Mikayel Seryozha Aleksanyan

maleksanyan@ysu.am

Institute of Physics
Chair of Materials Science and Nanotechnology
Head of the chair, professor

Education

Institution	Yerevan State University
Faculty	Faculty of Radiophysics
Date	2008 - 2011
Degree name	PhD student

Institution	Yerevan State University
Faculty	Faculty of Radiophysics
Date	2006 - 2008
Degree name	Masters

Institution	Yerevan State University
Faculty	Faculty of Radiophysics
Date	2002 - 2006
Degree name	Bachelor

Scientific Rank/degree

Institution	Yerevan State University
Date	2024
Degree name	Professor
Specialty	Physico-mathematical sciences

Institution	Yerevan State University
Date	2023
Degree name	Doctor
Specialty	Technical sciences
Research Topic	Prospective gas sensors based on metal oxide nanocomposites

Institution	Yerevan State University
Date	2011
Degree name	Candidate
Specialty	Physico-mathematical sciences
Scientific Supervisor	V.M. Arakelyan
Research Topic	Preparation and investigation of prospective semiconductor materials for gas sensors

Language skills

Հայերեն English Русский

Publications

Article

SnO2/MWCNTs Nanostructured Material for High-Performance Acetone and Ethanol Gas Sensors

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov, Emma Khachaturyan, Rima Papovyan, Alena Michalcová, Dušan Kopecký

ACS Omega 2025 7283-7294

Article

Study of a Nanostructured Co-Doped SnO2 Sensor for Hydrogen Peroxide Vapor Detection Using Impedance Spectroscopy

Gohar Shahnazaryan, Mikayel Aleksanyan, Artak Sayunts, Zarine Simonyan, Rima Papovyan, Gevorg Shahkhatuni

ACS Omega 2025 14452 - 14465

Article

Fabrication and Characterization of MWCNTs Decorated ZnO Nanograins Based Sensor for Enhanced Performance Toward CO2 Gas

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov, Rima Papovyan, Dušan Kopecký

Advanced Materials Interfaces 2025 2500185

Article

Highly Sensitive Ammonia Gas Sensor Based on MWCNTs Saturated Fe2O3 Nanograins

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov, Andranik Grigoryan, Rima Papovyan, Dušan Kopecký

Langmuir 2025 26614–26627

Article

Influence of the Growth Parameters on RF-Sputtered CNTs and Their Temperature-Selective Application in Gas Sensors

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov, Rima Papovyan, Dušan Kopecký

ACS Omega 2025 34733–34746

Article

MWCNTs/Fe2O3:ZnO Nanocomposite Material for Chemoresistive Sensing of Hydrogen Peroxide Vapors

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov, Hayk Kasparyan, Dušan Kopecky

ACS Applied Electronic Materials 2024 940-949

Article

Fabrication of the Fe2O3:ZnO Based Nanostructured Sensor for LPG Detection
Mikayel Aleksanyan,, Artak Sayunts, Gevorg Shahkhatuni, Gohar Shahnazaryan, Zarine Simonyan,

Davit Kananov
e-Journal of Surface Science and Nanotechnology 2024 149-156

Article
Fabrication and characterization of highly responsive hydrogen sensor based on Fe2O3:ZnO nanostructured thin film
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Gohar Shahnazaryan,

Vladimir Aroutiounian
Measurement: Sensors 2024 100984

Article
Acetone Vapors Detection Using a MWCNTs/SnO2 Nanocomposite Material
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov,

Emma Khachaturyan, Dušan Kopecký

ACS Applied Electronic Materials 2024 4090–4098

Article
Flexible Gas Sensor Based on the RF-Grown Fe2O3:ZnO/CNTs Material for Propylene Glycol Vapor Detection
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov,

Alena Michalcová, Lukáš Koláčný, Dušan Kopecký

ACS Applied Electronic Materials 2024 6893–6904

Article
ԺԱՄԱՆԱԿԱԿԻՑ ՆԱՆՈԿԱՌՈՒՑՎԱԾՔԱՅԻՆ ԳԱԶԱՅԻՆ ՍԵՆՍՈՐՆԵՐԻ ԲՆՈՒԹԱԳՐԵՐԻ ՈՒՍՈՒՑՄԱՆ ԱՌԱՆՁՆԱՀԱՏԿՈՒԹՅՈՒՆՆԵՐԸ ԲՈՒՀԵՐՈՒՄ
Ալեքսանյան Միքայել
Կրթությունը 21-րդ դարում 2024 56-66

Article
Room Temperature Detection of Hydrogen Peroxide Vapor by Fe2O3:ZnO Nanograins
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Hayk Kasparyan,

Dušan Kopecký
Nanomaterials 2023 120

Article
Detection of hydrogen peroxide vapor using flexible gas sensor based on SnO2 nanoparticles decorated with multi-walled carbon nanotubes
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Vladimir Aroutiounian,

Emma Khachatryan
Advances in Natural Sciences: Nanoscience and Nanotechnology 2023 025001

Article
Growth, Characterization, and Application of Vertically Aligned Carbon Nanotubes Using the RF-Magnetron Sputtering Method
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Hayk Kasparyan,

Dušan Kopecký

ACS Omega 2023 20949-20958

Article

Investigation of the MWCNT/SnO2 Sensor for the Detection of Acetone Vapors
M. S. Aleksanyan, G. H. Shahkhatuni, E. A. Khachaturyan, G. E. Shahnazaryan, A. G. Sayunts,

H. R. Hovhannisyan, D. A. Kananov

Journal of Contemporary Physics (Armenian Academy of Sciences) 2023 67-72

Article

Optoelectronic Transimpedance Converter Based on MOS Photovaricap for High Resistive Gas Sensors
Semerjyan B.O., D.A. Kananov, M.S. Alexanyan

Armenian Journal of Physics 2023 119 -125

Article

Flexible SnO2〈Co〉/MWCNT Sensor for Detection Low Concentrations of Hydrogen Peroxide Vapors
M. S. Aleksanyan, A. G. Sayunts, G. H. Shahkhatuni, Z. G. Simonyan, V. M. Aroutiounian,

G. E. Shahnazaryan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 133-139

Article

Use of Nanostructured Fe2O3:ZnO Film for Detection of Hydrogen
M. S. Aleksanyan, A. G. Sayunts, G. H. Shahkhatuni, Z. G. Simonyan, G. E. Shahnazaryan,

V. M. Aroutiounian

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 140-145

Article

Investigations of the Impedance Characteristics of a Nanostructured ZnO⟨La⟩ Sensor for Hydrogen Peroxide Vapors
G.E. Shahnazaryan, G.A. Shahkhatuni, M.S. Aleksanyan, Z.G. Simonyan, V.M. Aroutiounian, A.G. Sayunts

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 254–262

Article

Gas Sensor Based on ZnO Nanostructured Film for the Detection of Ethanol Vapor
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Gohar Shahnazaryan,

Vladimir Aroutiounian

Chemosensors 2022 245/17

Article

Flexible sensor based on multi-walled carbon nanotube-SnO2 nanocomposite material for hydrogen detection
Mikayel S Aleksanyan, Artak G Sayunts, Gevorg H Shahkhatuni, Zarine G Simonyan,

Vladimir M Aroutiounian, Gohar E Shahnazaryan

Advances in Natural Sciences: Nanoscience and Nanotechnology 2022 035003

Article

Study of Gas Sensitivity of SnO2〈Nb〉Film in Liquefied Petroleum Gas
M. S. Aleksanyan, A. G. Sayunts, G. H. Shahkhatuni, G. E. Shahnazaryan, V. M. Aroutiounian

Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 139-145

Article

Influence of Ultraviolet Rays on Sensitivity of Sensors for Acetone Vapor Detection
M. S. Aleksanyan, A. G. Sayunts, V. M. Aroutiounian, G. E. Shahnazaryan, G. H. Shahkhatuni

Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 109-116

Article

Influence of the Lanthanum Doping on the Gas Sensing Properties of the Magnetron Sputtered ZnO films for H2O2 Vapor Detection
M.S. Aleksanyan

Armenian Journal of Physics 2021 110-116

Article

Cobalt Doped SnO2 Thin Film for Detection of Vapor Phase Hydrogen Peroxide
M.S. Aleksanyan, V.M. Aroutiounian, G.E. Shahnazaryan, A.G. Sayunts

Armenian Journal of Physics 2021 8-18

Article

Solid-State Sensors for Ethanol Detection
Mikayel Aleksanyan

International Journal of Engineering and Artificial Intelligence 2020 30-43

Article

Influence of UV Rays on the Volt-Capacity Characteristic of SnO2:Co Sensor of Vapors of Hydrogen Peroxide
M. S. Aleksanyan, A. G. Sayunts, A. A. Zakaryan, V. M. Aroutiounian, V. M. Arakelyan, G. E. Shakhnazary

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 151-156

Article

Investigations of Sensors for Detection of Hydrogen Peroxide Vapors under the Influence of UV Illumination
M. S. Aleksanyan, A. G. Sayunts, A. A. Zakaryan, V. M. Harutyunyan, V. M. Arakelyan,

G. E. Shakhnazaryan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 205-212

Article

First-Principles Study of the Interaction of H2O2 with the SnO2 (110) Surface
M. A. Aghamalyan, A. A. Hunanyan, V. M. Aroutiounian, M. S. Aleksanyan, A. G. Sayunts, H. A. Zakaryan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 235-239

Article

ВЛИЯНИЕ УЛЬТРАФИОЛЕТОВЫХ ЛУЧЕЙ НА ВОЛЬТ- ЕМКОСТНУЮ ХАРАКТЕРИСТИКУ SnO2:Co СЕНСОРА ПАРОВ ПЕРЕКИСИ ВОДОРОДА
М.С. АЛЕКСАНЯН, А.Г. САЮНЦ, А.А. ЗАКАРЯН, В.М. АРУТЮНЯН, В.М. АРАКЕЛЯН, Г.Э. ШАХНАЗАРЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 218-227

Article

ИССЛЕДОВАНИЕ СЕНСОРА ДЛЯ ОБНАРУЖЕНИЯ ПАРОВ ПЕРЕКИСИ ВОДОРОДА ПОД

ДЕЙСТВИЕМ УЛЬТРАФИОЛЕТОВОГО ИЗЛУЧЕНИЯ
М.С. АЛЕКСАНЯН, А.Г. САЮНЦ, А.А. ЗАКАРЯН, В.М. АРУТЮНЯН, В.М. АРАКЕЛЯН, Г.Э. ШАХНАЗАРЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2020

312-324

Article

Magnetron Sputtered ZnO Thin Films for Hydrogen Peroxide Vapor Detection
Mikayel ALEKSANYAN, Vladimir AROUTIOUNIAN, Valeri ARAKELYAN, Gohar SHAHNAZARYAN,

Gevorg SHAHKHATUNI

Sensors & Transducers 2020 23-31

Article

Effects of UV Irradiation on the Sensing Properties of Co-doped SnO2 Thin Film for Ethanol Detection
Mikayel Aleksanyan, Artak Sayunts, Hayk Zakaryan, Vladimir Aroutiounian, Gohar Shahnazaryan,

Valeri Arakelyan

International Journal on Advances in Systems and Measurements 2020 312-321

Manual

Կիսահաղորդչային գազային սենսորների առանձնահատկությունները
Միքայել Ալեքսանյան
2020 52

Article

Study of Hydrogen Peroxide Vapors Sensor Made of Nanostructured Co-doped SnO2 Film
Vladimir AROUTIOUNIAN, Valeri ARAKELYAN, Mikayel ALEKSANYAN, Gohar SHAHNAZARYAN,

Artak SAYUNTS, Berndt JOOST

Sensors & Transducers 2019 24-31

Article

Исследование сенсора на основе ZnO:La для детектирования паров перекиси водорода методом импедансной спектроскопии
Г.А. Шахатуни, В.М. Арутюнян, В.М. Аракелян, М.С. Алексанян, Г. Э. Шахназарян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2019

253-262

Article

Investigation of sensor made of ZnO:La for detection of hydrogen peroxide vapours by impedance spectroscopy method
G. H. Shahkhatuni, V. M. Aroutiounian, V. M. Arakelyan, M. S. Aleksanyan, G. E. Shahnazaryan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2019 188-195

Article

Magnetron Sputtering Techniques and Their Applications at Gas Sensors Manufacturing
M.S. Aleksanyan
Armenian Journal of Physics 2019 62-77

Article

Thin-film SnO2 and ZnO detectors of hydrogen peroxide vapors

Vladimir Aroutiounian, Valeri Arakelyan, Mikayel Aleksanyan, Gohar Shahnazaryan, Petr Kacer,

Pavel Picha, Jiri Kovarik, Jakub Pekarek, Berndt Joost

Journal of Sensors and Sensor Systems 2018 281-288

Article

Conductometric sensor for hydrogen peroxide vapors detection
G. H. Shahkhatuni, V. M. Aroutiounian, V. M. Arakelyan, M. S. Aleksanyan, G. E. Shahnazaryan

Armenian Journal of Physics 2018 153-159

Article

Nanostructured Sensors for Detection of Hydrogen Peroxide Vapours
Vladimir AROUTIOUNIAN, Valeri ARAKELYAN, Mikayel ALEKSANYAN, Artak SAYUNTS,

Gohar SHAHNAZARYAN, Petr KACER, Pavel PICHA, Jiri KOVARIK, Jakub PEKAREK, Berndt JOOST

Sensors & Transducers 2017 46-53

http://www.sensorsportal.com/HTML/DIGEST/Submission.htm

Article

Sensor for detection of chemical agents made of Co-doped SnO2
V. M. Aroutiounian, V. M. Arakelyan, M. S. Aleksanyan, A. G. Sayunts, G. E. Shahnazaryan, M. Vrnata,

P. Fitl, J. Viček, K. S. Gharajyan, H. S. Kasparyan

Armenian Journal of Physics 2017 122-127

Article

The ethanol sensors made from α-Fe2O3 decorated with multiwall carbon nanotubes
V.M. Aroutiounian, V.M. Arakelyan, G.E. Shahnazaryan, M.S. Aleksanyan, K. Hernadi, Z. Nemeth, P. Berki,

Z. Papa, Z. Toth, L. Forro

Advances in Nano Research 2015 1-11

http://www.techno-press.org/?journal=anr&subpage=1

Article

New Applications of the Noise Spectroscopy for Hydrogen Sensors
Ferdinand Gasparyan, Hrant Khondkaryan, Mikayel Aleksanyan

Journal of Modern Physics 2014 1-8

http://www.scirp.org/journal/jmp/

Article

Статистические и шумовые характеристики нанокомпозитных газовых сенсоров
Р.В. Оганесян, Г.Д. ХОНДКАРЯН, М.С. АЛЕКСАНЯН, В.М. АРАКЕЛЯН, Б.О. СЕМЕРДЖЯН,

Ф.В. ГАСПАРЯН, В.М. АРУТЮНЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2014

241 - 251

Conference

Detection of gasoline vapor by ZnO thin film sensor
M.S. Aleksanyan, V.M. Arakelyan, V.M. Aroutiounian

Conference

Hydrogen Peroxide Vapours Sensors Made From ZnO<La> and SnO2<Co> Films
V. Aroutiounian, V. Arakelyan, M. Aleksanyan, A. Sayunts, G. Shahnazaryan, P. Kacer, P. Picha,

J. A. Kovarik, J. Pekarek, B. Joost

Conference

Gasoline sensor based on ZnO
M.S. Aleksanyan, V.M. Arakelyan, V.M. Aroutiounian, A.G. Sayunts

---

Conference

Detection of Simulants of Chemical Warfare Agents on Textile Chemiresistors
A. Sýkorová, E. Marešová, D. Tomeček, Š. Havlová, P. Hozák, J. Vlček, L. Fišer, P. Fitl, M. Aleksanyan,

A. Sayunts, V. Aroutiounian, M. Vrňata

Conference

SnO2 and ZnO Detectors of Hydrogen Peroxide Vapors
Vladimir M. Aroutiounian, Valeri M. Arakelyan, Mikayel S. Aleksanyan, Artak G. Sayunts,

Gohar E. Shahnazaryan, Petr Kacer, Pavel Picha, Jiri A. Kovarik, Jakub Pekarek, Berndt Joost

---

Conference

Co-DOPED SnO2 SENSOR FOR DETECTION OF CHEMICAL AGENTS
V.M. Arakelyan, M.S. Aleksanyan, A.G. Sayunts, G.E. Shahnazaryan, M. Vrnata, P. Fitl, J. Viček,

K.S. Gharajyan, H.S. Kasparyan

Conference

Manufacturing and investigations of hydrogen peroxide vapors sensor
V.M. Aroutiounian, V.M. Arakelyan, M.S. Aleksanyan, G.E. Shahnazaryan, P. Kacer, P. Picha, J.A. Kovarik,

J. Pekarek, B. Joost

Conference

Co-doped SnO2 Sensor for Detection of Hydrogen Peroxide Vapors
V. M. Aroutiounian, V. M. Arakelyan, M. S. Aleksanyan, G. E. Shahnazaryan, A. G. Sayunts, B. Joost

---

Conference

UV-assisted Chemiresistive Alcohol Sensor Based on Cobalt Doped Tin Dioxide
Mikayel Aleksanyan, Artak Sayunts, Hayk Zakaryan, Vladimir Aroutiounian, Valeri Arakelyan,

Gohar Shahnazaryan

Conference

Hydrogen Peroxide Vapor Sensor Based on Zinc Oxide
V. M. Aroutiounian, M. S. Aleksanyan, V. M. Arakelyan, G. E. Shahnazaryan, G. H. Shahkhatuni

---

Patent

Արդյունաբերական թունավոր նյութերի ռեզիստիվ սենսոր
Հարությունյան Վլադիմիր Միխաիլի, Առաքելյան Վալերի Միքայելի, Վրնատա Մարտին,

Ալեքսանյան Միքայել Սերյոժայի, Ադամյան Ձավեն Նիկոլայի, Սայունց Արտակ Գարեգինի,

Շահնազարյան Գոհար Էմիլի, Ադամյան Արսեն Ձավենի, Խաչատուրյան Էմմա Արսենի,

Ֆիտլ Պրեմիսլ, Վլչեկ Յան

Patent

Ռազմական թունավոր ազդանյութերի ռեզիստիվ սենսոր

Հարությունյան Վլադիմիր Միխաիլի, Առաքելյան Վալերի Միքայելի, Վրնատա Մարտին, Ալեքսանյան Միքայել Սերյոժայի, Ադամյան Ձավեն Նիկոլայի, Սայունց Արտակ Գարեգինի, Շահնազարյան Գոհար Էմիլի, Ֆիտլ Պրեմիսլ, Վլչեկ Յան, Կասպարյան Հայկ Սերգեյի

Patent

Օդում ջրածնի պերօքսիդի գոլորշիների հայտնաբերման եղանակ
Վ. Հարությունյան, Վ. Առաքելյան, Մ. Ալեքսանյան, Ձ. Ադամյան, Ա. Սայունց, Գ. Շահնազարյան, Պ. Կաչեր

Patent

Ջրածնի պերօքսիդի գոլորշիներ հայտնաբերող սենսորի պատրաստման եղանակ
Ալեքսանյան Միքայել Սերյոժայի, Հարությունյան Վլադիմիր Միխաիլի, Շահնազարյան Գոհար Էմիլի, Շահխաթունի Գևորգ Հարությունի

Patent

Ջրածնի նանոկառուցվածքային ռեզիստիվ սենսոր
Ալեքսանյան Միքայել Սերյոժայի, Սայունց Արտակ Գարեգինի, Շահխաթունի Գևորգ Հարությունի, Սիմոնյան Զարինե Գևորգի, Շահնազարյան Գոհար Էմիլի, Հարությունյան Վլադիմիր Միխաիլի

Patent

Ջրածնի դետեկտոր
Միքայել Ալեքսանյան, Արտակ Սայունց, Գևորգ Շահխաթունի, Զարինե Սիմոնյան, Գոհար Շահնազարյան

Conference

Highly Sensitive Hydrogen Sensor Based on ZnO/MWCNTs Nanocomposite Material
M.S. Aleksanyan, A.G. Sayunts, G.H. Shahkhatuni, Z.G. Simonyan, G.E. Shahnazaryan

---

Conference

A Chemiresitive Gas Sensor Based on SnO2:ZnO Nanostructured Thin Film for the Detection of Hydrogen Peroxide Vapor
Mikayel Seryozha Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Vladimir Aroutiounian, Gohar Shahnazaryan

---

Conference

Highly Sensitive Hydrogen Gas Sensor Based on Fe2O3:ZnO Nanostructured Thin Film
Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Gohar Shahnazaryan, Vladimir Aroutiounian

---

Conference

Fabrication and Characterization of CO2 Sensor Using ZnO<In> Nanograins
M. Aleksanyan, G. Shahkhatuni, Z. Simonyan, G. Shahnazaryan, R. Papovyan, D. Kananov, A. Grigoryan, G. Gevorgyan, G. Stepanyan, A. Sayunts

---