WIPO TISC CASE STUDY · INDIA · KARNATAKA

From awareness to patents: how Karnataka's TISC grew a network of 93 academic IP cells

The Technology and Innovation Support Centre at the Karnataka State Council for Science and Technology (KSCST) has taken intellectual property awareness to colleges and universities across the state. An audit of the network's complete patent portfolio, verified on the Indian Patent Office's own registers and set against WIPO and Indian Patent Office benchmarks, shows what that effort has achieved and where the next gains lie.

Dr. Sarasija Padmanabhan and Ms. Jyothi Sharma · Patent Information Centre and WIPO TISC, KSCST, Indian Institute of Science campus, Bengaluru · November 2026

THE NETWORK AT A GLANCE

93
institutional IP cells supported by KSCST

20 / 31
districts of Karnataka reached, in all four revenue divisions

1 in 8
of Karnataka's patent applications in 2024–25 came from an IP cell

35
institutions that filed their first patent only after joining

5,437
published applications, verified and attributed

202
patents granted, all verified on the Patent E-register

150
granted patents in force or within the renewal grace period

5th
among Indian academic filers in 2024–25, if counted as one network

A TISC that works through institutions

KSCST has run a state Patent Information Centre on the Indian Institute of Science campus since 2005 and became part of the WIPO TISC network in 2020, coordinated nationally by the Cell for IPR Promotion and Management (CIPAM). Rather than serving inventors one at a time, it helps colleges and universities to set up their own **IP cells**, trains their coordinators, and audits their activity.

Each IP cell becomes a local point of contact for faculty and students, multiplying the TISC's reach.

Awareness first

India's National IPR Policy (2016) puts awareness as its first objective and calls for IP cells in academic institutions. In 2020–21 alone the KSCST TISC helped set up 12 new IP cells and ran more than 50 webinars for over 4,500 participants; from April to November 2024 it ran 27 further programmes for more than 2,000 participants.

2005
Patent Information Centre opens at KSCST

2016
First IP cells; National IPR Policy

2020
PIC becomes a WIPO TISC; 29 IP cells

2022
58 IP cells

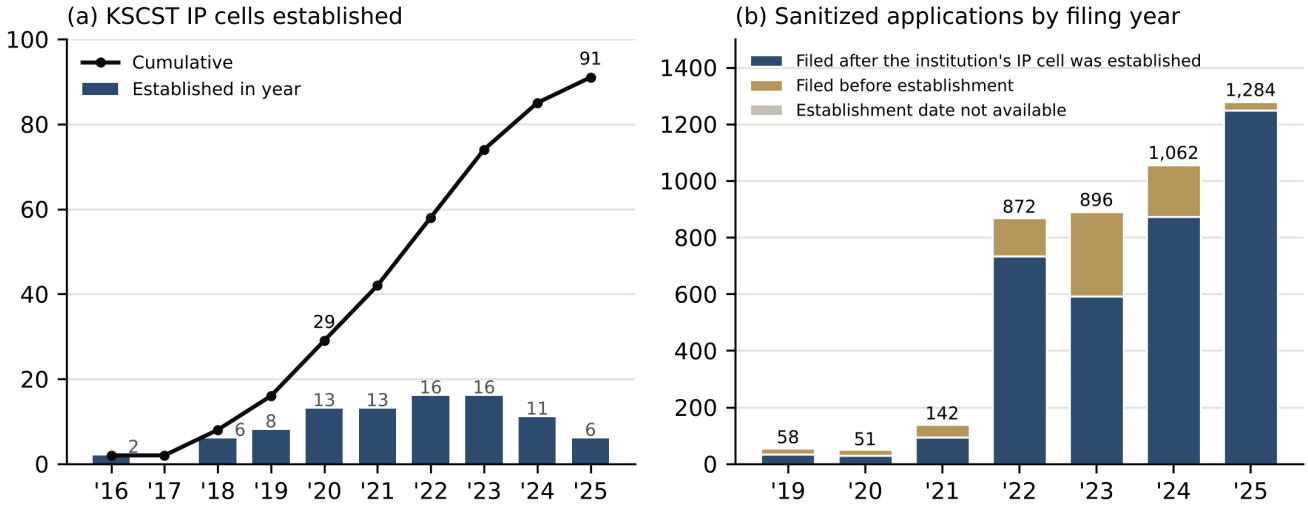
2025
91 dated IP cells; 1,284 filings a year

2026
Register-verified portfolio audit

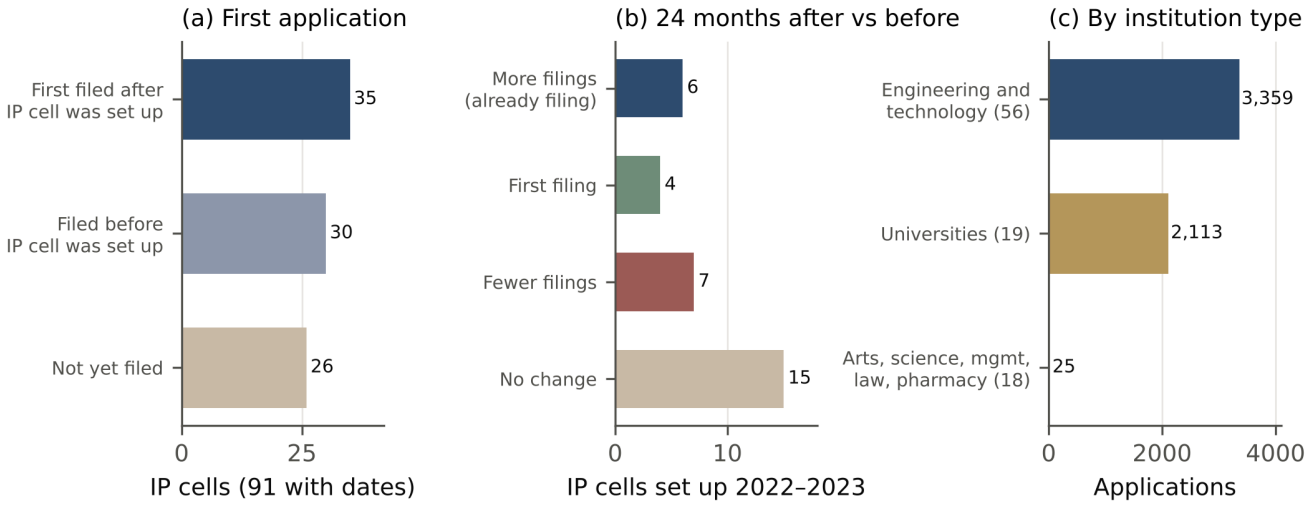
RESULT 1

Awareness turned into filing

The number of dated IP cells rose from two in 2016 to 29 by 2020, 58 by 2022 and 91 by 2025, with 13 to 16 new cells a year in 2020–2023. Applications from the network rose from 142 filed in 2021 to 872 in 2022 and 1,284 in 2025.



(a) IP cells established each year and in total (91 with known dates); (b) applications by filing year, split by whether they were filed after or before the applicant's IP cell was set up.



(a) Timing of each dated IP cell's first application; (b) IP cells set up in 2022–2023: filings in the 24 months after compared with the 24 months before; (c) applications by institution type (number of IP cells in parentheses).

New institutions entering the patent system

35 of the 65 dated IP cells with an application filed their first one only after their cell was set up, a median of 23 months later. 86% of applications attributed to dated cells were filed after the cell was established.

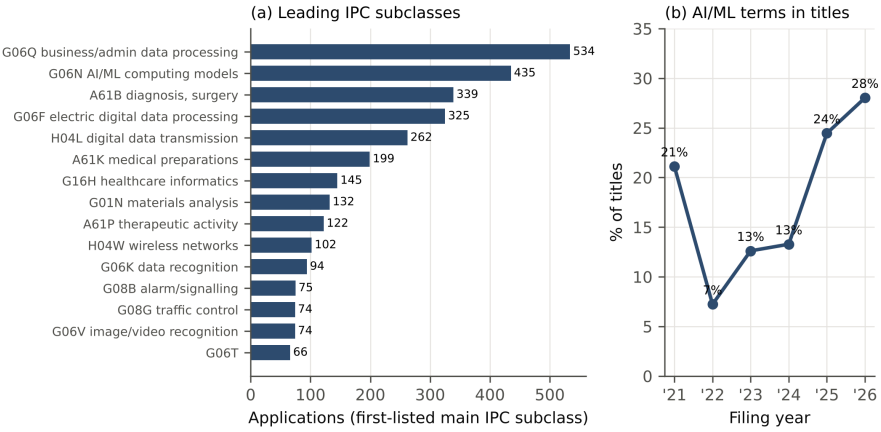
Change after joining

Of 32 cells set up in 2022–2023, 10 filed more in the two years after joining (four for the first time), for example RNS Institute of Technology (3 to 40); 7 filed less and 15 were unchanged. Overall the change was not statistically significant.

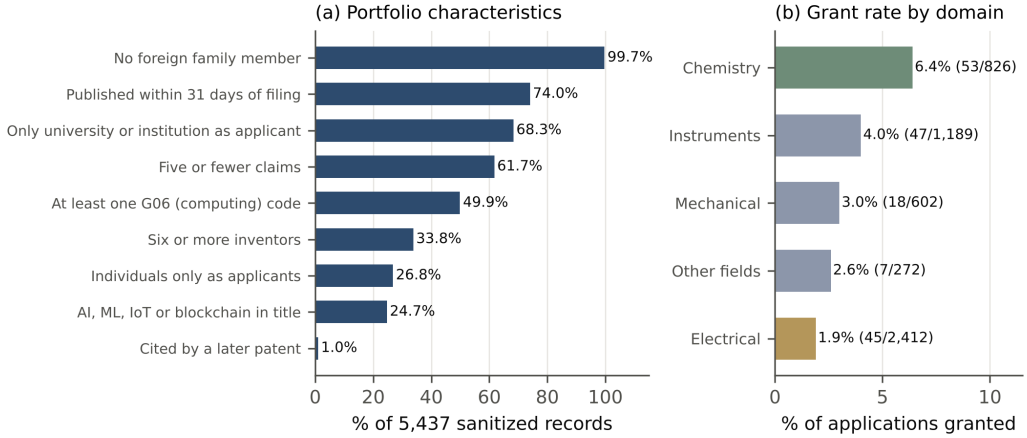
RESULT 1 · PORTFOLIO PROFILE

What is being patented, and by whom

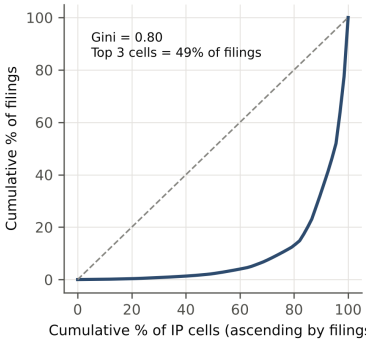
Half of all applications carry a computing (G06) code. Titles referring to AI, machine learning or deep learning were 7% of 2022 filings and 28% of 2026 filings. Filing is concentrated: three institutions account for 48.6% of all applications.



(a) Fifteen most frequent IPC subclasses (first-listed main IPC); (b) share of titles mentioning AI, machine learning or deep learning, by filing year.



(a) Characteristics of the 5,437 sanitized records; (b) share of applications granted by technology domain (grants/applications).



Lorenz curve of applications across the 67 active IP cells.

Concentration. REVA University (1,237), New Horizon College of Engineering (756) and CMR Institute of Technology (650) file 48.6% of all applications; 33 IP cells have fewer than ten.

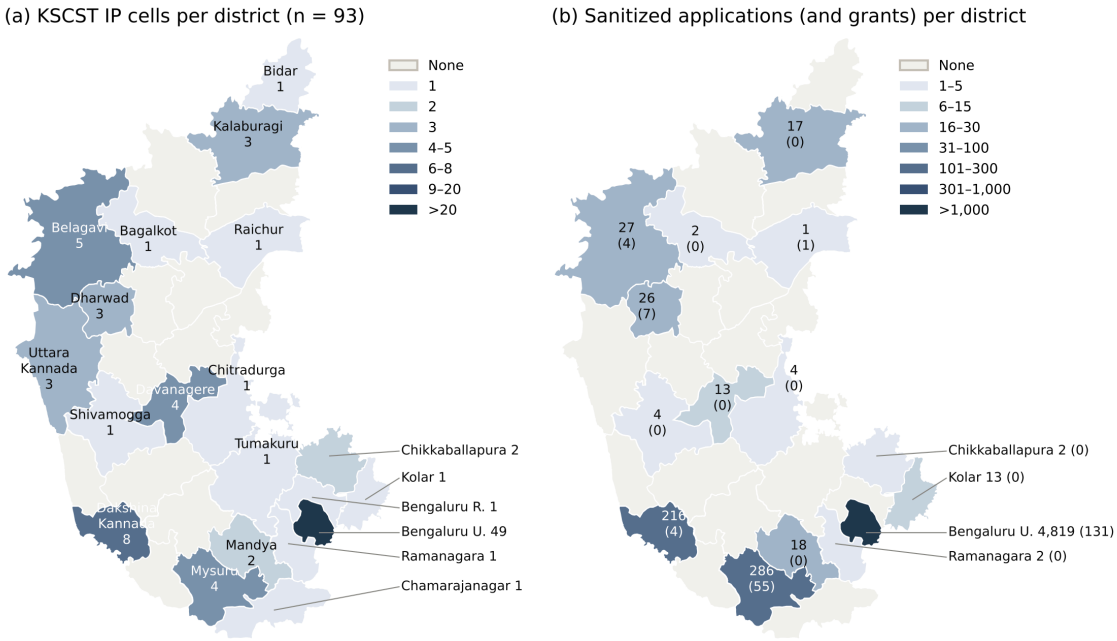
Grant rate by domain. Chemistry applications were granted at 6.4% (53 of 826), against 1.9% for electrical engineering (45 of 2,412).

Domestic portfolios. 99.7% of records have no foreign family member, and no application carries a PCT number.

RESULT 2

Reach across Karnataka

The 93 IP cells are spread over 20 of Karnataka's 31 districts and all four revenue divisions. Bengaluru Urban hosts half of the IP cells and most of the filing, but institutions outside the capital turn applications into patents far more often.



(a) IP cells per district; (b) published applications per district, with granted patents in parentheses. District boundaries: open-source map (svgmap-karnataka).

Revenue division	Districts reached	IP cells	Applications	Grants	Grants per 100 applications
Bengaluru	9 of 9	61	4,852	131	2.7
Mysuru	4 of 8	15	520	59	11.3
Belagavi	4 of 7	12	55	11	20.0
Kalaburagi (Kalyana-Karnataka)	3 of 7	5	18	1	5.6
Karnataka	**20 of 31**	**93**	**5,437**	**202**	**3.7**

Grant rates differ by division

Applications from the Belagavi division were granted at 20 per 100 and those from the Mysuru division at 11 per 100, against under 3 per 100 in the Bengaluru division. Twenty-six of the 93 IP cells, including those in Bidar, Chamarajanagar, Tumakuru and Uttara Kannada, have not yet published an unambiguously attributed application; the five IP cells of the Kalaburagi division have filed 18 applications in all.

RESULT 3 · BENCHMARKED AGAINST WIPO

A growing network inside a faster-growing country

Since 2022 the IP cells' filings have grown faster than the world total but more slowly than resident filing in India.

147
KSCST IP cells, 2025 (index, 2022 = 100)

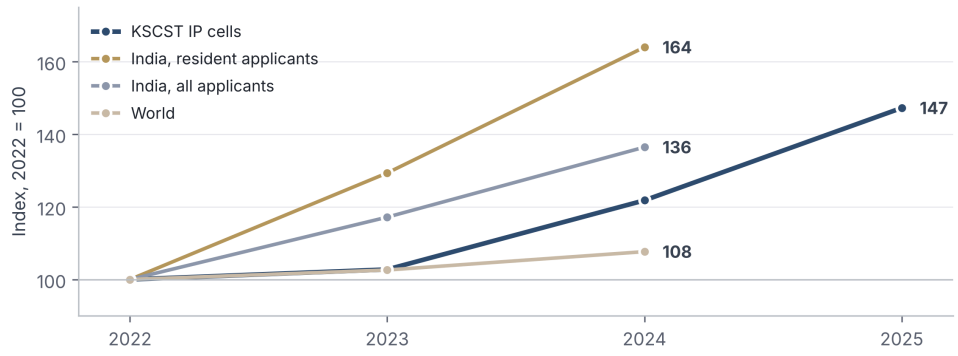
164
India, resident applicants, 2024

136
all applications at the Indian Patent Office, 2024

108
world, all offices, 2024

Since 2022, national resident filings have grown faster than IP-cell filings

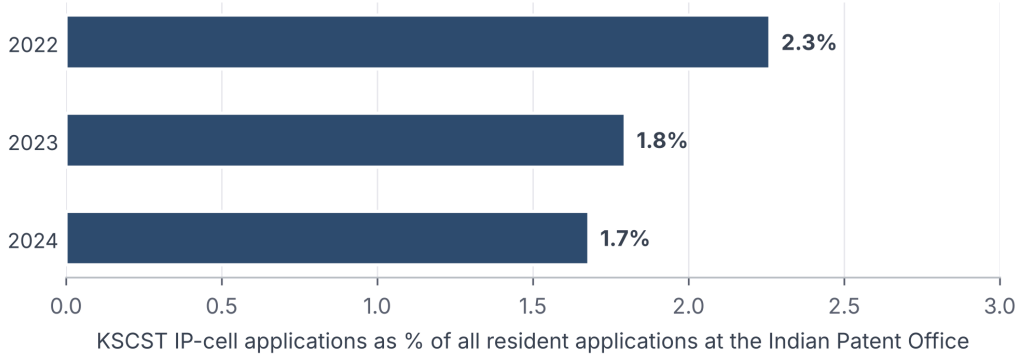
Patent applications indexed to 2022 = 100 (KSCST IP cells: 872, 896, 1,062, 1,284)



Sources: KSCST IP cells, sanitized InPASS dataset (5,437 records, by filing year). India and world: WIPO World Intellectual Property Indicators 2023 to 2025 (IPO residents 38,551 / 49,860 / 63,217; IPO total 77,068 / 90,298 / 105,157; world 3.46 m / 3.55 m / 3.725 m). WIPO 2025 data not yet published.

The 93 IP cells file about 1 in 50 of India's resident patent applications

Share has eased from 2.3% to 1.7% as national filing accelerated



Sources: KSCST IP cells, sanitized InPASS dataset (872, 896, 1,062 applications). WIPO World Intellectual Property Indicators 2023 to 2025, resident applications at the Indian Patent Office (38,551; 49,860; 63,217).

What it means

The 93 cells file roughly 1 in 50 resident patent applications in India (2.3% in 2022, 1.7% in 2024). From 2022 to 2024 their filings rose 22%, against 64% for resident filing in India and 8% for the world. The network's fastest growth came between 2021 and 2022.

RESULT 3 · AGAINST THE INDIAN PATENT OFFICE ANNUAL REPORT 2024–25

One in eight of Karnataka's patent applications comes from an IP cell

The Office of the Controller General of Patents, Designs and Trade Marks reports filings by state and by applicant type. Against it, the 93 IP cells filed 12.7% of Karnataka's applications in 2024–25.

12.7%
of Karnataka's 8,319 applications in 2024–25

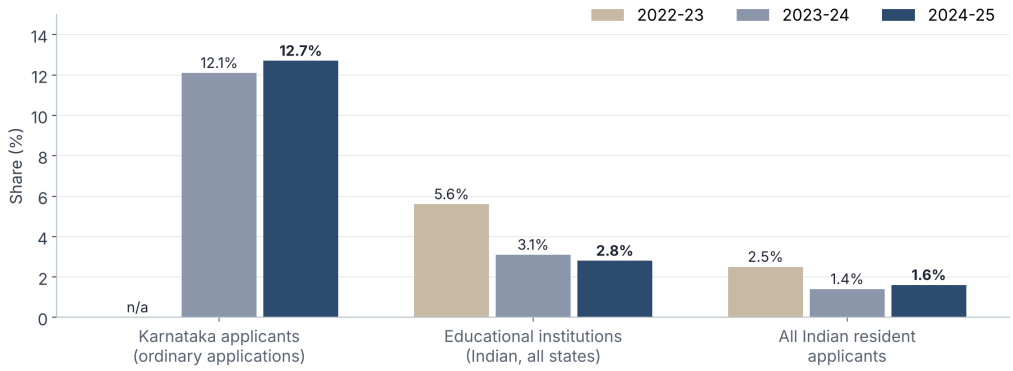
5th
among Indian academic filers, if counted as one network

2.8%
of 37,681 applications by Indian educational institutions

#2
Karnataka's rank among states by patent applications

The IP cells file about 1 in 8 of Karnataka's patent applications

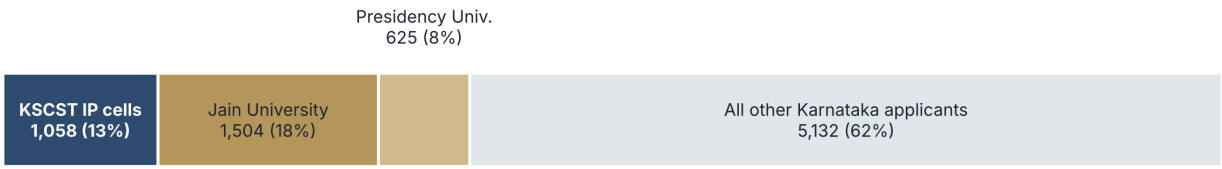
KSCST IP-cell applications as a share of Indian Patent Office categories, by financial year



Sources: KSCST IP cells, sanitized InPASS dataset by filing date (FY April to March): 1,070 / 731 / 1,058. Indian Patent Office: CGPDTM Annual Report 2024-25, p.22 (educational institutes, Indian: 19,155 / 23,306 / 37,681; Indian total: 43,301 / 51,574 / 68,201) and Appendix B, pp.32-33 (Karnataka ordinary: 6,025 / 8,319; 2022-23 not given). State is assigned by applicant address.

Karnataka's 8,319 applications in 2024-25: where the IP cells sit

Ordinary patent applications by Karnataka applicants, 2024-25



Sources: CGPDTM Annual Report 2024-25, Appendix B, p.32 (Karnataka 8,319; the report's text on p.21 gives 8,371) and pp.23-24 (Jain, Presidency). KSCST: sanitized InPASS dataset, FY 2024-25. Indicative: the report assigns state by applicant address, and a few IP-cell joint filings may be credited to applicants in other states.

What it means

Karnataka filed 8,319 ordinary applications in 2024–25, second only to Tamil Nadu and 38% more than in 2023–24; the IP cells' share of the state was 12.1% and 12.7% in those years. Nationally, filings by Indian educational institutions almost doubled from 19,155 (2022–23) to 37,681 (2024–25), while the IP cells filed 1,070, 731 and 1,058 applications in 2022–23, 2023–24 and 2024–25, so their share of academic filing fell from 5.6% to 2.8%.

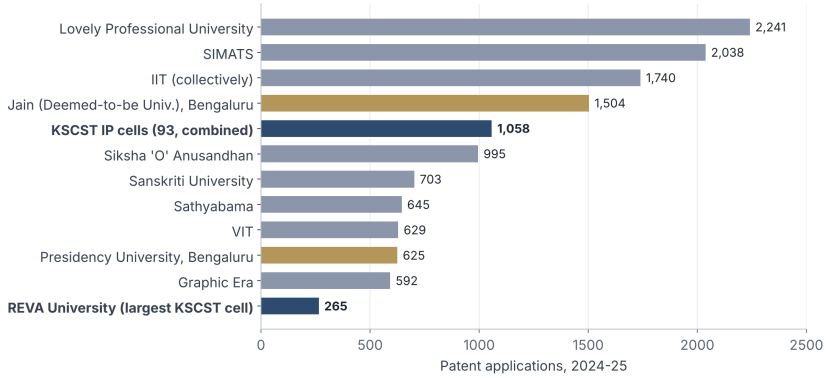
RESULT 3 · AGAINST THE INDIAN PATENT OFFICE ANNUAL REPORT 2024–25

A national-scale academic filer, with a distinct technology mix

No single IP cell is in the national top 10; the largest, REVA University, filed 265 applications in 2024–25. Counted together, the cells would rank fifth among Indian academic applicants.

Taken together, the 93 IP cells would rank 5th among Indian academic filers

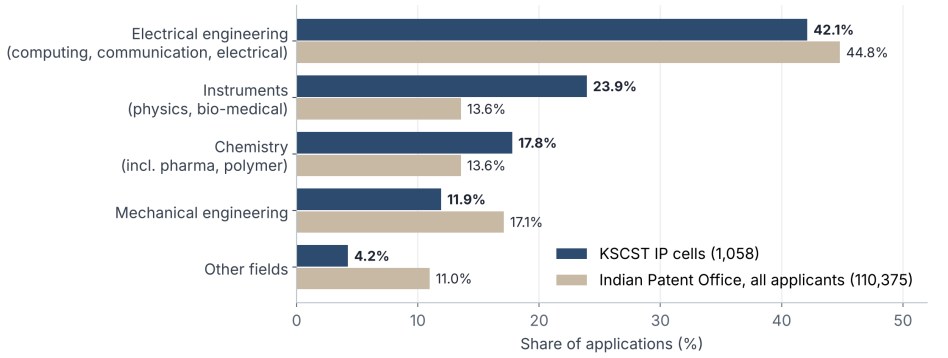
Patent applications filed in 2024-25: the Patent Office's top 10 academic applicants, with the KSCST network added



Sources: CGPDTM Annual Report 2024-25, pp.23-24, 'Top 10 Indian Applicants for Patents from Academic Institutes and Universities'. KSCST: sanitized InPASS dataset, applications filed April 2024 to March 2025 (joint filings counted once; about a quarter are filed in inventors' own names). Gold: Karnataka institutions outside the KSCST network. The KSCST total groups 93 institutions, as the report groups the IITs.

IP cells file more in instruments and bio-medical, less in mechanical

Share of 2024-25 applications by technology sector: KSCST IP cells vs all applications at the Indian Patent Office



Sources: CGPDTM Annual Report 2024-25, Appendix E, p.39 (applications by field of invention), grouped by us into WIPO's five sectors: electrical = computer science & electronics + computer science & technology + communication + electrical; instruments = physics + bio-medical; chemistry = chemical + polymer. KSCST: first-listed WIPO sector of each 2024-25 application (1% unclassified excluded).

What it means

Two Bengaluru universities outside the network, Jain and Presidency, are in the national top 10. The IP cells file a larger share than the national total in instruments, which include bio-medical devices (23.9% against 13.6%), and in chemistry (17.8% against 13.6%), and a smaller share in mechanical engineering (11.9% against 17.1%).

RESULT 3 · BENCHMARKED AGAINST WIPO

Specialised in computing and health; not yet filing abroad

Compared with world filing, the IP cells file a larger share in computer technology, medical technology and digital communication, and a smaller share in electrical machinery and measurement. No application has been filed under the Patent Cooperation Treaty (PCT).

18.8%
computer technology (world 13.2%)

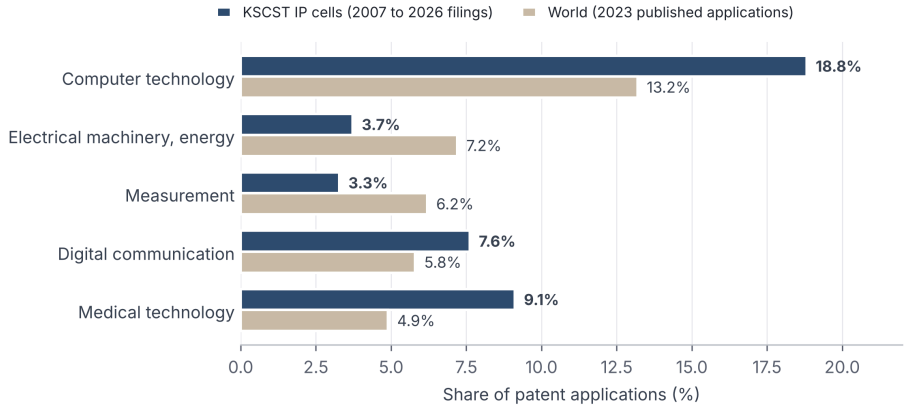
9.1%
medical technology (world 4.9%)

5.9
PCT applications per 100 filings, India 2024

0
valid PCT numbers in 5,437 IP-cell records

IP cells lean towards computing and medical devices

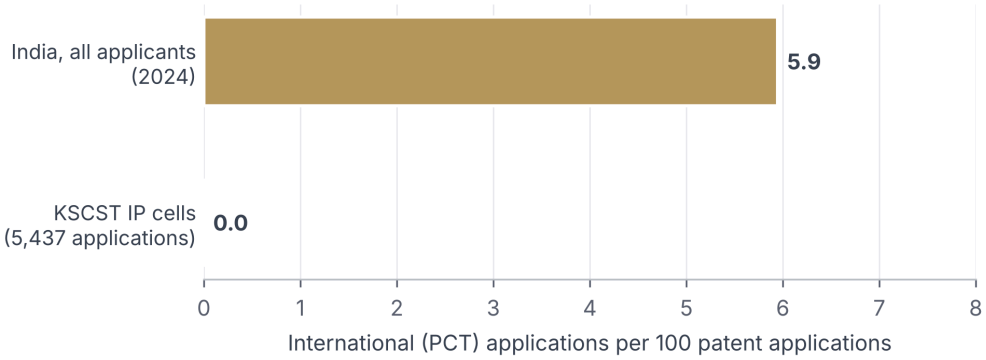
WIPO's five largest technology fields: share of applications, KSCST IP cells vs world



Sources: KSCST IP cells, 3,598 applications with a published IPC, classified by first IPC symbol using WIPO's IPC-technology concordance (main fields only). World: WIPO World Intellectual Property Indicators 2025, p.17 (2023 published applications, all IPCs).

No IP-cell invention has yet been taken abroad through the PCT

Indian applicants file about 6 PCT applications for every 100 patent applications



Sources: KSCST IP cells, sanitized InPASS dataset (PCT fields of 5,437 records: none with a valid PCT number). India: WIPO PCT Yearly Review 2026 (4,543 PCT applications of Indian origin, 2024) and World Intellectual Property Indicators 2025 (76,405 applications of Indian origin, 2024). Ratio is indicative.

What it means

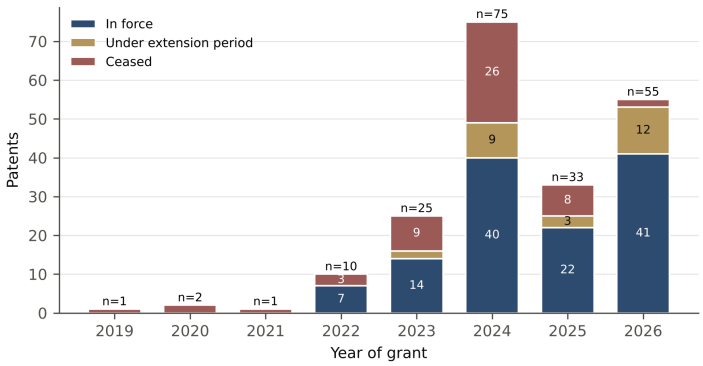
The fields in which the network is specialised, computing and medical technology, are among WIPO's five largest worldwide. Indian applicants as a whole file about six PCT applications for every 100 national applications; the IP cells have filed none, and PCT activity cannot be measured from InPASS records as no application carries a valid PCT number.

Sources: WIPO WIPI 2025 (p.17); WIPO PCT Yearly Review 2026; sanitized InPASS dataset (3,598 applications with IPC)

RESULT 4

Granted patents

Grants rose from one or two a year before 2022 to 75 in 2024. All 202 granted patents were checked individually on the Patent E-register in October 2026.



124
in force

26
in the six-month renewal grace period

674
renewal-years paid (INR 919,040)

40 / 44
patents kept in force by the Ramaiah group

Legal status of the 202 granted patents by year of grant (Patent E-register, 27–28 October 2026).

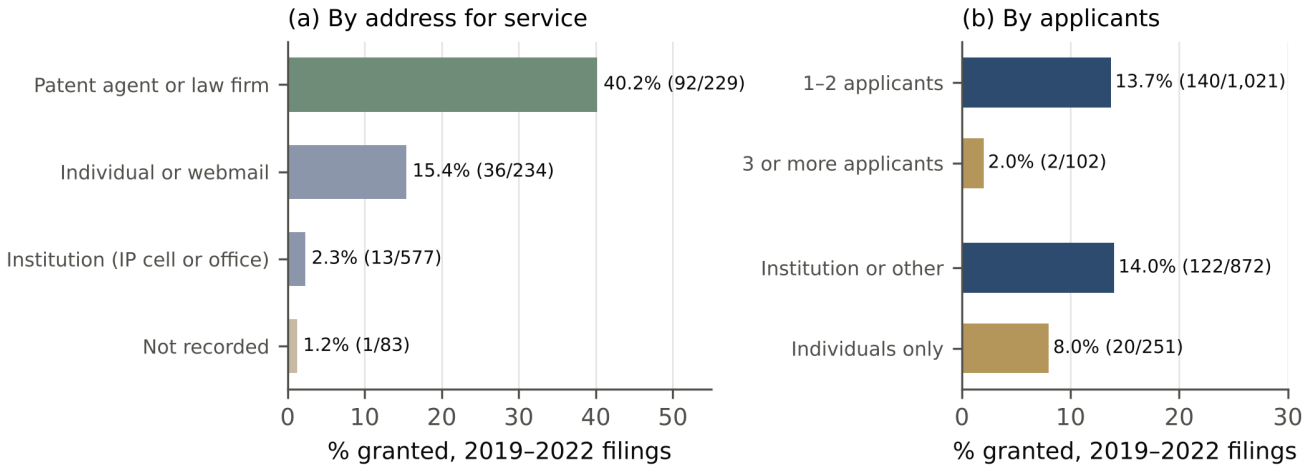
Two patents restored under Section 60

Six restoration applications have been filed (four by JSS Academy of Higher Education and Research, two by PES) and two allowed, both for JSS College of Pharmacy, Ooty. After restoration the owner paid renewals several years in advance.

Indian Patent No. 496294
"Donepezil loaded lipid coated nanoceria for effective management of Alzheimer disease"
Application 202041055661 · granted 9 January 2024 · renewed to December 2028

Indian Patent No. 528384
"A composition of papain enzyme for nutraceutical/therapeutic purpose and a process for formulating the same"
Application 202141024278 · granted 15 March 2024 · renewed to May 2031

Grant outcomes and professional prosecution, 2019–2022 filings



Share of 2019–2022 applications granted (a) by address for service and (b) by number and type of applicants. Associations, not proof of cause: an agent may be appointed only once an applicant decides to prosecute.

RESULT 4 · BENCHMARKED AGAINST WIPO

Most losses occur before examination and at the first renewal

In a random sample of older pending applications, most had lapsed because no request for examination was filed. After grant, about three-quarters of patents remain in force or in the grace period up to eight years from filing.

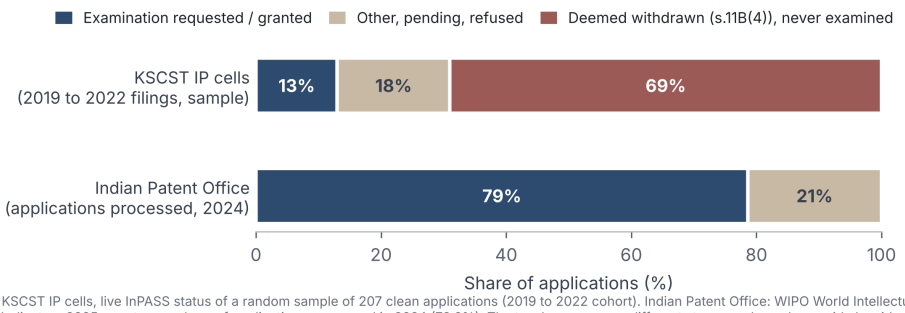
75–78%
of grants alive (in force or grace) in each age band under 8 years

29
of 52 ceased grants still restorable

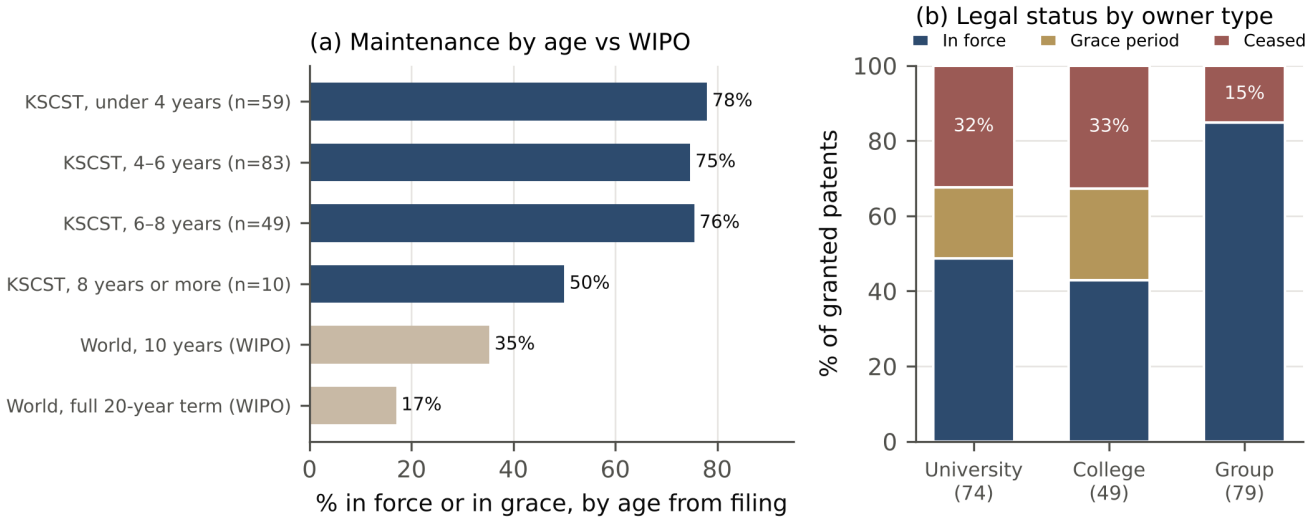
69%
of 2019 to 2022 sample deemed withdrawn, no exam request

35 / 52
ceased grants never paid a renewal fee

The loss happens before examination, not at it
Outcome of applications: KSCST IP cells compared with the Indian Patent Office overall



Sources: KSCST IP cells, live InPASS status of a random sample of 207 clean applications (2019 to 2022 cohort). Indian Patent Office: WIPO World Intellectual Property Indicators 2025, grants as a share of applications processed in 2024 (78.6%). The two bars measure different stages and are shown side by side for context.



(a) Granted patents in force or in grace period by age from filing (201 patents with a filing date), compared with WIPO's cohort estimates for 85 offices; (b) legal status by owner type.

What it means

The request for examination is due 48 months from priority for applications filed before 15 March 2024 and 31 months for later ones; 2,054 IP-cell deadlines fall between November 2026 and October 2027. After grant, 32% of university-owned and 33% of college-owned patents have ceased, against 15% for multi-institution groups.

THE NEXT STAGE

Following the patent life cycle to the end

The register audit shows, step by step, where applications and patents are lost after filing.

On track

1. Filing

IP cell, search, drafting

5,437

applications; 1,284 filed in 2025; 74% published early.

Largest gap

2. Request examination

31 months for filings from 15 March 2024; 48 months for earlier filings

69%

of sampled 2019–2022 pending applications deemed withdrawn; 2,054 deadlines in the next 12 months.

On track

3. Examination and grant

reply to the examination report

40.2%

of 2019–2022 agent-prosecuted applications granted; 1 refusal in the live sample of 207.

Gap

4. First renewal

accrued fees, 3 to 9 months after grant

35 / 52

ceased patents never paid a renewal; 29 may still be restored.

Not yet due

5. Statement of working

Form 27, once every three financial years

187

patents reach their first deadline in 2027–2029; 13 statements on record.

Largest gap

6. Licensing and international filing

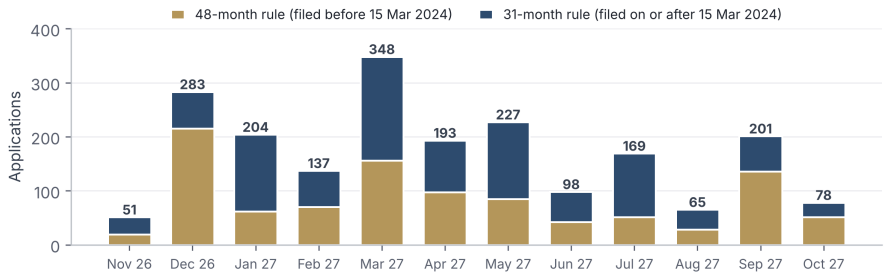
assignment, licence, PCT

0

licences or assignments on the register; 0 PCT applications.

2,054 examination deadlines fall in the next 12 months

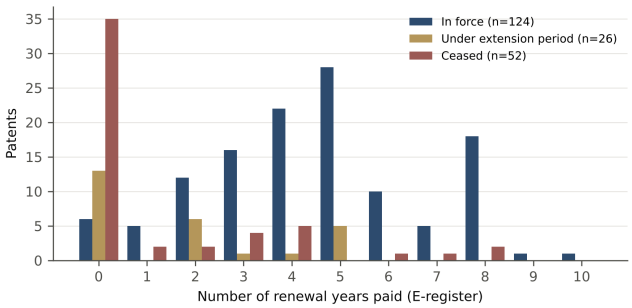
Request-for-examination deadlines by month, November 2026 to October 2027, KSCST IP-cell applications



Source: KSCST RQ deadline tracker (5,235 pending applications; deadline from the earlier of filing and priority date; Rule 24B, Patents (Amendment) Rules 2024). Counts show deadlines falling due, not lapses: some requests may already have been filed.

Two rules, one peak. 3,288 applications are on the 31-month rule and 1,947 on the 48-month rule. Deadlines peak in December 2026 (283) and March 2027 (348).

First renewal. Most patents are granted more than two years after filing, so the first payment covers accrued fees: 124 of the 148 patents with a renewal on record paid it as a lump sum, a median of 85 days after grant.

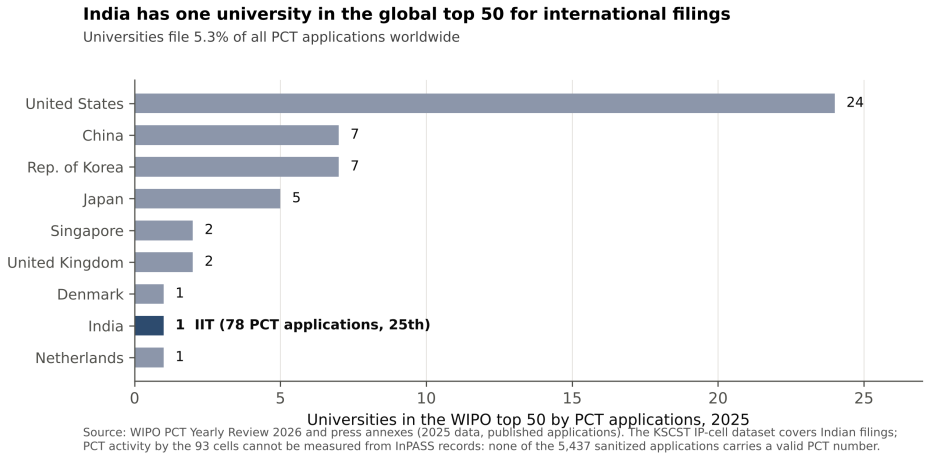


Renewal years paid for the 202 granted patents, by current legal status.

UNIVERSITIES IN THE GLOBAL PCT SYSTEM

Academic international filing is a small, concentrated field

Universities file 5.3% of all PCT applications worldwide, and India has one institution among the 50 leading university applicants.



WHAT THE TISC IS DOING NEXT

Seven measures, one for each finding

1 Docket every examination deadline

2,054 request deadlines fall due in the next 12 months (31 months for filings since 15 March 2024, 48 months for earlier ones).

2 Make grant trigger a renewal reminder

35 of the 52 ceased patents never paid the first, accrued-fee renewal.

3 Review the 29 restorable patents

Lapsed within the last 18 months, so restoration under Section 60 may still be possible.

4 File in one institutional name

26.8% of records list only individuals, and attribution checks removed 8.2% of retrieved records.

5 Track what lasts; support prosecution

Measure examined and maintained patents; 40.2% of agent-prosecuted applications were granted against 2.3% handled by IP cells.

6 Open a commercialisation file at grant

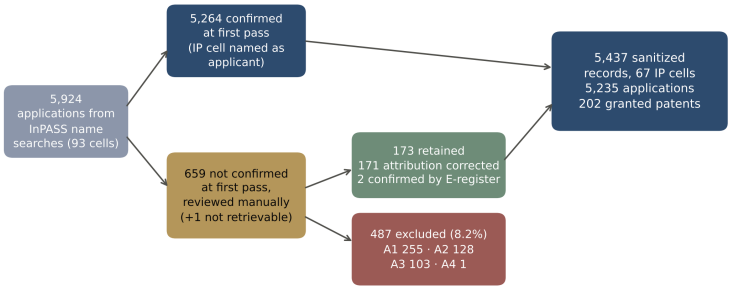
Diary Form 27 (every three financial years) and assess licensing; no licence or assignment is yet recorded.

7 Open a selective PCT route

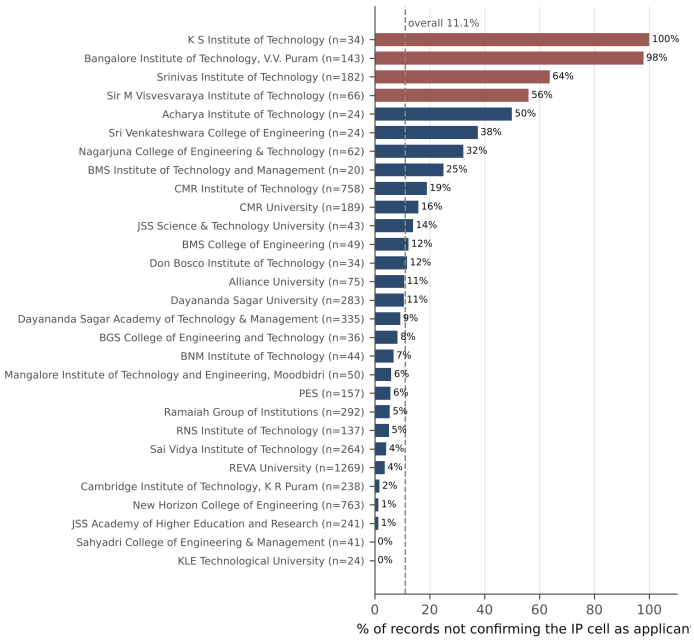
Screen the strongest computing and medical inventions for international filing; none has yet used the PCT.

HOW THE AUDIT WAS DONE

From name searches to a verified dataset



Construction of the sanitized dataset: 487 of 5,924 applications (8.2%) were excluded because no KSCST IP cell could be confirmed as an owner (classes A1–A4).



Share of records in which the attributed IP cell was not confirmed as applicant at the first pass (IP cells with at least 20 records).

Lessons for other TISC networks

- **Work through institutions.** One state TISC reached 93 institutions in 20 districts, which now file an eighth of Karnataka's patent applications.
- **Use the official registers.** InPASS Application Status and the Patent E-register were enough to verify every granted patent and a random sample of pending applications.
- **Check attribution before counting.** Name searches retrieved patents of other institutions with similar names.
- **Benchmark against WIPO and the national office.** Published statistics show where the network is strong and where it lags.
- **Follow patents beyond filing.** Examination, renewal, statements of working, international filing and licensing.

About the data

Published Indian patent applications attributed to the 93 KSCST IP cells (published January 2021 to August 2026) were compiled from InPASS; 487 of 5,924 records with unconfirmed ownership were removed. Legal status was verified on InPASS and the Patent E-register on 27–28 October 2026. Examination deadlines follow Rule 24B as amended in 2024. WIPO figures: World Intellectual Property Indicators 2023 to 2025 and PCT Yearly Review 2026; Indian Patent Office figures: CGPDTM Annual Report 2024–25 (financial years). Comparisons are indicative. Full analysis: "From awareness to patents: a Technology and Innovation Support Centre audit of 93 academic IP cells across Karnataka, India".

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OUTCOMES BY IP CELL

Which IP cells need which support

The life-cycle indicators for the 25 IP cells with at least 20 applications. Each column is shaded on its own scale: navy for filing and grant, brick for deadlines and lapses.

	Filing and grant					Deadlines and lapses		
	Applications (all years)	Granted, 2019–22 filings (%) (filed 2019–22)	Handled by patent agent (%) (all years)	Granted patents (granted 2019–26)	Form 27 on record (register, Oct 2026)	Exam deadlines, next 12 months (Nov 2026–Oct 2027)	Grants ceased (status Oct 2026)	Restorable patents (lapsed in last 18 months)
REVA University	1,237	1	1	4	0	647	4 of 4	3
New Horizon Coll. of Engg	756	0	0	2	0	296	0 of 2	0
CMR Inst. of Tech.	650	6	20	12	0	305	7 of 12	1
Dayananda Sagar Acad. of Tech. & Mgmt	310	–	20	0	0	25	–	0
Ramaiah Group of Institutions	281	33	77	44	0	115	4 of 44	2
Sai Vidya Inst. of Tech.	257	–	1	1	0	7	0 of 1	0
Dayananda Sagar University	254	–	46	3	0	57	0 of 3	0
Cambridge Inst. of Tech.	243	4	4	2	0	191	2 of 2	1
JSS Acad. of Higher Educ. & Research	241	41	56	50	9	61	12 of 50	9
CMR University	165	0	2	0	0	47	–	0
PES	152	49	65	35	1	39	8 of 35	4
RNS Inst. of Tech.	136	–	1	1	0	31	0 of 1	0
Alliance University, Bengaluru	71	–	4	1	0	42	0 of 1	0
Srinivas Inst. of Tech.	66	–	0	0	0	33	–	0
Mangalore Inst. of Tech. & Engg	48	4	2	1	0	22	1 of 1	0
Srinivasa University	47	–	2	0	0	1	–	0
BMS Coll. of Engg	45	73	67	14	1	13	3 of 14	2
BNM Inst. of Tech.	44	–	16	7	0	17	0 of 7	0
Nagarjuna Coll. of Engg & Technology	43	–	0	0	0	0	–	0
Sahyadri Coll. of Engg & Mgmt	41	–	5	3	0	20	0 of 3	0
JSS Sci. & Tech. University	39	–	54	5	0	11	3 of 5	1
BGS Coll. of Engg & Tech.	33	–	0	0	0	0	–	0
Don Bosco Inst. of Tech.	32	0	0	0	0	13	–	0
Sir M Visvesvaraya Inst. of Tech.	31	–	0	0	0	2	–	0
KLE Technological University	24	–	12	7	2	10	4 of 7	4
Other 42 IP cells	**222**	**14**	**32**	**10**	**0**	**52**	**4 of 10**	**2**
All 67 active IP cells	**5,437**	**13**	**17**	**202**	**13**	**2,054**	**52 of 202**	**29**

The period each column covers is shown under its heading; statuses as of 27–28 October 2026. Because columns cover different periods, a cell with many recent filings (e.g. REVA University) can show many applications and deadlines but few grants. Grants ceased is shown as ceased of granted (e.g. 4 of 4 for REVA). – fewer than 10 applications filed in 2019–2022, or no grants. Joint applications are counted under each cell.

	Filed 2021	Filed 2022	Filed 2023
Patent agent or firm	27.5% (11/40)	29.6% (32/108)	16.5% (15/91)
Individual or webmail	13.8% (9/65)	10.5% (16/153)	8.4% (12/143)
Institution (IP cell or office)	23.5% (4/17)	1.3% (7/555)	0.2% (1/518)
Not recorded	0.0% (0/20)	1.8% (1/56)	0.0% (0/144)

Share granted by address for service and filing year (grants/applications).

What it shows

The four cells with the highest grant rates (BMS College of Engineering, PES, JSS AHER, Ramaiah) also used patent agents most (56–77%). The three largest filers (REVA, New Horizon, CMR Institute of Technology) used agents for 0–20% and hold 61% of the 2,054 examination deadlines due in the next 12 months. The agent advantage holds within each filing year.