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Kişisel Bilgiler

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Eğitim Bilgileri

Doktora, İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, Türkiye 1990 - 1994

Yüksek Lisans, İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, Türkiye 1987 - 1990

Lisans, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, Türkiye 1982 - 1987

Yaptığı Tezler

Doktora, Investigation of Si_{1-x}Gex alloy formation by using STM, Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 1994

Yüksek Lisans, Construction of a scanning tunneling microscope and first results, Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 1990

Akademik Unvanlar / Görevler

Prof.Dr., Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik Bölümü, 2014 - Devam Ediyor

Prof.Dr., Sabancı Üniversitesi, Mühendislik Ve Doğa Bilimleri Fakültesi, Mühendislik Ve Doğa Bilimleri Programları Bölümü, 2008 - 2013

Prof.Dr., İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 2006 - 2008

Doç.Dr., İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 2002 - 2006

Yrd.Doç.Dr., İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 1999 - 2002

Öğretim Görevlisi Dr., University Of Oxford, Department Of Materials, 1998 - 1999

Öğretim Görevlisi Dr., University Of Oxford, Department Of Materials, 1997 - 1998

Öğretim Görevlisi Dr., University Of Bath, Science, School Of Physics, 1994 - 1997

Araştırma Görevlisi, İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 1987 - 1994

Yönetilen Tezler

ORAL A., Ultra-yüksek-çözünürlük düşük sıcaklıklı manyetik kuvvet mikroskopisi, Yüksek Lisans, A.Badami(Öğrenci), 2019

ORAL A., Non-contact atomic force microscope in ultra high vacuum using radiation pressure excitation of cantilever with Fabry-Perot interferometer, Yüksek Lisans, E.KARAGÖZ(Öğrenci), 2017

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ORAL A., Non-contact atomic force microscope operation in ultra high vacuum using radiation pressure excitation of cantilever, Yüksek Lisans, Y.UYSALLI(Öğrenci), 2016

ORAL A., Determination of photon momentum transfer between different mediums using interferometry of an angled silica fiber filament, Yüksek Lisans, E.ÖZGÖNÜL(Öğrenci), 2016

ORAL A., Design of a self-aligned, high resolution, low temperature (30 mK - 300 K) magnetic force microscope, Doktora, Ö.KARCI(Öğrenci), 2015

ORAL A., Development, fabrication and characterization of graphene and bismuth hall sensors for scanning hall probe microscopy, Doktora, S.SONUŞEN(Öğrenci), 2015

ORAL A., Design of an advanced atomic force microscope control electronics using FPGA, Yüksek Lisans, İ.KEHRİBAR(Öğrenci), 2013

ORAL A., Mechanically exfoliated single and multilayer graphene sheets and graphene field effect transistor, Yüksek Lisans, S.MANUKYAN(Öğrenci), 2009

ORAL A., Development of nano Hall sensors for high resolution scanning Hall probe microscopy, Doktora, M.DEDE(Öğrenci), 2008

ORAL A., Investigation of lateral forces in dynamic mode AFM/STM, Doktora, M.ATABAK(Öğrenci), 2007

ORAL A., Scanning hall probe microscopy (SHPM) using quartz crystal AFM feedback, Yüksek Lisans, K.ÜRKMEN(Öğrenci), 2005

ORAL A., Fabrication and characterization of GaAs and InAs hall sensors, Yüksek Lisans, S.ÖZDEMİR(Öğrenci), 2004

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ORAL A., Construction of an atomic force microscope operating in air and liquid, Yüksek Lisans, M.KARAKÖSE(Öğrenci), 2003

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ORAL A., Microfabrication of micro hall sensors on GaAs and InSb for scanning hall probe microscopy, Yüksek Lisans, M.MURAT(Öğrenci), 2001

ORAL A., Atomic resolution imaging and force spectroscopy of silicon surfaces with atomic force microscopy, Doktora, H.ÖZGÜR(Öğrenci), 2001

ORAL A., Simultaneous STM/ AC-AFM investigation of clean Si(001)-(2x1) surface and Ge epitaxial growth on Si(001)-(2x1), Yüksek Lisans, M.ATABAK(Öğrenci), 2001

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **Synthesis of Graphene-MoS2 composite based anode from oxides and their electrochemical behavior**
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- II. **Solubility Enhancement of Fe in ZnO Nanoparticles Prepared by Co-Precipitation Method**
Musharaf M., Karamat S., Hassan M. U. , Khaliq U., ORAL A., Behjat A. B. , Akram R., Almohaimeed Z.
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- III. **Interpretation of SARS-CoV-2 behaviour on different substrates and denaturation of virions using ethanol: an atomic force microscopy study**
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- IV. **Chemical vapor deposition of molybdenum disulphide on platinum foil**
Karamat S., Hassan M. U. , Pan J. S. , Tabassam L., ORAL A.
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- V. **1 fm/root Hz noise level low temperature Fabry-Perot atomic force/magnetic force microscope operating in 4-300 K temperature range**
Karc O., Celik U., Oral A.
REVIEW OF SCIENTIFIC INSTRUMENTS, cilt.91, sa.1, 2020 (SCI İndekslerine Giren Dergi)
- VI. **Multilayer graphene growth on polar dielectric substrates using chemical vapour deposition**
KARAMAT S., Celik K., Zaman S. S. , ORAL A.
APPLIED SURFACE SCIENCE, cilt.442, ss.720-725, 2018 (SCI İndekslerine Giren Dergi)
- VII. **Non-destructive patterning of 10nm magnetic island array by phase transformation with low-energy**

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- VIII. **Growth of nano-graphene on SrTiO₃ (110) substrates by chemical vapour deposition**
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- IX. **Radiation pressure excitation of a low temperature atomic force/magnetic force microscope for imaging in 4-300 K temperature range**
Celik U. L. , KARCI O., UYSALLI Y., Özer H. T. , ORAL A.
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- X. **3D scanning Hall probe microscopy with 700 nm resolution**
DEDE M., AKRAM R., ORAL A.
APPLIED PHYSICS LETTERS, cilt.109, sa.18, 2016 (SCI İndekslerine Giren Dergi)
- XI. **Graphene/SrTiO₃ hetero interface studied by X-ray photoelectron spectroscopy**
KARAMAT S., KE C., Inkaya U. Y. , AKRAM R., YILDIZ İ., Zaman S. S. , ORAL A.
PROGRESS IN NATURAL SCIENCE-MATERIALS INTERNATIONAL, cilt.26, sa.4, ss.422-426, 2016 (SCI İndekslerine Giren Dergi)
- XII. **Suitable alkaline for graphene peeling grown on metallic catalysts using chemical vapor deposition**
KARAMAT S., Sonusen S., ÇELİK Ü., UYSALLI Y., ORAL A.
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- XIII. **Coalescence of few layer graphene grains grown by chemical vapor deposition and their stacking sequence**
Karamat S., Sonusen S., Dede M., Uysalli Y., Ozgonul E., ORAL A.
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- XIV. **Synthesis of few layer single crystal graphene grains on platinum by chemical vapour deposition**
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- XV. **An ultra-low temperature scanning Hall probe microscope for magnetic imaging below 40 mK**
Karci O., Piatek J. O. , Jorba P., DEDE M., Ronnow H. M. , ORAL A.
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- XVI. **Design of a self-aligned, wide temperature range (300 mK-300 K) atomic force microscope/magnetic force microscope with 10 nm magnetic force microscope resolution**
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- XVII. **Single layer graphene Hall sensors for scanning Hall probe microscopy (SHPM) in 3-300 K temperature range**
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- XVIII. **The effects of postdeposition annealing conditions on structure and created defects in Zn_{0.90}Co_{0.100} thin films deposited on Si(100) substrate**
Can M. M. , Firat T., Shah S. I. , Bakan F., Oral A.
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- XIX. **High sensitivity and multifunctional micro-Hall sensors fabricated using InAlSb/InAsSb/InAlSb heterostructures**
BANDO M., OHASHI T., Dede M., Akram R., Oral A., Park S. Y. , SHIBASAKI I., HANDA H., SANDHU A.
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- XX. **Noncontact lateral-force gradient measurement on Si(111)-7 x 7 surface with small-amplitude off-resonance atomic force microscopy**
Atabak M., Unverdi O., Özer H. T. , Oral A.
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- XXI. **Imaging capability of pseudomorphic high electron mobility transistors, AlGaIn/GaN, and Si micro-Hall probes for scanning Hall probe microscopy between 25 and 125 degrees C**
AKRAM R., Dede M., Oral A.
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- XXII. **Variable Temperature-Scanning Hall Probe Microscopy With GaN/AlGaIn Two-Dimensional Electron Gas (2DEG) Micro Hall Sensors in 4.2-425 K Range Using Novel Quartz Tuning Fork AFM Feedback**
Akram R., Dede A., Oral A.
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- XXIII. **Scanning Hall Probe Microscopy (SHPM) using quartz crystal AFM feedback**
Dede M., Uerkmen K., Girisen O., Atabak M., Oral A., Farrer I., Ritchie D.
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- XXIV. **Solid or liquid? Solidification of a nanoconfined liquid under nonequilibrium conditions**
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- XXV. **A highly sensitive atomic force microscope for linear measurements of molecular forces in liquids**
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- XXVI. **Direct measurement of molecular stiffness and damping in confined water layers**
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- XXVII. **Nano and micro Hall-effect sensors for room-temperature scanning hall probe microscopy**
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- XXVIII. **Low-amplitude, force gradient imaging of Cu(100) surface using tunnel current feedback**
ÖZER H. Ö., NORRĬS A., Oral A., HOFFMANN P. M., PETHĬCA J. B.
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- XXIX. **50 nm Hall sensors for room temperature scanning Hall probe microscopy**
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- XXX. **High-sensitivity noncontact atomic force microscope/scanning tunneling microscope (nc AFM/STM) operating at subangstrom oscillation amplitudes for atomic resolution imaging and force spectroscopy**
Oral A., GRIMBLE R., ÖZER H. Ö., PETHĬCA J.
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- XXXI. **Integrated piezoresistive sensors for atomic force-guided scanning Hall probe microscopy**
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- XXXII. **Measurement of energy dissipation between tungsten tip and Si(1 0 0)-(2 x 1) using sub-Ångström oscillation amplitude non-contact atomic force microscope**
Özer H. Ö., Atabak M., Oral A.
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- XXXIII. **Micromachined III-V cantilevers for AFM-tracking scanning hall probe microscopy**
BROOK A. J., BENDĬNG S., PINTO J., Oral A., RĬTCHĬE D., BEERE H., SPRĬNGTHORPE A., HENĬNĬ M.
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- XXXIV. **Room-temperature scanning Hall probe microscope (RT-SHPM) imaging of garnet films using new high-performance InSb sensors**
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- XXXV. **Room temperature scanning Hall probe microscopy using GaAs/AlGaAs and Bi micro-hall probes**

- SANDHU A., MASUDA H., Oral A., Bending S., YAMADA A., KONAGAI M.
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- XXXVI. **Simultaneous non-contact atomic force microscopy (nc-AFM)/STM imaging and force spectroscopy of Si(1 0 0)(2 × 1) with small oscillation amplitudes**
Özer H., Atabak M., Ellialtıglu R. M. , Oral A.
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- XXXVII. **Energy dissipation in atomic force microscopy and atomic loss processes**
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- XXXIX. **Quantitative atom-resolved force gradient imaging using noncontact atomic force microscopy**
Oral A., GRIMBLE R., ÖZER H. Ö. , HOFFMANN P., PETHICA J.
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- XL. **Room temperature sub-micron magnetic imaging by scanning Hall probe microscopy**
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- XLII. **Direct measurement of interatomic force gradients using an ultra-low-amplitude atomic force microscope**
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- XLIII. **Manipulation of atoms across a surface at room temperature**
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- XLIV. **Quantitative electrostatic force measurement in AFM**
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- XLV. **Interaction of bromine with Ni(110) studied by scanning tunnelling microscopy**
Fishlock T., Pethica J., Oral A., Egdell R., Jones F.
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- XLVI. **Direct observation of melting of the vortex solid in Bi2Sr2CaCu2O8+delta single crystals**
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- XLVII. **Hall effect in a highly inhomogeneous magnetic field distribution**
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- XLIX. **Vortex imaging in superconducting films by Scanning Hall Probe Microscopy**
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- L. **Real-time scanning hall probe microscopy**
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- LI. **Initial stages of SiGe epitaxy on Si(001) studied by scanning tunneling microscopy**
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- LII. **A NOVEL FORCE MICROSCOPE AND POINT-CONTACT PROBE**
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Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Flexible Organic Light Emitting Diodes (OLEDs) with multi-layerGraphene Anode**
Sharif P., ALEMDAR E., GÜNBAŞ E. G. , ÇIRPAN A., ORAL A.
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- II. **Flexible Organic Light Emitting Diodes (OLEDs) with multi-layerGraphene Anode**
Sharif P., ALEMDAR E., GÜNBAŞ E. G. , ÇIRPAN A., ORAL A.
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- III. **Multi-layered Conductive Films via Recursive Transfer-Print of Graphene onto Polymeric Foil**
Inkaya U., ÇELİK K., ORAL A.
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- IV. **High-density array of 10 nm ferromagnetic nano-islands patterned non-destructively by phase transformation with low-energy proton irradiation**
DUTTA T., PATHAK S., ASBAHİ M., ÇELİK K., LEE J. M. , YANG P., SAİFULLAH M. S. M. , ORAL A., BHATİA C., CHA J., et al.
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- V. **Development of High Speed AFM Operating at 1,000 Lines/s amp 15x15x3µm XYZ Scan Range**
ÇELİK Ü., KEHRİBAR İ., UYSALLI Y., ÇELİK K., ÖZER H. Ö. , ORAL A.
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- VI. **Characterization of Multilayered Conductive Films Produced by Multiple Transfer Printing Graphene onto Ultra-Thin PVC Foil**
Inkaya U., ÇELİK K., ORAL A.
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- VII. **Development of High Speed AFM operating at 1,000 Lines/s 15x15x3µm XYZ Scan Area**
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- VIII. **Ups and Downs of Running a Spinoff company for 19 years!**
ORAL A.
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- IX. **Flexible Multilayer Graphene Hall Sensors on Ultra-Thin PVC Foil**
ORAL A.
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- X. **Development of SAMPLE Scanning High Speed AFM operating at 1,000 Lines/s 15µm x 15µm x 3µm**
ÇELİK Ü., UYSALLI Y., KEHRİBAR İ., ÇELİK K., ÖZER H. Ö. , ORAL A.
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- XI. **Why Graphene growth on Dielectrics is fascinating**
KARAMAT S., ORAL A.
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- XII. **Status and trends in high performance magnetic imaging using Scanning Probe Microscopy SPM**

ORAL A.

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- XIII. **High performance magnetic imaging using Scanning Probe Microscopy SPM at low temperatures 20mK 300K**
ORAL A.
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- XIV. **Development of tip Scanning High Speed AFM operating at 1 000 Lines s 15um**
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- XV. **Surface and Compositional Study of Graphene grown on Lithium Niobate LiNbO₃ substrates by Chemical Vapour Deposition**
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