

Assoc. Prof. ALPAN BEK

Personal Information

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Address: Dumlupınar Bulvarı 1 06800 Çankaya Ankara

Education Information

Doctorate, Ecole Polytechnique Federale De Lausanne, Temel Bilimler, Switzerland 2000 - 2004

Postgraduate, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), Turkey 1996 - 1998

Undergraduate, İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, Turkey 1992 - 1995

Foreign Languages

German, C1 Advanced

English, C1 Advanced

Dissertations

Doctorate, Apertureless SNOM: A New Tool for Nano-Optics, Ecole Polytechnique Federale De Lausanne, Temel Bilimler, 2004

Postgraduate, Low loss optical waveguides and polarization splitters wit oxidized ALxGa1-xAs layers, Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), 1998

Research Areas

Physics, Interdisciplinary Physics and Related Science and Technology Areas, Biophysics and Medical Physics, Electromagnetism, Acoustics, Heat Transfer, Classical Mechanics and Fluid Dynamics, Optics, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Optical Properties, Spectroscopy of Matter, Natural Sciences

Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, 2015 - Continues

Assistant Professor, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, 2011 - 2015

Research Assistant, Cluster In Biomedicine (Cbm Scrl), Lanada, 2007 - 2010

Research Assistant, Ludwig-Maximilians-Universitaet München, Fizik, Fizik, 2005 - 2007

Research Assistant, Max-Planck Institute For Solid State Research (Mpi-Fkf), Nanoscale Science, 1999 - 2004

Research Assistant, İhsan Doğramacı Bilkent Üniversitesi, Fen Fakültesi, Fizik Bölümü, 1996 - 1999

Academic and Administrative Experience

Head of Department, Middle East Technical University, Graduate School of Natural and Applied Sciences, Neuroscience and Neurotechnology, 2020 - Continues

Academic Performance D. Board Member, Middle East Technical University, Presidency Office, Presidency Office, 2019 - Continues

Rektörlük Akademik Teşvik Değerlendirme Komisyonu Üyesi, Middle East Technical University, Presidency Office, Presidency Office, 2018 - Continues

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Middle East Technical University, Presidency Office, Merkezi Laboratuvar Araştırma ve Uygulama Merkezi, 2018 - Continues

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Middle East Technical University, Presidency Office, 2017 - Continues

Rektörlük Stratejik Plan Komisyonu Üyesi, Middle East Technical University, Presidency Office, Presidency Office, 2016 - Continues

Academic Board Member, Middle East Technical University, Graduate School of Natural and Applied Sciences, 2016 - Continues

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Middle East Technical University, Presidency Office, 2015 - Continues

Academic Board Member, Middle East Technical University, Graduate School of Natural and Applied Sciences, Micro and Nanotechnology, 2012 - Continues

Academic Board Member, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2011 - Continues

Bölüm Stratejik Plan Komisyonu Başkanı, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2017 - 2020

Bölüm Başkan Danışmanı, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2017 - 2020

Courses

INTRODUCTION TO PHOTONICS AND OPTOELECTRONICS I, Undergraduate, 2018 - 2019

INTRODUCTION TO NANOOPTICS, Postgraduate, 2018 - 2019

INTRODUCTION TO NANOOPTICS, Postgraduate, 2015 - 2016

Advising Theses

Kocaman S., BEK A., Barrier engineering for high-performance nBn infrared photodetectors, Doctorate, F.UZGUR(Student), 2020

Bek A., Son Ç. D. , Behavior of neuro-2a cells on femtosecond laser structured silicon substrates, Postgraduate, S.MINGU(Student), 2020

Bek A., Pavlov I., Laser induced periodic surface structuring for surface enhanced Raman spectroscopy, Postgraduate, Z.TUĞÇE(Student), 2020

Bek A., Ateş S., Quantum Optics with Single-photon Nanoantenna, Postgraduate, O.YÜCEL(Student), 2019

Bek A., Kocaman S., Radiometry-based range prediction for mid- and long-wave infrared imaging systems, Postgraduate, B.BERKAN(Student), 2018

BEK A., Design and characteristics of high performance mid-wavelength type-2 superlattice sensors, Postgraduate, F.OĞUZ(Student), 2018

BEK A., Investigation of the therapeutic effect of sodium butyrate in Caco-2 colon cancer cell line by using ATR-FTIR spectroscopy, Postgraduate, B.ÇELİK(Student), 2018

Bek A., Analysis and evaluation of HFO2 based resistive RAM devices for new generation non-volatile memories,

Postgraduate, S.BURHAN(Student), 2018
Bek A., İmer M. B. , Development of hole transport transparent conductive electrodes for n-type crystalline silicon solar cells, Postgraduate, O.AKDEMİR(Student), 2018
BEK A., Nanosecond pulsed infrared laser induced crystallization of amorphous silicon films for potential photovoltaic applications, Doctorate, K.ÇINAR(Student), 2018
BEK A., Comparative study on surface enhanced raman scattering activity of various silver nanostructures, Postgraduate, Ö.DEMİRTAŞ(Student), 2017
BEK A., Surface coverage control of self organized plasmonic nanostructures at interfaces of photovoltaics related materials, Postgraduate, G.BİRANT(Student), 2017
BEK A., Enhancement of plasmonic nonlinear conversion and polarization lifetime via fano resonances, Doctorate, B.CAN(Student), 2017
Danışman M. F. , Bek A., Utilization of fiber loop ring down technique for sensing applications, Postgraduate, A.YOLALMAZ(Student), 2017
BEK A., Investigation of structural and functional properties of OmpG mutants by FTIR spectroscopy, Postgraduate, İ.YILMAZ(Student), 2017
BEK A., YERÇİ S., Characterization of molybdenum oxide and magnesium doped zinc oxide charge transport layers deposited by sputtering for heterojunction solar cells, Postgraduate, G.BEKTAŞ(Student), 2017
BEK A., Suppression of coffee-ring effect in random optical potentials, Postgraduate, M.YAĞMUR(Student), 2017
BEK A., YERÇİ S., Development of a large area germanium on insulator platform by liquid phase epitaxy, Postgraduate, Z.İREM(Student), 2017
ÜNALAN H. E. , BEK A., Production and characterization of multilayered one dimensional plasmonic nanowires, Postgraduate, E.AYGÜN(Student), 2017
BEK A., Fabrication of well-organized plasmonic interfaces by nanosphere lithography, Postgraduate, Y.KASAP(Student), 2016
BEK A., A systematic study on adatom interaction with graphyne polymorphs, Postgraduate, Y.GÖZDE(Student), 2016
BEK A., Influence of nanoparticle shape on colloidal plasmonic interface properties, Postgraduate, E.SARIGÜL(Student), 2014
BEK A., Development of a 60W pulsed fiber laser amplifier for materials processing, Postgraduate, Y.OZAN(Student), 2014
BEK A., Fabrication of various metal nanostructures with hole mask colloidal lithography, Postgraduate, İ.MURAT(Student), 2014
BEK A., ÜNALAN H. E. , A Feasibility study for external control on self-organized production of plasmonic enhancement interfaces for solar cells, Postgraduate, M.Zolfaghari(Student), 2013
BEK A., ÜNALAN H. E. , A feasibility study for external control on self-organized production of plasmonic enhancement interfaces for solar cells, Postgraduate, M.ZOLFAGHARI(Student), 2013
TURAN R., BEK A., Effect of substrate type on structural and optical properties of metal nanoparticles for plasmonic applications, Postgraduate, İ.Tanyeli(Student), 2011
Bek A., Atomik Kuvvet Mikroskopu Nanomanipülasyonu Sıcak Nokta Üretimi, Postgraduate, R.Jansen(Student), 2008

Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Orta Doğu Teknik Üniversitesi, June, 2019
Award, TÜBA GEBİP 2019 alan jüri üyeliği, Middle East Technical University, June, 2019
Award, BAGEP 2019, Middle East Technical University, February, 2019
Award, Mustafa Parlar Ödülü, Orta Doğu Teknik Üniversitesi, February, 2019
Competition, Adım ODTÜ proje yarışması, Orta Doğu Teknik Üniversitesi, February, 2019
Appointment Academic Staff, Appointment Academic Staff, Arab-American University of Jenin, January, 2019
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, December, 2018
Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, November, 2018

Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, November, 2018
Doctorate, Doctorate, İhsan Doğramacı Bilkent Üniversitesi, November, 2018
Award, Parlar Vakfı Araştırma Teşvik Ödülü, Orta Doğu Teknik Üniversitesi, November, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, November, 2018
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, October, 2018
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, September, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, September, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, September, 2018
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, September, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, August, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, August, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, June, 2018
Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, May, 2018
Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, May, 2018
Award, TÜBA-GEBİP ÖDÜLÜ 2018, TÜBA, May, 2018
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, April, 2018
Appointment Academic Staff, Appointment Academic Staff, Arab Americal University of Jenin, April, 2018
Doctoral Examination, Doctoral Examination, İhsan Doğramacı Bilkent Üniversitesi, March, 2018
Award, Bilim Akademisi - BAGEP 2018 ÖDÜLÜ, Bilim Akademisi, February, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, January, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, January, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, January, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, January, 2018
Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, January, 2018
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, January, 2018

Designed Lessons

Bek A., Introduction to Nanooptics, Postgraduate, 2017 - 2018

Research Infrastructure Information

Bek A., Nanooptik Araştırma Laboratuvarı, January 2015

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Laser Crystallization of Amorphous Ge Thin Films via a Nanosecond Pulsed Infrared Laser**
Korkut C., Cinar K., Kabacelik I., TURAN R., Kulakci M., BEK A.
CRYSTAL GROWTH & DESIGN, vol.21, no.8, pp.4632-4639, 2021 (Journal Indexed in SCI)
- II. **Single-molecule-resolution ultrafast near-field optical microscopy via plasmon lifetime extension**
OVALI R. V. , ŞAHİN R., BEK A., TAŞGIN M. E.
Applied Physics Letters, vol.118, no.24, 2021 (Journal Indexed in SCI)
- III. **Surface Physical Properties of Ion Beam Sputtered Copper Thin Films on Poly Tetrafluoroethylene**
Atta A., Abdeltwab E., BEK A.
SURFACE TOPOGRAPHY-METROLOGY AND PROPERTIES, vol.9, no.2, 2021 (Journal Indexed in SCI)
- IV. **Fabrication of flexible, cost-effective, and scalable silver substrates for efficient surface enhanced Raman spectroscopy based trace detection**
Khan G. A. , Demirtas O. O. , Demir A. K. , AYTEKİN Ö., BEK A., Bhatti A. S. , Ahmed W.

COLLOIDS AND SURFACES A-PHYSCOCHEMICAL AND ENGINEERING ASPECTS, vol.619, 2021 (Journal Indexed in SCI)

- V. **Nanosphere Concentrated Photovoltaics with Shape Control**
Esmaeilzad N. S. , Demir A. K. , Hajivandi J., Ciftpinar H., Turan R., Kurt H., Bek A.
ADVANCED OPTICAL MATERIALS, vol.9, no.3, 2021 (Journal Indexed in SCI)
- VI. **Plasmonic Light-Management Interfaces by Polyol-Synthesized Silver Nanoparticles for Industrial Scale Silicon Solar Cells**
Birant G., ÖZTÜRK İ. M. , DOĞANAY D., ÜNALAN H. E. , BEK A.
ACS Applied Nano Materials, vol.3, no.12, pp.12231-12239, 2020 (Journal Indexed in SCI)
- VII. **Fano-control of down-conversion in a nonlinear crystal via plasmonic-quantum emitter hybrid structures**
Artvin Z., Gunay M., BEK A., TAŞGIN M. E.
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS, vol.37, no.12, pp.3769-3776, 2020 (Journal Indexed in SCI)
- VIII. **Implementation of generalized Harvey-Shack theory in light scattering from rough surfaces**
Gunoven M., Nasser H., Ünal M., Aytakin O., Turan R., Bek A.
PHYSICAL REVIEW A, vol.102, no.6, 2020 (Journal Indexed in SCI)
- IX. **Facile preparation of nanoparticle based SERS substrates for trace molecule detection**
Demirta O., DOĞANAY D., ÖZTÜRK İ. M. , ÜNALAN H. E. , BEK A.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.22, no.37, pp.21139-21146, 2020 (Journal Indexed in SCI)
- X. **Monolayer Assembly of MultiSpiked Gold Nanoparticles for Surface-Enhanced Raman Spectroscopy-Based Trace Detection of Dyes and Explosives**
Ahmed W., Demirtas O., ÖZTÜRK İ. M. , BEK A.
ACS APPLIED NANO MATERIALS, vol.3, no.7, pp.6766-6773, 2020 (Journal Indexed in SCI)
- XI. **Quantum emitter interacting with graphene coating in the strong-coupling regime**
Gunay M., Karanikolas V., ŞAHİN R., Ovali R. V. , BEK A., TAŞGIN M. E.
PHYSICAL REVIEW B, vol.101, no.16, 2020 (Journal Indexed in SCI)
- XII. **MoO_x/Ag/MoO_x multilayers as hole transport transparent conductive electrodes for n-type crystalline silicon solar cells**
Akdemir O., Borra M. Z. , Nasser H., TURAN R., BEK A.
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.44, no.4, pp.3098-3109, 2020 (Journal Indexed in SCI)
- XIII. **Lithography-Free Random Bismuth Nanostructures for Full Solar Spectrum Harvesting and Mid-Infrared Sensing**
Soydan M. C. , Ghobadi A., Yildirim D. U. , Duman E. S. , BEK A., Erturk V. B. , Ozbay E.
ADVANCED OPTICAL MATERIALS, vol.8, no.4, 2020 (Journal Indexed in SCI)
- XIV. **Controlling steady-state second harmonic signal via linear and nonlinear Fano resonances**
Guenay M., Artvin Z., BEK A., TAŞGIN M. E.
JOURNAL OF MODERN OPTICS, vol.67, no.1, pp.26-34, 2020 (Journal Indexed in SCI)
- XV. **Revealing Laser Crystallization Mechanism of Silicon Thin Films via Pulsed IR Lasers**
Çınar K., Yeşil C., Bek A.
Journal of Physical Chemistry C, vol.124, pp.976-985, 2020 (Journal Indexed in SCI)
- XVI. **Plasmon lifetime enhancement in a bright-dark mode coupled system**
Yildiz B. C. , Bek A., Taşgin M. E.
PHYSICAL REVIEW B, vol.101, 2020 (Journal Indexed in SCI)
- XVII. **Fabrication of 15-µm Pitch 640 x 512 InAs/GaSb Type-II Superlattice Focal Plane Arrays**
Oguz F., Arslan Y., Ulker E., BEK A., Ozbay E.
IEEE JOURNAL OF QUANTUM ELECTRONICS, vol.55, no.4, 2019 (Journal Indexed in SCI)
- XVIII. **Synthesis of tin oxide-coated gold nanostars and evaluation of their surface-enhanced Raman scattering activities**
Elci A., Demirtas O., Öztürk İ. M. , Bek A., Esenturk E.
JOURNAL OF MATERIALS SCIENCE, vol.53, pp.16345-16356, 2018 (Journal Indexed in SCI)

- XIX. **Silent enhancement of SERS signa without increasing hot spot intensities**
Postaci S., Yildiz B. C. , BEK A., TAŞGIN M. E.
NANOPHOTONICS, vol.7, no.10, pp.1687-1695, 2018 (Journal Indexed in SCI)
- XX. **Improvement of Laser-Crystallized Silicon Film Quality via Intermediate Dielectric Layers on a Glass Substrate**
Cinar K., Karaman M., Bek A.
ACS OMEGA, vol.3, pp.5846-5852, 2018 (Journal Indexed in SCI)
- XXI. **Electrical response of electron selective atomic layer deposited TiO₂-x heterocontacts on crystalline silicon substrates**
Ahiboz D., Nasser H., Aygun E., Bek A., Turan R.
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.33, no.4, 2018 (Journal Indexed in SCI)
- XXII. **Frequency Modulated Raman Spectroscopy**
Greco S., Dal Zilio S., Bek A., Lazzarino M., Naumenko D.
ACS PHOTONICS, vol.5, pp.312-317, 2018 (Journal Indexed in SCI)
- XXIII. **97 percent light absorption in an ultrabroadband frequency range utilizing an ultrathin metal layer: randomly oriented, densely packed dielectric nanowires as an excellent light trapping scaffold**
Ghobadi A., Dereshgi S. A. , Hajian H., Birant G., BÜTÜN B., BEK A., ÖZBAY E.
NANOSCALE, vol.9, no.43, pp.16652-16660, 2017 (Journal Indexed in SCI)
- XXIV. **In-chip microstructures and photonic devices fabricated by nonlinear laser lithography deep inside silicon**
Tokel O., Turnali A., Makey G., Elahı P., Colakoglu T., Ergecen E., Yavuz O., Hubner R., Borra M. Z. , Pavlov I., et al.
NATURE PHOTONICS, vol.11, pp.639-646, 2017 (Journal Indexed in SCI)
- XXV. **Silver nanowire networks as transparent top electrodes for silicon solar cells**
AURANG P., DOĞANAY D., BEK A., TURAN R., ÜNALAN H. E.
SOLAR ENERGY, vol.141, pp.110-117, 2017 (Journal Indexed in SCI)
- XXVI. **A micromechanical switchable hot spot for SERS applications**
Naumenko D., Toffoli V., Greco S., Dalzilio S., Bek A., Lazzarino M.
APPLIED PHYSICS LETTERS, vol.109, 2016 (Journal Indexed in SCI)
- XXVII. **Fluorescence excitation by enhanced plasmon upconversion under continuous wave illumination**
Taşgin M. E. , Salakhutdinov I., Kendziora D., Abak M. K. , Turkpence D., Piantanida L., Fruk L., Lazzarino M., Bek A.
PHOTONICS AND NANOSTRUCTURES-FUNDAMENTALS AND APPLICATIONS, vol.21, pp.32-43, 2016 (Journal Indexed in SCI)
- XXVIII. **Enhanced second harmonic generation from coupled asymmetric plasmonic metal nanostructures**
Yildiz B. C. , Taşgin M. E. , Abak M. K. , Coskun S., Ünalalan H. E. , Bek A.
JOURNAL OF OPTICS, vol.17, 2015 (Journal Indexed in SCI)
- XXIX. **Optimized spacer layer thickness for plasmonic-induced enhancement of photocurrent in a-Si:H**
Saleh Z. M. , NASSER H., ÖZKOL E., GÜNÖVEN M., ABAK K., CANLI S., BEK A., TURAN R.
JOURNAL OF NANOPARTICLE RESEARCH, vol.17, no.10, 2015 (Journal Indexed in SCI)
- XXX. **High haze nature of textured Al:ZnO with Ag nanoparticles for light management in thin film solar cells**
Nasser H., Ozkol E., Bek A., Turan R.
OPTICAL MATERIALS EXPRESS, vol.5, pp.932-942, 2015 (Journal Indexed in SCI)
- XXXI. **A feasibility study for controlling self-organized production of plasmonic enhancement interfaces for solar cells**
Borra M. Z. , Gullu S. K. , Es F., Demircioğlu O., Günöven M., Turan R., Bek A.
APPLIED SURFACE SCIENCE, vol.318, pp.43-50, 2014 (Journal Indexed in SCI)
- XXXII. **Engineering nonlinear response of nanomaterials using Fano resonances**
Turkpence D., Akguc G. B. , Bek A., Taşgin M. E.
JOURNAL OF OPTICS, vol.16, 2014 (Journal Indexed in SCI)
- XXXIII. **Enhanced Optical Absorption and Spectral Photocurrent in a-Si:H by Single- and Double-Layer Silver Plasmonic Interfaces**

- Saleh Z. M. , NASSER H., ÖZKOL E., GÜNÖVEN M., ALTUNTAS B., BEK A., TURAN R.
PLASMONICS, vol.9, no.2, pp.357-365, 2014 (Journal Indexed in SCI)
- XXXIV. **Effect of surface type on structural and optical properties of Ag nanoparticles formed by dewetting**
Tanyeli I., Nasser H., ES F., BEK A., TURAN R.
OPTICS EXPRESS, vol.21, no.18, 2013 (Journal Indexed in SCI)
- XXXV. **Fabrication of Ag Nanoparticles Embedded in Al:ZnO as Potential Light-Trapping Plasmonic Interface for Thin Film Solar Cells**
Nasser H., Saleh Z. M. , Ozkol E., Gunoven M., BEK A., TURAN R.
PLASMONICS, vol.8, no.3, pp.1485-1492, 2013 (Journal Indexed in SCI)
- XXXVI. **Understanding the plasmonic properties of dewetting formed Ag nanoparticles for large area solar cell applications**
Gunendi M. C. , TANYELİ I., Akguc G. B. , BEK A., TURAN R., Gulseren O.
OPTICS EXPRESS, vol.21, no.15, pp.18344-18353, 2013 (Journal Indexed in SCI)
- XXXVII. **Modulation of structure, morphology and wettability of polytetrafluoroethylene surface by low energy ion beam irradiation**
ATTA a., FAWZY y., BEK A., Abdel-Hamid H. M. , El-Oker M. M.
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS, vol.300, pp.46-53, 2013 (Journal Indexed in SCI)
- XXXVIII. **A Revertible, Autonomous, Self-Assembled DNA-Origami Nanoactuator**
MARİNÍ M., Piantanida L., Musetti R., Bek A., Dong M., Besenbacher F., Lazzarino M., Firrao G.
NANO LETTERS, vol.11, no.12, pp.5449-5454, 2011 (Journal Indexed in SCI)
- XXXIX. **In vivo distribution of beta 2 glycoprotein I under various pathophysiologic conditions**
Agostinis C., BIFFI S., GARROVO C., DURIGUTTO P., LORENZON A., Bek A., Bulla R., Grossi C., Borghi M. O. , Meroni P., et al.
BLOOD, vol.118, no.15, pp.4231-4238, 2011 (Journal Indexed in SCI)
- XL. **Molecular Assembly of Multi-Wall Carbon Nanotubes with Amino Crown Ether: Synthesis and Characterization**
Camarena J. P. , Espinoza-Gomez H., SOMANATHAN R., Tiznado H., Velez-Lopez E., Romero-Rivera R., Martinez-Lopez M. A. , Avalos-Borja M., Bek A., Alonso-Nunez G., et al.
JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, vol.11, no.6, pp.5539-5545, 2011 (Journal Indexed in SCI)
- XLI. **Tip enhanced Raman scattering with adiabatic plasmon focusing tips.**
Bek A., De A., DAS G., Di F., LAZZARINO M.
Micron (Oxford, England : 1993), vol.42, pp.313-7, 2011 (Journal Indexed in SCI Expanded)
- XLII. **Infrared Microspectroscopy: A Multiple-Screening Platform for Investigating Single-Cell Biochemical Perturbations upon Prion Infection**
Didonna A., Vaccari L., Bek A., Legname G.
ACS CHEMICAL NEUROSCIENCE, vol.2, no.3, pp.160-174, 2011 (Journal Indexed in SCI)
- XLIII. **FTIR Microspectroscopy: A Multiple-screening Platform for Investigating Single-cell Biochemical Perturbations upon Prion Infection**
Didonna A., Vaccari L., BEK A., Legname G.
PRION, vol.4, no.3, pp.210, 2010 (Journal Indexed in SCI)
- XLIV. **Modulation of Alpha-Synuclein Aggregation by Dopamine Analogs**
LATAWIĘC D., Herrera F., Bek A., Losasso V., Candotti M., Benetti F., Carlino E., Kranjc A., Lazzarino M., Gustincich S., et al.
PLOS ONE, vol.5, no.2, 2010 (Journal Indexed in SCI)
- XLV. **Nanoscale chemical mapping using three-dimensional adiabatic compression of surface plasmon polaritons**
DE ANGELIS F., DAS G., CANDELORO P., PATRINI M., GALLI M., Bek A., LAZZARINO M., MAKSYMOW I., LIBERALE C., ANDREANI L. C. , et al.
NATURE NANOTECHNOLOGY, vol.5, no.1, pp.67-72, 2010 (Journal Indexed in SCI)
- XLVI. **Structural Insights into Alternate Aggregated Prion Protein Forms**

- POLANO m., BEK A., BENETTÍ f., lazzarino m., LEGNAME g.
JOURNAL OF MOLECULAR BIOLOGY, vol.393, no.5, pp.1033-1042, 2009 (Journal Indexed in SCI)
- XLVII. **Fluorescence enhancement in hot spots of AFM-designed gold nanoparticle sandwiches**
Bek A., JANSEN R., RINGLER M., MAYILO S., KLAR T. A. , FELDMANN J.
NANO LETTERS, vol.8, no.2, pp.485-490, 2008 (Journal Indexed in SCI)
- XLVIII. **Nanocrystal Encoded Fluorescent Microbeads for Proteomics Antibody Profiling and Diagnostics of Autoimmune Diseases**
SUKHANOVA a., SUSHA a., BEK A., MAYILO s., ROGACH a., FELDMANN j., OLEINIKOV v., REVEIL b., DONVITO b., COHEN j., et al.
Nano Letters, vol.7, pp.2322-2327, 2007 (Journal Indexed in SCI Expanded)
- XLIX. **Apertureless scanning near field optical microscope with sub-10 nm resolution**
Bek A., VOGELGESANG R., KERN K.
REVIEW OF SCIENTIFIC INSTRUMENTS, vol.77, no.4, 2006 (Journal Indexed in SCI)
- L. **The effect of annealing conditions on the red photoluminescence of nanocrystalline Si/SiO₂ films**
Wu X., Bek A., Bittner A. M. , Eggs C., Ossadnik C., VEPREK S.
Thin Solid Films, vol.425, pp.175-184, 2003 (Journal Indexed in SCI)
- LI. **Low-temperature photoluminescence spectra of layered semiconductor TlGaS₂**
Gasany N., Aydinli A., Bek A. A., YILMAZ İ. Ö.
Solid State Communications, vol.105, no.1, pp.21-24, 1998 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **A Dual-Wavelength Pulsed Laser Processing Platform for a-Si Thin Film Crystallization**
Türker V., Yağcı M. E. , Salman S. H. , Çınar K., Eken S. K. , Bek A.
Instruments, vol.3, no.2, pp.31, 2019 (Refereed Journals of Other Institutions)
- II. **Laser-driven self-organised functional 3D superstructures deep inside silicon**
İLDAY F. Ö. , TURAN R., BEK A.
arxiv, 2014 (International Refereed University Journal)

Books & Book Chapters

- I. **Fano Resonances in the Linear and Nonlinear Plasmonic Response**
Taşgın M. E. , Bek A., Postacı S.
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- V. **Laser-induced periodic nano-patterning of solar cell surfaces for low-cost and low material loss fabrication of light management interfaces**
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- VIII. **Slicing Crystalline Silicon Wafer by Deep Subsurface Laser Processing and Selective Chemical Etching**
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- XX. Plasmonic Excitation-Assisted Photovoltaic Enhancement in MoOx/c-Si Solar Cells by Air Brush Spray Deposited Au Nano-Particles**
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- XXX. Suppression of coffee ring effect in random optical potentials**

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- XXXI. **Laser Assisted Sculpting of Silicon**
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- XL. **Molecular Activation by Plasmon Enhanced Nonlinear Conversion**
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- XLVI. **Nonlinear Plasmonics for Photovoltaics**
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- XLVII. **Advanced light trapping interface for a-Si:H thin film**
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- BEK A., BİRANT G., İDİKUT F., Project Supported by Higher Education Institutions, İnce film kristal silisyum heteroeklem üretimi, 2017 - 2017
- BEK A., DEMİRTAŞ Ö., SEYEDPOUR ESMAEILZAD S., ÖZTÜRK İ. M. , Project Supported by Higher Education Institutions, Düzenli nano yapılarla donatılmış Raman artırım arayüzleri üretilmesi ve artırım kanallarının analizi, 2017 - 2017
- Bek A., Tokel O., TUBİTAK Project, Uzaysal Işık Modülatörleri ile Güneş Pilleri için Lazer Mikroişleme, 2015 - 2017
- BEK A., DEMİRTAŞ Ö., Project Supported by Higher Education Institutions, Moleküler Yapısal Değişikliklerin Kuvvet Kipli Raman Spektroskopisi ile Tespiti, 2016 - 2016
- Bek A., TÜBİTAK International Bilateral Joint Cooperation Program Project, Tek molekül tespiti için frekans modüleli Raman saçılması, 2014 - 2016
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- BEK A., ÖZTÜRK İ. M. , Project Supported by Higher Education Institutions, Tek molekül tespiti için FREkans MODüleli Raman Saçılması (FREMORS), 2015 - 2015
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- BEK A., ZOLFAGHARIBORRA M., KASAP Y., TURGUT B. B. , ÖZTÜRK M., Project Supported by Higher Education Institutions, Plazmonik Metal Nanoyapılar Yardımıyla Silisyum Tabanlı Güneş Pili Etkinliğinin Artırılması, 2011 - 2013

Contractual Researches

- BEK A., Nanomanyetik, 2016 - Continues
- Bek A., Nanomanyetik, DÜŞÜK SICAKLIK OPTİK AÇIKLIKSIZ TARAMALI YAKIN ALAN OPTİK MİKROSKOPU GELİŞTİRİLMESİ, 2018 - 2019

BEK A., Nanomanyetik, 2016 - 2016

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Memberships / Tasks in Scientific Organizations

INSTICC, Member, 2019 - Continues, Portugal

SPIE, Member, 2015 - Continues

APS, Member, 1993 - Continues

Scientific Refereeing

Project Supported by Public Organizations in Other Countries, Rusya Federasyonu Eğitim Bakanlığı, Russia, October 2019

Project Supported by Other Official Institutions, Sivas Cumhuriyet University, Turkey, September 2019

TUBITAK Project, 3501 - National Young Researcher Career Development Program, Middle East Technical University, Turkey, August 2019

OPTICS EXPRESS, SCI Journal, July 2019

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Plasmonics, SCI Journal, April 2018
JOURNAL OF ALLOYS AND COMPOUNDS, SCI Journal, March 2018
Journal Of Microscopy-Oxford, SCI Journal, February 2018
SCIENTIFIC REPORTS, SCI Journal, January 2018

Scientific Consultations

Nanomanyetik, Scientific Consultancy, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey, 2019 - Continues
Nanomanyetik Ltd. Şti., Scientific Consultancy, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey, 2018 - Continues
Nanomanyetik Bilimsel Cihazlar Ltd.,Şti, Project Consultancy, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey, 2018 - Continues

Tasks In Event Organizations

Bek A., 25. Yoğun Madde Fiziği Ankara Toplantısı, Scientific Congress, Ankara, Turkey, Aralık 2019
Bek A., 21. Ulusal Optik, Elektro-Optik ve Fotonik Çalıştayı, Scientific Congress, İstanbul, Turkey, Eylül 2019
Bek A., BIOSTEC-BIOIMAGING 2019, Scientific Congress, Praha, Czech Republic, Şubat 2019

Edit Congress and Symposium Activities

Fotonik 2019, Working Group, İstanbul, Turkey, 2019
YMF Ankara 2018, Working Group, Ankara, Turkey, 2018
FOTONİK 2018, Working Group, Ankara, Turkey, 2018
2nd International Congress on Semiconductor Materials & Devices 2018 (ICSMD2018), Invited Speaker, Ardahan, Turkey, 2018
2nd International Congress on Semiconductor Materials & Devices 2018 (ICSMD2018), Working Group, Ardahan, Turkey, 2018
PVCON 2018, Working Group, Ankara, Turkey, 2018
UPCON 2, Working Group, Valencia, Spain, 2018
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Citations

Total Citations (WOS):1173
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Invited Talks

Ulusal yaz okulu sunumu, Seminar, Maltepe Üniversitesi, Turkey, July 2019
Surface Enhanced Raman Scattering (SERS) with silver nanoparticles, nanowires and gold nanostars, Seminar, İhsan Doğramacı Bilkent Üniversitesi, Turkey, February 2018

Awards

