

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

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

Under Graduate, 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

Post Graduate, 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

Professional Experience

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

Bölüm Stratejik Plan Komisyonu Başkanı, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, 2017 - Continues

Bölüm Başkan Danışmanı, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, 2017 - 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

Fakülte Akademik Kurul Üyesi, 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

Fakülte Akademik Kurul Üyesi, Middle East Technical University, Graduate School of Natural and Applied Sciences, Micro and Nanotechnology, 2012 - Continues

Fakülte Akademik Kurul Üyesi, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2011 - Continues

Courses

INTRODUCTION TO PHOTONICS AND OPTOELECTRONICS I, Under Graduate, 2018 - 2019

INTRODUCTION TO NANOOPTICS, Post Graduate, 2018 - 2019

INTRODUCTION TO NANOOPTICS, Post Graduate, 2015 - 2016

Advising Theses

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

Bek A., İmer M. B. , Development of hole transport transparent conductive electrodes for n-type crystalline silicon solar cells, Post Graduate, O.AKDEMİR(Student), 2018

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

Bek A., Analysis and evaluation of HFO₂ based resistive RAM devices for new generation non-volatile memories, Post Graduate, S.BURHAN(Student), 2018

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

BEK A., Investigation of the therapeutic effect of sodium butyrate in Caco2 colon cancer cell line by using ATR-FTIR spectroscopy, Post Graduate, B.ÇELİK(Student), 2018

BEK A., Nanosecond pulsed infrared laser induced crystallization of amorphous silicon films for potential photovoltaic applications, Doctorate, K.ÇINAR(Student), 2018

YERCİ S., BEK A., Development of a large area germanium on insulator platform by liquid phase epitaxy, Post Graduate, Z.İREM(Student), 2017

BEK A., Suppression of coffee-ring effect in random optical potentials, Post Graduate, M.YAĞMUR(Student), 2017

BEK A., Surface coverage control of self organized plasmonic nanostructures at interfaces of photovoltaics related materials, Post Graduate, G.BİRANT(Student), 2017

BEK A., Enhancement of plasmonic nonlinear conversion and polarization lifetime via fano resonances, Doctorate, B.CAN(Student), 2017

DANIŞMAN M. F. , BEK A., Utilization of fiber loop ring down technique for sensing applications, Post Graduate, A.YOLALMAZ(Student), 2017

BEK A., Investigation of structural and functional properties of OmpG mutants by FTIR spectroscopy, Post Graduate, İ.YILMAZ(Student), 2017

YERÇİ S., BEK A., Characterization of molybdenum oxide and magnesium doped zinc oxide charge transport layers deposited by sputtering for heterojunction solar cells, Post Graduate, G.BEKTAŞ(Student), 2017

BEK A., Comparative study on surface enhanced raman scattering activity of various silver nanostructures, Post Graduate, Ö.DEMİRTAŞ(Student), 2017

BEK A., ÜNALAN H. E. , Production and characterization of multilayered one dimensional plasmonic nanowires, Post Graduate, E.AYGÜN(Student), 2017

BEK A., A systematic study on adatom interaction with graphyne polymorphs, Post Graduate, Y.GÖZDE(Student), 2016

BEK A., Fabrication of well-organized plasmonic interfaces by nanosphere lithography, Post Graduate, Y.KASAP(Student), 2016

BEK A., Influence of nanoparticle shape on colloidal plasmonic interface properties, Post Graduate, E.SARIGÜL(Student), 2014

BEK A., Development of a 60W pulsed fiber laser amplifier for materials processing, Post Graduate, Y.OZAN(Student), 2014

BEK A., Fabrication of various metal nanostructures with hole mask colloidal lithography, Post Graduate, 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, Post Graduate, M.ZOLFAGHARI(Student), 2013

Bek A., Atomik Kuvvet Mikroskopu Nanomanipülasyonu Sıcak Nokta Üretimi, Post Graduate, 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 üyesi, Middle East Technical University, June, 2019

Competition, Adım ODTÜ proje yarışması, Orta Doğu Teknik Üniversitesi, February, 2019

Award, BAGEP 2019, Middle East Technical University, February, 2019

Award, Mustafa Parlar Ödülü, 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

Award, Parlar Vakfı Araştırma Teşvik Ödülü, Orta Doğu Teknik Üniversitesi, November, 2018

Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, November, 2018

Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, November, 2018

Doctorate, Doctorate, İhsan Doğramacı Bilkent Üniversitesi, November, 2018

Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, October, 2018

Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, September, 2018

Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, September, 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, August, 2018

Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, August, 2018

Post Graduate, Post Graduate, Orta Doğu Teknik Üniversitesi, June, 2018

Award, TÜBA-GEBİP ÖDÜLÜ 2018, TÜBA, May, 2018

Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, May, 2018

Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, 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, Post Graduate, 2017 - 2018

Research Infrastructure Information

Bek A., Nanooptik Araştırma Laboratuvarı, January 2015

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

- **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, pp.21139-21146, 2020 (Journal Indexed in SCI)
- **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, pp.6766-6773, 2020 (Journal Indexed in SCI)
- **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, 2020 (Journal Indexed in SCI)
- **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, pp.3098-3109, 2020 (Journal Indexed in SCI)
- **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, 2020 (Journal Indexed in SCI)
- **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)
- **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, pp.26-34, 2020 (Journal Indexed in SCI)
- **Revealing Laser Crystallization Mechanism of Silicon Thin Films via Pulsed IR Lasers**
Çınar K., YEŞİL C., BEK A.

- Journal of Physical Chemistry C, vol.124, pp.976-985, 2020 (Journal Indexed in SCI)
Fabrication of 15- μ m 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, 2019 (Journal Indexed in SCI)
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)
Silent enhancement of SERS signa without increasing hot spot intensities
Postaci S., Yildiz B. C. , BEK A., TAŞGIN M. E.
- NANOPHOTONICS, vol.7, pp.1687-1695, 2018 (Journal Indexed in SCI)
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)
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, 2018 (Journal Indexed in SCI)
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)
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, pp.16652-16660, 2017 (Journal Indexed in SCI)
In-chip microstructures and photonic devices fabricated by nonlinear laser lithography deep inside silicon
Tokel O., Turnali A., Makey G., Elahi 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)
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)
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)
Fluorescence excitation by enhanced plasmon upconversion under continuous wave illumination
Taşgın 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)
Enhanced second harmonic generation from coupled asymmetric plasmonic metal nanostructures
Yıldız B. C. , Taşgın M. E. , Abak M. K. , Coskun S., Ünalalan H. E. , Bek A.
- JOURNAL OF OPTICS, vol.17, 2015 (Journal Indexed in SCI)
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, 2015 (Journal Indexed in SCI)
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)
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)

● **Engineering nonlinear response of nanomaterials using Fano resonances**

Turkpençe D., Akguc G. B. , Bek A., Taşgın M. E.

JOURNAL OF OPTICS, vol.16, 2014 (Journal Indexed in SCI)

● **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, pp.357-365, 2014 (Journal Indexed in SCI)

● **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, 2013 (Journal Indexed in SCI)

● **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, pp.1485-1492, 2013 (Journal Indexed in SCI)

● **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, pp.18344-18353, 2013 (Journal Indexed in SCI)

● **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)

● **A Reversible, Autonomous, Self-Assembled DNA-Origami Nanoactuator**

MARÍNÍ M., Piantanida L., Musetti R., Bek A., Dong M., Besenbacher F., Lazzarino M., Firrao G.

NANO LETTERS, vol.11, pp.5449-5454, 2011 (Journal Indexed in SCI)

● **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, pp.4231-4238, 2011 (Journal Indexed in SCI)

● **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)

● **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, pp.5539-5545, 2011 (Journal Indexed in SCI)

● **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, pp.160-174, 2011 (Journal Indexed in SCI)

● **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, 2010 (Journal Indexed in SCI)

● **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, pp.67-72, 2010 (Journal Indexed in SCI)

● **Structural Insights into Alternate Aggregated Prion Protein Forms**

POLANO m., BEK A., BENETTÍ f., lazzarino m., LEGNAME g.

JOURNAL OF MOLECULAR BIOLOGY, vol.393, pp.1033-1042, 2009 (Journal Indexed in SCI)

● **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, pp.485-490, 2008 (Journal Indexed in SCI)

● **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)

● **Apertureless scanning near field optical microscope with sub-10 nm resolution**

Bek A., VOGELGESANG R., KERN K.

REVIEW OF SCIENTIFIC INSTRUMENTS, vol.77, 2006 (Journal Indexed in SCI)

● **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 Expanded)

● **Low-temperature photoluminescence spectra of layered semiconductor TlGaS₂**

Gasanlı N., Aydinli A., Bek A. A., YILMAZ İ. Ö.

Solid State Communications, vol.105, pp.21-24, 1998 (Journal Indexed in SCI)

Articles Published in Other Journals

● **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, pp.31, 2019 (Refereed Journals of Other Institutions)

● **Laser-driven self-organised functional 3D superstructures deep inside silicon**

İLDAĞ F. Ö., TURAN R., BEK A.

arxiv, 2014 (International Refereed University Journal)

Books & Book Chapters

● **Fano Resonances in the Linear and Nonlinear Plasmonic Response**

Taşgın M. E., Bek A., Postacı S.

in: Fano Resonances in Optics and Microwaves, Eugene Kamenetskii, Almas Sadreev, Andrey Miroshnichenko, Editor, Springer, London/Berlin, Zürich, pp.1-31, 2018

● **Tip-Assisted Optical Nanoscopy for Single-Molecule Activation and Detection**

Naumenko D., Cassese D., Lazzarino M., Bek A.

in: Novel Approaches for Single Molecule Activation and Detection, Fabio Benfenati, Enzo Di Fabrizio, Vincent Torre, Editor, Springer, London/Berlin, Berlin, pp.61-83, 2014

Refereed Congress / Symposium Publications in Proceedings

● **The behaviour of neuro-2A cells on silicon substrates with various topographies generated by femtosecond laser micromachining**

Mingu S., PAVLOV I., SON Ç. D. , BEK A.

7th International Conference on Bioimaging, BIOIMAGING 2020 - Part of 13th International Joint Conference on Biomedical Engineering Systems and Technologies, BIOSTEC 2020, Valletta, Malta, 24 - 26 February 2020, pp.192-199

● **Laser-induced periodic nano-patterning of solar cell surfaces for low-cost and low material loss fabrication of light management interfaces**

PAVLOV I., Çolakoğlu T., genç e., abak m. k. , Nasser H., TURAN R., BEK A.

2019 Annual Nanotechnology Conference, 11 - 13 September 2019

● **Low dark current diffusion limited planar type InGaAs photodetectors**

m halit d., ateşal o., çalışkan m. d. , BEK A., ÖZBAY E.

SPIE Optical Engineering Applications, 2019, 11 - 15 August 2019

● **Evaluation of Cell Response to Femtosecond-Laser Induced Substrate Topography**

Mingu S., İDİKUT F., PAVLOV I., SON Ç. D. , BEK A.

21. Ulusal Optik, Elektro-Optik ve Fotonik Çalıştayı, İstanbul, Turkey, 06 September 2019

● **Slicing Crystalline Silicon Wafer by Deep Subsurface Laser Processing and Selective Chemical Etching**

zolfaghari borra m., Nasser H., ÇİFTPINAR E. H. , turnalı a., deminsky p., Çolakoğlu T., TOKEL O., İLDAY F. Ö. , PAVLOV I., TURAN R., et al.

2019 Conference on Lasers and Electro-Optics Europe European Quantum Electronics Conference (CLEO/Europe-EQEC), 23 - 27 June 2019

● **Liquid crystal alignment on the patterns produced by nonlinear laser lithography**

PAVLOV I., Rybak A., Dobrovolskiy A., Kazantseva Z., BEK A., Candemir O., Gvozдовskyy I.

2019 Conference on Lasers and Electro-Optics Europe and European Quantum Electronics Conference, CLEO/Europe-EQEC 2019, Munich, Germany, 23 - 27 June 2019

● **Subsurface Silicon Processing by Microsphere Focusing of Ultrafast Infrared Laser**

İDİKUT F., Borra M. Z. , Seyedpour S. E. , BEK A.

2nd International Conference on Optics, Photonics and Lasers (OPAL), Amsterdam, Netherlands, 24 - 26 April 2019, pp.69-70

● **Nonlinear laser lithography for photonic design of si solar cells**

Pavlov I., Çolakoğlu T., Es F., BEK A., TURAN R., Gnilitzkiy I., İlday O.

2015 European Conference on Lasers and Electro-Optics - European Quantum Electronics Conference, CLEO/Europe-EQEC 2015, Munich, Germany, 21 - 25 June 2015

● **Laser Ablated Single Walled Carbon Nanotube Films as Microsupercapacitors**

DURUKAN M. B. , çınar k., BEK A., ÜNALAN H. E.

19th International Metallurgy and Materials Congress, 25 - 27 October 2018

● **Radiometry-based Range Prediction for Mid- and Long-Wave Infrared Imaging System**

TURGUT B. B. , GÖKTUĞ GENCEHAN A., ÖZDEMİR O., AKARCA B., KARADAĞ A., ÖZKAN B., BEK A.

20. Ulusal Optik, Elektrooptik ve Fotonik Çalıştayı, Ankara, Turkey, 14 September 2018

● **Laser Crystallization of Si Thin Film via Pulsed IR Laser for Ultra-Thin Crystalline Solar Cells**

ÇINAR K., Salar H. S. , Dönerçark E., Avishan N., Aytaç A. E. , BEK A.

PVCON2018, 4 - 06 July 2018

● **A Comparison of MWIR and LWIR Imaging Systems with regard to Range Performance**

Turgut B. B. , Artan G. G. , Bek A.

29th Conference on Infrared Imaging Systems - Design, Analysis, Modeling, and Testing XXIX, Florida, United States Of America, 17 - 18 April 2018, vol.10625

● **Evaluation of the Therapeutic Potential of Sodium Butyrate In Caco-2 Colon Cancer Cell Line**

çelik b., ŞİMŞEK ÖZEK N., BEK A., SEVERCAN F.

Uluslararası Katılımlı 6. İlaç Kimyası: İlaç Etkin Maddesi Tasarımı, Sentezi, Üretimi ve Standardizasyonu Kongresi, 22 - 25 March 2018

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● **Enhanced second harmonic generation from coupled asymmetric plasmonic metal nanostructures**

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Supported Projects

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Bek A., Nalbant Esentürk E., Taşgin M. E., Şahin R., TUBİTAK Project, Kuantum Girişim Artırımı Raman Spektroskopisi (Qupers), 2020 - 2023

Bek A., Ünal H. E., Coşkun Ş., TÜBİTAK International Bilateral Joint Cooperation Program Project, Akışkanlarda Mikrop Tespiti İçin Sers Aktif Gümüş Nanotel Filtre Folyoları Geliştirilmesi (Ramanfilter), 2020 - 2022

Bek A., TUBİTAK Project, Yarıiletken pul yüzey altının Lazerle mikrometre ve altı boyutta işlenmesi (mikroYALAZ), 2018 - 2020

Bek A., TUBİTAK Project, Lazer Kristalizasyon Yöntemi ile Yüksek Verimli İnce Film Kristal Si Güneş Gözesi Geliştirilmesi, 2015 - 2019

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Bek A., TUBİTAK Project, Plazmonik Uygulamaları İçin Geniş Alanlı Dielektrik Yüzeylerin Kontrollü Asimetrik Metal Nanoyapılarla Donatılması, 2015 - 2018

BEK A., BİRANT G., İDİKUT F., Project Supported by Higher Education Institutions, İnce film kristal silisyum heteroeklem üretimi, 2017 - 2017

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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

BEK A., Industrial Thesis Project, Yüksek Performanslı Atomik Kuvvet Mikroskobu Geliştirilmesi, 2013 - 2016

Bek A., Project Supported by Higher Education Institutions, Orta Doğu Teknik Üniversitesi -Disiplinler arası proje, Proje No:BAP-07-02-2015-006, "Kolon Kanseri Hücrelerinde Histon Deasetilaz İnhibitörünün Terapötik Etkilerinin Mikronanoteknolojik Yöntemlerle Araştırılması, 2015 - 2015

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Bek A., FP7 Project, FOCUS SINGLE MOLECULE ACTIVATION AND COMPUTING, 2011 - 2014

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, Orta Doğu Teknik Üniversitesi, 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

Invited 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

Kobit 2018, Working Group, İstanbul, Turkey, 2018

Citations

Total Citations (WOS):1009

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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

Dođramacı Bilkent Üniversitesi, Turkey, February 2018

Awards

BEK A., BAGEP 2013, Bilim Akademisi, April 2013