewed Journal)

**II. Improving short-term memory performance of healthy young males using alpha band neurofeedback**

Gökşin B., YILMAZ B., İÇÖZ K.

NeuroRegulation, vol.6, no.1, pp.15-22, 2019 (Scopus)

**III. Ball Lens Based Mobile Microscope**

İÇÖZ K.

JOURNAL OF POLYTECHNIC-POLİTEKNİK DERGISİ, vol.19, no.4, pp.603-610, 2016 (ESCI)

**IV. Küresel Lens Temelli Mobil Mikroskop**

İÇÖZ K.

Politeknik Dergisi, vol.19, no.4, pp.603-610, 2016 (Peer-Reviewed Journal)

## Books & Book Chapters

**I. Biyosinyal İşleme**

İÇÖZ K.

in: Biyomedikal Mühendisliğinin Temelleri, Asyalı M., Kara S., Yılmaz B., Editor, Nobel Yayın Dağıtım, Ankara, pp.253-301, 2014

## Refereed Congress / Symposium Publications in Proceedings

**I. A backstepping based contactless manipulation of a magnetic microparticle**

ABLAY G., Eroğlu Y., Büyük M., İÇÖZ K.

International Conference on Material Science and Technology (IMSTEC'19), Ankara, Turkey, 18 - 20 October 2019

**II. Geriadımlamal Yaklaşım ile Bir Manyetik Mikromanipülâtörün Kontrolü**

ABLAY G., Eroğlu Y., Büyük M., İÇÖZ K.

Otomatik Kontrol Ulusal Toplantısı, TOK2019, Turkey, 11 - 14 September 2019, pp.221-224

**III. On the Magnetic Tweezer Design and Modeling**

ABLAY G., İÇÖZ K., Büyük M., Eroğlu Y.

International Eurasian Conference on Biological and Chemical Sciences (EURASIANBIOCHEM 2019), Ankara, Turkey, 28 - 29 June 2019

**IV. Image-processing based signal readout method for MRD biochip MRD BiyoçİP İçin Görüntü İşleme Temelli Sinyal Elde Etme Metodu**

uslu F., İÇÖZ K., TAŞDEMİR K.

27th Signal Processing and Communications Applications Conference, SIU 2019, Sivas, Turkey, 24 - 26 April 2019

- V. **LOW-COST MICROFLUIDICS FOR MONITORING MINIMAL RESIDUAL DISEASE(MRD)**  
akar ü, İÇÖZ K.  
International Summit of Innovation in Medicine-4, 11 - 13 October 2018, pp.43-46
- VI. **Active control of magnetic particles with a horizontal magnetic tweezer**  
ABLAY G., BÖYÜK M., Eroğlu Y., İÇÖZ K.  
International Mediterranean Science and Engineering Congress (IMSEC 2018), Adana, Turkey, 24 - 26 October 2018
- VII. **MEASUREMENT OF THE IMPACT OF ADP ON BLOOD COAGULATION USING PAPER BASED BIOSENSORS**  
GERÇEK T., İÇÖZ K.  
3rd International Energy and Engineering Congress, Gaziantep, Turkey, 18 - 19 October 2018, pp.28-32
- VIII. **A horizontal magnetic tweezer for single molecule micromanipulations**  
ABLAY G., BÖYÜK M., Eroğlu Y., İÇÖZ K.  
International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT 2018), Ankara, Turkey, 19 - 21 October 2018
- IX. **Use of Topological Data Analysis in Motor Intention Based Brain-Computer Interfaces**  
ALTINDIŞ F., YILMAZ B., BORISENOK S., İÇÖZ K.  
European Signal Processing Conference (EUSIPCO), Rome, Italy, 3 - 07 August 2018, pp.1695-1699
- X. **Micromanipulation based on electromagnetic actuators**  
ABLAY G., İÇÖZ K., BÖYÜK M.  
International Scientific and Vocational Studies Congress (BILMES2018), Nevşehir, Turkey, 5 - 08 July 2018
- XI. **The Impact of Protein G Layer on 11-Mercaptoundecanoic Acid Coated Gold Surface for Antibody Immobilization**  
İÇÖZ K., SOYLU M. Ç.  
International Congress on Engineering and Life Science, 26 - 29 April 2018
- XII. **Electromagnetic Micromanipulator Designs for Biological Species**  
BÖYÜK M., İÇÖZ K., ABLAY G.  
International Eurasian Conference on Biological and Chemical Sciences (EURASIANBIOCHEM 2018), Ankara, Turkey, 16 - 20 April 2018, pp.156-162
- XIII. **Design of Magnetic Tweezers for Single Molecule Manipulation**  
CANLILAR M. A., SELİM F. T., PAYAS A., BÖYÜK M., İÇÖZ K., ABLAY G.  
International Conference on Materials Science Mechanical and Automation Engineering and Technology (IMSMATEC 2018), İzmir, Turkey, 10 - 12 April 2018, pp.1-5
- XIV. **Design of a magnetic actuator based microsensor system**  
ABLAY G., İÇÖZ K.  
International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017
- XV. **Design of magnetic actuator based microsensor system**  
ABLAY G., İÇÖZ K.  
2nd International Mediterranean Science and Engineering Congress, 25 - 27 October 2017
- XVI. **Capturing Leukemia Cells Using Two Different Antibodies**  
gerçek t., İÇÖZ K.  
2nd International Mediterranean Science and Engineering Congress, 25 - 27 October 2017
- XVII. **Nickel Micro Pads and Columns For Trapping Immunomagnetic Beads and Captured Leukemia Cells**  
böyük m., Hassan M., ABLAY G., İÇÖZ K.  
2nd International Conference on Material Science and Technology in Cappadocia, 11 - 13 October 2017
- XVIII. **Nickel micro pads and columns for trapping immunomagnetic beads and captured leukemia cells**  
BÖYÜK M., HASAN M., ABLAY G., İÇÖZ K.  
2nd International Conference on Material Science and Technology in Cappadocia (IMSTEC 2017), Nevşehir, Turkey, 10 - 11 October 2017
- XIX. **Immunomagnetic capture efficiency of leukemia cells**

İÇÖZ K.

22nd International Biomedical Science and Technology Symposium, 12 - 14 May 2017

**XX. MRD Biochip**

İÇÖZ K.

Select Biosciences BioMEMS and Microfluidics: Technologies and Applications Conference, Boston, United States Of America, 16 - 17 March 2017

**XXI. Cultivation-Free Bacteria Detection from Water Samples**

İÇÖZ K.

2nd International Water and Health Congress, 14 - 17 February 2017

**XXII. Immobilization of Tumor Cells on Micro Pads for Image Based Quantification**

İÇÖZ K.

Istanbul International Conference On Progress in Applied Science, 4 - 06 January 2017

**XXIII. IMMOBILIZATION OF TUMOR CELLS ON MICRO PADS FOR IMAGE BASED QUANTIFICATION**

İÇÖZ K.

1th International Conference on Progress in Applied Science, İstanbul, Turkey, 4 - 06 January 2017, pp.327-328

**XXIV. Cell Phone Microscopy + Image Processing: Low Cost Readout Method for BioMEMS**

İÇÖZ K.

3rd International Congress on Biosensors, Ankara, Turkey, 5 - 07 October 2016, pp.35

**XXV. Micro/Nano Magnetic Particle Accumulation on Micro Contact-Printed Gratings**

İÇÖZ K.

12th International Nanoscience and Nanotechnology Conference, Kocaeli, Turkey, 3 - 05 June 2016, pp.70

**XXVI. Magnetic-particle based signal amplification method integrated with mobile-devices for low cost biosensing**

Mzava O., Tas Z., Lafci V. C., Cakar M. A., Ozdur I., İÇÖZ K.

26th Anniversary World Congress on Biosensors (Biosensors), Gothenburg, Sweden, 25 - 27 May 2016, vol.27, pp.14-15

**XXVII. Point-of-Care Screening for Sickle Cell Disease By a Mobile Micro-Electrophoresis Platform**

Ung R., Alapan Y., Hasan M. N., Romelfanger M., He P., Tam A., Rosanwo T., Akkus A., ÇAKAR M. A., İÇÖZ K., et al.

57th Annual Meeting of the American-Society-of-Hematology, Florida, United States Of America, 5 - 08 December 2015, vol.126

**XXVIII. AN ONTOLOGY EDITOR: CREATING CONCEPT MAPS FOR SEMANTIC WEB BASED E-LEARNING SYSTEMS**

Icoz K., ÇAKAR M. A., YİĞİT T., Egi S.

8th International Technology, Education and Development Conference (INTED), Valencia, Spain, 10 - 12 March 2014, pp.7505-7509

## Supported Projects

İçöz K., Yılmaz B., TUBITAK Project, MRD Biyoçip: Minimal Rezidüel Hastalığın Basit ve Güvenilir bir yolla izlenmesi, 2015 - 2020

İÇÖZ K., Project Supported by Higher Education Institutions, Manyetik Parçacıkların kullanıldığı biyosensörlerde mikronano demir parçacıklar kullanarak işaret artırma ve mobil cihazlardan algılama sisteminin geliştirilmesi, 2015 - 2017

YILMAZ B., İÇÖZ K., BORISENOK S., ERKUTLU İ., Project Supported by Higher Education Institutions, Motor niyet dalgaları tabanlı ihtiyaç iletim sistemi tasarımı, 2015 - 2017

İÇÖZ K., TUBITAK Project, Manyetik Parçacıkların Kullanıldığı Biyosensörlerde Mikro/Nano Demir Parçacıklar Kullanarak İşaret Arttırma Ve Hassasiyeti Geliştirme, 2014 - 2017

İÇÖZ K., TUBITAK Project, E-öğrenme portalı için akıllı sistem tasarımı, 2013 - 2016

## **Metrics**

Publication: 62

Citation (WoS): 247

Citation (Scopus): 264

H-Index (WoS): 9

H-Index (Scopus): 10

## **Congress and Symposium Activities**

Electrochemical nucleic acid based biosensors/microfluidic devices for healthcare applications, Attendee, United Kingdom, 2016

## **Non Academic Experience**

Business Organization (private), Intel Corp., Metrology And Inspection Systems