SDG 9: Industry, Innovation and Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

INTRODUCTION

Infrastructure, industry and innovation

Sustainable Development Goal 9 asks countries and institutions to build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation. Its premise is simple: reliable infrastructure, productive and cleaner industry, and a strong base of research and technology are the foundations on which economic growth, decent jobs and wellbeing rest. The goal also stresses that access to knowledge, technology and enterprise should widen over time rather than stay concentrated in a few places.

SRM University-AP follows these principles through the places where innovation happens: its laboratories, shared research instrumentation and engineering departments, and its links with industry, public agencies and start-up support. Research is carried out with attention to practical use, students meet industry practice through guest lectures, workshops and visits, and the incubation ecosystem helps turn ideas into ventures. In principle, teaching, research and enterprise are treated as one connected pipeline for innovation, and the sections that follow show how that approach is reflected in the University's records.

A. Resilient infrastructure

Quality, reliable and sustainable facilities, with equitable access to them.

B. Inclusive and sustainable industrialisation

Productive, resource-efficient and cleaner industry that creates opportunity.

C. Innovation

Stronger research capability, technology development and enterprise.

HOW THE UNIVERSITY CONTRIBUTES

Research and laboratories: funded research, shared instruments and centres that give researchers the tools to work on real problems.

Industry and public linkages: agreements, guest lectures and joint work with companies, laboratories and government departments.

Entrepreneurship and incubation: mentoring, funding routes and recognition for student, staff and external founders.

HIGHLIGHTS



WHAT THE NUMBERS SHOW

Research that attracts funders. SRM-AP ran 21 sponsored projects and 13 consultancy assignments in FY 2024–25, which shows that external agencies and companies back its research.

Shared facilities. 20 new central instrumentation facilities were added, which widens access to advanced characterisation equipment for researchers across departments.

Open to industry. 16 research and industry agreements and 65 mapped events keep laboratories and classrooms connected to practitioners.

Research that is read. 208 SDG 9-tagged publications, 102 of them cited above the world average for comparable work, show research output that reaches beyond the campus.

Ideas to ventures. 8 incubated start-ups are mapped primarily to SDG 9, working in areas such as nano-materials, AR/AI and manufacturing.

RESEARCH AND INNOVATION

Funded research and consultancy

In FY 2024–25 the University held **16 sponsored projects from government agencies** and **5 from non-government funders**. SRM-AP also carried out **13 consultancy projects**, which supports applied research that answers industry needs.

Alongside external funding, the University's own seed and general research funding accepted all **104 applications** received from 13 departments, which provides internal support for early-stage research.

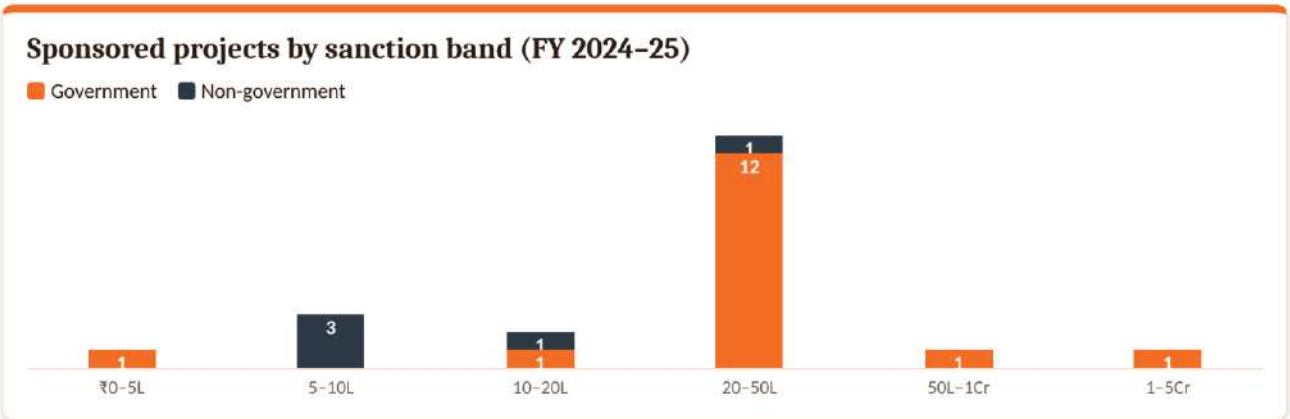
Among the research outputs counted by the Dean–Research office, **75 publications involved industry collaboration**.

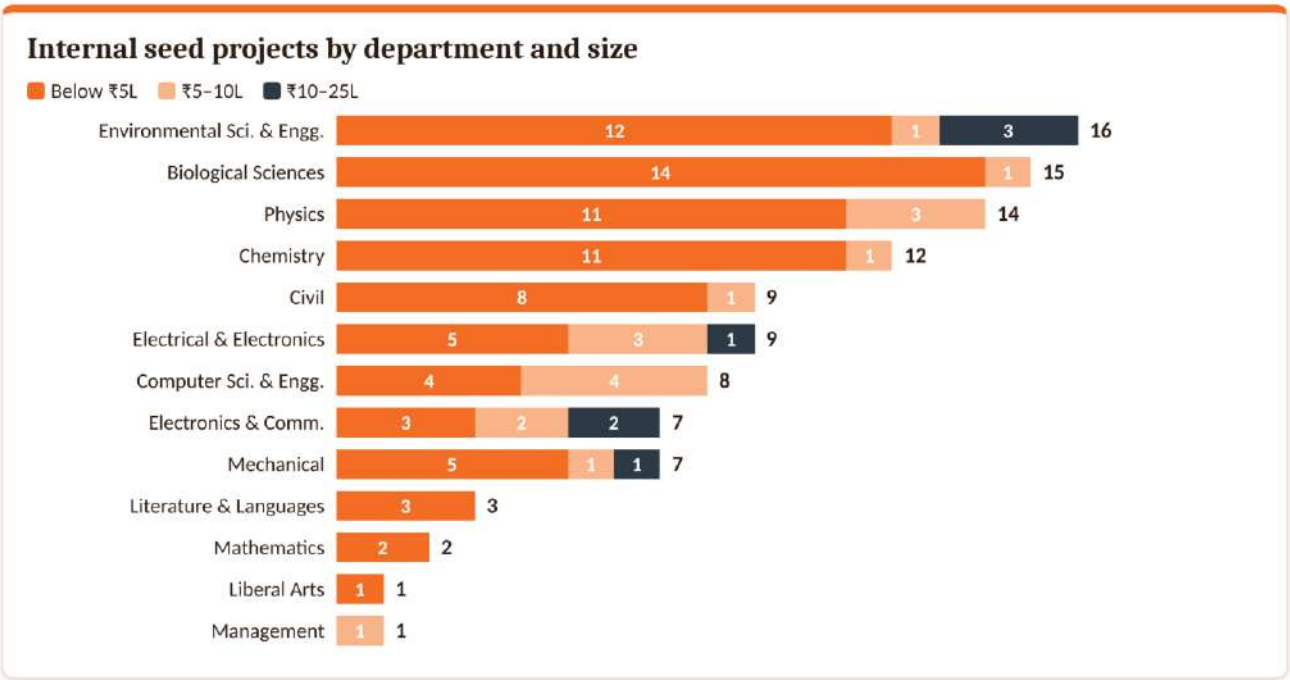
16
government-sponsored projects
FY 2024–25

5
non-government-sponsored projects
FY 2024–25

13
consultancy projects
FY 2024–25

104
seed-funded projects
104 of 104 applications accepted





Projects were sponsored by both government and non-government funders, so research does not depend on a single source. Seed funding reached 13 departments, and 79 of the 104 sanctioned projects were below ₹5 lakh, so support was spread widely across the University.

INDUSTRY AND RESEARCH LINKAGES

Agreements with industry and public bodies

SRM-AP signed **16 research and industry agreements** between August 2024 and June 2025 that relate directly to SDG 9. They span 15 organisations, from national laboratories and a state government department to technology companies, and they support shared research, industry exposure and innovation support.



MATERIALS, METALS AND ENERGY MATERIALS

- **CSIR–NAL** — Research collaboration on corrosion-protective coatings (Aug 2024)
- **Hindalco Industries Ltd** — Confidentiality agreement for business discussions and information exchange (Sep 2024)
- **Central Metallurgical R&D Institute, Egypt** — Scientific and educational cooperation (Nov 2024)
- **Hydrogen Innovations Pte Ltd** — Materials research on catalyst development (Mar 2025)
- **Black Komodo Investments FZE** — Confidentiality agreement (Feb 2025) and R&D agreement (Jun 2025) on piezoelectric generators, tiles and materials

INFRASTRUCTURE AND TRANSPORT

- **Roads & Buildings Department, Govt. of Andhra Pradesh** — Pavement engineering research, internships, guest lectures and workshops (Sep 2024)

ELECTRONICS, COMPUTING AND AEROSPACE

- **Uniglobus Electricals & Electronics Pvt Ltd** — Research in electrical and electronics engineering (Nov 2024)
- **Nanochip Skills Pvt Ltd** — Confidentiality agreement to explore business and research opportunities (Nov 2024)
- **Adaxon Pte Ltd and Next Tech Lab (SRM-AP)** — Web3, generative AI, federated learning and IoT applications (Jan 2025)
- **Efftronics Systems Pvt Ltd, Mangalagiri** — R&D, laboratories, curriculum and certification programmes (Jan 2025)
- **Vayudhwajai-M Aerospace Pvt Ltd** — Drone technology research, funding and awareness programmes (Feb 2025)
- **Microsoft Student Community and Purple Technologies** — Set-up of an advanced technical research lab, Singularity Lab (2025)
- **Blumin Software and Training Consultancy LLP** — Industry collaboration, innovation and professional development (Oct 2024)

INNOVATION AND ENTREPRENEURSHIP ECOSYSTEM

- **Hyderabad Impact Hub Pvt Ltd** — Social entrepreneurship ecosystem and innovation support (May 2025)
- **Chakra Dialogues Foundation** — Academic exchange, incubation, research and industry collaboration (May 2025)

RESEARCH CENTRES AND INFRASTRUCTURE

Shared facilities for advanced research

The Central Instrumentation Facility (CIF) is the University's shared platform for advanced research equipment. In FY 2024–25 it added **20 new facilities** with a total outlay of **₹4,63,07,469**, and a further **20 augmentations** of research infrastructure were recorded. This supports researchers across departments who need characterisation and analysis tools that no single laboratory could justify alone.

Income of **₹68,912** was recorded through CIF and the I-STEM portal during the year, a sign that the equipment is in active use.

Seven Centres of Excellence submitted reports on their salient features, activities and achievements for the year, and **₹50,53,200** was sanctioned to them.

20
new CIF facilities added
FY 2024–25

₹4,63,07,469
outlay on new CIF facilities
FY 2024–25

20
research-infrastructure augmentations
FY 2024–25

₹68,912
earned through CIF / I-STEM
FY 2024–25

7
Centres of Excellence reporting
FY 2024–25

₹50,53,200
sanctioned to Centres of Excellence
FY 2024–25

INSTRUMENT TRAINING AND USER MEETS, 2024–25

13 Sep 2024	AMPTS III instrument demonstration
9 Jan 2025	Familiarisation workshop on powder X-ray diffraction equipment
12 Feb 2025	ICP-OES training
7 Mar 2025	I-STEM online meeting with instrument responsible persons, operators and users
20 May 2025	Horiba FluoroLog instrument training
18–19 Jun 2025	Users' meet on X-ray diffraction technique
25–26 Jun 2025	Users' meet on NMR spectroscopy

EVENTS AND OUTREACH

Sixty-five SDG 9 events in a year

Between July 2024 and June 2025, departments recorded **65 events mapped to SDG 9**: guest lectures, technical events, workshops, conferences and training sessions that bring industry practice and current research into the classroom. They range from one-day talks to a five-day faculty development programme and international conferences.

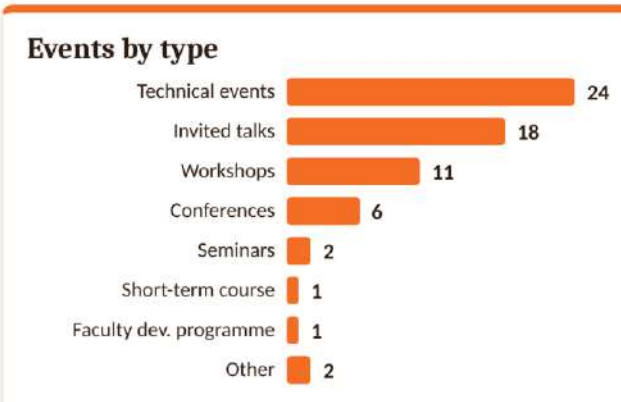
12 events received external funding, totalling **₹33,17,658**, which shows that outside organisations backed these activities. Civil Engineering, Physics, and Electronics and Communication Engineering were the most active hosts, and activity peaked in April 2025 with 12 events.

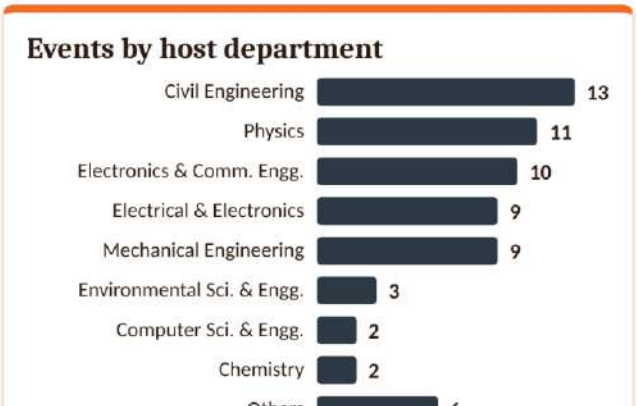
65
SDG 9-mapped department events
2 Jul 2024 – 26 Jun 2025

12
externally funded events

₹33,17,658
external funding received

6
conferences within the 65 events







FEATURED EVENTS

1st International Conference on Emerging Trends in Optical Technologies (ETOT-I)

2–4 January 2025 · Department of Physics
164 participants listed · 62 speakers · 101 oral and poster presentations

A three-day conference on optics, bringing together researchers and industry experts to discuss quantum optics, imaging, sensing and photonics applications. The conference had 121 external participants alongside 8 faculty, 10 PhD scholars, 5 PG and 20 UG students, and drew discussions on bidding for larger international events. External funding of ₹7,92,000 was received.



Conference poster listing the title, dates and venue of ETOT-I

1st International Conference on Emerging Computing (ICEC-2024)

23–25 November 2024 · Department of Electronics and Communication Engineering
906 paper submissions · 139 papers accepted · 7 keynote speakers

A conference on intelligent computing and communication technologies, covering AI-enabled computing, networking, next-generation computing, cybersecurity and quantum computing. Accepted papers were published in IEEE Xplore, and 16 papers were recognised as best papers.



Panel seated on stage beside a flower-garlanded lectern at the ICEC-2024 inaugural session



People seated in rows in a conference hall

OCIT-2024: 22nd OITS International Conference on Information Technology

12–14 December 2024 · Department of Electronics and Communication Engineering
600 paper submissions · 136 papers accepted · 12 best papers

A three-day conference on information technology, from artificial intelligence and machine learning to advanced networking and quantum computing, with seven keynote talks and a platinum sponsorship from CCC Digital India. Accepted papers were published in IEEE Xplore.



People standing in a meeting room with a presentation screen behind them



Group photograph of participants and organisers in a seminar room

ECE Open House Day 2025: From Microchips to Megatrends

23 April 2025 · Department of Electronics and Communication Engineering
291 participants · 150+ student projects on display · 4 industry and academic guests

A showcase of capstone, undergraduate research and postgraduate projects in electronics and communication engineering, with evaluation and feedback from experts of IBM Research, Mphasis, Efftronics and IETE, and an outreach programme for school students. Participants: 4 external, 35 faculty, 22 PG and 230 UG.



Event poster showing the key highlights, date and venue

Industry guest lecture on Distributed Control Systems

17 March 2025 · Department of Electronics and Communication Engineering
150 participants · 1 industry speaker

A guest lecture by a business development manager of Rockwell Automation on decentralised control architectures, communication protocols and uses such as smart grids and industrial automation. 148 undergraduate students and 2 faculty members took part.



Speaker addressing the class in front of two display screens



Students seated in a tiered classroom

Atmanirbhar Bharat: Innovations in Lean Manufacturing for the Automotive Industry

16 April 2025 · Department of Mechanical Engineering
97 participants · 2 industry speakers

A one-day workshop on lean manufacturing, Industry 4.0 and sustainable practices in automotive production, led by speakers from industry, including Tata Elxsi. Students and faculty gained trend insights for curriculum and research, and the session opened routes to internships and projects.



A man in a silk shawl receiving a potted plant from a woman in front of the workshop screens



A man standing and speaking to a seated audience in a tiered classroom

STUDENT-FACING EVENTS

Two events run by the Directorate of Student Affairs drew large audiences. Together they recorded **6,557 participants** (3,537 at Techpreneur 2024 and 3,020 at National Space Day 2024), with Techpreneur putting **25 technical stalls** in front of students and visitors.

Techpreneur 2024

2 September 2024 · Directorate of Student Affairs
3,537 participants · 25 technical stalls · 2 guests of honour

A technical exposition in the Atrium with 25 stalls from Next Tech Lab, the Directorate of Entrepreneurship and Innovation and the research office. Projects shown included additive manufacturing, robotics, unmanned aerial vehicles, 6G radio-frequency design, solid-state batteries and hydrogen fuel cells, alongside start-up ventures. Guests included the co-founder of Infosys and the CEO of Swiggy.

Participants: 2 external, 20 faculty, 15 PhD scholars, 1,000 PG and 2,500 UG. Showcased areas also included edge AI, thermal management of electronics, smart indoor localisation, responsible e-waste management and reclamation of critical metals.



People gathered around a technical stall



Two people at a technical stall

National Space Day 2024: live telecast

23 August 2024 · Directorate of Student Affairs
3,020 participants

A live telecast titled “Touching Lives While Touching the Moon: India’s Space Saga”, shown in the APJ Abdul Kalam Auditorium to mark National Space Day. It reached about 3,000 students along with deans and heads of department, and students were encouraged to revisit the recording afterwards.

Participants: 20 faculty and 3,000 UG students. The session ran from 10:00 to 11:00 am.



Audience seated in a large auditorium



Large screen on the auditorium stage with the audience in front

PUBLICATIONS

SDG 9 research output, 2024–2025

SRM-AP has **208 publications** from SRM-AP under SDG 9, **88 from 2024** and **120 from 2025**. The mix of 89 journal articles, 44 review papers, 33 book chapters, 32 conference papers and 9 books shows research reaching beyond a single outlet type.

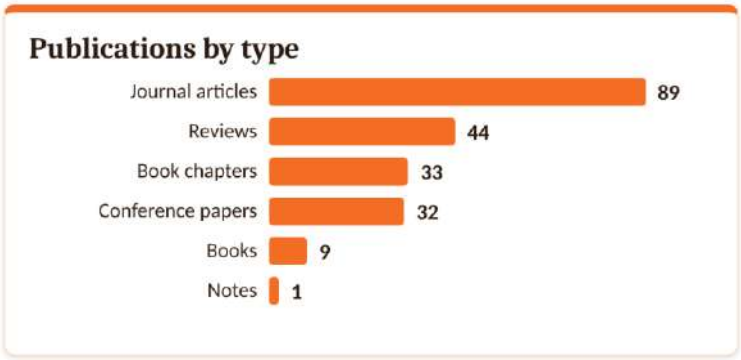
Field-weighted citation impact (FWCI) compares citations with the world average for similar work. **102 of the 208 publications score above 1.0**, and the average FWCI is 1.67, which indicates that a good share of this work is cited more than comparable papers worldwide.

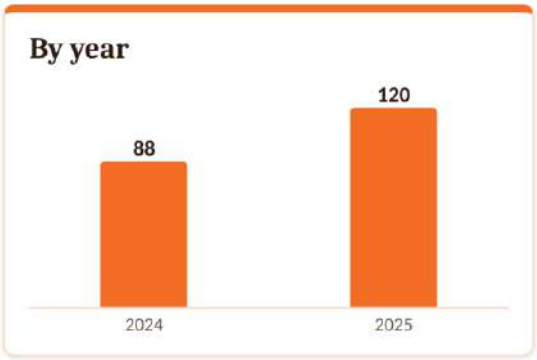
208
SDG 9-tagged publications
2024–2025

120
published in 2025
88 in 2024

102
with FWCI above 1.0
of 208 publications

1.67
average FWCI
across the 208





HIGHLY CITED PUBLICATIONS

Eight papers with high field-weighted citation impact on industrial IoT, smart manufacturing, intelligent transport, digital security and construction materials.

#	Title and authors	Year	Type	FWCI	DOI
1	**AI-Powered IoT: A Survey on Integrating Artificial Intelligence With IoT for Enhanced Security, Efficiency, and Smart Applications** Menon U, V. et al.	2025	Article	26.69	10.1109/ACCESS.2025.3551750
2	**Interoperability Between OPC-UA and MQTT in Hybrid Industrial IoT (IIoT) Environments** Guptha, V.D.P.S. et al.	2025	Conference paper	11.99	10.1109/COMSNETS63942.2025.10885710
3	**Environmental impact of concrete containing high volume fly ash and ground granulated blast furnace slag** Bhagath Singh, G.V.P. and Durga Prasad, V.	2024	Article	8.10	10.1016/j.jclepro.2024.141729
4	**TRSBi-YOLO: Transformer based lightweight and high-performance model for PCB defects detection** Ancha, V.K. et al.	2025	Article	7.48	10.1007/s11227-025-07771-0

#	Title and authors	Year	Type	FWCI	DOI
5	**DYNAMIC-TRUST: Blockchain-Enhanced Trust for Secure Vehicle Transitions in Intelligent Transport Systems** Surapaneni, P. et al.	2025	Article	4.54	10.1109/TITS.2025.3545755
6	**Decentralized Blockchain-Integrated IoT Framework for Enhancing Cybersecurity and End-to-End Trust in Data Transmission** Rajak, B. et al.	2025	Conference paper	4.86	10.1109/ICICNIS66685.2025.11315751
7	**Intelligent Industrial IoT: A Data-Driven Approach for Smart Manufacturing and Predictive Maintenance** Putteti, S. et al.	2025	Conference paper	4.36	10.1109/ICAISS61471.2025.11041978
8	**FSS-Based THz Electromagnetic (EM) Wave Absorbers: Principle, Design, and Applications** Kumar, A. and Bhardwaj, A.	2025	Book chapter	4.59	10.1007/978-3-031-78802-4_30

STARTUPS AND INNOVATION

Incubated ventures

Of the **30 start-ups** incubated in 2024–25, **8 are mapped primarily to SDG 9**. Five are led by external founders and three by students, and they work in nano-materials, manufacturing, blockchain and augmented-reality retail technology, which links the incubation ecosystem to industry and digital infrastructure.

Two of the eight received funding, a combined **₹3,50,000**. None reports patents filed or granted, or technology-transfer agreements.



Vascan Solutions Pvt Ltd
Retail tech · Student-led

In-store product search for retail. ₹3,00,000 MeitY TIDE 2.0 grant.

Incubation: Apr 2024 – Oct 2025

Opulent
Smart ring manufacturing · Student-led

Smart ring manufacturing. ₹50,000 Directorate of Entrepreneurship support.

Incubation: Apr 2024 – Apr 2025

109 Nano Composite Technologies Pvt Ltd
Nano technology · External founder

Nano-composite characterisation, synthesis and application services for industry and research bodies.

Incubation: May 2024 – Nov 2025

Tryneu Global Solutions (OPC) Pvt Ltd
Augmented reality · External founder

AI-based virtual dressing platform for e-commerce.

Incubation: Jul 2024 – Jul 2025

Vamsharaj Technologies Pvt Ltd
Augmented reality · External founder

AR and VR solutions for niche retail such as furniture, home décor and property visualisation.

Incubation: Oct 2024 – Oct 2025

Keloth Deeptech Pvt Ltd
AR / AI technology · External founder

Computer vision and machine learning for facial mapping and skin analysis with product recommendations.

Incubation: Oct 2024 – Oct 2025

Ironmen Technologies Pvt Ltd
Manufacturing · External founder

An automated ironing and folding machine.

Incubation: Dec 2025

TWO-LYP Computations
Blockchain · Student-led

Blockchain-based reward and engagement tools for creators.

Incubation: Mar 2025 – Mar 2026



INNOVATION ECOSYSTEM HIGHLIGHTS

- **3.5-star rating** for the University's Institute Innovation Council from the Ministry of Education.
- **Hatchlab Research Center**, a separate not-for-profit entity, reports 56 start-ups onboarded to date.
- **4 start-ups funded** (2 internal, 2 external) under the MeitY GENESIS EiR scheme, ₹5 lakh each.
- **Smart India Hackathon winner:** Team Ritorono (B.Tech CSE) won the software edition at IIT Jammu.

CONCLUSION

Progress across the innovation chain

The records in this section show an institution that supports SDG 9 across the whole innovation chain. Funded projects and consultancy engage external partners, shared instrumentation widens access to research tools, and agreements with laboratories, government departments and companies keep the work connected to practice. Events bring practitioners to campus, publications carry the research into the wider literature, and incubated start-ups are a route from ideas to ventures.