



TECHKRITI'16

Pre Conduction Report

IIT Kanpur has always believed and practiced the philosophy of inculcating complete education including personality and leadership development among the youngsters. As a part of this culture, the Students Gymkhana of IIT Kanpur has been organizing for the last 22 years, an annual All India competition on Innovation in Technology and Entrepreneurship, acronym Techkriti, among engineering students of this country. Sustained efforts have now elevated Techkriti to a global platform for promoting innovation and creativity. The festival is a much awaited event in the technical and business calendar of the student community, and attracts participation from India as well as abroad.

Lately, Techkriti has grown into one of the biggest and the most zestful student festivals in Asia, witnessing nearly 40,000 participants with over 1000 participants from abroad, including countries like China, Russia, Kuwait, UAE, USA among others. The participation is from almost all the prestigious colleges within country like IITs, IIMs, NITs etc.

THEME: BEYOND OUR PLANET

The universe never ceases to amaze us; and life has a way of being obvious. Beyond Our Planet presents a wide stage to evaluate, understand and explore deep into this unlimited space of opportunities. Beyond Our Planet is an avenue to expand our horizons, to innovate and move forward.

Techkriti'16 will be organized from **3rd-6th March**.

The core team specially thanks for the efforts of the following people, without whom Techkriti, as is now, would not have been possible.

- Dr. A.R. Harish (DOSA, IIT Kanpur)
- Dr. Vimal Kumar (ADSA, IIT Kanpur)
- Dr. Sudhir Kamle (Festival Chairman, Techkriti)
- Dr. J Ramkumar (Member, FAC)
- Dr. Prawal Sinha (Ex-Member, FAC)
- Kailash Chand Meena
- Aman Trigunait
- Shivam Yadav
- Nikhil Rastogi



We are also grateful for the support provided to us by the Senate, Professors, IIT Kanpur Administration and all the students of IIT Kanpur.

INITIATIVES

Spreading Smiles:

With ever increasing stress amongst the students, Techkriti undertook the campaign to highlight the need to smile! Following activities were undertaken as a part of this campaign.

- TOSC Sessions: Sessions were conducted during TOSC to bring out the positivism amongst the students.
- Make a wish: Techkriti team fulfilled the wishes of the children at Subhash Children Home Kanpur and helped setup a Sports and Hobby room there.
- Winter Donation Drive: Taking a leaf out of the previous editions of Techkriti, Team Techkriti organized winter donation drive in Bhopal, Kolkata, Noida, Lucknow, Indore and Gwalior.

Car Launch Event of Team FSAE, IIT Kanpur:

Techkriti supports technical innovations by the students of our campus. With this objective, Techkriti sponsored the Launch Ceremony of B16 and F16.

New Year Celebration:

In association with Students Gymkhana, Techkriti organized the New Year Celebrations held at OAT. Movie Screening, followed by Dhol Parade, DJ, Free Ice Creams and Photo booths, the entire event received warm response from students.

Accessible India Campaign:

In association with Ministry of Social Justice and Empowerment, Techkriti undertook the promotion of Accessible India Campaign launched by the ministry with the purview of making at least 50 percent of all government buildings in the national capital and all state capitals “fully accessible” for the disabled by July 2018. Techkriti serves as the stepping stone for the same with a nationwide competition for college students to come up with ideas and technological solutions to achieve the same.

Education Opportunity at France:

A session from the officials of Campus France was organized to familiarize students with the education opportunities at France and the process for the same.

Summer Training:

For the first time Techkriti organized Summer Training program at 4 different centers across the country.



Astrophotography Competition: World Space Week

Techkriti marked World Space Week with an astrophotography competition which received entries from various countries like New Zealand, France, Italy etc.

Panel Discussion on Space Exploration:

Techkriti'16 revealed its theme, "**Beyond Our Planet**" with a panel discussion with the following panelists:

- Mr. Abhlesh Tomy: First Indian solo Circumnavigator
- Prof. Pankaj Jain, Physics
- Prof. Nitin Gupta, BSBE
- Prof. Kushari, Aerospace
- Prof. YN Singh, EE

MAJOR EVENTS

- **IARC:** This event is about solving a maze via line following autonomous bots, emphasis on the basics of robotics. Participants have to prepare 2 autonomous robots which can communicate with each other so as to simultaneously solve 2 mazes via line –This event has participation from India as well as following International Teams. Participants are from Sri-Lanka, UAE, Bangladesh and Nepal.
- **Multirotor:** In this event, participants will be judged in both the aspects of a multirotor that is on the expertise of flying skill and the stability of your bot. These fascinating aircrafts combine the flight characteristics of both a plane and a helicopter.
- **Wild Soccer:** The ultimate battle between wild robots on soccer field with weapons attached to the bots. The robots will not only have to rip apart the opponent's robot, but it will also have to show excellent tackling skill to score goals. Each Team consists of 3 bots on soccer arena.
- **IORC:** Indian Open Rubik's Cube is the first ever official Rubik's Cube competition in India started in IIT Kanpur. IORC is conducted under the patronage of WCA- World Cube Association. This event has twelve sub-events. Participants have advantage of competing among the cubers throughout the world.
- **IOPC:** IOPC is the annual International Online Programming Contest of IIT Kanpur, organized by the Techkriti team. It is a prestigious programming contest where each



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coder whacks his brain to code solutions to the given problems. It is the place where optimization and proficiency matters, skills matter, hard work matters.

- **TGP:** Techkriti Grand Prix, brings a heart-pounding challenge for your engineering skills in building a remote controlled vehicle which performs via Taking sharp bends, zigzag curves on a rough road and jumping over planks, powered by a powerful internal combustion engine.
- **IRGT:** The International Robot's Got Talent does not restrict participant's creativity to a pre-defined problem statement. Any admirable work/bot/machine can be presented in IRGT. Participants from various countries would participate in a country specific qualifying round, and the winning teams from the countries would be given entry to the Grand Finale of the International Robot's Got Talent to be held during Techkriti '16.
- **Sky Sparks:** The competition involves RC aircraft with electric motors. The competition provides a platform to compete different flyers through a series of different rounds doing different manoeuvres and showing their talent in flying like payload dropping, limbo flying and on spot landing.
- **INAE-IIT Kanpur National Competition "Innovation in Manufacturing Practices 2015"**
This event is organized by Mechanical Engineering Department of IIT Kanpur in collaboration with INAE to provide great opportunity to showcase their talent in Design and Manufacturing practices. Contestants design an effective and innovative model and give a final working shape as a product.
- **TIC: Techkriti Innovation Challenge**
TIC presents you a wonderful platform where you can showcase your innovative ideas in form of a model, prototype, patent, cool apps or any software product in front of elegant Panel of Judges. Inviting participants to bring forth original and unique ideas and present it in a genuine and comprehensive way.
- **IOT: Internet Of Things**
Internet of Things is a competition where participants get a platform to present their business plans related to internet of things. Here start-ups get guidance from India's finest mentors and also an opportunity for networking, team creation and to raise seed funding.



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- **Accessible India:**

This is a technical competition organized by Techkriti in collaboration with Ministry of Social Justice and Empowerment, Government of India where the participants are expected to develop/design a transformative technology solution (innovative, smart and useful app/concept/product) that would be useful to people with any types of disability.

- **Embedded:**

This Event poses challenge to the students of electronics community, to create a device which sends real-time data of the body parameters to the physician through Internet, through the help of embedded systems. Embedded systems design is a productive synergy between hardware and software design.

- **Appathon: “Applications Development Challenge”**

This event promises you the most amazing opportunity to bring your ideas recognition, as teams vie for prizes and glory. Participants are free to develop apps for any technology, be it Android or iOS, Windows 8/10 metro apps or Internet of Things, or even the web.

- **Entrepreneurial Events:**

- Business Venture
- Social Track
- Manmohan Gill Bio Business
- Internet of Things
- Elevator Pitch
- Accessible India Campaign

ALL EVENTS:

CATEGORY	COMPETITION
Robogames	<ul style="list-style-type: none"> • Wild Soccer • IARC • Manoeuvre • IRGT
ECDC	<ul style="list-style-type: none"> • Electromania • Electrade • Embedded • FPGA



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Entrepreneurial	<ul style="list-style-type: none"> • Accessible India • Business Venture • Internet of Things • Social track • Elevator Pitch • Manmohan Gill Bio Business
Business	<ul style="list-style-type: none"> • Battlefield • Marketing Villa • Be the Tycoon • Countdown – Finatics and Mark-Ops • Stocksim • Best Manager
Presentation	<ul style="list-style-type: none"> • Soccon • 29 States • Techkriti Innovation Challenge • Accessible India
Design Event	<ul style="list-style-type: none"> • Bridge Design Challenge • Junkyard Wars • Scientoon • Concatenate • Techkriti Grand Prix
Software corner	<ul style="list-style-type: none"> • Battle City • Chaos • IOPC • Appathon • Crypto • IHPC
Take Off	<ul style="list-style-type: none"> • Hoverush • Impulse • Multirotor • Rule the Sky • Sky Sparks
Mixed Bowl	<ul style="list-style-type: none"> • IORC • Whatsup • AstroQuiz



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	<ul style="list-style-type: none"> • Astro Treasure • Nutcracker • CrimeRun
IMP (Innovation in Manufacturing Practices)	<ul style="list-style-type: none"> • Biggest Event in Techkriti'16

TECHNOCRUISE

Technocruise is the zonal round of Techkriti, this year Techkriti organized Technocruise in 8 cities across India. Main motive of Technocruise is to increase the reach of Techkriti among college students and provide opportunity to those students who are not able to attend Techkriti. Technocruise this year contained of prelims of events and workshops.

Zonal City:

1. Bhopal
2. Jaipur
3. Kolkata
4. Noida
5. Chandigarh
6. Lucknow
7. Gwalior
8. Agra

Events:

1. IARC
2. Manoeuvre
3. Impulse
4. BattleHack

Workshops:

1. Android App Development
2. Ethical Hacking
3. Internet of Things
4. Robotics
5. Rubik's Cube



TECHKRITI OPEN SCHOOL CHAMPIONSHIP

Aptitude and presentation competition for school students of class 9th-12th, organized in 12 cities of the country. Our mission is to strengthen and cultivate the talent of our nation at the grassroots level, which serves our sole motive. Through a series of events involving mental aptitude, logic, and scrutiny, it seeks to provide school students a platform to build fundamental experience and knowledge, to exercise co-ordination skills, and to think out of the box while providing solutions to practical problems.

Round 1: Around 3000 students participated in the first round of TOSC

Round 2: Online abstract submissions

Round 3: Final 100 participants were called to IIT Kanpur for the final round presentations.

Cities:

- 1) Kanpur
- 2) Lucknow
- 3) Delhi
- 4) Mumbai
- 5) Bangalore
- 6) Jaipur
- 7) Kota
- 8) Jhansi
- 9) Gwalior
- 10) Indore
- 11) Nashik





WORKSHOPS

1.Ethical Hacking
2.Android App. Development
3. Internet of Things
4. CAN-SAT Workshop
5. Sixth Sense Technology
6. Bridge Design
7. Androbot
8. Hexapod
9. VLSI Design
10. Embedded System
11. Cloud Computing
12. Share Market & Investment
13. Process Design & Engineering
14. Image processing with Matlab
15. Flying Wing
16. Social Media Analytics
17. Cisco Networking
18. Augmented Reality
19. Automobile and IC Engine



TALKS:

<p>Dr. Hamid Karzai</p>	<p>Hamid Karzai served as President of Afghanistan. He is one of the World's Most Successful President. He has been awarded many honours, such as Honorary Knighthood from Her Majesty Queen Elizabeth (2003), the Philadelphia Liberty Medal (2004). He had also played a major role in Soviet war in Afghanistan.</p>
<p>Vikas Swarup</p>	<p>Vikas Swarup is the author of the novel Q & A, adapted in film as Slumdog Millionaire, the winner of Best Film for the year 2009 at the Academy Awards. Currently, he is the Spokesperson, Ministry of External Affairs, India.</p>
<p>Dr. Lyn Evans</p>	<p>Dr. Lyn Evans is the Director of the Linear Collider collaboration at CERN. He has also served as the project leader of Large Hadron Collider in the past</p>
<p>Mike Libecki</p>	<p>Mike Libecki - A climber turned explorer with more than 45 expeditions to his name, searches out the last truly wild places on the planet</p>
<p>Pradeep Sindhu</p>	<p>Pradeep Sindhu, an alumnus of IIT Kanpur is an Indian American entrepreneur who is the co-founder and Chief Technical Officer/Vice Chairman of the Board of Directors of Juniper Networks Inc.</p>
<p>Jorge Gabriel Cham</p>	<p>Jorge Gabriel Cham is a Chinese Panamanian cartoonist and roboticist popularly known as the creator of "Piled Higher and Deeper Comics". He is also the co-founder of PHD TV.</p>



E-SPEAK:

Arjun Surya	Chief Scientific Officer, Curadev. He has more than 25 years of research experience and holds expertise in the assessment of drug molecules against several target classes across a range of therapeutic areas and specializes in building high performance research teams.
Amit Sethi	CIO, AXIS BANK, Winner of The Asian Banker Bank Technology Leadership Achievement Award for 2015. He re-engineered the processes and re-layered the IT architecture of the bank.
Netanel Raisch	Netanel Raisch developed Lishtot, Jerusalem-based startup won a place on CNBC's list of the 20 hottest startups of 2015 for its device that takes about two seconds to tell you if water is pure or contaminated.
Annurag Batra	Annurag Batra is a first generation entrepreneur and currently serving as Chairman and Editor-in-Chief of exchange4media group

INDIA INNOVATORS:

Ravi Nawal	Ravi Nawal, an alumna of IIM-A, has a keen interest in innovation which led to his first full-fledged book: India Can.
Dr. Pawan Agrawal	Dr. Pawan Agarwal runs Mumbai Dabbawala Education centre to give Education to Dabbawala and Deprived Children absolutely FREE. He is an International Motivational Speaker, Author and an Educationist.
Sanjay Katkar	MD and CEO of Quick Heal Technologies Limited, has redesigned the entire product portfolio and elevated the role of Quick Heal as a trustworthy IT security brand in more than 80 countries.
Vijay Talati	Vice President of Engineering, Routing Business Unit, Juniper Networks. He has volunteered with various local and international non-profits, including Vibha and Sunday Friends.



Industrial Conclave:

Company	Profile	Topic
Samsung	Mr. Balaji Holur (Senior Vice President, Samsung R&D Institute, Bangalore)	Practical Approach towards realization of Android Platforms in Internet of Things Space and impact of Big Data analytics technology.
Microsoft	NA	Design of Software
SAP Labs	NA	Free workshop on Internet of Things and its implementation
Winjit Technologies	Mr. Abhijit Junagade (Co-Founder, Winjit Technologies)	Interactive session with students on startups.

Exhibitions:

Techkriti was first held in 1995 with the aim of developing interest and encouraging innovation in technology among students. It has since grown into one of the largest technical festivals in Asia. Exhibitions in Techkriti has shown a tremendous level of innovations and inspirational exhibits from all over the world. Significance of technological innovation on humans is tremendous because technology helps them adapt to the environment and techkriti provides the platform, Tech-expo for this showcase of innovations and talents.

1. **Automated Chess:** An interactive automated chess playing prototype where people will be able to play and try their luck to outsmart the robot.
2. **Smart Technologies**
 - i) **Manav:** India's first interactive and fully automated humanoid which will interact with the audience and give a glimpse of the technical advancement in robotics
 - ii) **Bionic Arm:** A robotic prosthetic arm
 - iii) **Autonomous Drones:** Fully autonomous drones which can undertake long range flight
 - iv) **Brain Sensing:** A smart device to detect and convert brain senses into mechanical maneuvers
3. **Smart Technology**
 - i) **Wifi Dustbin:** a dustbin which creates wifi if right kind of waste is put into it.



- ii) **Charging Valet Tray:** A technology to free people of the cumbersome wires and to make charging easy
- 4. **Smart Vehicle Expo:** Next Generation vehicles which will revolutionize personal movement
 - i) **HoverTrax**
 - ii) **Mono Wheel Bike**
 - iii) **Solo Wheel**
- 5. **Gesture Controlled Gaming:** An interactive gestural armband gaming exhibition which will allow the audience to play 3 different games.
- 6. **Super Bike Expo:** An attempt to promote the much needed technology for the future, the electric motor powered superbikes. Rexnamo a company from Delhi will be displaying its 3 fully functional bike models.
- 7. **Defense Expo:** Exhibition of the latest arms and ammunitions by Ordnance factory with an aim to generate interests in the students in research and development going on in Defense.
- 8. **Vintage Car Rally:** A rally of vintage cars to pay homage to awe inspiring engineering marvels of the past. Some of the cars in the rally would consist of:
 - i) **1914 Rolls Royce**
 - ii) **1918 Rolls Royce**
 - iii) **1934 Ford**
 - iv) **1943 Ford**
- 9. **International Education Fair:** Like last year, there will be educational fair wherein educational opportunities for the students in France will be spoken of by the representative of embassies.

Shows:

Shows	Description
Farhan Live	Bollywood Night performed by Farhan Akhtar and his band.
Fire and Led Show	Artmosphere Performers will present a magical and highly unique choreographed show with acrobatic, juggling and circus trained entertainment
Interactive Session with TVF	An inspirational session on entrepreneurship, its hardships and success.
SUNBURN Campus	EDM Night by DJ Shaan, DJ Joshi and DJ Darth Legion



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Bike Stunt Show	Edge Riders will give a freestyle stunt riding performance
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FUN T:

A Fun Zone where you can enjoy with your wingies and friends. It has different games in which you can have a friendly competition with them.

- 1) **Laser Tag** – Only way to experience Counter Strike in real life
- 2) **Paint Ball** – Shoot your friends with color balls
- 3) **Zorb Football** – Enjoy football while zorbing in balloons
- 4) **Sumo Wrestling** – Enjoy traditional Japanese art form
- 5) **Poker** – Experience Vegas in Kanpur
- 6) **Archery** – Check out your aim by participating in it
- 7) **Ball Zorbing** – Experience floating in air

