

## Prof.Dr. HAKAN ALTAN

### Kişisel Bilgiler

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### Eğitim Bilgileri

Bütünleşik Doktora, New Jersey Institute of Technology, Uygulamalı Fizik, Amerika Birleşik Devletleri 2000 - 2005

Lisans Çift Anadal, State University of New York State University at Stony Brook, Fizik Ve Astronomi, Amerika Birleşik Devletleri 1994 - 1998

### Yabancı Diller

İngilizce, C2 Ustalık

### Araştırma Alanları

Fizik, Yoğun Madde 2:Elektronik Yapı, Elektrik, Manyetik ve Optik Özellikler, Optik özellikler, Yoğun madde spektroskopisi, Temel Bilimler

### Akademik Unvanlar / Görevler

Prof.Dr., Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik Bölümü, 2017 - Devam Ediyor

Doç.Dr., Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik Bölümü, 2011 - 2017

Yrd.Doç.Dr., Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik Bölümü, 2009 - 2011

Öğretim Görevlisi Dr., Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik Bölümü, 2007 - 2009

### Yönetilen Tezler

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Altan H., TIME DOMAIN TERAHERTZ ATTENUATED TOTAL INTERNAL REFLECTION SPECTROSCOPY, Yüksek Lisans, A.ATALAR(Öğrenci), 2021

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

ALTAN H., Characterization of conductive properties of thin films in terahertz region, Yüksek Lisans,

M.AKKAYA(Öğrenci), 2017

ALTAN H., İnce filmlerin iletkenlik özelliklerinin terahertz bölgesinde karakterizasyonu., Yüksek Lisans, M.Akkaya(Öğrenci), 2017

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

ALTAN H., Terahertz(>0.3THz) active imaging systems, Yüksek Lisans, F.İDİKUT(Öğrenci), 2016

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

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

ALTAN H., Imaging of metal surfaces using confocal laser scanning microscopy, Yüksek Lisans, B.CAN(Öğrenci), 2011

ALTAN H., Imaging solar cells using terahertz waves, Yüksek Lisans, S.KAYRA(Öğrenci), 2011

ALTAN H., Applications in broadband THz spectroscopy towards material studies, Yüksek Lisans, Z.TÜRKŞEN(Öğrenci), 2011

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ALTAN H., Investigation of DC generated plasmas using Terahertz time domain spectroscopy, Yüksek Lisans, G.KARAOĞLAN(Öğrenci), 2010

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ALTAN H., Timing issues in a terawatt laser system, Yüksek Lisans, R.PINAR(Öğrenci), 2008

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- I. **Terahertz wavefront engineering using a hard-coded metasurface**  
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- III. **Investigation of resonant properties of metamaterial THz filters fabricated from vanadium dioxide thin films**  
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- IV. **The sub-terahertz region absorption of sputter deposited nanoscale TiAlV thin films**  
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- V. **Response of a Glow Discharge Detector to Far Infrared Radiation**

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- VI. **1030 nm All-Fiber Closed-Loop Fiber Optic Gyroscope with High Sensitivity**  
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- VIII. **Time-Domain Characterization of the Radiation Pattern of the Terahertz Photoconductive Antennas**  
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- IX. **Robust, Sensitive, and Inexpensive 2D Focal Plane Array Upconverting MMW Imaging Into the Visible**  
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- X. **An ex vivo comparative study of occlusal and proximal caries using terahertz and X-ray imaging**  
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- XI. **Cross-like terahertz metamaterial absorber for sensing applications**  
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- XII. **Stand-Off Through-the-Wall W-Band Millimeter-Wave Imaging Using Compressive Sensing**  
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- XIV. **Enhancing the image resolution in a single-pixel sub-THz imaging system based on compressed sensing**  
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- XVII. **Fourcross shaped metamaterial filters fabricated from high temperature superconducting YBCO and Au thin films for terahertz waves**  
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- XVIII. **An indium tin oxide metasurface filter for terahertz applications: Design, fabrication, and characterization**  
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- XIX. **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.  
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- XX. **Terahertz Propagation in Tissues and Its Thickness Limitation**  
KARAGÖZ B., ALTAN H.

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- XXI. **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.  
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- XXII. **Terahertz Time-Domain Study of Silver Nanoparticles Synthesized by Laser Ablation in Organic Liquid**  
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- XXIII. **Characterization of a terahertz wave scanned imaging system for threat detection at standoff distances**  
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- XXV. **Metal mesh filters based on Ti, ITO and Cu thin films for terahertz waves**  
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- XXVI. **Broadband terahertz modulators using self-gated graphene capacitors**  
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- XXVII. **Graphene-enabled electrically controlled terahertz spatial light modulators**  
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- XXVIII. **Low-cost bandpass filter for terahertz applications**  
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- XXIX. **Dielectric Properties of Diesel and Gasoline by Terahertz Spectroscopy**  
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- XXX. **Characterization of primary and permanent teeth using terahertz spectroscopy**  
KAMBUROĞLU K., Yetimoglu N. O., ALTAN H.  
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- XXXI. **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.  
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- XXXII. **A simple single-mode fiber loss measurement scheme in the C-band based on fiber loop-cavity ringdown spectroscopy**  
Berberoglu H., ALTAN H.  
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- XXXIII. **Development of a rapid-scan fiber-integrated terahertz spectrometer**  
Keskin H., ALTAN H., Yavas S., İLDAY F. Ö., Eken K., ŞAHİN A. B.  
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- XXXIV. **Concentration-Based Measurement Studies of L-Tryptophan Using Terahertz Time-Domain Spectroscopy (THz-TDS)**  
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- XXXV. **Characterization of polypropylene treated under dual-RF plasma using terahertz time-domain**

## **spectroscopy**

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

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

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

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

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

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**XLI. 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.

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

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## **Diğer Dergilerde Yayınlanan Makaleler**

**I. Elektriksel Ölçüm ve Terahertz Teknolojileri**

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ODTÜLÜDERGİSİ, ss.68-69, 2012 (Hakemsiz Dergi)

## **Kitap & Kitap Bölümleri**

**I. Tryptophan as a biomarker using terahertz spectroscopy**

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**II. THz Sources and Detectors Fabricated from High Temperature Superconductors**

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- III. **Development of Stand-Off Imaging Systems Using Low Cost Plasma Detectors That Work in the GHz to THz Range**  
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- V. **THz Sources and Detectors Fabricated from High Temperature Superconductors**  
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- VI. **Numerical Simulation of the Plasma Inside a Glow Discharge Millimeter Wave Detector**  
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- VIII. **Investigating Glow Discharge Detectors as a Millimeter-Wave/Terahertz Radiation Detection Tool**  
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- IX. **Terahertz Propagation in Tissues and Its Thickness Limitation**  
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- X. **Plasma Sensing using THz Waves**  
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- XI. **Characterization of Air-Nitrogen-Argon DC Glow Discharge Plasma with THz Time Domain Spectroscopy**  
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- XIII. **Numerical Improvement of Terahertz Time-Domain Spectroscopic Measurements**  
Köseoğlu D., BERBEROĞLU H., ALTAN H.

## Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Evaluation of performance of an active terahertz imaging system for concealed face recognition**  
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- II. **Propagation of Laguerre-Gaussian Modes at Millimeter-wave through Scattering Media**  
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- III. **Fast and sensitive MMW imaging system with up-conversion readout working in the NIR Zone**  
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- IV. **Detection and recognition of concealed faces using a 340 GHz imaging system**  
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- V. **Broadband THz Absorber Layers for Microbolometer Applications**  
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- VI. **Comparison of terahertz and ultrasound imaging in the assessment of oral soft tissue lesions**  
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- VII. **Case presentation of oral soft tissue lesions by using ultrasound, terahertz and histopathology**  
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- VIII. **Assessment of the Diagnostic Effectiveness of Terahertz Radiation in Oral Soft Tissue Lesions**  
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- IX. **Investigation of In-Gap Field Enhancement at Terahertz Frequencies for a Metasurface Enhanced Sensor**  
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- X. **Non-linear Detection of THz radiation using a Metasurface Enhanced Sensor**  
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