

# Gevorg Harutyun Shahkhatuni

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## Research Institute of Physics

Center for Semiconductor Devices and Nanotechnologies

Researcher

## 🌐 Language skills

Հայերեն Русский English

## 📖 Publications

Article

### **SnO<sub>2</sub>/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 SnO<sub>2</sub> 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 CO<sub>2</sub> 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 Fe<sub>2</sub>O<sub>3</sub> 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/Fe<sub>2</sub>O<sub>3</sub>:ZnO Nanocomposite Material for Chemoresistive Sensing of Hydrogen Peroxide Vapors**

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov,  
Hayk Kasparyan, Dušan Kopecký  
ACS Applied Electronic Materials 2024 940-949

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*Article*

**Fabrication of the Fe<sub>2</sub>O<sub>3</sub>: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

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*Article*

**Fabrication and characterization of highly responsive hydrogen sensor based on Fe<sub>2</sub>O<sub>3</sub>:ZnO nanostructured thin film**

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Gohar Shahnazaryan,  
Vladimir Aroutiounian  
Measurement: Sensors 2024 100984

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*Article*

**Acetone Vapors Detection Using a MWCNTs/SnO<sub>2</sub> Nanocomposite Material**

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Davit Kananov,  
Emma Khachatryan, Dušan Kopecký  
ACS Applied Electronic Materials 2024 4090-4098

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*Article*

**Flexible Gas Sensor Based on the RF-Grown Fe<sub>2</sub>O<sub>3</sub>: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

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*Article*

**Room Temperature Detection of Hydrogen Peroxide Vapor by Fe<sub>2</sub>O<sub>3</sub>:ZnO Nanograins**

Mikayel Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Zarine Simonyan, Hayk Kasparyan,  
Dušan Kopecký  
Nanomaterials 2023 120

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*Article*

**Detection of hydrogen peroxide vapor using flexible gas sensor based on SnO<sub>2</sub> 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

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*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

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*Article*

**Investigation of the MWCNT/SnO<sub>2</sub> 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

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*Article*

**Investigation of Nanostructured Fe<sub>2</sub>O<sub>3</sub>:ZnO Sensor by Impedance Spectroscopy**

G. H. Shahkhatuni

Journal of Contemporary Physics (Armenian Academy of Sciences) 2023 385-390

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*Article*

**Flexible SnO<sub>2</sub> (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

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*Article*

**Use of Nanostructured Fe<sub>2</sub>O<sub>3</sub>: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

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*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

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*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

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*Article*

**Flexible sensor based on multi-walled carbon nanotube-SnO<sub>2</sub> 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

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*Article*

**Study of Gas Sensitivity of SnO<sub>2</sub> (Nb) Film in Liquefied Petroleum Gas**

M. S. Aleksanyan, A. G. Sayunts, G. H. Shahkhatuni, G. E. Shahnazaryan, V. M. Aroutiounian

*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

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*Article*

**Magnetron Sputtered ZnO Thin Films for Hydrogen Peroxide Vapor Detection**

Mikayel ALEKSANYAN, Vladimir AROUTIOUNIAN, Valeri ARAKELYAN, Gohar SHAHNAZARYAN,

Gevorg SHANKHATUNI

Sensors & Transducers 2020 23-31

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*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

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*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

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*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

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*Conference*

**Hydrogen Peroxide Vapor Sensor Based on Zinc Oxide**

V. M. Aroutiounian, M. S. Aleksanyan, V. M. Arakelyan, G. E. Shahnazaryan, G. H. Shahkhatuni

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*Patent*

**Ջրածնի պերօքսիդի գոլորշիներ հայտնաբերող սենսորի պատրաստման եղանակ**

Ալեքսանյան Միքայել Սերյոժայի, Հարությունյան Վլադիմիր Միխայիլի, Շահնազարյան Գոհար Էմիլի,

Շահխաթունի Գևորգ Հարությունի

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*Patent*

**Ջրածնի նանոկառուցվածքին ռեզիստիվ սենսոր**

Ալեքսանյան Միքայել Սերյոժայի, Սայունց Արտակ Գարեգինի, Շահխաթունի Գևորգ Հարությունի,

Սիմոնյան Չարինե Գևորգի, Շահնազարյան Գոհար Էմիլի, Հարությունյան Վլադիմիր Միխայիլի

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*Patent*

**Ջրածնի դետեկտոր**

Միքայել Ալեքսանյան, Արտակ Սայունց, Գևորգ Շահխաթունի, Չարինե Սիմոնյան,

Գոհար Շահնազարյան

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*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 Chemiresistive Gas Sensor Based on SnO<sub>2</sub>:ZnO Nanostructured Thin Film for the Detection of Hydrogen Peroxide Vapor**

Mikayel Seryozha Aleksanyan, Artak Sayunts, Gevorg Shahkhatuni, Vladimir Aroutiounian,

Gohar Shahnazaryan

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*Conference*

**Highly Sensitive Hydrogen Gas Sensor Based on Fe<sub>2</sub>O<sub>3</sub>:ZnO Nanostructured Thin Film**

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

Vladimir Aroutiounian

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*Conference*

**Fabrication and Characterization of CO<sub>2</sub> 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

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