

## Case Study of why IIT Bombay is ranked 1 in NIRF Rankings of Innovation 2024

### KEY INNOVATION METRICS:

Number of startups recognized by DPIIT/Startup India (2020-23): 46

Number of startups that have received VC investment in the previous 3 years: 83

No. of times Innovation grant received from the govt. organization in the previous 3 years: 137

No. of patents published in the last 3 years: 499

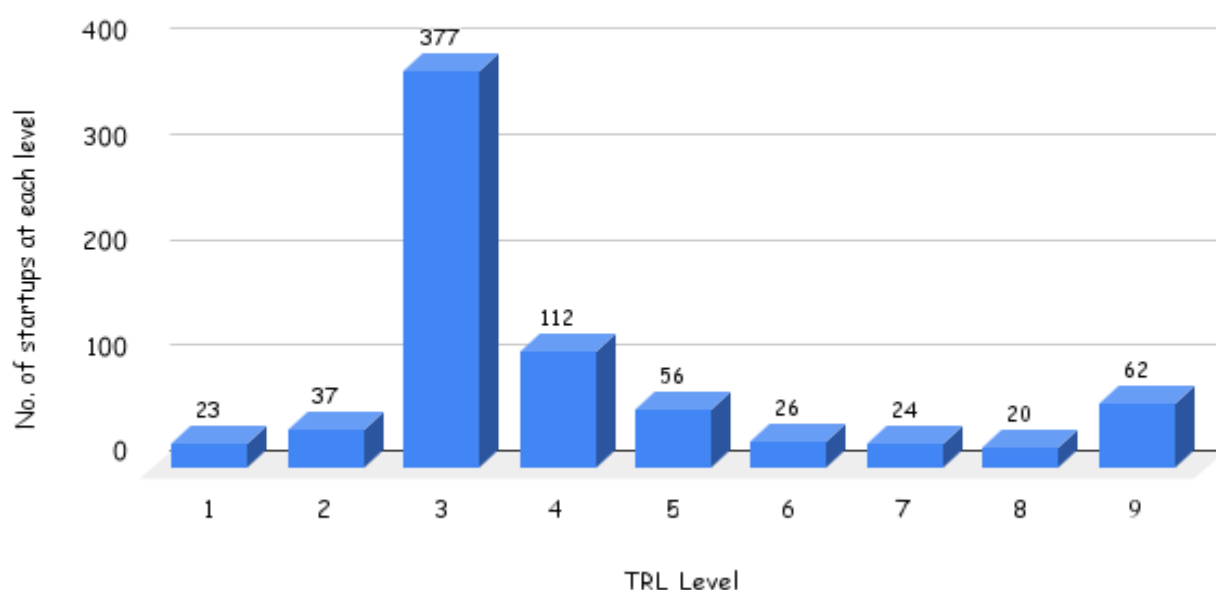
No. of patents granted in the last 3 years: 357

No. of technologies transferred in the last 3 years: 77

No. of ventures/startups grown to turnover of 50 lacs in the last 3 years: 69

No. of faculty members entered: 759

### No. of startups at each level vs. TRL Level



Financial Year	2022-23	2021-22	2020-21
No. of pre-incubation units	1	1	1
Expenditure on pre-incubation activities	8434723	3743619	3844944
Income generated by the institution through pre-incubation activities	26752028	900000	16399144
Profit generated for the institution	18317305	-2843619	12554200

Financial Year	2022-23	2021-22	2020-21
No. of incubation units	91	67	81
Expenditure on incubation activities	38470739	21919581	17487704
Income generated by the institution through incubation activities	55985025	58119545	33652717
Profit generated for the institution	17514286	36199964	16165013

---> 17 academic courses related to innovation, entrepreneurship, and IPR have been released as core/elective courses in the past 3 years.

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## Explanation:

IIT Bombay has earned the top spot in innovation rankings because of its strong focus on startups, new ideas, research, and turning those ideas into real products or businesses.

### 1. A Great Place for Startups

- In the last 3 years, **46 startups** at IIT Bombay were officially recognized by the government.
- **83 startups** got money from big investors (venture capitalists), showing that people believe in the ideas coming from this institute.
- **69 startups** grew so well that each made more than ₹50 lakhs in revenue!

### 2. Patents and Technology

- IIT Bombay filed **499 patents** (official rights to inventions) in just 3 years.
- Out of these, **357 were granted**, which means their work is original and valuable.
- They successfully shared or sold **77 technologies** to companies or industries, proving their research is useful in the real world.

### 3. Government Support

- The institute received **137 innovation-related grants** (funding) from government bodies in the last 3 years. This shows trust and recognition from the government.

### 4. Incubation Success (Helping Ideas Grow)

#### Pre-Incubation (Initial idea stage)

- They supported ideas even before they became startups.
- **Income earned** from these early ideas: Over ₹4.4 crores
- **Profit** made: Over ₹2.8 crores

#### Incubation (Turning ideas into businesses)

- The number of incubation units grew from 67 to **91** in the past year.
- **Total profit from incubated startups** over 3 years: Nearly ₹70 crores
- Clearly, their system works well — it helps ideas become real businesses **and** earns money for the institute!

### 5. Innovation in Education

- They introduced **17 courses** focused on **innovation, entrepreneurship, and patents (IPR)**.
- This means students aren't just studying theory — they're learning how to build new things and start companies too.

### 6. Strong Faculty Support

- With **759 faculty members**, there's a huge pool of mentors and experts to guide students and researchers.

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## Real Life examples

### 1. Student-led startup

#### ideaForge- The journey from IIT Bombay to drone industry leader

#### What problem did ideaForge solve?

[ideaForge](#) solved the problem of providing reliable, high-tech drones for surveillance, defense, and civil applications in India. Before ideaForge, there were hardly any Indian-made drones for critical uses like border security, disaster management, and mapping. Their drones became "eyes in the sky" for India's ground forces, helping with intelligence, surveillance, and rescue operations.

#### How did they start at IIT Bombay?

The founders of ideaForge—[Ankit Mehta](#) (B. Tech. & M. Tech., Mechanical Engineering, 2005), [Rahul Singh](#) (B. Tech., Mechanical Engineering, 2006), and [Ashish Bhat](#) (B. Tech., Electrical Engineering, 2007)—were students at IIT Bombay who loved tinkering with technology and robotics. Their journey began around 2004 as a fun college project, where they tried to build a hovercraft and later a quadcopter. They experimented in campus labs and garages, winning robotics competitions and pooling prize money to keep building better prototypes. In 2007, they formally started ideaForge and got support from SINE, IIT Bombay's startup incubator, which gave them space and guidance to grow.

#### Where are they today?

Today, ideaForge is India's leading drone manufacturer, holding about 50% of the country's drone market. Their drones are widely used by the Indian defence forces and in civil sectors like agriculture, mining, and construction. The company went public with a highly successful IPO in 2023, and is now recognized as one of the top drone companies globally. They have developed many patented technologies and have expanded internationally, continuing to innovate with new drone models and solutions.

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## 2. Faculty led startup

### **NanoSniff Technologies**

#### **What was the problem?**

India relied heavily on expensive imported devices to detect explosives at airports, railway stations, and other sensitive places. These devices were costly and not always suited for local needs. There was a need for an affordable, fast, and reliable explosive trace detector made in India.

#### **How did they solve it?**

NanoSniff Technologies developed NanoSniffer, India's first MEMS-based (micro-electromechanical systems) explosive trace detector. NanoSniffer can detect dangerous explosives like RDX, TNT, and ammonium nitrate in less than 10 seconds—even in tiny amounts. It is priced at about one-third the cost of imported detectors and can identify and classify different types of explosives, making it highly effective for Indian security agencies.

#### **What was IIT Bombay's role?**

- NanoSniff was incubated at SINE (Society for Innovation and Entrepreneurship), IIT Bombay's startup incubator, which provided lab space, technical support, and business guidance.
- The core technology was developed as part of deep-tech research at IIT Bombay's Centre of Excellence in Nanoelectronics (CEN).
- IIT Bombay faculty, especially [Prof. V. Ramgopal Rao](#), mentored the team and helped transfer the research from lab to market.
- The startup benefited from IIT Bombay's ecosystem, including access to advanced fabrication facilities and early-stage funding opportunities.

#### **Where are they today?**

NanoSniff Technologies has successfully commercialized its technology and launched NanoSniffer, which is now used by airports, security forces, and other high-security locations across India. The device has passed rigorous testing by DRDO and the National Security Guard. NanoSniff has raised significant funding from angel investors and government grants, and is working to get international certifications for global expansion. Their innovation is seen as a major step towards making India self-reliant in security technology.

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## 3. Externally founded, IIT Bombay supported startup

### ThinkLABS Technosolutions

#### What was the problem?

Schools in India lacked engaging, hands-on science education tools. Most science lessons were theoretical and did not excite students or help them understand concepts practically.

#### How did they solve it?

ThinkLABS developed robotics-based science experiment kits and interactive programs. These kits made science learning fun and practical, helping students understand complex topics through real experiments and robotics.

#### What was IIT Bombay's role?

- ThinkLABS was founded by [Gagan Goyal](#), who was not an IIT Bombay student but approached IIT Bombay's SINE incubator for support.
- SINE provided ThinkLABS with a soft loan of ₹10–12 lakh, infrastructure, and business mentorship.
- The startup also benefited from SINE's network and credibility, which helped it raise \$1 million from Seed Fund in 2007.

#### Where are they today?

ThinkLABS's science kits have been adopted by over 300 schools across 23 Indian states. The company crossed ₹50 crore in revenues by 2014 and was acquired by the Bengaluru-based edtech startup FitKids in 2016.

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## The Events and Initiatives Behind the Success

IIT Bombay's top spot in the NIRF Innovation rankings for 2024 isn't just luck—it's the result of a buzzing campus culture where ideas turn into real-world impact. Here's a look at the events and efforts that are making IIT Bombay a true innovation powerhouse:

### 1. National Showcases: Where Ideas Meet the World

[InvenTiv 2025](#) was a huge deal this year. IIT Bombay put six of its most exciting new technologies on display at this national R&D fair—think drones, AI, green tech, and even marine innovations. These showcases aren't just for show; they help connect researchers with industry and government, turning lab work into solutions that matter.

### 2. Startup Festivals: Where Entrepreneurs Are Born

The [E-Summit](#) is one of the highlights of the year. Run by the student Entrepreneurship Cell, it's a high-energy mix of talks, workshops, competitions, and networking. Budding founders get to pitch their ideas, meet investors, and even score some seed funding or mentorship. Many successful startups have taken their first steps at this very event.

### 3. Industry Partnerships: Building Bridges to the Real World

IIT Bombay is serious about teaming up with industry. They've set up R&D centers with companies like Rishabh Instruments and launched big collaborations in areas like semiconductors. The [ASPIRE-IITB Research Park](#) is a hub where researchers, startups, and big companies work side by side, fast-tracking the journey from idea to market.

### 4. Thematic Workshops: Tackling Big Challenges Together

Events like [ICONS 2025](#) bring together some of the brightest minds to focus on defense tech. Over two days, you'll find everything from AI-powered logistics to smart materials being discussed and demoed. It's a melting pot of faculty, startups, and industry experts, all working on solutions for national security.

### 5. Startup Support: From Campus to Company

IIT Bombay's startup incubator, [SINE](#), is the backbone for many young ventures. Whether you're a student, professor, or even an outsider with a great idea, SINE offers funding, lab space, and expert advice. This support has led to a boom in patents and deep-tech startups coming out of the campus.

### 6. A Rapid Rise in Rankings

All these efforts are paying off. IIT Bombay jumped from 7th place in the NIRF Innovation rankings in 2023 to 1st in 2024—a clear sign that their focus on entrepreneurship, research, and real-world impact is working.