

## Prof. HAKAN ALTAN

### Personal Information

**Email:** haltan@metu.edu.tr

**Web:** <https://users.metu.edu.tr/haltan/index.htm>

### International Researcher IDs

ScholarID: vv3OAYEAAAAJ

ORCID: 0000-0002-2456-8827

Publons / Web Of Science ResearcherID: AAB-9726-2019

ScopusID: 7801441454

Yoksis Researcher ID: 167841

### Education Information

Doctorate, New Jersey Institute of Technology, Uygulamalı Fizik, United States Of America 2000 - 2005

Undergraduate Double Major, State University of New York State University at Stony Brook, Fizik Ve Astronomi, United States Of America 1994 - 1998

### Foreign Languages

English, C2 Mastery

### Research Areas

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

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2017 - Continues

Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2011 - 2017

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2009 - 2011

Lecturer PhD, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2007 - 2009

### Advising Theses

ALTAN H., Biological applications of terahertz time-domain attenuated total reflection spectroscopy, Postgraduate, M.GELGEÇ(Student), 2022

Altan H., TIME DOMAIN TERAHERTZ ATTENUATED TOTAL INTERNAL REFLECTION SPECTROSCOPY, Postgraduate, A.ATALAR(Student), 2021

ALTAN H., Novel methods in modulation and detection of terahertz waves for imaging applications, Doctorate, T.TAKAN(Student), 2018

ALTAN H., Characterization of conductive properties of thin films in terahertz region, Postgraduate, M.AKKAYA(Student),

2017

ALTAN H., Characterization of conductive properties of thin films in terahertz region, Postgraduate, M.Akkaya(Student), 2017

ALTAN H., Terahertz time-domain spectroscopy and its application towards measurements in biology, Postgraduate, Z.ÖZER(Student), 2016

ALTAN H., Terahertz(>0.3THz) active imaging systems, Postgraduate, F.İDİKUT(Student), 2016

ALTAN H., Pulsed three dimensional THz imaging, Postgraduate, B.KARAGÖZ(Student), 2016

ALTAN H., Design and characterization of metamaterials for Terahertz region, Postgraduate, M.ALİ(Student), 2016

ALTAN H., Image reconstruction based on active scan techniques in the terahertz frequency range, Postgraduate, V.ALİ(Student), 2014

ALTAN H., Development of a picosecond pulsed mode-locked fiber laser, Postgraduate, M.EMRE(Student), 2013

ALTAN H., Fiber-integrated terahertz spectrometer driven by ultrafast ytterbium doped fiber laser, Postgraduate, H.KESKİN(Student), 2013

ESENTÜRK O., ALTAN H., Dielectric properties of fuel oils and their ethanol mixtures investigated by terahertz time-domain spectroscopy, Postgraduate, E.ARIK(Student), 2013

OKUTUCU ÖZYURT H. T., ALTAN H., Experimental investigation of nanofluids using terahertz time domain spectroscopy (THz TDS), Postgraduate, C.KORAL(Student), 2012

ALTAN H., Development of a pulsed fiber laser for lidar system, Postgraduate, E.DÜLGERGİL(Student), 2012

ALTAN H., Design and analysis of an open loop fiber-optic gyroscope, Postgraduate, M.ÖZDEMİR(Student), 2012

ALTAN H., Imaging of metal surfaces using confocal laser scanning microscopy, Postgraduate, B.CAN(Student), 2011

ALTAN H., Imaging solar cells using terahertz waves, Postgraduate, S.KAYRA(Student), 2011

ALTAN H., Applications in broadband THz spectroscopy towards material studies, Postgraduate, Z.TÜRKŞEN(Student), 2011

ALTAN H., Material characterization with terahertz time-domain spectroscopy, Doctorate, D.KÖSEOĞLU(Student), 2010

ALTAN H., Investigation of DC generated plasmas using Terahertz time domain spectroscopy, Postgraduate, G.KARAOĞLAN(Student), 2010

ALTAN H., Development of a compact time-domain terahertz spectrometer using photoconductive antenna detection method, Postgraduate, Ü.ERÖZBEK(Student), 2009

ALTAN H., Fundamentals of a metal surface imaging system based on laser-optic principles, Postgraduate, M.BEKTAŞ(Student), 2009

ALTAN H., Development of compact terahertz time-domain terahertz spectrometer using electro-optic detection method, Postgraduate, M.MELİZ(Student), 2009

ALTAN H., Timing issues in a terawatt laser system, Postgraduate, R.PINAR(Student), 2008

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

- I. **VO<sub>2</sub>-Based Dynamic Coding Metamaterials for Terahertz Wavefront Engineering**  
Akyurek B., Noori A., Demirhan Y., Ozyuzer L., Guven K., ALTAN H., Aygun G.  
JOURNAL OF INFRARED MILLIMETER AND TERAHERTZ WAVES, vol.46, no.1, 2025 (SCI-Expanded)
- II. **Development of Polarization-Insensitive THz-to-IR Converters for Low-IR-Signature Target Detection and Imaging**  
Aytaç B., ŞAHİN A. B., ALTAN H.  
Sensors, vol.24, no.17, 2024 (SCI-Expanded)
- III. **Investigation of resonant properties of metamaterial THz filters fabricated from vanadium dioxide thin films**  
Zeyrek S., Demirhan Y., Noori A., Tugay H., Altan H., Sabah C., Aygün Özyüzer G., Özyüzer L.  
MODERN PHYSICS LETTERS B, vol.38, no.11, pp.2450056-2450071, 2024 (SCI-Expanded)
- IV. **Investigation of resonant properties of metamaterial THz filters fabricated from vanadium dioxide thin films**  
Zeybek S., Demirhan Y., Noori A., Tugay H., Altan H., Sabah C., Aygun G., Ozyuzer L.

MODERN PHYSICS LETTERS B, vol.38, no.11, 2024 (SCI-Expanded)

- V. **Terahertz wavefront engineering using a hard-coded metasurface**  
Noori A., Akyurek B., Demirhan Y., Ozyuzer L., Guven K., Altan H., Aygun G.  
Optical and Quantum Electronics, vol.55, no.8, 2023 (SCI-Expanded)
- VI. **Performance of an Active THz Imaging System for Recognition of Concealed Faces**  
Yıldırım İ. O., Altan H., Şahin A. B.  
Journal of Infrared, Millimeter, and Terahertz Waves, vol.44, no.5-6, pp.365-378, 2023 (SCI-Expanded)
- VII. **The sub-terahertz region absorption of sputter deposited nanoscale TiAlV thin films**  
Öksüzöğlü R. M., ALTAN H., Abdüsselamoğlu M. S., Özkan Ö. B., Bayram Y., Chakar E. S.  
Optical Materials, vol.135, 2023 (SCI-Expanded)
- VIII. **Response of a Glow Discharge Detector to Far Infrared Radiation**  
Kusoglu-Sarikaya C., Akbar D., ALTAN H.  
IEEE TRANSACTIONS ON PLASMA SCIENCE, vol.50, no.12, pp.5023-5030, 2022 (SCI-Expanded)
- IX. **1030 nm All-Fiber Closed-Loop Fiber Optic Gyroscope with High Sensitivity**  
Keskin H., Vural H. A., Altinoz B., Bektik U., Altan H.  
JOURNAL OF SENSORS, vol.2022, 2022 (SCI-Expanded)
- X. **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)
- XI. **Time-Domain Characterization of the Radiation Pattern of the Terahertz Photoconductive Antennas**  
Elmabruk K., Demir K., ALTAN H., Sahin A. B., ÜNLÜ M.  
JOURNAL OF INFRARED MILLIMETER AND TERAHERTZ WAVES, vol.40, no.6, pp.595-605, 2019 (SCI-Expanded)
- XII. **Robust, Sensitive, and Inexpensive 2D Focal Plane Array Upconverting MMW Imaging Into the Visible**  
Rozban D., Aharon A., Kahana L., Abramovich A., Yitzhaky Y., ALTAN H., Kopeika N. S.  
IEEE PHOTONICS TECHNOLOGY LETTERS, vol.31, no.10, pp.747-750, 2019 (SCI-Expanded)
- XIII. **An ex vivo comparative study of occlusal and proximal caries using terahertz and X-ray imaging**  
Kamburoglu K., KARAGÖZ B., ALTAN H., Ozen D.  
DENTOMAXILLOFACIAL RADIOLOGY, vol.48, no.2, 2019 (SCI-Expanded)
- XIV. **Cross-like terahertz metamaterial absorber for sensing applications**  
SABAH C., MULLA B., ALTAN H., Ozyuzer L.  
PRAMANA-JOURNAL OF PHYSICS, vol.91, no.2, 2018 (SCI-Expanded)
- XV. **Stand-Off Through-the-Wall W-Band Millimeter-Wave Imaging Using Compressive Sensing**  
ALKUS U., Sahin A. B., ALTAN H.  
IEEE GEOSCIENCE AND REMOTE SENSING LETTERS, vol.15, no.7, pp.1025-1029, 2018 (SCI-Expanded)
- XVI. **Multilayer Graphene Broadband Terahertz Modulators with Flexible Substrate**  
KAYA E., Kakenov N., ALTAN H., Kocabas C., ESENTÜRK O.  
JOURNAL OF INFRARED MILLIMETER AND TERAHERTZ WAVES, vol.39, no.5, pp.483-491, 2018 (SCI-Expanded)
- XVII. **Enhancing the image resolution in a single-pixel sub-THz imaging system based on compressed sensing**  
ALKUS U., ERMEYDAN E. S., Şahin A. B., CANKAYA I., ALTAN H.  
OPTICAL ENGINEERING, vol.57, no.4, 2018 (SCI-Expanded)
- XVIII. **Thermally and optically tunable sub-terahertz superconducting fishnet metamaterial**  
SABAH C., MULLA B., ALTAN H., Ozyuzer L.  
PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS, vol.544, pp.46-53, 2018 (SCI-Expanded)
- XIX. **Terahertz Bandpass Frequency Selective Surfaces on Glass Substrates Using a Wet Micromachining Process**  
Ramzan M., Khan T. M., Bolat S., NEBİOĞLU M. A., ALTAN H., Okyay A. K., Topalli K.  
JOURNAL OF INFRARED MILLIMETER AND TERAHERTZ WAVES, vol.38, no.8, pp.945-957, 2017 (SCI-Expanded)
- XX. **Fourcross shaped metamaterial filters fabricated from high temperature superconducting YBCO and Au thin films for terahertz waves**  
Demirhan Y., Alaboz H., Nebioglu M. A., Mulla B., AKKAYA M., ALTAN H., SABAH C., Ozyuzer L.

- SUPERCONDUCTOR SCIENCE & TECHNOLOGY, vol.30, no.7, 2017 (SCI-Expanded)
- XXI. **Single- and double-sided sensor applications of metamaterials based on square-ring and diamond resonators for terahertz region**  
SHAWKY N., Taha S. A. A., ALTAN H., SABAH C.  
MODERN PHYSICS LETTERS B, vol.31, no.8, 2017 (SCI-Expanded)
- XXII. **An indium tin oxide metasurface filter for terahertz applications: Design, fabrication, and characterization**  
NEBİOĞLU M. A., Takan T., ALTAN H., Demirhan Y., Alaboz H., Ozyuzer L., SABAH C.  
MODERN PHYSICS LETTERS B, vol.31, no.8, 2017 (SCI-Expanded)
- XXIII. **Terahertz Propagation in Tissues and Its Thickness Limitation**  
KARAGÖZ B., ALTAN H.  
DEEP IMAGING IN TISSUE AND BIOMEDICAL MATERIALS: USING LINEAR AND NONLINEAR OPTICAL METHODS, pp.377-411, 2017 (SCI-Expanded)
- XXIV. **Observation of Gate-Tunable Coherent Perfect Absorption of Terahertz Radiation in Graphene**  
Kakenov N., Balci O., Takan T., ÖZKAN V. A., Akan H., KOCABAŞ C.  
ACS PHOTONICS, vol.3, no.9, pp.1531-1535, 2016 (SCI-Expanded)
- XXV. **Characterization of a terahertz wave scanned imaging system for threat detection at standoff distances**  
YILDIRIM İ. S., ÖZKAN V. A., Idikut F., Takan T., ŞAHİN A. B., ALTAN H.  
OPTICAL AND QUANTUM ELECTRONICS, vol.48, no.7, 2016 (SCI-Expanded)
- XXVI. **Terahertz Time-Domain Study of Silver Nanoparticles Synthesized by Laser Ablation in Organic Liquid**  
Koral C., ORTAÇ B., ALTAN H.  
IEEE TRANSACTIONS ON TERAHERTZ SCIENCE AND TECHNOLOGY, vol.6, no.4, pp.525-531, 2016 (SCI-Expanded)
- XXVII. **Detection of far-infrared radiation using glow discharge detectors**  
Takan T., ALASGARZADE N., Uzun-Kaymak I. U., Sahin A. B., ALTAN H.  
OPTICAL AND QUANTUM ELECTRONICS, vol.48, no.5, 2016 (SCI-Expanded)
- XXVIII. **Metal mesh filters based on Ti, ITO and Cu thin films for terahertz waves**  
Demirhan Y., Alaboz H., ÖZYÜZER L., Nebioglu M. A., Takan T., ALTAN H., Sabah C.  
OPTICAL AND QUANTUM ELECTRONICS, vol.48, no.2, 2016 (SCI-Expanded)
- XXIX. **Broadband terahertz modulators using self-gated graphene capacitors**  
Kakenov N., Balci O., Polat E. O., ALTAN H., KOCABAŞ C.  
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS, vol.32, no.9, pp.1861-1866, 2015 (SCI-Expanded)
- XXX. **Graphene-enabled electrically controlled terahertz spatial light modulators**  
Kakenov N., Takan T., ÖZKAN V. A., Balci O., Polat E. O., ALTAN H., KOCABAŞ C.  
OPTICS LETTERS, vol.40, no.9, pp.1984-1987, 2015 (SCI-Expanded)
- XXXI. **Low-cost bandpass filter for terahertz applications**  
Takan T., Keskin H., ALTAN H.  
OPTICAL AND QUANTUM ELECTRONICS, vol.47, no.4, pp.953-960, 2015 (SCI-Expanded)
- XXXII. **Dielectric Properties of Diesel and Gasoline by Terahertz Spectroscopy**  
ARIK E., ALTAN H., ESENTÜRK O.  
JOURNAL OF INFRARED MILLIMETER AND TERAHERTZ WAVES, vol.35, no.9, pp.759-769, 2014 (SCI-Expanded)
- XXXIII. **Characterization of primary and permanent teeth using terahertz spectroscopy**  
KAMBUROĞLU K., Yetimoglu N. O., ALTAN H.  
DENTOMAXILLOFACIAL RADIOLOGY, vol.43, no.6, 2014 (SCI-Expanded)
- XXXIV. **Dielectric Properties of Ethanol and Gasoline Mixtures by Terahertz Spectroscopy and an Effective Method for Determination of Ethanol Content of Gasoline**  
ARIK E., ALTAN H., ESENTÜRK O.  
JOURNAL OF PHYSICAL CHEMISTRY A, vol.118, no.17, pp.3081-3089, 2014 (SCI-Expanded)
- XXXV. **A simple single-mode fiber loss measurement scheme in the C-band based on fiber loop-cavity**

### **ringdown spectroscopy**

Berberoglu H., ALTAN H.

OPTICS COMMUNICATIONS, vol.317, pp.29-33, 2014 (SCI-Expanded)

XXXVI. **Development of a rapid-scan fiber-integrated terahertz spectrometer**

Keskin H., ALTAN H., Yavas S., İLDAY F. Ö., Eken K., ŞAHİN A. B.

OPTICAL AND QUANTUM ELECTRONICS, vol.46, no.4, pp.495-503, 2014 (SCI-Expanded)

XXXVII. **Concentration-Based Measurement Studies of L-Tryptophan Using Terahertz Time-Domain Spectroscopy (THz-TDS)**

Ozer Z., Gok S., ALTAN H., Severcan F.

APPLIED SPECTROSCOPY, vol.68, no.1, pp.95-100, 2014 (SCI-Expanded)

XXXVIII. **Characterization of polypropylene treated under dual-RF plasma using terahertz time-domain spectroscopy**

Akbar D., ALTAN H.

JOURNAL OF MATERIALS SCIENCE, vol.48, no.23, pp.8209-8214, 2013 (SCI-Expanded)

XXXIX. **Characterization of a Glow Discharge Detector With Terahertz Time Domain Spectroscopy**

Cinar K., Bozaci H. M., ALTAN H.

IEEE SENSORS JOURNAL, vol.13, no.7, pp.2643-2647, 2013 (SCI-Expanded)

XL. **Characteristics of HfO<sub>2</sub> and SiO<sub>2</sub> on p-type silicon wafers using terahertz spectroscopy**

Altan H., Sengupta A., Pham D., Grebel H., Federici J. F.

SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.22, no.5, pp.457-463, 2007 (SCI-Expanded)

XLI. **Terahertz absorption spectrum of para and ortho water vapors at different humidities at room temperature**

Xin X., Altan H., Saint A., Matten D., Alfano R. R.

JOURNAL OF APPLIED PHYSICS, vol.100, no.9, 2006 (SCI-Expanded)

XLII. **Terahertz (THz) spectroscopy of Freon-11 (CCl<sub>3</sub>F, CFC-11) at room temperature**

Altan H., Yu B. L., Alfano S. A., Alfano R. R.

CHEMICAL PHYSICS LETTERS, vol.427, pp.241-245, 2006 (SCI-Expanded)

XLIII. **Direct observation of the strength of plasmon-longitudinal optical phonon interaction in n-type GaAs**

Altan H., Xin X., Matten D., Alfano R. R.

APPLIED PHYSICS LETTERS, vol.89, no.5, 2006 (SCI-Expanded)

XLIV. **Terahertz study of 1,3,5-trinitro-s-triazine by time-domain and Fourier transform infrared spectroscopy**

Huang F., Schulkin B., Altan H., Federici J., Gary D., Barat R., Zimdars D., Chen M., Tanner D.

APPLIED PHYSICS LETTERS, vol.85, no.23, pp.5535-5537, 2004 (SCI-Expanded)

XLV. **Optical and electronic characteristics of single walled carbon nanotubes and silicon nanoclusters by terahertz spectroscopy**

Altan H., Huang F., Federici J., Lan A., Grebel H.

JOURNAL OF APPLIED PHYSICS, vol.96, no.11, pp.6685-6689, 2004 (SCI-Expanded)

XLVI. **Terahertz imaging using an interferometric array**

Federici J., Gary D., Schulkin B., Huang F., Altan H., Barat R., Zimdars D.

APPLIED PHYSICS LETTERS, vol.83, no.12, pp.2477-2479, 2003 (SCI-Expanded)

XLVII. **Damped Ly alpha absorption associated with an early-type galaxy at redshift z=0.16377**

Lanzetta K., Wolfe A., Altan H., Barcons X., Chen H., FernandezSoto A., Meyer D., OrtizGil A., Savaglio S., Webb J., et al.

ASTRONOMICAL JOURNAL, vol.114, no.4, pp.1337-1344, 1997 (SCI-Expanded)

### **Articles Published in Other Journals**

I. **Elektriksel Ölçüm ve Terahertz Teknolojileri**

KAYRA GÜLLÜ S., Akbar D., ALTAN H.

ODTÜLÜDERGİSİ, pp.68-69, 2012 (Non Peer-Reviewed Journal)

## Books & Book Chapters

- I. **Tryptophan as a biomarker using terahertz spectroscopy**  
Altan H., Gürel O.  
in: Biophotonics, Tryptophan and Disease, Laura A. Sordillo, Peter P. Sordillo, Editor, AP, London, Cambridge, pp.41-51, 2022
- II. **THz Sources and Detectors Fabricated from High Temperature Superconductors**  
Altan H., Demirhan Y., Özyüzer L., Aygün Özyüzer G., Türkoğlu F.  
in: Terahertz (THz), Mid Infrared (MIR) and Near Infrared (NIR) Technologies for Protection of Critical Infrastructures Against Explosives and CBRN, Pereira M.F., Apostolakis A., Editor, Springer-Verlag, Dordrecht, pp.153-164, 2021
- III. **Development of Stand-Off Imaging Systems Using Low Cost Plasma Detectors That Work in the GHz to THz Range**  
Altan H., Akbar D., Pavia J. P., Ribeiro M., Şahin A. B., Kuşoğlu-Sarıkaya C.  
in: Terahertz (THz), Mid Infrared (MIR) and Near Infrared (NIR) Technologies for Protection of Critical Infrastructures Against Explosives and CBRN, Apostolakis A., Pereira M.F., Editor, Springer-Verlag, Dordrecht, pp.275-285, 2021
- IV. **Development of Stand-Off Imaging Systems Using Low Cost Plasma Detectors That Work in the GHz to THz Range**  
AKBAR D., ALTAN H., Ribeiro M., ŞAHİN A. B., Kuşoğlu Sarıkaya C., Pavia J. P.  
in: Terahertz (THz), Mid Infrared (MIR) and Near Infrared (NIR) Technologies for Protection of Critical Infrastructures Against Explosives and CBRN. NATO Science for Peace and Security Series B: Physics and Biophysics, Pereira M.F., Apostolakis A., Editor, Springer, Dordrecht, pp.275-285, 2021
- V. **THz Sources and Detectors Fabricated from High Temperature Superconductors**  
DEMİRHAN Y., Türkoğlu F., ALTAN H., SABAH C., ÖZYÜZER L.  
in: Terahertz (THz), Mid Infrared (MIR) and Near Infrared (NIR) Technologies for Protection of Critical Infrastructures Against Explosives and CBRN. NATO Science for Peace and Security Series B: Physics and Biophysics, Pereira M.F., Apostolakis A., Editor, Springer, Dordrecht, pp.153-164, 2021
- VI. **Numerical Simulation of the Plasma Inside a Glow Discharge Millimeter Wave Detector**  
Kuşoğlu Sarıkaya C., Akbar D., Altan H.  
in: Optics, Photonics and Laser Technology 2018, Paulo Ribeiro Maria Raposo, Editor, Springer-Verlag, Zürich, pp.221-238, 2019
- VII. **Compressive Sensing Imaging at Sub-THz Frequency in Transmission Mode**  
ÖZKAN V. A., Menteşe Y., TAKAN T., ŞAHİN A. B., ALTAN H.  
in: THz for CBRN and Explosives Detection and Diagnosis, Mauro Pereira, Oleksiy Shulika, Editor, Springer Netherlands, Dordrecht, pp.49-55, 2017
- VIII. **Investigating Glow Discharge Detectors as a Millimeter-Wave/Terahertz Radiation Detection Tool**  
ALASGARZADE N., NEBİOĞLU M. A., TAKAN T., UZUN KAYMAK İ. Ü., ŞAHİN A. B., ALTAN H.  
in: THz for CBRN and Explosives Detection and Diagnosis, Mauro Pereira, Oleksiy Shulika, Editor, Springer Netherlands, Dordrecht, pp.179-187, 2017
- IX. **Terahertz Propagation in Tissues and Its Thickness Limitation**  
KARAGÖZ B., ALTAN H.  
in: Deep Imaging in Tissue and Biomedical Materials: Using Linear and Nonlinear Optical Methods, Lingyan Shi, Robert R. Alfano, Editor, Pan Stanford, pp.377-411, 2017
- X. **Plasma Sensing using THz Waves**  
ALTAN H.  
in: NATO Science for Peace and Security Series B Physics and Biophysics Terahertz and Mid Infrared Radiation, Mauro F. Pereira, Oleksiy Shulika, Editor, Springer Netherlands, pp.1-8, 2011
- XI. **Characterization of Air-Nitrogen-Argon DC Glow Discharge Plasma with THz Time Domain Spectroscopy**  
Karaoğlu G., TOSUN Z., Demiral A., ALTAN H.

in: NATO Science for Peace and Security Series B Physics and Biophysics Terahertz and Mid Infrared Radiation, Mauro F. Pereira, Oleksiy Shulika , Editor, Springer Netherlands, pp.73-77, 2011

**XII. Influence of the Spot Size of the Probe Beam on the Detected THz Power Using Electro-Optic Detection Method**

Metbulut M., GÜLLÜ H. H., ALTAN H.

in: NATO Science for Peace and Security Series B Physics and Biophysics Terahertz and Mid Infrared Radiation, Mauro F. Pereira, Oleksiy Shulika , Editor, Springer Netherlands, pp.107-111, 2011

**XIII. Numerical Improvement of Terahertz Time-Domain Spectroscopic Measurements**

Köseoğlu D., BERBEROĞLU H., ALTAN H.

in: NATO Science for Peace and Security Series B Physics and Biophysics Terahertz and Mid Infrared Radiation, Mauro F. Pereira, Oleksiy Shulika , Editor, Springer Netherlands, pp.85-90, 2011

## **Refereed Congress / Symposium Publications in Proceedings**

**I. Nano-scale Development of Terahertz Plasmonic Amplifiers Based on 2D Materials**

Altan H.

Workshop on Terahertz Technology and Applications 2024, Karlsruhe, Germany, 12 - 13 March 2024, pp.1

**II. THz to IR Converter for Incoherent Detection of Radiation**

Aytac B., Şahin A. B., Altan H.

Sensors and Communication Technologies in the 1 GHz to 10 THz Band 2024, Edinburgh, England, 18 - 19 September 2024, vol.13203

**III. Antipodal Vivaldi antenna with frequency selective surface for ultrawideband radar systems**

Köseni E., Altan H., Özdemir Ö.

Sensors and Communication Technologies in the 1 GHz to 10 THz Band 2024, Edinburgh, England, 18 - 19 September 2024, vol.13203

**IV. Propagation of Laguerre-Gaussian Modes at Millimeter-wave through Scattering Media**

Doğru S., Altan H., Şahin A. B.

Emerging Imaging and Sensing Technologies for Security and Defence VIII 2023, Amsterdam, Netherlands, 5 - 06 September 2023, vol.12740

**V. Evaluation of performance of an active terahertz imaging system for concealed face recognition**

Yıldırım İ. O., Doğru Ş., Şahin A. B., Altan H.

Artificial Intelligence for Security and Defence Applications 2023, Amsterdam, Netherlands, 4 - 05 September 2023, vol.12742

**VI. Fast and sensitive MMW imaging system with up-conversion readout working in the NIR Zone**

Kurup A. R., Rozban D., Kopeika N. S., Yitzhaky Y., Altan H., Abramovich A.

Radar Sensor Technology XXVII 2023, Florida, United States Of America, 1 - 03 May 2023, vol.12535

**VII. Detection and recognition of concealed faces using a 340 GHz imaging system**

Yıldırım İ. O., Şahin A. B., Altan H.

SPIE Security + Defence, 2022, Berlin, Germany, 5 - 07 September 2022

**VIII. Broadband THz Absorber Layers for Microbolometer Applications**

Atik B., Demirörs O., Yıldırım M., ALTAN H., ESENTÜRK O.

International Conference on Infrared, Millimeter, and Terahertz Waves, IRMMW-THz, 28 August 2022

**IX. Comparison of terahertz and ultrasound imaging in the assessment of oral soft tissue lesions**

KAMBUROĞLU K., Sönmez G., ÇAKMAK E. E., Eratam N., ALTAN H.

INTERNATIONAL CAPITAL CONFERENCE ON MULTIDISCIPLINARY SCIENTIFIC RESEARCH, Portugal, 13 - 14 July 2022

**X. Case presentation of oral soft tissue lesions by using ultrasound, terahertz and histopathology**

KAMBUROĞLU K., Sönmez G., ÇAKMAK E. E., BARIŞ E., ALTAN H.

INTERNATIONAL CAPITAL CONFERENCE ON MULTIDISCIPLINARY SCIENTIFIC RESEARCH, Portugal, 13 - 14 July 2022

- XI. **Investigation of In-Gap Field Enhancement at Terahertz Frequencies for a Metasurface Enhanced Sensor**  
Tugay H., ALTAN H., DEMİRHAN Y., ÖZYÜZER L., SABAH C.  
2021 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC), Munich, Germany, 21 - 25 June 2021
- XII. **Non-linear Detection of THz radiation using a Metasurface Enhanced Sensor**  
ALTAN H.  
Photonica 2021, Belgrade, Serbia, 25 August 2021, pp.22
- XIII. **The evaluation of various designs for Ytterbium doped fiber based superfluorescent source at 1 $\mu$ m wavelength**  
KESKİN H., Vural H., Alaçakır E., ALTAN H.  
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ALTAN H., TUBITAK Project, Yalıtkan Metal Geçiş Özellikli Vanadyum Dioksit Metamalzemelerini Kullanan Terahertz Modülator ve Sensör Yapıların Araştırılması, 2018 - 2022

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ALTAN H., KESKİN H., NEBİOĞLU M. A., Project Supported by Higher Education Institutions, Fiber Lazerle Bütünleşik Terahertz Spektrometre, 2016 - 2019

ALTAN H., YILDIRIM İ. O., TAKAN T., ÖZKAN V. A., Project Supported by Higher Education Institutions, Bariyer Arkası Terahertz Görüntüleme Sistemi, 2016 - 2019

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Altan H., NATO Supported Research Project, Development of a 100m Stand off MM Wave 3D Imaging System based on a GDD Array, 2015 - 2019

Altan H., Şahin A. B., TUBITAK Project, Terahertz Frekans Bandı Yüksek Veri Hızı Komünikasyon Sistemi Deneysel Alıcı Verici Yapılarının Kurulması Ve Geliştirilmesi, 2013 - 2019

Altan H., Project Supported by Other Private Institutions, Poliüretan Köpük Numunelerin Zamana Dayalı Terahertz Spektroskopi Yöntemi Kullanarak İncelenmesi, 2017 - 2018

Altan H., Project Supported by Higher Education Institutions, Çok Kipli Lazer Diyeton Işın Kaynağı Olarak Kullanıldığı Terahertz THz Spektroskopi Sistemleri için Hızlı Taramanın Geliştirilmesi, 2016 - 2018

ALTAN H., TUBITAK Project, Grafen Tabanlı Terahertz Optoelektronik Aygıtlar, 2015 - 2017

Altan H., Özyüzer L., TUBITAK Project, Süperiletken Metamalzeme Temelli Terahertz Bant-Geçirgen Filtreler, 2014 - 2016

ALTAN H., TUBITAK Project, Terahertz Thz Algılama Uygulamaları İçin Oda Sıcaklığında Çalışan Deşarj Lambaların Karakterizasyonu, 2014 - 2016

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ALTAN H., Industrial Thesis Project, Milimetre ve Milimetre Altı Dalga Boylarında Görüntüleme Sistemi, 2012 - 2016

ALTAN H., TUBITAK Project, Yakın Gerçek Zamanlı Terahertz Spektrometre Sistemi Geliştirilmesi, 2014 - 2015

ALTAN H., TAKAN T., KARAGÖZ B., Midilli Y., Project Supported by Higher Education Institutions, Biyolojik Malzemelerin T-Işınları İle Karakterizasyonu, 2014 - 2015

ALTAN H., TAKAN T., Midilli Y., Karagöz B., Project Supported by Higher Education Institutions, Zamana Dayalı Terahertz Ölçüm Sistemi ile Deri Dokuların İncelenmesi, 2013 - 2015

ALTAN H., Industrial Thesis Project, Milimetre Terahertz Dalga Boylarında Çalışan Aktif Görüntüleme Sistemi, 2012 - 2015

ALTAN H., TUBITAK Project, Yakın Gerçek Zaman İşlemli, Fiberde Tümlleşik Atmalı Terahertz Spektrometre, 2012 - 2015

ALTAN H., TUBITAK Project, Zamana Dayalı Terahertz Ölçüm ve Görüntüleme Tekniklerinin Geliştirilmesi, 2011 - 2014

ALTAN H., Project Supported by Higher Education Institutions, Zaman Çözümlü Terahertz Spektrometre Geliştirilmesi (pompa/sonda Tekniği), 2012 - 2013

ESENTÜRK O., Arik E., ALTAN H., Project Supported by Higher Education Institutions, Petrol Ürünü Yakıtların Terahertz Spektroskopiyle Analizi, 2012 - 2013

ALTAN H., Industrial Thesis Project, Çeşitli Çıptaki Namluların Ölçümünde Kullanılacak Master/Lazer/Optik Sistemlerinin

Tasarımı, 2008 - 2012

ALTAN H., Industrial Thesis Project, Çeşitli Çaptaki Namluların Ölçümünde Kullanılacak Master Lazer Optik Sistemlerinin Tasarımı, 2008 - 2012

ALTAN H., TUBITAK Project, Kompakt Atılımlı Terahertz Spektrometre Geliştirilmesi, 2008 - 2011

ALTAN H., TUBITAK Project, Kompakt Akımlı Terahertz Spektrometre Geliştirilmesi, 2008 - 2011

ALTAN H., Project Supported by Higher Education Institutions, Yoğun Plazmaların Terahertz Dalgaboyları İle İncelenmesi, 2009 - 2009

## Patent

Altan H., PLAZMA DEŞARJ LAMBA KULLANILAN MİKRODALGA/MİLİMETRE DALGABOYLARI GÖRÜNTÜLEME TERTİBATI, Patent, CHAPTER H Electricity, The Invention Registration Number: 2017 02831 , Standard Registration, 2020

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## Scientific Refereeing

TUBITAK Project, 1002 - Quick Support Program, Middle East Technical University, Turkey, February 2019

## Scientific Consultations

METU MEMS CENTER, Scientific Consultancy, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey, 2018 - Continues

## Tasks In Event Organizations

Altan H., SPIE Security and Defence, Millimetre Wave and Terahertz Sensors and Technology XII, Scientific Congress, Strasbourg, France, Eylül 2019

Altan H., PHOTOPTICS 2019, Scientific Congress, Praha, Czech Republic, Şubat 2019

## Scientific Research / Working Group Memberships

Odtü Mems Merkezi, Middle East Technical University, Turkey, <http://mems.metu.edu.tr/tr/akademisyenler>, 2018 - Continues

## Metrics

Publication: 159

Citation (WoS): 724

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## **Awards**

Altan H., TÜBA GEBİP FİZİK ALANI, Tüba, January 2016

Altan H., BAGEP FİZİK ALANI, Bagep, January 2016

Altan H., TÜBİTAK TEŞVİK ÖDÜLÜ - FEN BİLİMLERİ, Tübitak, December 2015

Altan H., Baki Komsuoğlu Bilim Teşvik Ödülü, Kocaeli Üniversitesi, September 2014

## **Non Academic Experience**

Public Research Center, ODTÜ MEMS MERKEZİ, ODTÜ MEMS MERKEZİ

OPEDEV LTD. ŞTİ.

City University of New York at City College

New Jersey Institute of Technology

New Jersey City University

New Jersey Institute of Technology

Johns Hopkins University

SUNY at Stony Brook, ABD