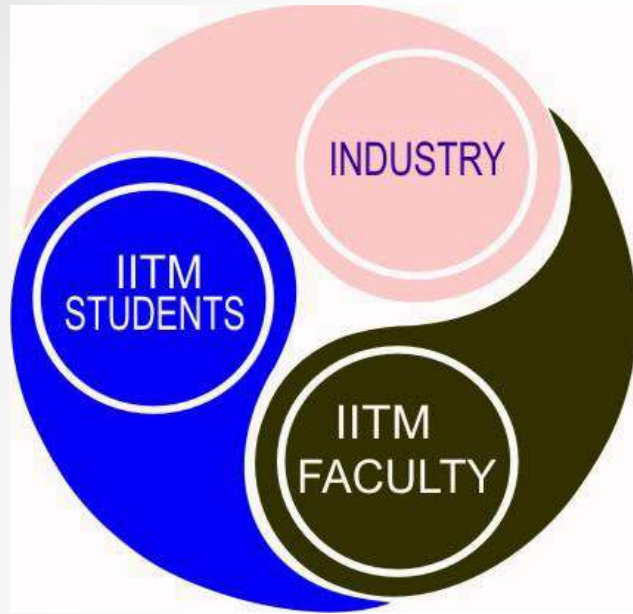




# INNOVATION & ENTREPRENEURIAL ECOSYSTEM @ IIT-MADRAS

# India's first University based RESEARCH PARK



“Innovations thrive when faculty, students and industry interact in a formal / informal environment”

IIT-Madras Research Park is a pioneering effort in India to catalyze collaborative research between industry and academia and enable Technological Innovation & nurture Entrepreneurship

- Industry can tap into Faculty expertise & Student skills
- Presence of IITM Research Centres, Incubators and Startups make IITMRP an active ecosystem



**Prof. Bhaskar Ramamurthi**  
Chairman



**Prof. Ashok Jhunjunwala**  
Co-chairman & Faculty-in-Charge



**Kris Gopalakrishnan**  
Co-founder, Infosys



**MM Murugappan**  
Vice Chairman, Murugappa Group



**B Santhanam,**  
President & MD  
Saint Gobain Glass, India



**S Mahalingam**  
Former CFO,  
TCS



**Gopal Srinivasan,**  
Chairman & MD,  
TVS Capital Funds Ltd.



**Prof. Krishnan Balasubramanian**  
Dean, IC&SR

**A non-profit Section 8 company, promoted by IITM**

Governed by a Board of Directors - eminent academics & industrialists

# IITMRP - PHASE I and II



Total built up area of **1.2M sq ft**

- **Phase I** (0.4M sq ft): operational since Mar 2010.  
**Fully occupied** with 70+ companies

## IITMRP Capital expenditure

Description	Cost (₹ in crore)
Phase -I project Cost (100cr from MHRD + interest)	110.00
<b>Phase -II project Cost</b> (self-generated & bank loans)	<b>337.66</b> (US\$ 52M)
<b>Total Project Cost of IIT Madras Research Park</b>	<b>447.66</b> (US\$ 70M)
Amount <b>Spent</b> as on <b>31<sup>st</sup> Jan 2017</b>	356.00
Amount pending settlement towards finishing & interiors work for Phase -II	91.66

- **Phase II:** 0.82M sq. ft. built up area with 5 blocks catering to IT, Mechanical, Bio-sciences, Utilities sectors & multi-level parking. **30% operational currently**
  - Incorporating cutting-edge technologies developed in IITM: 48V DC LED Lights, Variable Frequency Drives (VFD) and VAV for improved efficiency of HVAC, 0.3M litre of chilled water storage for HVAC to reduce peak demand & 1MW of Solar PV
  - Allocated 100k sq. ft. for incubation & startups (SMEs) in Phase II (3rd and 6th floors)
  - **Clients:** SGRI (anchor client - 1.2 lakh sq. ft.), TCS Innovation Labs (30k sq. ft.); IIT Alumni Industry Interaction Center, CII-Logistics, IITM Center for Machine Tools, Incubators.
  - Food Court (operational), conference rooms and Auditorium (902), childcare, gym & fine dining



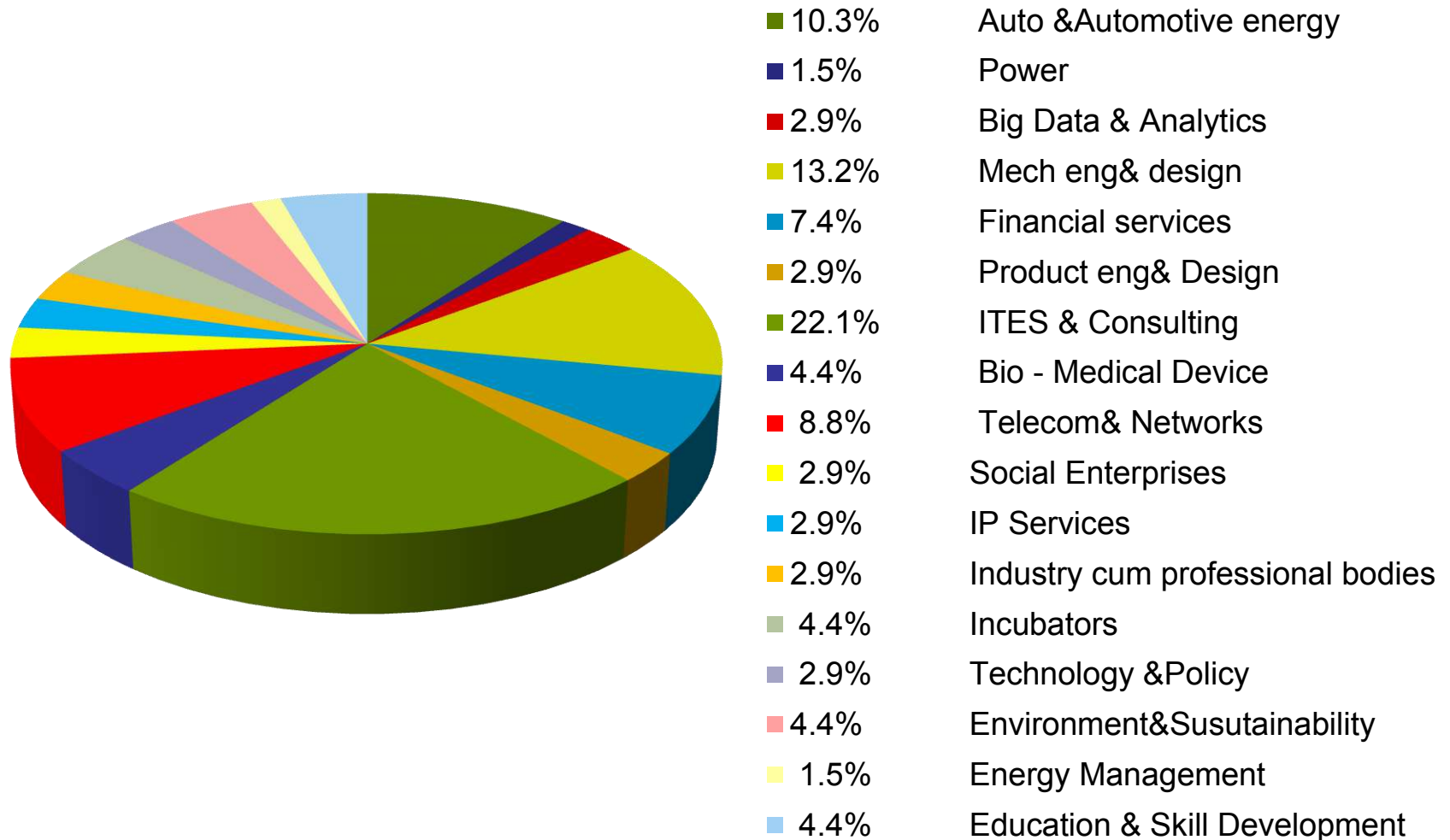
# IITMRP Clients (incl. Fortune 50,150)

- 43 R&D clients (private sector/MNCs, PSUs, SMEs)
- 4 IITM Incubators
- IITM start-ups: 45 under incubation + 10 graduated (R&D clients)
- 5 IITM Centres of Excellence



# IITMRP Clients (contd.)

## Sector classification



# Credit Points System - To Measure Collaboration

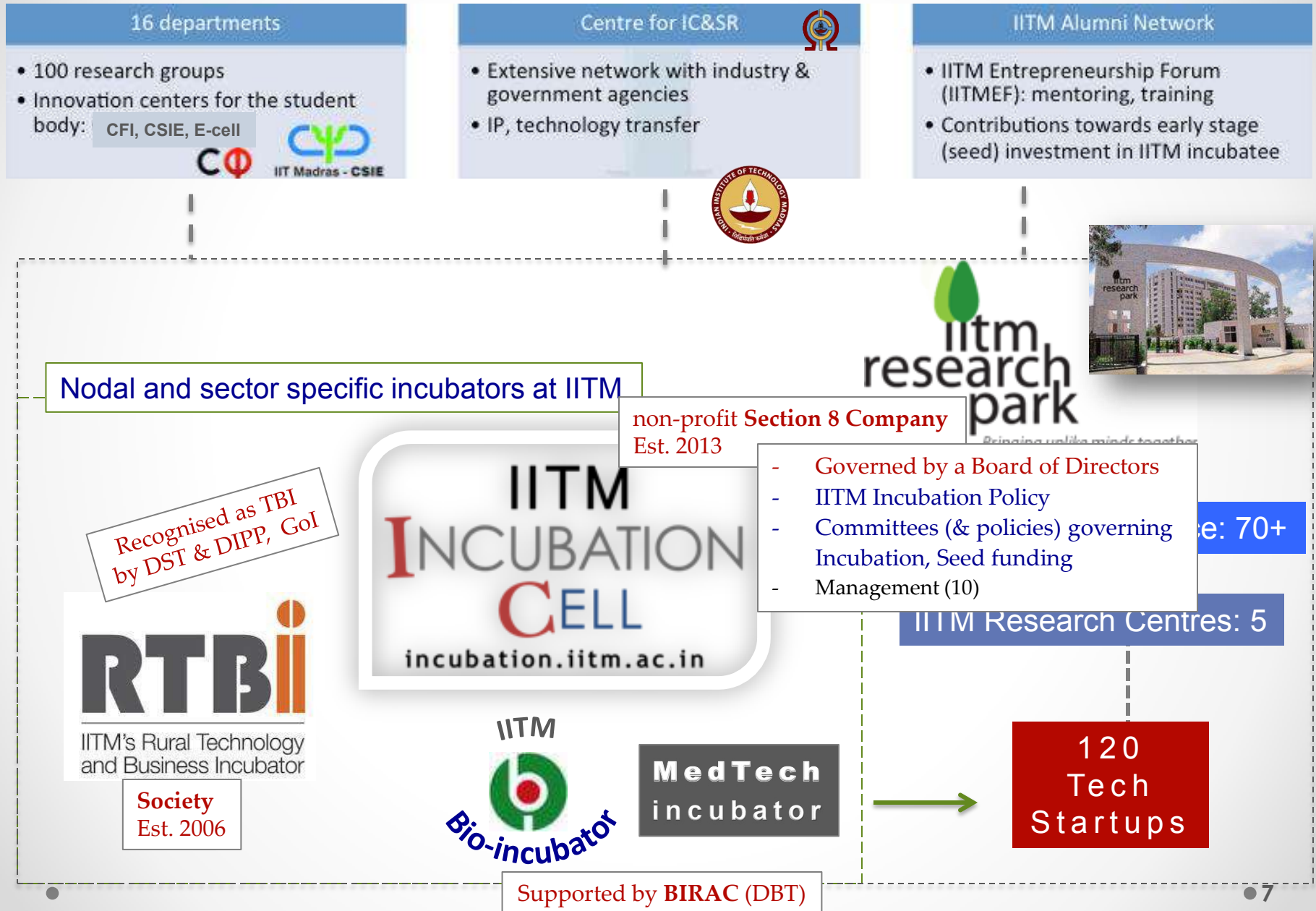
	Project Category	Credits
1	R&D projects to IC&SR (credits per Rs 1M)	200
2	Consultancy to IC&SR (credits per Rs 1M)	200
3	Royalty(credits per Rs 100K)	100
4	Adjunct faculty/Chair Professor	200 per year
5	Part time employment for BTech / MTech / MA students	2.5per month
6	Sponsored PhD Student	100 per year
7	Sponsored M.S Students	75 per year
8	Joint PhD guidance	100 per year
9	MS Guidance	75 per year
10	M. Tech guidance	75 per year
11	B-Tech / MSc. / MA Guidance	50 per year
12	Full Time employment for Fresh, UG, PG and Research Graduates of IITM.	50 credits (only once)

## Leases:

- Long term (20 years)
- Short term (3 years)



# Entrepreneurial Ecosystem at IIT-Madras



# Innovation & pre-Venture Activities at IITM

## 1. IITM's Centre for Innovation (CFI)

Started in 2008 with donation from IITM alumni (1981 batch)



Promote informal learning and foster innovation/invention in technology – students 'walk in with a idea & walk out with a product'

- **Student – run centre** (not faculty driven or investment heavy)
- Space provided with minimal infra / equipment
- **Light guidance/mentorship** provided from Academia (Design Thinking, Electrical/Mechanical Engg., domain expertise: water, agri, healthcare) and Industry
- **Student clubs:** aero, robotics, biotech, sahaay, etc.



## 2. Pre-incubation support to ventures-in-making

Entrepreneurs spend few months within incubators; work with IITM faculty/labs

→ all support provided → graduated to incubation



## Technology Transfer

LICENSING AND COLLABORATION

INDUSTRIAL CONSULTANCY & SPONSORED RESEARCH (IC&SR), IIT MADRAS





# Incubation Support to IITM Startups

18 – 36 months incubation period

## 1 OFFICE SPACE

- Shared space/ infra within incubators located at IITM Research Park (RP)
- Rent offices in IITMRP (subsidized)
  - Phase I - 35,000 sq. ft. (15% clients are startups)
  - Phase II - 100,000 sq. ft. (3<sup>rd</sup> and 6<sup>th</sup> floors) for incubated startups and SMEs



2 **BRANDING** 'IIT Madras Incubated company'

3 **BUSINESS SUPPORT SERVICES:** accounting, Company Secretarial services, Legal, IP

4 **MENTORSHIP:** IIT Alumni (serial entrepreneurs, investors/VCs, domain experts), Industry Heads, IITM Faculty members & Ecosystem partners (VCs, Industry R&D)

5 **NETWORKING:** training, workshops, events



## 6 SEED FUNDING

- IITM Startup Fund: ₹3.34 crore (US\$ 0.5M) Alumni donation
- ₹4 crore (US\$ 0.6M) Industry contribution via Corporate Social Responsibility (CSR) from Cholamandalam Finance, Goldman Sachs India, Amex India, Titan, ANSYS & Banca Sella (2015 -17)
- Government grants to incubators: ₹7 crore (US\$ 1.1M)
  - Seed support provided to incubatees: ₹5-45 lakh (US\$ 7.7k – 70k) as grants/soft loans
  - /convertible debt

# Mentorship support to Incubatees



## Alumni mentors (IITMEF, Chennai chapter)

- **Mentoring Clinics:** bi-monthly meetings & assigned mentors
  - Participants: IITM incubatees, faculty/students
  - Core mentors (serial entrepreneurs, industry heads): Dr. Rajan Srikanth, Mohan Narayan, Vishy Vishwanathan, S Gopal, Venkat Vishwanathan, P Senthil Nathan, Suresh Kalpathi, others
  - Regulars: 50 incubatees

**MM Murugappan** (chair, Murugappa Group): monthly meets  
(regular: 20 incubatees)

**Kris Gopalakrishnan** (cofounder, Infosys)

## IITM Faculty mentors

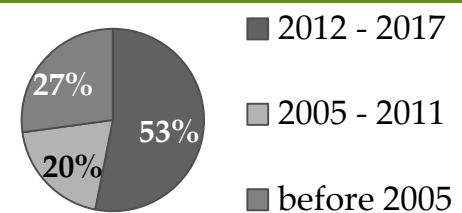
**Ecosystem Partners:** Murugappa Group, Goldman Sachs, Titan | Keiretsu Forum | TATA Trust | BPCL | TiE-Chennai | Ultimate Startup Advisors | Villgro | Syndicate Bank | Chennai Angels, Helion, Ankur Capital, Axilor, & other angle/VC firms



# Incubations @ IITM

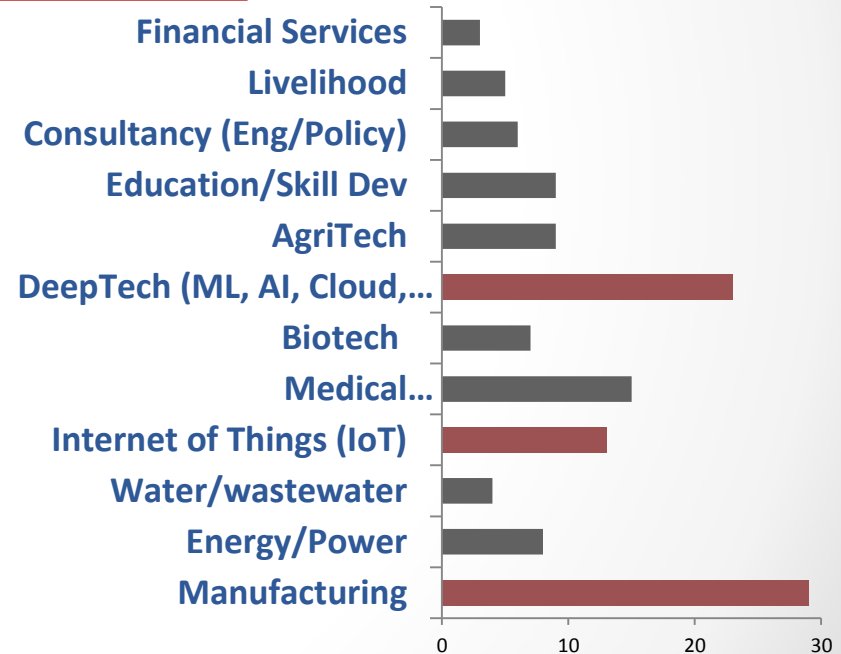
- Tech Startups incubated: **120**
  - **Founders** (210): students (5%), faculty (16%), project staff (2%) & alumni (42%) of IITM; external entrepreneurs (35%)
    - 37 Cos. have **Faculty** as co-founders (20) or minority shareholders
  - **Graduates**: 43
  - Inactive/Closure or Exit: 22 (18%)
  - Current Incubatees: 57

81 Alumni Founders & Graduation Year



- ₹ 10.6 crore (US\$ 1.7M) seed support provided to incubatees (as grants/debt/equity) by IITMIC/RTBI till date
- 28 raise total investment of ₹ 640 crore (US\$ 100 M) from angel/VC investments
- 52 companies generate cumulative revenue of ₹ 87 crore+ (US\$ 14M) in FY 2015-16
  - 3 startups (>5cr), 16 (1-5cr), 10 (<1cr), 23 (<0.5cr)
- direct Jobs created: 2500
- Patents filed by incubatees: 60+

Sector classification



**IITM's Vision on Growth:** Build India's leading Tech Startup hub with innovation & impact as key drivers. Empower entrepreneurs to address national challenges - manufacturing, energy, healthcare, environment & job creation – through successful, self-sustaining businesses. Incubate 40 Cos. every year with strong IP base.



## Select Success stories from IITM Incubation ecosystem

**Full list of incubatee companies:** [www.incubation.iitm.ac.in/portfolio/all-startups](http://www.incubation.iitm.ac.in/portfolio/all-startups)

**Awards & Recognitions:** [www.incubation.iitm.ac.in/news](http://www.incubation.iitm.ac.in/news)

# National Award to IITM Incubation Cell

IITMIC wins **National Award for emerging Technology Business Incubator** for 2016 from Department of Science and Technology, Government of India



Award handed over to IITMIC CEO by  
**Hon'ble President Shri Pranab Mukherjee**  
on 19th National Technology Day in New Delhi  
on 11<sup>th</sup> May 2017



First 'Made in India' Smart **electric scooters** for Indian market with improved ride quality & battery performance (comparable to its petrol counterparts). Team: 150+

*Fund raised:* ₹20 lac seed fund by IITMIC/RTBI; ₹50 lac angel investment by Raju Venkatraman (CEO, Medall) & V Srinivas (founder, Aerospike); ₹6 crore (US\$ 1M) seed series from Flipkart founders (2014); ₹75 crore (US\$ 12M) in Series A by Tiger Global (May'15), ₹205 crore (US\$ 30.5M) by Hero MotorCorp (Oct'16)



Tarun Mehta & Swapnil Jain, Co-founders, Ather Energy, receive the ET Startup Award 2016 from Union Minister Mr. Nitin Gadkari and Amitabh Kant, CEO, Niti Aayog

Winner

Economic Times Startup Awards 2016

Best on Campus

(3 Sept 2016)





# Top 5 finalists in Economic Time Startup Awards 2016, Best on Campus



## Planys Technologies

[www.planystech.com](http://www.planystech.com)

*Founders: IITM Alumni and Faculty members (ME)*

Design & manufacture **compact underwater vehicles** for immersed structure inspection & environmental survey.

*Fund raised: ₹1.75 crore (US\$ 0.3M) angel investment* by Keiretsu Forum, Chennai & Singapore Chapters

- **The Takeda Young Entrepreneur Award 2016, Japan**
- **Rising Star Startup award at Petrotech 2016** under Ministry of Petroleum and Natural Gas, Govt. of India

## Detect Technologies

*Founders: IITM Alumni and Faculty (ME)*

Design & manufacture products primarily focused **on pipeline integrity management** for oil & gas and power plants through **inspection & fault prediction**. Current products: Guided Ultrasonic Monitoring of Pipe Systems (GUMPS) to predict leaks/damages; Noctua

*Fund raised: ₹4 crore (US\$ 0.6M) angel investment* by Keiretsu Forum, Chennai



**Wharton India Economic Forum Award 2017** with a cash award of \$12k (Jan 2017)

Builds mobility solutions using two primary technologies: **multilingual speech recognition & voice biometrics** (14 Indian languages and over 1000 dialects). Offices in India, Singapore Philippines and UAE. *Fund raised:* Series A investment by **Kris Gopalakrishnan** (Co-Founder, Infosys), IDG Ventures India, India Angel Network, Yournest Fund, Stata Ventures (2015), **Series B investment** (May'17)

Umesh Sachdev (cofounder CEO) selected in Top 10 'Next Generation Leaders 2016' from around the world by TIME Magazine

Finalist in ET Startup Awards 2016 – bestincampus

## Hyperverge Inc

<http://hyperverge.co/>

Using **Deep Learning** (machine learning & AI) to **analyse and organise photos across all devices**.

*Fund raised:* seed fund by IITMIC, **\$1 M in Series A** from NEA, Milliways Ventures and Naya Ventures (2014)



**PiBeam Labs** - Manufactures variants of **solar/manual hybrid three wheelers** to move goods & passengers.

*Fund raised:* seed fund by IITMIC/RTBI, ₹1.64 crore (**US\$ 0.26K**) **angel investment** from Keiretsu Forum Chennai/Sing. chapters (2016)



Provides a concept to field experience to customers through innovation in technologies related to:

### Non-destructive Testing

Manufacturing Diagnostics

**Materials Characterization**

**Structural health monitoring**

Simulation and Visualization tools & training



Robotic crawler for pipe inspection

<http://dhvani-research.com/>

2016 - Hon'ble Minister (of Power, Coal, Renewable Energy and Mines) Piyush Goyal's rendezvous with **Green Building, Green Home & Green Transport** at IITM: products developed by incubated startups, **Cygni Energy, Swadha Energies, Zazen, Intellizon** launched by Minister

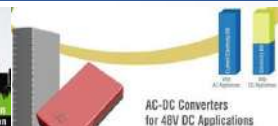


Indian STEP & Business Incubator Association conferred their **Startup Award 2016**

**cygni Energy** - provides various **Solar-DC & DC Micro-grid** solutions. Cygni recently completed 4000 solar DC off-grid installation in Rajasthan and building pioneering DC Microgrid city in Bihar (Sasaram).

*Fund raised:* seed fund by RTBI, ₹10 crore (**US\$ 1.6M**) **Series A investment** (2016)

[www.cygni.com](http://www.cygni.com)



**Swadha Energies** - developed **Green Building Cooling System** comprising Variable air Volume Box (VAV Box), Variable Frequency Drive (VFD) and sensor network integrated with Building Management System.

*Fund raised:* seed fund by RTBI, **angel investment** (2016)

Swadha won **National Entrepreneurship Award 2016** (Engineering Services), under Ministry of Skill Development & Entrepreneurship, Govt. of India.

[www.swadhaenergies.com](http://www.swadhaenergies.com)

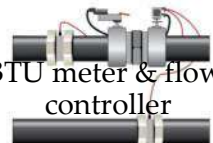
VAV  
Box



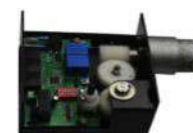
VFD



BTU meter & flow  
controller



Sensor &  
network







**Stellapps Technologies** India's first & largest dairy technology solutions company, building **automation tools integrated with cloud, mobility and data analytics** for dairy farms, cooperatives and private dairies.

*Fund raised:* seed fund by RTBI, **Series A** by Omnivore Partners (2015) & **Bridge funding** (2017)

**Deloitte top 50 fastest growing Tech companies in India** -- Stellapps placed **2<sup>nd</sup>** all over India

[www.stellapps.com](http://www.stellapps.com)

Native Applications & Solutions

3<sup>rd</sup>-party Integration



**Airwood**

**Agri Data and Analytics** company: **full-stack agri production management and data sciences** company that uses comprehensive data instruments, predictive analytics and process improvements to uplift farmers and farming as a whole. Provides **Precision Agri services**

*Fund raised:* ₹30 lac seed fund by Incubator, **₹4 crore seed series investment** (Dec' 2015)



Kamal Kisan wins the **Syngenta 'Best Agricultural Enterprise'** at the **DBS - NUS Social Venture Challenge Asia** in Singapore.

RTBI incubated **Kamal Kisan** develops tools to help farmers reduce labour-intensive tasks and increase profitability. One of their tools is the sugarcane planter that improves efficiency by 80%.

**Cover Story in Sept 2016 issue of Outlook Business** "Good Businesses 2016 - Planting Machines" Kamal Kisan seeks to ease the troubles of small farmers with its low cost and easy-to-use products. RTBI CEO also finds a **mention**.



## Innonano Research Pvt Ltd

founders: IITM faculty & alumni

Nanomaterial based water purification technology to remove iron & arsenic from ground water. Has been widely deployed in India. Over 150 small-scale community purifiers were installed last year in the **arsenic-affected** rural areas of the country, serving over 100,000 people

*Fund raised:* ₹120 crore (US\$ 18M) investment (acquisition)



Provides innovative & cost effective technologies for efficient **water, wastewater & solid waste management solutions** based on sustainability principles.

*Fund rasied:* Rs 15 lac (seed fund by IITMIC/RTBI ) & 40 lac Angel Investment

Current activities: Real-time monitoring, reporting & troubleshooting of water & wastewater treatment systems using IoT based instrument and field level data collection by mobile app, information processed on cloud server for troubleshooting alerts.







## Skillveri Training Solutions

Indigenously manufacture **Welding Training Simulators** to help bridge India's skill gap.

Offer customized solutions for welding training requirements for **industries** (eg. Murugappa Grp, Daimler, Ashok Leyland), **vocational training institutes**, ITIs, polytechnic and engineering colleges (eg. IITM, IIT-Mandi, PSG Tech).

*Fundraising:* Rs 8 crore Series A investment by **Michael and Susan Dell Foundation (MSDF)** and **Ankur Capital** (Jan 2017), angel investment by Ankur Capital (2015), seed funding by RTBI & IITMIC



## Merkel Haptics

Founded by IITM Faculty

Design & manufacture **mannequin based training simulators** for medical professionals.

Current product: CPR training simulator



# Incubation Floor – Phase II, IITM Research Park



IITM Research Park, Phase II: 800k sq ft built up area comprising five blocks, multi-level parking and 100k sq.ft. incubation/startup floors



## IITM Incubation Cell

Third Floor, D Block, Phase II


IIT Madras Research Park

Chennai 600113, TN, India

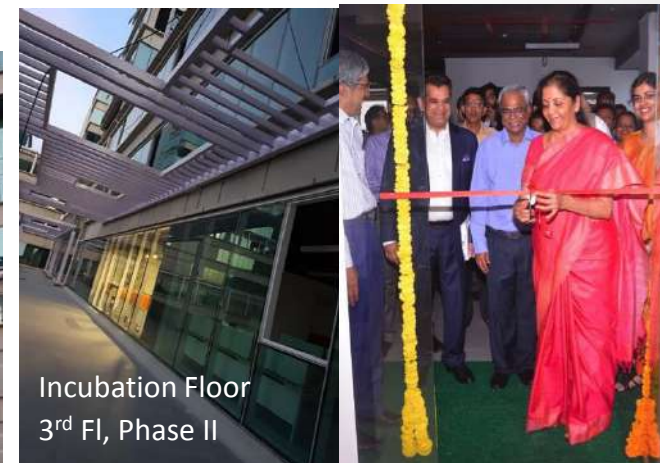
+91 (0) 44 6646 9869 / 70

[office@incubation.iitm.ac.in](mailto:office@incubation.iitm.ac.in)

[www.incubation.iitm.ac.in](http://www.incubation.iitm.ac.in)

 /IITMadrasIncubation

 @IITMIC



Inauguration of new IITMIC office by Hon'ble Min. Nirmala Sitharaman - 2017

