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Institute of Physics
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Publications

Article

Polyvinylpyrrolidone planarized liquid crystalline 1T-WS2/rGO hybrid nanocomposites-based humidity sensing platform

A. Vasil’ev, M. Zhezhu, S. Gyozalyan, L. Avanesyan, Y. Grigoryan, A.A. Kuzanyan, A.A. Hovhannisyan, Mohamed Aly Saad Aly, D.A. Ghazaryan, H. Gharagulyan

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Article

Enhancement of mechanical properties of graphene oxide fibers via liquid crystalline phase formation and flake size optimization

M. Zhezhu, G. Baghdasaryan, G. Gevorgyan, S. Gyozalyan, Y. Grigoryan, K. Margaryan, H. Gharagulyan

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Article

Perovskite nanocubes confined in Mesoporous Metal Organic Framework Facilitates Photocatalytic CO2 Reduction

Nwaji Njemuwa, Boka Fikadu Banti, Magdalena Osial, Hermine Gharagulyan, Amrita Jain, Jaebeom Lee, Michael Giersig

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Liquid Crystalline 2D Hybrid Nanomaterials for Sensing Applications

Hermine Gharagulyan

2026 53 - 54

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Dual effect of L-Cysteine on the reorientation and relaxation of Fe3O4-decorated graphene oxide liquid crystals

M. Zhezhu, Y. Melikyan, V. Hayrapetyan, A. Vasil'ev, H. Gharagulyan

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L-cysteine polymorph coatings for THz sensing metasurfaces

M. Zhezhu, A. Vasil'ev, H. Parsamyan, T. Abrahamyan, G. Baghdasaryan, S. Gyozalyan, D. Ghazaryan,

H. Gharagulyan

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Chemical vapor deposition synthesis of (GeTe)n(Sb2Te3) gradient crystalline films as promising planar heterostructures

M. Zhezhu, A. Vasil'ev, M. Yapryntsev, E. Ghalumyan, D.A. Ghazaryan, H. Gharagulyan

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Article

Revisiting THz absorption in GO and rGO liquid crystalline films

A. Vasil’ev, M. Zhezhu, H. Parsamyan, G. Baghdasaryan, M. Sargsyan, D.A. Ghazaryan, H. Gharagulyan

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Conference

Liquid Crystalline Nanosystems for Advanced Optoelectronics

Hermine Gharagulyan, Alexey Vasil’ev, Marina Zhezhu, Sara Gyozalyan, L. Avanesyan, V. Mehrabyan

2025 34-35

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ELECTRON-BEAM DRIVEN MICROPATTERNING OF L-CYSTEINEFUNCTIONALIZED CHALCOGENIDES

Sara Gyozalyan, L Avanesyan, V Mehrabyan, M Zhezhu, A Vasil'ev, H Gharagulyan

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AMINO ACID-CONTROLLED MAGNETIC ALIGNMENT OF FE3 O4 - ENRICHED GOLC

Lilit Avanesyan, S Gyozalyan, V Mehrabyan, M Zhezhu, A Vasil'ev, H Gharagulyan

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TERAHERTZ RESPONCE OF GRAPHENE-LIKE STRUCTURES

L. Avanesyan, A. Vasil'ev, M. Zhezhu, H. Parsamyan, G. Baghdasaryan, M. Sargsyan, D. A. Ghazaryan,

H. Gharagulyan

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Liquid Crystalline Nanosystems: Research Directions, Methods, and Achievements

Hermine Gharagulyan, Alexey Vasil'ev, Marina Zhezhu, Adrine Sahakyan, Olgert Dallakyan,

Sara Gyozalyan, Lilit Avanesyan, Valentina Mehrabyan

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Ge–Sb–Te Gradient Crystalline Films for Potential Optical Filtering

Marina Zhezhu, Alexey Vasil'ev, Maxim Yaprintsev, Davit Ghazaryan, Hermine Gharagulyan

2025 68-69

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Resonances Induced by Structural Asymmetry in the THz Domain and Their Applications
Sara Gyozalyan, Marina Zhezhu, Alexey Vasil'ev, Henrik Parsamyan, Tigran Abrahamyan,

Gayane Baghdasaryan, Davit A. Ghazaryan, Hermine Gharagulyan

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Optical Properties of Chitosan-Functionalized Graphene Oxide
Valentina Mehrabyan, Gayane Baghdasaryan, Adrine Sahakyan, Marina Zhezhu, Alexey Vasil'ev,

Hermine Gharagulyan

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Terahertz Response of Liquid Crystalline GO and rGO Thin Films
Lilit Avanesyan, Alexey Vasil'ev, Marina Zhezhu, Henrik Parsamyan, Gayane Baghdasaryan,

Maksim Sargsyan, Davit A. Ghazaryan, Hermine Gharagulyan

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E-beam induced micropattern generation and amorphization of L-cysteine-functionalized graphene oxide nano-composites
Y. Melikyan, H. Gharagulyan, A. Vasil'ev, V. Hayrapetyan, M. Zhezhu, A. Simonyan, D.A. Ghazaryan,

M.S. Torosyan, A. kharatyan, J. Michalicka, M. Yeranosyan

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Article

Improving the electro-optical properties of MoS2/rGO hybrid nanocomposites using liquid crystals
A. Vasil'ev, Y. Melikyan, M. Zhezhu, V. Hayrapetyan, M.S. Torosyan, D.A. Ghazaryan, M. Yeranosyan,

H. Gharagulyan

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Article

Broadband THz metasurface bandpass filter/antireflection coating based on metalized Si cylindrical rings
Karen Simonyan, Hermine Gharagulyan, Henrik Parsamyan, Ashot Khachatryan, Mkrtich Yeranosyan

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Manipulating Optical Features of MoS2-decorated rGO Nanosystems
Hermine Gharagulyan, A. Vasil'ev, M. Zhezhu, Y. Melikyan

2024 39 - 39

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Studying Graphene Oxide Stability Depending on Particle Sizes
Yeghvard Melikyan, A. Vasil'ev, M. Zhezhu, H. Gharagulyan

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Comparison of the Electro-Optical Properties of MoS2/rGO Heterostructures Fabricated via CVD and Soft Chemistry Methods
Marina Zhezhu, A. Vasil'ev, Y. Melikyan, H. Gharagulyan

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Stability Controlling of L-arginine- and L-nitroarginine-Functionalized Graphene Oxide
Yeghvard MELIKYAN, Alexey VASIL’EV, Marina ZHEZHU, Elen MNATSAKANYAN, Deren PETROSYAN,

Mkrtich YERANOSYAN, Ruben APREYAN, Hermine GHARAGULYAN

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Functionalized Graphene Oxide Liquid Crystalline Systems Under External Fields
Hermine Gharagulyan, Alexey Vasil’ev, Marina Zhezhu, Gayane Baghdasaryan, Yeghvard Melikyan

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Synthesis, Characterization and Liquid Crystalline Phase Formation of MoS2
Sara Gyozalyan, Yeva Melikyan, Marina Zhezhu, Alexey Vasil’ev, Hermine Gharagulyan

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Essential L-Amino Acid-Functionalized Graphene Oxide for Liquid Crystalline Phase Formation
H. Gharagulyan, Y. Melikyan, V. Hayrapetyan, Kh. Kirakosyan, D.A. Ghazaryan, M. Yeranosyan

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Article

Strong light absorption and absorption absence in photonic crystals with helical structure in an external static magnetic field
A. H. Gevorgyan, N. A. Vanyushkin, I. M. Efimov, A. O. Kamenev, S. S. Golik, H. Gharagulyan,

T. M. Sarukhanyan, Malek G. Daher, K. B. Oganesyan

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Controlling Possibilities of Functionalized Graphene Oxide Liquid Crystalline Microdroplets
Gharagulyan Hermine, Melikyan Yeghvard, Vasilev Alexey, Hayrapetyan Vardan, Khachatryan Ashot,

Apreyan Ruben, Yeranosyan Mkrtich

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Filtering of terahertz radiation by a metasurface structure
Simonyan Karen, Parsamyan Henrik, Gharagalyan Hermine, Khachatryan Ashot, Yeranosyan Mkrtich

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Magnetically Induced Transparency in Media with Helical Dichroic Structure
Mushegh S. Rafayelyan, Gvidon K. Matinyan, Hermine Gharagulyan, Tatevik M. Sarukhanyan,

Meruzhan Z. Hautyunyan, Ilya M. Efimov, Nikolay A. Vanyushkin, Sergey S. Golik, Ashot H. Gevorgyan

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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

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Lasing polarization peculiarities in cholesterics separated by dye-doped polymeric layer
T.M. Sarukhanyan, H. Gharagulyan, A.H. Gevorgyan, R.B. Alaverdyan

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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

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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

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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

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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

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

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Spatial evolution of light polarization in wedge-shaped cholesteric liquid crystal cell
R. Alaverdyan, L. Aslanyan, G. Gevorgyan, H. Gharagulyan, H. Hovakimyan, Zh. Ninoyan

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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

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Diffusion in liquid crystals of two cholesterics with different pitches.
Ashot H. Gevorgyan, Roman B. Alaverdyan, Hermine Gharagulyan, Mushegh S. Rafayelyan,

Hayarpi Grigoryan

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