

# Roman Bakhshi Allahverdyan

## Institute of Physics

Chair of Optics

Head of the chair, professor

☎ 37496361198

37493361198

23-30

(060) 71-03-30

✉ ralaverdyan@ysu.am



## 🌐 Language skills

Հայերեն Русский English

## 📖 Publications

*Article*

### **Multimode Robust Lasing in a Dye-Doped Polymer Layer Embedded in a Wedge-Shaped Cholesteric**

Tatevik M. Sarukhanyan, Hermine Gharagulyan, Mushegh S. Rafayelyan, Sergey S. Golik,

Ashot H. Gevorgyan, Roman B. Alaverdyan

Molecules 2021 6089

*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

*Article*

### **Lasing peculiarities in cholesteric multilayer structure with dye-doped polymer film depending on the concentration of laser dye and pumping energy**

T. M. Sarukhanyan, H. S. Gharagulyan, M. L. Sargsyan, H. Grigoryan, R. S. Hakobyan, A. H. Gevorgyan,

R. B. Alaverdyan

Molecular Crystals and Liquid Crystals 2020 15-25

*Article*

### **Spectral Peculiarities of Multilayer Cholesteric Wedge-Cell System with Dye-Doped Polymer Layer**

H. Gharagulyan, T. M. Sarukhanyan, A.V. Ninoyan, A. H. Gevorgyan, R. B. Alaverdyan

Optics and Spectroscopy 2020 1644-1648

*Article*

### **Light energy accumulation by cholesteric liquid crystal layer at oblique incidence**

M.S. Rafayelyan, H. Gharagulyan, T. M. Sarukhanyan, A.H. Gevorgyan, R. S. Hakobyan, R.B. Alaverdyan

Liquid Crystals 2019 1079-1090

*Article*

### **Light-induced multi-wavelength lasing in dye-doped chiral nematic liquid crystals due to strong pumping illumination**

Tigran Dadalyan, Zhirayr Ninoyan, Inge Nys, Roman Alaverdyan, Jeroen Beeckman, Kristiaan Neyts  
Liquid Crystals 2018 1272-1278

---

*Article*

**Light-induced hydrodynamic reorientation of hybrid aligned nematic liquid crystals caused by direct volume expansion**

T. Dadalyan, K. Petrosyan, R. Alaverdyan, R. Hakobyan

Liquid Crystals 2018 1-6

---

*Article*

**Tuning the lasing wavelength of dye-doped chiral nematic liquid crystal by fluid flow**

T. Dadalyan, R. Alaverdyan, Zh. Ninoyan, O. Willekens, J. Beeckman, I. Nys

Liquid Crystals 2017 372-378

<http://www.tandfonline.com/loi/tlct20#.V4iQbUt97cc>

---

*Article*

**Экспериментальное исследование конвекции марангони в наножидкостях**

Г. С. Геворгян, К. А. Петросян, Р. С. Акопян, Р. Б. Алавердян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2017  
490-494

---

*Article*

**Polarized light in anisotropic medium with twisting**

R. B. Alaverdyan, A. L. Aslanyan, L. S. Aslanyan, G. S. Gevorgyan, S. Ts. Nersisyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2015 137-143

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

---

*Article*

**Enhanced physical properties of nematics doped with ferroelectric nanoparticles**

M.R. Hakobyan, R.B. Alaverdyan, R.S. Hakobyan, Yu.S. Chilingaryan

Armenian Journal of Physics 2014 11-18

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

---

*Article*

**Лазерно-индуцированные термокапиллярные волны в изотропных и анизотропных жидкостях**

Р. С. Акопян, М.Р.Акопян, Р.Б.Алавердян, Ю.С.Чилингарян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2014  
230-240

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

---

*Article*

**Thermomechanical Effects in Hybrid and Cylindrical-Hybrid Oriented Nematic Liquid Crystals**

Rafik S. Hakobyan, Mariam R. Hakobyan, Roman B. Alaverdyan

Molecular Crystals and Liquid Crystals 2014 152-162

<http://www.tandfonline.com/loi/gmcl20>

---

*Article*

**Volume Expansion Mechanism of Laser-Induced Hydrodynamic Reorientation**

R.S.Hakobyan, M.R.Hakobyan, R.B.Alaverdyan, Yu.S.Chilingaryan

*Article*

**Гравитационный и термокапиллярный механизмы возбуждения гидродинамических движений в жидких кристаллах лазером с пространственно периодической структурой интенсивности**

Р.С.Акопян, М.Р.Акопян, Р.Б.Алавердян, Ю.С.Чилингарян

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2014 177-189

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

---

*Manual*

**Լույսի բևեռացումը և նրա հետազոտումը**

Ասլանյան Լ.Ս., Ալավերդյան Ռ.Բ.

2014 69

---

*Article*

**Наблюдение двух областей селективного отражения света от тонкой пленки холестерического жидкого кристалла**

Алавердян Р. Б., Дадалян Т. К., Чилингарян Ю. С.

Квантовая Электроника (Quantum Electronics) 2013 433-434

<http://www.quantum-electron.ru/pa.phtml?page=geninfo>

---

*Article*

**CHIRAL PHOTONIC STRUCTURES WITH ANISOTROPIC DEFECT CONTROLLED BY HYDRODYNAMIC FLOW**

R. B. Alaverdyan, T. K. Dadalyan

Armenian Journal of Physics 2013 55-60

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

---

*Article*

**Spectral investigation of chiral photonic structure with laser dye-doped isotropic polymer film**

Alaverdyan R. B., Dadalyan T. K., Chilingaryan Yu. S., Karapetyan A. S., Hovhannisyan T. M.,

Hovhannisyan S. I.

Proceedings of SPIE - The International Society for Optical Engineering 2012 847518

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

---

*Article*

**Luminescence spectrum thermal properties of Rhodamine 6G doped polymethyl methacrylate film sandwiched between cholesteric liquid crystal layers**

Alaverdyan R. B., Dadalyan T. K., Karapetyan A. S., Torosyan N. S.

Journal of Physics: Conference Series 2012 1-4

<http://iopscience.iop.org/journal/1742-6596>

---

*Article*

**Study of cholesteric liquid crystal - Rhodamine 6G doped polymethyl methacrylate thin film - Cholesteric liquid crystal system**

Alaverdyan R. B., Dadalyan T. K., Hayrapetyan N. A.

*Conference*

**Experimental and Theoretical Investigation of Polarization Plane Rotation of Light in Nanoparticle-Enriched Chiral liquid-crystalline Photonic Structures with an Anisotropic Defect Layer**

A.H. Gevorgyan, H. Gharagulyan, M.S. Rafayelyan, R.B. Alaverdyan

---

*Conference*

**Asymmetric Transmission liquid-crystals of Two Cholesterics with Different Pitches and Chiralities**

A.H. Gevorgyan, M.S.Rafayelyan, Zh.V.Ninoyan, Hermine Gharaguiyan, R.B.Alaverdjan

---

*Conference*

**Nonreciprocal Transmission in Electro-Tunable Cholesterics**

H. Gharagulyan, M. S. Rafayelyan, A. H. Gevorgyan, R. B. Alaverdyan

---

*Conference*

**Optical Properties of Polymer-Dispersed Cholesteric Liquid- Crystalline Wedge-Cell**

H. Gharagulyan, R. B. Alaverdyan, A. H. Gevorgyan, Zh. V. Ninoyan, T. M. Sarukhanyan

---

*Conference*

**Lasing in Cholesteric-Polymer Wedge-Cell System**

T. M. Sarukhanyan, R. B. Alaverdyan, A. H. Gevorgyan, H. Gharagulyan

---

*Conference*

**Characteristics of photonic band gap edge lasing in Cholesteric Liquid Crystals**

T. K. Dadalyan, R.B. Alaverdyan, T.M. Sarukhanyan

---

*Conference*

**Light energy accumulation by cholesteric liquid crystal layer at oblique incidence**

M.S. Rafayelyan, H. Gharagulyan, T. M. Sarukhanyan, A.H. Gevorgyan, R.B. Alaverdyan

---

*Conference*

**Lasing polarization peculiarities in cholesterics separated by dye-doped polymeric layer**

T.M. Sarukhanyan, H. Gharagulyan, A.H. Gevorgyan, R.B. Alaverdyan

---

*Conference*

**Investigation of the influence of direct volume expansion on optical properties of Nematic Liquid Crystal layer**

T.K. Dadalyan, K. A. Petrosyan, R. S. Hakobyan, R. B. Alaverdyan

---

*Conference*

**Tuning the lasing wavelength in dye-doped chiral photonic structure with pitch gradient by means of hydrodynamic flow**

Zh. Ninoyan, T. Dadalyan, R. Alaverdyan

---

*Conference*

**Spatial evolution of light polarization in wedge-shaped cholesteric liquid crystal cell**

R. Alaverdyan, L. Aslanyan, G. Gevorgyan, H. Gharagulyan, H. Hovakimyan, Zh. Ninoyan

---

*Conference*

**Non-linear control of lasing wavelength in dye-doped chiral photonic structures by means of light**

T. Dadalyan, Zh. Ninoyan, R. Alaverdyan, I. Nys, J. Beeckman, K. Neyts

---

*Conference*

**Lasing in three-layer cholesteric-dye-doped polymer-cholesteric sandwich cell**

T.M. Sarukhanyan, H. Gharagulyan, R.B. Alaverdyan, A.H. Gevorgyan

---

*Conference*

**The role of the geometric phase in cholesteric with a defect layer toward multimodal robust lasing**

T.M. Sarukhanyan, M.S. Rafayelyan, H. Gharagulyan, R.B. Alaverdyan, S.S. Golik, A.H. Gevorgyan

---