

DATA FOR ANNUAL REPORT 2023-24

(Period 01.07.2023 TO 30.06.2024)

Note: Data to be provided separately in bilingual form (English and Hindi)

1.	Name of the department
	Physics
2.	Department Profile with Infrastructures and facilities
	<p>The department of Physics is committed to impart quality education both in theoretical as well as experimental physics with special emphasis on “learning by doing” for socio economic growth. The Department of Physics has Nine faculty members and five non-teaching staff and is headed by Prof. S.S. Verma. All faculties and technical staff are highly qualified and extremely competent to impart knowledge of Physics to students at various level. The faculty has been active in organizing scientific meetings and conferences from time to time. The Department offers basic courses on physics to students of all engineering trades at ICD and UG levels. Also, department is offering MSc (Physics) programme since 2011 and Ph.D. programme since 2007 in various fields such as radiation physics, biological systems, nuclear physics, plasmonics and condensed matter physics. Besides teaching the faculty members are engaged in active research work in their respective fields of interest covering different areas of Physics and the research findings have been published in international and national referred journals with impact factor ranges from 0.2 to 7. Well-equipped research labs cater to the needs of full time and part time research scholars</p> <p>Courses offered: Post Graduate Programme: M. Sc. in Physics</p> <p>Laboratories in the Department:</p> <ol style="list-style-type: none">1. Well-equipped ICD Labs2. Diploma Lab3. Applied Physics Lab.4. Physics of Material Lab.5. M.Sc. Physics Lab.6. Computational Physics Lab.7. Dark Room (For Optics experiment)8. Research Lab-I (Material Synthesis Lab.)9. Research Lab-II (Radiation and Nuclear Physics Lab.)10. Research Lab-III (EM-Wave Interaction Lab.)11. Computational Material Science Lab.

3. Research Publications					
A Web of Science indexed Journals					
Name of the author/s		Title of paper	Name of journal	ISSN number	Year of publication
Jagdeep Singh & A. S. Dhaliwal		Electrochemical synthesis of porous Ag@PANI/MWCNTs ternary composite for electrochemical and photocatalytic application	Polymer Bulletin	0170-0839	2024
Karan Bansal, Jagdeep Singh & A. S. Dhaliwal		Synthesis and characterization of ternary nanocomposite based on Ag-Fe ₃ O ₄ /rGO for electrochemical application	Fullerenes, Nanotubes and Carbon Nanostructures	1536-383X	2024
Kailash & S. S. Verma		Refractive Index Sensitivity (RIS) and Thermoplasmonic Response of Au-/Ag-Decorated Alloy Nanoshells	Plasmonics	1557-1963	2024
Rekha Rani and M M Sinha		Recent advances in two-dimensional transition metal oxides and di-chalcogenides as efficient thermoelectric materials	Physica Scripta	1402-4896	2024
Kailash & S. S. Verma		Simulations of optical properties of gallium alloy nanorods based on aspect ratio and shell thickness	Materials Today Communications	2352-4928	2023
Kailash & S. S. Verma		Opto-Thermal Properties of some Composite Metallic Nanoshells for their Thermoplasmonic Applications	Plasmonics	1557-1963	2023
Kailash & S. S. Verma		Quantifying the optical and thermoplasmonic properties of some bimetallic alloy nanospheres	Journal of Quantitative Spectroscopy and Radiative Transfer	1879-1352	2023
Megha Goyal M.M. Sinha		Phase stability and thermoelectricity in topological Dirac semimetal Na ₃ Bi	Materials Science in Semiconductor Processing	1873-4081	2023
Karan Bansal, Jagdeep Singh & A. S. Dhaliwal		Synthesis of silver-decorated nanocomposite based on reduced graphene oxide and its electrochemical performance	Fullerenes, Nanotubes and Carbon Nanostructures	1536-4046	2023

Karan Bansal, Jagdeep Singh & A. S. Dhaliwal	Green synthesis and characterization of superparamagnetic nanocomposite based on reduced graphene oxide/Fe ₃ O ₄ prepared using leaf extract of Azadirachta indica	Inorganic and Nano-Metal Chemistry	2470-1564	2023
Jaspal Singh, Tavneet Kaur, Amrit Pal Singh, Megha Goyal, Kulwinder Kaur, Shakeel Ahmad Khandy, Ishtihadah Islam, Aadil Fayaz Wani, Ram Krishan, MM Sinha, SS Verma	LiNbCoX (X= Al, Ga) quaternary Heusler compounds for high-temperature thermoelectric properties: a computational approach	Bulletin of Materials Science	ISSN: 0250-4707 (print); eISSN: 0973-7669 (online)	2023
Singh Jaspal, Kaur Kulwinder, Islam Ishtihadah, Jan Mohammad Mir, Megha Goyal' Tavneet Kaur, S.S. Verma, Atif Mossad Ali, Shakeel Ahmad Khandy	Electronic structure, phonon stability, mechanical and high-temperature thermoelectric properties of Li-based quaternary Heusler alloys	Current Applied Physics	ISSN 1567-1739	2023
Kailash, SS Verma	Thermoplasmonic study of AuxAg(1-x) alloy nanospheres	Optical and Quantum Electronics	ISSN 0306-8919	2023
Pradeep Bhatia, SS Verma, MM Sinha	Investigation of Plasmonic Properties of Egg-like Multilayer Structures	Plasmonics	15571955.	2023
Akanksha Bhardwaj, Pradeep Bhatia, Suram Singh Verma	Plasmonic properties of silver coated non-spherical gallium alloy nanoparticles	Optical and Quantum Electronics	0306-8919	2023
Megha Goyal, Murari Mohan Sinha	Topological Phase Transition and Lattice Dynamical Properties of Half-Heusler XPtBi (X= Gd, Nd)	physica status solidi	1862-6300	2023

Prem Pankaj, Prabhdeep Kaur, Kuldip Singh Mann	Dielectric Spectroscopy as a Tool to Distinguish Starch and Flour	Recent Progress in Science and Technology	1662-0356	2023
Prachi Palta, Prabhdeep Kaur, KS Mann	Measurement and modelling of organic matter's altering effect on dielectric behavior of soil in the region of 200 MHz to 14 GHz	Journal of Microwave Power and Electromagnetic	0832-7823	2023
Indu Sharma, Shruti Mahajan, Vishal Arora, Mehak Arora, Nitin Mahajan, Nitin Mahajan, Kanika Aggarwal, Anupinder Singh	Effect of Magnetic field on dielectric properties in PLT/BNCFO composites	Emerging Materials Research	20460147	2023
Kanika Aggarwal, Madan Sharma, Shubhpreet Kaur, Anupinder Singh	Establishment of magneto-dielectric effect and magneto-resistance in composite of PLT and Ba-Based U - type hexaferrite	Journal of Advanced Dielectrics	2010135X,	2023
B Scopus indexed Journals				
Name of the author/s	Title of paper	Name of journal	ISSN number	Year of publication
Baltej Singh Sidhu, Manoj Kumar Gupta, A S Dhaliwal and K S Kahlon	Study of photon shielding effectiveness of recycled environment waste Cement Kiln Dust doped Bismuth Alkali Borate glasses	Journal of Physics: Conference Series	1742-6596	2023
Rekha Rani and M M Sinha	To study the effect of strain engineering on the band gap of Ba ₂ monolayer: a first principle approach	Journal of Physics: Conference Series	1742-6596	2023
Rahul Sharma, Nihal, Karan Bansal, A.S. Dhaliwal, Mamta Sharma, J.K. Goswamy	Synthesis and characterization of WO ₃ based thin film electrode material for electrochromic device	Materials Today: Proceedings	2214-7853	2023

	Jaspal Singh, Tavneet Kaur, Megha Goyal, Kulwinder Kaur, SS Verma, MM Sinha	Exploring structural, electronic, phonon, mechanical, elastic, thermodynamic, and thermoelectric properties of the Li based quaternary Heusler LiTaCoAl by DFT		Materials Today: Proceedings	ISSN 2214-7853	2023
	Tavneet Kaur, Amrit Pal Singh, Jaspal Singh, MM Sinha	An ab initio investigation of electronic, elastic, mechanical and vibrational properties of Co ₂ VX (X= Al, Ga)		Materials Today: Proceedings	ISSN 2214-7853	2023
	Pradeep Bhatia, SS Verma	Enhancement of LSPR properties of temperature-dependent gold nanoparticles		Materials Today: Proceedings	ISSN 2214-7853	2023
C	Other peer reviewed Journals					
	Name of the author/s	Title of paper	Name of journal	ISSN number	Year of publication	
	Nil					
D	Full Paper in International conferences					
	Name of the author/s	Title of paper	Name of journal	Page No., ISSN number	Title of proceedings	Year of publication
	Nil					
E	Full Paper in National conferences					
	Name of the author/s	Title of paper	Name of journal	Page No., ISSN number	Title of proceedings	Year of publication
	Nil					
4.	Other publications					
	a. Books published					
	Name of the teacher	Title of the book published	National / International	Name of the Publisher	ISBN/ISSN number of the proceeding	Year of publication
	Nil					
	b. Book Chapters					
	Name of the teacher	Title of the Chapter published	Title of the book	National / International	Name of the Publisher	ISBN/ISSN number
	Year of publication					

5.	Expert lectures organised							
	Name and Affiliation of expert	Topic			Number of participants	Date of event	Sponsoring Agency if any	Photographs (high resolution) of the Event
	Nil							
6.	Research projects awarded during the year							
	Name of the Principal Investigator/ Co Investigator (if applicable)	Name of the Scheme/ Project/ Endowments/ Chairs	Name of the Funding agency	Type (Government/ Non-Government)	Department	Date and Year of Award	Funds provided (INR in lakhs)	Duration of the project
	Nil							
7.	Consultancy projects received during the year							
	Name of the consultant	Name of consultancy project		Consulting/ Sponsoring agency with contact details		Year	Revenue generated (INR in Lakhs)	
	Nil							
8.	Patents Filed/granted/published/licensed							
	Name of Faculty	Patent/ application Number	Title of the patent	Year of Award of patent	Date of filing/ granting / publishing / licensing	Status of Patent (Filed/ Granted/ Published/ Licensed)		
	Nil							
9.	Conferences/ Seminars Organized by the department							
	S No	Name of the program	Duration	No of participants	Sponsoring Agency if any	Name of Organiser (s)	Photographs (high resolution) of the Event	
	1.							
10.	Training programmes held for teachers and Staff							

	S No	Name of the program	Duration	No of participants	Sponsoring Agency if any	Name of Organiser (s)	Photographs (high resolution) of the Event
11.	Training programmes held for students						
	S No	Name of the program	Duration	No of participants	Sponsoring Agency if any	Name of Organiser (s)	Photographs (high resolution) of the Event
Nil							
12.	Total number of students qualifying in state/ national/ international level examinations during the year (eg: NET/SLET/GATE/GMAT/CAT/GRE/TOEFL/Civil Services/State government examinations)						
	Year	Names of students selected/ qualified	Name of the test Qualified/selected (NET/SLET/GATE//GMAT/CAT/GRE/JAM/IELET/TOEFL/Civil Services/State government examinations/ Other examinations conducted by the State / Central Government Agencies) (Specify)			Registration number/roll number for the exam	
	2024	SOUMIK BHOWMIK	GATE-2024			PHY-2263001	
	2024	VIVEKANAND	GATE-2024			PHY-2263006	
13.	Start-ups and Innovations-Nil						
	(Summary of activity in detail)						
14.	Linkage with industry						
	Name of the Department				Name of Industry/ Company		Date of signing MoU/ etc.
Nil							
15.	Curricular Achievements/ Co-curricular achievements						
	Name of Faculty Member			Achievement		Date and Year	
Nil							
16.	Member of Senate/ Board of Governors/ Directors of other Universities/ Industries						
	Name of Faculty Member			Type of Membership		Name of Industry/ Company/ Organization	
Nil							
17.	Expert/ Invited lectures delivered						
	Name of faculty member	Topic of delivered lecture/ expert lecture		Name of the organization/ Institute/ industry, where the expert lecture was delivered.		Organizer	Date/ Year of the event

	Prof. MM Sinha	2D nanomaterials	Conference on “Innovations in Materials Science”	Institute Instrumentation Centre, IIT Roorkee.	April 24–27, 2024
	Nil				
18.	Short term training programs/ short term courses attended				
	Name of faculty member	Title of the STC/ STTP attended	Name of the organization/ Institute/ industry	Date/ Year of the event	
19.	Awards/ Prizes won by Students and Faculty				
	Name of faculty member	Title of the award with details	Bestowing agency/ organization/ Institute	Date & year of award	Photographs (high resolution) of the Event
	Nil				
20	Any other salient achievements by faculty /staff/Research scholars/students:				
	<ul style="list-style-type: none"> • Mr. Nikhil Kumar, M.Sc. (Physics) final year student has been selected as a researcher for the purpose of carrying out a research project at Friedrich-Schiller-Universitat Jena (Germany) for a period 01.07.2024 to 30.06.2027 with a monthly gross pay of Euro 2831.14. • Mr. Kailash (Ph.D. Student in Physics Department) with registration no. PPH-2131 has received the prestigious Raman-Charpak Fellowship-2023 funded by Department of Science and Technology, Government of India, Service for Science and Technology (SST), French Embassy in India / Ambassade de France en Inde and Ministry of Foreign Affairs & International Development, Govt. of France. • Mr. Somendra, PGPHY-2363011, has been selected for summer internship-2024 at TIET, Patiala (Punjab) • Mr. Anmol Singh, PGPHY-2363004, has been selected for Summer Internship-2024 at Indira Gandhi Centre for Atomic Research (IGCAR), Department of Atomic Energy, Kalpakkam -603 102, Tamil Nadu. • Mr. Vijay Kumar, PGPHY-2363005, has been selected for summer internship-2024 at IIT Jodhpur (Rajasthan). • Mr. Shahidul Islam, PGPHY-2363012, has been selected for summer internship-2024 at IIT Bhilai (Chhattisgarh) • Ms. Harini S. Rao, PHPHY-2150360 has been selected to pursue Ph.D. at Department of Chemical and Materials Engineering Chang Gung University, Taiwan in the academic session 2024-2025. • Ms. Suman Somani, PGPHY-2363001, has been selected for summer internship-2024 at IIT Mandi. • Ms. Punyasha Nayak, PGPHY-2363008, has secured summer internship-2024 under the supervision of Dr. Ritu Gupta, Assistant Professor, Department of Physics at IIT Ropar. • Mr. Omveer Singh, PGPHY-2363013, has been selected for Summer Internship-2024 at Regional Centre Dr. K.S. Krishnan Geomagnetic Research Laboratory (KSKGRL) Prayagraj (U.P.) of Indian Institute of Geomagnetism (IIG), Bombay. • Mr. Bhavnesh, PGPHY-2363010, has secured summer internship-2024 under the supervision of Prof. Vivek Malik, Department of Physics, IIT Roorkee. 				

Note 1:	<ol style="list-style-type: none">1. The hard copy of the data may please be sent by 05/07/2023 to AR (Acad) and soft copy at : aracad@sliet.ac.in2. Data should be typed in Arial Font (Size: 11) with single spacing.3. <u>Data should be consolidated separately in bilingual form (i.e. in English and Hindi).</u>4. Provide the photographs of the events also.
Note 2:	Faculty members are requested to provide the desired information in bilingual form (i.e. in English and Hindi). Both the files may be sent separately in single email.