BAKU STATE UNIVERSITY

9th INTERNATIONAL CONFERENCE

MODERN TRENDS IN PHYSICS

November 27 – 28, 2025

BAKU STATE UNIVERSITY
BAKU, AZERBAIJAN

PROGRAMME

9th INTERNATIONAL CONFERENCE: "MTP-2025" MODERN TRENDS IN PHYSICS

MTP 2025

NOVEMBER 27 - 28, 2025

BAKU STATE UNIVERSITY

9th INTERNATIONAL CONFERENCE "MTP-2025"

MODERN TRENDS IN PHYSICS

November 27-28, 2025

BAKU STATE UNIVERSITY | AZERBAIJAN

November 27, Thursday

OPENING CEREMONY

Main Academic Building, 3rd Floor, Main Hall

Link to session

09:00-10:00	Registration
10:00-11:00	Opening Ceremony/ Group Photo
11:00-11:20	**Coffee Break / Poster session**

PLENARY SESSION

Chairperson: Mais Suleymanov (Azerbaijan)

Main Academic Building, 3rd Floor, Main Hall

Link to session

11:20-11:40	**Reinventing SPR Biosensors with 2D Materials: From Optical Modeling to High-Throughput Diagnostics** **Stefano Bellucci** *National Institute of Materials Physics, Romania*

11:40-12:00	**Nonreciprocal transport phenomena and diode effect in superconductors** **Iman Askerzade** *Ankara University, Türkiye*
12:00-12:20	**Database of phosphorescence, Raman scattering, and infrared transmission spectra of crude oil of the Absheron peninsula of Azerbaijan** **Karim Allahverdiyev** *Azerbaijan National Academy of Aviation, Azerbaijan*
12:20-12:40	**Boosting aqueous zinc-ion battery performance via lanthanum-driven structural engineering of hydrated vanadate** **Muhammad Iftikhar Khan** *The University of Lahore, Pakistan*
12:40 – 14:00	**Lunch**

November 27, Thursday	
KEYNOTE SPEAKER'S SESSION	
Chairpersons:	**Amirullah Mamedov (Türkiye),** **Karim Allahverdiyev (Azerbaijan)** **Academic Building II, 10th Floor, Student Development Centre** **Link to session**
14:00 – 14:15	**Novel mechanism of cancer development identified** **Oktay Gasymov** *Institute of Biophysics, Azerbaijan*
14:15-14:30	**Multilayer chalcogenide glass nanostructures: towards the formation of high-efficiency diffractive optical elements** **Alexei Meshalkin** *Institute of Applied Physics of Moldova State University, Moldova*
14:30-14:45	**Gravitation and spacetime: emergent from spinor interactions – how?** **Martin Rainer** *Middle East Technical University, Türkiye;* *ENAMEC Institute, Würzburg Germany;* *Baku State University, Azerbaijan*
14:45-15:00	**The CP structure of the top quark-Higgs Yukawa coupling is probed through an analysis of ttH/tH events** **Nazim Huseynov** *CERN, Switzerland*
15:00-15:20	**Coffee Break**

November 27, Thursday

PARALLEL SESSIONS

Session 1-1: Theoretical and High Energy Physics / Space Sciences and Astrophysics

Chairpersons: Fazal-e-Aleem (Pakistan), Kamala Alisheva (Azerbaijan)

Academic Building II, 10th Floor, Student Development Centre

Link to session

15:20-15:30	**An estimation of elliptic flow at the RHIC and LHC energies** **Tabassam U., Zainab R., Abbas Safdar** *COMSATS University Islamabad Campus, Pakistan*
15:30-15:40	**How can using satellite networks help achieve bigger data sets and results for astronomical observations** **Huseynli M.** *The University of Edinburgh, Scotland*
15:40-15:50	**Modeling prompt photon production in proton-proton collisions at NICA SPD energies using PYTHIA 8.3** **Alizada M.R.** *Baku State University, Azerbaijan*
15:50-16:00	**Hydro+tsallis modeling and collective dynamics in high-multiplicity pp collisions at $\sqrt{s}$ = 7 TeV** **Muhammad A.[1], Haifa I. A.[2], Murad B.[1]** [1]*Abdul Wali Khan University, Pakistan* [2]*Princess Nourah bint Abdulrahman University, Saudi Arabia*

16:00-16:10	**Recent theoretical developments on the strange exotic states** **Amirli S.I.** *Baku State University, Azerbaijan*
16:10-16:20	**The inverse compton effect as a possible mechanism for parton acceleration** **Alizada M.R., Suleymanov M.K.** *Baku State University, Azerbaijan*
16:20-16:30	**Nucleon generalized parton distributions at finite temperature within the soft-wall AdS/QCD model** **Akbarova N.J.[1], Allahverdiyeva M.A.[2], Mamedov Sh.A.[1]** [1]*Institute for Physical Problems of the Baku State University, Azerbaijan* [2]*Institute of Physics, Azerbaijan*
16:30-16:40	**Gravitation, an effective interaction of spinors?** **Rainer M.** *ENAMEC Institute Würzburg, Germany; METU, Türkiye*
16:40-16:50	**Hidden-strangness tetraquarks within dynamical diquark model** **Jafarzade Sh.** *Arizona State University, USA*
16:50-17:00	**A comparative investigation of the galactic distribution of Wolf–Rayet and O-type stars** **Abdulkarimova A.F., Rustamov J.N.** *Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*
17:00-17:10	**Morphologies of the Hα and Hβ lines in young herbig Ae/Be STARS: HD 31648, HD 52721, HD 53367** **Rustamov B.N.[1,2], Mikailov Kh.M.[1], Mammadova S.O.[2], Aliyeva V.I.[2], Rustamova A.B.[2]**

	[1]*Baku State University, Azerbaijan* [2]*Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*
17:10-17:20	**MHD instabilities in shear flows of anisotropic cosmic plasmas: numerical solution of fire hose modes using boundary value problem techniques** **Samadov J.H., Dzhalilov N.S.** *Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*
17:20-17:30	**Comparative photometric and spectroscopic evolution of NOVA SCO 2023 AND RX PUP** **Alisheva K.I., Mikailov Kh.M., Isagova N.R.** *Baku State University, Azerbaijan*
17:30-17:40	**The possible role of comets in analysing the problem of an unknown planet** **[1]Gadirov E.K., [2]Guliyev A.S.** [1]*Baku State University, Azerbaijan* [2]*Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*

November 27, Thursday

PARALLEL SESSIONS

Session 1-2: Materials Science and Engineering

Chairpersons: Muhammad Iftikhar Khan (Pakistan),
Habiba Shirinova (Azerbaijan)

Academic Building II, Room № 303

Link to session

15:20-15:30	**Strain-driven electronic and thermoelectric modulation in $Ba_{2X}ReO_6$(X=Y,Sc) oxides double perovskites** [1]**Nazir S.,** [2]**Noor N.A.,** [1]**Hussain S.T,** [3]**Mumtaz S.** [1]*University of Lahore, Pakistan* [2]*University of Sargodha, Pakistan* [3]*Gachon University, Republic of Korea*
15:30-15:40	**Experimental investigation of bubble dynamics in vertical water channels/vessels** **Rehman N., Hussain A., Ahmad A.** *University of Engineering and Technology, Pakistan*
15:40-15:50	**Flexible and durable porous polysiloxane/MWCNT nanocomposites for next-generation triboelectric nanogenerators.** [1,2]**Gulahmadov O.G.,** [1]**Muradov M.B.,** [1]**Gahramanli L.R.,** [1]**Jiseok Kim, Todorova N. and** [3]**Trapalis Ch.** [1]*Baku State University, Azerbaijan* [2]*Karabakh University, Azerbaijan* [3]*Institute of Nanoscience and Nanotechnology, National Center for Scientific Research "Demokritos", Greece*

15:50-16:00	**Enhanced dielectric and optical performance in TiO_3/Graphene/PVA nanocomposites via solution casting: structural, morphological, and interfacial insights.** **[1]Gahramanli L.R., [1, 2]Alakbarova Sh.S.** *[1]Baku State University, Azerbaijan* *[2]Baku State University, Azerbaijan*
16:00-16:10	**Synthesis, studies, structure, and properties of halogen- substituted pyrimidine-thione-thione-thione derivatives** **[1]Nazarov N.M., [1,2]Mahmudov I.H, [1]Babayev S.S., [1]Rzayeva I.A., [1]Ahmadova C.C., [1]Qrigoriyeva N.M.** *[1]Academician A.M. Guliyev institute of Chemistry of the Additive Republic of Azerbaijan, Azerbaijan* *[2]Baku Engineering University, Azerbaijan*
16:10-16:20	**Synthesis and characterization of NI-GO nanorods with enhanced oxidation reduction reaction for alkaline membrane fuel cell** **Rehman N., Hussain A., Ahmad A.** *University of Engineering and Technology, Pakistan*
16:20-16:30	**Defect states of perovskites $A'_{0.5}A''_{0.5}MnO_3$** **Jabarov S.H., Hakhverdiyeva Z.E.** *Institute of Physics, Azerbaijan*
16:30-16:40	**Synthesis and structural investigation of $BaTiO_3$-Fe_3O_4 core–satellite hybrid structures** **Shirinova H.A., Karimova A.H., Nuriyeva S.G., Gahramanli L.R., Humbatov Sh.A.** *Baku State University, Azerbaijan*
16:40-16:50	**The influence of transition metals on the catalytic properties of HZSM-5 zeolite in the conversion of bioethanol to the BTX fraction** **[1]Mammadova Kh., [1]Kerimli F., [2]Mammadov E.** *[1]Baku State University, Azerbaijan*

	[2]*The Baku Branch of Lomonosov Moscow State University, Azerbaijan*
16:50-17:00	**Electrophysical properties of optimally modified polypropylene with a phthalimide additive** **[1,2]Mehrabova M.A., [1]Safarova S.I., [1]Kerimov F. Sh., [3]Hasanov N.H., [1]Jafarova G.S., [1]Rehimov R.S.** [1]*Azerbaijan Technical University, Azerbaijan* [2]*Institute of Radiation Problems, Azerbaijan* [3]*Baku State University, Azerbaijan*
17:00-17:10	**On the properties of an acoustic filter in metamaterials based on the problems of wave propagation through elastic solids with periodic arrays of defects** **Remizov M.Yu.** *Western Caspian University, Azerbaijan*
17:10-17:20	**Tuning structural and optical properties of CdS via Cd:S ratio control using silar technique** **Hamidova S.N., Gahramanli L.R., Mammadov V.U.** *Baku State University, Azerbaijan*
17:20-17:30	**Electric current generation in schottky diodes under the effect of an additional electric field** **Mamedov R.K., Aslanova A.R.** *Baku State University, Azerbaijan*
17:30-17:40	**Intracavity laser frequency mixing under quasi-phase- matching conditions** **Kerimli N.V.** *Azerbaijan Medical University, Azerbaijan*
17:40-17:50	**Matrix-dependent structure-property relationships in SiC/Polymer nanocomposites: comparative study of polypropylene and polystyrene systems** **Gahramanli L.R., Alakbarova Sh.S.** *Baku State University, Azerbaijan*

17:50-18:00	**Improving the adhesion of thermally sprayed coatings by optimizing spraying parameters** **[1]Rakhadilov B.K, [2]Abizhanovaa I.K., [2]Abdulina S.A., [2]Kengesbekov A.B., [2]Magazov N.M., [2]Kussainov A.E.** *[1]PlasmaScience LLP Ust-Kamenogorsk, Kazakhstan* *[2]D. Serikbayev East Kazakhstan State Technical University Ust-Kamenogorsk, Kazakhstan*
18:00-18:10	**Thickness-dependent mechanical properties of epitaxial PMN-PT thin films studied by nano-indentation** **Boota M.1, Houwman E.P.[2], Sebastiani M.[3], Rossi E.[3], Bemporad E.[3], Rijnders G.[2]** *[1]The University of Lahore, Pakistan* *[2]MESA+ Institute for Nanotechnology, University of Twente, The Netherlands* *[3]Roma Tre University, Italy*
18:10-18:20	**Transfer matrix method as a tool for probing optical responses of a thin film: a theoretical approach** **Muhammad A.[1], Muhammad A.[1], Khalid R.[2], Ahmad A.[2]** *[1]The University of Lahore, Pakistan* *[2]Punjab University, Pakistan*
18:20-18:30	**Efficient construction of two-dimensional layered materials and their multifunctional applications** **Hussain A.** *The University of Lahore, Pakistan*

November 27, Thursday

PARALLEL SESSIONS

Session 1-3: Condensed Matter Physics

Chairpersons: İman Askerzade (Türkiye),
Mustafa Muradov (Azerbaijan)

Academic Building II, Room № 221

Link to session

15:20-15:30	**Dependence of reflection and extinction coefficient of Nano-Sİ-Nanocomposite on type of polymer matrix** **Surkhayli A.E., Shirinova H.A., Pashayev B.G., Jafarov M.A.** *Baku State University, Azerbaijan*
15:30-15:40	**The negative capacitance, an anomalous peak in the C-V plot, and voltage-dependent profile of interface traps and series resistance in Au/(CdTe: PVA)/n-Si structure** **[1]Guchlu C.Sh, [2]Demirci A.** *[1]Gazi University, Türkiye* *[2]PROTEK Technology Solutions Trans. & Cons. Serv. Ind. & Trade Ltd. Co., Türkiye*
15:40-15:50	**Resonance emission of InSe nanoparticles beyond the fundamental absorption edge** **[1]Salmanov V.M., [1]Guseynov A.G., [1]Jafarov M.A., [2]Ibragimov G.B., [1]Mamedov R.M.1, [1]Akhmedova F.Sh., [1]Jafarli Kh.E.** *[1]Baku State University, Azerbaijan* *[2]Institute of Physics, Azerbaijan*

15:50-16:00	**A spectral method for investigating the second harmonic generation (SHG) spectrum** **Kasumova R.J., Ahmadova A.R.** *Baku State University, Azerbaijan*
16:00-16:10	**Optical properties of ZnSe films depending on annealing for optic applications** **Bulut E.E., Tüzemen Şenadım E.** *Sivas Cumhuriyet University, Türkiye*
16:10-16:20	**Fluoride-derived synthesis of SiO_2** **Ahmadov Kh.I., Pashayev B.G., Rahimli A.M., Aliyev L.P., Mammadov V.U.** *Baku State University, Azerbaijan*
16:20-16:30	**Structural and surface quality enhancement of InGaAs layers through tmin flow engineering for QCL devices** **Özbakir F.K.,Yolcu G.,Perkitel İ., Altuntaş İ., Demir İ.** *Sivas Cumhuriyet University, Türkiye*
16:30-16:40	**Low-defect InP/GaAs buffer layers on si for monolithic photonic integration** **Tariverdiev S., Demir I.** *Sivas Cumhuriyet University, Türkiye*
16:40-16:50	**Ferroelectric-paraelectric phase transition in $BaTiO_3$ and $PbTiO_3$ perovskites at high temperatures** **Huseynov R.E., Mammadov A.I., Mehdiyeva R.Z., Huseynova E.R.** *Institute of Physics, Azerbaijan*
16:50-17:00	**Crystal structure of AgCuS thin films** **Bagirova H.I.[1], Hakhverdiyeva Z.E.[2], Nazarov A.M.[2], Aliyev Y.I.[3]** [1]*Azerbaijan University, Azerbaijan* [2]*Institute of Physics, Azerbaijan* [3]*Azerbaijan State Pedagogical University, Azerbaijan*

17:00-17:10	**Radiation effects on the parameters of micro-pixel avalanche photodiodes under fast neutron irradiation** **Akbarov R.A.** *Institute of Radiation Problems, Azerbaijan; Department of Nuclear Research of IDDA, Azerbaijan*
17:10-17:20	**Influence of TMAl and SiH_4 precursor flow rates on the structural and electronic characteristics of lattice-matched inalas used IN quantum cascade lasers** **Alkrdy A., Sür Ö., Ünal D.H., Koçak M.N., Demir İ.** *Sivas Cumhuriyet University, Türkiye*
17:30-17:40	**The dependence of the electrical conductivity of $FeGaInSe_4$ on frequency and temperature** **Niftiyev N.N.[1], Dashdemirov A.O.[1], Mammadov F.M.[1,2], Aghayeva R.M.[1], Muradov, M.B.[3]** [1]*Azerbaijan State Pedagogical University, Azerbaijan* [2]*Institute of Catalysis and Inorganic Chemistry named after academician M. Nagiyev, Azerbaijan* [3]*Baku State University, Azerbaijan*
17:40-17:50	**Enhanced adsorption of airborne radioisotopes by a graphene-based multilayer filtration cartridge** **Tene T.** *Universidad Técnica Particular de Loja, Ecuador*
17:50-18:00	**Physics of graphene-based nanostructures: study of properties** **Jafarov S., Hesenli E., Ismayilova Z.** *Nakhchivan State University, Azerbaijan*
18:00-18:10	**Thermal properties of the chalcogenide semiconductor Cu_2NiTe_2** **Aliyev Y.I.[1], Guliyeva Kh.M.[2]** [1]*Azerbaijan State Pedagogical University, Azerbaijan* [2]*Institute of Physics, Azerbaijan*

18:10-18:20	**The influence of gamma rays on the structure of Fe_3O_4 nanoparticles** **[1]Hashimov R.F., [2]Abdurahmanova V.A., [1]Aliyeva N.A., [2]Aliyev Y.I.** [1]*Institute of Physics, Azerbaijan* [2]*Azerbaijan State Pedagogical University, Azerbaijan*

November 27, Thursday

PARALLEL SESSIONS

Session 1-4: Biophysics
Chairpersons: Gasymov Oktay (Azerbaijan),
Irada Aliyeva (Azerbaijan)

Academic Building II, Room № 307

Link to session

15:20-15:30	**Expression and purification cytochrome C-like domain of the human BK channel** **Aliyeva T., Aliyeva A.A., Gudratova F.R., Mahmudova S.A., Gasimov K.G., Yusifov T.N.,** *Institute of Biophysics, Azerbaijan*
15:30-15:40	**Cu_2^+–Silk fibroin interactions: impact on monolayer viscoelasticity** **Suleymanova L.M., Gasymov O.K.** *Institute of Biophysics, Azerbaijan*
15:40-15:50	**The effect of hyperthermia and alkalization on the distribution dynamics of anti-cancer agents in lung cancer** **Bakhishova M.J.[1], Aslanov R.B.[1], Melikova L.A.[1,2], Gasymov O.K.[1]** [1]*Institute of Biophysics, Azerbaijan* [2]*National Center of Oncology, Azerbaijan*
15:50-16:00	**Interplay between bioelectrical and egfr signaling pathways as a novel approach in cancer therapy** **Sayyablı A.Y., Aliyeva G.I., Gudratova F.R., Gasimov K.G., Yusifov T.N.,** *Institute of Biophysics, Azerbaijan*

16:00-16:10	**The role of congo red in the determination of aggregates in silk fibroin solution** **Mammadzada A.M.** *Institute of Biophysics, Azerbaijan*
16:10-16:20	**Optical and structural analyses of the sericin–rhodamine 6G interaction** **Aytaj J.M.** *Institute of Biophysics, Azerbaijan*

November 28, Friday

PLENARY SESSION

Chairperson: Mais Suleymanov (Azerbaijan)

Academic Building II, 10th Floor, Student Development Centre

Link to session

09:30-09:50	**Van Hove Singularity and Ferroelectrics-Based Weyl Metamaterials** **Amirullah Mamedov** *Bilkent University, Türkiye* *Baku State University, Azerbaijan*
09:50-10:10	**Nobiomaterials in the treatment of cancer - an overview** **Fazal-e-Aleem** *The University of Lahore, Pakistan*
10:10-10:30	**The fabrication of photonic sensors-based Al/(AgZnO:rGO-PVA)/Al via controlling solar photon intensities in the wide range of voltage and illumination intensities** **Şemsettin Altındal** *Gazi University, Türkiye*
10:30-10:50	**The eigenvectors of the 5D discrete Fourier transform in Newtonian basis revisited** **Natig Atakishiyev** *Institute of Physical Problems of Baku State University, Azerbaijan*
10:50-11:10	**The relationship between geomagnetic field components and aircraft accidents in civil aviation** **Ümit Deniz Goker** *Istanbul Beykent University, Türkiye*
11:10-11:35	**Coffee Break**

November 28, Friday	
KEYNOTE SPEAKER'S SESSION	
Chairpersons: Şemsettin Altındal (Türkiye), Oktay Gasymov (Azerbaijan) **Academic Building II, 10th Floor, Student Development Centre** **Link to session**	
11:35-11:50	**Information - limited gravity: bandwidth constraints as the origin of dark phenomena** **Elshad Allahyarov** *Case Western Reserve University, USA* *Recognition Science Institute, USA* *Institut für Theoretische Physik II: Weiche Materie, HH-Universität Düsseldorf, Germany*
11:50-12:05	**Artificial Intelligence Environment for Precise Satellite Data Processing** **Rustam Rustamov** *Institute of Physics, Azerbaijan*
12:05-12:20	**Study of the Higgs boson in the $H \rightarrow b\bar{b}$ decay channel using various machine learning algorithms** **Faik Ahmadov** *CERN, Switzerland*
12:20-12:35	**Semileptonic decays: an LCSR view on the experiment-lattice tension** **Tahmasib Aliyev** *Middle East Technical University, Türkiye*
12:35-14:00	**Lunch**

November 28, Friday

PARALLEL SESSIONS

Session 2-1: Theoretical and High Energy Physics / Space Sciences and Astrophysics

Chairpersons: Ümit Deniz Göker (Türkiye),
Sajida Abdulvahabova (Azerbaijan)

Academic Building II, 10th Floor, Student Development Centre

Link to session

14:00-14:10	**Dipole and quadrupole radiation of the semiconfined quantum well model of the oscillator-shaped profile** **Jafarova A.M.** *Institute of Physics, Azerbaijan*
14:10-14:20	**A new potential and a model of the linear harmonic oscillator with the position-dependent mass** **Nagiyev Sh.M.** *Institute of Physics, Azerbaijan*
14:20-14:30	**A new view on cosmology by using Jakobi's eqution from classical mechanics** **Isayeva E.A.** *Institute of Physics, Azerbaijan*
14:30-14:40	**Neutrino oscillations and matter enhancement of neutrino oscillations, the MSW (Mikheyev-Smirnov-Wolfenstein) effect** **Rahimov D.M., Jalilov N.S.** *Shamakhy Astrophysical Observatory named after .Tusi, Azerbaijan*
14:40-14:50	**Spectrophotometric study of planetary nebula NGC 7009** **Alili A.H., Mikailov Kh.M., Alisheva K.I.** *Baku State University, Azerbaijan*

14:50-15:00	**The Tcc+(3875) resonance in hot medium** **Damen S., Süngü J.Y., Veliev E.V.** *Kocaeli University, Türkiye*
15:00-15:10	**On the differential rotation of celestial bodies: coriolis force and rossby-like waves** **Babayev E.F.** *Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*
15:10-15:20	**The role of the Coulomb effect in proton polarization** **Ahmedov R.** *Azerbaijan State University of Oil and Industry, Azerbaijan*
15:20-15:40	**Coffee Break**
15:40-15:50	**On some spectral and photometric features of symbiotic stars: AGPeg, AG Dra, CH Cyg, and EG And** **Mikailov Kh.M.[1], Rustamova A.B.[2] and Rustamov B.N.[1,2]** [1]*Baku State University, Azerbaijan* [2]*Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*
15:50-16:00	**Predicting the presence of clouds a priori in gas giant exoplanets' atmospheres** **Siddiqui F.R.** *Baku State University, Azerbaijan*
16:00-16:10	**Estimation of the efficiency of detecting neutrinos from supernovae using electron optical modules of the Baikal GVD** **Rahimov D.M.** *Shamakhy Astrophysical Observatory named after N.Tusi, Azerbaijan*
16:10-16:20	**p–p scattering in the Regge–Eikonal model** **Abdulvahabova S.G., Bayramova T.O.** *Baku State University, Azerbaijan*

November 28, Friday	
PARALLEL SESSIONS	
Session 2-2: Materials Science and Engineering **Chairpersons: Stefano Bellucci (Italy),** **Lala Gahramanli (Azerbaijan)** **Academic Building II, Room №303** **Link to session**	
14:00-14:10	**Compensation for charge sharing in pixelated semiconductor radiation detectors** **Guliyev E.G.** *Redlen Technologies Inc (Canon Corporation), Canada*
14:10-14:20	**Production and dielectric characterization of MWCNT–Si-based nanocomposites** [1]**Masimova A.I.,** [1]**Shirinova.H.A.,** [2]**Suleymanova.N.Y** [1]*Baku State University, Azerbaijan* [2]*Institute of Physics, Azerbaijan*
14:20-14:30	**Vibrational and structural analysis of GeS single crystals via raman spectroscopy** **Guliyeva S.S., Balayeva L.A., Huseynov A.H.** *Baku State University, Azerbaijan*
14:30-14:40	**Synthesis and characterization of a new $SnBi_4Te_4$ VAN DER WAALS topological material** [1]**Mehtiyeva Kh.Z.,** [1,2]**Amiraslanov I.R.,** [3,4]**Casciaro M.,** [3,4]**Papagno M.,** [1,2]**Aliev Z.S.** [1]*Baku State University, Azerbaijan* [2]*Institute of Physics, Azerbaijan* [3]*Università della Calabria, Italy* [4]*STAR IR, Via Tito Flavio, Università della Calabria, Italy*

14:40-14:50	**Avalanche field-effect transistor (AFET) biosensor for ultra-sensitive early cancer detection: modeling and simulation study** **Heyderli N.R., Saydgov A.Z., Ahmadov G.S.** *Nuclear Research Department, IDDA, Azerbaijan*
14:50-15:00	**Photoluminescence investigation of ZnO/ZnS Core–Shell nanostructures** **Feyzullayeva L.S., Nuriyeva S.G.** *Baku State University, Azerbaijan*
15:00-15:10	**Electrical characterization of deep-level defects in TE-doped N-type GASB grown by the czochralski method** **[1]Bushra B., [2]Aneeqa S.** [1]*Eye Interaction Ltd, United Kingdom* [2]*Lahore college for Women University, Pakistan*
15:10-15:20	**Investigation of the possibility of a new detector based on SiPM in nuclear forensics** **Piraliyeva F.K., Sadigov A.Z., Naghiyev J.A.** *Nuclear Research Department, IDDA, Azerbaijan*
15:20-15:40	**Coffee Break**
15:40-15:50	**Effect of gamma irradiation on the optical properties of $FeGaInS_4$/ PVA composites** **Addayeva Z.R., Muradov M.B.** *Baku State University, Azerbaijan*
15:50-16:00	**Nonstationary conversion of ultrashort radiation pulse frequencies** **[1,2,3]Amirov Sh.Sh., [2]Kasumova R.J., [2]Safarova G.A.** [1]*Azerbaijan Medical University, Azerbaijan* [2]*Baku State University, Azerbaijan* [3]*Khazar University, Azerbaijan*

16:00-16:10	**Optimal gravity and field orientation conditions for bone tissue healing using magnetic nanoparticles and scaffolds** **[1]Yusif-zada K., [2]Gasanova S., [3]Allahyarov E.** *[1]Leyla Medical Center, Azerbaijan* *[2]Baku State University, Azerbaijan* *[3]Case Western Reserve University, USA; Recognition Science Institute, USA; Institut für Theoretische Physik II: Weiche Materie, HH-Universität Düsseldorf, Germany*
16:20-16:30	**Solar-simulated photocatalysis with MoS_2-WO_3 heterostructures: an efficient strategy for RhB degradation** **Wajeehah Shahid** *The University of Lahore, Pakistan*
16:30-16:40	**Raman spectroscopic investigation of boron-doped GaSe crystals** **Balayeva L.A., Huseynov A.H.** *Baku State University, Azerbaijan*

November 28, Friday

PARALLEL SESSIONS

Session 2-2: Materials Science and Engineering
Chairpersons: Maarif Jafarov (Azerbaijan),
Almara Aliyeva (Azerbaijan)

Academic Building II, Room №307

Link to session

14:00-14:10	**Photoconductivity properties of GaS_xSe_{1-x}(x=0.6) single crystal** **Jahangirova S.A., Abasova A.Z., Hasanova L.H., Mammadov E.Z.** *Baku State University, Azerbaijan*
14:10-14:20	**Influence of material selection on stress, deformation and mass in automotive rear wings: a FEM-based comparative analysis** **Dedeoğlu O.** *Concept Design Engineer, Karsan Inc, Türkiye*
14:20-14:30	**Optimizing the performance of Au/(CdTe:PVA)/n-Si junctions: influence of CdTe doping levels** **Baxtiyarlı E.R., Afandiyeva İ.M.** *Baku State University, Azerbaijan*
14:30-14:40	**Dielectric properties and AC-conductivity of Re/n-GaAs schottky diodes in the frequency range of 1 kHz-5 MHz** **Afandiyeva İ.M., Bakhtiyarli E.R., Akhundov C.G.** *Baku State University, Azerbaijan*
14:40-14:50	**Effect of gamma irradiation on the optical properties of GO/PVA/Ag-based nanocomposites** **Baghirov M.B., Muradov M.B.** *Baku State University, Azerbaijan*

14:50-15:00	**Influence of cooling mode on the emission spectrum of HIPS nanocomposites** **Aliyeva G.Y., Pashayev B.G., Shirinova H.A., Hasanova M.R.** *Baku State University, Azerbaijan*
15:00-15:10	**Thermal properties of GeO_2 nanoparticles** **Mammadova N.J., Mammadov H.M., Jafarov.M.A.** *Baku State University, Azerbaijan*
15:10-15:20	**Optical properties of new PP+ZrO_2 / TiO_2 based hybrid nanocomposites** **Valiyev S., Hajiyeva F.** *Baku State University, Azerbaijan*
15:20-15:40	**Coffee Break**
15:40-15:50	**Synthesis and optical properties of new Pr:PVDF/CdS/ZnS – based nanocomposites doped with praseodymium** **Huseynova S., Hacıyeva F.** *Baku State University, Azerbaijan*
15:50-16:00	**Photoconductivity investigation in GaSe–Ge heterostructures** **Babayeva A.F., Guseynov A.G., Akhmedova F.Sh., Balayeva L.A.** *Baku State University, Azerbaijan*
16:00-16:10	**Time series analysis based on computer vision for the extraction of the time period of a simple pendulum** **Nasir Mehmood** *The University of Lahore, Pakistan*
16:20-16:30	**Investigation of silicon photomultipliers irradiated by gamma rays** **Mammadli A.H.** *Institute of Radiation Problems, Azerbaijan*

16:30-16:40	**Monolithic TiO_2 nanotube DSSC–supercapacitor platform for autonomous solar-to-hydrogen conversion** **Eminov Sh.O.[1], Gardashov R.G.[2], Gurbanov I.I.[1], Abdullayeva S.H.[1], Jalilova Kh.D., Badalov A.A.[1], Rajabli A.A.[1]** [1]*Institute of Physics, Azerbaijan* [2]*Institute of Geography, Azerbaijan*

November 28, Friday	
PARALLEL SESSIONS	
Session 2-3: Condensed Matter Physics **Chairpersons: İzzat Afandiyeva (Azerbaijan),** **Ciğdem Shukriyye Guchlu (Türkiye)** **Academic Building II, Room № 219** **Link to session**	
14:00-14:10	**Transition-metal pentachalcogenides material class as topological insulators: weyl points, electronic structure, and van hove singularities** **[1]Koc H., [2]Mamedov A.M., [3]Ozbay E.** *[1]Siirt University, Türkiye* *[2]Bilkent University, Türkiye; BSU, Azerbaijan* *[3]Bilkent University, Türkiye*
14:10-14:20	**The complex effects of organic and inorganic salt additives on rheological, electrical, and optical properties on agarose-based hydrogels** **Asadova A.H.** *Baku State University, Azerbaijan*
14:20-14:30	**Electrochemical properties of ceramic-polymer based PKR-3M composite studied by EIS method** **Mehdiyeva N.** *Karabakh University, Azerbaijan*
14:30-14:40	**Plasmon engineering in germanene, silicone allotropes and graphene derivatives: a first-principles study** **Vacacela G.C.** *University of Calabria, Italy* *Universidad Ecotec, Ecuador*

14:40-14:50	**Mechanism of blue luminescence formation in ZnS Crystals due to donor–acceptor pair recombination** **Mammadli Ch.A.[1], Huseynov C.I.[1], Abbasov I.I.[2], Asadullayeva S.G.[2]** [1]*Azerbaijan State Pedagogical University* [2]*Azerbaijan State Oil and Industry University*
14:50-15:00	**The negative dielectric, electric modulus, loss tangent (TANδ), AC conductivity (σ_{ac}), and nyquist ARCS in the Au/(CdTe:PVA)/n-Si structures as function of frequency and voltage** [1]**Demirci A.,** [2]**Güçlü Ç.Ş.** [1]*PROTEK Technology Solutions Trans. & Cons. Serv. Ind. & Trade Ltd. Co., Türkiye* [2]*Gazi University, Türkiye*
15:00-15:10	**Development of foam concrete composition based on composition adhesives** **Guvalov A.A.** *Azerbaijan Architecture and Construction University, Azerbaijan*
15:10-15:20	**The role of ion migration and hysteresis in perovskite solar cells: modeling charge trapping and release mechanisms via drift-diffusion** **Najafzade N.E., Mammadov F.** *Azerbaijan National Aerospace Agency, Azerbaijan*
15:20-15:40	**Coffee Break**
15:40-15:50	**Density functional theory perspective on the triclinic system of $NiFe_2O_4$** **Sadıgova A.A., Mammadova S.O.** *Institute of Physics, Azerbaijan*

15:50-16:00	**Optical and structural characterization of Ga_2O_3 thin films deposited by RF magnetron sputtering at different oxygen ratios** **Hopoğlu H., Tüzemen Şenadim E.** *Sivas Cumhuriyet University, Türkiye*
16:00-16:10	**Comparative analysis of simulation and experimental results of $CdS/Cd_{1-x}Mn_xTe$ heterojunctions for solar cell applications** [1,2]**Mehrabova M.A.,** [1]**Safarov N.Y.** [1]*Azerbaijan Technical University, Azerbaijan* [2]*Institutue of Radiation Problems, Azerbaijan*
16:00-16:10	**Thermophysical investigation of nanocrystalline h-BN under neutron irradiation** **Abbasov N.R.** *Nuclear Research Department of IDDA, Azerbaijan*
16:10-16:20	**Synthesis and properties of multiphase nanocomposites based on PE+Fe_3O_4+MWCNTs** **Huseynova J., Hajiyeva F.** *Baku State University, Azerbaijan*

November 28, Friday

PARALLEL SESSIONS

Session 2-4: **Biophysics**

Chairpersons: **Namig Ahmedov (Azerbaijan),**
Gulnara Akverdieva (Azerbaijan)

Academic Building II, Room №221

Link to session

14:00-14:10	**Spatial structure of the H–Ala–Val–Pro–Tyr–Pro–Gln–Arg–OH molecule** **Karimli Y.G., Akhmedov N.A.** *Baku State University, Azerbaijan*
14:10-14:20	**Spatial structure of analogues of the Rubiscolin-5 molecule** **Agayeva L.N., Karimli Y.G.** *Baku State University, Azerbaijan*
14:20-14:30	**Polyphenols from quince leaves: extraction, characterization, and biological** **Madrakhimova S.D.[1], Matmuratov B.Ya.[2], Yunuskhuja Yu.T.[2], Matchanov A.D.[1]** [1]*Institute of Bioorganic Chemistry named after. acad. A.S. Sadykova Academy of Sciences of the Republic of Uzbekistan, Republic of Uzbekistan* [2]*Tashkent Medical University, Uzbekistan*
14:30-14:40	**Metabolic implications of radioactive iodine therapy in toxic adenoma patients: a comprehensive assessment of leptin, lipid profile, and insulin sensitivity** **Mammadova A.E.** *Azerbaijan Medical University, Baku*

14:40-14:50	**The spatial structure of the N-terminal tetrapeptide fragment of the albutensin a molecule** **Ismayilzada M.T., Agayeva L.N.** *Baku State University, Azerbaijan*
14:50-15:00	**Study of the dipeptide fragment of biologically active molecule** **Abbasova G.D., Haciyeva L.S.** *Baku State University, Azerbaijan*
15:00-15:10	**The effect of some electrolytes on the structural temperature of water** **Masimov E.A., Aliyev E.Z., Teymurova J.Z.** *Baku State University, Azerbaijan*

November 28, Friday	
POSTER SESSION	
11:00-11:20	
1.	**Ion distribution function in elastic collisions of particles in plasma** **Huseynov T.Kh.** *Baku State University, Azerbaijan*
2.	**Parametric instability of plasma with excitation of low-frequency ion and high-frequency electron oscillations** **Mammadov F.E., Akberov E.M., Gurbanov I.I., Aliev A.A., Aliev S.A., Eminov Sh.O., Khalilov A.J.** *Institute of Physics, Azerbaijan*
3.	**Machine learning for particle signal selection** **Khalilova Sh.G.** *Institute of Physics, Azerbaijan* *Baku State University, Azerbaijan*
4.	**Physics-informed neural network modelling of the Schrödinger equation for the coulomb potential and quantum harmonic oscillator** **Alizada M.R., Nuriyev R.A., Alazova S.D., Muradova S.T.** *Baku State University, Azerbaijan*
5.	**Physics-informed neural network modelling of nonlinear quantum size effects in semiconductor nanowires** **[1]Alizada M.R., [2]Tanriverdili K.V., [3]Ibragimov G.B.** [1]*Baku State University, Azerbaijan* [2]*Azerbaijan Technical University, Azerbaijan* [3]*Institute of Physics, Azerbaijan*

6.	**Some solutions of the MHD equations for a single-liquid collisionless plasma of anisotropic solar wind for small distances from the sun and the problem of plasma mass acceleration** **[1]Bashirov M.M., [2]Ahmedova K.N.** [1]*Baku State University, Azerbaijan* [2]*Baku State University, Azerbaijan*
7.	**Physics-informed neural network approach to solving the Schrödinger equation for the Van der Waals potential in a harmonic trap** **Alizada M.R., Rajabov M.R., Alazova S.D., Muradova S.T.** *Baku State University, Azerbaijan*
8.	**Improved four-parameter exponential–type potential** **[1]Badalov V.H., [2]Badalov S.V.** [1]*Baku State University, Azerbaijan* [2]*University of Bayreuth, Germany*
9.	**Effect of the anodizing electrolyte composition on the structure and morphology of TiO_2 nanotube arrays** **Jalilova Kh. D., Eminov Sh. O., Abdullaeva S.H., Mammadova G.H.** *Institute of Physics, Azerbaijan*
10.	**Parametric instability of plasma with excitation of low-frequency ion and high-frequency electron oscillations** **Mammadov F.E., Akberov E.M., Gurbanov I.I., Aliev A.A., Aliev S.A., Eminov Sh.O., Khalilov A.J.** *Institute of Physics, Azerbaijan*
11.	**Defect structure investigation of PVDF-based β-Ga_2O_3–CNT nanocomposites by positron annihilation lifetime spectroscopy** **Ahmadova S.A., Ibragimov G.B.** *Institue of Physics, Azerbaijan*

12.	**Lattice parameter expansion and microstrain behavior of WNi alloys exposed to high-dose γ-radiation** **[1]Samadov S.F., [1]Abiyev A.S, [1]Samedov O.A., [2]Ahmadova A.B.** [1]*Institute of Radiation Problems, Azerbaijan* [2]*Baku State University, Azerbaijan*
13.	**Microstructural and surface morphology evolution of ZrC nanocrystals under high-dose gamma irradiation** **[1]Samadov S.F., [1]Samedov O.A., [1]Mirzayev M.N., [2]Hajiyeva Sh.N.** [1]*Institute of Radiation Problems, Azerbaijan* [2]*Baku State University, Azerbaijan*
14.	**Optical properties of TiO_2 nanotubular films obtained by anodic oxidation of glass / ITO /Ti structures** **Eminov Sh.O., Jalilova Kh.D., Abdullayeva S.H., Aliyev A.A., Aliyev S.A., Rajabli A.A.** *Institute of Physics, Azerbaijan*
15.	**Photoluminescence mechanisms in AAO–Cu nanocomposites containing electrochemically grown copper nanowires** **Eminov Sh.O., Ismailov N.J., Karimova A.Kh., Mamedova G.H., Rajabli A.A.** *Institute of Physics, Azerbaijan*
16.	**Assessment of the thermal stability of aniline amide of natural petroleum acids by Tg/DTg/DTa method** **[1]Dadashova N., [1]Abbasov V., [1,2]Aghamaliyeva D., [1]Aliyeva N., [1]Ahmedova S.** [1]*Academician Y. H. Mammadaliyev Institute of Petrochemical Processes, Azerbaijan* [2]*Azerbaijan State Oil and Industry University, Azerbaijan*

17.	**Characteristics of microcrystalline cellulose obtained from various domestic non-woody industrial crops** **[1]Tkachenko T.V., [1].O. Haidai, [1,2]Kamenskyh D.S., [3]Jafarov M.A., [1]Korinenko B.V., [2,4]Starik S.P., [5]Bratishko V.V., [1]Povazhny V.A., [6]Ruban S.V., [1]Yevdokymenko V.O.** *[1]V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry of the NAS of Ukraine, Ukraine* *[2]V. Bakul Institute for Superhard Materials of the NAS of Ukraine, Ukraine* *[3]Baku State University, Azerbaijan* *[4]Frantsevich Institute for Problems of Materials Science of the NAS of Ukraine, Ukraine* *[5]National University of Life and Environmental Sciences of Ukraine, Ukraine* *[6]LLC RPE «RD PRODUCTION GROUP», Ukraine*
18.	**Effect of γ-irradiation on dielectric properties of polymer nanocomposites** **Nabiyeva A.M., Guliyev M.Q., Ismayilova R.S.** *Institute of Radiation Problems, Azerbaijan*
19.	**Effect of gamma irradiation on the thermophysical properties of PVA and PVA/CdS nanocomposites** **Gasimova A.I., Nuriyev M.A.** *Institute of Radiation Problems, Azerbaijan*
20.	**Physico-mechanical improvement of HNBr composites via Epsu-based crosslinking** **Azizova A.S., Khankishiyeva R.F., Akhundzada H.N., Mammadov A.Kh., Salehov A.Kh., Valiyeva S.A., Khudaverdiev V.** *Institute of Radiation Problems, Azerbaijan*

21.	**Doping-induced optimization of thermoelectric performance in $Au_3In_5Se_9$–$Ag_3In_5Te_9$ systems for infrared applications** **Ragimov R.Sh., Sarmasov S.N.** *Baku State University, Azerbaijan*
22.	**Determination of fundamental parameters of stars: HD2885 (A3IV) and HD1280 (A2V) bazed on photometric quantities [c1], Q, β** **Samadov Z.A., Abdulova L.A.** *Baku State University. Azerbaijan*
23.	**Determination of fundamental parameters (Teff logg) of the stars: HR33, HR64 and HR140** **Aliyeva Z.F., Jafarli E.B.** *Baku State University, Azerbaijan*
24.	**The effect of solar activity on academic performance of students** **Bashirov M.M., Ahmadova K.N.** *Baku State University, Azerbaijan*
25.	**Determination of fundamental parameters of stars: HD1279 (B7III) and HD1438 (B8V) based on photometric quantities [c1], Q, β** **Samadov Z.A., Hashimova J.A.** *Baku State University, Azerbaijan*
26.	**Theoretical quantum chemical modeling of the stability of manganese borides under extreme pressures** **Bazarbek A.** *Eurasian National University, Kazakhstan*

27.	**Features of electrical conductivity of single crystals of cadmium-mercury-tellurium solid solutions in strong electric fields** **[1]Abdinov A.Sh., [1]Amirova S.I., [2]Babayeva R.F., [1]Ragimova N.A., [1]Rasulov E.A.** [1]*Baku State University, Azerbaijan* [2]*Azerbaijan State Economic University, Azerbaijan*
28.	**The influence of a uniform magnetic field on discharge development in a long tube with variable distributed capacitance** **Agayev M.N.** *Baku State University, Azerbaijan*
29.	**Surface ionization of barium atoms on the (100) crystallographic surface of molybdenum in high vacuum** **Orudjov A.K., Jafarova A.V.** *Baku State University, Azerbaijan*
30.	**Advancements and applications of the frenkel-pool effect in organic semiconductors** **Qaraev E.S., Ragimov R.Sh.** *Baku State University, Azerbaijan*
31.	**The impact of waste from the gadabay deposit on the environment** **[1]Guliyeva A.A., [2]Rafiyeva H.L., [2]Jafarova N.M.** [1]*Nagiev Institute of Catalysis and Inorganic Chemistry, Azerbaijan* [2]*Baku State University, Azerbaijan*
32.	**Ecological assessment of the environmental impact of heavy metals in the waste generated by the metallurgical industry** **Jafarova N.M., Hajiyeva S.R., Bayramov G.I.** [1]*Baku State University, Azerbaijan*

33.	**Quantitative study of petrochemical and polycyclic aromatic hydrocarbon (PAH) pollution in lake Zabrat Absheron peninsula** **[1]Hajiyeva S.R., [1]Aliyeva T.İ., [2]Huseynov E.Y., [1]Jafarova N.M.** [1]*Baku State University, Azerbaijan* [2]*Azerbaijan State University of Oil and Industry, Azerbaijan*
34.	**Quantum-chemical properties of Fe-Ile-Trp dimer complex** **Rahimzade S.G., Akverdieva G.A.** *Baku State University, Azerbaijan*
35.	**Interactions of iron ions with fungal melanins** **Bagirov R.M.** *Baku State University, Azerbaijan*
36.	**Spatial structure and conformational properties of pentapeptide molecule Np5** **[1]Ismailova L.I., [2]Akhmedova S.R., [1]Akhmedov N.A.** [1]*Baku State University, Azerbaijan* [2]*Azerbaijan Technical University, Azerbaijan*
37.	**Intrinsic and extrinsic instabilities in multiminima energy spectrum semiconductors** **Alizada N.** *Baku State University, Azerbaijan*
38.	**Influence of Mn (manganese) ion concentration on the heat capacity of diluted magnetic semiconductor superlattices** **Mahmudov M.M., Damirov R.Y.** *Baku State University, Azerbaijan*
39.	**Density of states effective mass of $(AgSbTe_2)_{0.9}(PbTe)_{0.1}$** **[1,2]Ragimov S.S., [3]Hashimova N.N.,** **[2]Aliyeva A.I. and [4]Pashayev G.P.** [1]*Baku State University, Azerbaijan* [2]*Institute of Physics, Azerbaijan* [3]*Azerbaijan State Oil and Industry University, Azerbaijan* [4]*Military Institute named after Heydar Aliyev, Azerbaijan*

40.	**Influence of $BiSe_3Te_6$ semiconductor compound strength properties of low-density polyethylene** **Gafarova D.M., Askerova G.Z.** *Azerbaijan University of Architecture and Construction, Azerbaijan*
41.	**Comparative analysis of methanol, ethanol, and propanol solutions based on structural temperature measurements** **[1]Gurbanova F.G., [1]Hasanov A.A.** [1]*Baku State University, Azerbaijan*
42.	**Molecular-level mechanisms of ionic hydration and phase behavior in Peg–Citrate systems** **[1]Shahbazova G.M., [2]Masimov E.A.** [1]*Baku State University, Azerbaijan* [2]*Institute of Physics, Azerbaijan*
43.	**Physics at future Circular Electron-Positron Collider** **[1] Dadashova A., [2] Huseynov N.** [1]*CEPC, China* [2] *CERN, Switzerland*
44.	**Study of the crystal structure of $TlIn(S_{1-x}Se_x)_2$ semiconductor compounds by X-ray diffraction** **Sharifov R.R., Dashdemirov A.O., Abiyev A.S.** *Azerbaijan State Pedagogical University, Azerbaijan*
45.	**Surface processes of CsCl interaction with barium islands: role of edge atoms and temperature factor** **Abdullayev T.Sh., Sarmasov S.N.** *Baku State University, Azerbaijan*
46.	**Influence of relative humidity on the optical parameters and conductivity of free-standing porous silicon films** **Mammadov H.M., Sarmasov S.N.** *Baku State University, Azerbaijan*

47.	**Intraband optical transitions in quantum dots** **Usibli G.A., Gadirova I.R.** *Baku State University, Azerbaijan*
48.	**Energy spectrum of a particle with position-dependent effective mass in a new hyperbolic potential** **[1]Nagiev Sh.M., [2]Nahmadov I.A.** [1]*Institute of Physics, Azerbaijan* [2]*Baku State University, Azerbaijan*
49.	**Solution of the radial Schrödinger equation for the 5-parameter exponential-type potential** **Mahmudova G.V., Badalov V.H.** *Baku State University, Azerbaijan*
50.	**Luminescence and defect states of $NaBi(MoO_4)_2$ crystal** **Darvishov N.H., Rustamov F.A., Mamedov M.Z., Gasanly N.M.** *Institute for Physical Problems of Baku State University, Azerbaijan*
51.	**The production of Higgs bosons Ahh in polarized e^-e^+-collisions** **Abdullayev S.K., Gojayev M.Sh., Alizade M.R.** *Baku State University, Azerbaijan*
52.	**Production of Higgs bosons Ahh in polarized e^-e^+-annihilation** **Abdullayev S.K., Gojayev M.Sh., Alizada M.R.** *Baku State University, Azerbaijan*
53.	**Study of the process $e^-e^+ \rightarrow Ahh$** **Abdullayev S.K., Gojayev M.Sh., Alizada M.R.** *Baku State University, Azerbaijan*

54.	**Green sorbents based on saponites for the removal of cationic dyes** **[1]Bohatyrenko V. A., [2]Kamenskyh D. S., [2]Tkachenko T. V., [2]Yevdokymenko V.O.** *[1]Dragomanov Ukrainian state university, Kyiv, Ukraine;* *[2]V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry (IBOPC) Ukraine*
55.	**Photoluminescence in stain-etched porous silicon after immersion plating deposition of Cu** **Rustamov F.A., Darvishov N.H., Mamedov M.Z., Bobrova Y.E., Askerova H.O.** *Baku State University, Azerbaijan*
56.	**Structural changes of nitrogen-doped graphene nanoplates** **Gahramanli L.R., Huseynzade R.R.** *Baku State University, Azerbaijan*
57.	**Structural changes of nitrogen-doped reduced graphene oxide** **Gahramanli L.R., Huseynzade R.R.** *Baku State University, Azerbaijan*
58.	**Isotope resolved (n,p) activation in ZnO nanoparticles cross sections and inventory modeling** **Izzatova I.V.** *Institute of Radiation Problems, Azerbaijan*
59.	**Molecular analysis of drug-poliglusam interactions on Fe_3O_4 nanoparticles** **Orujova F.R., Karimova A.H.** *Baku State University, Azerbaijan*
60.	**The Raman analysis of graphene and phosphorus-doped graphene-based materials** **Gahramanli L.R., Isayeva L.R.** *Baku State University, Azerbaijan*

61.	**Effect of thermal annealing on the optical properties of GO/$FeGaInS_4$/PVA composites** **Mamedova C.H., Muradov M.B., Addayeva Z.R.** *Baku State University, Azerbaijan*
62.	**In-Situ absorption spectroscopic investigation of aggregation and crystallization kinetics in PM6:Y6 and PM6:L8-BO organic photovoltaic systems** **[1]Kuvondikov V.O., Urazkulova D.M.** [1]*Institute of Ion Plasma and Laser Technologies, Uzbekistan*
63.	**The effect of polyethylene glycol on the electrical conductivity of aqueous solutions of various electrolytes** **Rasulzada G.X., Hesenova X.T.** *Baku State University, Azerbaijan*
64.	**Impact of gamma irradiation on the structural ordering and surface evolution of $Cd_{1-x}Fe_xS$ thin films** **[1]Mehrabova M.A., [2]Mammadli S.N.** [1]*Azerbaijan Technical University, Azerbaijan* [2]*Institute of Radiation Problems, Azerbaijan*
65.	**Comparative analysis of the molecular structure of Ch-Fe_3O_4/GO-based nanodrug delivery systems** **Aghayeva Sh.M., Karimova A.H., Mehdiyeva A.R.** *Baku State University, Azerbaijan*
66.	**Physical methods of influencing the catalyst surface, changing its catalytic activity using the example of the methyl alcohol synthesis reaction** **Khimach N.Y., Baran M.M., Kamenskyh D.S., Tkachenko T.V., Yevdokymenko V.O.** *V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry Ukraine*

67.	**Photoelectric and radiation-defect interaction mechanisms in Yb-doped gas monocrystals under gamma irradiation** **[1]Mammadova N.P., [2,3]Madatov R.S., [2]Tagiev T.B., [2]Mamishova R.M., [1,2]Khaligzadeh A.Sh.** [1]*Baku State University, Azerbaijan* [2]*Institute of Radiation Problems, Azerbaijan* [3]*National Aviation Academy, Azerbaijan*
68.	**Synthesis and electrical characterization of chitosan-based green polymer nanocomposites reinforced with multi-walled carbon nanotubes** **[1]Orujova T.I., [1]Gahramanova G.K., [2]Jabbarov R.B.** [1]*French-Azerbaijani University (UFAZ) under Azerbaijan State Oil and Industry University, Azerbaijan;* [2]*Institute of Physics, Azerbaijan*
69.	**Functionalized iron oxide nanoparticles for optimized drug delivery applications** **Mehdiyeva A.R., Karimova A.H., Muradov M.B., Nuriyeva S.G., Gahramanli L.R., Eyvazova G.M.** *Baku State University, Azerbaijan*
70.	**Structural analysis of SiC and PP Via X-ray diffraction** **[1]Hamidova S.N., [2]Gahramanli L.R.** [1]*Baku State University, Azerbaijan* [2]*Baku State University, Azerbaijan*
71.	**Dielectric properties of PVA/NiCr-LDH nanocomposite film** **Ibrahimova Kh.A., Azizov A.A., Balayeva O.O., Eyvazova G.M.** *Baku State University, Azerbaijan*
72.	**Study of azomethines, nitrobenzylidene chloroacetamide, and n-aminoacetophenone N (2-hydroxyethyl) ethylenediamine as multifunctional additives** **Aminova B., Ibragimova T., Almammadova A., Qahramanova K., Mammadova G., Qasimli G., Babaeva H.** *Institute of Additive Chemistry, Azerbaijan*

73.	**Conversion technology graphene oxide to reduced GO** **Ahmadova N., Babayeva M.** *Baku State University, Azerbaijan*
74.	**The mechanism of ozone formation in the microdischarge channel in the barrier discharge** **Alakbarov Sh.Sh.** *Baku State University, Azerbaijan*
75.	**4-study of the antimibromic properties of dimethylaminobenzylidene thiosemicarbazide copper acetate salt** **Gasimli G.R., Babayev E.R., Mammadova P.Sh., Aminova B.M., Ibrahimova T.M., Almammedova A.E., Gahramanova K. R., Mammadova G.A.,** *Acad. A. Guliyev Institute of Additive Chemistry, Azerbaijan*
76.	**Functional applications of gallium sulfide (GaS) crystals in gas detectors** **[1,2]Madatov R.S., [3]Allahverdiyev S.A., [1,4]Mamishova R.M., [1,3]Khaligzade A.Sh., [1]Sadigli L.E., [1,2]Faradjova U.F.** [1]*Institute of Radiation Problems, Azerbaijan* [2]*National Aviation Academy, Azerbaijan* [3]*Baku State University, Azerbaijan* [4]*Azerbaijan University of Architecture and Construction, Azerbaijan*
77.	**Intraband optical transitions in quantum dots** **Usibli G.A., Gadirova I.R.** *Baku State University, Azerbaijan*
78.	**The role of the spectrophotometric method in studying the optical properties of liquid mixtures** **Abdullayev A.P., Huseynov H.I., Babayev N.M., Musazada I.V., Asgarova G.Z.** *Azerbaijan University of Architecture and Construction, Azerbaijan*

79.	**Determination of characteristic semiconductor parameters in the $TlIns_2$-$TlEuS_2$ system of solid solutions** **Aghabalayeva A.A., Nurullayev Y.Q.** *Baku State University, Azerbaijan*
80.	**Intraband optical absorption in GaAs semiconductor superlattices** **Ibaeva R.Z.** *Institute of Physics, Azerbaijan*
81.	**Energy spectrum and wave functions of electrons and holes in semiconductor-based quantum wire** **Ismayilov T.H., Amirova L.F.** *Baku State University, Azerbaijan*
82.	**Study of the electrical conductivity of a two-dimensional electron GaS in a semi-parabolic quantum well with coulomb field screening by remote impurity ions** **[1]Huseynov H.I., [2]Mahmudov M.M., [2,3]Jahangirli Z.A., [1]Abdullayev A.P.** [1]*Azerbaijan University of Architecture and Construction, Azerbaijan* [2]*Baku State University, Azerbaijan* [3]*Institute of Physics, Azerbaijan*
83.	**Size effect of $BaTiO_3$ nanoparticles on the optical properties of chiral phase liquid crystal** **[1]Mammadova N.M., [1]Humbatov Sh.A., [2]Imamaliev A.R.** [1]*Baku State University, Azerbaijan* [2]*Institute of Physics, Azerbaijan*

84.	**Excitation of unstable waves in conducting media in the presence of a constant temperature gradient** **Veliyeva G.V., Hasanov E.R.** *Baku State University, Azerbaijan*
85.	**Phase transitions and band inversion in $Pb_{1-x}Sn_xTe$ solid solutions: experimental and theoretical aspects** **Sarmasov S.N., Ragimov R.Sh.** *Baku State University, Azerbaijan*
86.	**Spatial structure of the β-casomorphin-9 molecule** **Akhmedov N.A., Ismailova L.I., Agayeva L.N., Godjayev N.M.** *Baku State University, Azerbaijan*
87.	**Comparative conformational analysis of two antimicrobial tetrapeptides FRFR and WRWR** **Agaeva G.A., Agaeva U.T., Godjaev N.M.** *Baku State University, Azerbaijan*
88.	**Conformational behavior of β-amyloid (25–35) peptide in different environments: structural insights into aggregation propensity** **[1]Najafova G.Z., [2]Agaeva G.A.** [1]*French-Azerbaijani University (UFAZ) under the Azerbaijan State Oil and Industry University, Azerbaijan.* [2]*Baku State University, Azerbaijan*
89.	**The role of intramolecular resonance hydrogen bonding in the formation of intermolecular hydrogen bonds in mono- and dimeric complexes of the (Z)-N, N-Diethyl-3-oxo-2-(2-phenylhydrazineylidene) propanamide $C_{13}H_{17}N_3O_2$ molecule** **Demukhamedova S.D., Aliyeva I.N.** *Baku State University, Azerbaijan*

90.	**Spatial structure and reactivity of T7 peptide based on theoretical studies** **Hajiyeva Sh.N., Abbasova G.D., Aliyeva I.N., Veliyeva L.I.** *Baku State University, Azerbaijan*
91.	**Crystallization kinetics of amorphous $TlIn_{1-x}Sn_xTe_2$ films** **[1]Alekperov E.Sh., [2]Ibragimov G.B., [2]Nazarov A.M.** *[1]Baku State University, Azerbaijan* *[2]Institute of Physics, Azerbaijan*
92.	**Investigating the rheological and thermal properties of disol and trisol solutions** **Bagirova A.A.** *State Border Service Military Hospital, Azerbaijan*

NOTES: