Artak Garegin Sayunts

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Research Institute of Physics
Center for Semiconductor Devices and Nanotechnologies
Senior researcher

Education

Institution	Yerevan State University
Faculty	Faculty of Radiophysics / Department of Physics of Semiconductors and Microelectronics
Date	2013 - 2016
Degree name	PhD student

Institution	Yerevan State University
Faculty	Faculty of Radiophysics / Department of Physics of Semiconductors and Microelectronics
Date	2011 - 2013
Degree name	Masters

Institution	Yerevan State University
Faculty	Faculty of Radiophysics
Date	2007 - 2011
Degree name	Bachelor

Scientific Rank/degree

Institution	Yerevan State University
Date	2016
Degree name	Candidate
Specialty	Technical sciences
Scientific Supervisor	V.M. Aroutiounian
Research Topic	Study of semiconductor gas sensors

Language skills

Հայերեն English Русский

Work experience

Institution	Department of Physics of Semiconductors and Microelectronics, YSU

Period of time	2021 till now
Rank/degree	Head of Educational Laboratory

Institution	Center of Semiconductor Devices and Nanotechnologies, YSU
Period of time	2013 till now
Rank/degree	Research scientist

Participation in international conferences and seminars

08/05/2023 - 11/05/2023	Sensor and Measurement Science International (SMSI 2023) Germany
24/08/2022 - 26/08/2022	Measurement, Sensor Systems and Applications Conference (MeSSAC 2022) Online and On-demand China
21/11/2020 - 25/11/2020	The Fifth International Conference on Advances in Sensors, Actuators, Metering and Sensing (ALLSENSORS 2020) Spain
19/09/2018 - 21/09/2018	4th International Conference on Sensors Engineering and Electronics Instrumentation Advances (SEIA' 2018) Netherlands (the)
23/06/2017 - 25/06/2017	The 11th Int. Conference on Semiconductor Micro- and Nanoelectronics (ICSMN 2017) Armenia
19/03/2017 - 23/03/2017	Second Intern. Conf. on Advances in Sensors, Actuators, Metering and Sensing (ALLSENSORS 2017) France
30/05/2017 - 01/06/2017	The 18th Int. Conference on Sensors and Measurement Technology (AMA Conferences – SENSOR 2017) Germany

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

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

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

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

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

Study of MWCNT / SnO2/Ru thick-film sensors for detecting thepresence of certain harmful gases in air
Z.N. Adamyan, A.G. Sayunts, E.A. Khachaturyan, V.M. Aroutiounian

Armenian Journal of Physics 2021 49-73

Article

Tin Oxide/Carbon Nanotube Nanocomposite Sensors for Some Toxic VOCs Detection
Z.N. Adamyan, A.G. Sayunts, E.A. Khachaturyan, V.M. Aroutiounian

South Florida Journal of Development 2021 1067-1093

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

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

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

Nanocomposite H2O2 Vapor Sensors Made on the Base of Carbon Nanotubes Covered with SnO2 Nanoparticles

Zaven ADAMYAN, Artak SAYUNTS, Emma KHACHATURYAN, Valeri ARAKELYAN, Vladimir AROUTIOUNIAN, Bernth JOOST

Sensors & Transducers 2019 18-23

Article

ИССЛЕДОВАНИЕ СЕНСОРОВ ПАРОВ ПЕРЕКИСИ ВОДОРОДА, ИЗГОТОВЛЕННЫХ НА ОСНОВЕ УГЛЕРОДНЫХ НАНОТРУБОК, ПОКРЫТЫХ НАНОЧАСТИЦАМИ ДВУОКИСИ ОЛОВА

З.Н. АДАМЯН, А.Г. САЮНЦ, Э.А. ХАЧАТУРЯН, В.М. АРАКЕЛЯН, В.М. АРУТЮНЯН, B. JOOST

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

75–84

Article

Study of Hydrogen Peroxide Vapors Sensors Based on Carbon Nanotubes Coated with Tin Oxide Nanoparticles

Z. N. Adamyan, A. G. Sayunts, E. A. Khachaturyan, V. M. Araqelyan, V. M. Aroutiounian, B. Joost

Journal of Contemporary Physics (Armenian Academy of Sciences) 2019 57–64

Article

Nanocomposite sensors of propylene glycol, dimethylformamide and formaldehyde vapors

Zaven Adamyan, Artak Sayunts, Vladimir Aroutiounian, Emma Khachaturyan, Martin Vrnata, Premysl Fitl, Jan Vlcek

Journal of Sensors and Sensor Systems 2018 31-41

Article

Study of Propylene Glycol, Dimethylformamide and Formaldehyde Vapors Sensors Based on MWCNTs/SnO2 Nanocomposites

Zaven Adamyan, Artak Sayunts, Vladimir Aroutiounian, Emma Khachaturyan, Arsen Adamyan, Martin Vrnata, Přemysl Fitl, Jan Vlček

Sensors & Transducers 2017 38-45

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

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

Исследование нанокомпозитных толстопленочных сенсоров паров бутанола
З.Н. Адамян, А.Г. Саюнц, Э.А. Хачатрян, В.М. Арутюнян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2016

192-201

http://www.flib.sci.am/eng/Fizika/Frame.html

Article

Study of Nanocomposite Thick-Film Butanol Vapor Sensors
Z.N. Adamyan, A.G. Sayunts, E.A. Khachaturyan, V.M. Aroutiounian

Journal of Contemporary Physics (Armenian Academy of Sciences) 2016 143-149

http://www.springer.com/physics/particle+and+nuclear+physics/journal/11958

Article

Comparative Study of VOC Sensors Based on Ruthenated MWCNT/SnO2 Nanocomposites
Vladimir Aroutiounian, Zaven Adamyan, Artak Sayunts, Emma Khachaturyan, Arsen Adamyan,

Klara Hernadi, Zoltan Nemeth, Peter Berki

International journal of Emerging Trends in Science and Technology 2014 1309-1319

http://ijetst.in/

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

Study of propylene glycol and dimethylformamide vapors sensors based on MWCNTs/SnO2 nanocomposites
Z. Adamyan, A. Sayunts, V. Aroutiounian, E. Khachaturyan, A. Adamyan, M. Vrnata, P. Fitl, J. Vlček

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Conference

Study of MWCNT/SnO2 Nanocomposite Acetone and Toluene Vapor Sensors
Vladimir M. Aroutiounian, Zaven N. Adamyan, Artak G. Sayunts, Emma A. Khachaturyan,

Arsen Z. Adamyan

Conference

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

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Conference

On Selectivity of Surface-Ruthenated MWCNT/SnO2 Nanocomposite VOCs Sensors

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

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Conference

MWCNTs/SnO2 Harmful Gas Sensors

Z. Adamyan, A. Sayunts, V. Aroutiounian, E. Khachaturyan, A. Adamyan, M. Vrnata, P. Fitl, J. Vlček

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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

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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

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Conference

STUDY OF MWCNTs/SnO2 NANOCOMPOSITE FORMALDEHYDE GAS SENSOR

Z.N. Adamyan, A.G. Sayunts, E.A. Khachaturyan, V.M. Aroutiounian

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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

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Conference

Study of MWCNTs/SnO2 Nanocomposite H2O2 Vapor Sensors

Z. N. Adamyan, A. G. Sayunts, E. A. Khachaturyan, V. M. Araqelyan, V. M. Aroutiounian, B. Joost

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Conference

UV-assisted Chemiresistive Alcohol Sensor Based on Cobalt Doped Tin Dioxide

Mikayel Aleksanyan, Artak Sayunts, Hayk Zakaryan, Vladimir Aroutiounian, Valeri Arakelyan, Gohar Shahnazaryan

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Patent

Արդյունաբերական թունավոր նյութերի ռեզիստիվ սենսոր

Հարությունյան Վլադիմիր Միխաիլի, Առաքելյան Վալերի Միքայելի, Վրնատա Մարտին, Ալեքսանյան Միքայել Սերյոժայի, Ադամյան Զավեն Նիկոլայի, Սայունց Արտակ Գարեգինի, Շահնազարյան Գոհար Էմիլի, Ադամյան Արսեն Զավենի, 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 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

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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
