

S3T 2026 – Inaugural Session

Programme Schedule

Date: April 07, 2026

Time: 09:00 AM – 10:00 AM

Venue: TCC Seminar Hall

Inauguration Programme

Time	Activity
08:30- 09:00 AM	Registration
09:00 – 09:05 AM	Welcome Address – by <i>Dr. Chahat Jain</i>
09:05 – 09:10 AM	About the Congress – by <i>Dr. Yuvraj Singh</i>
09:10 – 09:20 AM	Student Presentation on <i>Sustainability in Construction</i>
09:20 – 09:25 AM	Felicitation Ceremony
09:25 – 09:30 AM	Address by Principal
09:30 – 09:35 AM	Vote of Thanks – by <i>Dr. Arvind Dhingra</i>
09:35 – 09:40 AM	National Anthem
09:40 – 10:00 AM	High Tea

Note

- Technical sessions will commence from **10:00 AM onwards**.

Session Schedule

Track 1: Civil Engineering

Theme: Sustainable Infrastructure & Resilient Built Environment

Session: 01

Date: April 07, 2026

Venue: TCC Seminar Hall

Time	Paper ID	Title of Paper	Author(s)	Affiliation	Mode (Offline/ Online)
10:30 – 10:40	103	Self-Sensing Concrete: A Review of Piezoelectric Materials	Maskeenjot Kaur, Harman Singh, Gaurvi Verma, Dilpreet Singh, Harvinder Singh*	GNDEC, Ludhiana	Offline
10:40 – 10:50	105	Influence of concrete softening on structural performance of RC structures	Gurnoor Singh, Pushpinder Singh*	GNDEC, Ludhiana	Offline
10:50 – 11:00	106	Structural Health Monitoring of Corroded RC Beams For Residual Strength Assessment	Manpreet Singh Bains, Yuvraj Singh*, Harvinder Singh*	GNDEC, Ludhiana	Offline
11:00 – 11:10	110	Flexural performance of alkali-activated concrete in reinforced member under corrosive environment	Arshdeep Kaur, Prabhjot Singh*	GNDEC, Ludhiana	Offline
11:10 – 11:20	111	A Review on the Use of Industrial and Agricultural Waste as Replacement Materials in Grouts for Semi-Flexible Pavements	Shishir Chore, Jagbir Singh*	GNDEC, Ludhiana	Offline
11:20 – 11:30	112	Net-Zero and Net-Positive Building Materials for Mass Housing: A Life Cycle Assessment	Sneha Rani, Raushan Kumar, Manvinder Kingra*, Yuvraj Singh*	GNDEC, Ludhiana	Offline
11:30 – 11:40	117	Barriers to Adoption of Building Information Modelling in Developing Countries: A Review	Khushpreet Kaur, Mandeep Kaur*	GNDEC, Ludhiana	Offline
11:40 – 11:50	118	Experimental Investigation Metakaolin Incorporation on the	Sukhvir Singh, Gurnoor Singh,	GNDEC, Ludhiana	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

		Performance of Recycled Aggregate Concrete	Sukhwinder Singh*		
11:50 – 12:00	119	Finite element study on the shear response of shallow beams in stiffened RC slabs	Pushpinder Singh , Harvinder Singh*	GNDEC, Ludhiana	Offline
12:00 – 12:10	120	Corrosion Assessment in Reinforced Concrete Structures: A Scoping Review	Charnjeet Singh , Harvinder Singh*, Jagbir Singh*	IKG PTU, Kapurthala	Offline
12:10 – 12:20	124	IoT and AI-Enabled Structural Health Monitoring of RC Structures Using Smart Sensor Networks	Chanpreet Kaur , Arshdeep Singh , Gurpurneet Kaur*, Chahat Jain*, Yuvraj Singh*	GNDEC, Ludhiana	Offline
12:30 onwards	Valedictory session (Track 1, Venue - TCC Hall)				

*Faculty

Guidelines

- Each presentation: **8 minutes + 2 minutes discussion**
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- Only registered authors will be eligible to receive the presentation certificate & author kit

For queries regarding Track 1, please contact:

Dr Yuvraj Singh (CE), Convenor

Session Schedule

Track 1: Civil Engineering

Theme: Sustainable Infrastructure & Resilient Built Environment

Session: 02

Date: April 07, 2026

Venue: Room G1

Time	Pap er ID	Title of Paper	Author(s)	Affiliation	Mode (Offline/ Online)
10:30 – 10:40	101	Soil Subgrade Improvement Using Waste Plastic Materials :A Review	Abhinav Kumar, Varinder Singh*	GNDEC, Ludhiana	Offline
10:40 – 10:50	102	Sustainable Stabilization of Expansive Subgrade Soils Using Rice Husk Ash and POP Waste	Tushar Gupta, Prashant Garg*	GNDEC, Ludhiana	Offline
10:50 – 11:00	113	Comparative Cost Analysis of Clay Brick and ARC Block Masonry with Cement and ARC Mortars	Arshdeep Kaur, Yuvraj Singh*, Harvinder Singh*	GNDEC, Ludhiana	Offline
11:00 – 11:10	104	Smart cities: using technology to improve urban life	Aditi Verma, Gurmeet Singh*	GCOG, Ludhiana	Offline
11:10 – 11:20	107	Upgradation of Conventional Activated Sludge Process With Anoxic-Aerobic MBBR for Treatment of Dairy Wastewater	Harmanjot Singh, Avneet Kaur*, Puneet Pal Singh Cheema*	GNDEC, Ludhiana	Offline
11:20 – 11:30	108	Assessment of Horizontal Subsurface Flow Constructed Wetland with Polyculture and Monoculture Vegetation for Rural Wastewater	Hardeep Singh, Puneet Pal Singh Cheema*, Sukhwinderpal Singh*	GNDEC, Ludhiana	Offline
11:30 – 11:40	109	Review on solid waste assessment and management in educational institutes to achieve zero waste campus	Rajveer Singh Souravpreet Singh , Balihar Singh*	GNDEC, Ludhiana	Offline
11:40 – 11:50	114	Slope Stability	Pawanpreet Singh, Raghav Sharma,	GNDEC, Ludhiana	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

			Pardeep Singh Joia*		
11:50 – 12:00	116	Sustainable vs. Conventional Construction: A Critical Review of Environmental, Economic, and Social Performance	Vatanveer Singh, Zorawar Singh, Tanveer Singh, Pardeep Singh Joia*	GNDEC, Ludhiana	Offline
12:00 – 12:10	122	Soil Stabilization Using Ground Granulated Blast Furnace Slag and Sugarcane Bagasse Ash	Harshpreet Kaur, Amandeep Singh*	GNDEC, Ludhiana	Offline
12:10 – 12:20	123	Comparative Analysis of Energy and Water Efficiency in Conventional and Green Residential Buildings	Uzair Nazir Sheikh, Vikrant Bansal, Yeshmeen Kaur, Pardeep Singh Joia*	GNDEC, Ludhiana	Offline
12:20 – 12:30	121	Earthquake resistant building construction : A Review	Harshdeep Verma, Balihar Singh*	GNDEC, Ludhiana	Offline
12:30 onwards	Valedictory session (Track 1, Venue - TCC Hall)				

**Faculty*

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For queries regarding Track 1, please contact:

Dr Yuvraj Singh (CE), Convenor

Session Schedule

Track 2: Electrical Engineering
Theme: Sustainable Infrastructure & Resilient Built Environment

Session: 01

Date: April 07, 2026

Venue: Computational Laboratory, Electrical Department

Time	Paper ID	Title of Paper	Author(s)	Affiliation	Mode (Offline/Online)
10:30 – 10:40	EE201	Challenges in integration of distributed generation sources with conventional power grid	Palak, Manjot Kaur, Dr.Mandeep Kaur*	GNDEC	Offline
10:40 – 10:50	EE206	IoT-Based Smart Energy Metering Systems: A Review of Design, Implementation, and Applications	Khushi Sehgal ; Diksha ; Gursimran Kaur, Dr. Kanwardeep Singh*, Dr. Mandeep Kaur*	GNDEC	Offline
10.50-11.00	EE207	Harnessing Synergy: AI driven Renewable Energy Integtration in Smart Grids for Viksit Bharat	Gursimran Singh, Mayank, Pf.Ashish Kumar*, Dr. Dharminder Singh*, Pf.Amarjeet Kumar*, Pf.Ramesh Kumar Jha*	GGI, Khanna	Offline
11.00-11.10	EE210	Large scale empirical study of electric vehicle usage pattern and	Ekamjot Kaur, Dr.Arvind Dhingra*	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

		charging infrastructure needs			
11.10-11.20	EE208	Market-Based Methods for Transmission Congestion Management	Ajayveer Singh Bansal , Pf.Arshdeep Kaur*, Dr.Kanwardeep Singh*	GNDEC	Offline
11.20-11.30	EE204	Superconducting magnetic energy storage system	Simranpreet Kaur , Pf. Kuldeep Kooner, Pf. Arshdeep Kaur*	GNDEC	Offline
11.30-11.40	EE203	Impact of Electric Vehicle Integration on Power Quality in Modern Power Systems: A Comprehensive Review	Khushi Sehgal; Diksha; Gursimran Kaur , Dr.Arvind Dhingra*, Er.Sukhpal Singh*	GNDEC	Offline
11.40-11.50	EE202	Comparative life cycle environmental and economic assessment of advanced power train technologies (engine downsizing, hybrid vehicles and electric vehicles)	Eveneet Kaur Gurpuneet Singh , Dr.Ranvir Kaur*	GNDEC	Offline
11.50-12.00	EE211	Integration of Distributed Generation in Modern Power System Restructuring: A Review	Shubham , Dr. Kanwardeep Singh*, Er.Arshdeep Kaur*	GNDEC	Offline

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For queries regarding Track 2, please contact:

Dr Arvind Dhingra (EE), Convenor

Session Schedule

Track 3: Electronics and Communication Engineering
Theme: Future-Ready Electronics: AI, IoT & 6G for Sustainable Innovation

Session: 01

Date: April 07, 2026

Venue: EDA Laboratory, ECE Department

Time	Paper ID	Title of Paper	Author(s)	Affiliation	Mode (Offline /Online)
10:30 am– 12:30 pm	EC301	Role of AI in Electronics	Nandini Bansal, Simranjit Kaur*	GNDEC	Offline
	EC302	6G Communication : Shaping the Future of Next Generation Wireless Networks	Harmanpreet Kaur, Nikita, Jashandeep Kaur, Gurjot Kaur Walia*	GNDEC	Offline
	EC303	Social Engineering in Digital Payment Frauds: Attack Patterns, Psychological Mechanisms, and Prevention Strategies	Sonu Tiwari, Gaurav Kumar, Harminder Kaur*, Harleen Kaur*	GNDEC	Offline
	EC304	AI in drones	Mannat Sidhu, Simranjit Kaur*, Gurjot KaurWalia*	GNDEC	Offline
	EC307	Sustainable and green electronics for future ready systems	Diya Sharma, Harminder Kaur Aulakh*, Harleen Kaur*	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

	EC308	The convergence of Embedded System and Iot	Mohhamad Aftab , Gurpurneet Kaur*	GNDEC	Offline
	EC309	Integration of Internet of Things (IoT) and Artificial Intelligence for Smart and Sustainable Applications	Prince Kumar , Gurpurneet Kaur*	GNDEC	Offline
10:30 am–12:30 pm	EC310	FinFET Technology: Design, Advantages, Challenges, and Applications: A Review	Harshdeep Singh Bhagrath , Gursimran Singh, Gurpurneet Kaur*	GNDEC	Offline
	EC311	Silicon Photonic Integrated Circuits for Next-Generation 6G Communication Systems a Review"	Harshdeep Singh Bhagrath , Akashdeep Singh, Harshdeep Singh , GurpurneetKaur*	GNDEC	Offline
	EC313	FinFET-Based Biosensors for Low-Power and High-Sensitivity Biomedical Applications"	Kriday Beri , Harshdeep Singh Bhagrath, Gurjot KaurWalia*, Gurpurneet Kaur*	GNDEC	Offline
	EC315	Towards Sustainable Electronics: A Review of Green Materials and Low-Energy	Nayamat Manra , Rahul Kumar Yadav , Gurpurneet Kaur*, Chahat Jain*	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

		Design Approaches			
EC317	Advances at the Intersection of VLSI Design and Nanoelectronics: Challenges, Emerging Technologies, and Future Directions	Sonu Tiwari , Gaurav Kumar, Harleen Kaur*	GNDEC	Offline	
EC318	Smart Transport System	Ritik Raushan , Gurburneet Kaur*	GNDEC	Offline	
EC319	Artificial Intelligence and Machine Learning for Smart Energy Management in IoT-Enabled Sustainable Systems	Jasleen Kaur , Harleen Kaur*, Harminder Kaur*	GNDEC	Offline	
EC322	Self-Powered AIOT Systems Using Energy Harvesting Electronics	Pranav Jain , Chahat Jain*	GNDEC	Offline	
EC323	A Review of Medical Imaging Systems with Insights from an Industrial Visit to Allengers	Biplove Bhumbla , Gurburneet Kaur*	GNDEC	Offline	
EC324	Performance Optimization of CMOS Circuits through Strategic Power and Delay Trade-off Analysis	Ritik Raushan , Gurburneet Kaur*	GNDEC	Offline	

Track 3: Electronics and Communication Engineering

Theme: Future-Ready Electronics: AI, IoT& 6G for Sustainable Innovation

Session: 02

Date: April 07, 2026

Venue: Mechanical Seminar Hall

Time	Paper ID	Title of Paper	Author(s)	Affiliation	Mode (Offline/ Online)
10:30 am– 12:30 pm	EC325	AI-Driven Adaptive : Traffic Signal Automation	Krishan Kumar, Gurunaamdeep kaur, Harpreet Kaur, Mauli Sehgal, Gurpurneet Kaur*	GNDEC	Offline
	EC326	Role of Biomedical Electronics In Modern Mammography Systems For Breast Cancer Detection	Harsimran Kaur Bhatti, Anas Abbas, Gurleen Kaur*	GNDEC	Offline
	EC327	Remote Care Monitor	Jashanpreet Singh, Harleen Kaur, Munish Rattan*, Gurpurneet Kaur*	GNDEC	Offline
	EC328	Artificial Intelligence and Machine Learning for Sustainable Electronics: A Review of Design, Efficiency, and Reliability	Gurpuneet Singh Hunjan, Gurnoor Kaur, Somiya Dutt, Eveneet Kaur, Chahat Jain*	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

	EC330	AIoT Convergence: Pioneering Future-Ready Electronics for Smart Cities	Simranjeet Singh, Gursimran Singh	GGI, Khanna	Offline
	EC331	Smart Driver Safety: AI, ML and IoT-Based Drowsiness Detection System.	Raghav Sharma, Gurpurneet Kaur*	GNDEC	Offline
10:30 am– 12:30 pm	EC332	A Review on Various Edge Detection Methods used in Digital Image Processing for Feature Detection and Extraction	Gurpreet Singh*, Harsimran Kaur*, Sacred Samiyos Kagore, Blessing Chindowa	GGI, Khanna	Offline
	EC333	Alcohol Detection & Anti Sleep Alert Electronic Ignition System for Vehicles using Arduino	Kulwinder Singh*, Dharminder Singh*, Md. Al Imran, Sahib Kumar Dey	GGI, Khanna	Offline
	EC334	Role of Artificial intelligence and Machine learning in smart electronics system -A Review	Jasjit Kaur, Amanpreet Singh*, Priyanka Arora*	GNDEC	Offline
	EC335	A Smart Web-Based Mental Wellness Monitoring Platform Using MERN Stack Technologies	Navpreet Kaur, Navneet Saini, Neha Mehta	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
 Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

EC336	Reconfigurable Intelligent Surfaces for 6G Wireless Communication System	Kanwaljeet Singh, Nirbhey Singh, Harminder Kaur Aulakh*	GNDEC	Offline
EC337	The Quantization Paradox: Evaluating Hardware-in-the-Loop Vulnerabilities to Conditioned Backdoors in TinyML Edge Devices	Sifti Grover, Parkhi Gupta, Jagdeep Kaur	GNDEC	Offline
EC338	Emerging ICT and Smart Networks: A Comprehensive Review	Gurpuneet Singh Hunjan, Gurnoor Kaur, Chahat Jain*	GNDEC	Offline
EC339	Artificial Intelligence-Based Collision Detection and Prediction System for Road Safety	Ankit Kumar, Preeti Pannu*	GNDEC	Offline
EC340	Salesforce Development: Building Smart Solutions with Identity	Gautam Kumar, Preeti Pannu*, Navneet Kaur*	GNDEC	Offline
EC341	Empowering Sustainable and Smart Technologies: The Convergence of IoT and Embedded Systems	Vishal Chaudhary, Sourav Kumar, Gurpuneet Singh, Chahat Jain*	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

10:30 am– 12:30 pm	EC343	Integration of RF and Optical Communication Technologies for 5G and 6G Networks	Gurjot Kaur , Gurjot Kaur Walia*, Gurpurneet Kaur*	GNDEC	Offline
	EC344	Energy-Latency Trade-Off Analysis of BLE and ZigBee in Smart Home IoT Systems	Navneet Singh Grewal, Gurpurneet Kaur*, Chahat Jain*	GNDEC	Offline
	EC345	Artificial Intelligence and Machine Learning in Electronics	Abhijeet Singh Aryan Hatta Taranjot Singh, Harminder Kaur*, Navneet Kaur*	GNDEC	Offline

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For queries regarding Track 3, please contact:

Dr Gurpurneet Kaur (ECE), Convenor

Dr.Chahat Jain (ECE), Convenor

Session Schedule

Track 4: Mechanical and Production Engineering
Theme: Smart Manufacturing and Smart Sustainable Mechanical Systems

Session: 04

Date: April 07, 2026

Venue: CML Hall

Time	Paper ID	Title of Paper	Author(s)	Affiliation	Mode (Offline/Online)
10:30 am– 12:30 pm	ME4 01	Design and Development of a UAV-Based Thermal Monitoring System for Structural Inspection of Elevated Infrastructure	Aditya Vashisht, Satjot Singh Dhillon	GNDEC	Offline
	ME4 02	Development of microwave-processed metal ceramic clads on SS-304	Aditya Singh, Palak, Jaskirat Singh, Gaganpreet Singh, Debasish Mahata, Jatinder Pal	GNDEC	Offline
	ME4 03	Fabrication and characterisation of stainless-steel based microwave-processed cast	Aditya Singh, Palak, Japneesh Singh, Jaskirat Singh, Gurjit Singh, Jatinder Pal	GNDEC	Offline
	ME4 04	Design & Fabrication of solar heat collector for water heating	Manik Jain, Inderjot singh rupal, Jagmeet Singh, Jatinder Pal	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

	ME4 05	Parametric optimization and analysis of dry sliding wear of stainless-steel based microwave processed composite using Taguchi approach	Manwinder Singh, ,Palak, Madhav Thakur, Jatinder Pal	GNDEC	Offline
10:30 am– 12:30 pm	ME 409	Sustainable Robotics: Green Manufacturing Practices for Industry 5.0	Ayush Belwal, Rohit Kumar Ashish Kumar Bhateja, Amarjeet Kumar, Kanwar Jabar Singh Gill, Ramesh Kumar Jha	Gulzar Group of Instituti ons, Ludhiana	Offline
	ME4 10	Agricultural Solar Automated Rotation: An Internet of Things-Based Solar Tracking System for Improved Energy Harvesting in Agricultural Applications	Kashish Gujral, Raman Kumar, Swapandeep Kaur	GNDEC	Offline
	ME4 11	Applications of Artificial Intelligence in Astrophysical Data Analysis: A Review	Balkaran Singh, Chamkaur Jindal	GNDEC	Offline
	ME4 12	Development, Fabrication and Assembly of Hub Knuckle for a BAJA SAE Off-Road Vehicle	PranavSaggar	GNDEC	Offline

National Student Congress on Smart & Sustainable Technologies (S3T-2026)
Guru Nanak Dev Engineering College, Ludhiana | April 7–8, 2026

	ME4 13	Transition from Industry 4.0 to Industry 5.0: Artificial Intelligence, Cyber-Physical Systems, and Human-Centric Smart Manufacturing	Parminder Kaur, Rajbir Kaur , Raman Kumar, RupinderKaur, Arshpreet Kaur	GNDEC	Offline
	ME4 14	AI-Based Waste Classification and Disposal Recommendation System Using EfficientNetB0 with a Conceptual Framework for Automated Waste Sorting	Komalpreet Kaur , Raman Kumar	GNDEC	Offline

For queries regarding Track 4, please contact:

Dr Raman Kumar (ME), Convenor