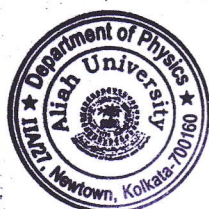


Academic and Administrative Audit

Aliah University

Academic Year : 2022-23

Department : Physics



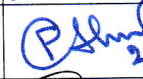

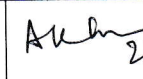
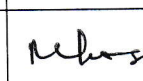
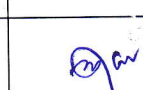



The Academic Audit of Aliah University focuses on four key functional areas:

1. Academic Management
2. Academic Practices
3. Infrastructure and supportive facilities
4. Initiatives and Supplementation



The Department of Physics has constituted an eight member internal academic audit committee to conduct an academic audit of the Physics Department:

Sl. No.	Name of the Faculty members	Designation	Role	Signature
1	Dr. Md. Mehedi Kalam	Professor	Chairman	 24/07/23
2	Dr. Muklesur Rahman	Professor	Convenor	 24.07.23
3	Dr. Sk. Faruque Ahmed	Professor	Member	 24/07/23
4	Dr. Badiur Rahaman	Assistant Professor	Member	 24/07/23
5	Dr. Md. Abdul Khan	Assistant Professor	Member	 24/07/2023
6	Dr. Md. Mabud Hossain	Assistant Professor	Member	 24/7/23
7	Dr. A K M Maidul Islam	Assistant Professor	Member	 24/07/23
8	Dr. Jayanta Kumar Saha	Assistant Professor	Member	 24/07/23



Academic Management

Information about HOD/ HOD (Officiating)

- 1] Name: **Prof. Md. Mehedi Kalam**
- 2] Designation: Professor
- 3] Qualification: M.Sc., Ph.D.
- 4] Teaching experience (in years): 19 years
- 5] Industry experience (if any in years): Nil
- 6] Number of teaching hours per week: 12
- 7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):
 - [1] Traversable wormhole on the brane with non-exotic matter: a broader view.
Rikpratik Sengupta, Shounak Ghosh, **Mehedi Kalam**, Saibal Ray
Class. Quant. Grav. 39, no.10, 105004 (2022)
DOI: <https://doi.org/10.1088/1361-6382/ac61ae>
 - [2] Possible Existence of Dark-Matter-Admixed Pulsar in the Disk Region of the Milky Way Galaxy.
Nilofar Rahman, Masum Murshid, Sajahan Molla and **Mehedi Kalam**
Universe 8, 12, 652 (2022)
DOI: <https://doi.org/10.3390/universe8120652>
 - [3] Quasi-normal modes of Ayon-Beato Garcia regular black holes for scalar field.
Masum Murshid, Farook Rahaman and **Mehedi Kalam**
Indian J. Phys. 97, 1, 295 (2023)
DOI: 10.1007/s12648-022-02374-4
 - [4] Thin-shell wormhole under non-commutative geometry inspired Einstein-Gauss-Bonnet gravity.
N Rahman, **M Kalam**, A Das, S Islam, F Rahaman, M Murshid
Eur. Phys. J. Plus 138, no. 146, 2, (2023)
DOI: 10.1140/epjp/s13360-023-03764-1
 - [5] Analytical model of low-mass strange stars in 2+1 space-time.
Masum Murshid, Nilofar Rahman, Irina Radinschi and **Mehedi Kalam**
Pramana -J Phys 97, no. 51, 1 (2023)
DOI: <https://doi.org/10.1007/s12043-022-02508-7>
 - [6] Lorentzian wormholes in an emergent universe
Rikpratik Sengupta, Shounak Ghosh, B.C.Paul and **Mehedi Kalam**
Class. Quant. Grav. 40, no. 9, 095009 (2023)
DOI: 10.1088/1361-6382/acc5d7
- 8] Contribution to enrich quality of teaching-learning during the academic year:
(Seminars/Workshops/lectures/field visits organized):

Seminar Organized:

1. 6th Colloquium Lecture delivered by Prof. Naresh Dadhich, Emeritus Professor & Former Director, IUCAA, Pune, Govt. of India on 25th November 2022.
Title of the talk: Why Einstein (Had I been born in 1844!) ? : Relativity for Everyone.
2. 7th Colloquium Lecture (HYBRID MODE) delivered by Prof. Yashwant Gupta, Distinguished Professor and Centre Director, National Centre for Radio Astrophysics (NCRA), Tata Institute of Fundamental Research (TIFR), Pune University Campus, Pune, Govt. of India on 16th February 2023.
Title of the talk: Probing the Universe using radio waves.



Invited Lectures:

Delivered a contributory talk on “**Wormhole and dark matter in Galactic halos.**” in an inaugural conference on the “Current Status of Cosmology” at the Thanu Padmanabhan Centre for Cosmology and Science Popularization (CCSP), SGT University, Delhi-NCR on 17th-19th Oct. 2022.

9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity
Departmental Committee	Chairman	Organized several meeting with faculty members for smooth running of the departments
Board of Studies	Chairman	Organized BOS meetings
DRC and DSC, Physics	Chairman	Conducted meetings with DRC and DSC members for smooth functioning of the dept.

10] Other responsibilities (Please specify, add rows if required):

--	--

11] Best Practices in teaching & academic-administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Teaching Members (to be filled by individual Teaching member)

1] Name: **Dr. Muklesur Rahman**

2] Designation: Associate Professor

3] Qualification: PhD

4] Teaching experience (in years): 13+ years

5] Industry experience (if any in years): Nil

6] Number of teaching hours per week: 16

7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

1. AC electrical conductivity and dielectric properties of doping induced molecular ferroelectric diisopropylammonium bromide Mater. Res. Express 6, 096306 (2019).
2. Complex impedance studies of organic ferroelectric-diisopropylammonium iodide (DIPAI) AIP Conference Proceedings 2142, 040011 (2019).
3. Nematic-cybotactic nematic phase transition in a liquid crystal: a dielectric spectroscopic study Mater. Res. Express 6, 115105 (2019).
4. Study material developed for PHYUGCC01, PHYUGCC03, PHYUGCC10, PHYUGSE01, PHYPGTE02

8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized):

1. Oral Presentation entitled "A Century's Journey of Ferroelectric Molecular Crystal" CMDAYS 19, 29-31 August 2019, Vidyasagar University, West Midnapore

9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity

10] Other responsibilities (Please specify, add rows if required):

1	Head, Department of Physics (November 2019)
2	

11] Best Practices in teaching & academic administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Teaching Members (to be filled by individual Teaching member)

- 1] Name: **Dr. Badiur Rahaman**
 2] Designation: Assistant Professor
 3] Qualification: M.Sc., Ph.D.
 4] Teaching experience (in years): 13+ Years
 5] Industry experience (if any in years): No
 6] Number of teaching hours per week: 18
 7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

A.Y.	Publications
2022-23	<i>Thermal and magnetic properties of Cu₄O(SeO₃)₃ composed by ferrimagnetic O₂Cu₆ units of edge-sharing OCu₄ tetrahedra</i> , Journal of Alloys and Compounds 956, 170346 (September, 2023); https://doi.org/10.1016/j.jallcom.2023.170346
	<i>Electronic Structure and Microscopic Model of Cu₂(SeO₃)F₂: a 2-D AFM ladder compound</i> , The European Physical Journal B.96, 46 (April 2023); http://dx.doi.org/10.1140/epjb/s10051-023-00514-1
	<i>Ising-like Magnetism in Quasi-Two-Dimensional Co(NO₃)₂·2H₂O</i> , Materials, 15(20), 7066 (Oct. 2022) https://doi.org/10.3390/ma15207066
	<i>Square lattice antiferromagnets (NO)M(NO₃)₃ (M = Co, Ni): Effects of anisotropy</i> , Journal of Alloys and Compounds 929:167197 (Sep. 2022); https://doi.org/10.1016/j.jallcom.2022.167197
	<i>Electronic and Microscopic Properties of Spin ½ System, CuInO(VO₄)</i> , International Journal of Innovative Research in Physics, 3, 4, 32-38(Jul. 2022); https://doi.org/10.15864/ijip.3405

8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized):

9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity

10] Other responsibilities (Please specify, add rows if required):

1	
2	

11] Best Practices in teaching & academic-administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Teaching Members (to be filled by individual Teaching member)

1] Name: **Dr. Sk Faruque Ahmed**

2] Designation: Professor

3] Qualification: Ph.D.

4] Teaching experience (in years): 13+ Years

5] Industry experience (if any in years): Nil

6] Number of teaching hours per week: 14

7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

Effect of nickel incorporation on structural and optical properties of zinc oxide thin films deposited by RF/DC sputtering technique; M. Khan and Sk. F. Ahmed, Materials Physics and Mechanics, 51, (January, 2023) 19-32.

8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized):

9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity
Examination Committee, Aliah University, January 2020 - November 2022.	Chairman	As per requirement
Board of Studies (BOS) in Department of Chemistry, Aliah University, January 2021-Till now	Member	
Departmental Research committee (DRC) of the Department of Physics, Aliah University, September 2020- Till now.	Convener	
Academic Council of Aliah University, September 2021-Till now.	Member	
Board of Research Studies (BRS), Aliah University, November 2020 - November 2022.	Member	
Committee for the NAAC gradation, Aliah University, 2021.	Member	
Departmental Purchase committee (DPC) of the Department of Physics, Aliah University, December 2019-Till now.	Member	
Board of Studies (BOS) in Department of Physics, Aliah University, December 2019 -Till now.	Member	

10] Other responsibilities (Please specify, add rows if required):

1	Controller of Examinations (Acting): Aliah University, November 2019 - November 2022.
---	--

11] Best Practices in teaching & academic administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Teaching Members (to be filled by individual Teaching member)

1] Name: **DR MD ABDUL KHAN**

2] Designation: ASSISTANT PROFESSOR (Stage-3)

3] Qualification: M.Sc.(CU), B.Ed. (CU), Ph.D.(CU)

4] Teaching experience (in years): **25 Years**

10+2 Level: 11 years (2/1999-3/2010)
UG Level: 13 years (3/2010 – 6/2023)
PG Level: 10 years (11/2013 - 6/2023)

5] Industry experience (if any in years): NIL

6] Number of teaching hours per week: 16

7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

Projects	NIL
Publications	Journal Article
1	Md. A. Khan and M. Hasan, Resonance Energy and Wavefunction of ^{31}Ne: a Calculation Using Supersymmetric Quantum Mechanics. Physics of Atomic Nuclei, 2023, Vol. 86, No. 5, pp. 670–679. [DOI: https://doi.org/10.1134/S1063778823050186]
2	Md. Abdul Khan and Mahamadun Hasan, Few-body model approach to the lowest bound S-state of non-symmetric exotic atoms and ions. Phys. Scr. 98 (2023) 075407 [DOI: https://doi.org/10.1088/1402-4896/acde1f]
3	Md.A. Khan* , S.H. Mondal, M. Alam, M. Hasan, Study of Fusion Reactions of Light Nuclei at Low Energies Using Complex Nucleon-Nucleus Potential Function. Bulgarian Journal of Physics vol. 50 (2023) 354–366 [DOI: https://doi.org/10.55318/bgjp.2023.50.4.354]
4	Md.A. Khan, M. Hasan, S.H. Mondal, M. Alam, T. Surungan, Study of Resonances in Exotic Drip-Line Nuclei by the Use of Super-Symmetric Quantum Mechanics. Bulgarian Journal of Physics vol. 50 (2023) 335–353 [DOI: https://doi.org/10.55318/bgjp.2023.50.4.335]
5	M Alam, M Hasan, SH Mondal, MA Khan, Low-lying bound and resonance states in ^{61}ACa and ^{62}ACa. Int. J. Mod. Phys. E, Vol. 32, No. 2 (2023) 2350009 [DOI: https://dx.doi.org/10.1142/S021830132350009X]
	Proceedings paper
1	M. Hasan, and Md. A. Khan, (2022), “Structure study of the exotic ^{72}Ca dripline nucleus”. Proc. DAE Symp. Nucl. Phys. 66 (2022) 222, 66 th DAE-BRNS Symposium on Nuclear Physics, Cotton University, Guwahati, Assam, India, December 01-05, 2022. ISBN: 9-788195-922512

8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized):

Participation in Seminars/Workshops/lectures/fieldvisits		
1	Nuclear Reaction and Structure up to Intermediate Energy Collision (NRSIC-23) organized by Variable Energy Cyclotron Centre, Kolkata and Sponsored by Board of Research in Nuclear Sciences (BRNS), DAE, Govt. Of india, held at VECC, Sector -1, Block-AF, Bidhannagar, Kolkata -700064, West Bengal, India January 24-25, 2023	
Conference/Seminar/Workshop organized		
	14.08.2022	Webinar on the occasion of 75 years of Independence of India [Role: Organizing committee Member]
		Online [Zoom Platform] Department of Physics, Aliah University, Kolkata



9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity
DRC	Member	PhD related activities
DSC	Convenor	PhD Supervision
AU Sc Tech Club	Chairman	Organizing Lecture, Seminar, Science Awareness' Progs.
AU Pub Committee	Member	University publication related activities
IQAC	Member	Quality improvement, Promotion under CAS & Related activities
NAAC	Member	NAAC related documentation
BOS Physics	Member	Curriculum Design, UGC CBCS Course structure etc
Univ Space Alloc Committee	Member	Relevant activities for proper utilization of space
IAPT, ISAMP	Life member	

10] Other responsibilities (Please specify, add rows if required):

1	Approved as PI of DST-SERB SURE funded reserch project (SERB Lett. No. SUR/2022/004670 Dated 08.05.2023)
2	Confidential Assignments from NSOU
3	AUAT Confidential Assignment, Aliah University

11] Best Practices in teaching & academic-administration introduced in the department in the academic year (Please specify, add rows if required):

1	Apart from Chalk & Talk, use of PPT, Microcontroller based Interactive Teaching learning (using Desktop/Laptop & Projector, Discrete circuit components), FORTRAN programming Skill development for PG/PhD students
2	Work on UG/PG Nuclear Physics book writing under progress



Information about Teaching Members (to be filled by individual Teaching member)

- 1] Name: **Dr. Md. Mabud Hossain**
- 2] Designation: Assistant Professor
- 3] Qualification: M.Sc., Ph.D.
- 4] Teaching experience (in years): 10+ Years
- 5] Industry experience (if any in years): No
- 6] Number of teaching hours per week: 18
- 7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

A.Y.	Publications
2022-2023	<p>"Structured Light: Study of Different Profiles of the Laguerre-Gaussian Beam" S Akhtar, M M Hossain, J K Saha, Resonance 28, 1359-1371 (2023). https://doi.org/10.1007/s12045-023-1673-6</p> <p>"A Comparative Study of Electromagnetically Induced Transparency (EIT) in Λ-, V-and Ξ-type systems using Laguerre-Gaussian (LG) Laser Beams" S Akhtar, J K Saha, M M Hossain, Journal of Nonlinear Optical Physics & Materials (published online), (2023). https://doi.org/10.1142/S0218863523500820</p> <p>"Microwave-controlled coherence effects and the generation of four-wave mixing signal in a five-level atomic system involving Rydberg states" A Das, J K Saha, M M Hossain, The European Physical Journal D 77, 146 (2023). https://doi.org/10.1140/epjd/s10053-023-00724-3</p> <p>"Effects of static magnetic field, driving laser strength and polarization on the coherent properties of a microwave mediated four-level tripod-type atomic system" A Das, M M Hossain, Physica Scripta 98 (2), 025404 (2023). https://iopscience.iop.org/article/10.1088/1402-4896/acb1dd/pdf</p>
A.Y.	Research Projects
2022-2023	<p>West Bengal DSTBT (DHSTBT), Govt of W.B. Major Research Project: "Study of coherent nonlinear resonances in Zeeman sublevels of hyperfine structure of Rb atoms using pump-probe laser spectroscopy: Theory and Experiment" (PI: Dr. Md. Mabud Hossain & Co-PI: Dr. Jayanta Kr. Saha) [Duration: 2018-2019, 2019-2020, 2020-2021 (8th July), Extended up to 31st March 2023 due to pandemic Covid-19] Date of Start and Completion: 08/07/2018 & 31/03/2023 <u>Sanction Order Nos.</u> 249(Sanc.)/ST/P/S&T/16G-26/2017, dt 2503/2018 1901/ST/P/S&T/16G-26/2017, dt 1902/2020 1225(Sanc.)/STBT-11012 (26)/19/2019-ST SEC Dt 28/02/2022</p>

- 8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized):

A.Y.	Seminars/Workshops/Lectures/Field visits organized
2022-2023	<p>Convener: "Webinar on the occasion of 75 years of Independence of India" Department of Physics, Aliah University, 14/08/2022.</p>



9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/Activity
All departmental committees: [Departmental Committee (DC), Departmental Purchase Committee (DPC), Board of Studies / Syllabus formation/revision committee, Departmental library/book list preparation committee, Departmental Research Committee (DRC), Departmental exam related committee, Doctoral Scrutiny Committee (DSC) of few PhD students, Departmental routine/ time table committee, etc.]	Member	Full time cooperation to HoD for daily activities; actively participation in tender process; syllabus construction; book list preparation; PhD course work and seminar organization for students; exam related works like invigilation, paper set, moderation, evaluation, marks preparation/tabulation, etc; engagement for class routine and exam schedule preparation; scrutiny of research of PhD students as DSC of few ones; always cooperation and engagement with departmental activities.
WBDST Project Purchase Committee, 2018- 31.03.2023	Convener	Financial work related to Fellowship and Purchase work done during the project
University Research Programme (URP) Cell, AU (24.12.2019) to till date	Jt. Coordinator	Additional duty in an officer post at URP Cell/PhD Section for full coordination with departments, students, supervisors, CoE, FO, Admission committee, Deans and BRS Chairperson, for smooth running of PhD & MPhil programmes.
PhD Admission Committee Session 2023-2024	Member	Actively involved with Chairman and Convener for completion of all process related to PhD Admission
BRS of Aliah University	Member	Actively involved to report and discuss all activities in PhD Section for running PhD programme at AU
SVMCM Non-NET Fellowship for PhD of Aliah University (e.f. March 2020) to till date	Nodal Officer	Notification, receiving, verification and submission of necessary fellowship bills to WB-MDFC, through Registrar
Nodal Officer of Aliah University for the CSIR JRF/SRF/RA Fellowship Scheme (e.f. April 2021) till date	Nodal Officer	Role of Nodal Officer is as a Checker to check/verification of fellowship documents and submission/approval in CSIR New-IFMS web portal

10] Other responsibilities (Please specify, add rows if required):

1	PhD Students Supervision (throughout year)
2	MSc Project Students Supervision (Last Sem of each year)
3	AU Academic Council, Invitee Member, (related to PhD Section/URP Cell)

11] Best Practices in teaching & academic-administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Teaching Members (to be filled by individual Teaching member)

1] Name: **Dr. A. K. M. MAIDUL ISLAM**

2] Designation: Assistant Professor

3] Qualification: PhD

4] Teaching experience (in years): 9+ years

5] Industry experience (if any in years): Nil

6] Number of teaching hours per week: 16 hours

7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

1. Interfacial Interactions of a Myoglobin/DOPC Hybrid System at the Air–Water Interface and Its Physicochemical Properties, Ikbal Ahmed, Nilanjan Das, A. K. M. Maidul Islam, Jasper Rikkert Plaisier, Pietro Parisse, and Jayanta Kumar Bal, ACS Omega 2023, 8, 30199–30212

2. Received financial support from India-DESY Cooperation, funded by the Department of Science and Technology (DST) and coordinated by JNCASR, Bengaluru, India to perform research experiment from August 23 to September 12, 2023, at the DESY Photon Science, Hamburg, Germany

3. Received financial support from the International Centre for Theoretical Physics (ICTP), Trieste, Italy to perform research experiments at the Elettra Synchrotron, Trieste, Italy.

8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized): nil

9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity
1. Training and Placement cell committee	Member	Different activities related to university placement
2. Departmental purchase committee	Member	Different activities related to purchase of the department
3. BOS	Member	Curriculum Design of UG and PG Course structures etc as and when required

10] Other responsibilities (Please specify, add rows if required):

1	
2	

11] Best Practices in teaching & academic-administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Teaching Members (to be filled by individual Teaching member)

- 1] Name: **Dr. Jayanta Kumar Saha**
- 2] Designation: Assistant Professor
- 3] Qualification: M.Sc., Ph.D.
- 4] Teaching experience (in years): 7+ Years
- 5] Industry experience (if any in years): No
- 6] Number of teaching hours per week: 18
- 7] Number of Research Projects/Publications/Study material developed during the academic year (provide list in separate sheet):

Research publications

1. Structured light: Study on the different profiles of the Laguerre-Gaussian beam, Samim Akhtar, Md. Mabud Hossain and **J. K. Saha**, Resonance 28, 1359 (2023), <https://doi.org/10.1007/s12045-023-1673-6>
2. A comparative study of electromagnetically induced transparency (EIT) in λ -, V- and Xi- type systems using Laguerre-Gaussian (LG) laser beams, Samim Akhtar, **J. K. Saha** and Md. Mabud Hossain, Accepted in J. Non. Opt. Phys. Mat. (2023); <https://doi.org/10.1142/S0218863523500820>
3. Microwave strength and phase controlled coherence effects and generation of four-wave mixing signal in a five-level atomic system involving Rydberg states, Aparajita Das, **J. K. Saha** and Md. Mabud Hossain, Eur. Phys. J. D 77, 146 (2023); <https://doi.org/10.1140/epid/s10053-023-00724-3>
4. Geometrical and information theoretical measures on H, Li and Na atom endohedrally captured in C_{36} and C_{60} cages, Santanu Mondal, Anjan Sadhukhan, Kalidas Sen and **J. K. Saha**, Eur. Phys. J. Plus 138, 576 (2023); <https://doi.org/10.1140/epjp/s13360-023-04188-7>
5. Two-electron system inside impenetrable spherical cavity: Structural and Quantum information theoretical analysis, Santanu Mondal, Anjan Sadhukhan, Kalidas Sen and **J. K. Saha**, J. Phys. B: At. Mol. Opt. Phys. 56, 155001 (2023); <https://doi.org/10.1088/1361-6455/ace177>
6. Information theoretic measures on the two-photon transitions of hydrogen atom embedded in weakly coupled plasma environment, S. Mondal, **J. K. Saha**, P. K. Mukherjee, B. Fricke, Phys. Scr. 98, 045411 (2023); <https://doi.org/10.1088/1402-4896/acc2f2>
7. Structural analysis of the ro-vibrational states of screened hydrogen molecular ion H_2^+ in the regime of Borromean binding, S. Mondal, A. Sadhukhan, Tapan K. Mukhopadhyay, M. Pawlak and **J. K. Saha**, Phys. Scr. 98, 015408 (2023); <https://doi.org/10.1088/1402-4896/aca729>

Research project undertaken

Title of the project: "Structural, Quantum Entanglement and Quantum Information Theoretic Measures on Confined Few-body Atomic and Molecular Systems"

Funding agency: Science and Engineering Research Board, Department of Science and Technology (DST-SERB), Govt. of India under the Core Research Grant (CRG) scheme

File No.: CRG/2022/003547

Role & responsibility: PI (Full)

Period of funding: 2023-2026

Date of start: 13th March, 2023

8] Contribution to enrich quality of teaching-learning during the academic year: (Seminars/Workshops/lectures/field visits organized): NIL

A.Y.	Seminars/Workshops/Lectures/Field visits organized
2022-2023	Jt. Convener of the "Webinar on the occasion of 75 years of Independence of India" organized by the Department of Physics, Aliah University on 14.08.2022.



9] Contribution to the growth and development of the University during the academic year:

Committee	Position held	Work done/ Activity
All departmental committees: [Departmental Committee (DC), Departmental Purchase Committee (DPC), Board of Studies / Syllabus formation/revision committee, Departmental library/book list preparation committee, Departmental Research Committee (DRC), Departmental exam related committee, Doctoral Scrutiny Committee (DSC) of few PhD students, Departmental routine/ time table committee, etc.]	Member	Full time cooperation to HoD for daily activities; actively participation in tender process; syllabus construction; book list preparation; PhD course work and seminar organization for students; exam related works like invigilation, paper set, moderation, evaluation, marks preparation/tabulation, etc; engagement for class routine and exam schedule preparation; scrutiny of research of PhD students as DSC of few ones; always cooperation and engagement with departmental activities.
WBDST Project Purchase Committee	Convener	Financial work related to Fellowship and Purchase work done during the project

10] Other responsibilities (Please specify, add rows if required):

1	PhD Students Supervision (throughout year)
2	MSc Project Students Supervision (Last Sem of each year)
3	Life member of Indian Physical Society (IPS), Indian Society for Atomic, Molecular and Optical Physics (ISAMP), Indian Association for the Cultivation of Science (IACS)
4	Referee of various Int. Scopus Index Peer-reviewed Journals (IOP Science, Springer, Elsevier, OSA, Taylor & Fancies, etc.)

11] Best Practices in teaching & academic-administration introduced in the department in the academic year (Please specify, add rows if required):

1	
2	



Information about Technical Staff & Non-Teaching Members (to be filled by individual Technical Staff & Non-Teaching Member)

- 1] Name: Mehedi Hassan
2] Designation: Technical Assistant (Grade-I)
3] Qualification: B.Sc (Physics, Hons.), M.Sc. (Physics), B.Ed.
4] Teaching experience (in years): 7 years
5] Industry experience (if any in years): N.A
6] Number of teaching-support/ Lab- hours per week: 40 hours (for Technical Staff)
7] Contribution to the growth and development of the University during academic year (Administrative responsibilities):

Committee	Position held	Work done/ Activity
NAAC Committee	Member	As per requirement
Asset Marking Committee	Member	As per requirement
Ifter Maslish Committee	Member	As per requirement
Sports Committee	Member	As per requirement

- 8] Other responsibilities (Please specify, add rows if required):

1	All kind of official work
---	---------------------------



Information about Technical Staff & Non-Teaching Members (to be filled by individual Technical Staff & Non-Teaching Member)

1] Name: Md. Muklada Hossain

2] Designation: Technical Assistant (Grade-I)

3] Qualification: B.Sc (Physics, Hons.), M.Sc. (Physics), B.Ed.

4] Teaching experience (in years): 7 years

5] Industry experience (if any in years): N.A.

6] Number of teaching-support/Lab- hours per week: 40 hours (for Technical Staff)

7] Contribution to the growth and development of the University during the academic year (Administrative responsibilities):

Committee	Position held	Work done/ Activity
NAAC	Member	Documentation

8] Other responsibilities (Please specify, add rows if required):

1	Preparation of Laboratory Instruction manuals
---	---



Academic Practices

Academic Practices (for the academic year: 2022-23)

1] Total number of teaching-days in the academic year: **One hundred and eighty days (180)**

2] Total number of permanent teaching staff: **Eight (08)**

3] Total number of permanent teaching staff with PhD: **Eight (08)**

4] Number of programmes offered (please specify): **Three (03)**

1. **3 year BSc. in Physics (CBCS)**

2. **2 year MSc. in Physics (CBCS)**

3. **PhD in Physics**

5] Number of sanctioned intake of students and Number of actual admissions:

Number of sanctioned intake of students in the 3 year B.Sc. in Physics is Sixty (60) and Number of actual admissions in the same is Twenty two (22).

Number of sanctioned total intake of students in the 2 year M.Sc. in Physics is Sixty (60) and Number of actual admissions in the 2 year M.Sc. in Physics is Forty Nine (49).

6] How many teaching members have attended Orientation Programme/ Refresher Course/ FDP/ Workshop/ Training Programme/ Research Methodology Course/ Capacity Building Programme etc.:

Two (02) teaching members have attended Orientation Programme/Refresher Course/FDP/ Workshop/Training Programme/Research Methodology Course/Capacity Building Programme etc.

7] Number of Orientation Programme/ Refresher Course/ FDP/Workshop/ Training Programme/ Research Methodology Course/Capacity Building Programme etc. organised by the department:

NIL

8] Number of Training Programme/ Consultancy offered by the department:

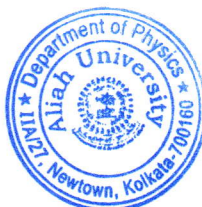
NIL

9] Number of academic collaborations made by the department:

Five (05) academic collaborations for research purposes are made on an individual level by the faculty members of the department.

10] Innovative practices (please specify):

Apart from maximizing the active teaching methods, the Department frequently adopted innovative practices in teaching and learning e.g. free access to educational resources and research labs, use of information and communication technologies, computational thinking etc. for a holistic development of student's ability towards independent learning, innovation and skill development.



Teaching-Learning-Evaluation process (for the academic year: 2022-23)

1] Does teaching members participate in course designing?

Yes, all the teaching members actively participate in course designing as and when required.

2] Does the department have a structured Board of Studies or similar academic body to design/ expand/ modify course content?

Yes, the department have a structured Board of Studies or similar academic body to design/ expand/ modify course content

3] Does the programme follow:

- a. CBCS structure
- b. Elective-based structure
- c. Any other, please specify

Yes, the department offers elective-based programme.

4] Does the department follow Academic Calendar implemented By the University?

Yes, the department follow Academic Calendar implemented by the University.

5] Use of Teaching-Learning tools/platforms (Please specify)

- a. OHP
- b. LCD
- c. Interactive Boards
- d. LMS
- e. Any other

The faculty members frequently use LCD projector as a teaching-learning tools.

6] Use of ICT in Teaching-Learning-Evaluation

- a. e-books
- b. e-journals
- c. research database/ repositories
- d. IT enabled classroom
- e. Online assignment
- f. Online assessment
- g. Online feedback

The faculty members often prefer to use ICT in Teaching-Learning-Evaluation e.g. referring e-books, e-journals as well as for online assignment.

7] Weekly class hour per course (average):

For UG courses, 6 class hours per week and for PG courses, 4 class hours per week.

8] Whether remedial/tutorial classes included in class routine?

Yes, remedial/ tutorial classes included in class routine.

9] Does the programme offered has scope of Internship/Project/Field work/Seminar presentation/Industrial training?

Yes, as per the curriculum offered by the department, the programme offered has scope of Seminar presentation.

10] Does the department follow progressive evaluation of students?

Yes, the department follows progressive evaluation of students.

11] Number of students appeared and passed in the academic year:

Forty two (42) number of final year students (3 year BSc. in Physics) appeared for the exam and Thirty nine (39) number of students passed the same in the 2022-23 academic year.

Fifty two (52) number of final year students (2 year MSc. in Physics) appeared for the exam and Forty four (44) number of students passed the same in the 2022-23 academic year.



Research output (for the academic year: 2022-23)

1] Does the department offer MPhil/ PhD/ Post-Doctoral Programme?
(Please specify):

Yes, the department offers "PhD in Physics" programme.

2] Number of students/ scholars registered/ enrolled in MPhil/PhD/Post-Doctoral Programme (If the answer to Q1 is yes):

No scholar is registered in PhD programme in the 2022-23 academic session.

3] Number of publications in refereed & peer-reviewed journals:

Twenty nine (29) articles are published in different refereed & peer-reviewed journals of repute.

4] Number of book/edited-volume/book-chapter published with ISBN:

NIL

5] Number of patents registered:

NIL

6] Number of revenue generating events (Consultancy, Training Programme, MDP/ EDP etc.):

NIL

7] Number of Seminar/Conference/Workshop/FDP etc organised at State/National/ International level:

Two special lectures and one webinar are arranged by the department.

8] Number of sponsored research projects:

a. Completed: **NIL**

b. Ongoing: **Two (02)**

9] Number of collaborative research projects: **NIL**

a. Completed

b. Ongoing

10] Any innovative research initiative adopted and implemented (please specify):

Individual faculty members adopt and implement different innovative research initiatives as per necessity.



Infrastructure & facilities (departmental level)

- 1] Number of classrooms: **Six (06)**
- 2] Number of ICT-enabled classrooms: **One (01)**
- 3] Number of laboratories: **Eighteen (18)**
- 4] Availability of licensed software/databases: **One (01)**
- 5] Number of tutorial rooms: **One (01)**
- 6] Number of seminar halls: **One (01)**
- 7] Number of rooms for the teaching members: **Two (02)**
- 8] Number of computer/ printer/ scanner available:
 - a. In laboratory
 - b. In teachers' enclosure
 - c. For Research scholars
 - d. For Administrative purpose

	Computer	Printer	Scanner
In laboratory	49	01	01
In teachers' enclosure	08	08	08
For Research scholars	27	08	00
For Administrative purpose	02	04	02
Total	86	21	11

- 9] Whether Internet facility available in classrooms/laboratory/teachers' enclosure?
Yes, internet facility is available in the laboratories as well as in the teacher's enclosure.
- 10] Whether reprographic facility available?
Yes, reprographic facility available in available in the department.
- 11] Number of washroom facility (for male): **Three (03)**
- 12] Number of washroom facility (for female): **Three (03)**
- 13] Presence of appropriate signage:
Yes appropriate signage are there in the proper places.
- 14] Barrier free environment ensured?
Yes, Barrier free environment is ensured around the department.



Initiatives and Supplementation for Students:

1] Whether Mentorship (Teacher-driven) for students is in place?

Yes, mentorship (teacher-driven) for students is in place.

2] Do the students participate in extra-academic activities and pursue Co-curricular activities?

Yes, the students actively participate in different extra-academic activities and pursue co-curricular activities in various cultural programs organized in the department as well as in other departments of the University.

3] Does the department arrange Industry-visit/ Industrial lecture/Field-trips/ Excursions/Archeological trips/ Exhibitions etc. for students?

No, the department does not arrange Industry-visit/Industrial lecture/Field-trips/Excursions/ Archeological trips/Exhibitions etc. for students as it does not fit with the curriculum.

4] Does the department arrange seminars/workshops/skill-development programmes etc. for students?

Yes, the department arrange seminars/workshops/skill-development programmes etc. for students.

5] Does the department arrange programmes for the students focusing Soft-skill and Personality development?

Yes, it is within the undergraduate curriculum of the department and also organized by the university.

6] Does the department have any Student Forum/Club/Chapter etc.?

No, the department does not have any student's forum.

7] Does the department have a students' feedback mechanism in place?

No, the department does not have any students' feedback mechanism in place.

8] Are the students provided with Training and Placement support?

Yes, the students avail Training and Placement support from university placement cell.

9] Do the students receive ICT-based teaching?

Yes, the students receive ICT-based teaching.

10] Can the student's access digital resources offered by the University library?

Yes, the students can access digital resources offered by the University library.

11] Please indicate the number of students those have qualified for

NET/SET/GATE/GMAT/SLET/WBCS/UPSC or any other Competitive Exam (for the specific period)

Ten (10) students are qualified in different competitive exams in the 2022-23 academic session.

12] Please indicate the number of students those have progressed for higher studies (for the specific period)

Ten (10) students are progressed for higher studies in the 2022-23 academic session.

13] Please indicate the number of students those were offered placements by the University (for the specific period).

NIL

