

## Assoc. Prof. TUNAY TANSEL

### Personal Information

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### International Researcher IDs

ORCID: 0000-0001-8144-3951

Publons / Web Of Science ResearcherID: E-9546-2018

Yoksis Researcher ID: 105253

### Education Information

Doctorate, Christian-Albrechts-Universitaet zu Kiel, Fiziko-Kimya / Düzey Bilim, Fizik, Germany 2002 - 2006

Postgraduate, Johann Wolfgang Goethe-Universitaet Frankfurt am Main, Nükleer Fizik, Fizik, Germany 1996 - 1999

Undergraduate, Johann Wolfgang Goethe-Universitaet Frankfurt am Main, Fizik Bölümü, Fizik, Germany 1991 - 1995

### Foreign Languages

German, C1 Advanced

English, B2 Upper Intermediate

### Dissertations

Doctorate, Elektrolitler ve Elektrotlar arasındaki elektrokimyasal arayüzeydeki adsorbat difüzyon Video-STM

Araştırmaları, Christian-Albrechts-Universitaet Zu Kiel, Fizik, 2006

Postgraduate, H<sup>+</sup>/He<sup>+</sup> transmisyon iyon kanalize ve RBS metodu ile ultra-ince kristal Silikon, Johann Wolfgang Goethe-Universitaet Frankfurt Am Main, Fizik, 1999

### Research Areas

Physics, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Optical Properties, Spectroscopy of Matter, Natural Sciences

### Academic Titles / Tasks

Associate Professor, Hacettepe University, Nükleer Bilimler Enstitüsü, 2018 - Continues

Assistant Professor, Hacettepe University, Nükleer Bilimler Enstitüsü, 2013 - 2018

## Academic and Administrative Experience

Hacettepe Üniversitesi, Nükleer Bilimler Enstitüsü, Fotonik Anabilim Dalı (Disiplinlerarası), 2016 - Continues  
Hacettepe Üniversitesi, Nükleer Bilimler Enstitüsü, Fotonik Anabilim Dalı (Disiplinlerarası), 2013 - Continues

## Courses

OPTİK VE NANOELEKTRONİK, Doctorate, 2021 - 2022

THE EFFECTS OF RADIOLOGICAL AND NUCLEAR THREATS AND , Postgraduate, 2021 - 2022

Yüzey Biliminden Nanoyapılara, Undergraduate, 2017 - 2018, 2016 - 2017

FROM SURFACE SCIENCE TO NANOTECHNOLOGY, Doctorate, 2016 - 2017

## Advising Theses

TANSEL T., Aşırı selenyum katkılı siyah silisyum görünür ve kızılötesi dedektörlerin üretimi ve karakterizasyonu, Postgraduate, O.AYDIN(Student), 2017

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

- I. **Long infrared detector based on Se-hyperdoped black silicon**  
TANSEL T., Aydın O.  
JOURNAL OF PHYSICS D-APPLIED PHYSICS, no.29, 2024 (SCI-Expanded)
- II. **Novel injectable calcium-magnesium phosphate cement-based composites with piezoelectric properties: advancements in bone regeneration applications**  
Sakar N., ZİYLAN A., Karakaya M., Adem U., TANSEL T.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, no.15, 2024 (SCI-Expanded)
- III. **A facile photolithography process enabling pinhole-free thin film photovoltaic modules on soda-lime glass**  
Kartopu G., Oklobia O., TANSEL T., Jones S., Irvine S.  
Solar Energy Materials and Solar Cells, vol.251, 2023 (SCI-Expanded)
- IV. **Effect of electric field assisted crystallisation of PVDF-TrFE and their functional properties**  
Tansel T.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.332, 2021 (SCI-Expanded)
- V. **High beta-phase processing of polyvinylidene fluoride for pyroelectric applications**  
Tansel T.  
JOURNAL OF POLYMER RESEARCH, vol.27, no.4, 2020 (SCI-Expanded)
- VI. **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)
- VII. **The investigation of quantum efficiency constituents of InAs/AlSb/GaSb based N structure type-II SL photodetectors with InAlAs interface**  
Kilic A., TANSEL T., Hostut M., Elagoz S., Ergun Y.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.33, no.9, 2018 (SCI-Expanded)
- VIII. **Large hh-lh splitting energy for InAs/AlSb/GaSb based N-structure photodetectors**  
Akel K., Hostut M., TANSEL T., Ergun Y.  
JOURNAL OF APPLIED PHYSICS, vol.123, no.2, 2018 (SCI-Expanded)
- IX. **Electrical and optical performances with extracted minority carrier lifetimes of InAs/GaSb SL photodetector operating in the mid wavelength infrared range**  
TANSEL T., Hostut M., Ergun Y.

- SUPERLATTICES AND MICROSTRUCTURES, vol.111, pp.1211-1216, 2017 (SCI-Expanded)
- X. **Electrical performance of InAs/AlSb/GaSb superlattice photodetectors**  
TANSEL T., Hostut M., Elagoz S., Kilic A., Ergun Y., Aydinli A.  
SUPERLATTICES AND MICROSTRUCTURES, vol.91, pp.1-7, 2016 (SCI-Expanded)
- XI. **N-structure based on InAs/AlSb/GaSb superlattice photodetectors**  
HOŞTUT M., Alyoruk M., TANSEL T., Kilic A., TURAN R., Aydinli A., Ergun Y.  
SUPERLATTICES AND MICROSTRUCTURES, vol.79, pp.116-122, 2015 (SCI-Expanded)
- XII. **Surface recombination noise in InAs/GaSb superlattice photodiodes**  
Tansel T., Kutluer K., Muti A., Salihoglu Ö., Aydinli A., TURAN R.  
Applied Physics Express, vol.6, no.3, 2013 (SCI-Expanded)
- XIII. **N structure for type-II superlattice photodetectors**  
Salihoglu O., Muti A., Kutluer K., Tansel T., TURAN R., Ergun Y., Aydinli A.  
Applied Physics Letters, vol.101, no.7, 2012 (SCI-Expanded)
- XIV. **Quantitative measurements of adsorbate-adsorbate interactions at solid-liquid interfaces**  
Taranovskyy A., Tansel T., Magnussen O.  
Physical Review Letters, vol.104, no.10, 2010 (SCI-Expanded)
- XV. **In situ video-STM studies of adsorbate dynamics at electrochemical interfaces**  
Tansel T., Taranovskyy A., Magnussen O. M.  
ChemPhysChem, vol.11, no.7, pp.1438-1445, 2010 (SCI-Expanded)
- XVI. **Video STM studies of adsorbate diffusion at electrochemical interfaces**  
Tansel T., Magnussen O.  
Physical Review Letters, vol.96, no.2, 2006 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Video STM Studies of Adsorbate Dynamics at Electrochemical Interfaces**  
TANSEL T., Koji S., Magnussen O.  
Meet, Abstr.-Electrochem. Soc, 2005 (Non Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Black Silicon Based Infrared Detector**  
TANSEL T., TURAN R.  
ISIF'xx20 / 5. Uluslararası Buluş Fuarı, 17 - 25 September 2019
- II. **All Laser Scribed Monolithic CdTe Solar PV Mini-Modules Grown by MOCVD**  
Kartopu G., TANSEL T.  
8 th International Advance in Applied Physics and Material Science Congress co Exhibition, 24 April - 30 December 2018
- III. **Wave function characteristics obtained by atomistic approach for superlattice photodetectors in the SWIR**  
Akel K., HOŞTUT M., TANSEL T., KILIÇ A., ERGÜN Y.  
BIT'xxs 8th Annual Congress of Nano Science and Technology-2018, Potsdam, Germany, 24 - 26 October 2018
- IV. **Band Profile Investigation for InAs/GaSb and InAs/AlSb/GaSb N-structure Photodetectors using SL Empirical Pseudopotential Method**  
ERGÜN Y., Akel K., TANSEL T., HOŞTUT M.  
9TH INTERNATIONAL CONFERENCE ON NANOMATERIALS - RESEARCH APPLICATION, 18 - 20 October 2017
- V. **Band profile investigation for InAs/AlSb/GaSb N-Structure**  
ERGÜN Y., TANSEL T., HOŞTUT M., akel k.  
Nanocon 2017 Brno Çek republic, 18 - 21 October 2017

- VI. **Band Profile Investigation For InAs/GaSb and InAs/AlSb/GaSb Structure Using SL Empirical Pseudopotential Method**  
 ERGÜN Y., TANSEL T., HOŞTUT M., AKEL K.  
 ÇUKUROVA UNIVERSITY INTERNATIONAL CONFERENCE ON CONDENSED MATTER AND MATERIALS SCIENCE 2017  
 11-15 October, Adana / TURKEY <http://iccm17.cu.edu.tr>, 11 - 15 October 2017
- VII. **COMPARISON OF THE PYROELECTRIC COEFFICIENTS OF PVDF-TRFE POLYMER AFTER CORONA POLING BY NEEDLE, WIRE AND MULTI-WIRE GEOMETRIES**  
 RÜŞEN A., TANSEL T., ENER RÜŞEN S.  
 2nd International Conference on Material Science and Technology in Cappadocia (IMSTEC'17), 11 - 13 October 2017, vol.1, pp.324
- VIII. **COMPARISON OF THE PYROELECTRIC COEFFICIENTS OF PVDF-TRFE POLYMER AFTER CORONA POLING BY NEEDLE, WIRE AND MULTI-WIRE GEOMETRIES**  
 RÜŞEN A., TANSEL T., ENER RÜŞEN S.  
 2nd International Conference on Material Science and Technology in Cappadocia (IMSfEC'xx7), Nevşehir, Turkey, 11 - 13 October 2017, vol.1, pp.324
- IX. **Pseudo Potential Calculation of N Structure Type II Superlattice**  
 ERGÜN Y., HOŞTUT M., KILIÇ A., SALIHOĞLU O., TANSEL T., KALEN K.  
 8th International Conference on Nanomaterials - Research & Application October 19th - 21st 2016 / Hotel Voronez I, Brno, Czech Republic, EU, 19 - 21 October 2016
- X. **Low Cost Infrared Photodiodes Based On Chalcogen Hyperdoped Black Silicon SATF 2016 accepted proceeding**  
 TANSEL T., AYDIN O., UTKU H.  
 Conference: Science & Applications on Thin Films (SATF) 2016, At İzmir, Turkey, 19 - 22 September 2016
- XI. **Gibbs Free Energy Assisted Passivation Layers**  
 SALIHOĞLU O., TANSEL T., HOŞTUT M., ERGÜN Y., AYDINLI A.  
 42 Conference on Infrared Technology and Applications XLII, Massachusetts, United States Of America, 18 - 21 April 2016, vol.9819
- XII. **ELECTRICAL PERFORMANCE OF INAS ALSB GASB SUPERLATTICE PHOTODETECTOR**  
 HOŞTUT M., TANSEL T., ERGÜN Y., KILIÇ A., AYDINLI A.  
 7TH INTERNATIONAL CONFERENCE ON NANOMATERIALS - RESEARCH & APPLICATION, 14 - 16 October 2015
- XIII. **Electrical Performance of N Structure T2SL Photodetectors**  
 HOŞTUT M., ERGÜN Y., ELAĞÖZ S., KILIÇ A., TANSEL T., AYDINLI A.  
 AITA 2015 - Advanced Infrared Technology and Applications, PISA, ITALY, Pisa, Italy, 29 September - 02 October 2015
- XIV. **Mid Wave Type II InAs GaSb superlattice photodetectors**  
 ÖMER S., ABDULLAH M., KILIÇ A., HOŞTUT M., TANSEL T., ERGÜN Y., TURAN R., AYDINLI A.  
 11th Nanoscience and Nanotechnology Conference (NanoTR-11) Ankara, Turkey. 22 -25 June, 2015., 22 - 25 June 2015
- XV. **N Structure Superlattice MWIR Photodetectors**  
 ERGÜN Y., HOŞTUT M., TANSEL T., KILIÇ A., AYDINLI A., ELAĞÖZ S.  
 Microelectronics Technology, Circuits, and Systems for Space Applications Workshop, İSTANBUL, TÜRKİYE, 15-17 Haziran 2015, 15 - 17 June 2015, vol.11
- XVI. **Atomic Layer Passivation of Type II InAs GaSb superlattice photodetectors**  
 ERGÜN Y., HOŞTUT M., TANSEL T., KILIÇ A., AYDINLI A., ELAĞÖZ S.  
 Microelectronics Technology, Circuits, and Systems for Space Applications Workshop, İSTANBUL, TÜRKİYE, 15-17 Haziran 2015, 15 - 17 June 2015, vol.11
- XVII. **Wave function overlap comparison between symmetric InAs GaSb and asymmetric InAs AlSb GaSb type II superlattice photodetectors**  
 ERGÜN Y., HOŞTUT M., TANSEL T., KILIÇ A., AYDINLI A., ELAĞÖZ S.  
 Microelectronics Technology, Circuits, and Systems for Space Applications Workshop, İSTANBUL, TÜRKİYE, 15-17 Haziran 2015, 15 - 17 June 2015, vol.11

- XVIII. **ELECTRICAL AND OPTICAL PERFORMANCE OF INAS / ALSB / GASB SUPERLATTICE PHOTODETECTOR**  
HOŞTUT M., TANSEL T., ERGÜN Y., KILIÇ A., AYDINLI A.  
7th International Conference on Nanomaterials - Research and Application, Brno, Czech Republic, 14 - 16 October 2015, pp.255-259
- XIX. **High quantum efficiency Type II superlattice N structure photodetectors with thin intrinsic layers**  
ERGÜN Y., HOŞTUT M., TANSEL T., KILIÇ A., Muti A., TURAN R., AYDINLI A.  
Proc. SPIE, Infrared Technology and Applications XXXIX, edited, Baltimore, Maryland, USA, 29 April - 01 May 2013
- XX. **Passivation of type II InAs GaSb superlattice photodetectors with atomic layer deposited Al<sub>2</sub>O<sub>3</sub>**  
Salihoglu O., Muti A., Kutluer K., TANSEL T., Coskun K., TURAN R., AYDINLI A.  
Proc. SPIE, Infrared Technology and Applications, Baltimore, Maryland, United States Of America, 29 April - 03 May 2013
- XXI. **Low frequency noise behavior at Reverse Bias Region in InAs GaSb Superlattice Photodiodes on Mid Wave Infrared**  
TANSEL T., Kutluer K., Muti A., Ömer S., AYDINLI A., TURAN R.  
Proc. SPIE 8704, Infrared Technology and Applications XXXIX, 87040Y, Baltimore, Maryland, USA, United States Of America, 29 April - 01 May 2013
- XXII. **Video STM studies of adsorbate dynamics at electrochemical interfaces**  
OLAF M., TANSEL T., Koji S., Roccaro P.  
207th ECS Meeting, Abstract #1527, copyright ECS, Quebec City, Canada, 15 - 20 May 2005

## Supported Projects

TANSEL T., Project Supported by Higher Education Institutions, Geniş bant Kızılötesi Fotodetektörün lazer yardımı ile doğrudan Mesa Yapımı ve iletken metal kontak uygulaması, 2016 - 2017

TANSEL T., Project Supported by Higher Education Institutions, Siyah Silisyum tabanlı Fotoalgılayıcı Sistemlerinin Geliştirilmesi, 2016 - 2017

TANSEL T., Project Supported by Higher Education Institutions, Kalkojen Grubu Elementlerle Katkılanmış Silisyum Tabanlı Kızılötesi Algılayıcılar, 2013 - 2017

## Scientific Refereeing

TUBITAK Project, 1007 - Public Institutions Research and Development Projects DP, Hacettepe University, Turkey, January 2020

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Hacettepe University, Turkey, November 2018

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Hacettepe University, Turkey, November 2018

## Metrics

Publication: 39

Citation (WoS): 50

Citation (Scopus): 222

H-Index (WoS): 5

H-Index (Scopus): 7

## Non Academic Experience

Orta-Dođu-Teknik Üniversite

Ugulamalý Bilimler Ünversitesi,Kiel /almanya

Christan-Albrecht-Üniversitesi, Kiel/almanya

Heraeus Quarzglas GmbH&Co KG-Şirket, Hanau/Almanya