

Ֆիզիկայի ինստիտուտ

Կիրառական էլեկտրադիմամիկայի և մոդելավորման ամբիոն
Ամբիոնի վարիչ, պրոֆեսոր

Հրապարակումներ

Հոդված

Resonant enhancement and confinement of microwave field in coupled conductive rod systems

Tigran Abrahamyan, Gor Ohanyan, David Hambaryan, Artyom Movsisyan, Henrik Parsamyan,

Hovhannes Haroyan, Arsen Babajanyan, Khachatur Nerkararyan

Physica Scripta 2025 025515

Հոդված

Dielectric coated conductive rod resonantly coupled with a cut transmission line as a tunable microwave bandstop filter and sensor

David Hambaryan, Tigran Abrahamyan, Henrik Parsamyan, Artyom Movsisyan, Bill Minasyan,

Hovhannes Haroyan, Arsen Babajanyan, Kiejin Lee, Barry Friedman, Khachatur Nerkararyan

Heliyon 2024 e24477

Հոդված

Reflective multi-layer metasurface based on half-wave plate structure for polarization control in the visible-near-infrared region

Artyom Movsisyan, Hasmik Manukyan, Billi Minasyan, Arsen Babajanyan

Physica Scripta 2024 095545

Հոդված

Highly dispersive transmission conditions for a conductive rods-based ultrathin bilayer metastructure

Tigran Abrahamyan, Gor Ohanyan, David Hambaryan, David Kalantar, Henrik Parsamyan,

Hovhannes Haroyan, Arsen Babajanyan, Kiejin Lee, Khachatur Nerkararyan

Journal of Physics D: Applied Physics 2024 355108

Հոդված

Pulsars with the masses $2.14M_{\odot}$ and $2.27M_{\odot}$ as strange star candidates

Hasmik Shahinyan, Tigran Sargsyan, Arsen Babajanyan

Journal of High Energy Astrophysics 2024 126-131

Հոդված

Numerical Solutions of Certain Time-Independent Quantum Mechanics Problems by Using the Python Environment

H. Shahinyan, L. Ghazaryan, A. Babajanyan

Armenian Journal of Physics 2024 43-51

Հոդված

Mice Glucose Level Monitoring by a Non-Invasive Microwave Imaging Technique

<Հոդված

Resonant detection of surface microwaves using dielectric-coated conductive rods coupled with a cut Goubau line

Tigran Abrahamyan, Gor Ohanyan, Hovhannes Haroyan, Arsen Babajanyan, Khachatur Nerkararyan

IET Conference Proceedings 2024 11-14

<Հոդված

Characterization of microwave response of the mesh-pattern vs. uniformly-coated indium-tin-oxide indicator for the thermoelastic optical microscope: a comparative analysis

Artyom Movsisyan, Hasmik Manukyan, Billi Minasyan, Zhirayr Bagdasryan, Kiejin Lee,

Arsen Babajanyan

IET Conference Proceedings 2024 15-18

<Հոդված

Characterization of interaction phenomena of electromagnetic waves with metamaterials via microwave near-field visualization technique

Zhirayr Bagdasaryan, Arsen Babajanyan, Barry Friedman, Kiejin Lee

Scientific Reports 2023 18457

<Հոդված

3D visualization of microwave electric and magnetic fields by using a metasurface-based indicator

Zhirayr Bagdasaryan, Arsen Babajanyan, Henrik Parsamyan, Barry Friedman, Seungwan Kim,

Jung-Ha Lee, Kiejin Lee

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Characterization of Metal Nanoparticles Aqueous Solution by a Thermoelastic Optical Indicator Microscope

G. Ohanyan, N. Margaryan, M. Manvelyan, L. Odabashyan, B. Minasyan, A. Movsisyan, R. Khachatrian,

A. Babajanyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 187-191

<Հոդված

3D Visualization Method Based on Metastructure Optical Indicator of Thermoelastic Polarization Microscope for Electromagnetic Fields in Microwave and THz Ranges

A. Babajanyan, Zh. Bagdasaryan, H. Parsamyan, B. Friedman, K. Lee

NanoWorld Journal 2022 S4

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Resonant Interaction Between Microwaves and Thin Conducting Microstructure with Finite Length

T. Abrahamyan, H. Haroyan, D. Hambaryan, H. Parsamyan, K. Lee, A. Babajanyan, Kh. Nerkararyan

NanoWorld Journal 2022 S5

<Հոդված

Microwave and Joule Heating Visualization by a Thermo-Elastic Microscope for Carbon

Composite Materials

Sh. Arakelyan, A. Babajanyan, G. Berthiau, B. Friedman, K. Lee

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Հոդված

Surface-standing-wave formation via resonance interaction of a finite-length conductive rod with microwaves

Tigran Abrahamyan, Hovhannes Haroyan, David Hambaryan, Henrik Parsamyan, Arsen Babajanyan,

Kiejin Lee, Barry Friedman, Khachatur Nerkararyan

Journal of Physics D: Applied Physics 2022 445001

Հոդված

Microwave response phase control of a graphite microstrip

Arsen Babajanyan, Tigran Abrahamyan, Hovhannes Haroyan, Billi Minasyan, Torgom Yezekyan,

Kiejin Lee, Barry Friedman, Khachatur Nerkararyan

Carbon 2022 151-156

Հոդված

Noninvasive in Vivo Evaluation of Mouse-Blood Glycemia with a Microwave Spiral Sensor

A. Babajanyan, B. Minasyan, L. Odabashyan, S. Kim, J. Kim, J.-H. Lee, B. Friedman, K. Lee

Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 47-54

Հոդված

Visualization of microwave near-field distribution in sodium chloride and glucose aqueous solutions by a thermo-elastic optical indicator microscope

Arsen Babajanyan, Zhirayr Baghdasaryan, Levon Odabashyan, Jung-Ha Lee, Barry Friedman, Kiejin Lee

Scientific Reports 2021 2589

Հոդված

Performance of Pentacene Based Organic Thin Film Transistor with an

Octadecyltrichlorosilane Self-Assembled Monolayer Interface

A. Babajanyan, B. Minasyan, A. Movsisyan, B. Friedman, K. Lee

Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 208-213

Ուսումնական ծեռևսարդ

Ասոմային և միջուկային ֆիզիկայի ընդհանուր դասընթացի լաբորատոր աշխատանքների

ուղեցույց

Հասմիկ Շահինյան, Լուսինե Ղազարյան, Արմեն Բաբաջանյան

2021 64

Հոդված

Detection of Iron Nanoparticles in Aqueous Solutions by Microwave Sensor

L. Odabashyan, N. Margaryan, G. Ohanyan, M. Manvelyan, D. Hambaryan, T. Abrahamyan,

R. Khachatryan, A. Babajanyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 171-175

Հոդված

Thermal distribution in unidirectional carbon composite material due to the direct heating and microwave influence visualized by a thermo-elastic optical indicator microscope

Zhirayr Bagdasaryan, Arsen Babajanyan, Levon Odabashyan, Shant Arakelyan, Hanju Lee,
Gerard Berthiau, Barry Friedman, Kiejin Lee
Measurement 2020 107189(1-7)

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**ОБНАРУЖЕНИЕ НАНОЧАСТИЦ ЖЕЛЕЗА В ВОДНЫХ РАСТВОРАХ С ПОМОЩЬЮ
МИКРОВОЛНОВОГО СЕНСОРА**

Л. ОДАБАШЯН, Н. МАРГАРЯН, Г. ОГАНЯН, М. МАНВЕЛЯН, Д. АМБАРЯН, Т. АБРААМЯН, Р. ХАЧАТРЯН,
А. БАБАДЖАНЯН
Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2020
251-258

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COMPUTER MODELING OF MICROWAVE STRIPLINE RESONATORS FOR NON-INVASIVE SENSING

A. Zh. BABAJANYAN, B. J. MINASYAN, L. A. ODABASHYAN, Zh. A. BAGHDASARYAN, K. LEE
Proceedings of the YSU A. Physical and Mathematical Sciences 2019 60-64

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**Antenna Investigation by a Thermoelastic Optical Indicator Microscope: Defects Measurement
and 3D Visualization of Electromagnetic Fields**

Arsen Babajanyan, Shant Arakelyan, Hanju Lee, Seungwan Kim, Gerard Berthiau, Barry Friedman,
Kiejin Lee
IEEE ANTENNAS AND PROPAGATION MAGAZINE 2019 27-31

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Investigation of Ag Nanoparticles/Water Solutions by Microwave Stripline Sensor

A. Babajanyan, T. Abrahamyan, R. Khachatryan, D. Hambaryan, B. Hovhannisyan, B. Minasyan,
L. Odabashyan
Journal of Contemporary Physics (Armenian Academy of Sciences) 2019 196-202

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**ИССЛЕДОВАНИЕ РАСТВОРОВ НАНОЧАСТИЦ Ag В ВОДЕ С ПОМОЩЬЮ МИКРОВОЛНОВОГО
ПОЛОСКОВОГО СЕНСОРА**

А. БАБАДЖАНЯН, Т. АБРААМЯН, Р. ХАЧАТРЯН, Д. АМБАРЯН, Б. ОГАНЕСЯН, Б. МИНАСЯН,
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263-271

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Real-time sensing the glucose concentration by quadratic-shaped microwave sensor

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**Real-Time Noninvasive Measurement of Glucose Concentration Using a Modified Hilbert
Shaped Microwave Sensor**

Levon Odabashyan, Arsen Babajanyan, Zhirayr Bagdasaryan, Seungwan Kim, Jongchel Kim,
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Հոդված

Microwave Heating Visualization for Carbon Fibers Composite Material: Development of Tunable Microstrip Structures

Shant Arakelyan, Hanju Lee, Do-Suck Han, Arsen Babajanyan, Gerard Berthiau, Barry Friedman,

Kiejin Lee

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Հոդված

Microwave Fractal Bandpass Filters Based on Modified Hilbert Curves of the First and the Second Orders

A. Babajanyan, H. Parsamyan, K. Lee

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Հոդված

МИКРОВОЛНОВЫЕ ФРАКТАЛЬНЫЕ ПОЛОСОВЫЕ ФИЛЬТРЫ, ОСНОВАННЫЕ НА МОДИФИЦИРОВАННЫХ КРИВЫХ ГИЛЬБЕРТА ПЕРВОГО И ВТОРОГО ПОРЯДКОВ

Г. ПАРСАМЯН, А. БАБАДЖАНЯН, К. ЛЕЕ

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Հոդված

DETERMINATION OF GLUCOSE CONCENTRATION IN AQUEOUS SOLUTION BY USING MODIFIED HILBERT SHAPED MICROWAVE METAMATERIAL SENSOR

H. A. PARSAMYAN, A. Zh. BABAJANYAN, Sh. Kh. ARAKELYAN, K. LEE

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Հոդված

Performance of Pentacene-based Thin-film Transistors Fabricated at Different Deposition Rates

Arsen Babajanyan, Jinho Hwang, Duri Kim, Meenwoo Kim, Hanju Lee, Levon Odabashyan,

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Glucose Aqueous Solution Sensing by Modified Hilbert Shaped Microwave Sensor

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Հոդված

Visualization of Microwave Heatingformesh-Patterned Indium-tin-Oxide by a Thermo-Elastic Optical Indicator Microscope

A. Babajanyan, Zh. Baghdasaryan, L. Odabashyan, H. Lee, B. Friedman, K. Lee

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Direct imaging of the SSD and USB memory drives heating by thermo-elastic optical indicator microscopy

Shant Arakelyan, Hanju Lee, Yeonghun Jeong, Arsen Babajanyan, Barry Friedman, Kiejin Lee

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Characterization of Anisotropic Electrical Conductivity of Carbon Fiber Composite Materials by a Microwave Probe Pumping Technique

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Specifications of Rabi oscillations in the quantum emitters systems coupled to the localized plasmon polaritons

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Pre-Annealing Effects on a Pentacene Organic Thin Film Transistor With a Polymer Dielectric Interface

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Magneto-Optical Visualization by Bi:YIG Thin Films Prepared at Low Temperatures
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Sensitive Detection of Nano-Scale Vibrations by the Metal-Coated Fiber Tip at the Liquid-Air Interface
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«Վիճակագրական ռադիոֆիզիկա» լաբորատոր աշխատանքների ծեռևարկ
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Գիտաժողովի նյութ

Sensitive Detection of Nano-Scale Vibrations by the Metal-Coated Fiber Tip at the Liquid-Air Interface
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Գիտաժողովի նյութ

In Vitro Monitoring of HbA1C by a Microwave Biosensor
Seungwan Kim, Jongchel Kim, Armen Abrahamyan, Arsen Babajanyan, Jung-Ha Lee, Barry Friedman,
Kiejin Lee

Գիտաժողովի նյութ

Nondestructive label-free mapping of DNA bioassay using a near-field scanning microwave microscope
Arsen Babajanyan, Barry Friedman, Kiejin Lee

Գիտաժողովի նյութ

Microwave and Joule Heating Visualization by Thermo-Elastic Sensor for Carbon Fibers Composite Material
Kiejin Lee, Shant Arakelyan, Hanju Lee, Sunghoon Jeon, Do-Suck Han, G. Berthiau, Arsen Babajanyan

Գիտաժողովի նյութ

Detection of Resonant Oscillations of the Liquid Surface by using a Tapered Fiber Opto-Mechanical Sensor

Tigran Abrahamyan, Stella Sargsyan, Arsen Babajanyan, Khachatur Nerkararyan

Գիտաժողովի նյութ

Pre-Annealing Effects on a Pentacene Organic Thin Film Transistor with a Polymer Dielectric Interface

Arsen Babajanyan, Sul A Choi, Kyungchul Kim, Hanju Lee, Barry Friedman, Kiejin Lee

Գիտաժողովի նյութ

The Resonant Coupling of the Quantum Dots in the Environment of Metal Nanoparticle at Optical Frequencies

Sona Nerkararyan, Arsen Babajanyan, Khachatur Nerkararyan

Գիտաժողովի նյութ

Microwave Characterization of Complex Dielectric Permittivity Dependence on Glucose Concentration in Blood Serum and Aqueous Solution

Babajanyan A., Lee K., Kim S., Kim J., Friedman B., Arakelyan Sh., Parsamyan H.

Գիտաժողովի նյութ

Label-Free Monitoring of HbA1C by Microwaves

Babajanyan A., Kim S., Kim J., Abrahamyan A., Friedman B., Lee K.

Գիտաժողովի նյութ

Detection of Nanometric Vibrations by Using Opto-Mechanical Sensor

Arsen Babajanyan, Tigran Abrahamyan, Shant Arakelyan, Khachatur Nerkararyan

Գիտաժողովի նյութ

Noninvasive In Vitro Monitoring of HbA1c with a Microwave Biosensor

Arsen Babajanyan, S. Kim, J. Kim, Shant Arakelyan, K. Lee, J.-H. Lee, B Friedman

Գիտաժողովի նյութ

Detecting Defects in Sub-Skin-Depth Metallic Layers by a Thermo-Elastic Sensor

Arsen Babajanyan, Shant Arakelyan, Hanju Lee, Kiejin Lee, Barry Friedman

Գիտաժողովի նյութ

Effect of Pentacene Deposition Rate on OTFT

Arsen Babajanyan, Jinho Hwang, Duri Kim, Meenwoo Kim, Levon Odabashyan, Zhirayr Baghdasaryan, Seungwan Kim, Jongchel Kim, Hanju Lee, Kiejin Lee, Deokjoon Cha

Գիտաժողովի նյութ

Characterization of Heat Distribution and Microwave Absorption in a Carbon Composite Material by a Thermo-Elastic Optical Indicator Microscope

Aarsen Babajanyan, Zhirayr Baghdasaryan, Levon Odabashyan, Hanju Lee, Seungwan Kim, Jongchel Kim, Jinho Hwang, Duri Kim, Meenwoo Kim, Deokjoon Cha, Kiejin Lee

Գիտաժողովի նյութ

Real-Time Noninvasive Measurement of Glucose Concentration Using a Modified Hilbert

Shaped Microwave Fractal Sensor

Arsen Babajanyan, Levon Odabashyan, Zhirayr Baghdasaryan, Seungwan Kim, Jongchel Kim,

Jinho Hwang, Meenwoo Kim, Hanju Lee, Deokjoon Cha, Kiejin Lee, Duri Kim

Գիտաժողովի նյութ**3D visualization of electromagnetic fields and thermal distribution by the thermo-elastic optical indicator microscope**

A. Babajanyan, K. Lee, Zh. Baghdasaryan, L. Odabashyan, S. Kim, J. Kim, Gerard Berthiau, B. Friedman

Գիտաժողովի նյութ**Noninvasive in-vitro monitoring of D-glucose concentration by using a microwave fractal sensor**

A. Babajanyan, L. Odabashyan, Zh. Baghdasaryan, T. Abrahamyan, N. Harutyunyan, S. Kim, J. Kim, B. Friedman, K. Lee

Գիտաժողովի նյութ**Sensing of silver nanoparticles in aqueous solutions by using an optical fiber probe-tip**

A. Babajanyan, T. Abrahamyan, R. Khachatryan, Kh. Nerkararyan

Գիտաժողովի նյութ**Characterization of Ag nanoparticles concentration in aqueous solution by microwave biosensor**

Arsen Babajanyan, Zh. Baghdasaryan, T. Abrahamyan, L. Odabashyan, H. Lee, D. Kim, M. Kim, S. Kim, K. Lee

Գիտաժողովի նյութ**Microwave and Joule heating visualization by a thermo-elastic sensor for carbon composite materials**

Shant Arakelyan, Arsen Babajanyan, Gerard Berthiau, Barry Friedman, Kiejin Lee

Գիտաժողովի նյութ**Detecting Low Dose of Glucose in the Microwave Range By Using Thermoelastic Optical Indicator Microscope**

Tigran Abrahamyan, Nelli Babajanyan, David Hambaryan, Hasmik Manukyan, Arsen Babajanyan, Kiejin Lee

Գիտաժողովի նյութ**Dielectric-Coated Conductive Rod Resonantly Coupled with a Cut Goubau Line as a Sensitive Microwave Sensor**

Tigran Abrahamyan, Hovhannes Haroyan, David Hambaryan, Artyom Movsisy, Henrik Parsamyan, Arsen Babajanyan, Khachatur Nerkararyan, Kiejin Lee

Գիտաժողովի նյութ**Resonant interaction between microwaves and thin conducting microstructure with finite length**

T. Abrahamyan, H. Haroyan, D. Hambaryan, H. Parsamyan, A. Babajanyan, Kh. Nerkararyan, K. Lee
