

# Vahram Patvakan Mkrtchyan

## Research Institute of Physics

Laboratory of Solid State Physics

Researcher

☎ 37491422474  
23-25

✉ vmkrtchyan@ysu.am

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## Education

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<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Faculty of Physics, solid state physics department
<b>Date</b>	1985 - 1988
<b>Degree name</b>	PhD student

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<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Faculty of Physics, solid state physics department
<b>Date</b>	1980 - 1985
<b>Degree name</b>	Qualified specialist

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## Scientific Rank/degree

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<b>Institution</b>	Yerevan State University
<b>Date</b>	1992
<b>Degree name</b>	Candidate
<b>Specialty</b>	Physico-mathematical sciences
<b>Scientific Supervisor</b>	Bezirganyan Petros
<b>Research Topic</b>	Studies of images of various combinations imperfections of X-ray interferometric systems

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## Language skills

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Հայերեն Русский English

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## Work experience

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<b>Institution</b>	Yerevan State University
<b>Period of time</b>	2018 till now
<b>Rank/degree</b>	Researcher

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<b>Institution</b>	Ministry of education and science
<b>Period of time</b>	2017 - 2018
<b>Rank/degree</b>	Deputy Minister

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**Institution** National Assembly of Armenia  
**Period of time** 2014 - 2017  
**Rank/degree** Parliament Member

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**Institution** Yerevan State University  
**Period of time** 2006 - 2014  
**Rank/degree** Senior researcher

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**Institution** Yerevan water and sewage CJSC, Mashtots branch  
**Period of time** 2004 - 2006  
**Rank/degree** Director

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**Institution** Ministry of State Property Management  
**Period of time** 2000 - 2004  
**Rank/degree** Head of Department

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**Institution** Yerevan State University  
**Period of time** 1988 - 2000  
**Rank/degree** Researcher

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## Scientific interests

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- X-Ray interferometry, Liquid crystals, material science
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## Publications

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*Article*

**Double-Slit X-Ray Dynamical Diffraction in the Transmitted Beam [Рентгеновская динамическая дифракция на двух щелях в проходящем пучке]**

A. P. Aivazyan, M. K. Balyan, S. A. Petrosyan, V. P. Mkrtchyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2025 101-107

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*Article*

**Investigations of the Structure and Morphology of CsPbBr<sub>3</sub> Films Deposited by Vacuum Thermal Evaporation [Исследования структуры и морфологии пленок CsPbBr<sub>3</sub>, осажденных методом вакуумного термического испарения]**

L. A. Matevosyan, S. A. Petrosyan, V. P. Mkrtchyan, A. P. Aivazyan, V. S. Harutyunyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2025 202-209

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*Article*

**X-ray dynamical diffraction wavefront division interferometer (double-slit diffraction) with an asymmetric monochromator**

Vahram Mkrtchyan, Minas Balyan, Sargis Petrosyan, Ashot Aivazyan

Acta Crystallographica A-Foundation and Advances 2025 438-448

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Article

**Measurements of the geometrical characteristics and refractive index of specimens made with X-ray interferometers**

Vahram Mkrtchyan, Ashot Aivazyan, Sargis Petrosyan, Minas Balyan

Journal of Applied Crystallography 2024 499-502

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Article

**Investigation of structural and optical properties of CsPbBr<sub>3</sub> films synthesized by single-source vacuum evaporation method**

Valeri Harutyunyan, Lenrik Matevosyan, Vahram Mkrtchyan, Gayane Pluzyan, Sargis Petrosyan,

Anna Tokmajyan

IET Conference Proceedings 2024 38-41/208333

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Article

**Residual stress on ettringite crystals in mature Type K shrinkage-compensating cement pastes**

Valeri S. Harutyunyan, Ashot P. Aivazyan, Vahram P. Mkrtchyan, Paulo J.M. Monteiro,

Ana Paula Kirchheim, Sebastian Prinz

Construction and Building Materials 2023 132892

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Article

**Observation of Electroconvection in Nematic Liquid Crystals by X-Ray Interferometric Method**

V. P. Mkrtchyan, L. G. Gasparyan, R. A. Alaverdyan, T. M. Sarukhanyana

Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 379-383

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Article

**Наблюдение электроконвекции в нематических жидких кристаллах рентгеноинтерферометрическим методом**

Л.Г. Гаспарян, В.П. Мкртчян, Р.Б. Алавердян, Т.М. Саруханян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 561-567

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Article

**ДВОЙНОЕ ЛУЧЕПРЕЛОМЛЕНИЕ РЕНТГЕНОВСКИХ ЛУЧЕЙ В НЕМАТИЧЕСКИХ ЖИДКИХ КРИСТАЛЛАХ ПОД ВОЗДЕЙСТВИЕМ ВНЕШНЕГО ЭЛЕКТРИЧЕСКОГО ПОЛЯ**

Л.Г.Гаспарян, В.П.Мкртчян, Т.К. Дадалян, П.С. Петросян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2019 513-518

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Article

**Investigation of the influence of electric field on the anisotropy of nematic liquid crystals by means of X-ray interferometric method**

T. K. Dadalyan, L. G. Gasparyan, V. P. Mkrtchyan

ԵՊՀ Գիտական տեղեկագիր, Բնական գիտություններ 2017 97-100

<http://ysu.am/science/hy/1355990920>

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Article

**Исследование влияния внешнего электрического поля на анизотропию нематических жидких кристаллов методом рентгеновской интерферометрии**

В.П.Мкртчян, Л.Г.Гаспарян, Т.К. Дадалян

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

52-58

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

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*Article*

**Residual stress on ettringite crystals in expansive cement paste**

V.S.Harutyunyan, A.P.Aivazyan, V.P.Mkrtchyan

Proceedings of the YSU A. Physical and Mathematical Sciences 2017 105-108

<http://www.ysu.am/science/en/journals>

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*Article*

**Investigation of the influence of external electric field on the anisotropy of nematic liquid crystals by X-Ray interferometry**

L. G. Gasparyan, V. P. Mkrtchyan, T. K. Dadalyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2017 271-275

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*Article*

**Study of an anisotropy of nematic liquid crystals in X-ray frequency range**

V.P.Mkrtchyan, L.G.Gasparyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2015 388-393

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

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*Article*

**Исследование анизотропии нематических жидких кристаллов в области рентгеновских частот.**

Л.Г.Гаспарян, В.П.Мкртчян

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

520-528

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

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*Article*

**Measurement of the refractive index of nematic liquid crystals 5CB by means of x-ray interferometry**

Mkrtchyan V. P., Gasparyan L. G., Dadalyan T. K., Balyan M. K., Kuyumchyan A. V.

Proceedings of SPIE - The International Society for Optical Engineering 2014 920714

<http://spie.org/publications/conference-proceedings>

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*Article*

**ЗАВИСИМОСТЬ РЕНГЕНОДИФРАКЦИОННЫХ КАРТИН ОТ ПЕРВИЧНОГО ПАДАЮЩЕГО ПУЧКА**

Л.Г. Гаспарян, В.П. Мкртчян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2013

285-290

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*Article*

**Study of the X-ray anisotropy of materials via X-ray interferometry**

V.P.Mkrtchyan, L.G.Gasparyan, M.K.Balyan

Inorganic Materials 2011 1676-1680

<http://link.springer.com/journal/10789>

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Article

**Исследование рентгено-оптической анизотропии материалов рентгеноинтерферометрическим методом**

Л.Г.Гаспарян, В.П.Мкртчян, М.К.Балян

Заводская лаборатория. Диагностика материалов. 2010 27-31

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Article

**Искусственная ультразвуковая анизотропия кристаллов в области рентгеновских частот**

Л.Г. Гаспарян, В.П. Мкртчян, М.К. Балян, А.С. Мелконян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2007 242-249

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Article

**Температурная искусственная анизотропия кристаллов в области рентгеновских частот**

Л.Г. Гаспарян, В.П. Мкртчян, М.К. Балян, А.Г. Григорян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2006 374-378

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Article

**X-ray Diffraction Investigations of Microstructure of calcium Hydroxide Crystallites in the Interfacial Transition Zone of Concrete**

Valeri S.Harutyunyan, Vahram P.Mkrtchyan, Minas K.Balyan, Ashot P.Aivazyan, Eduard S. Abovyan,

Paulo J.M.Monteiro

Journal of the American Ceramic Society 2003 2162-2166

[http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1551-2916](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1551-2916)

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Article

**Micro strain distribution in calcium hydroxide present in the interfacial transition zone**

V.S.Harutyunyan, V.P.Mkrtchyan, M.K.Balyan, E.S.Abovyan, P.J.M.Monteyro

Cement and Concrete Research 2000 709-713

<http://www.journals.elsevier.com/cement-and-concrete-research>

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Article

**Влияние внешних воздействий на Брэгг-Лауэвскую дифракцию рентгеновских лучей**

Л.Г.Гаспарян, В.П. Мкртчян, А.Г. Григорян, М.К.Балян, С.А. Валасанян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2000 28-37

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Article

**Исследование особенностей дифракции X-лучей в сочетаниях Брэгг-Лауэвских отражений**

Л.Г.Гаспарян, В.П.Мкртчян, М.К.Балян, А.Г.Григорян, С.А.Валасанян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 1999 162-171

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

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Conference

**Investigation of the anisotropy nematic liquid crystals in X-ray frequency range**

Gasparyan L.G., Mkrtchyan V.P.

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Conference

**Study of microstructural peculiarities and deformation state of ettringite crystals in Type K cement pastes by FTIR spectroscopy, optical microscopy, combined SEM-EDS, and XRD techniques**

V.S. Harutyunyan, A.P. Aivazyan, P.J.M. Monteiro, A.P. Kirchheim, V.P. Mkrtchyan

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*Conference*

**Measurement of the Refractive Index of Nematic Liquid Crystals 5CB by Means of X-ray Interferometry**

V.P.Mkrtchyan, L.G.Gasparyan, T.K.Dadalyan, M.K.Balyan, A.V.Kuyumchyan

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*Conference*

**Nano Fabrication of Compound Bifocal Zone Plate for X-ray Optics**

A.V.Kuyumchyan, A.Y.Suvorov, T.Ishikawa, V.V.Aristov, E.V.Shulakov, A.A.Isoyan, N.A.Kuyumchyan,

V.P.Mkrtchyan

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*Conference*

**ДВОЙНОЕ ЛУЧЕПРЕЛОМЛЕНИЕ РЕНТГЕНОВСКИХ ЛУЧЕЙ В НЕМАТИЧЕСКИХ ЖИДКИХ КРИСТАЛЛАХ ПОД ВОЗДЕЙСТВИЕМ ВНЕШНЕГО ЭЛЕКТРИЧЕСКОГО ПОЛЯ**

Л.Г. Гаспарян, В.П. Мкртчян, Т.К. Дадалян

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*Conference*

**X-Ray Double Refraction Through Nematic Liquid Crystals Under Influence of an External Electric Field**

V. P. Mkrtchyan, L.G.Gasparyan, T.K.Dadalyan

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*Conference*

**Double-Slit X-ray Dynamical Diffraction in the Transmitted and Diffracted Beams**

A. P. Aivazyan, M. K. Balyan, S. A. Petrosyan, V. P. Mkrtchyan

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