5TH INTERNATIONAL CONFERENCE

ON

"PHYSICS FOR SUSTAINABLE DEVELOPMENT & TECHNOLOGY"

(ICPSDT-2023)

Certificate of Participation

This is to certify that

Name: *Gokhan Surucu* .....

has attended in the 5th ICPSDT 2023 and presented the paper titled

Investigation of Solid-State Hydrogen Storage Materials, 2D Catalysts, and Their Topological Engineering

as an Invited Talk in the Technical Session-IIIA (Computational Physics-III) held during 07-08 September' 2023 organized by Department of Physics, Chittagong University of Engineering & Technology, Chattogram-4349, Bangladesh.

Prof. Dr. Md. Ashraf Ali
Conference Secretary
5th ICPSDT-2023

Prof. Dr. Swapan Kumar Roy
Conference Chair
5th ICPSDT-2023

5th International Conference
on
"Physics for Sustainable Development and Technology"
(ICPSDT-2023)
(September 7-8, 2023)
Theme: Physics Research for Emerging Futures

Conference Scope:
Condensed Matter Physics, Materials Science and Magnetic Materials, Advanced/Engineering Materials, Semiconductors, Superconductors and Insulators, Optoelectronics, Environmental Science & Polymers, Composite and Ceramic Materials, Nano Science and Technology, Thin Films, Crystal Growth and Amorphous Materials, Medical, Health and Bio-Physics, Plasma Physics and Meta Materials, Laser Physics and Non-Linear Optics, Atmospheric Physics and Meteorology, Nuclear, Radiation and Reactor Physics, Particle & High Energy Physics, Renewable Energy, Computational Physics, Theoretical Physics, Physics Education and Industry, VLSI Design and Fabrication, Electronic Devices and Quantum Computing, Wireless, Optical and Mobile Communication along with all related topics.

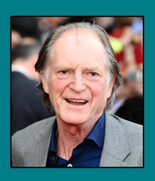
Format of Presentation:
(a) Oral Presentation (b) Poster Presentation

Venue:
Sheikh Kamal IT Business Incubator, CUET

Important dates:
Deadline for abstract submission : June 30 2023
Abstract acceptance notification : July 15, 2023
Deadline for Registration : August 15, 2023

Registration fees:
Professional (Author/participant) : BDT 3000
Student (Author/participant) : BDT 1500
Foreign participant : US $ 100

Keynote Speakers:



Prof. Dr. David Bradley
Emeritus Professor
Department of Physics
University of Surrey, UK



Prof. Dr. Tanusri Saha Dasgupta
Director
S. N. Bose National Centre for Basic Sciences.
JD Block, Sector-III, Salt Lake City, Kolkata - 700 106, India



Prof. Dr. Susanta Lahiri
Emeritus Scientist (CSIR)
Department of Chemistry
Diamond Harbour Women's University
Sarisha, South 24 Parganas 743368, India



Prof. Dr. Abdullah Al Mamun
Department of Physics
Jahangirnagar University, Dhaka, Bangladesh

Invited Speakers:



Prof. Dr. Debnarayan Jana
Department of Physics
University of Calcutta, India



Dr. Hiromitsu Haba
Team Leader
RIKEN Nishina Center of Accelerator-Based Science, Japan



Prof. Dr. Joydeep Chowdhury
Department of Physics
Jadavpur University, Kolkata-700032, India



Prof. Dr. Indra Dasgupta
Senior Professor, School of Physical Sciences,
IACS, Kolkata 700 032, India



Prof. Dr. Pritam Deb
Department of Physics DPIIT
Chair Professor, Intellectual Property Rights
Cell Tezpur University (Central University)
Napaam, Tezpur 784028, India



Prof. Dr. Faruque-Uz-Zaman Chowdhury
Vice Chancellor, Hamdard University
and Professor (Lien), Department of Physics, CUET



Prof. Dr. Saleh Hasan Naqib
Department of Physics
University of Rajshahi, Rajshahi, Bangladesh



Prof. Dr. Mayeen Uddin Khandaker
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Conference Chair:



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Chittagong University of Engineering & Technology (CUET)
Chattogram-4349, Bangladesh
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https://www.cuet.ac.bd/conf/icpsdt/invited-speakers

Keynote Speaker:

1. Professor TanusriSaha Dasgupta

Keynote Session (Talk)	07/09/2023	09:55 am – 10:30 am

2. Professor Susanta Lahiri

Keynote Session (Talk)	07/09/2023	10:50 am – 11:25 am

3. Professor D.A. Bradley

Keynote Session (Talk)	08/09/2023	09:00 am – 09:35 am

4. Professor Abdullah Al Mamun

Keynote Session (Talk)	08/09/2023	09:35 am – 10:10 am

Invited Speaker:

1. Prof. Debnarayan Jana

Invited Talk	07/09/2023	04:50 pm – 05:15 pm

2. Prof. Mayeen Uddin Khandaker

Invited Talk	08/09/2023	10:25 am – 10:50 am

3. Dr. HiromitsuHaba

Invited Talk	08/09/2023	10:50 am–11:15 am

4. Prof. Joydeep Chowdhury

Invited Talk	07/09/2023	11:45 am – 12:10 pm

5. Prof. Saleh Hasan Naqib

Invited Talk	07/09/2023	02:30pm – 02:55 pm

6. Prof. Faruque-Uz-Zaman Chowdhury

Invited Talk	08/09/2023	04:20 pm – 04:45 pm

7. Dr. Gokhan SURUCU

Invited Talk	07/09/2023	04:50 pm – 05:15 pm

8. Prof. Indra Dasgupta

Invited Talk	07/09/2023	11:45am – 12:10 pm

9. Dr. M.N.I. Khan

Invited Talk	08/09/2023	10:25am – 10:50am

10. Dr. Pradip Deb

Invited Talk	07/09/2023	02:30pm – 02:55pm

11. Prof. Pritam Deb

Invited Talk	07/09/2023	02:30 pm – 02:55 pm

12. Prof. Bhanu Prakash Singh

Invited Talk	07/09/2023	11:45 am – 12:10 pm

13. Prof. Mahbub Alam

Invited Talk	07/09/2023	02:30 pm – 02:55 pm

14. Prof. M R Khan

Invited Talk	08/09/2023	02:00 pm – 02:25 pm

Investigation of Solid-State Hydrogen Storage Materials, 2D Catalysts, and Their Topological Engineering

Gokhan Surucu[1, *]

[1]Department of Energy Systems Engineering, Gazi University, Ankara, 06500 Türkiye

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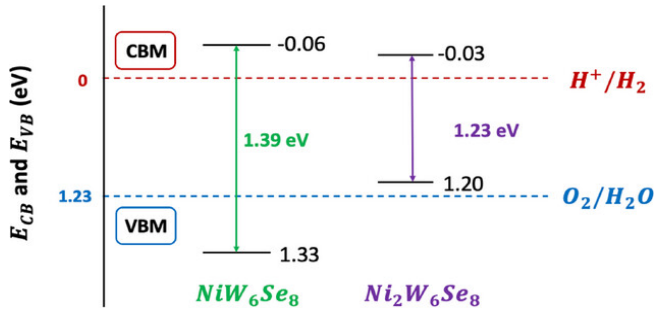
Objectives: Hydrogen's potential as green energy is evident, but effective storage needs innovation. Employing DFT, we optimize solid-state storage, 2D catalysts, and topological engineering for sustainable energy progress.

Methods: Our study employs DFT to analyze and optimize solid-state hydrogen storage materials, probing thermodynamic stability, adsorption energies, and electronic structures. This informs effective storage solutions and extends to the Hydrogen Evolution Reaction (HER) mechanisms, uncovering intricate pathways for two-dimensional (2D) catalysts with enhanced efficiency.

Results and discussion: We study the thermodynamic stability, adsorption energies, and electrical properties of different solid-state hydrogen storage materials using DFT. We enhance effective and feasible storage devices by elucidating the fundamental principles that control hydrogen-material interactions. In addition, studying HER processes reveals the complexity of electrocatalytic pathways, especially in developing 2D materials. DFT helps create better catalysts by revealing complex HER processes and chemical pathways. We also explore the topological properties of these two-dimensional materials and their effects on hydrogen performance. The link between material structures and hydrogen interactions reveals new ways to improve catalytic activity and stability, which advances hydrogen-related technology [1-5].

Conclusion(s): We use Density Functional Theory (DFT) to help choose and build solid-state hydrogen storage materials and 2D catalysts. We aim to speed the development of hydrogen-based energy systems by harnessing this synergy, decreasing the gap between theoretical predictions and real-world applications.

Figure: The schematic representation of the calculated band levels for NiW6Se8 and Ni2W6Se8 (an example of the results of the studies [5])



References:

1. G Surucu, A Gencer, A Candan, H H Gullu, M Isık, International Journal of Energy Research, (2020), 2345, 44(3)
2. A Gencer, S Aydin, O Surucu, X Wang, E Deligoz, Applied Surface Science, (2021), 149484, 551.
3. G Karanfil, H Coskun, M Karakis, A Sarsilmaz, A Gencer, G Surucu, A Aljabour, F Ozel, International Journal of Hydrogen Energy, (2022), 5326, 47(8).
4. G Ding, T Sun, G Surucu et al, Physical Chemistry Chemical Physics, (2022), 17210-17216, 24(28)
5. T Dag, G Surucu, A Gencer, et al, Advanced Theory and Simulations, (2023)

Session: Physics/Theoretical Physics/Computational Physics/Applied Physics and Engineering.

Mode of presentation: Oral (invited)

5th International conference on "Physics for Sustainable Development & Technology (ICPSDT-2023)"
(7-8 September, 2023)

Organized by
Department of Physics
Chittagong University of Engineering & Technology (CUET)

Conference Programme

7 September 2023 (Thursday)

08:00 am - 08:50 am	**Registration** Venue: Sheikh Kamal IT Business Incubator, CUET

Inaugural Ceremony
Venue: Auditorium, Sheikh Kamal IT Business Incubator, CUET

09:00am - 09:05 am	Tilawat-e-Quran
09:05 am - 09:10 am	Welcome speech by Conference Secretary
09:10 am - 09:15 am	Speech by Special Guest, Dean, Faculty of Engineering and Technology, CUET
09:15 am - 09:25am	Speech by Guest of Honor, Hon'ble Vice-Chancellor, CUET
09:25am - 09:45am	Inaugural Speech by the Chief Guest, President, Bangladesh Accreditation Council
09:45 am - 09:50 am	Vote of thanks by Conference Chair

7 September 2023 (Thursday)	
Keynote Session-I **Venue: Auditorium, Sheikh Kamal IT Business Incubator, CUET** **Time: 09:50 am -11:25 am**	
KS-I Chair Co-Chair	 Professor Jiban Podder Professor Samiul Islam Sarkar
09:55 am - 10:30 am	**Title: Quantum Materials by Computation: Challenges & Opportunities** Professor Tanusri Saha Dasgupta
Refreshment **Time: 10:30 am - 10:45 am** **Venue: Common room**	
KS-II Chair Co-Chair	 Professor Bhanu Prakash Singh Professor Shyamal Ranjan Chakraborty
10:45 am - 11:20	**Title: Radiation, Radioisotope, Radiopharmaceuticals and**

am	**Nature Resourced Chemicals** Professor Susanta Lahiri
11:20 am - 11:40 am	Chronicle of the Department of Physics, CUET by Conference Chair
Technical Session-IA **Computational Physics-I** **Venue: A** **Time: 11:45 am - 01:30 pm**	
Chair	Professor Abdur Razzaque Sarkar
Co-Chair	Professor Mirza Humaun Kabir Rubel
IT-1 11:45 am – 12:10 pm	**Title: Understanding Emergent Phases in Quantum Matter** Professor Indra Dasgupta
Abstract ID	**Title and Authors of the research to be presented**
127	Origin of Rashba-Dresselhaus effects in rare earth perovskites: insights from First-principle calculations ***Swarup Ghosh***, Joydeep Chowdhury
131	A computational study of the thortveitite structure of zinc pyrovanadate, $Zn_2V_2O_7$, under pressure ***S. Reza***, M. Maaza, M. S. Islam
134	Investigation of the physical properties of a new type of non-centrosymmetric superconductor Zr_3Ir via ab-initio methodology ***Razu Ahmed***, Md. Sajidul Islam, S. H. Naqib
169	Pressure-induced Li_5N: physical properties from first-principles exploration ***M. Abdul Hadi Shah***, S.H. Naqib
206	Study towards lead-free perovskite $CsMI_3$ (M= Pb, Mg, Ga, Ca, Ba, Sr) for photovoltaics and optoelectronics appliance by a first-principle calculations ***M. Biswas***, M. A. Ali, M. M. Hossain, S. H. Naqib, M. M. Uddin
200	A comprehensive theoretical study of the physical properties of the $Mo_4Y_2Al_3B_6$ i-MAB phase via first-principle calculations ***M. R. Rana***, S. Islam, K. Hoque, M. M. Hossain, M. M. Uddin, S.H. Naqib, M. A. Ali
221	Study of physical properties of M_2BC (M=Ti, Zr, Hf and W): A DFT investigation ***R. Islam***, M. M. Hossain, M. A. Ali, M. M. Uddin, S. H. Naqib
228	Study of new MAX phase materials: Sc_2AX (A= Bi, Br; X=C, N, B) via *Ab-initio* Method ***Ruma Akther***, N. Jahan, M. A. Ali
Technical Session-IB **Nuclear Physics** **Venue: B** **Time: 11:45 am - 01:30 pm**	
Chair	Professor Md. Abdur Rashid
Co-Chair	Professor A.K.M. Rezaur Rahman
IT-2	**Title: Advancing Sustainable Development through Physics: From Nuclear Reactions to Energy Generation and Waste Management** Prof. B. P. Singh
Abstract ID	**Title and Authors of the research to be presented**
161	Non-monotonic potential description of $\alpha+^{36,40}$Ar elastic scattering ***M. Nure Alam Abdullah***, Shahadat Hossain Dipu
116	Estimating the effect of exhalation rate of soil ^{222}Rn gas regarding local meteorological factors in Purulia district, West Bengal, India ***Subhradeep Karmakar***, Moinur Rahaman, Subham Dutta, Parimal Tudu, Sonjoy Mondal
132	Radon exhalation and gamma dose assessment for various ceramic tiles used in Bangladesh ***Sopan Das***, Shahadat Hossain
240	Non-monotonic potential description of $\alpha+^{208}$Pb elastic scattering ***M. Zahid Hasan***, M. Nure Alam Abdullah
138	CFD Investigation of convective heat transfer enhancement in a vertical triangular sub channel using water-based Al_2O_3-CuO nanofluid Drupada Roy, ***Anik Chakraborty***, Anik Sarker, Hasib Noor Redoy

241	Modified single-folded potentials for the α^{+208}Pb elastic scattering ***Sinthia Binte Kholil***, M. Nure Alam Abdullah
165	Investigating the effects of nld models and photon strength functions on MACS and reaction rates of a branching point isotope in the relevant astrophysical energy range ***Raeed Nawaf***, A.K.M. Rezaur Rahman
255	Measurement of radioactivity in chemical and organic fertilisers used in chattogram area, Bangladesh. ***Kanchan Sarkar***, Animesh Kumer Chakraborty, Mahiuddin Ahmed, Shahadat Hossaind
Technical Session-IC **Materials Science-I** **Venue: C** **Time: 11:45 am - 01:40 pm**	
Chair	Professor Md. Mohi Uddin
Co-Chair	Professor Md. Sahab Uddin
IT-3	**Title: SERS active substrates from Langmuir Blodgett Film templates: Fabrications & Applications** Joydeep Chowdhury
Abstract ID	**Title and Authors of the research to be presented**
101	Synthesis and application of cross-linked cellulose hydrogel beads in the uptake of toxic Cadmium ions from aqueous solution ***Kakoli Banerjee***, Arpita Manna
140	Synthesis and characterization of Sm_2AlTaO_7 crystals for optoelectronic device applications ***Md Abdur Razzaque Sarker***, Mst. Nusrat Jahan Nira
191	Multifunctional properties of Sm doped multiferroic bismuth ferrite ***Iffat Ara Mitu***, Shahida Akhter, S. Manjura Hoque
185	Preparation and characterization of $AgCuO_2$ thin films for possible photovoltaic applications ***M. Alomgir Hossain***, M.S.I Sarker, M.M. Rahman, M.K.R. Khan
231	Removal of toxic Methylene Blue dye by TiO_2-Potato peel composite material from aqueous solution ***A. Rasel***, M. R. Alam, A. A. Rakib, U. Rayhan
188	Synthesis and characterization of Cd doped SnO_2 thin films for optoelectronic and photovoltaic applications ***Abu Bokkor Siddique***, M.M. Rahman,M.S.ISarker, M.K.R. Khan
232	Removal of toxic Congo Red dye by Biochar derived from Sesbaniasesban L stick ***M. A. Ali***, A. A. Rakib, M. M. Hasan, U. Rayhan
234	Electrical transport properties and impedance spectroscopy of Bi_2O_3 added Li-Cu-Mg-Zn ferrites ***Faruque Ahammed***, M. Samir Ullah, M. Rasel Shikder, M. N. I. Khan, A. T. M. Kaosar Jamil
244	Synthesis of magnetic (Fe_3O_4 & $NiFe_2O_4$) nanoparticles, fabrication of these nanoparticles reinforced epoxy based nanocomposites and their characterization ***Sajib Madbar***, M.A. Islam, M.A. Gafur, Md. Asadul Hoque
Lunch **Time: 01:40 pm - 02:30 pm** **Venue: Common room**	
Technical Session-IIA **Computational Physics-II** **Venue: A** **Time: 02:30 pm - 4:35 pm**	
Chair	Professor Joydeep Chowdhury
Co-Chair	Dr. Md. Mukter Hossain
IT-4	**Title: The case of missing electronic entropy and the magnetic susceptibility of high-T_c cuprates** S. H. Naqib
Abstract ID	**Title and Authors of the research to be presented**
135	Unveiling the impact of pressure on the opto-electronic and thermoelectric characteristics of $FrCaX_3$ (X = Cl, Br, I) perovskite materials: A first-principle investigation

	Mohammad Abdur Rashid, Md. Borhanul Asfia, Sahadat Jaman
173	DFT approach into the physical properties of MTe_3 (M = Hf, Zr) superconductors: a comprehensive study F. Rahman, ***M. M. Ali,*** M. A. Ali, M. M. Uddin, S. H. Naqib, M. M. Hossain
250	Design and performance analysis of lead-free perovskite solar cell using SCAPS-1D device simulation Md. Shizer Rahman, ***Rabeya Khan***, Md. Rasidul Islam
108	Ab-initio investigation of the physical properties of BaAgAs Dirac semimetal and its possible thermo-mechanical and optoelectronic applications ***A.S.M. Muhasin Reza***, S.H. Naqib
175	Prediction of thermo-dynamical stabilityandstudy of opto-electronic properties of double perovskite halides, Cs_2AuScX_6 (X= Cl, Br, I) ***S. Mahmud***, M.A. Ali, M. M. Hossain, M. M. Uddin
176	Half-metallic to metallic transition of ferromagnetic $SrVO_3$ under high pressure: Density functional theory insights F. B. A. Urbi, ***M. A. Hassan***, M. S. Hossain, J. Hossain, M. M. Rahaman
225	Comparative study of electronic and optoelectronic properties of all inorganic $CsPbX_3$(X = Cl, Br, I) perovskiteby DFT approach ***Md. R. Islam***, E. Jahan, Md. M. H. Mitul, M. Kamruzzaman
193	DFT insights into Nb-based 211 MAX phase carbides: Nb_2AC (A = Ga, Ge, Tl, Zn) ***P. Das***, M. A. Ali, N. Jahan
117	A comparative study of the physical properties of XIr_3 (X = La, Th) superconductors via *ab-initio* approach ***Md. Sajidul Islam***, Razu Ahmed, S. H. Naqib
189	Design and performance enhancement of GaAs-based solar cells by using intermediate band layer: a numerical approach ***M. M. Ali***, A. A. Mamun, M. R. Islam, M. G. Rashed, M. Julkarnain
Technical Session-IIB **Atmospheric Physics** **Venue: B** **Time: 2:30 pm-4:35 pm**	
Chair	Professor Md. Abdullah Elias Akhter
C-Chair	Dr. M. A. K. Mallik
IT-5	**Title: A Comprehensive study of characterizing cold days and waves in Bangladesh** Professor Md. Mahbub Alam
Abstract ID	**Title and Authors of the research to be presented**
237	Prediction of tropical cyclone 'Mocha' and associated storm surge over the Bay of Bengal using NWP models ***Md. Abdullah Elias Akhter***, M. A. K. Mallik, S.M. Quamrul Hassan, Md. Shameem Hassan Bhuiyan
120	Prediction of atmospheric instabilities from the surface parameters through machine learning Abhijit Banerjee, ***Sreshtha Basu***, Soham Chatterjee, Rina Bhattacharya
235	Heat stress index development in Bangladesh using NWP models ***M. A. K. Mallik***, Md. Shadekul Alam, Md Abdullah Elius Akhter, H.M.A.R. Maruf
128	On the variation of the solar wind speed with the flare intensity and wind density during X-Class solar flare on June 9, 2023 ***Abhijit Banerjee***, Sudikin Paramanik, Avirup Banik, Amitlal Bhattacharya, Rina Bhattacharya
259	Investigation of warm core structure of tropical cyclones by WRF model ***Kh. Hafizur Rahman,*** M. A. Taher
202	Sensitivity of cumulus parameterization scheme and data sources in the WRF model for simulating thunderstorm events over Bangladesh. ***M. Mozammel Hoque***, S. Jamal Ahmed, M.A.K. Mallik, S. M. Quamrul Hassan
144	Climate change and changing rainfall pattern over West Bengal Amrik Bhattacharya, Chandrima Ghosh, Avijit Malakar, M. Roy, ***Amitlal Bhattacharya***
148	Sensitivity of microphysics and PBL parameterization schemes in WRF-ARW model on track of tropical cyclones 'Amphan' and 'Bulbul' over the Bay of Bengal

	Md. Idris Ali, Md. Mahbub Alam
236	Predictability of monsoon low pressure systems over the head Bay of Bengal and its associated features using weather research and forecasting model ***M. A. K. Mallik***, Md. Azizur Rahman, Md. Abdullah Elias Akhter
238	Simulation of a thunderstorm event over north-western part of Bangladesh using WRF model ***M. Mozammel Hoque***, S. Jamal Ahmed, M.A.K. Mallik, S. M. Quamrul Hassan
239	Predictability of human comfort index of heat wave events over Bangladesh using NWP and RayMan pro-model ***Flora Rahman***, Md. A. E. Akhter, M. A. K. Mallik, SM Quamrul Hassan
Technical Session-IIC **Materials Science-II** **Venue: C** **Time: 02:30 pm - 4:35 pm**	
Chair	Dr. Md. Abdul Gafur
Co-Chair	Prof. Muhammad Samir Ullah
IT-6	**Title: Non-ergodic quntum phenomena in ensemble of two dimensional systems** P. Deb
Abstract ID	**Title and Authors of the research to be presented**
208	Synthesis of Zn and Ni-doped barium hexaferrite via spark plasma sintering approach ***M. S. Alam***, Isao Kagomiya, Ken-ichi Kakimoto
151	Single crystal growth and anisotropic ionic conductivity of $Li_{3x}La_{2/3-x}TiO_3$ with various Li concentrations ***M. S. Ali***, R. Parvin, Y. Maruyama, M. Nagao, S. Watauchi, I. Tanaka
264	Investigation of the optimal annealing temperature effect of Ti^{4+} doped Mg-Zn ferrites ***M. T. A. Sourav***, M. A. Hossain
245	Investigation of frequency dependent complex permeability and dielectric properties with varying iron concentrations of Ni-Mg-Cu-Zn ferrites ***M. M. Alave Khan***, Rajon Saha Auntu, S. K. Shil, M. A. Hossain, S. S. Sikder
192	Facile synthesis and characterization of multiferroic $Bi_{0.85}La_{0.15}FeO_3$ ferrites ***Israt Jahan Isha***, Shahida Akhter, S. Manjura Hoque
201	Flux pinning phenomenon in GdBCO coated superconductors and determination of the critical temperature (T_c) of the sample ***Md Asadul Islam***, Md. Saifur Rahman, Saiful Islam, Edmund Soji Otabe, Md. Anwarul Kabir Bhuiya
205	Structural and impedance spectroscopy investigation of $Ni_{0.20}Cu_xZn_{1-x}Fe_2O_4$ samples synthesized by solid state reaction at different sintering temperatures ***Nurul Absar***, M. A. Gafur, M.A. Hoque, Md. Shofiqul Islam, F.-U.-Z. Chowdhury, Swapan K. Roy
177	Investigation of structural, optical, magnetic and electrical properties of Mg substituted Ni-Cu-Cd bulk ferrites obtained from Sol-gel synthesized nanocrystalline powder ***Md Shahbaz Khan***, M. Belal Hossen
224	Synthesis and structural, optical, magnetic characterization of co-doped $Ba_{0.9}La_{0.1}Ti_{(1-x)}Co_xO_3$ perovskite ***A.R. Bhuiyan***, H.K. Rouf, Z. Hasan, M.R. Hasan, M.K. Alam, M.N.I. Khan
180	Growth, structural, thermal and optical characterization of pure and L-asparagine monohydrate added zinc sulphate heptahydrate crystals ***M. A. Rahman***, H. N. Das, J. Podder
Refreshment **Time: 04:35 pm - 04:50 pm** **Venue: Common room**	
Technical Session-IIIA **Computational Physics-III** **Venue: A** **Time: 04:50 pm - 06:35 pm**	
Chair	Professor Indra Dasgupta
Co-Chair	Professor Md. Mijanur Rahaman
IT-7	**Title: Investigation of Solid-State Hydrogen Storage Materials, 2D Catalysts, and Their Topological Engineering**

	Gokhan Surucu
Abstract ID	**Title and Authors of the research to be presented**
141	Ab-initio insights into the structural, elastic, bonding and thermophysical properties of UHx (x = 1,2,3,5,6,7,8) under pressure: possible relevance to high-Tc superconductivity ***Md. Ashraful Alam***, F. Parvin, S. H. Naqib
147	Pressure induced investigation of elastic, optoelectronic and photocatalyticproperties of semiconducting $RbNbO_3$ ***M. Monira***, M. A. Helal, M. N. H. Liton, M. Kamruzzaman, S. Kojima
170	Structural phase transition and the effect of Sulfur substitution on the physical properties of $KTaO_3$: a DFT insights ***H. Akter***, M. A. Ali, M. M. Hossain, M. M. Uddin, S. H. Naqib
183	DFT investigation of physical and optoelectronic properties of Ag-based inorganic double perovskites halides Cs_2AgIrX_6 (X= F, Cl, Br) ***M. A. Rayhan***, M.A. Ali, M. M. Hossain, M. M. Uddin, S. H. Naqib
251	A comprehensive DFT+U investigation of electrical, optical, and structural properties of doped $CsSnCl_3$ perovskite: unveiling optoelectronic potential ***Dholon Kumar Paul,*** A. K. M. Akther Hossain
222	Chalcopyrite semiconductors of $HgXN_2$ (X=Si, Ge and Sn): A DFT study for photovoltaic and thermo-mechanical applications ***A. Hossain***, M. M. Hossain, M. A. Ali, M. M. Uddin, S. H. Naqib
109	The pressure dependent mechanical, phonon, bonding, electronic, optical, and thermophysical properties of CsV_3Sb_5 Kagome compound: a DFT based ab-initio study ***M. I. Naher***, M. A. Ali, M. M. Hossain, M. M. Uddin, S. H. Naqib
136	CFD investigation of steam condensation with air through a channel of four tubes bundle under natural convection Drupada Roy, Anik Chakraborty, Anik Sarker, ***Pratik Chakraborty***
Technical Session-IIIB **Materials Science and Nano Physics** **Venue: B** **Time: 04:50 pm - 06:35 pm**	
Chair	Professor Quazi Delwar Hossain
Co-Chair	Dr. Muhammad Abdullah Al Mamun
IT-8	**Title: Beyond T-graphene: Two-dimensional tetragonal allotropes and their potential applications** Debnarayan Jana
Abstract ID	**Title and Authors of the research to be presented**
181	Fabrication of a Schottky diode with direct deposition of multilayer graphene on n-GaN by solid-phase reaction ***Md. Sahab Uddin***, Kazuyoshi Ueno
211	Structural and luminescence properties of Eu-doped PMO films with ethylene bridge and methyl terminal groups ***Md Rasadujjaman***, Jinming Zhang, Alexey S. Vishnevskiy, Jing Zhang, Mikhail R. Baklanov
212	Synthesis of $NiO–SnO_2$ nanoparticles using myristica fragrans fruit extract for biological applications ***Md. Somel Islam***, Md. Rasadujjaman, Mamun-Or-Rashid, Abdullah Al Mamun
233	Magnetic properties Bi-doped La-Ba perovskite manganite ***M. Rasel Shikder***, M. Samir Ullah
184	Structural and optical properties of silver doped zinc selenide thin films prepared by thermal evaporation method ***M. Mahbubur Rahman***, K. M. A. Hussain, T. Faruqe, A.T.M.K. Jamil
194	Bio-Synthesis of silver nanoparticles (AgNPs) using Momordica charantia extracts to perceive the feasibility of its application as medicinal agent in different purposes ***M. F. Ehasan***, R. Sultana, A. K. M. A. Ullah, A. K. M. F. Kibria, A. R. M. Tareq
166	Structural and morphological studies on gelatin based ternary nanocomposite ***Salvin Mustakim***, Md Abul Kalam, Mohammad Jellur Rahman
246	Study of structural, magnetic and electrical properties of Cr-substituted Ni-Cu-Zn ferrites synthesized by solid state reaction technique ***Rajon Saha Auntu***, S. K. Shil, M. A. Hossain, S. S. Sikder

8 September 2023 (Friday)	
Keynote Session-II **Venue: Auditorium, Sheikh Kamal IT Business Incubator, CUET** **Time: 9:00 am - 10:10 am**	
Chair Co-Chair	Professor AKM Moinul Haque Meaze Dr. Hiromitsu Haba
KS-03 Time: 09:00 am -09:35 am	**Title: Skin Dose Evaluations using Thin Graphite Layers** Professor D.A. Bradley
Chair Co-Chair	Professor Saleh Hasan Naqib Professor Golam Hafez
KS-04 Time: 09:35 am -10:10 am	**Title: Nucleus-acoustic and self-gravito-acoustic waves in degenerate quantum plasma systems** Professor A. A. Mamun
10:10 am - 10:25 am **Refreshment & Tea** **Venue: Common room**	
Technical Session-IVA **Nano Physics and Applications** **Venue: A** **Time: 10:25 am-12:40 pm**	
Chair	Professor Mohammad Belal Hossen
Co-Chair	Professor Md. Abdus Satter
IT-9	**Title: Nanotechnology: perspective and future** Dr. M. N. I. Khan
Abstract ID	**Title and Authors of the research to be presented**
149	Drinking and waste water management treatment and antimicrobial activity of reduced graphene Oxide- Iron nanoparticles composite ***T.N. Ghosh,*** M. R. Bera, P. Deb, D. Jana
156	One-dimensional van der Waals heterostructures composed of hexagonal boron nitride and carbon nanotubes fabricated by atomic layer deposition ***A. Hossain***, H. Okuno, S. Forel, C. Journet, C. Marichy
126	The structural and optical properties of CdS nanoparticles prepared through green synthesis approach ***Parimal Tudu***, Rittwick Mondal, BibhatsuKuiri, Probodh Kumar Kuiri, Ardhendu Sekhar Patra, Sonjoy Mondal
226	Structural Rietveld refinement analysis of NiCuZnAl bulk ceramics and study of their dynamic dielectric, modulus and impedance spectroscopy ***M. Faishal Mahmood***, M. Belal Hossen
139	Tuning of structural and optical properties of CdS nanoparticles with incorporation of Arjuna bark as capping reagent ***Moinur Rahaman,*** Rittwick Mondal, Parimal Tudu, Saikat Santra, Sandip Das, Subhradeep Karmakar, Md. Samsur Rahaman, Dipankar Biswas, Sonjoy Mondal
153	Development of bismuth/reduced graphene oxide (Bi/rGO) nanocomposite using starch and applied them as recyclable nanocatalyst ***Prianka Saha,*** Md. Mahiuddin
154	Exploration through structure and properties of Al^{3+} doped Ni-Zn-Co ($0 \leq x \leq 0.12$) nano ferrites ***Nusrat Jahan***, J I Khandaker, M N I Khan
178	Exploration of Al substitution on the structural with Rietveld refinement analysis, magnetic, electrical, dielectric and optical properties of Ni-Al-Cd dense ceramics obtained from nanocrystalline Powder ***Nur Mohammed***, M. Belal Hossen
187	Synthesis and characterization of Cu-Gd co-substituted M-type $SrFe_{12}O_{19}$ nanopowder prepared by sol-gel route ***Md. Roni Islam***, M.K.R. Khan, M.M. Rahman, M.S.I. Sarker
190	Study of the structural, optical and magnetic properties of Y and Cu co-doped $BiFeO_3$ nanoparticles

	Tanmoy Kumar Ghosh, M.K.R. Khan, M.M. Rahman, M.S.I. Sarker
Technical Session-IVB **Health and Radiation Physics** **Venue-B** **Time: 10:25 pm –12:40 pm**	
Chair	Professor M. Nure Alam Abdullah
Co-Chair	Professor Animesh Kumer Chakraborty
IT-10	**Title: Detecting the Unseen, the Radiation Dosimetry with novel media for medical and industrial applications** ***Mayeen Uddin Khandaker,*** Siti Nurasiah Mat Nawi, S.F. Abdul Sani, S.E.Lam, D.A. Bradley
IT-11	**Title: Production and applications of radioisotopes at RIKEN RI Beam Factory – Search for new elements through therapy of cancer** Hiromitsu Haba
Abstract ID	**Title and Authors of the research to be presented**
159	Temporal variation of natural radioactivity and evaluation of radiological hazards in sediment cores of the Sundarban mangrove, Bangladesh ***Shaiful Kabir***, Mohammad Amirul Islam, Mohammad Belal Hossen
160	Evaluation of naturally occurring radionuclides and concomitant radiological risks in sediments of the Kaptai Lake, Bangladesh ***Biplob Das***, Mohammad Amirul Islam, Mohammad Belal Hossen
230	Water quality index determination for the upper reaches of the Sangu and Matamuhuri rivers in Bangladesh ***N. C. Ghosh***, K. B. Anwar
145	Investigating neutron contamination in radiotherapy for 15 MV photon beam from medical LINAC ***Mst. Ummey Habiba Musfika***, HM Jamil, Md. Shakilur Rahman, AKM Moinul Haque Meaze
152	Synthesis and thermoluminescence properties of $LiCaPO_4$ phosphor ***Md. Raghib Rahat,*** Homaira Afia Mimi, Md. Kamruzzaman, Mahfuza Begum, Md. Abul Hasnat, H.A. Abdul-Rashid, Mayeen Uddin Khandaker, D.A. Bradley, Md. Al-Mamun, A.K.M. Mizanur Rahman
186	Synthesis and investigation of structural and thermoluminescence properties of $ZnLiBO_3$ phosphor for TL radiation dosimetry applications ***Homaira Afia Mimi***, Md. Raghib Rahat, Md. Kamruzzaman, Mahfuza Begum, Md. Abul Hasnat, H.A. Abdul-Rashid, Mayeen Uddin Khandakere, D.A. Bradley, Md. Al-Mamun, A.K.M. Mizanur Rahman
215	Heavy metal concentration in cultivated Curcuma longa and corresponding soil of two hill districts of Bangladesh and associated health risk ***A. Rahaman***, M. R. Karim, S. Hossain, M. S. Rahman, C. K. Mahmud, S. N. Shil
216	A study on soil properties of ginger (Zingiberofficinale) cultivating land and levels of some metals in ginger cultivated in Rangamati and Khagrachari districts of Bangladesh ***S. N. Shil,*** M. R. Karim, S. Hossain, M. S. Rahman, C. K. Mahmud, A.Rahaman
217	Studies on natural radionuclides in sand and sediments of Parki beach, Anowara, Chattogram, Bangladesh ***M. S. Rusdi***, M. R. Karim, S. Hossain, D.A. Chowdhury, N. Doulah, M. S. Rahman, I. N. Rifat, N. Deb
12.40 pm – 2:00 pm **Lunch and Prayer Break**	
Technical Session-VA **Theoretical Physics** **Venue: A** **Time: 02:00pm-04:05pm**	
Chair	Professor Sunil Dhar
Co-Chair	Professor Nusrat Jahan
IT-12	Parallelism between classical optics and quantum phenomena in superconductor: Josephson junction model ***M R Islam***
Abstract ID	**Title and Author(s) of the research to be presented**

121	Triple differential cross-section (TDCS) for ionization of Ag atom by e± impact ***Sushmita Banerjee***, Sunil Dhar
125	Double differential cross-section (DDCS)of ionizing hydrogenic 2S metastable state considering exchange effects ***Md. Thowhidul Hoque Chowdhury***, Sunil Dhar
167	Star formation rate profiles in spiral galaxies at z < 0.03 ***Md. Abdullah Al Zaman***, Md. Rafiqul Islam, H. M. A. R. Maruf
171	Dust-ion-acoustic solitary and shock waves in opposite polarity dusty plasma with kaniadakis distributed electrons ***M. S. Hossain***, J. F. Pinki, A. J. Pritha, M. G. M. Anowar
182	Generating static spherically symmetric solution of Einstein's equations in general relativity ***M. I. H. Sakib***, M. O. Rahman, S. Barua, M. A. Kauser
162	Analytical approach for optimal HTS Solenoid design M. R. Islam, ***Jahangir Alam***
242	Dust-ion-acoustic solitary and shock waves in electron-positron-ion dusty plasma with kaniadakis distributed electrons ***J. F. Pinki***, M. S. Hossain, M. G. M. Anowar
133	The effect of heavy nucleus on the structure of nonlinear waves in warm degenerate plasmas ***J. Akter,*** A. A. Mamun
260	Dust-ion-acoustic rogue waves in presence of non-extensive electrons ***N. K. Tamanna***, A. A. Mamun
Technical Session-VB **Engineering and Technology** **Venue: B** **Time: 2:00 pm-4:05 pm**	
Chair	Professor Sajal Chandra Banik
Co-Chair	Professor Md. Julkarnain
IT-13	**Title: Physics Education: Preparing for Future Industries** Pradip Deb
Abstract ID	**Title and Authors of the research to be presented**
163	Internal pneumatic shuttering for Drop-On-Demand aerosol jet printing: expanding capabilities of aerosol jet printing ***Md. Abu Mosa***, JeongYeop Jo, Kye-Si Kwon
130	Performance and emission characteristics study of waste transformer oil using L-ascorbic acid to reduce nox in diesel engine. ***Sourav Dhar***, Anik Chakraborty, Rittik Das Gupta, Md. Zesanul Kabir, Pratik Chakraborty
106	2.4 GHz ISM band microstrip patch antenna using a partial ground plane for wireless sensor nodes ***M. F. Ahmed***, M.B. Islam, M. H. Kabir, M. A. Islam
102	Design and simulation of Bezier bend directional coupler for improved electro-optic switching in MMI structures ***Noor Afsary***, Md Koushik Alam, Md Omar Faruk Rasel, Karimul Hoque, Takaaki Ishigure
103	Design and development of a low-cost 3D laser scanning system using MATLAB and raspberry Pi. ***Rittik Das Gupta***, Anik Chakraborty, Sourav Dhar, Md. Zesanul Kabir
122	Maximizing efficiency in optical networks with 2D taper-based Y-branch MMI polymer powersplitter ***M. K. Alam***, N. Afsary, K. Hoque, M. O. F. Rasel, T. Ishigure
243	A Dual-band microwave meta material absorber for various absorption applications ***Pranab Dewan***, Nishan Das, Md. Sharif Mia
253	Convolution neural network (CNN) based semiconductor manufacturing defect detection system by using real wafer maps ***Sharith Dhar***, Md. Saiful Islam
262	Efficiency of electrochemical energy conversion in water hyacinth and water hyacinth-$CuSO_4.5H_2O$ composite

	Md. Muktadir Rahman Talukder, ***Md Rabiul Alam***, Md. Moniruzzaman Mim, Md. Shahjahan, Md. Kawser, Md Merej Ali
258	Electrochemical energy characterization of water hyacinth (Eichhorniacrassipes) and Bryphyllum Pinnatum (Kalanchoepinnata) leaf: a comparative study M. R. Alam, M. M. R. Talukder, ***T. I. Babu***, M. P. Mia,M. H. Akash,F. Hasan,M. I. Santo,M. M. Hasan, B. Paul,A. Saha,S. Nandi,S. S. Pritom, M. H.Ovi, Yeasin Md Jafir, A. Chowdhury, M. M.Farazi
4:05 pm - 4:20 pm **Refreshment & Tea** **Venue: Common Room**	
Technical Session: Physics Education **Venue: Auditorium, Sheikh Kamal IT Business Incubator, CUET** **Time: 04:20 pm – 04:45 pm**	
Chair	Professor A. A. Mamun
Co-Chair	Dr. Md. Amirul Islam
IT-14	**Title: Physics education at tertiary level in Bangladeshi Universities: current situation, challenges and possible remedies** Professor Faruque-Uz-Zaman Chowdhury
Panel Discussion: Physics Research at tertiary level in Bangladeshi for 4IR **Venue: Auditorium, Sheikh Kamal IT Business Incubator, CUET** **Time: 04:45 pm – 05:30 pm**	
Chair	Professor A. A. Mamun
	Open Discussion Session
Poster Session **Venue: Ground Floor, Sheikh Kamal IT Business Incubator, CUET** **Time: 05:40 pm – 06:45 pm**	
Abstract ID	**Title and Authors of the research to be presented**
104	Investigating the impact of non-silicate stabilizers on cotton pre-treatment: a performance analysis ***Nafiz Mehmud Khan***, Md. Mahmudul Habib, Muhammad Abdullah Kaysar, Sweety Shahinur, Md. Masroor Anwer
105	The application of gel dosimeters and comparison with other dosimeters in radiotherapy: a literature review ***Sujan Mahamud***, Mahbuba Kader Meem, Md. Mokhlesur Rahman
107	Design and analysis the performance of elliptical patch Antenna based on Machine learning ***Rakibul Hasan Masum***, Huzzatul Islam, Asraful Al Noman, Md. Ashraful Islam, Md. Matiqul Islam
110	Investigation of proper line Balancing Technique for improving the productivity of a Garments industry ***Md. Taibur Rahman Tushar***, Tahnin Bintay Kamal, Md. Anisur Rahman Dawon, Md. Shohel Mia, Md. Masroor Anwer
111	Dose calculation in the lung region using AAA algorithm and verification by measurements ***Laila Sharmin***, Rajada Khatun, Md. Anwarul Islam, Shirin Akter, Afroza Shelly
112	Fabrication of sers active substrate through impregnation of silver nanoparticles organized in langmuirblodgett film matrix of MBBA liquid crystal molecules ***Priyabrata Maity***, Joydeep Chowdhury
114	(3+1)-dimensional cylindrical dust ion-acoustic solitary waves in dusty plasma ***T. F. Rahman***, J. Akter, A A Mamun
115	White Light Generation with Carbon Nanodots-Dye Molecule-Au Nanocluster composites and their application in heavy ion detection and Bio-imaging for cancer diagnostics ***Sk Firoj Haque***, Joydeep Chowdhury
118	Modeling and Neutronic Analysis of Pin-cell Comprising SMR HTGR Xe-100's Pebble-bed type Fuel with Different Chemical Composition & Micro-heterogenous Fuel Configuration Using Open-MC ***Umme Sadia Binte Kashem***, Mohammed Monzur Hossain Khan, Farshid Reza Sabab
119	Development of Low-Cost water purity identification system based on IoT and Machine learning

	Risad Mia, Md. Ashraful Islam, Md. Reaz Hossain, Md. Matiqul Islam
123	Structural, electronic, thermoelectric and optical properties of lanthanum nitride: Insights from first-principle calculations ***Rati Ray Banik***, Swarup Ghosh, Joydeep Chowdhury
124	Synthesis and characterization of graphene oxide reinforced cobalt doped bismuth titanate nanocomposites ***A. R. Ridoy***, Md Al Mamun, M. R. Rahman
129	Large amplitude dust-acoustic solitary waves and double layers in Nonthermal warm complex plasmas ***N. Alam***, A. Mannan, A. A. Mamun
137	Fabrication of SERS active substrate on Langmuir Blodgett Films of DNA molecules ***Ritu Sarkar***, Rajdeep Sinha, Sumit Kumar Das, Joydeep Chowdhury
142	Hazard estimations results from Arsenic contamination in common foodstuffs, fishes and water samples of Joypurhat District, Bangladesh ***Nazma Khatun***, Mohammad Nazmul Hossain, Md Didarul Islam,AshiqurRahaman
143	Assessment of pollution risks associated with polymers and trace metal contamination in the river Hooghly, West Bengal, India M. Roy, ***A. Bhattacharya***
146	Design of an indicative featured and speed controlled obstacle avoiding robot ***Erteza Tawsif Efaz***, Abdullah Al Mamun, Khan Salman, Irfan Khan
150	Dust-acoustic Shock waves in a magnetized non-thermal plasma ***A Hayat***, S Sultana, A. A. Mamun
155	Arbitrary amplitude of ion-acoustic solitary waves in a non-thermal plasma with an electron beam ***J. Barman***, S. Sultana
157	Development of a cost effective IoT-based embedded device for environmental monitoring in paddy cultivation area: integrating storage database with remote data visualization ***Anik Chakraborty***, Rittik Das Gupta, Md. Zesanul Kabir, Md. Saiful Islam Bablu, Pratik Chakraborty, Sourav Dhar
158	A study on bone metastasis management by radiotherapy and production routes of an alternative radioisotope ***Md. Nurul Amin***, A. K. M. Rezaur Rahman, Md. Ahad Mia, Sajjad Mohammad Yusuff
164	Modeling of a high-speed and cost-effective FPV quadcopter for surveillance ***Erteza Tawsif Efaz***, Maliha Mahazabeen Mowlee, Jafrina Jabin, Irfan Khan, Mohammad Rezaul Islam
168	DFT insights into the elastic, electronic, and thermodynamic properties of M_2PbC (M = Sc, Ti, Zr, Hf) M. A. Rayhan, ***Mehnaj Akhter***, Md. Shamim Ahasan, M. M. Hossain, M. M. Uddin, S. H. Naqib, M. A. Ali
172	Heavy nucleus acoustic solitary excitations in partially degenerate quantum plasma ***S. Biswas***, S. Sultana, A A Mamun
174	Transition metal induced semiconductor-metallic transformation of ferromagnetic $LaMO_3$ (M = Cr, Mn, Fe): A DFT insights ***M. S. Hossain***, F. B. A. Urbi, M. A. Hassan, J. Hossain, ***M. M. Rahaman***
179	Comparative study of WTe_2 Weyl semimetal in bulk and layer control 2D structures for photocatalytic and optoelectronic applications ***Anamika Paul***, M. Kamruzzaman, M. A. Helal, M. N. H. Liton
195	Investigation of structural, electronic, elastic and optical properties of halide-perovskites $RbAuX_3$ (X=F, Cl, Br): a DFT study ***J. R. Roy***, S. E. Sumi, A. Sharker, M. Monira, M. A. Helal, M. N. H. Liton, M. Kamruzzaman
196	The first principles insight of the mechanical and optoelectronic properties of $RbPbX_3$ (X= F, Cl) perovskite structure to explore its potential applications ***F. Z. Mim***, R. Jannat, M. Monira, M. A. Helal, M. N. H. Liton, M. Kamruzzaman
197	The structural, elastic, electronic, and optical properties of $ATaO_3$ (A = Rb, Cs) perovskite structure ***C. Sarkar***, S. A. Tanny, M. Monira, M. A. Helal, M. N. H. Liton, M. Kamruzzaman
198	Screening the effect of pressure on mechanical and optoelectronic properties of led-free

	halide perovskite $RbGeI_3$ ***M. Monira***,F. Z. Mim, R. Jannat, M. A. Helal, M. N. H. Liton, M. Kamruzzaman
199	Effect of Mg contents on structural, morphological and optical properties of hydrothermally synthesized Mg doped α-MoO_3 nanobelts ***Pritish Mondal***, Sapan Kumar Sen, Md. Nasir Uddin, A. K. M. NaimIshtiaq, G. G. Biswas, Md. Emran Hossain, Karimul Hoque
203	Effect of Chromium substitutions on the structural, DC resistivity, and dielectric properties of $Ni_{0.6}Mn_{0.2}Zn_{0.2}Cr_xFe_{2-x}O_4$ ferrites ***S. Bibi***, M. N. I. Khan, S. M. Hoque, F. U. Z. Chowdhury, M.A.Ali
204	A convolutional neural network-based multi-class image classification for automatic wafer map failure recognition in semiconductor manufacturing ***TanzeemTahmeed Reza***, ***Md. Mahmudul Arif***, Md.Saiful Islam
207	Hydrothermal synthesis, phase analysis and magneto-electric characterizations of lead-free ferroelectric BM^{2+} (Zn, Ca, Mg)T- BFO system ***Mirza H. K. Rubel***, M. Khalid. Hossain, K. Monower Hossain
209	Study and synthesis of $(Ba_{1-x}Ca_x)(Ti_{1-x}V_x)O_3$ perovskite by hydrothermal reaction for magneto-electric and optical properties Mirza H. K. Rubel, Ghonoshyam Roy Gourob, ***Md. Abdul Matin***, Ramis Muniyat Niva, Md. Habibul Islam
210	Effect of wheat bran filler on the properties of jute fabric reinforced unsaturated polyester resin composites Md. Hasibul Hasan, Hrithita Aftab, G. M. Shafiur Rahman, Md. Abdus Sattar, ***Muhammad Abdullah Al Mamun***
213	DFT Insight into Structural, Electronic, Optical and Thermal Properties of Eco-Friendly Perovskites $CuXO_3$ (X = Al, In) for Green Energy Generation. ***Mahmudur Rahman***, M. Rifat Uddin Akhand, Md Zahid Hasan, Rajabur Rahaman, Swapnil Chowdhury, Md. Rasheduzzaman
214	Ab-initio calculation of the structural, electronic, mechanical, optical, and thermoelectric properties of ternary chalcogenide Cu_2GeS_3 compound ***Rajabur Rahaman***, Swapnil Chowdhury, Mahmudur Rahaman, Rifat Uddin Akhand, Md. Zahid Hasan, Md. Rasheduzzaman
218	Study on hydrothermal synthesis, phase analysis and multifunctional properties of Bi/Nb based perovskite. ***Md. Habibul Islam***, Mirza H. K. Rubel, Md. Abdul Matin, Md Borhan Uddin, Md. Najmus Sakib, Ghonoshyam Roy Gourob
219	Electric and magnetic properties of cobalt and zinc doped manganese ferrite with yttrium substitution ***M. H. Rahman***, M. N. I. Khan, R. Rashid, Md. Razibul Hasan, Mohammad K. Alam, Md. Mahfuz. Alam
220	Synthesis of structural, optical, magnetic and electrical properties of $Ba_{0.77}Ca_{0.23}Ti_{1-x}Fe_xO_3$ perovskite ***Md. Bahar Ullah***, Jamal Uddin Ahamed, Redwanur Rahman Rubel, M. Atikur Rahman, Zahid Hasan, Mohammed Nazrul Islam Khan, Mohammad KhurshedAlam
223	In search of a potential method for teaching quantum mechanics in undergraduate level ***Animesh Banik***, Tareq Aziz, Md. Shihab Khan, Quazi Muhammad Rashed Nizam
227	Theoretical analysis of Y_2AX (A = S, Br; X = C, N): exploring rare earth Y-based MAX carbides and nitrides ***M. Akther***, N. Jahan, M. A. Ali
229	A comprehensive theoretical insight into MAX borides Hf_2AB [A = S, Se, Te] and MAX carbides Hf_2AC [A = S, Se, Te] phases ***J. Islam***, M. D. Islam, M. A. Ali, H. Akter, A. Hossain, M. Biswas, M. M. Hossain, M. M. Uddin, S. H. Naqib
247	Exploring the structural, elastic, and optoelectronic properties of $ScCuO_3$ via DFT approach ***S. A. Shupra***, M. Sumaiya, M. A. Helal, M. N. H. Liton, M. Kamruzzaman, A. K. M. Farid Ul Islam
248	First principles study of elastic, electronic and optical properties of $MCuO_3$ (M = La and Y) under hydrostatic pressure ***M. Sumaiya,*** S. A. Shupra, M. A. Helal, M. N. H. Liton, M. Kamruzzaman, A. K. M.

	Farid Ul-Islam, Istiak Ahmed
249	Synthesis and the investigation of Eu doped BFO and Nickel Zinc manganese ferrite composites ***A. Kaiyum***, M.A. Hossain, R.Rashid, M. N. I. Khan
252	Thin shell wormhole solutions from generalized Kiselev Black hole ***N. M. Eman***, S M K Alam, S A Dihan, S Masum, M T I Rony, B Dey, Al Motasin, N J Shirin
254	Leaching Effect in the production of Silicon from Sand by the Alumino-Thermite reduction process Md. Shoriful Islam, ***M. A. Sattar***, M. A. Halim, M. A. Hoque, Md. Aminul Islam
256	Study of the Physical and Magnetic Properties of $Mn_{0.5}Zn_{0.5}Fe_{2-x}Y_xO_4$ ***A.H. Zulkarnine***, Afsana Mimi, Amir Hossain, A.A. Momin
257	Influence of Gd substitution physical, magnetic and transport properties of multiferroic $Bi_{0.8}Y_{0.2}Fe_{1-X}Gd_xO_3$ ceramic ***Amir Hossain***, Afsana Mimi, A.H. Zulkarnine, K. H. Repon, M.R. Hasan, K. A. Khan, A.A. Momin
261	Enhanced dyson sphere design with secondary panels for non-sunward energy capture ***Md Rabiul Alam***, Ajmain Jawad, Md Merej Ali, Mehedy Hasan1, Abdullah Al Monsur, Shams Hossain Al Nayaz
263	Electric propulsion materials: investigating on stainless steel wire and bare copper wire force field characteristics ***Md Rabiul Alam***
265	Synthesis and characterization of Nickel ferrite nanoparticles sintered in different temperatures by sol-gel auto combustion method ***S. S. Rashid***, M.R. Hasan, R. Rashid, H.M. Waliullah, M.N.I. Khan
266	Double layer Kagome Metal Pt_3In_2: a DFT investigation ***Urbashi Chowdhury***, M. A. Ali, M. M. Hossain, S. H. Naqib, M. M. Uddin
267	Mixed convection on vertical plate for biomagnetic boundary layer flow with magnetization and localized heating or cooling ***Md. RayhanProdhan***, Nazrul Islam
268	Concentrations of natural radionuclides in the plants of Karnaphuli and Haldariver: Radiological risk assessment ***Al Amin M Sirajul Islam***, Shahadat Hossain, AKM Saiful Islam Bhuian, Quazi Muhammad Rashed Nizam, M.H.Miah
269	Development, properties and investigation of ultra-fine $CoFe_2O_4$ Nano crystals prepared by the modified sol-gel route ***I. Hossain***, M. Ismail, M.Rana, H.M. Waliullah, S. K. Roy, R.Rashid, M.N.I Khan
07:00 pm - 08:00 pm	**Prize Giving & Closing Ceremony** Venue: TSC Cafeteria, CUET
08:00 pm - 09:00 pm	**Dinner** Venue: TSC Cafeteria, CUET