

# Ferdinand Vazgen Gasparyan

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## Research Institute of Physics

Center of Semiconductor Devices and Nanotechnologies

Senior researcher

## 🌐 Language skills

Русский English Հայերեն

## 📖 Publications

Article

### Modeling the Parameters of p-i-n Solar Cells Based on CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite

Ferdinand Gasparyan

Indian Journal of Pure and Applied Physics 2024 51-57

Article

### Solar Cells on the Base of Isotype Heterojunction Black Silicon - Crystalline Silicon

Ferdinand Gasparyan, Vladimir Gasparian

Indian Journal of Pure and Applied Physics 2024 1106-1112

Article

### Optical simulation and experimental investigation of the crystalline silicon/black silicon/perovskite tandem structures

Ferdinand Gasparyan, Gagik Ayvazyan, Vladimir Gasparian

Optical Materials 2023 113879

Article

### Optical Properties of the Crystalline Silicon-black Silicon-perovskite Tandem Solar Cells

Ferdinand Gasparyan

Advanced Materials Science and Technology 2023 0517626.(1-11)

Article

### Capacitive Immunosensors Based on Structures Electrolyte-Insulator-Semiconductor

F.V. Gasparyan, V.V. Simonyan, L.F. Gaspar

Journal of Contemporary Physics (Armenian Academy of Sciences) 2023 257-265

Article

### ЕМКОСТНЫЕ ИММУНОСЕНСОРЫ НА ОСНОВЕ СТРУКТУР

### ЭЛЕКТРОЛИТ-ИЗОЛЯТОР-ПОЛУПРОВОДНИК

Ф.В. ГАСПАРЯН, В.В. СИМОНЯН, Л.Ф. ГАСПАРЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2023

354-365

Article

### Dynamics of Charged Complex Molecules in Aqueous Solution

F.V. Gasparyan, L.F. Gasparyan, V.V. Simonyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 98-103

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*Article*

**Reflection and Transmission of Radiation of the Structure Crystalline Silicon-Black Silicon-Perovskite**

F. V. Gasparyan, G. Y. Ayvazyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2022 160-165

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*Article*

**Effect of thermal annealing on the structural and optical properties of black silicon**

Ferdinand Gasparyan, Gagik Ayvazyan, Surik Khudaverdyan, Ashok Vaseashta

Journal of Materials Science: Materials in Electronics 2022 17001-17010

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*Article*

**Internal Electrical Noises of BioFET Sensors Based on Various Architectures**

Lusine Gasparyan, Ferdinand Gasparyan, Vahan Simonyan

Open Journal of Biophysics 2021 177-204

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*Manual*

**Պինդմարմնային էլեկտրոնիկա**

Ֆերդինանտ Գասպարյան

2021 220

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*Article*

**Activation-relaxation processes and related effects in quantum conductance of molecular junctions**

F. Gasparyan, N. Boichuk, S. Vitusevich

Nanotechnology 2020 045001(1-7)

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*Article*

**Noises and Signal-to-Noise Ratio of Nanosize EIS and ISFET Biosensors**

Lusine Gasparyan, Ilya Mazo, Vahan Simonyan, Ferdinand Gasparyan

Open Journal of Biophysics 2020 1-12

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*Article*

**Study of Molecular Junctions Metal-DNA-Metal for the DNA Sequencing**

L.F. Gasparyan, I. A. Mazo, V. V. Simonyan, F. V. Gasparyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 77-86

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*Article*

**EIS Biosensor for Detection of Low Concentration DNA Molecules**

L. F. Gasparyan, I. A. Mazo, V. V. Simonyan, F. V. Gasparyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 101-109

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**DNA Sequencing Modified Method through Effective Regulation of Its Translocation Speed in Aqueous Solution**

Lusine Gasparyan, Ilya Mazo, Ferdinand Gasparyan, Vahan Simonyan

Open Journal of Biophysics 2020 96-112

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**ИССЛЕДОВАНИЕ МОЛЕКУЛЯРНЫХ ПЕРЕХОДОВ МЕТАЛЛ- ДНК-МЕТАЛЛ ДЛЯ СЕКВЕНИРОВАНИЯ ДНК**

Л.Ф. ГАСПАРЯН, И.А. МАЗО, В.В. СИМОНЯН, Ф.В. ГАСПАРЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 104-116

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Article

**EIS БИОСЕНСОР ДЛЯ ОПРЕДЕЛЕНИЯ НИЗКОЙ КОНЦЕНТРАЦИИ МОЛЕКУЛ ДНК**

Л.Ф. ГАСПАРЯН, И.А. МАЗО, В.В. СИМОНЯН, Ф.В. ГАСПАРЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 136-146

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Monograph

**Ֆիզիկայի պատմություն**

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Article

**DNA Sequencing: Current State and Prospects of Development**

F. Gasparyan, L. Gasparyan, I. Mazo, V. Simonyan

Open Journal of Biophysics 2019 169-197

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Article

**ISFET Based DNA Sensor: Current-Voltage Characteristic and Sensitivity to DNA Molecules**

F. Gasparyan, L. Gasparyan, I. Mazo, V. Simonyan

Open Journal of Biophysics 2019 239-253

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Article

**Photoconductivity, pH Sensitivity, Noise, and Channel Length Effects in Si Nanowire FET Sensors**

Ferdinand Gasparyan, Ihor Zadorozhny, Hrant Khondkaryan, Armen Arakelyan, Svetlana Vitusevich

Nanoscale Research Letters 2018 87-95

<https://nanoscalereslett.springeropen.com/>

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Article

**Noise spectroscopy of tunable nanoconstrictions: molecule-free and molecule-modified**

Ferdinand Gasparyan, Volodymyr Handziuk, Lode K J Vandamme, Maristella Coppola, Viktor Sydoruk,

Mykhailo Petrychuk, Dirk Mayer, Svetlana Vitusevich

Nanotechnology 2018 385704 (1-12)

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Article

**Electrical Noises in Thin Metal Wires**

F.V. Gasparyan.

Journal of Contemporary Physics (Armenian Academy of Sciences) 2018 376-383

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Article

**Электрические шумы в тонких металлических проволоках**

Ф. Гаспарян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2018  
501-511

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*Article*

**К теории переноса тока в механически управляемых обрывных переходах**

Ф. Гаспарян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2017  
166-176

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*Article*

**Double-gated Si NW FET sensors: Low-frequency noise and photoelectric properties**

F.Gasparyan

Journal of Applied Physics 2016 064902(1-8)

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**ЭФФЕКТ СМЕЩЕНИЯ КРАЯ ПОГЛОЩЕНИЯ В КРЕМНИЕВОЙ НАНОПРОВОЛОКЕ**

Ф.В. ГАСПАРЯН, А.А. АРАКЕЛЯН, Г.Д. ХОНДКАРЯН

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2016  
464-470

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*Article*

**Double-gated Si NW FET sensors: Low-frequency noise and photoelectric properties**

F. Gasparyan, H. Khondkaryan, A. Arakelyan, I. Zadorozhnyi, S. Pud, S. Vitusevich

Journal of Applied Physics 2016 064902-(1-9)

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*Article*

**The Effect of Shifting of the Absorption Edge in the Silicon Nanowire**

F.V. Gasparyan, A.H. Arakelyan, H.D.Khondkaryan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2016 345-349

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

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*Article*

**Quantum modulation of the channel charge and distributed capacitance of double gated nanosize FETs**

F.V. Gasparyan, V.M. Aroutiounian

Advances in Nano Research 2015 49-54

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*Article*

**Single trap in liquid gated nanowire FETs: Capture time behavior as a function of current.**

F. Gasparyan

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**Quantum modulation of the channel charge and distributed capacitance of double gated**

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**Low-Frequency Noises in the Metal-Semiconductor Contact**

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Journal of Contemporary Physics (Armenian Academy of Sciences) 2015 170–176

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**Низкочастотные шумы контакта металл-полупроводник**

Ф.В. Гаспарян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2015 228-236

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*Article*

**CHARGE CARRIER'S DISTRIBUTION IN THE INVERSION CHANNEL OF NANOSIZED FETs**

F.V. GASPARYAN

Armenian Journal of Physics 2014 136-146

<http://ajp.asj-oa.am/>

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*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/>

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**Single trap dynamics in electrolyte-gated Si-nanowire field effect transistors**

S. Pud, F. Gasparyan, M. Petrychuk, J. Li, A. Offenhäusser, S. A. Vitusevich

Journal of Applied Physics 2014 233705-(1-11)

<http://aip.scitation.org/jap/info/contact>

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*Article*

**Статистические и шумовые характеристики нанокompозитных газовых сенсоров**

Р.В. Оганесян, Г.Д. ХОНДКАРЯН, М.С. АЛЕКСАНИЯН, 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

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**Chapter 11: Noise Reduction in (Bio-) Chemical Sensors Functionalized with Carbon Nanotube Multilayers**

F.V. Gasparyan

NATO Science for Peace and Security Series B: Physics and Biophysics, Advanced Sensors for Safety and Security  
2013 139-150

*Monograph*

**Դիէլեկտրիկների ֆիզիկա**

Ֆ. Գասպարյան

2013 217

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*Monograph*

**Low-Frequency Noise Spectroscopy at Nanoscale: Carbon Nanotube Materials and Devices**

Svetlana Vitusevich, Ferdinand Gasparyan

2011 40

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*Conference*

**Ultraviolet photodetector on the base of silicon nanowires**

F. Gasparyan

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*Conference*

**UV photodetector on the base of silicon nanowire FET**

Ferdinand Gasparyan

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*Conference*

**Low-frequency noises and SNR of double gated Si NW ISFET based biochemical sensor**

F.V. Gasparyan, H.D.Khondkaryan

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*Conference*

**Low-frequency noises of double-gated SiNW FET under irradiation**

F. Gasparyan, H.Khondkaryan, A.Arakelyan

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*Conference*

**Optical properties of double-gated silicon nanowire FETs**

Hrant Khondkaryan, Armen. Arakelyan, Ferdinand Gasparyan

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*Conference*

**BIOCHEMICAL SENSORS BASED ON SILICON NANORIBBON FETs Part 1: Samples Fabrication, CVCs, pH-sensitivity**

F. Gasparyan, I.Zadorozhnyi, H.Khondkaryan, A.Arakelyan, S.Vitusevich

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*Conference*

**Noise Characterization of Molecular Junctions**

F. Gasparyan, V.Handziuk, M.Coppola, V.Sudoruk, D.Mayer, S.Vitusevich

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*Conference*

**Biochemical Sensors Based on Silicon Nanoribbon FETs. Part 2: Low-frequency noise and size-dependent effects**

F. Gasparyan, I. Zadorozhnyi, H. Khondkaryan, A. Arakelyan, S. Vitusevich

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*Conference*

**Transport Regimes in Tunable Gold Nanoconstructions: Proposed Solution by Low-Frequency Noise Spectroscopy**

*Patent*

**Method of 1/f Noise Reduction And Noise Level Manipulation In Semiconductor Based Devices**

12. Gasparyan F.V.

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