

# Zarine Gevorg Simonyan

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## Research Institute of Physics

Center for Semiconductor Devices and Nanotechnologies

Researcher

## Education

<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Radiophysics
<b>Date</b>	2020 - 2022
<b>Degree name</b>	Masters

<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Radiophysics
<b>Date</b>	2016 - 2020
<b>Degree name</b>	Bachelor

## Language skills

Հայերեն Русский English

## Work experience

<b>Institution</b>	Center of Semiconductor Devices and Nanotechnology
<b>Period of time</b>	2021 till now
<b>Rank/degree</b>	Researcher

## Scientific interests

- Gas sensors
- Flexible gas sensors
- Carbon nanotubes (CNTs)

## 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 Khachatryan, 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

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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

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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

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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

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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*

**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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*Patent*

**Զրաձևի դետեկտոր**

Միքայել Ալեքսանյան, Արտակ Սայունց, Գևորգ Շահխատունի, Զարինե 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*

**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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