3.7.2 Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years (10) 3.7.2.1: Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years

S. No.	Organisation with which MoU is signed	Name of the institution/ industry/ corporate house	Year of signing MoU	Duration	List the actual activities under each MOU year wise	Number of students/teachers participated under MoUs	Website link
1	Department of Space, Government of India S A S	Semi-Conductor Laboratory, Department of Space, Government of India, S.A.S. Nagar, Mohali	28-10-2015	10-years	Conference as well as SCI indexed publications	Three M.Tech student and Two Ph.D. scholar training	http://rnc.sliet.ac.in/files/202 2/11/MoU-2015.pdf
2	Engineering Research Institute,	CSIR- Central Electronics Engineering Research Institute, Pilani, Rajasthan	19-09-2017	5-years	() ne loint Ph L) linder the way and conference naper	One Faculty and one Ph.D. scholar	MoU-2017.pdf (sliet.ac.in)
3	National Institute of Technology, Agartala, Tripura State	National Institute of Technology, Agartala, Tripura State	16-02-2018	5-years			<u>MoU-2018.pdf (sliet.ac.in)</u>
4	Vietnam Academy of Science and Technology 18 Hoang Quoc Viet,	Institute of Materials Science, Vietnam Academy of Science and Technology 18 Hoang Quoc Viet, Cau Giay, Hanoi, Vietnam	05-10-2018		Sanctioned 1. ASEAN-India R&D project entitled "Design and Development of Novel Optoelectronic Devices for High-Speed Reconfigurable Optical Access Networks" sponsored by AISTDF, SERB New Delhi is going on with collaboration of IMS/VAST Vietnam. The total cost of project is Rs. 20,70,628/ Dr. Quang Minh Ngo, AsP & PI, IMS, Hanoi, Vietnam has visited SLIET, Longowal from 17-07-2018 to 30-07-2018 (14 Days) under ASEAN-India R&D project. Dr. Surinder Singh, Prof. (ECE) SLIET, Longowal has visited IMS, Hanoi, Vietnam from 03-12-2018 to 16-12-2018 (14 Days) under ASEAN-India R&D project. Dr. Sukhbir Singh, JRF, has visited IMS, Hanoi, Vietnam from 25/09/2019 to 24/10/2-19 (30 Days) under ASEAN-India R&D project. Total 06 papers in SCI Journal and 02 papers in Conference publications under ASEAN-India R&D project. Sanctioned ASEAN-India Research and Training Fellowship (AIRTF) which is sponsored by DST, New Delhi and Federation of Indian Chambers of Commerce and Industry (FICCI), New Delhi. The total cost of fellowship is 4,00,000/ Mr. Dai Van Pham has visited under the ASEAN-India Research and Training Fellowship (AIRTF) from 01 June 2019 to 30 November 2019. 2. Activities proposed to be carried out · Exchange visit under the ASEAN-India collaborated R&D project. · Visiting Research scholar from SLIET Longowal to IMS/VAST Vietnam	M.Tech. and one JRF)	MoU-2018.pdf (sliet.ac.in)

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5		Pharmaffiliates Analytics & Synthetics (P) Ltd., Plot No. 225, Industrial Area Phase- II, Panchkula, Haryana- 134 109	06-12-2018	5-years	To initiate teaching and R&C collaboration	8	MoU-2018.pdf (sliet.ac.in)
6	Homi Bhabha Cancer Hospital (HBCH Tata Memorial Centre), Sangrur	Homi Bhabha Cancer Hospital (HBCH Tata Memorial Centre), Sangrur	07-01-2019	5-years	Collaborative project on head and neck cancer	3	<u>MoU-2019.pdf (sliet.ac.in)</u>
7	of Applied Physics of the Russian	Federal Research Center, Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS), 46 Ulyanov Street, Nizhny Novgorod, Russia	06-07-2019	3- years	Sanctioned Indo-Russian joint project entitled "Optical Metrology of Ultra Short Pulses for Design of Flexible MIMO based Next Generation Optical Communication Networks" sponsored by DST New Delhi is going on with collaboration of IAP RAS Russia. The total cost of project is 21,48,672/ • Dr. Surinder Singh and Er. Dilbag Singh, has visited IAP RAS Russia from 10-06-2019 to 23-06-2019 (14 Days) under Indo-Russian joint project. • Total 10 papers in SCI Journal and 01 papers in Conference publications under Indo-Russian joint project	One faculty and Three students (three JRF)	<u>MoU-2019.pdf (sliet.ac.in)</u>
8	Atal Bihari Vajpayee Govt. Institute of Engineering and Technology, Pragatinagar, Shimla	Atal Bihari Vajpayee Govt. Institute of Engineering and Technology, Pragatinagar, Shimla	22-08-2019	5-years			MoU-2019.pdf (sliet.ac.in)
9	Meritorious School Sangrur	Meritorious School Sangrur	14-09-2019	3- years			MoU-2019.pdf (sliet.ac.in)
10	Guru Nanak Dev University, Amritsar (Punjab)	Guru Nanak Dev University, Amritsar (Punjab)	26-09-2019	5-years			MoU-2019.pdf (sliet.ac.in)
11	Maharaja Ranjit Singh Punjab Technical University, Bathinda (Punjab)	Maharaja Ranjit Singh Punjab Technical University, Bathinda (Punjab)	26-09-2019	5-years			MoU-2019.pdf (sliet.ac.in)
12	Eastman Cast & Forge Limited, Ludhiana (Punjab)	Eastman Cast & Forge Limited, Ludhiana (Punjab)	2019	3- years		1	MoU-2019.pdf (sliet.ac.in)
13	Indian Institute of Food Processing Technology (IIFPT), Thanjavur	Indian Institute of Food Processing Technology (IIFPT), Thanjavur	13-01-2020	5-years			MoU-2020.pdf (sliet.ac.in)
14	University of West Attica (UNIWA)	University of West Attica (UNIWA)	13-02-2020	9-years			MoU-2020.pdf (sliet.ac.in)

15	Meritorious School Ghabdan (Sangrur)	Meritorious School Ghabdan (Sangrur)	06-02-2020	3- years			MoU-2020.pdf (sliet.ac.in)
16		Gigabyte Networks Pvt. Ltd., Rakh Bagh., Ludhiana- 141001	03-07-2020	3- years	One consulatncy project of 2.32 Lac. In 2020 and on patent published in 2021	One Faculty	MoU-2020.pdf (sliet.ac.in)
17	University Kebangsaan Malaysia	University Kebangsaan Malaysia	14-07-2020	5-years	One research article published in Scopus Indexed journal in 2021	One faculty	MoU-2020.pdf (sliet.ac.in)
18		Harcourt Butler Technical University (HBTU), Kanpur	05-01-2021	5-years			MoU_2021.pdf (sliet.ac.in)
19	Agriculture, Central University of	Department of Applied Agriculture, Central University of Punjab (CUPB), Bathinda,	12-01-2021	5-years			MoU_2021.pdf (sliet.ac.in)
20		Sabudh Foundation, Sahibzada Ajit Singh Nagar, Mohali	19-11-2021	5-years	Training of students in cutting edge technologies	0	MoU_2021.pdf (sliet.ac.in)
21	Llowyoot Engineering and	ICAR-Central Institute of Post- Harvest Engineering and Technology (ICAR-CIPHET), Ludhiana	09-02-2022	5-years			MoU_2022.pdf (sliet.ac.in)
22	· · · · · · · · · · · · · · · · · · ·	Modern Colours Private Limited, Village- Mangarh, Machiwara Road, Kohara- 141112, Ludhiana	09-06-2022	5-years	Summer Training of 02 students at MCPL (June 2022)	2	MoU_2022.pdf (sliet.ac.in)
23		Dr. B.R. Ambedkar National Institute of Technology, Jalandhar- 144027	04-10-2022	5-years			MoU_2022.pdf (sliet.ac.in)

## SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY (SLIET), LONGOWAL, DISTRICT- SANGRUR (PUNJAB) ACTIVITIES UNDER MEMORANDUM OF UNDERSTANDING (MoU)

Sr. No.	Name of External Agency/ Organization/Firm	Date of Execution of Collaboration	Activates Conducted
01	Modern Colours Private Limited, Village- Mangarh, Machiwara Road, Kohara- 141112, Ludhiana	09.06.2022	An Interactive Session/ Expert Talk on 'PAINT AND COATING INDUSTRY' has been organized by Association of Chemical Technocrats, Department of Chemical Engineering, SLIET in association with Longowal SLIET Students' Chapter (Chemical), Institution of Engineers (India) on 9.6.2022 for Chemical Engineering students of SLIET. The expert speakers Mr. Muktideep Singh, Director and Mr. Sunny Sharma, Manager (Marketing), Modern Colours Pvt. Ltd., Ludhiana had explained the advances in Paint and Coating/ Surface Technology. The advancement in the field was discussed by experts with the participants. Students, staff and faculty members of the department enthusiastically participated in the session and interacted with the experts. The session was coordinated by Dr. Gulshan Kumar Jawa and Dr. S M Ahuja assisted by Mr. Ravinder Sharma. Prof. Pushpa Jha, Head, Dept. of Chemical Engg., SLIET had thanked felicitated the experts for conducting the session and appreciated the association between the department and the industry for mutual benefits.
02	Mehr Chand Polytechnic College, Jalandhar	23.04.2022	<ol> <li>Two Day Workshop on NBA Accreditation Process at Mehr Chand Polytechnic, Jalandhar (MBI) under AICTE sponsored Margdarshan Scheme on 15-16 December 2021</li> <li>Workshop on COs-POs mapping on 17-18 September 2021</li> </ol>
03	ICAR-CIPHET, Ludhiana	09.02.2022	Mr. Rajiv Sharma, an employee of ICAR-Central Institute of Post-Harvest Engineering and Technology, is undertaking his Ph.D. research work on "Studies on Characterization and Valorization of Semi- Popped Gorgon Nut" in Food Engineering and Technology department under supervision of Prof. Dharmesh Chandra Saxena. A research paper has been published entitled "The impact of milling parameters on physiochemical, nutritional, color, flowability, and functional properties of raw gorgon nut flour fractions".
04	Pharmaffiliates Analytics & Synthetics P Ltd, Plot no. 225, Industrial Area phase-II, Panchkula,	06.01.2021	<ul> <li>Summer/Winter internship to the PG students</li> <li>To initiate teaching and R&amp;C collaboration</li> <li>To sponsoring PG/Ph.D. projects</li> <li>NIT Jalandhar (at Institute level)</li> <li>Joint Ph.D. Research Guidance</li> </ul>

	Haryana-134109, India		<ul> <li>Joint organization of International Conference – AFMFP-2022</li> <li>Summer training to the students.</li> <li>Academics &amp; Research Collaborations</li> </ul>
05	Gigabyte networks private limited, Ludhiana	25.06.2020	One consultancy Project and one patent filed under this MOU. Consultancy Project: Development of optimal UV sanitization device to disinfect the virus and bacteria for various applications. Order No SLIET/Dean(R&C)/CP-5, dated 06/07/2020. Patent filed: SMART UV-C SAFE DISINFECT WASTE BIN AND METHOD THEREOF, filed on 04/11/2020, Application no. 202011048252
06	Meritorious School Ghabdan ( Sangrur)	06.02.2020	A seminar was conducted in Meritorious School Ghabad( Sangrur) for Eleventh and Twelfth class students on the above-mentioned topic in the month of September 2019. All the students of the school participated in the seminar along with the Principal and teachers (Prior to sign MoU)
07	University of West Attica, (UNIWA) Athens, Greece EUROPE	13.02.2020	<ul> <li>Prof. Klimis Visited SLIET in November 2019</li> <li>Interaction with the Faculty and Staff members of the CSE Department, SLIET</li> <li>Expert talk on the topic "Human Authentication"</li> <li>A Special Session focused on Research for the PhD Scholars and PG students</li> <li>Discussion on the research and future perspectives of social computing to the faculty and staff.</li> </ul>
08	Federal Research Center, Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS), 46 Ulyanov Street, Nizhny Novgorod, Russia	06.07.2019	<ul> <li>One Research Project funded by the govement of India</li> <li>1. Sanctioned Indo-Russian joint project entitled "Optical Metrology of Ultra Short Pulses for Design of Flexible MIMO based Next Generation Optical Communication Networks" sponsored by DST New Delhi is going on with collaboration of IAP RAS Russia. The total cost of project is 21,48,672/ Six Joint Publications (Five SCI Journal and One International Conference)</li> <li>1. Elena Anashkina, Vitaly Dorofeev, S.V. Muravyev, Sergei Motorin, Aleksei VyacheslavovichAndrianov, Arseny A Sorokin, Maksim Koptev, Surinder Singh, and Arkady Kim "Possibilities of laser amplification and measurement of the field structure of ultrashort pulses in the range of 2.7 - 3 µm in erbium-ion-doped tellurite glass fibres" Quantum Electronics. Vo. 48(12) pp. 1118-1127, 2018.</li> <li>2. E. A. Anashkina, Maxim Koptev, Alexey Andrianov, Vitaly V. Dorofeev, Surinder Singh, Lovkesh Bhatia, Gerd Leuchs, and Arkady Kim "Reconstruction of optical pulse intensity and phase based on SPM spectra measurements in microstructured tellurite fiber in telecommunication range," in <i>Journal fiber f</i></li></ul>
			of Lightwave Technology. Vol. 17, Issue. 17, pp. 4375-4381. 3. Vishal Sharma, Surinder Singh, LovkeshBahtia, Elena A. Anashkina, and Alexey V. Andrianov "Optical frequency comb generation by the exploitation of gain modulation phenomenon in

			<ul> <li>semiconductor optical amplifier," Optical Engineering Vol. 60(6), 066108 2021.</li> <li>4. T Kaur, S Singh, EA ANASHKINA, AV ANDRIANOV, "Design analysis of multi-wavelength conversion based on XAM effect of EAM for high speed optical transmission," Optoelectronics and Advanced Materials-Rapid Communications, Vol. 15, pp. 307-313, 2021</li> <li>5. Vishal Sharma, Surinder Singh, LovkeshBahtia, Elena A. Anashkina, and Alexey V. Andrianov "Demonstration of optical frequency comb generation using four-wave mixing in highly nonlinear fiber," Optik, Vol. 241, pp. 166948, 2021.</li> <li>6. Vasundhara, Lovkesh, Singh S. (2022) Implementation of XOR Gate Using a Nonlinear Polarization Rotation in Highly Nonlinear Fiber. In: Tiwari M., Maddila R.K., Garg A.K., Kumar A., Yupapin P. (eds) Optical and Wireless Technologies. Lecture Notes in Electrical Engineering, vol 771. Springer, Singapore. <u>https://doi.org/10.1007/978-981-16-2818-4_23</u></li> <li>Exchange Visit:</li> <li>1. Dr. Surinder Singh and Er. Dilbag Singh, has visited IAP RAS Russia from 10-06-2019 to 23-06-2019 (14 Days) under Indo-Russian joint project.</li> </ul>
09	Homi Bhabha Cancer	07.01.2019	1. Internship of following SLIET students at HBCH, Sangrur in May-June 2019
	Hospital (HBCH Tata Memorial Centre), Sangrur		<ul> <li>Ref. No. SLIET/Dean(A)/2019/428-434 dated 10 May 2019</li> <li>- Ushma Singla (GIN-121716)</li> <li>- Ansuman Kumar (GIN/SL/15/4505)</li> <li>2. Visit of GIN-2015 (4-year) and GIN-2016 (3-year) batch students to HBCH, Sangrur on 25.04.2019 Ref. No. SLIET/Dean(A)/2019/225-229 dated 24 April 2019</li> </ul>
10	Institute of Materials Science, Vietnam Academy of Science and Technology 18 Hoang Quoc Viet, CauGiay, Hanoi, Vietnam	05.10.2018	One Research Project funded by the government of India Sanctioned ASEAN-India R&D project entitled "Design and Development of Novel Optoelectronic Devices for High-Speed Reconfigurable Optical Access Networks" sponsored by AISTDF, SERB New Delhi is going on with collaboration of IMS/VAST Vietnam. The total cost of project is Rs. 20,70,628/ One AIRTF international research fellowship grant: Sanctioned ASEAN-India Research and Training Fellowship (AIRTF) which is sponsored by DST, New Delhi and Federation of Indian Chambers of Commerce and Industry (FICCI), New Delhi. The total cost of fellowship is 4,00,000/- Seven Joint Publications (four SCI Journal and Three International Conference)
			<ol> <li>Dilbag Singh, Surinder Singh, Vishal Sharma, Sukhbir Singh and Quang Minh NGO, "Design of XPM based all optical contention detection circuit at 120 Gbps" Optical and Quantum Electronics, Vol. 51 pp 215, 2019.</li> <li>Surinder Singh, Dilbag Singh, Vishal Sharma, Sukhbir Singh and Quang Minh NGO, "Design of all</li> </ol>

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	1		optical contention detection circuit based on HNLF at the data rate of 120 Gbps" Optical Fiber
			Technology, Vol. 52 pp. 101958, 2019.
			3. Sukhbir Singh, Surinder Singh, Quang Minh NGO and Amin Malekmohammadi, " 340-Gb/s PoISK-
		8	DP-DQPSK optical orthogonal modulation format with coherent direct detection foe high capacity
			WDM optical network" Optical Fiber Technology, Vol. 52 pp. 101936 2019.
			4. Sukhbir Singh, Surinder Singh, Quang Minh Ngo, and Amin Malek Mohammadi, "Analysis of all-
			optical wavelength converter based on FWM effect in HNLF for coherent 100 Gbps dual-polarized
			DQPSK signal," Optical fiber technology, Vol. 59, pp. 102323, 2020.
			5. Vishal Sharma, Surinder Singh, Sukhbir Singh and Quang Mingh NGO, " Design approach of all
			optical contention detection circuit" in Photonics-2018: International conference on Fiber optics
			and Photonics, December 2019
			6. Cam Thi Hong Hoang, Minh Quang Ngo, Dai Van Pham, Thanh Son Pham, Vinod Kumar Verma, Amit
			Kumar Shakya, Veerpalkaur, Sukhbir Singh, and Surinder Singh," Surface plasmon resonance sensor
			based on photnic crystal fiber covered with gold film," The 6th academic conference on natural
			science for young scientist, mastel and phd students from ASEAN countries. CASEAN-2019, 23rd-
			26th October 2019, Thai Nguyen, Vietnam.
			7. V. D. Pham, V. A. Nguyen, T. T. Hoang, T. H. C. Hoang, Q. M. Ngo and S. Singh, "A study on the
	1		whispering-gallery-mode lasers in Er3+-doped silica glass microspheres and its integrated with SOI
			slotted photonic crystal waveguides," 2020 Opto-Electronics and Communications Conference
			(OECC), 2020, pp. 1-4, doi: 10.1109/OECC48412.2020.9273714.
			Exchange visits:
10	21 <sup>th</sup>		1. Dr. Quang Minh Ngo, AsP& PI, IMS, Hanoi, Vietnam has visited SLIET, Longowal from 17-07-2018 to
			30-07-2018 (14 Days) under ASEAN-India R&D project.
			2. Dr. Surinder Singh, Prof. (ECE) SLIET, Longowal has visited IMS, Hanoi, Vietnam from 03-12-2018 to
			16-12-2018 (14 Days) under ASEAN-India R&D project.
			3. Dr. Sukhbir Singh, JRF, has visited IMS, Hanoi, Vietnam from 25/09/2019 to 24/10/2-19 (30 Days)
			under ASEAN-India R&D project.
			4. Mr. Dai Van Pham has visited under the ASEAN-India Research and Training Fellowship (AIRTF) from
			01 June 2019 to 30 November 2019.
11	Threatlandscape Cyber	15.06.2018	> 09 Student were selected and trained by the company in the field of Cyber security.
	Solutions Pvt. Ltd.		Following projects were executed under MoU.
	Banglore		Wazuh Ruleset for Security Monitoring
			Services configuration
	8 8		<ul> <li>Aggregation and parsing Threat Intel feeds</li> </ul>
			0/

			4
12	National Institute of Technology (NIT), Agartala, Tripura	16.02.2018	<ul> <li>Micro services Dockerization</li> <li>Security Monitoring with ELK stack</li> <li>Threat detection model testing</li> <li>Other activities conducted under MoU for the selected students.</li> <li>Introduction to Python</li> <li>Introduction to Network security</li> <li>Students were absorbed in the Threatlandscape Cyber Solutions Pvt. Ltd. company.</li> <li>Research and Development Activities</li> <li>Expert Lectures</li> <li>Computation of design-related engineering properties and fracture resistance of plum (Prunus domestica L.) kernels to compressive loading by MohdAaib Sheikh, Charanjiv Singh Saini, Harish</li> </ul>
			<ul> <li>Kumar Sharma</li> <li>Analyzing the effects of hydrothermal treatment on antinutritional factor content of plum kernel grits by using response surface methodology by MohdAaqib Sheikh, Charanjiv Singh Saini, Harish Kumar Sharma</li> </ul>
13	CSIR- Central Electronics Engineering Research Institute, Pilani	09.09.2017	Research activities are carried out jointly. Er. J.S Kalsi is associated with the research guidance and training programs.
14	Semi-Conductor Laboratory, Department of Space, Gol, SAS Nagar	28.10.2015	(2015-16) <ol> <li>Prof. J S Ubhi has undergone Internship on CMOS Design and Process Technology, Semi-Conductor Laboratory (SCL), Mohali from December 21, 2015 to January 4, 2016.</li> <li>Prof. J S Ubhi has undergone Internship on CMOS Process Integration and Fabrication Techniques, Semi-Conductor Laboratory (SCL), Mohali from June 06, 2016 to July 05, 2016.         <ul> <li>(2016-17)</li> <li>Ms. Rajdevinder Kaur (PEC 1603), Research Scholar undergone 4 to 6 weeks industrial training in SCL, SAS Nagar during June/July 2017.</li></ul></li></ol>
		а 	Laboratory (SCL), SAS Nagar, Mohali • Er. Ashutosh Yadav, Sci/Engr 'E'; Semi-Conductor Laboratory (SCL), SAS Nagar, Mohali • Er. Rajesh Srivastava, Sci/Engr 'D'; Semi-Conductor Laboratory (SCL), SAS Nagar, Mohali.

	(2018-19)
	5) Mr. Mukesh Kumar, Research scholar (ECE) visited SCL, Mohali for his Ph.D. work from 09/10/2019
	to 01/11/2019 for the purpose of using laboratory facility and discussions related to research activity.
	6) Er. H S Jatana, Group Head-DPG, SCL Mohali, Chandigarh delivered experts talks on November 8th,
5	2019, on following topics during STC on "Nanoelectronics & VLSI: Devices, Circuits & Systems"
<i>2</i>	organized from Nov. 4-8, 2019 under twinning activities with NIT, Srinagar Garhwal:
10 A A A A A A A A A A A A A A A A A A A	<ul> <li>Analog Design-Front end and</li> </ul>
	Challenges & Issues in design of SOCs 8-11-2019
	(2020-21)
	7) Prof. J S Ubhi and Mr. Mukesh Kumar has published following SCI paper with Scientists from SCL,
	Mohali
14	• Mukesh Kumar, Jagpal Singh Ubhi, Sanjeev Basra, Anuj Chawla, H.S. Jatana, "Total ionizing dose
	hardness analysis of transistors in commercial 180 nm CMOS technology" Microelectronics Journal,
	Volume 115, 105182, 2021 (Impact factor 1.605)
	(2022-23)
	8) Expert talk on "Recent Trends Semiconductors and Electronics" held on 24.01.2023 during 9.30am
	11.30am by Er. HS Jatana Ex Scientist G, Semiconductor Complex Laboratory, Mohali for Faculty, staff
	and students of UG/PG/PhD program.

17.

अस्कुल सचिव (प्रशासन) Deputy Registrar (Admn.) संस लौगोवाल अभियांत्रिकी एवं प्रौद्योगिकी संस्थान, Sant longowal Institute of Engg. & Tech Sant longowal Institute of Engg. & Tech Longowal, Dist. Sangrur (Pb.) कुल-सचिव / REGISTRAR स्लाईट लॉगोवाल/SLIET LONOWAL