

DATA FOR ANNUAL REPORT 2022-23

(Period 01.07.2022 TO 30.06.2023)

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
		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
Jagdeep Singh & A. S. Dhaliwal	Synthesis of rGO/AgNPs adsorbent for the effective removal of two basic dyes: kinetics, isotherms and thermodynamic studies	International Journal of Environmental Science and Technology	1735-1472 (print); 1735-2630 (web)	2022
Ankit Kumar, SK Singh, Pravin Kumar,	Structural, morphological, and phase transformation studies of 1.4 MeV Kr	Journal of Materials Research	Electronic ISSN 2044-5326	2022


AS Dhaliwal	ion beam irradiated zirconia thin films		Print ISSN 0884-2914	
Ankit Kumar, Pravin Kumar, AS Dhaliwal	Thermally induced phase transformation and structural modifications of E-beam evaporated zirconia thin films	Phase Transitions	1411594	
Kailash, SS Verma	Exploring thermoplasmonic profiles of some noble metallic nanospheres	Materials Today Communications	ISSN 2214-7853	2022
Akanksha Bhardwaj & Suram Singh Verma	Refractive Index Sensitivity Analysis of Gallium and Gallium Alloy Nanoparticles Using Inflection Point Method	Plasmonics	15571955	2022
Tavneet Kaur, Jaspal Singh, Megha Goyal, Kulwinder Kaur, Shakeel Ahmad Khandy, Muzzammil Ahmad Bhat, Utkirjon Sharopov, Shobhna Dhiman, Aadil Fayaz Wani, Bindu Rani, MM Sinha, SS Verma	First principles calculation to investigate Li based quaternary Heusler compounds LiHfCoX (X= Ge, Sn) for thermoelectric applications	Physica Scripta	1402-4896	2022
Pradeep Bhatia, SS Verma, MM Sinha	Nanogap effects on plasmonic properties of dimer	Optical and Quantum Electronics	0306-8919	2022
Jaspal Singh, Kulwinder Kaur, Muzzammil Ahmad Bhat, Utkir Bahodirovich Sharopov, Shobhna Dhiman, Megha Goyal, SS Verma, Shakeel Ahmad	First-principles calculations on the electronic structure and thermoelectric properties of quaternary Heusler compounds: LiScPtSi and LiScPdGe	Materials Today Communications	2352-4928	2022

	Khandy				
	Prem Pankaj, Prabhdeep Kaur, Kuldip Singh Mann	Dielectric properties of eggshell powder at 2.45 and 5.8 GHz relevant to dielectric heating	Journal of Microwave Power and Electromagnetic Energy	0832-7823	2022
B	Scopus indexed Journals				
	Name of the author/s	Title of paper	Name of journal	ISSN number	Year of publication
	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
	Nil				
E	Full Paper in National conferences				
	Name of the	Title of paper	Name of journal	Page No., ISSN	Title of
					Year of

	author/s			number	proceedings	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	
	A S Dhaliwal	Superabsorbent Polymers Application in Agriculture Sector	Properties and Applications of Superabsorbent Polymers Smart Applications with Smart Polymers	International	Springer Singapore	Hardcover ISBN 978-981-99-1101-1 Softcover ISBN 978-981-99-1104-2	2023	
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.	6th National Conference on “Advanced Materials and Radiation Physics (AMRP-2023)”	May 18-19, 2023	250		Department of Physics. SLIET Longowal	

							
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
	1.	One-week Faculty Development Program (FDP) on "Characterization of Nano-Materials and Applications"	One-week (22-26 May 2023)	40		Department of Physics, SLIET Longowal in collaboration with NITTR Chandigarh	

							
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	
2023	Yogeesh N	GATE-2023				PGPHY-2150366	
2023	Harini S Rao	GATE-2023				PGPHY-2150360	

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
	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	
1.	Prof. S S Verma	Characterization of Nano Materials and Applications	NITTTR Chandigarh & SLIET Longowal	One-week (22-26 May 2023)	
2.	Ms. Kanika Aggarwal	Advanced Pedagogy Technology	Ramanujan college, Delhi University	25 June -1 July 2022.	
3.	Ms. Kanika Aggarwal	The Joy of computing using Python	Swayam NPTEL, IIT Ropar	July-Oct 2022.	
4.	Ms. Kanika Aggarwal	"NEP-2020, New Trends in Higher Education"	Ramanujan college Delhi University	26 Dec -1 Jan 2023.	
5.	Ms. Kanika Aggarwal	Characterization of Nano Materials and Applications	NITTTR Chandigarh & SLIET Longowal	One-week (22-26 May 2023)	
6.	Dr. P Kaur	Characterization of Nano Materials and	NITTTR Chandigarh & SLIET Longowal	One-week	

		Applications		(22-26 May 2023)
7.	Dr. Jagdeep Singh	Characterization of Nano Materials and Applications	NITTTR Chandigarh & SLIET Longowal	One-week (22-26 May 2023)
8.	Dr. Shubhpreet Kaur	Characterization of Nano Materials and Applications	NITTTR Chandigarh & SLIET Longowal	One-week (22-26 May 2023)
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. Yogeesh N from M.Sc./21 batch, Regd. No. PGPHY-2150366, has been selected to pursue his Ph.D. Programme at Dept. of Physics, IIT Jodhpur. • “Ms. Shalini Bhattacharjee, M.Sc.-22 batch student with Regd. No. 2263012 has been selected in the flagship programme “Vigyan Vidushi (Physics) 2023” at TIFR, Bombay from June 12-July 02, 2023. During the programme, she will be reimbursed travel costs up to 3-AC train fare from SLIET to TIFR Bombay and back and local transport costs by the organisers. She will also get accommodation (from 12:00 hrs on 11 June till 12:00 hrs on 2 July) in a spacious non-AC room with an attached toilet in the HBCSE hostel on sharing basis with another Vigyan Vidushi participant”. • Mr. Nikhil Kumar, M.Sc.-22 (Regd. No. PHY-2263014) has been selected in Summer Fellowship Programme-2023 a flagship programme of IAS, INSA and The national academy of Sciences o work with Prof. Ashok Kumar Verma, BARC Bombay during June-July 2023. • Ms. Shalini Bhattachary, M.Sc.-22 (Regd. No. PHY-2263012) has been selected to participate in a two-day pre-IPSC workshop on Planetary Sciences and Exploration: going beyond taking place on 20-21 March 2023 with all financial help from the organizers. • Departmental Research Scholar, Mr. Ankit Kumar attended TYC 6th Energy Materials workshop: Modelling Energy Interfaces held during Dec 14-16, 2022 at London, United Kingdom and 14th Annual International Workshop on Advanced Materials held during Feb 19-21, 2023 at Ras Al Khaimah, United Arab Emirates 			
Note 1:	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.in			

	<ol style="list-style-type: none">2. 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.