

भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad



#IITHJapanConnect

# किर IITH

*the crowning glory*

A quarterly e-newsletter of IITH | Issue - 5 | Jan 2021



Prof B.S. Murty (L), Director, IIT Hyderabad, during the MoU signing with Prof Kazuhiti Hashimoto, President, National Institute for Materials Science, Japan

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Dear Readers,

We hope you are doing well!

First of all, we sincerely thank all our readers for acknowledging and honoring our efforts for the past four editions. Your valuable suggestions have helped us improve, and we hope that किराIITH - The Crowning Glory (A quarterly e-Newsletter of IITH), Issue-5 reflects the same. Japan and IITH share an exceptional affectionate bond with one other.

This ever-booming alliance has resulted in a vibrant interchange of Indian and Japanese cultures, science, technology, R&D opportunities, industrial exposure, advanced studies opportunities for the stakeholders.

The combined developmental Intellect of Japan and IITH has enabled students with opportunities to show their innovation, develop scientific-temperament and contribute to the fast-paced world of Science, Technology, and Culture.

The collaboration has been very beneficial to both IITH and the associated Japanese Institutions. This edition is a testament to the vibrant and fruitful association of IITH and Japan. It is a proud celebration, and hence we fittingly named this edition as **किराIITH - The Crowning Glory, Issue-5, #IITHJapanConnect**.

We hope this edition gives you a good idea of the relationship between IITH and Japan and the various activities pertinent to the alliance. We hope to keep on delivering the latest issues of किराIITH - The Crowning Glory.

We wish everyone a safe and healthy stay.

***Have a good read!***



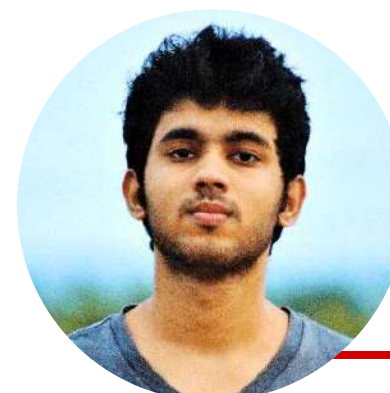
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(Media & PR Secretary,  
Student Gymkhana)

## Every Day is a chance to be better. . .

Dear friends,

Finally, we could bid adieu to the year 2020 - a special year for the whole world and will be remembered forever as three quarters of the year has been affected by Covid-19. While the Pandemic has affected every walk of life, the world has shown resilience and learnt a number of lessons from it and started a new life adapting to the circumstances and bringing out its best through innovative ideas.

IIT Hyderabad also went through a lot of challenges this year but could demonstrate that "When there is Will, there is a Way". It was exactly a year back when the COVID-19 outbreak was declared in India and by March mid the situation has started to get worse. IITH was among the first few institutes that took the call to send the Students back to their home well before the lockdown was instituted across the country. Also, IITH was among the very few institutes to buckle-up and open the door of the campus in a phased manner strictly adhering to the COVID-19 Protocol by Gol.

IITH has taken no. of novel initiatives like BTech in Biomedical Engineering, 7 Industry-oriented MTech Program and a new Department of Entrepreneurship with PhD Program. For the first time, 14 Foreign national students have enrolled at IIT Hyderabad for MTech and PhD programs. A special drive has been taken up to admit students who have been affected by Pandemic for PhD. The number of PhD student intake has been increased from 60 to 120. In addition, about 20 PhD students have been admitted exclusively to work on problems defined by DRDO labs. A Centre for Continuing Education started, and a Rural Development Centre established.

Continuing to excel on the Research facade with about 225 faculty members, the institute has published about 1270 Scopus publications, secured about 70 sponsored research projects with about Rs. 36 Crores and filed 18 patents. The seed grant for new faculty increased from Rs.3 lakhs to up to Rs.25 lakhs. About 27 new faculty members have been supported with total funding of over Rs. 5 Cr. this year. Several MoUs have been signed to strengthen the academic & research capabilities within the institute. IITH-DRDO Research Cell has been established. IITH-NIMS Research Centre has been established to have an exchange of PhD students, faculty and scientists between the two institutions. Research Excellence Awards have been initiated for faculty members. Interdisciplinary Research Projects worth Rs.1 Cr. and Rural Development Projects to the tune of 50 lakhs have been provided to the faculty.

Research culture among students has been nurtured with financial support through Build (Bold and Unique Ideas Leading to Development) projects. Alumni came forward and supported this new initiative partially. DST has funded Rs.135 Cr. under the NM ICPS, for TiHAN set up by Prof. P. Rajalakshmi of Electrical Engineering. Honorable Education Minister has obliged us by laying the Foundation Stone for the TiHAN. ICMR has funded Rs.15 Cr. to set up a CoE under Prof. Renu John, Biomedical Engineering. DBT has sanctioned an Indo-UK project (AMRflows) worth Rs. 11 Cr to Prof. Shashidhar, Civil Engineering. IITH also received global recognition for the contributions made to the development of 5G standards that is recently approved by ITU (International Telecommunication Union).

*Continued..*

A year back, we have ordained to disseminate a quarterly News Magazine of IITH. The intention was to bring awareness about all the good work done by the IITH Fraternity at IITH. I am obliged with the encouragement received from the reader that made us constitute each issue even better. The credit of the Crowning Glory of किराIITH goes to all the authors who have relentlessly contributed to each issue and to the Editorial Board who actualized it. I hope that in 2021, we will be able to set higher benchmarks to excel in research & technology and can curb unsought situation like COVID-19 Pandemic.

Wishing you a wonderful year ahead.

***Stay Safe & Stay Smart!***



## JICA Friendship Projects

Dear Friends,

Greetings from IIT Hyderabad!

I am delighted to know that IIT Hyderabad is bringing a special issue focusing on the long-standing collaboration of IIT Hyderabad with Japan in the last decade or so. As a faculty and the Dean (International and Alumni Relations) at IIT Hyderabad, I feel fortunate to be a part of this journey.

On a personal front, my association with Japan started much before I joined IIT Hyderabad. I was awarded the Japan Society for the Promotion of Science (JSPS) postdoctoral fellowship way back in 2007-09 to work with Professor Nobuhiro Tsuji of Osaka University (presently, he is associated with Kyoto University). Upon my return to India, our collaboration continued and flourished, resulting in successful research proposal grants, student exchanges, and regular mutual visits. With so many wonderful friends around, I reserve some of the most cherished moments associated with the stays and interactions I had with my Japanese colleagues and friends.

In the context of IIT Hyderabad, collaboration with Japan has been one of the hallmarks of this institute's eventful journey since its inception in 2008. The importance of the collaboration with Japanese academia/R&D/industry through JICA under the FRIENDSHIP project can hardly be overstated.

The phase 1 implementation of the project helped IIT Hyderabad in infrastructure development, forging research collaboration in selected frontier areas of research, securing scholarships for IITH students for pursuing their studies in Japan, and regular student and faculty exchanges, and so on.

On a quantitative term, the collaboration yielded 56 MoUs, 272 faculty exchanges, over 200 student exchanges, two external and seven internal research grants, 71 joint publications, 51 patent filings, and 138 scholarships for studying in Japan!

A defining aspect of the IIT Hyderabad-Japan collaboration has been the scholarship opportunities for IIT Hyderabad students to study in leading Japanese universities. It is most encouraging to note that the students have found career opportunities in Japanese academia and industries upon completing their masters and doctoral studies in Japan. They are contributing meaningfully to the research and development, innovations, and economy of Japan. It is heartening to see that IIT Hyderabad enjoys a vibrant alumni network in Japan ready to propel the IIT Hyderabad-Japan relationship to the next level.

It is also a great pleasure to note that the Phase-2 of the FRIENDSHIP project has been approved for FY 2021-2027. The framework for implementation of the Phase-2 is now under discussion. The major focus of the Phase-2 implementation will be research collaboration in cutting-edge and emerging research areas, joint doctoral programs, and greater engagements with Japanese and Indian industries to strengthen the innovation and transformation ecosystem.

Once again, I consider it my proud privilege to be a part of this journey. I firmly believe that we will see this collaboration grow even stronger in the coming days as we continue this journey together.

*Continued...*

Last but not least, as our battle with the COVID-19 pandemic continues, I wish the well-being of you, your family, and everyone associated with you.

**See you, Namaskar and Mata-ne,**



**Prof. Pinaki Prasad Bhattacharjee**  
**Dean (International and Alumni**  
**Relations)**

## IIT Hyderabad-Japan Collaboration

The IIT Hyderabad-Japan collaboration traces its roots to 2007 when Prime Ministers of India and Japan agreed for broader Indo-Japan engagement. In 2009, to take forward the collaboration, IIT Hyderabad held discussions with the Ministry of Human Resources Development (MHRD) and the Japan International Cooperation Agency (JICA). In 2010 a Salient Project Proposal was submitted to MHRD and JICA, which followed series of visits of the Japanese Teams from Tokyo and JICA, New Delhi, to IIT Hyderabad including one led by the Chairman, Japan-IITH Collaboration Consortium, expressing keenness to go ahead for further processes of the collaboration. The main objectives of the collaboration were the long-term promotion of exchange of students and faculty with reputed Universities of Japan and Infrastructure support for the development of IIT Hyderabad.

In 2012, a formal structure for the IIT Hyderabad-Japan collaboration was developed as a Project for an Official Development Assistance (ODA) loan by the Govt. of India from JICA for campus development of IIT Hyderabad. The objectives of the project were to strengthen the human resource development along with the creation of certain infrastructures with Japanese design as a mark of the friendship of the two nations. Collaborative interactions with the academics and industry of Japan, exchange of students and faculty, were also essential components of the project. The total cost of the project including the development of infrastructure, and research capabilities was Rs. 1775 cr.

For the first time in India, an international collaboration of a premier Institute of the magnitude as is envisaged under the Project is taking place at this Institute. The project envisages the creation of fifteen quality

Infrastructure facilities for the students and faculty of IIT Hyderabad, to benefit their academic pursuits as well as physical and cultural development. Specifically, the collaborations entailed the construction of six buildings with Japanese design as a mark of the friendship of the two Nations involving JICA to provide Schematic Design (SD) and Design Development (DD) for construction. In 2011, JICA assigned the Design Development Responsibility to the University of Tokyo, which is internationally well-known for its expertise.

The design of six buildings identified as International Guest House, Sports and Cultural Center for Students, Incubation and Research Park, Convention Center Complex, Knowledge Center (Library), and Research Center Complex was undertaken by University of Tokyo. The buildings were designed by the University of Tokyo on behalf of JICA as a good gesture, free of charge. These will be signature buildings and will stand as symbols of the friendship of the two nations. All the buildings under the project are currently under construction and are expected to be completed in 2022-23 timeframe.

Research support for enhancing the research infrastructure is provided in the project for high-end equipment and facilities. In addition, the exchange of human resources is an important object of the friendship between the two countries. Through a number of projects of JICA, there has been regular exchange of academics of IITH and Japanese universities as also of Japanese industry to exchange ideas and information leading to a good understanding and promoting the bond of friendship between the two countries.

*Continued...*





*Photographs of the early visits by JICA representatives and Professors from University of Tokyo.*



**Prof. K. V. L. Subramaniam**  
Dean (Planning)

## Reasons to come to Japan...

Dear Murty-sensei, Mohan -Sensei, Pradeep-sensei, Kataoka-Sensei, OCS Team, and all the students, it is really good to be reconnected with you.

I am Takashi Suzuki, Director General of JETRO Bengaluru. JETRO is a Japanese government organization which explore and promotes any business activities between India and Japan. For us, Not only just supporting business match-making, but also developing Talent exchange between India and Japan is becoming the most crucial part of our activities to strengthen Japanese business globalization and innovation.

I hope all of you recognize and remember JETRO, together with our sister organization JICA, held the event called "JAPAN DAY" every year since 2018 in IITH.

The previous event was held on 2 Oct last year, the day of Mahatma Gandhi Jayanti. We had to organize this event by Virtual because of COVID situation. Honestly, I missed your campus and Dal curry with green chilli in the canteen... but thanks to this virtual way, we could have more than 430 students participated in the event. It was the biggest number ever, and also with the biggest number of 20 Japanese companies joined and enjoyed their interaction with IITH students.

As a result of these 3 years (2018-2020) total of 12 Japanese companies hired 21 students. Especially in the previous event, 6 Japanese companies also confirmed 93 students for the internship in the coming season. Those Japanese companies are not only the big names like TOYOTA, TOSHIBA, NTT, RAKUTEN etc. but also Japanese Startups which eagerly explore the global market with Indian excellent talent like you.

I will say it again; Japan is not a bad place to be.

**Reason 1:** Japan has the World's third-largest economy, it must be the big stage for you to play.

**Reason 2:** Japan is open as an Innovation Hub, where talent like you are the most wanted. You can contribute yourself and have more opportunity to grow yourself.

**Reason 3:** Excellent business environment, which gives you no stress with the reasonable, transparent and efficient working environment.

**Reason 4:** Stable infrastructure, Efficient public transport services, connectivity, electricity, etc. for your easy living.

**Reason5:** Livable, safe society

These are the major reasons I would like to raise to you. And I rather emphasis Reason 5, less crime, less COVID, no Terrorism. A big city like Tokyo, Osaka are the global centre of young cultures, and not going too far from the urban, there are lots of beautiful wild nature you can also enjoy. And you must feel Japan's unique history and culture everywhere.

On the other hand, thanks to SOFTBANK, you have PAYTM based services and OYO is also in Japan already. You can find many Indian restaurants. According to Japanese ZOMATO like service called Guru Navi (<https://www.gnavi.co.jp/> Sorry, Japanese language only), 2869 Indian restaurants are registered in Japan, among all, 812 Indian restaurants in Tokyo only, where we have Indian town with more than 3000 Indians residents.

*Continued...*

Lastly, this is our commitment, we will continue to work together with IITH and JICA to promote more “Study in Japan” and “Work in/with Japan” This includes not only Scholarship and Recruit/Internship, but also promoting more Japanese companies’ co-research & development project with IITH for further diversification of our relationship. All these activities are based on the “People” and You are the “Only missing piece” for us.

See you next JAPAN DAY!!

◆ JAPAN DAY 2020 Official Website  
<https://www.jetro.go.jp/en/events/iithjapanday2020.html>



Mr. Takashi Suzuki,  
Director General of JETRO Bengaluru

## Achievement and future of FRIENDSHIP (the Project for Future Researchers at IITH to Enhance Network Development with Scholarship of Japan)

In August 2007, the prime ministers of Japan and India declared that the partnership between Japan and India was an essential pillar for the future architecture of the entire region. The cooperation between IITH and Japanese counterpart was commenced under this strong initiative based on the common understanding of the significance of the partnership. Through the cooperation, it is aimed that first-class university is established to symbolize the Japan-India partnership.

In 2009, the consortium composed of the Japanese government, JICA, universities, research institutions and private companies was formed as a venue to exchange opinions regarding the general framework of the cooperation to realize the effective "All Japan" support to IITH.

JICA has been extending the cooperation to IITH in integrated approach including facility development and strengthening of educational and research activities. For the facility development, ODA Loan project, "Campus Development Project of Indian Institute of Technology, Hyderabad (Phase 1-2)", was signed in 2014. Several important facilities in the IITH campus are being constructed under this loan including 6 buildings designed through technical cooperation project named "Campus Design Project for IIT-H through Academic Exchange and Interdisciplinary Collaboration" to symbolize partnership between India and Japan.

For the educational and research activities, the technical cooperation project, "the Project for Future Researchers at IITH to Enhance Network Development with Scholarship of Japan

(FRIENDSHIP Project)", started in 2012.

The objective of the project is that educational and research activities of IITH are further developed through the world-class research network associated with human resource interaction between IITH and higher education institutions and industrial clusters of Japan.

During the period of the projects, the unwavering commitment of IITH has been shown and implemented towards being the symbolic university of the Japan-India partnership.

As a result, distinguished results have been achieved. In view of academic partnership, around 140 FRIENDSHIP scholarship students were dispatched to Japan, 22 MoUs were agreed between Japanese academic institutions, about 280 faculty members visited each country, 10 joint research were conducted and more than 70 research papers were published.

In addition, some larger-scale research funds, such as SATREPS (Science and Technology Research Partnership for Sustainable Development), were obtained for joint research projects. Other than these, JICA-FSA (Friendship Scholars' Association) was established to extend supports to new scholarship students to Japan and share information among members, which bears an important part of Japan-India partnership.

*Continued...*

In view of industrial partnership, 13 MoUs were signed with Japanese companies, several joint research outcomes were exhibited at events and seminars, and internship programs and job fairs were held for FRIENDSHIP scholarship students. Through these activities, some students got a job at Japanese companies and contributed to strengthening the academic-industrial partnership between the two countries.

Based on these tangible achievements, JICA and IITH are now discussing to design the FRIENDSHIP Project Phase 2. In this phase, it is expected to establish Japan Desk as a regular unit of IITH, which would collect a wide range of

information regarding academic and industrial cooperation and perform as a hub for further partnership between Japan and India. This new hub should contribute to the continuous development of the human resource which would play important roles to strengthen the partnership sustainably.

Last but not least, we would like to express sincere gratitude to all counterparts at IITH and concerned parties in India and Japan for their great efforts so far and highly appreciate the continued support for deepening our partnership in future.



**IMAI Seiju (Director) & ITO Sachiyo  
(Program Officer)  
Higher Education and Social Security  
Group, Human Development  
Department, JICA**

## India & Japan - Special, Strategic and Global Partner

It is my great pleasure to extend a message to this issue of “KirIITH –The Crowning Glory”, the magazine of the highly reputed IIT Hyderabad, which is especially focusing on IIT-H’s connection with Japan.

Today, Japan and India enjoy excellent and highest ever relations as “Special Strategic and Global Partner”. Our cooperation varies from policy dialogues, security and defense, economic and social development, to science and technology, culture and people-to-people exchanges.

In this widened and deepened relations of our two countries, IIT Hyderabad is becoming an important hub and expected to play a very important role in our cooperation. While Japan has been assisting IIT-H for the construction of new campus building and facilities as well as for the establishment of academic, research and industrial collaborations with Japanese counterparts, IIT-H has already concluded many agreements and established arrangements with various universities and research institutes and is carrying out many joint research projects and students exchange programs. These activities are also paving the way for successful cooperation of the academic and the industry between our two countries.

I myself visited IIT-H new campus on 28th January and witnessed the development of the construction works on the new campus. Prof. B. S. Murty, Director, IIT-H kindly briefed me about the situation and the plan to strengthen the cooperative relations between IIT-H and academic institutions as well as Industries in and from Japan. I was strongly encouraged by

the intention and keenness of the Director to further strengthen the relations and cooperation between IIT- H and Japan. So, for my part also, I would like to work closely in this direction.

I am sure that the world reputed IIT Hyderabad not only becomes the very important hub connecting Japan and India through the cooperation with Japanese academy, industry but also contributes to strengthen and expand friendly relations between the people of Hyderabad, Telangana, India and Japan.

I wish IIT Hyderabad a great success in all its programs and future endeavors!



**Mr. TAGA Masayuki**  
Consul - General of Japan

## My Life in India & with IITH family

I travelled to India for the first time in July 2010 to attend the Joint Coordination Committee meeting of the DISANET Project, whose leading institute was IIT Hyderabad. I used to attend online meetings and to travel to Hyderabad and other cities in India as a researcher from Keio University, Japan.

In March 2011, the “2011 Tohoku Earthquake” struck Japan, and I spent a lot of time for the recovery of Internet infrastructure in the Tohoku area as part of a Japanese volunteer team. The post-disaster networking system, which the volunteer team deployed in many evacuation shelters in the Tohoku area, was the one that the DISANET project was also developing for the post-disaster scenario in India.

### *Some memories from DISANET*



After September 2011, the frequency of my travel to IIT Hyderabad drastically increased and my stay in IITH in one travel became much longer. I spent most of the remaining period of my tenure as a project assistant professor at Keio University in IIT Hyderabad because I realized I should work as a part of the Indian team to accomplish the goals of the DISANET project. IIT Hyderabad gave me office space, and I worked as a part of one of the DISANET teams in IITH. I believe I am the guy who stayed at the guest house of the IITH temporary campus the longest. Witnessing that I was frequently visiting IIT Hyderabad, my teammates started to ask me “Why don’t you shift to India?”. After some time, JICA announced the launch of the FRIENDSHIP project, which needs somebody to stay in IIT Hyderabad and facilitate Indo-Japan collaboration. It did not take a long time to raise my hand.

*Continued...*

Upon the commencement of my tenure as a JICA Expert in 2012, I quitted my job at Keio University. IITH appointed me as a visiting assistant professor so that I could teach and guide in the institute. Using the experience of network operation in Japan, I worked on restructuring the campus LAN after knowing the growth roadmap of IIT Hyderabad.

In addition to the engineers in the Computer Center, several students joined the team to troubleshoot and operate the campus LAN. Everyone in the team was proactive and seeking a problem to solve in the campus LAN. While the campus LAN operation is a very serious matter for the entire institute, working with highly motivated teammates is always a fun and enjoyable experience. This feeling never changes.

When the FRIENDSHIP project was launched, IIT Hyderabad was generating a very strong momentum to grow further. Such momentum strongly pushed the FRIENDSHIP project to accelerate the activity and to engage the project members including myself more on broad Indo-Japan collaborations.



### ***IITH Alumni in Japan***

The change makers and accelerators of Indo-Japan collaboration were the students and fresh alumni of IITH, who went to Japan for internship and higher study in Japanese companies and universities. They always and naturally help to establish the high reputation of IITH both as the ambassadors to Japan and the hard evidence of many positive aspects of the academics, R&D and culture of IIT Hyderabad.

***Continued...***





Travelling to Japan with IITH faculty members was also an exciting experience for me. The more they flew to Japan, the more attention and curiosity Japanese universities and companies developed on to IITH.

Many successful cases of initiating a collaboration with Japan brought even more fancy ideas and opportunities for further and broader collaborations. People in IITH made the FRIENDSHIP project a grand success and motivated JICA to launch FRIENDSHIP Project Phase-2 to do something far beyond what Phase-1 achieved.



**UoT-IITH Workshop in IITH**



**Profs. From Keio University visited IITH**



**Continued...**



## *Exhibition in Japan*

When I joined Keio University as a bachelor student, the campus called SFC where I studied till PhD was already 9 years old. (Keio University has several campuses, and SFC is one of them launched in 1990.) While I could enjoy the late stage of campus development, I used to feel that I missed the very exciting period immediately after the campus launch. I believe I am very lucky to witness the excitement, challenges, collaboration, and joy in the process of establishing IITH which all the students, professors, and staffs engaged with their limitless enthusiasm and efforts. I am grateful to such wonderful colleagues for allowing me to be a part of it. People in IITH have never treated me as a visitor. Everybody treated me as a friend, a family member and a teammate to share and accomplish many important goals together. Thanks to their kindness and open-mindedness, my life in India has always been

glorious since the very first day I stepped into the institute. To make myself deserve such a wonderful life, I happily put my enthusiasm and efforts to the maximum extent on the duties as a faculty member of IITH as well as the Indo-Japan collaboration.



**Dr. Kotaro Kataoka**  
Visiting Associate Professor  
Department of Computer Science &  
Engineering,  
IIT Hyderabad

## Love of Language – Japanese Language Classes at IITH

I have offered Japanese Language courses as an external Japanese language instructor at IIT-H since 2016. Spoken Japanese basics (1 credit) and Japanese Reading Writing Basics (1 credit) have provided an opportunity for IIT-H students to learn Japanese language and culture fundamentally and systematically in Liberal Arts department with the supervision of Dr. Badri Narayan Rath, Dr. Haripriya Narasimhan, and Dr. Mahati Chittem. A total of 756 students completed the courses for the past 5 years.

Spoken Japanese basics course focuses on the communication skills using the modern English alphabet (which is called Romaji), and the method makes an easy step for them to start learning Japanese. On the other hand, Japanese Reading and Writing course introduce Japanese original characters and the writing system from the beginning. There are three types of characters, Hiragana, Katakana, and Kanji in Japanese. Remembering the different characters and writing system is the first hurdle for them to overcome, but it generally requires a lot of time and effort. The course aims to help students to recognize, read, and write the characters step by step as well as increase their vocabulary and grammar knowledge through practical exercises.

Although learning Japanese as a Second and Foreign Language (SFL) requires a huge amount of time and effort, we believe the combination of face-to-face interactions during classroom hours and voluntary self-study outside classroom hours are very helpful in enhancing the learning effect. Several culture hands-on sessions such as calligraphy and traditional dress are introduced during classroom hours (as shown in following figures).



*Japanese Calligraphy hands-on session in the classroom*



*Japanese traditional dress (yukata) hands-on session in the classroom*

Also, we have designed and deployed a Moodle-based Learning Management System, “ORP Gym” to support their self-study outside classroom hours and complement classroom activities since 2018. The name of the system came from the fitness gym and students can voluntarily practice many quizzes with automatic and manual feedback from language instructors on the system whenever they have time. One of the features of the courses encourages them to use practically what they learn as many times as they want using the system, not just input the knowledge. The process of making mistakes and repairing them through retries are similar to our real daily life. “Failure teaches success” (“Shippai wa seikou no moto” in Japanese proverb). Mistakes teach us a lot.

*Continued...*

Once they comprehend the topic in each lesson and get used to sentence patterns and useful phrases, we also encourage group work such as a short skit performance and short movie-making project (as shown below).



**Short movie created by IIT-H students**

So many meaningful video contents have been produced by students' initiatives until today and have had a positive impact on others' language learning. Since IIT-H students are excellent in academics and very humble to learn, we are always impressed with their positive, active, and creative attitude toward learning.

We would be happy if many IIT-H students are interested in Japanese language and culture and deepen mutual understanding. We are hoping for them not to be shy and afraid to explore different languages and cultures. Learning with fun and the process with trial and error could be impressive for you just like your childhood.

When students in IIT-H are interested in going on a business trip/ internship to Japan, going to graduate school, or joining a company in Japan, we believe both courses can provide an opportunity to be ready for a new life. In addition, there are many research collaborations between IIT-H and Japanese universities and companies, we would be happy

if we can contribute to the smooth communication between Indian and Japanese researchers.

Now I am back at Keio University to research Educational Technology under the supervision of Dr. Rodney Van Meter, we would like to contribute to enhancing the learning effect in SFL education by utilizing Information and Communication Technology (ICT). We would be happy to work together with IIT-H researchers in terms of our research field more from now on.



**Ms. Yuka Shori Kataoka**  
Certified Japanese Language Instructor  
Doctoral program at Graduate School of  
Media and Governance, Keio University  
Research Fellow of Japan Society for the  
Promotion of Science (JSPS)

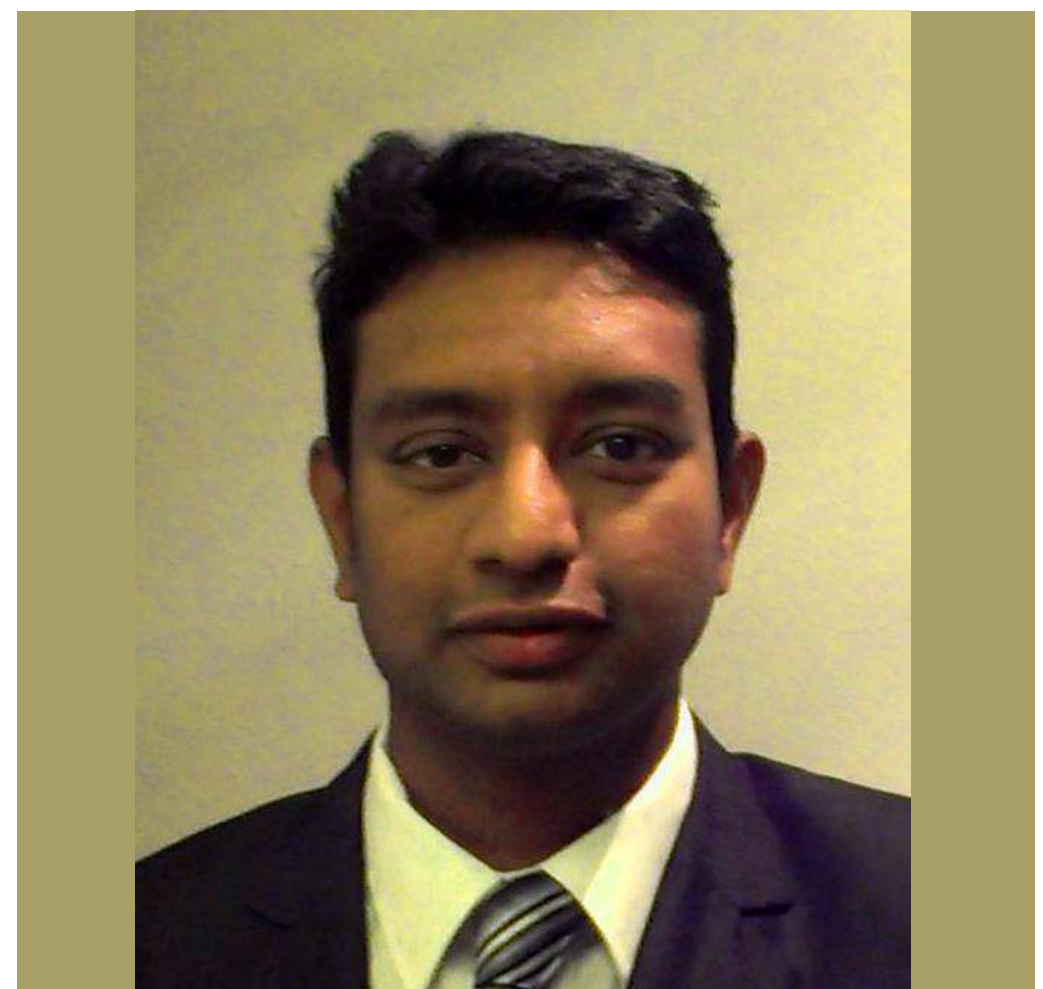
## Placements & Internships @Japan

IITH and Japan have a long relationship of research, collaboration and career growth, which is gaining in strength every year.

IITH witnessed a significant increase in the number of international offers. Despite the current pandemic situation, we have received 26 Placement offers from 06 Japanese companies and 20 Internship offers from 07 Japanese companies as-on-date for the Placement year 2020-21. The placement and Internship process for the year is still in progress.

IITH organizes “Japan Day” annually since 2018 to encourage Japanese Companies keen in hiring Indian talents and enable our students to explore career opportunities in Japan, broaden knowledge on areas of Technology in demand, career prospects and work culture in Japan. Japan Day 2020 was conducted virtually on October 02, 2020, and around 20 Japanese companies have participated.

Some of the prominent recruiters for the year 2020-21 are NTT-AT, Rakuten Mobile, Accenture Japan, Yokogawa, Yukai Engineering, Mitsubishi, I’m Beside You Inc., DG Takano, Denso, Sekisho Corporation. The international research and academic collaborations of IITH are creating new opportunities for our students in Japan.



**Dr. Pradeep Kumar Yemula**  
*Former Faculty-in-Charge*  
*Office of Career Services &*  
*Associate Professor*  
*Department of Electrical Engineering*



**Japan Day Poster released by JETRO**

## Journey So Far: JICA Friendship Scholars' Association (JICA-FSA)

JICA-FSA has been established as a student support system by-and-for the receipts of JICA Friendship Scholarship. The envision of JICA-FSA is to enable a constructive platform, building strong networking of IITH scholars through guidance and mentorship program. JICA-FSA is thriving to extend a support system to IITH students interested in pursuing their higher studies in Japan. Association is also involved in establishing IITH Alumni Japan Chapter and has organized Alumni meet in November 2019.

**Why Association:** In the CONNECT-IITH 2016, none of the graduated scholars were present as they were not invited. Thus, their absence intrigues the sense of disconnect between the scholar and the project. This disconnect was never felt earlier in the project since its inception in 2012. Till 2015, all of the scholars were the student and they had formed an informal community to discuss their issues and problem. In order to fill the void and to give a structure to the informal community, discussion to have an association triggered within scholars. **Inception:** An idea to have a formal association for JICA Friendship Scholarship receipts was discussed in the length at CONNECT-IITH-2017 in Kyoto, which was moderated by Dr. Mahendra Kumar Pal (the University of Tokyo).

A few ideas which were explored are-1. establishing an association comprising of already graduated scholars meaning an alumni network, 2. creating a team of senior members who can mentor current scholars and 3. putting a team of enthusiastic members representative in each region who can connect current and graduated scholars and IITH students.

Dr. Tanima Biswas (Waseda University), Dr. Swapnil Ghodke (Nagoya University) and Dr. Nitish Rajoria (Keio University) volunteered to represent the association and choose to go with

the idea of the mentorship program.

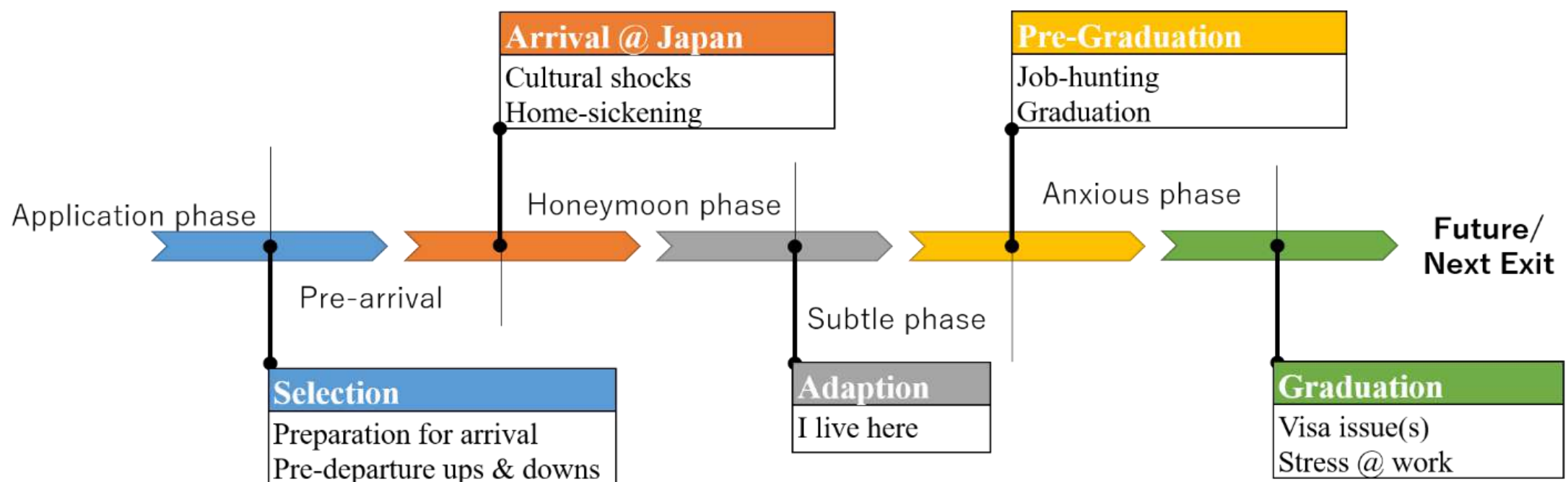
With a month-long effort, a team of mentors residing in various part of Japan namely Tokyo, Osaka, Kyoto, Sendai and Kyushu was put in placed to pave the path forward.

**Evolution and features:** Change is the law of nature and JICA-FSA is no indifferent. Association has continued to evolve based upon the internal discussion and feedbacks from scholars to form a vibrant proactive team. Dr. Mohit Joshi (Kyoto University), Dr. Sai Chandra Teja (Osaka University) and Dr. Mahendra Kumar Pal (University of Tokyo) were tapped upon to revamp the association. Team formulated the mission and vision of the association to address the new issues faced by the scholars based upon their experience and interaction with scholars.

Team further proposed an organizational structure which comprises three teams- Management Team, Executive Team and Mentors' Team for hassle-free execution of association activities. This structure serves as the foundation of the association. The main activities of the Association include:

- To hold/assist an annual meeting (CONNECT IITH);
- To coordinate and exchange information among members and its chapters throughout Japan and between the Association and IITH.
- To promote any other activity which meets the Association's objective.

*Continued...*



**A comprehensive support system of JICA-FSA is a comprises of various assistance at a different stage during and beyond the scholars' stay in Japan. Following schematic diagram illustrating the nature of assistantships provided at a different stage of scholars' life.**

Current Team: JICA-FSA is currently being run by a vibrant enthusiastic team of scholars and team members are:

1. Mr. Atul Singh, Tohoku University, Sendai
2. Dr. Brijesh Sharma, Osaka University, Osaka, Analytical Engineer, Horiba Advance, Techno
3. Mr. Surya Pratap Singh, Kyoto University, Kyoto
4. Dr. G. Pruthiviraj, The University of Tokyo, Tokyo Japan
5. Dr. Vikas Kuntal, The University of Tokyo, Tokyo, Japan
6. Ms. Bhargavi Thakur, The University of Tokyo, Asst. Manager, JR East

Timeline: Back in 2014, an event titled "Human Resource Forum" was envisioned, designed and executed by Ms. Junko Komoto, then coordinator of FRIENDSHIP Project. The primary objectives of the event were to create a platform to showcase the collaborative activities of IIT H with Japan and to facilitate the job-hunting of scholarship students.

The event was renamed to CONNECT-2015 IITH-Japan Industry-Academia Interaction Seminar by Mrs. Miki Matsuo, then project coordinator. The event spanned over two days, in which the first day was dedicated to job-hunting, interactive session for scholars (Knowledge sharing seminar), and the second day was dedicated to IITH-Japan Industry-Academia Interaction.

Since 2016, the CONNECT-IITH event has been redesigned and the current event is comprising of cultural activities on the first day while the second day is reserved for industry-visit and job-hunting activities. The scholars are introduced to HRs of various reputed companies and are advised to discuss the job-opportunities.

In 2017, scholars visited Myoshin-Ji Temple, one of the biggest temples in Kyoto and practised ZEN, meditation. In 2018, scholars paid a visit to Miraikan - The National Museum of Emerging Science and Innovation in Tokyo.

**Continued...**

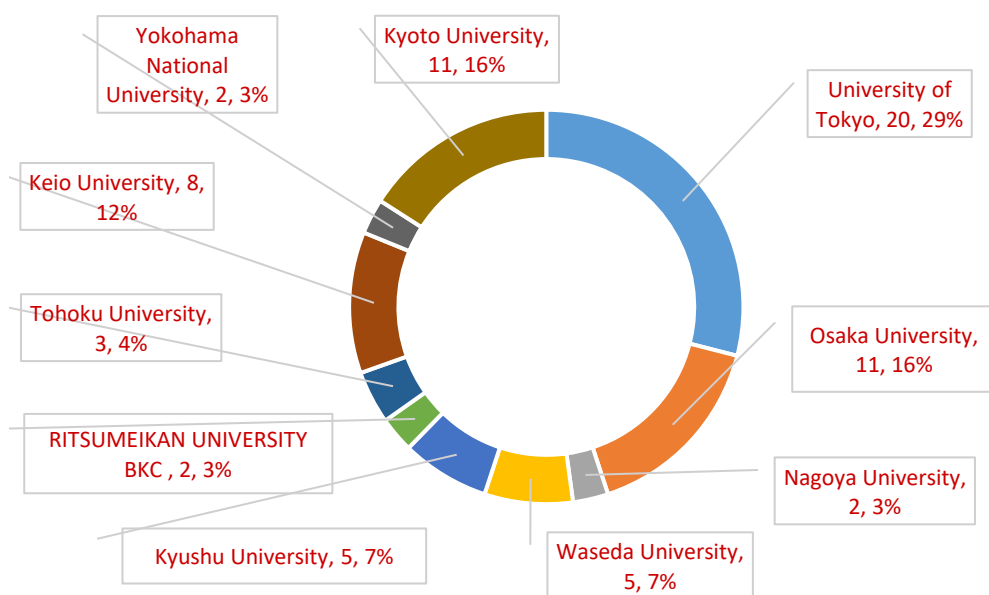
In 2019, JICA-FSA organized the CONNECT-IITH event in Tokyo and hosted Prof. B. S. Murty, Director, Prof. Siva Kumar, Dean IAR, Prof. Sireesh Saride, Dean Planning for a dinner. This dinner was organized as “IITH Alumni Meet in Japan” and was attended by 100+ IITH graduates working and studying in Japan. An office-bearer of IITH Alumni Association participated virtually.

An office-bearer of Suzuki and Embassy of India, Tokyo also graced the event with their presence.

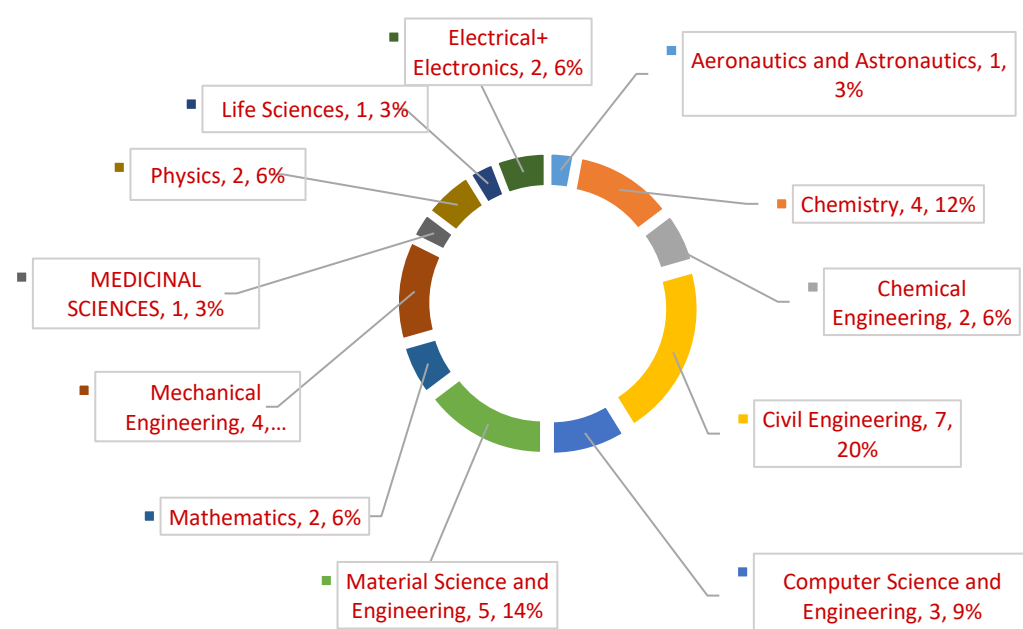
Amid COVID-19 Pandemic, CONNECT-IITH-2020 was organized virtually and attended by scholars in India and in Japan. The event also welcomed all IITH graduates who had secured admission in various prestigious universities in Japan. Prof. B.S. Murty, Prof. Pinaki Bhattacharya, Prof. C.K. Mohan, Prof. Siva Kumar, Prof. Kotaro Kataoka, JICA Official, Friendship Project coordinator and 100+ scholars attended the event.

For more details, please visit our homepage <http://www.jica-fsa.com/> or feel free to write to us @ [jica.fsa@gmail.com](mailto:jica.fsa@gmail.com) You may also follow us on Facebook via <https://www.facebook.com/jica.fsa/>

### Association in Numbers\*



\*(As of Aug 2020)  
Numbers of enrolled scholars in different Japanese universities



Departments chosen by enrolled scholars



**Dr. Mahendra Kumar Pal,**  
Researcher  
Hyogo Earthquake Engineering Research Center (E-Defense)  
National Research Institute for Earth Science and Disaster Resilience (NIED)



## Japan beyond college campuses

Japan is known worldwide for Ninja, electronic items with cutting edge technology, ramen and many more. Tea ceremony, flower arrangement (Akebana) and calligraphy are a few of the distinct elements of its rich culture. Upon arriving on the land of the rising sun, most of us strive to excel in our studies and witness these commonly known facts about Japan. But few of us dare to challenge ourselves and explore the awe-struck natural wonders and cultural profound heritage of Japan. These wonders include mountain trails, beautiful tropical beaches and stunning ridges and ripples of snow for skiing. This article introduces some of the memorable moments of IITH Alumni.

### Mountain Hiking: Three Sacred Mountains

Japan has some of the most incredible eye-catching natural wonders in the world. Japanese Alps (Northern and Southern) have long been the object of veneration and pilgrimage. The Three Holy Mountains of Japan (三霊山, Sanreizan) are three mountains revered by tradition in Japan. They include (1) Mount Fuji, (2). Mount Tate and, (3). Mount Haku of height 3776m, 3015 and 2702 m, respectively.

Aside from being a famous landmark and symbol of the country, Mount Fuji is a natural wonder. According to UNESCO, Mount Fuji has "inspired artists and poets and been the object of pilgrimage for centuries".



**Mount Fuji (Photo Credit Dr. Sai Chandra Teja, Osaka University)**

Mount Tate, commonly referred to as Tateyama, consists of three peaks: Ōnanjiyama (大汝山, 3,015m), Oyama (雄山, 3,003m), and Fuji-no-Oritateyama, (富士ノ折立, 2,999m) which run along a ridge.

**Continued...**



Mount Haku commonly known as Hakusan or White Mountain, is known for its diverse plant life namely *Primula cuneifolia* (Hakusan Kozakura), *Anemone narcissiflora* (Hakusan Ichige).



**Mount Haku (Credit Dr. Swapnil Ghodke and Dr. Pravin Kadu of Nagoya University)**

**Mount Tate (Photo Credit: Dr. Mahendra Kumar Pal, University of Tokyo)**

## Cycling Around Japan

The 70-km stretch along the route connecting Hiroshima to Onomichi, commonly known as Shimanamikaido is the cyclist paradise. With 14-rent cycle terminals where you may rent or drop off the cycle, ShimanamiKaido passes through six small islands in the Seto Inland Sea. It is also known as the Nishisetu Expressway.

**Continued...**



***Shimanamikaido (Photocredit: Dr. Mahendra Kumar Pal, University of Tokyo, Dr. R. Sai Chandra Teja, Osaka University)***

The 2nd popular choice of cycling route is Awaji island, where you may enjoy the beautiful scenery from the island's coast-hugging roads. You must enjoy locally available Onion. It is a 150 Kms circuit in one-way and which can be covered in a two-days period with an overnight stay, preferably camping at tropical beaches. The Naruto whirlpools can be best seen from sightseeing cruises that run from Shikoku and Awaji Island.

***Awaji Island (Photo Credit: Dr. Swapnil Ghodke and Mr. Upendar of Nagoya University)***

### ***The sweeping sand dunes, and Tottori Sand Museum***

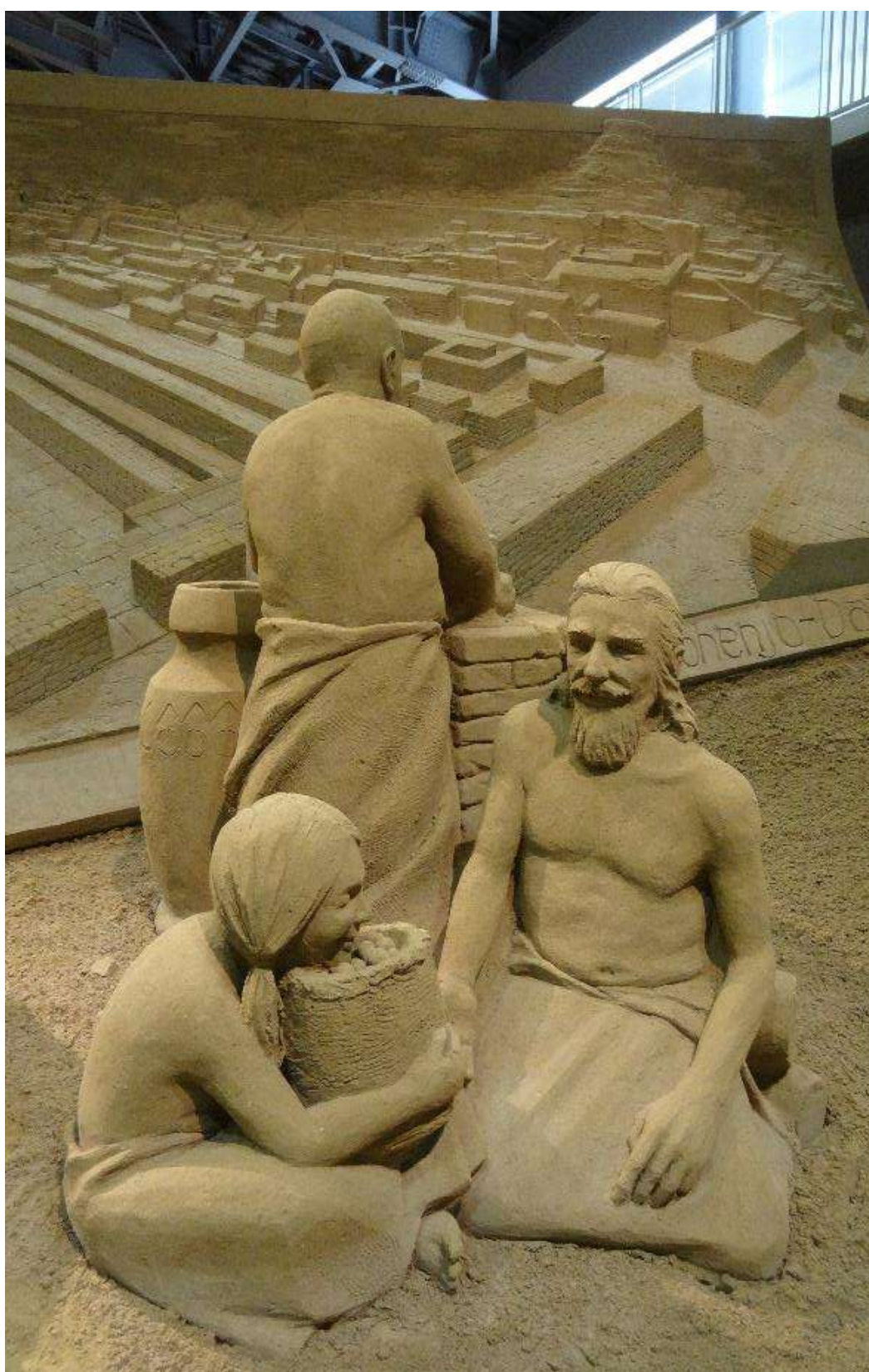
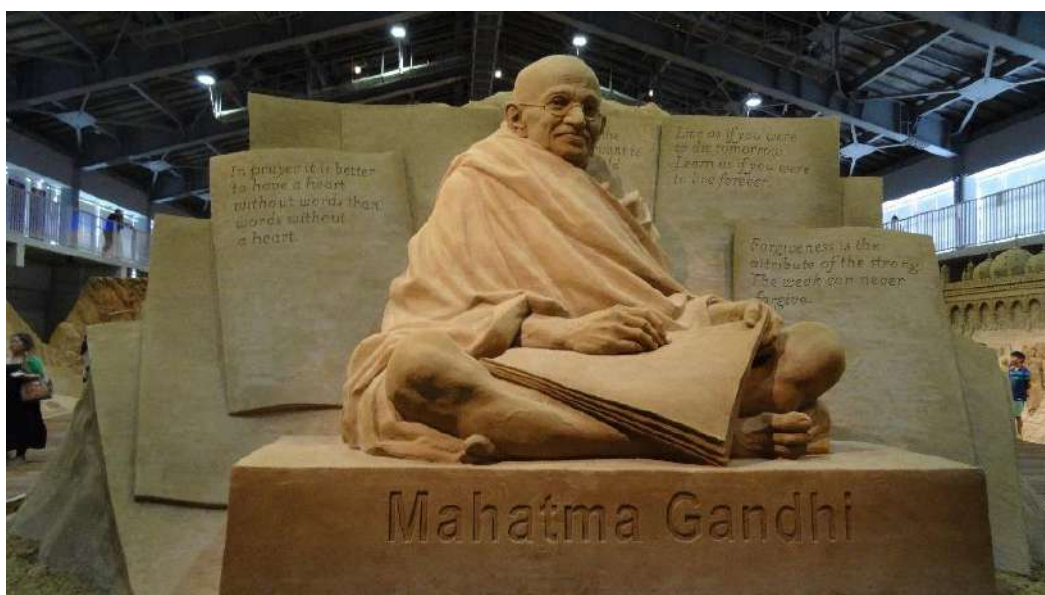
As the result of 100,000 years of ocean winds blowing in from the Sea of Japan, the sand dunes are naturally formed which are stretched over 16 Kms in length and are 2 Kms width with incredible 40-meter-deep basins and towering hills.

At such a vast nature, the sand museum was opened in 2006 and it has been exhibiting sand scriptures using sand from dunes dedicated to some specific theme on yearly basis with an aim to learn the beauty and possibility of sand.



***Continued...***

Museum has dedicated its 12 exhibitions for "Travel around the World in Sand, South Asia - Religious Devotion, Diverse Cultures, and the Road to Peace". Museum exhibited 21 sculpture focusing on various cultural and religious in South Asia, such as the Taj Mahal, Mahatma Gandhi, and Mohenjo-Daro for a period of one-year from 2019/4/13~2020/1/5.



**Tottori Sand Museum (Photo Credit: Dr. Mahendra Kumar Pal, University of Tokyo)**

## New Year Celebration

Evening parties, fireworks, illuminations, rave parties, and big-screen count-down are a few common ways to adieu to the last year and to welcome the new year. Japan is no indifferent in that celebration. Traditionally, Japan used to prepare for and welcome Toshigami (年神), the New Year's god. People clean their homes and prepare Kadomatsu or Shimenawa to welcome the god before New Year's Eve. Buddhist temples ring their bells 108 times as count-down, representing the 108 elements of bonō (煩惱), mental states that lead people to take unwholesome actions.

Alongside western culture influenced celebration, Japanese people celebrates their new year with friends and family and by visiting the shrine at midnight. Starting the new year by witnessing the first sunrise of the year is believed to be lucky. Every year, except in 2021 due to obvious reason, a million people visit Meiji Jingu Shrine located in western Tokyo; Meiji Jingu Shrine is a Shinto Shrine dedicated to the deified spirits of Emperor Meiji and his wife.

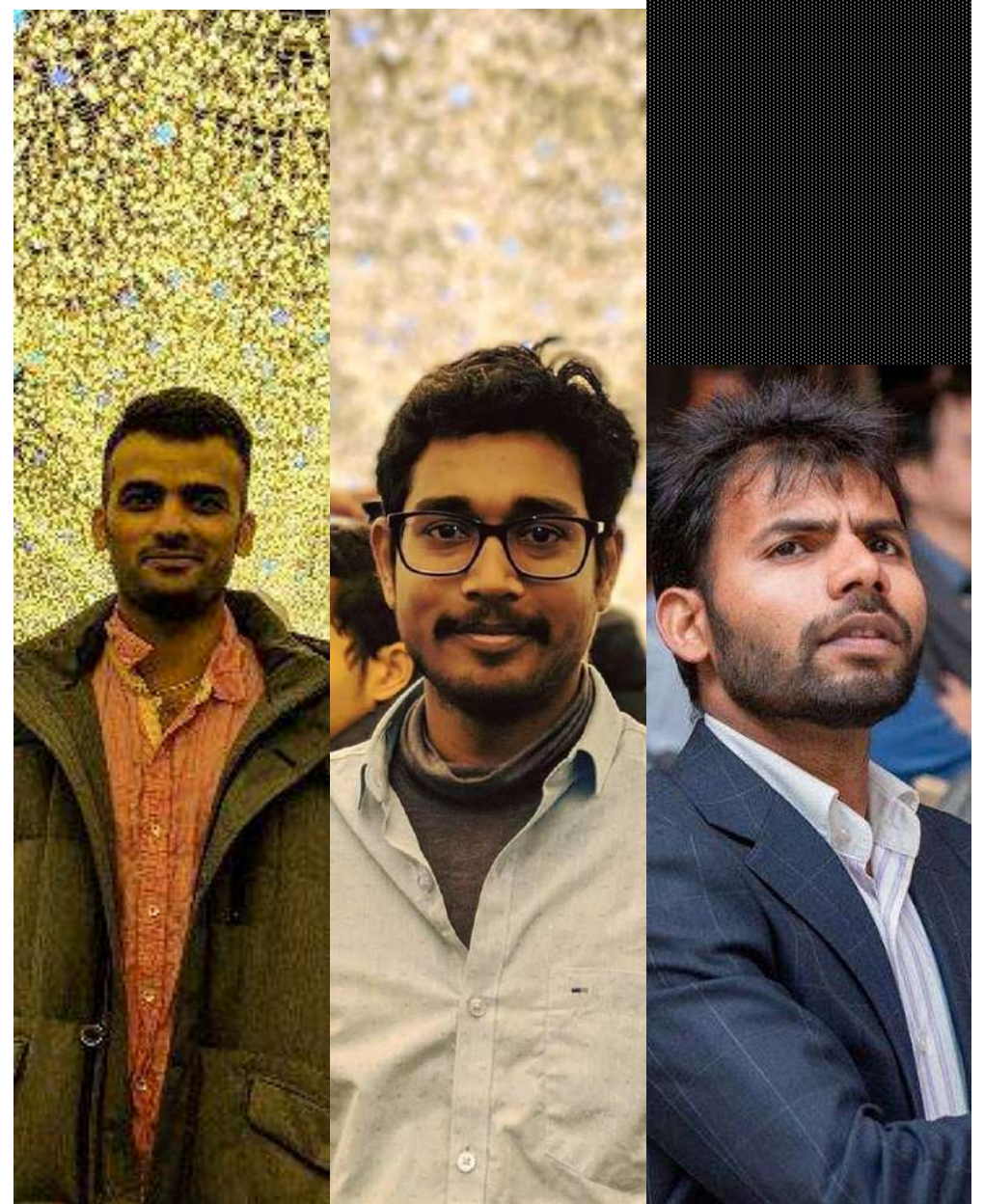
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***Folks viewing sunrise at Katsurahama Beach, Kochi, Japan,***



***Nabana no Sato New Year Winter Illumination  
(Photo Credit: Dr. Mahendra Kumar Pal, Dr. Gaddam Pruthviraj, University of Tokyo, Dr. R. Sai Chandra Teja, Osaka University)***



***Dr. R. Sai Chandra Teja, Osaka University  
(L)***

***Dr. Gaddam Pruthviraj, University of Tokyo  
(M)***

***Dr. Mahendra Kumar Pal, University of  
Tokyo (R)***

## Throwback moments @ IITH

Hello, my name is Emi MORIMOTO. I'm studying at Hokkaido University and I'm a master student.

I'm majoring in environmental engineering. My research topic in Japan is wastewater treatment by microbes. I like walking and cycling. Nice to meet you!

I'm interested in India because India develops very fast. IITH has a strong connection with Japan, that's because I joined IITH.

I enjoyed staying in a hostel in IITH. In Japan, it is normal to live alone near the university.

So it was a special time to stay with friends throughout the day. I joined the Onam festival in IITH. It was completely different from the Japanese festival. It was interesting.



***Throwback from Onam at IITH***

I studied microalgae for wastewater treatment with lab mates.

My Experience in IITH motivates me to study hard, and I want to stay in India again.

My best memory in IITH is friends. All students in IITH are very kind and friendly, so I was able to live happily.

Thanks to you guys, I had a very fulfilling time. I like India and IITH, thank you!

I enjoyed food, people, studying and so on. Biryani was spicy but so delicious!



***With Friends at IITH Hostels***



***Ms. Emi MORIMOTO,  
Master Student  
Hokkaido University, Japan***

## Fun Flares @IITH

I stayed at IITH for about three weeks from February last year. On weekdays, I learned about deep learning and ran the program, and on weekends, I went to historical sites such as Golconda Fort.

What I felt most strongly through this experience was that people in India are very kind. When I was in trouble with my research and life, they often helped me.

It was a very valuable opportunity to see and feel the history and culture of India.

I would like to thank everyone involved in India for making this experience possible.

Hope for you and your family happiness and great health as well.



*Mr. Yudai Okano  
Hokkaido University Graduate School  
Faculty of Engineering/ Division of Human  
Mechanical Systems and Design*



*Exploring Hyderabad with IITH's friends*

## Activities of NanoX under IITH-JICA Friendship Project

Nanoscience and Nanotechnology (NSNT) was one of the thematic areas of the first phase of the JICA friendship project under the IITH-Japan collaboration. NSNT area was coordinated by Dr. Ashok Kumar Pandey, Associate Professor, Department of Mechanical and Aerospace Engineering, from 2013 to 2018, and Prof. Shiv Govind Singh, Professor, Department of Electrical Engineering, IIT Hyderabad from 2018-2019. Prof. Yasuhiko Arakawa from the University of Tokyo coordinated the project from the Japanese side. Under this project, there were many visits by faculties and students from IIT Hyderabad to the top ten universities of Japan. The first such visit happened in October 2013. Subsequently, we conducted one day workshop of the IITH-JICA workshop on 1 December 2014. The workshop was attended by Prof. Arakawa Tokyo University, Prof. Iwamoto Tokyo University, Prof. Hamaya, Osaka University, Prof. Tabata, Kyoto University, Assoc. Prof. Totsu Tohoku University from Japan and faculties from IIT Hyderabad. Since then, there was much successful collaboration, joint proposal followed by students and faculty visits from/to Japan.

Faculties who visited under this project:

### **Dr. Ashok Kumar Pandey**

**Host:** Prof. Shuji Tanaka, Tohoku University

#### **Outcome:**

- Visited Prof. Tanaka's laboratory.
- Prof. Tanaka's showed his interest for long term students and faculty visit.
- He has agreed to open his facility for students intern if financial support is available.

**Ongoing:** Working on a proposal to fabricate integrated MEMS devices.

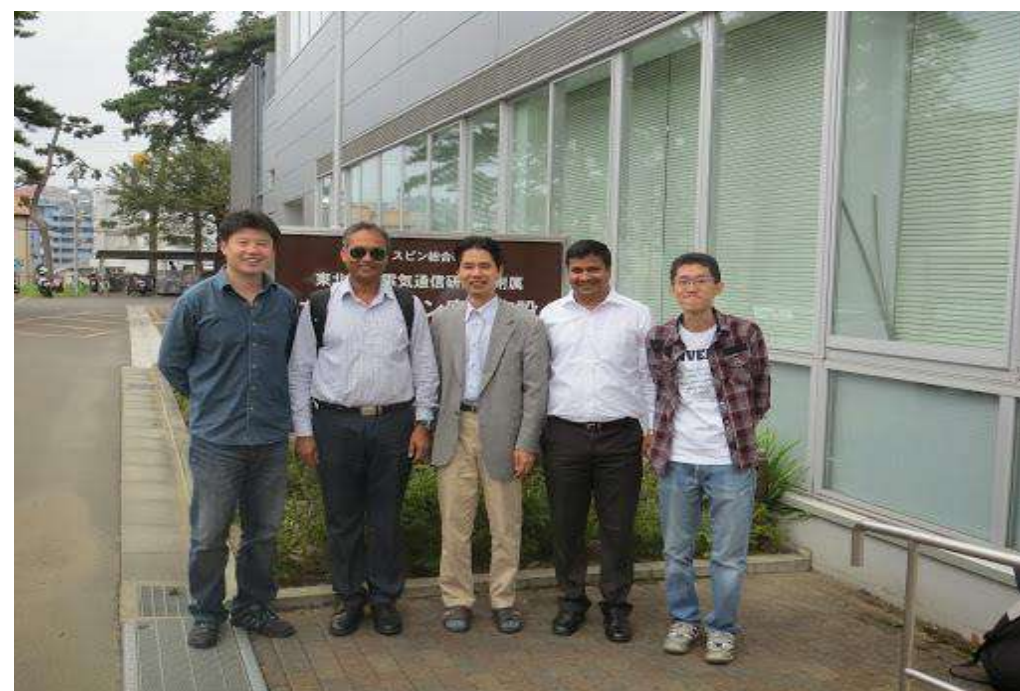
### **Dr. Ashok Kumar Pandey & Prof. Shiv Govind Singh**

**Host:** Tohoku University, The University of

Tokyo, Osaka University, Kyoto University

#### **Outcome & Plan:**

- We interacted with Nanoscience and Nanotechnology group in Japan.
- Invited them for an IITH-JAPAN Workshop



**Prof. Niwano and Prof. Y Kimura Nanoelectronics and Spintronics Lab, Tohoku University**

### **Prof. Prem Pal**

#### **Host:**

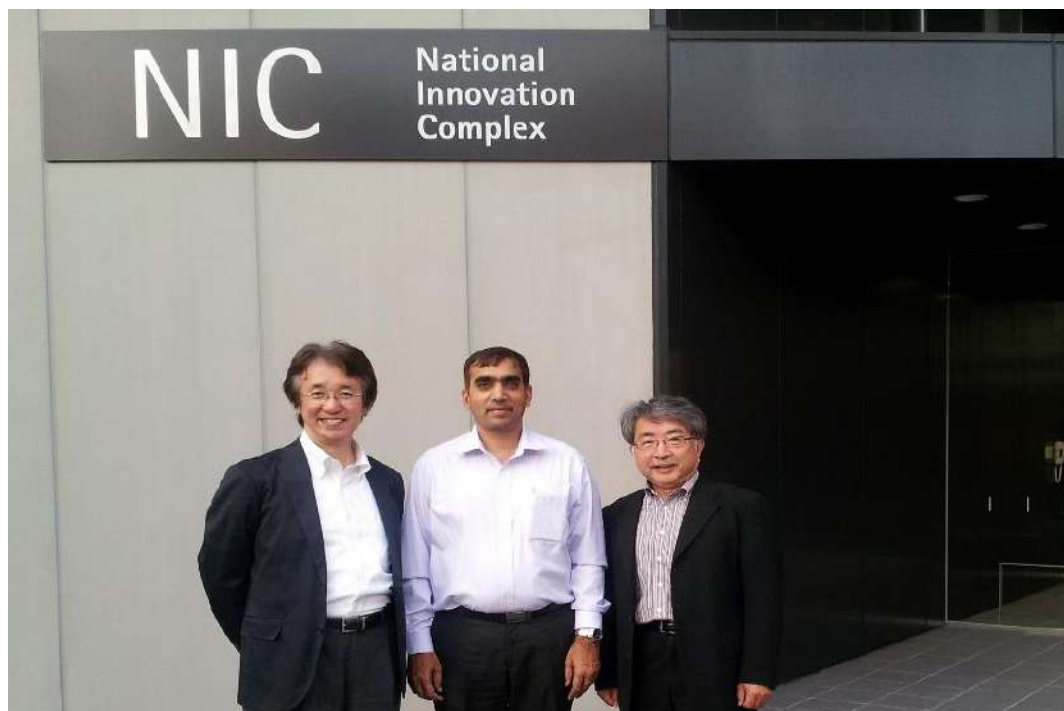
- Prof. Fumihito Arai, Nagoya University
- Prof. Kazuo Sato, Osaka University

#### **Outcome:**

- Visited Prof. Arai at Nagoya University and exchanged our research interest in MEMS fabrication.
- Visited Prof. Sato and discussed research related with Wet anisotropic etching, joint review article and book chapter on KOH based etching. Also invited him and Prof. H. Tanaka to visit IITH.
- Prof. Sato and Tanaka are visiting IITH from 13-18th December to deliver talk in a MEMS workshop at IITH.
- We have arranged several meetings with faculty and students for their possible research visits to their lab.

*Continued...*





**Prof. F. Arai and K. Sato in front of National Innovation complex, Nagoya University**



**Prof. Sato and his laboratory members**

### **Dr. Sushmee Badhulika**

**Host:** Prof. Shuji Tanaka, Tohoku University

#### **Outcome:**

- Visited micro/ nanomachining research and education center and discussed scope of visit with Prof. Tanaka
- Visited Nishizawa Memorial Research Center and discussed with Prof. Hara and Toda on nano smart sensors integrated with ICT for development of smart sensors.
- Visited Nishizawa Memorial Research Center and discussed the use of FIB, FESEM, RIE, Sputtering tools and techniques for different projects by Nishizawa Center.
- Presented a seminar talk on Hybrid Nanomaterials in Sensors and Bioanalytics Applications and interaction with students.
- Concluded the visit with Prof. Tanaka and

discussed with him the visit of research scholars. He was very receptive to such ideas to take the collaboration forward.

### **Prof. Suhash Ranjan Dey**

**Host:** Prof. Kei Ameyama, Ritsumeikan University

#### **Outcome:**

- Dr. Dey gave invited talk in Soft/Hard 2014 conference at Ritsumeikan University.
- Prof. Ameyama gave invited talk at IITH on February 2015.
- One joint conference publication in TITANIUM 2015, 13th World Conference at San Diego.
- One joint poster at OZ-15, German-Japanese 8th International Symposium on Nanostructures at Kyoto on 2nd March 2015.

### **Dr. Jyoti Ranjan Mohanty**

**Host:** Koki Takanashi, Director, Institute for Materials Research, Tohoku University

#### **Outcome:**

- Collaboration to develop complementary magnetic imaging facility



### **Prof. Adarsh Sandhu**

**Dept. of Engineering Sciences  
University of Electro-Communication (UEC)**

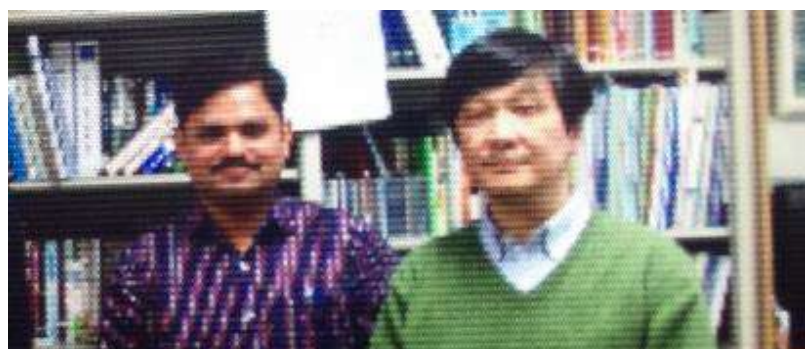
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## ***Dr. Suryanarayana Jammalamadaka***

**Host:** Osaka University

### **Outcome:**

- Prof. Sujuki has asked to send samples for measurement in order to have a common project proposal.
- Some magnetostrictive samples are sent and FMR measurements will be carried out by him.



***Prof. Y. Suzuki, Osaka University***



***Prof. Nakatami, Osaka University***



***Prof. Singubara, Osaka University***

## ***Dr. Surendra Kumar Martha***

**Host:** Osaka University

### **Outcome:**

- Delivered a general talk to graduate students at Osaka University.
- Plan for student exchange and possible project proposal in the area of polymer chemistry and its application in energy storage.



***Prof. Kuwabata, Professor, & Team, Department of Applied Chemistry, Osaka University***



***Prof. Hiroshi UYAMA, Department of Applied Chemistry, Osaka University***



***Content Courtesy:  
Dr. Ashok Kumar Pandey  
Former Faculty-in-Charge-Nano-X Research  
Group, IIT Hyderabad &  
Associate Professor, Department of  
Mechanical & Aerospace Engineering***

## The Project for Smart Cities for Emerging Countries based on Sensing, Network and Big Data Analysis of Multimodal Regional Transportation System (M2Smart Project)

The M2Smart Project is a joint research project by India and Japan and it has been designed collaboratively by Japan International Cooperation Agency (JICA) and Japan Science and Technology Agency (JST) as a Japanese government program of “Science Technology Partnership for Sustainable Development (SATREPS)”. Dr. Tsutomu Tsuboi (Nagoya Electric Works Co. Ltd., Japan) is the M2Smart SATREPS Project Leader. From the India side, Prof. Budaraju Srinivasa Murty (Director, IITH) is the Project Director since 2019 and Prof. U.B. Desai (Professor Emeritus of IITH and the founding Director of IITH) was the Project Director from 2017 to 2019 then continues to support this project as the Project Manager since 2019 and Prof. Bheemarjuna Reddy Tamma (Dept. of CSE, IITH) serves as the Co-Project Manager. From the Japan side, Dr. Tsuboi is the Project Manager and Prof. Atsushi Fukuda (College of Science and Technology, Nihon University) is the Co-Project Manager. The researchers from IIT Hyderabad, Nagoya Electric works Co. Ltd., Nihon University and Tokyo Institute of Technology (TIT) are jointly collaborating on this interdisciplinary project and formed 4 research groups, 1) Traffic Sensing, 2) Big Data Analysis, 3) Traffic Management, and 4) Smart City Policy.



**2nd JCC in June 2018 at IITH**



**3rd JCC in April 2019 at Nihon University**

### Introduction for the Project Team leaders and Co-leaders



**Group 1 [Traffic Sensing] Leader: Prof. C Krishna Mohan (IITH), Co-leader: Dr. Satoshi Takahashi (Nagoya Electric Works)**



**Group 2 [Big Data Analysis] Leader: Dr. Tetsuhiro Ishizaka (Nihon University), Co-leader: Dr. Maunendra Sankar Desarkar (IITH)**

*Continued...*



**Group 3 [Traffic Management] Leader: Dr. Digvijay S. Pawar (IITH), Co-leader: Dr. Tsutomu Tsuboi (Nagoya Electric Works)**



**Group 4 [Smart City Policy] Leader: Prof. Atsushi Fukuda (Nihon University), Co-leader: Prof. Soumya Jana (IITH)**

### **Historical Background and Overall Project Goals**

The aim of the M2Smart Project is to establish a reliable and common approach for grasping the traffic situation in cities by building a system that effectively utilizes mobile devices, traffic sensing, big-data analysis and network technologies. This project has started in 2017 and since then, we have conducted several research meetings in India and Japan, workshops in Hyderabad and Ahmedabad cities and presented M2Smart ongoing research results at several conferences in India, Japan and also internationally. More than 20 IITH PhD and MTech students are also enrolled as the Research Assistants at IITH for working on various research aspects of this project.

The team has set up a testbed system inside the IITH campus and on a 30KM stretch of NH-65

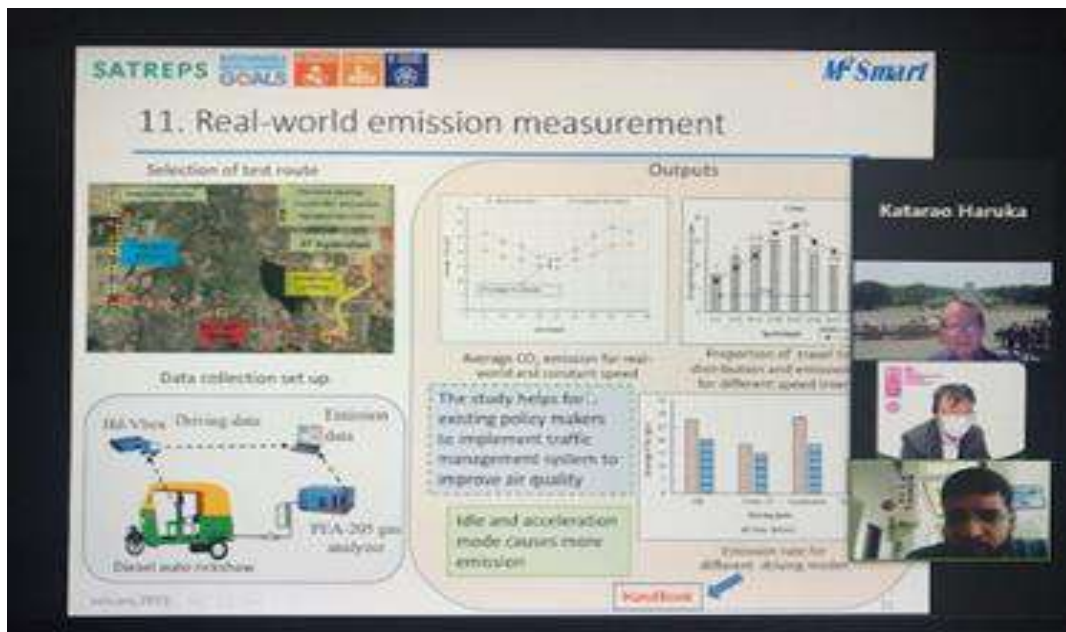
near the IITH campus. This field testbed system comprises several key components of the traffic management system such as real-time traffic flow monitoring cameras, speed detection safety system, traffic signal lights, remote environment gas sensing, etc.

At the 5th Joint Coordination Committee (JCC) held in January 2021 in online mode due to pandemic situation, the researchers reported the progress of the joint research for the traffic monitoring and the traffic flow analysis by utilizing deep learning AI recognition architecture, driving behavior sensing, environment gas monitoring, etc. Traffic monitoring has been implemented not only in Hyderabad but also in Ahmedabad by collaboration with Ahmedabad city authorities where the project team had installed traffic monitoring cameras at several junctions and main roads. Due to COVID-19, the onsite visits have been postponed, however, the M2Smart project team is able to compare traffic conditions of these two cities by gathering feeds from on-site cameras remotely.

Lastly, we thank all the people who dedicatedly involved in the M2Smart Project. This is an example of true collaboration between India and Japan!



**Continued...**



**5th Online JCC Meeting in January 2021**

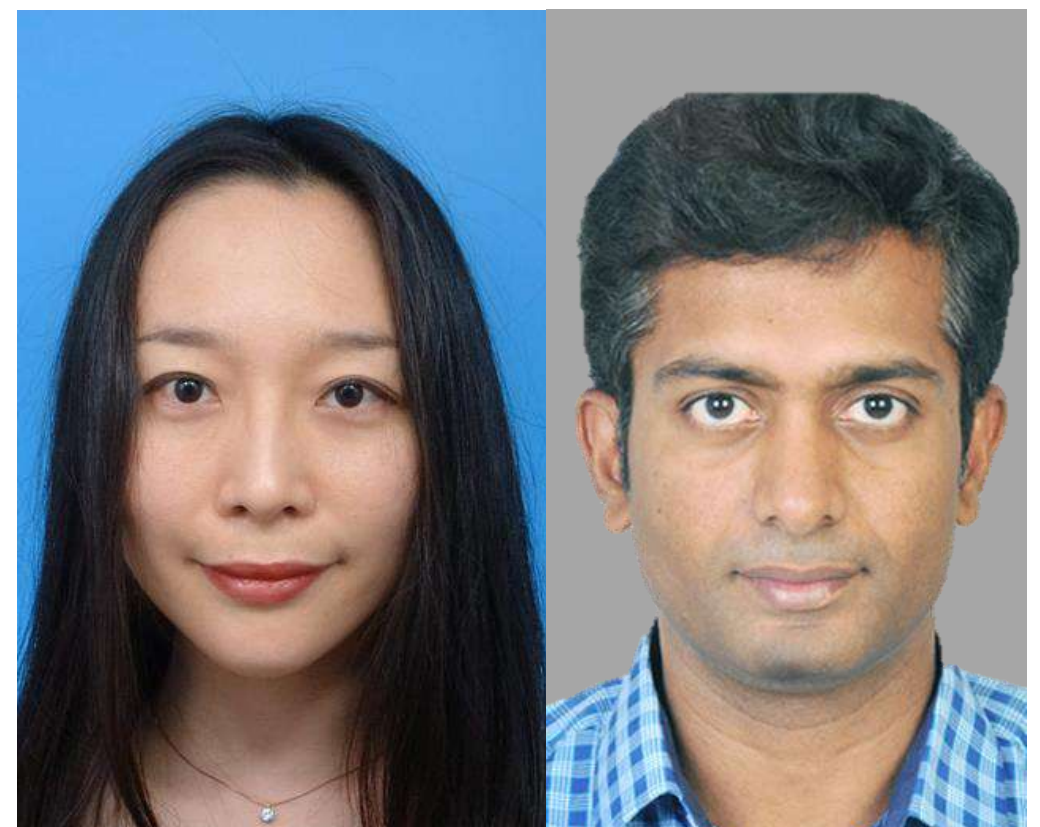


**IITH Testbed E-Rikishaws were delivered in February 2019**

## Gallery of the M2Smart Project



**Ahmedabad City Electric Board welcomes JICA, JST and IITH (SATREPS Project Team) in July 2018**



**Ms. Haruka Katarao (M2Smart Resident Coordinator, JICA, Japan) (L)  
Prof. Bheemarjuna Reddy Tamma (M2Smart Co-Project Manager, Dept. of CSE, IIT Hyderabad, India) (R)**



**M2Smart Lab Opening at IITH in May 2019**

## For Starters, Travel Patterns Of Hyd, Ahmedabad To Be Identified New app to help you pick best multi-mode ride-hailing options

**SMART WAY TO DRIVE AROUND TOWN**

**Project duration:** 3 years

**No. of researchers working on the project:** 14 professors and 26 research scholars from IIT Hyderabad, along with 21 professors and 13 researchers from Nihon University and Nagoya Electric Works, Japan

**Identified stretches:** 30-km stretch between Sangareddy and BHEL junction (Hyderabad) and the Paldi junction (Ahmedabad)

**PURPOSE OF PROJECT**

- Develop smartphone app to educate commuters on different modes of transport
- Develop 'handbook' to guide commuters in promoting carbon urban transportation

**BENEFITS TO COMMUTERS**

- Will be able to get range of transport options such as taxi, metro, buses etc. from one point to the other; existing apps only provide data of one transport mode at a time

**Financial aid:** ₹30 crore project approved by Japan International Cooperation Agency

**travel time, fare, ecofriendly travel options etc.," said Prof. Bheemarjuna Reddy Tamma, associate professor, depart-**

**to Nagoya Electric Works, Japan. The project also aims at reducing carbon emission by vehicles.**

**Mobile app that exist now**

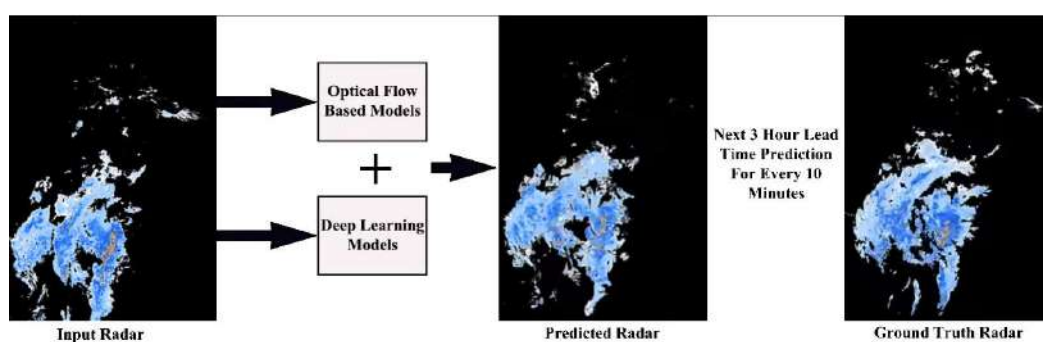
**reduced," Prof. Tamma added. The team plans to use green leaf icons on the smartphone app to indicate the carbon**

**Times of India, 30 May 2019**

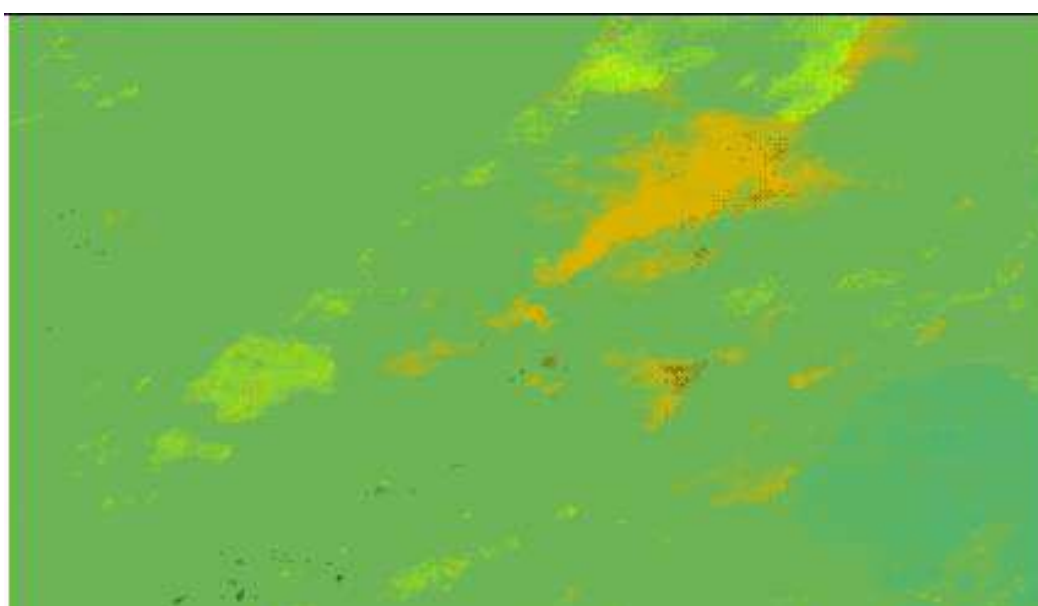
## AI Association with Japan

**AI image analysis and prediction to improve the weather news prediction accuracy:**  
**Funding Agency: Weathernews Inc., Tokyo, Japan**

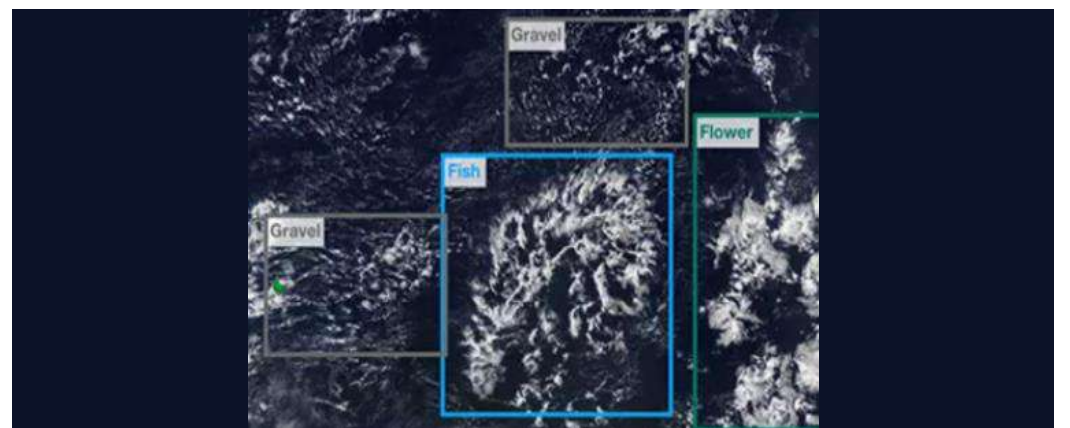
Me & my research group at Visual Learning and Intelligence Laboratory has used AI image analysis and prediction to improve the weather news prediction accuracy. A collection of advanced preprocessing algorithms and AI models are developed for analysing the images in order to forecast the weather conditions. Following algorithms and models have been developed and carried out the technology transfer:



**Precipitation Nowcasting**



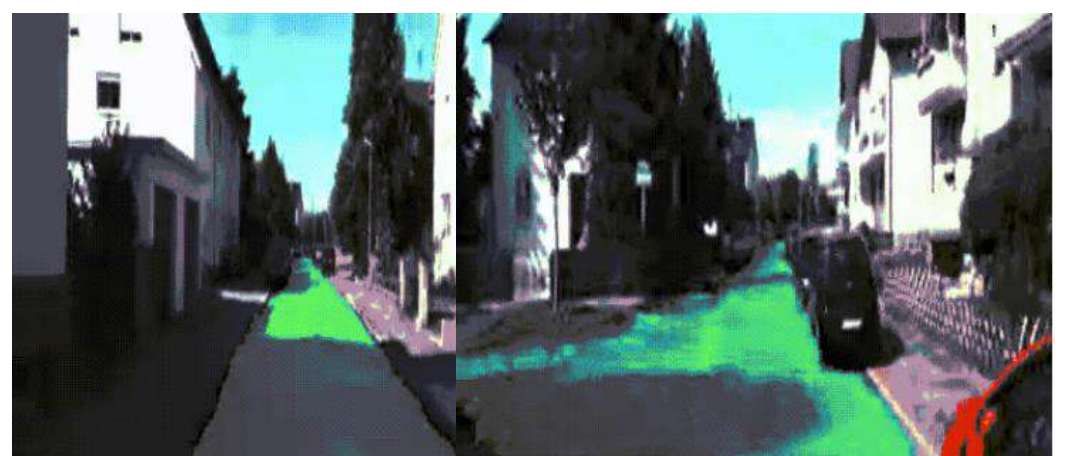
**Volcanic Eruption Classification – Ash Detection**



**Cloud segmentation on real-time RGB/Infrared data using deep learning techniques.**



**Road Scene Vehicle Detection in adverse weather conditions**



**Image Dehazing for road scene analysis tasks such as vehicle detection, vehicle classification and road line detection**

*Continued...*

## Design and Development of Real-Time Transportation Safety Monitoring System for Smart Cities

### Executive Summary:

The project aimed at the development of methods for analyzing traffic flows especially in the crowded scenario, methodologies to analyze various anomalous events like accidents, snatch thefts, and violence during religious processions, the design of machine learning models and the design of techniques for representing such anomalous events. The software is developed which works in real-time on surveillance scenarios. The deep learning-based models have been introduced to determine traffic violators (helmetless driving, rushing at stop signals, wrong side driving, illegal turns, etc.) and deep learning-based methods for recognition of human poses in various surveillance scenarios for person re-identification are the significant works competed as a part of this collaborative project. A real-time and scalable system for person re-identification that can identify potential anti-social elements and track their movements is an off-shoot of this collaborative project.

### Salient Research Achievements:

- **Detection of anomalous events:**  
Gaussian mixture model (GMM) is used to form a universal attribute model consisting of multiple actions to identify relevant attributes, also called action vectors. They contain actions of anomalous activity. For snatch theft detection, we have achieved over 99% classification accuracy. Due to the dynamic nature of this feature representation, this approach can also be used for other anomalous actions such as accident detection.
- **Traffic violation detection (motorcyclists without a helmet):**

Deep learning approach such as a convolutional neural network (CNN) to identify motorcyclists in dense traffic videos is explored in this work. After identification of motorcyclist, another CNN is used to detect head region to classify among motorcyclists with and without a helmet with over 90% classification accuracy at 52 ms/frame.

- **Person re-identification in surveillance videos:**

Using deep features (VGG16), a graph is constructed in such a way where each person is a node in which the edge between these nodes is calculated from a similarity measure to find the closest k neighbors of each node (person). A graph kernel is then used to classify among multiple persons.

**This is a collaborative project work between Indian Institute of Technology, Hyderabad, India and University of Tokyo, Japan.**

**Funding agency: DST-JSPS**

**Duration: June, 2018- Mar. 2020.**

**On the Indian side:**

**Principal Investigator: Prof. C Krishna Mohan, IIT Hyderabad, India.**

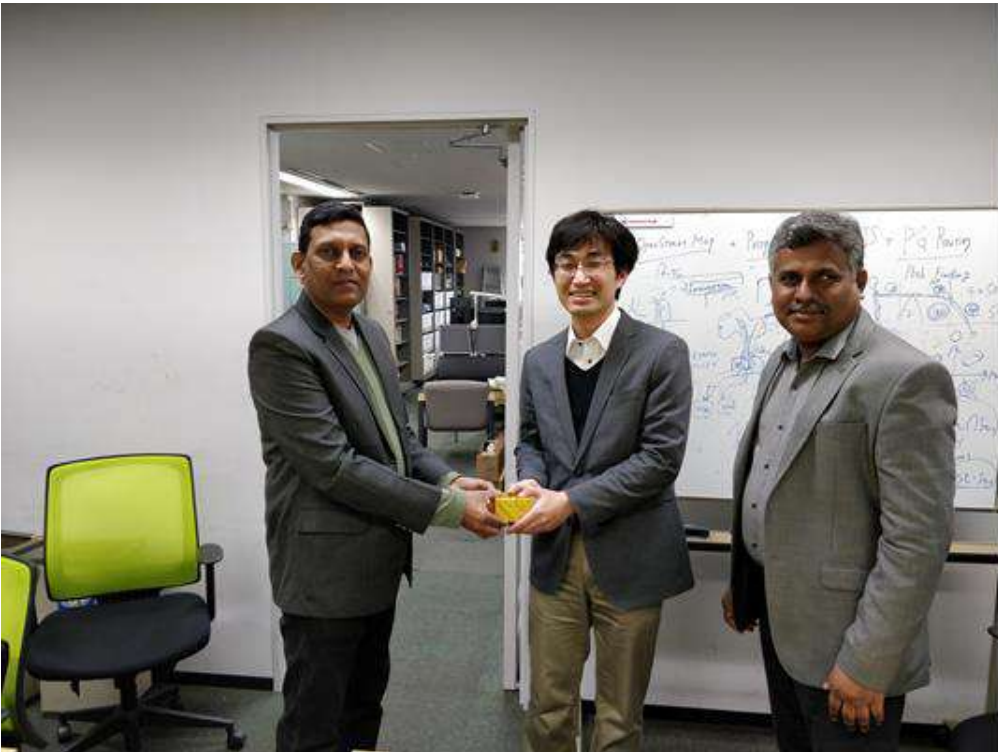
**Co-Investigator: Prof. B H Shekar, Mangalore University, Mangalore, Karnataka, India.**

**On the Japan side: Dr. Masaki Ito, University of Tokyo, Japan.**

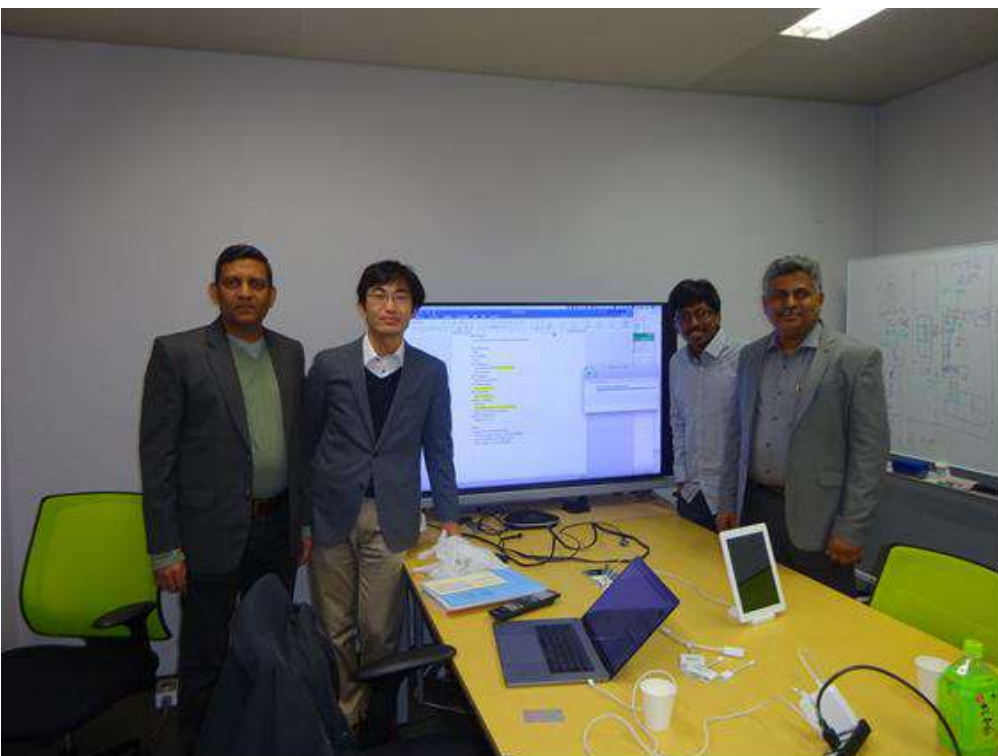
### Some memories down the lane of this Project



*Continued...*



***Prof. C. Krishna Mohan  
Dean (Public & Corporate Relations) &  
Professor, Department of Computer Science  
& Engineering,  
IIT Hyderabad***





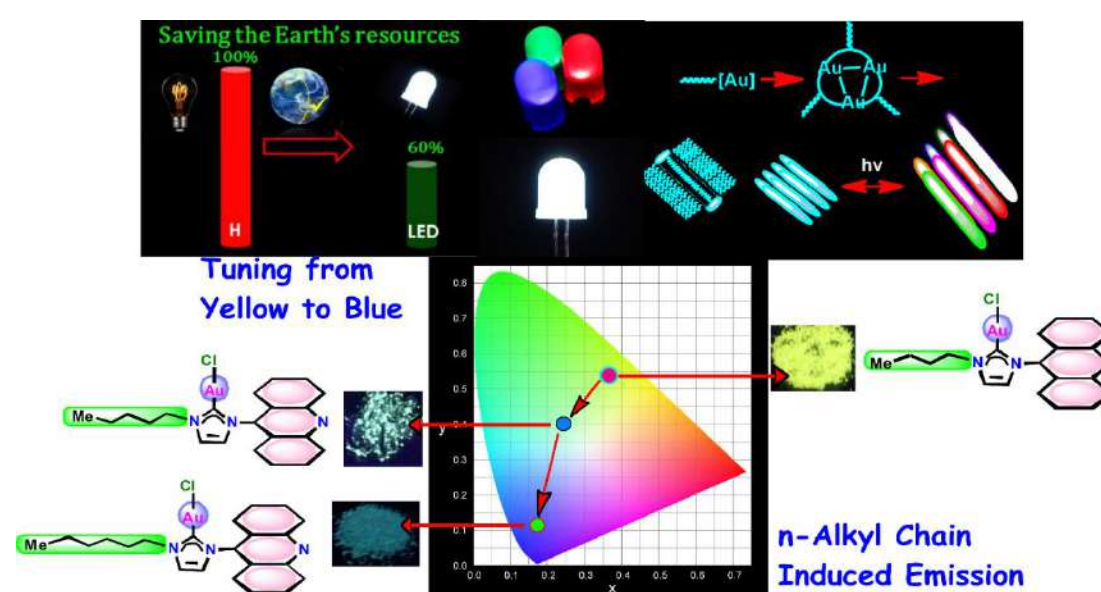
## Connection of Chemistry between IITH & RU, Japan

Highly energy-efficient LED technology contributes to saving the Earth's resources from 20% to 40% compared to conventional technology as about one-fourth of world electricity consumption is used for lighting purposes. Nevertheless, the current LED technology is limited with selected color options. Indeed, with current technology, we can't achieve the "True Color" from a single material. Our target is to tune the light emission through the nanoscale molecular aggregations. Therefore, the research collaboration has been established between our Organometallics Lab at IIT Hyderabad and Prof. Dr. Osamu Tsutsumi's lab at Applied Chemistry, Ritsumeikan University, Japan, through the generous support of the JICA Friendship Project in November 2015. The purpose of our interdisciplinary research collaboration is to advance fundamental understanding to solve problems at the nanoscale molecular aggregation level.

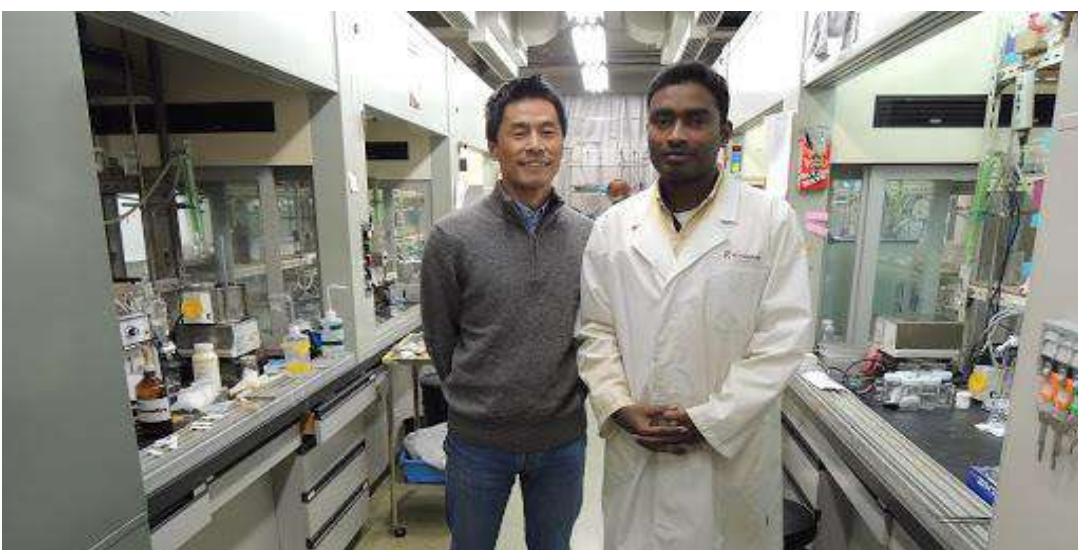
We have been working on this cutting-edge problem to identify the single source material to emit blue light or even direct white light using organo gold precursor or equivalent materials. One of the most challenging tasks in this research area is to identify the blue or white emitting system without chromophore's contribution. As a result, the n-alkyl chain stimulated paradigm luminescence shift with unique emission in N-heterocyclic carbene gold(I) chloride complexes have been demonstrated for the first time in the crystalline phase. The research collaboration has been further strengthened through the JICA PhD, RU JASSO internship, and RU Post-Doc fellowships. Four M1 students Mr. Shinya Nakamura, Mr. Masaya Yamane, Mr. Shohei Sugiyama, and Mr. Ozaki Kazuhisa, were invited through JICA from RU, Japan, to work in Organometallics Lab. Similarly, Dr. Katam Srinivas, Dr. Vaddamanu

Moulali, and Mr. Nandeshwar Muneshwar Giridhar were visited the RU for multiple times to work on this research problem. Through this intensive collaboration, four master students from RU and one post-Doc from IITH were trained. Besides, Mr. Kumar Siddhant, a master's student from Organometallics Lab, has been selected under the JICA Ph.D. program to investigate this research problem and he has been pursuing his Ph.D. in RU. The outcome of this collaboration includes the additional research collaboration with Prof. Shigeyuki Yamada's lab, KIT, Kyoto, Prof. Nobuyuki Mase's Lab, Shizuoka University, Hamamatsu along with several lectures, several conference presentations, several publications in very high impact peer reviewed journals, the Journal cover page highlight in American Chemical Society, the Best Poster Award, and the workshop on Photo functional Gold Molecules and Nano Materials 2019 (PGMNM2019).

### Some throwback moments exchanged between the two Research Group



*Continued...*



**Prof. Dr. Osamu Tsutsumi (L)**  
**Polymer Materials Chemistry Lab, Applied**  
**Chemistry, Ritsumeikan University, Japan**  
**Prof. Dr. G. Prabu Sankar (R)**  
**Organometallic Chemistry Lab, Department**  
**of Chemistry, IIT Hyderabad, India**

## IITH – Japan Connect in Design and Manufacturing

Design and Manufacturing has been one of the five areas of interaction between IITH and consortium universities in Japan, with Waseda University as the lead member from Japan. The collaboration also included other universities like Keio, Osaka, Shizuoka and Tokyo University Agricultural & Technology in addition to industrial interactions with Suzuki Corporation, Hitachi Zosen and AIST (National Institute of Advanced Industrial Science and Technology). The overall theme of these interactions has been “*Ecosystem for New Product and Process Design at Multi-scales*”.

All these collaborations were made possible through the support of JICA, based on the commitment in August 2007 between both Prime Ministers of India and Japan. These activities were sustained and enhanced by the active participation from both Japanese Universities and IITH through various academic exchanges, student scholarships, invited lectures, joint conferences and workshops. These interactions spanned multiple research subjects with some of the prominent being Additive Manufacturing, Digital Fabrication, Integrated Design & Manufacturing and Sustainable Manufacturing. The details of these activities as follows:

### Additive Manufacturing (Metal) with Osaka University

- Seminars and lectures at IITH and Osaka University by the visiting faculty on Joining, Welding and Metal AM.
- Joint research and exchange under the Sakura science program and JWRI International Joint Research Collaborator (JIJReC).
- Joint project with JWRI, Osaka University, Hitachi Zosen and IITH.
- JWRI-Indo workshop on Joining and Welding at Osaka University.

- These interactions with Osaka University resulted in international journal and conference publications and the collaboration continues actively.

### Digital Fabrication with Keio University

- Seminars and lectures at IITH and Keio University on 3D Printing and its adoption social fabrication.
- Jointly organized International symposium/conference(s) on Digital Fabrication with Keio University along with Deakin University and National Chiao Tung University.
- The above bi-yearly conference series has already been conducted four times and the next event is scheduled at Universitas Gadjah Mada, Indonesia.

### Integrated Design and Manufacturing with Shizouka University and TUAT

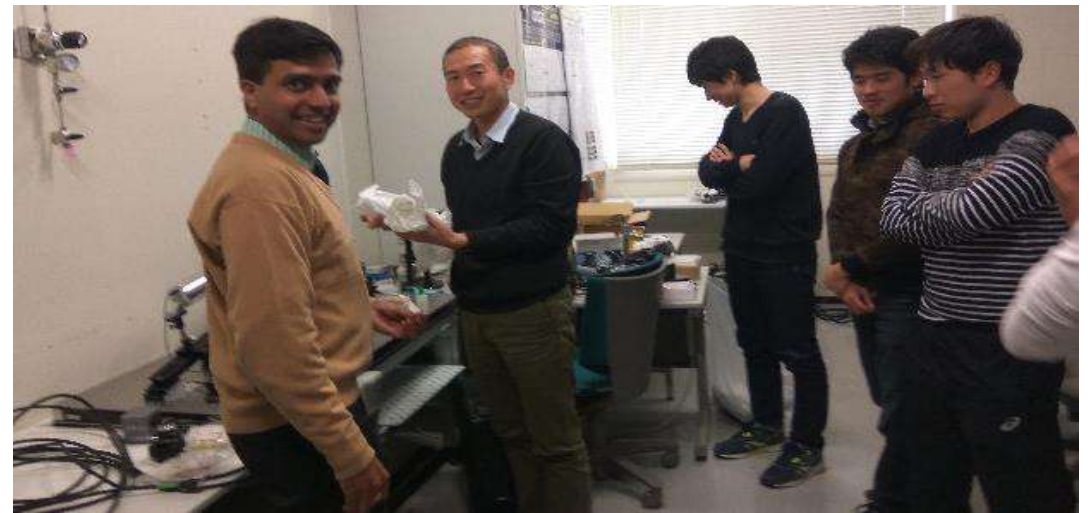
- Seminars and lectures at IITH and Shizouka University and Tokyo University of Agriculture and Technology (TUAT) on the themes of incremental sheet metal forming, crystal plasticity and bubbles and cleaning technologies.
- Joint faculty and student exchanges in addition to the Sakura science program.
- Joint workshops with Shizouka University at IITH covering both generic themes like promotion of R&D interaction and specific themes like Multi-phase flows.
- Interactions with Shizouka University resulted in starting a Fellowship supported by Suzuki Corporation, specific to IITH Faculty and PhD students.
- These interactions with Shizouka University are ongoing and strengthening further through international journal and conference publications.

*Continued...*

## Sustainable Manufacturing with Waseda University

- Interaction with Waseda University has been in the area of Sustainable Manufacturing covering the subjects like bio-manufacturing, design & dynamics and remanufacturing.
- Joint workshops, seminars and lectures at both IITH and Waseda University.
- Short term course at IITH on “Remanufacturing”.
- Waseda University, IITH and AIST are the partners with NTNU in a Norwegian sponsored project on circular manufacturing and the interaction continues.

The Design & Manufacturing team of IITH thanks the JICA-Friendship program, Hitachi Zosen, JWRI, Sakura science program, Suzuki Corporation for their support and facilitation for these activities. We also like to thank the members from the consortium universities and other industries, organizations and universities for their earnest participation and continuous support. We are hopeful that this IITH-Japan interaction will further grow in the future.



**Digital Fabrication Symposium at IITH**



**Keio University team at IITH**



**Remanufacturing Lectures at IITH by Prof. Takata of Waseda University**

*Continued...*



**ShizoukaUniv – IITH workshop@IITH**



**Prof. N. Venkata Reddy (L) &  
Professor Suryakumar S. (R)  
Department of Mechanical and Aerospace  
Engineering  
IIT Hyderabad**



**IITH members at Shizouka University (Sakura Science)**



**Prof. N. Venkata Reddy presenting about IITH-Japan  
Research Collaboration**

## Mobile Sensor Network, Data Sciences Farming Sciences, Smart Transportation

We have been working with various Universities and Industry on different projects in the field of Mobile Sensor Network, Data Sciences Farming Sciences, Smart Transportation. A summary of these collaborations are given below:

### 1. Mobile Sensor Networks

**Collaboration: KDDI R&D Labs, Japan. 4 Years (2012-2016)**

As part of this collaboration, we have worked on an Acoustic based navigation tool for IoT network, 3D Localisation algorithms for smart interactive IoT systems, deployment advisor tool - optimal node placement in IoT networks.

### 2. Data Science-based Farming Support System for Sustainable Crop Production under Climatic

**Change Collaboration: University of Tokyo, Japan, 5 Years (2017-2022) Ongoing**

In this project, techniques are developed to accelerate the crop-phenotyping process using UAV based remote sensing with on-vehicle sensors like RGB, multispectral cameras. Different crop types like maize, paddy etc are being studied in the experimental fields of Professor Jayashankar Telangana State Agricultural University (PJ TSAU), Rajendra Nagar, Hyderabad. Different traits like canopy coverage, stress, panicle detection, 50% flowering, biomass are estimated as part of the project from the UAV images acquired from the field. IoT nodes for monitoring the soil moisture and other environmental parameters are also deployed in the field for different seasons

### 3. Depth Detection using Stereo Vision – Transportation applications

## Sciences Farming Sciences,

**Collaboration: Ritsumeikan University (2018-2019), 2 Years**

Algorithms based on a Stereo camera for real-time depth detection of the obstacle was developed as part of the collaboration. Ritsumeikan Students IITH for 2 to 3 months and spend time in the lab.



**A team from the University of Tokyo visited fields at PJ TSAU during the Project meeting**



**Continued...**



*IITH students during an internship for one month and learned about agriculture-fieldwork and their technologies at the University of Tokyo, Japan*



*A team from Ritsumeikan University, Kyoto Japan visited the WiNet lab*



*Prof. P. Rajalakshmi,  
WiNet Lab,  
Department of Electrical Engineering &  
Dean (Students)  
IIT Hyderabad*

## Technologies for Rural and Women Empowerment

Collaborative research project proposal under progress in subject area of disaster management.

**Indian PI:** Dr. Shiva Ji, Dept. of Design & Dept. of Climate Change, IIT Hyderabad, India

**Japanese PI:** Prof. Hirohide Kobayashi, Kyoto University, Japan

**Title of Project:** “Reconstruction and Restructuring of Vernacular Design Techniques in Light of Disaster-Prone Vulnerabilities in Context of North-East and West India”

**Thrust Area:** Action Oriented Research

**Sub-domain:** Technologies for Rural and Women Empowerment

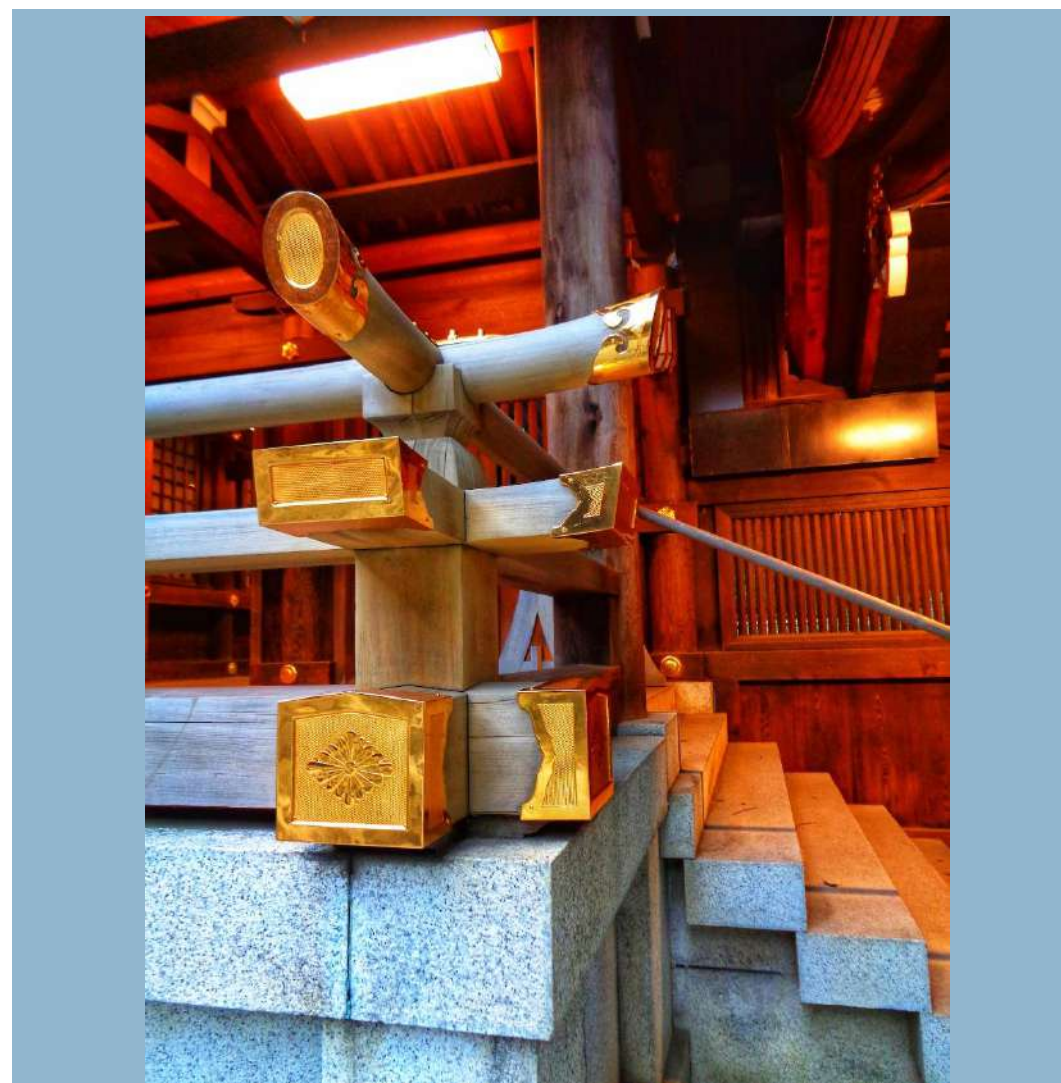
### Abstract:

Climate Change and disasters are increasing in frequency and severity threatening the life and livelihoods of many in future. It is well established that the vernacular architecture typologies have developed as factors of tradition, climate and functionality. But with the exacerbated climate change it is possible that the efficiency of the vernacular architecture to tackle disasters is at stake. This points out the need of realigning the traditional knowledge of built form and conserving the vernacular architecture. In India the North Eastern States of Assam, Sikkim and Meghalaya are hotspots of climate change and disasters. These states have developed vernacular architecture over generations to mitigate the disaster risk. The proposed engagement tries to explore and document how the vernacular architecture performs in the contemporary scenario and what needs to be changed to realign their functionality by involving the women for conservation.



**Dr. Shiva Ji (L) & Prof. Hirohide Kobayashi (R)**

As a part of my visit to Japan, I could capture many memories in my camera. One of them has been recently won the 3<sup>rd</sup> prize at Click! Japan Photo Contest Online Exhibition 2020 by the Embassy of Japan in India which also could get the place as back cover for this Japan Special Issue of KirIITH. The other few are:



| Title                              | Reflections of a perfectionist society                                                                                                                                                                                                                                                                                  |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>                 | I was amazed by the attention to details and perfection in execution of wooden railings at this shrine. It's not just a picture, but it displays the artistic approach in joinery techniques, the message of strength through sword-like curvature and metal capping to bring a proper ending. Truly Japanese heritage! |
| <b>Place where photo was taken</b> | Meiji Jingu Shrine, Yoyogikamizonocho, Shibuya City, Tokyo, Japan                                                                                                                                                                                                                                                       |

*Continued...*





*Dr. Shiva Ji*  
*Assistant Professor,*  
*Department of Design,*  
*IIT Hyderabad*

|                                    |                                                                                                                                                                                                                                                                                                       |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Title</b>                       | Slender mystic bamboos indicate the way to heavens                                                                                                                                                                                                                                                    |
| <b>Description</b>                 | I was amazed by the mystic shades, serene texture, and rustling sounds of this unique bamboo forest. The light from top appears as if descending from heavens to humanity at the ground, so indeed! Still, there is something inexpressible to the whole experience, can only be felt by being there. |
| <b>Place where photo was taken</b> | Arashiyama Bamboo Forest, Kyoto, Japan                                                                                                                                                                                                                                                                |

## IITH-JICA Collaboration

### Greetings!

I am sure you all agree that the collaboration with Japan and Japanese universities is one of the remarkable milestones in the journey of IITH towards its success. I am confident this collaboration will continue for the time to come.

### The Official Development Assistance (ODA) Loan

Though it is well known, I felt it gave some insights on the Indo-Japan collaboration, especially the IITH-JICA relationship. The Japan Collaboration of IIT Hyderabad started in 2007 based on the commitment between Japan and India's then prime ministers. However, a formal note was exchanged in 2012 between the Government of India and the Government of Japan. After that, a series of meetings and discussions continued with the Japanese and Indian government officials to formalize a proposal and obtain a formal Expenditure Finance Committee (EFC) approval. On 28th January 2014, the Japan International Cooperation Agency (JICA) and the **President of India** have signed the loan agreements for ₹ 23035 million. Since then, JICA has become the nodal office for administrative approvals and financial sanctions for the ODA loan activities. The JICA has been the critical office from the beginning, even before entering into the formal exchange of a note between the two governments. JICA had enabled the exchange programs like the Japan-East Asia Network of Exchange for Students and Youth (JENESYS), especially for IITH students and faculty, to visit Japanese leading universities and industry to enhance the awareness and to strengthen the link between the two cultures. The very first batch of IITH students who visited Japan under the JENESYS program is seen in the Picture.



**Picture: A team of IITH student's visited Japan under the JENESYS program (2010)**

I thought it is time to remember and thank the officers from JICA, Japan and the Department of Economic Affairs, FM, and the then Ministry of Human Resources Development, GoI, who had supported this collaboration '**Campus Development Project of IITH**' from its inception. IITH fraternity is grateful to the following officers:

#### JICA officers:

- Mr. Shinichi Yamanaka, Mr. Hara san, Mr. Takema Sakamoto san: Previous JICA's chief representatives
- Mr. Kondo san, Ejima san, Mr. Moholkar, Mr. Endo san – JICA (I) officers
- Mr. Kitamura san, the then country office, south Asia
- Mr. Mikako Hataeda san, the then Dy director-general, south Asia dept.
- Mr. Tomohide Ichiguchi and
- Mr. Tanaka

#### The current JICA (I) office team:

Mr. Katsuo Matsumoto san, Chief Representative, JICA (I) office along with his entire team (Mr. Akimine, Mr. Tange, Mr. Ehara, Mr. Vineet Sarin, Ms. Nikita Sharma), without their support at every stage, this project would not have been launched promptly.

**Continued...**

## Indian government officials:

- Shri R S Gujral, Finance Secretary, MoF
- Shri Ashok Thakur, Secretary (HE), and Shri Mathur, Addn. Secretary, the then MHRD during inception
- Shri R. Subrahmanyam, Secretary (MHRD), Smt. Amita Sharma, and Shri SS Sandhu, Addn. Secretaries, MHRD
- Prof. Uday B Desai, the then Director, IIT Hyderabad
- Mr. D. K. Ghosh, Coordinator, IITH-Japan collaboration project, IITH
- Prof. KVL Subrahmanyam, former and current Dean (Planning), IITH

Under this collaboration, human resources exchange is the KEY activity through FRIENDSHIP (Future Researchers at IIT Hyderabad to Enhance Network Development with Scholarship of Japan) program. The FRIENDSHIP Project's overall goal is to contribute to further development in the research activities of IITH through the world-class research network between IITH and leading universities, research labs, and industry of Japan. The following five thrust areas are identified to match India's needs and Japan's strengths.

- (1) Environment & Energy
- (2) Digital Communication
- (3) Design & Manufacturing
- (4) Nano-technology & Nano-science
- (5) Civil Engineering (Sustainability Development)

The first phase of the FRIENDSHIP program was started in 2012. The program was so designed that both students and the faculty of IITH could visit the universities, research labs, and leading industries of Japan. These visits have opened the doors for collaborative research in various fields of Science and Engineering. This program connects India with Japan not only in the field of science and technology but also paves a

strong path between two cultures. Incidentally, India and Japan share a common culture and values. I will take you through one of my impressions during my first visit to Japan in 2011. When we visited Canon Inc., Japan, we were told that the Canon Inc was known as 'Kwanon' in the 1900s, which is the name of the goddess of mercy (in Buddhism) with 1,000 hands and even the logo carries the idol's impression. The name got changed eventually to 'Canon' in 1935 and the current format in 1956. The transformation of the logo can be seen in the picture. The point is that the goddess 'Kwanon' resembles the Hindu goddess 'Lakshmi.' This is because of Buddhism's spread. Under this project, a team of professors from the University of Tokyo lead by Prof. Fujino was formed to advise and oversee the construction activities at IITH. As a part of this, the team members Prof. Ohno and Prof. Kawazoe (architects) have provided architectural designs for the iconic buildings on campus.



**Picture: Transformation of the 'Canons' logo (Photo courtesy: print-print.co.uk)**



**Picture: A group of IITH faculty with Team members of 'Campus Development Project of IITH' at the University of Tokyo, Japan (July 2011). Prof. Fujino and Prof. Kawazoe are seen in this picture (third and first from the left).**

**Continued...**

Initially, the ODA loan (financial assistance) was proposed to build two iconic structures (Guest House and Sports and Cultural Complex) on campus; later, the scope was extended to support several buildings following a constant persuasion with the Japanese government and JICA. These buildings include Guest House, Sports and Cultural Complex, Knowledge Centre, Research Centre Complex, Technology Incubation Park, Department Buildings, Hostels, Core Labs, Campus School, Health Care Centre.

Though it took a little longer to finalize the tender documents and appoint the consultants, with the strong support from JICA, the construction work has started in the year 2019. His excellency Mr. Kenji Hiramatsu, Ambassador of Japan to India, had graced the groundbreaking ceremony of the first phase of construction on 28th March 2019 (see the Picture). The second phase of construction started in August 2019. Prof. Fujino, Prof. Ohno, and Prof. Kawazoe visited the campus in November 2019 to oversee the construction works' progress and noted that the progress and the quality of construction were much higher than they anticipated. Prof. Ohno inspecting the products and materials used in the construction can be seen in the Picture. As we speak, the construction activities are going on in full swing, and it is expected to complete the construction activities by June 2023.



**Picture: The groundbreaking ceremony of Package 3A works of IITH by H. E. Mr. Kenji Hiramatsu, Ambassador of Japan to India – 28 March 2019**



**Picture: Prof. Ohno inspecting the products and materials to be used in the construction – November 2019**



**Picture: Prof. Ohno inspecting the products and materials to be used in the construction – November 2019**

I had an opportunity to interact with the Japanese counterparts on several occasions through the FRIENDSHIP program. I have active collaboration with Prof. Ikuo Towhata, Professor Emeritus, University of Tokyo, and Prof. Tatsuya Ishikawa, Professor, University of Hokkaido. As part of the collaboration, Prof. Towhata had offered a course on 'Advanced Geotechnical Earthquake Engineering' to IITH students during Jan-April, 2017. Later, Prof. Towhata had delivered a two-credit course on Geotechnical Earthquake Engineering under the GIAN program in December 2017.

**Continued...**

## Theme: Sustainable Development

The FRIENDSHIP program's sustainable development theme is looking at the environmental, structural, water resources, geotechnical and social aspects of sustainability. The following are the team members of this program.

| IITH                                                                                                                                          | Japan                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Environmental Engineering</b><br>Dr. Debraj Bhattacharyya,<br>Aishwarya Pandey, Keerti Katam<br>Dr. Asif Qureshi<br>Dr. Preetha Chattarjee | Prof. Satoshi Soda<br>Dr. Toshiyuki Shimizu<br>Prof. Shinji Kaneko,<br>Dr. Ayyoob Sharifi<br>Dr. Yujiro Tokumitsu |
| <b>Water Resources</b><br>Dr. KBVN Phanindra<br>Dr. N Seetha<br>Dr. Sathish Regonda                                                           | Prof. Hiroshi Morita                                                                                              |
| <b>Structural Engineering</b><br>Prof. KVL Subramanyam<br>Dr. Suriya Prakash<br>Dr. Mahendra Madhavan                                         | Prof. Fujino                                                                                                      |
| <b>Geotechnical Engineering</b><br>Prof. Sireesh Saride<br>Dr. B Umashankar<br>Dr. B Munwar Basha                                             | Prof. Fujimoto<br>Prof. Fukagawa<br>Prof. Towhata<br>Prof. Hazarika<br>Prof. Ishikawa                             |
| <b>Social Sciences</b><br>Dr. Haripriya Narasimhan<br>Dr. Aalok Khandekar                                                                     | Prof. Shinji Kaneko,<br>Dr. Ayyoob Sharifi<br>Dr. Yujiro Tokumitsu<br>Dr. Gergely Mohacsi                         |

Dr. Debraj Bhattacharyya is actively collaborating with Prof. Satoshi Soda and Dr. Shimizu, Ritsumeikan University, on 'Developing a cost-effective biological decentralized domestic wastewater treatment system.' This project was funded through CKP. A joint symposium on Recent advances in sustainable waste and wastewater engineering was held at IITH.



**Picture: Prof. Soda and Prof. Shimizu at the joint symposium**

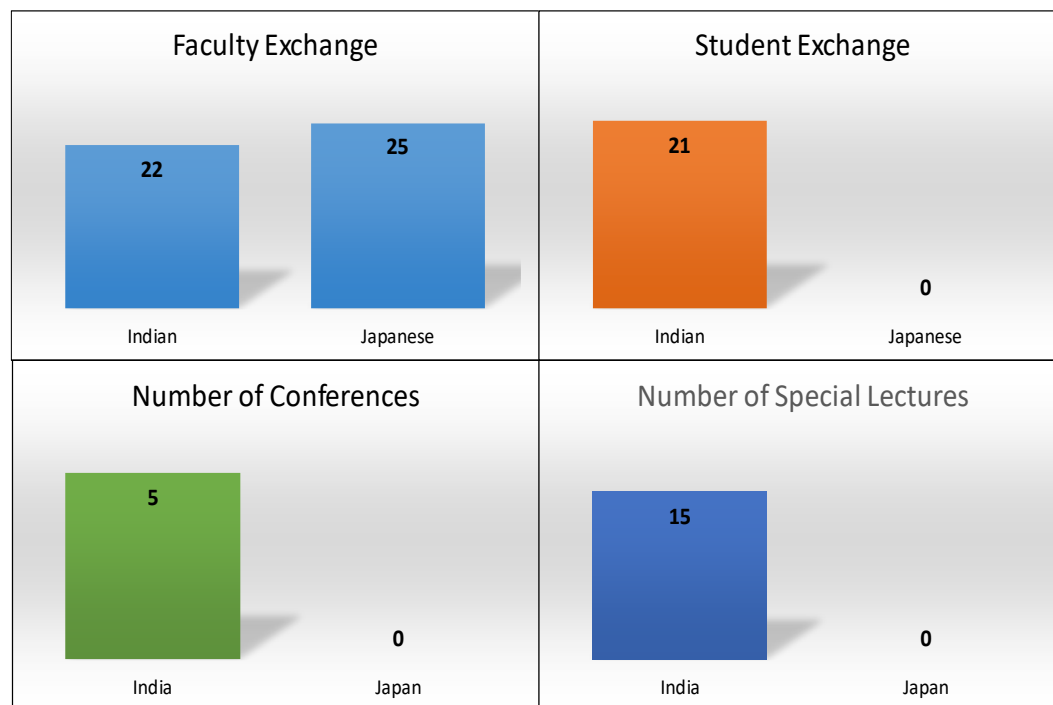
Under this collaboration, Dr. Munwar Basha and his students, Mr. Ravi Teja and Mr. Raghuram of Civil Engineering spent about three months at the Ritsumeikan University under JASSO program.



**Picture: Mr. Raghuram and Dr. Munwar Basha at Ritsumeikan University**

*Continued...*

## The Sustainable Development program in a nutshell:



### **Brief Statistics of Sustainable Development Program with Japan**

The sustainable development group has taken the initiation to invite more research students from Japan to IITH through joint supervision programs and collaboration projects.

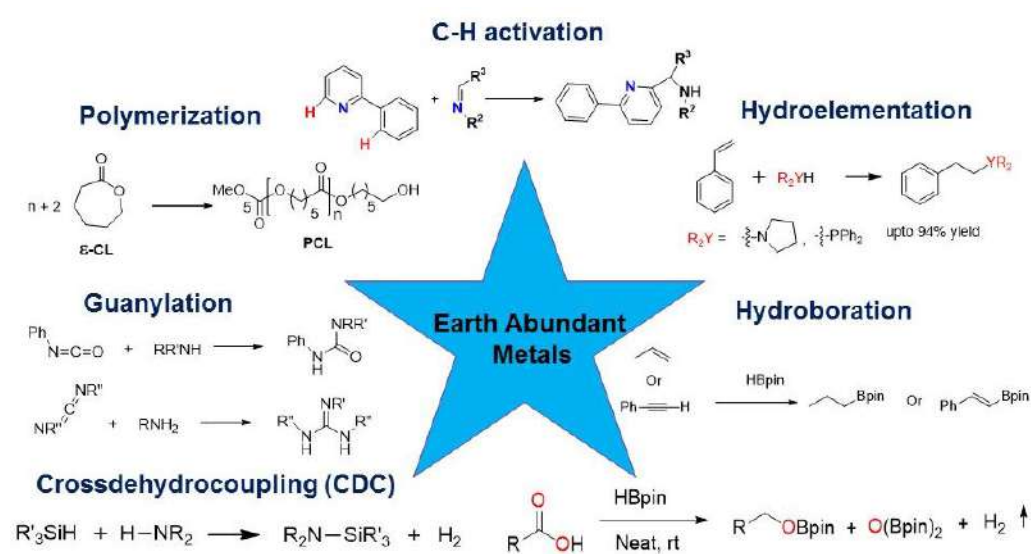


**Prof. Sireesh S.**  
**Department of Civil Engineering &**  
**Former Dean (Planning),**  
**IIT Hyderabad**

## My research group's association with Japan

Our research group has been long associated with Japan from the early days of IIT Hyderabad taking advantage of my Post-doctoral network. We have received excellent supports from the research group of Prof. Kazushi Mashima and Prof. Hayato Tsurugi of Osaka University and also from Japan International Cooperation Agency (JICA) on various fronts to establish our research group at IIT Hyderabad. This support was instrumental to provide international exposure to our research students. My very first doctoral student Mr. Ravi K. Kottalanka received three months research internship in Japan in 2012 during his PhD. Then Miss Jayeeta Bhattacharjee also visited Prof. Mashima's research Lab through the JASSO fellowship for three months. We also successfully received JICA-CKP collaborative project to work with Prof. Mashima group in 2018 for two years. Mr. Suman Das had visited Japan for six months through this project. Apart from these, a significant number of master students of IIT Hyderabad had chosen various Japanese universities as their PhD destinations through the JICA fellowship. I am also a regular visitor of Japan to strengthen these ties to a new height.

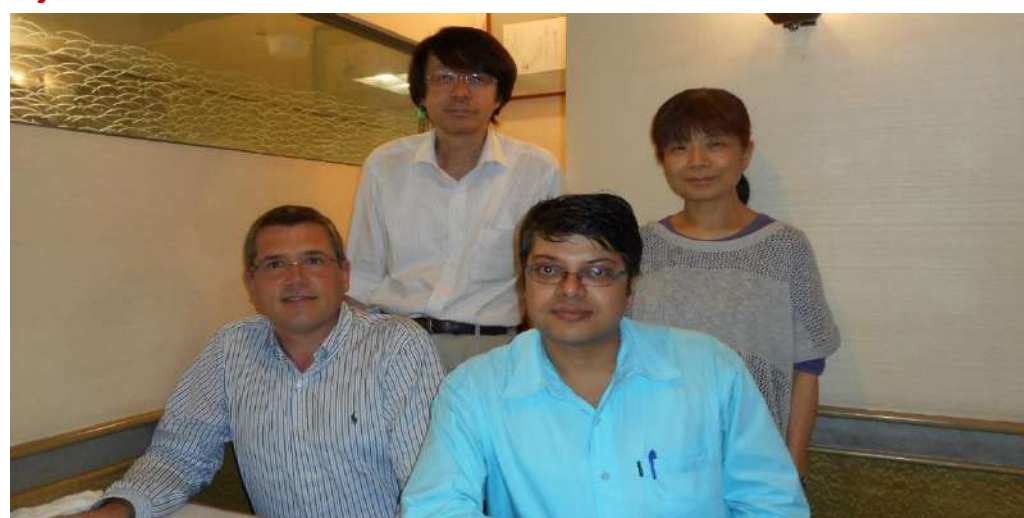
In our working group, we are involved to develop several efficient organometallic catalysts employing various metals with low cost, ready availability, comparatively low toxicity, and greater sustainability towards the environment. Alkali (Li, Na, K), alkaline earth metals (Ca, Sr, Ba), titanium the second most abundant in earth crust are our principal choices. In our group, these metals excelled as catalysts for a broad range of transformations, including cyclic ester Ring Opening Polymerizations (ROP), hydroamination, hydrophosphination, hydroboration, cross-dehydro-coupling reaction, C-H activation, etc.



**Figure 1: Current research work in our working group**



**Figure 2: Prof. Hayato Tsurugi visited our lab @ IIT Hyderabad 2019**



**Figure 3: With Prof. K. Mashima, Mrs. Mashima and Prof. A. Vidal @Osaka University during Japan Visit.**



**Figure 4: Several IITH master students working in Japan.**

*Continued...*



*Figure 5: With IITH alumni working in Tokyo during Japan visit.*



*Prof. Tarun Kanti Panda  
Professor, Department of Chemistry,  
IIT Hyderabad*



## Earthquake Disaster Mitigation Research Division, Hyogo

On 7th Nov 2019, our center and IITH inked the MoU with an aim to develop a numerical tool of the global standard for seismic performance assessment of the building and civil structures.

Development of a non-local damage model for concrete has been taken up for joint-research to kick-start the collaboration with Prof. Amrirtham Rajagopal of CE dept. This project continues to be technically challenging due to the nonlinear behavior of concrete and requires validation with experimental data, but I believe that outcomes will be available soon.

The collaboration is being led by Researcher Dr. Mahendra Kumar Pal, who is an expert on concrete modeling and is well poised to take it further because of his understanding of work culture in India and in Japan and obviously of being an IITH graduate. Last year, internship for IITH students and visits of researchers could not be carried amid the COVID-19 pandemic.

However, I believe that on-going efforts will take this collaboration to a new horizon. I sincerely thank Director Prof. B.S. Murty, Prof Amritham Rajagopal of IIT Hyderabad and Ms. Chikako Hiura of the JICA friendship project for their continuous support and kindness. I hope for the success of this collaboration.



***Dr. Koichi Kajiwara,  
Center Director, Earthquake Disaster  
Mitigation Research Division  
National Research Institute for Earth  
Science and Disaster Resilience (NIED),  
Mitsuda, Shijimicho, Miki Shi, Hyogo, Japan***

## Embassy of India, Tokyo (Japan)

India-Japan relations have evolved into 'Special Strategic and Global Partnership' based on shared values of democracy, non-violence, human rights, rules-based global order for global peace, stability, freedom and prosperity. The progress of our strategic cooperation has steadily progressed through various strategic mechanisms & agreements in important fields such as cybersecurity, ICT, space, civil nuclear cooperation, energy, startups, skill development, education and science and technologies.

Japan is a key partner in India's global initiatives such as International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI) and Indo-Pacific Ocean's initiative (IPOI). India-Japan Investment Promotion Partnership; Mumbai-Ahmedabad High-Speed Railway project; establishment of 12 Japan Industrial Townships (JITs); Technical Intern Training Programme (TITP); "Manufacturing Skill Transfer Promotion Programme" including Japan-India Institutes for Manufacturing (JIM) and the Japanese Endowed Courses (JEC); signing of Specified Skilled Worker (SSW) agreement; are some shining examples of further deepening of our close and strategic relations. On the economic front, Japan is the 4th largest investor and also the largest ODA contributor to India.

Cooperation in the field of Education is an important component of India - Japan bilateral relations. As per available data, there are over 300 academic and research partnerships (including student and teacher exchanges) between more than 70 universities/institutes of Japan and around 105 universities/institutes of India.

IIT Hyderabad (IITH) started by the Govt. of India in 2008 is renowned for actively pursuing

research and innovation that is evident from the excellent NIRF and other rankings, number of patents and publications, cutting-edge research, strong industry collaboration, and entrepreneurship.

With this vigour, IITH has been able to set up a network of centres & incubators for research, innovation and promotion of entrepreneurship at IITH. IITH is also planning to host one of the supercomputers under National Supercomputing Mission. These centres & facilities will promote research in areas of widespread utility such as AI & 5G technology, affordable housing, and information networks for natural disaster mitigation and recovery.

IITH has been at the forefront in successfully building tie-ups with leading academic institutions around the globe including with more than 20 Japanese Universities and Industries. Collaboration between IIT Hyderabad (IITH) and Japanese universities and institutions aims at combining joint research initiatives, academic exchanges and IITH campus development.

IITH and Japanese universities are collaborating in frontier areas of Nano-technology & Nano-science, Digital Communication, Environment & Energy, Design & Manufacturing and Civil Engineering.

IITH & its incubated startups have led in India's fight against COVID19 by contributing to the development of low-cost products such as AI-based COVID-19 detection kit in collaboration with BARC, Mumbai, ventilator "Jeevan Lite", applications for data collection, monitoring and surveillance of social distancing, protective gears for COVID19 preventive measures, etc.

*Continued...*

I wish to congratulate the IITH team for its inaugural quarterly theme-based magazine "किरीIITH (KirIITH) – The Crowning Glory" in 2020. The earlier 03 issues on theme COVID-19 Initiatives@IITH, AI Researches@IITH & Healthcare Initiatives@IITH are informative and useful. I hope that IITH will bring more such editions and will educate all stakeholders especially students.

In these challenging times of pandemic, it is very important that we stay safe and positive. I wish all the readers good health, success and happiness.



***H.E. Mr. Sanjay Kumar Verma  
Ambassador of India to Japan***

## Kioxia Corporation, Japan

Kioxia Corporation, formerly Toshiba Memory, signed MoU with IIT Hyderabad (IITH) on April 4th, 2019 for joint R&D publication and internship opportunities for the students. Despite a good initial start, unfortunately, we have not been able to materialize the plans yet due to the COVID-19 pandemic. However, we are optimistic about developing innovative solutions in the near future. Kioxia's key technology, Flash memory has continuously dedicated to enormous game-changing innovations in society, with the most significant growth recently in the area of Digital Transformation such as hyperscaler cloud services that provide 'datacenters'. At both Flash memory and SSD (Solid State Drive, one of the key flash storage devices) development fields, we have welcomed dozens of students from India.

Some graduated from the universities in India, some from the ones in Japan, and they have made huge contributions to Kioxia's future technology, which is to create, store and process the 'fuel' of our future; DATA, that changes things. Especially to name, Dr. R. Sai Chandra Teja and Dr. Ranga Reddy from IITH. Dr. Teja was responsible for diversifying the product portfolios and global business expansion strategy and successfully built a business plan from scratch with the idea of creating industry-specific video analytics solutions through utilizing the visual intelligence with IIT Hyderabad as a key technical partner. Dr. Ranga Reddy works on next-generation lithography technologies at Kioxia's world-class Flash memory fab facility in Yokkahichi in Japan. As described, Flash memory and its application have been widely spread, with the growth of Digital Transformation such as hyperscaler cloud services, and the contributions by global engineering support including India will be the

key to success; memory/SoC design, signal processing, software/firmware design. KIOXIA (kee-ox-ee-uh) is a combination of the Japanese word kioku meaning "memory" and the Greek word Axia meaning "value." Kioku, which underpins our mission and vision, goes beyond the notion of memory as mere data to broadly encompass experiences, emotions and ideas. COVID-19 situation has certainly brought a huge amount of challenges, inconveniences and restrictions. However, it also witnessed a huge growth in digital-commerce, digital entertainment as well as WFH environment. Kioxia takes this as another opportunity for 'Flash native solutions'. While we overcome this situation, when we come back to normal, the new normal, we look forward to working together with you all, to take the lead on treating the fuel for our future, data, with our Flash memory and storage technology together.

Please stay safe and healthy until we all overcome.

With best and warm regards,



**Mr. Shigeo (Jeff) Ohshima**  
**Technology Executive,**  
**SSD Application Engineering**  
**Kioxia Corporation, Japan**

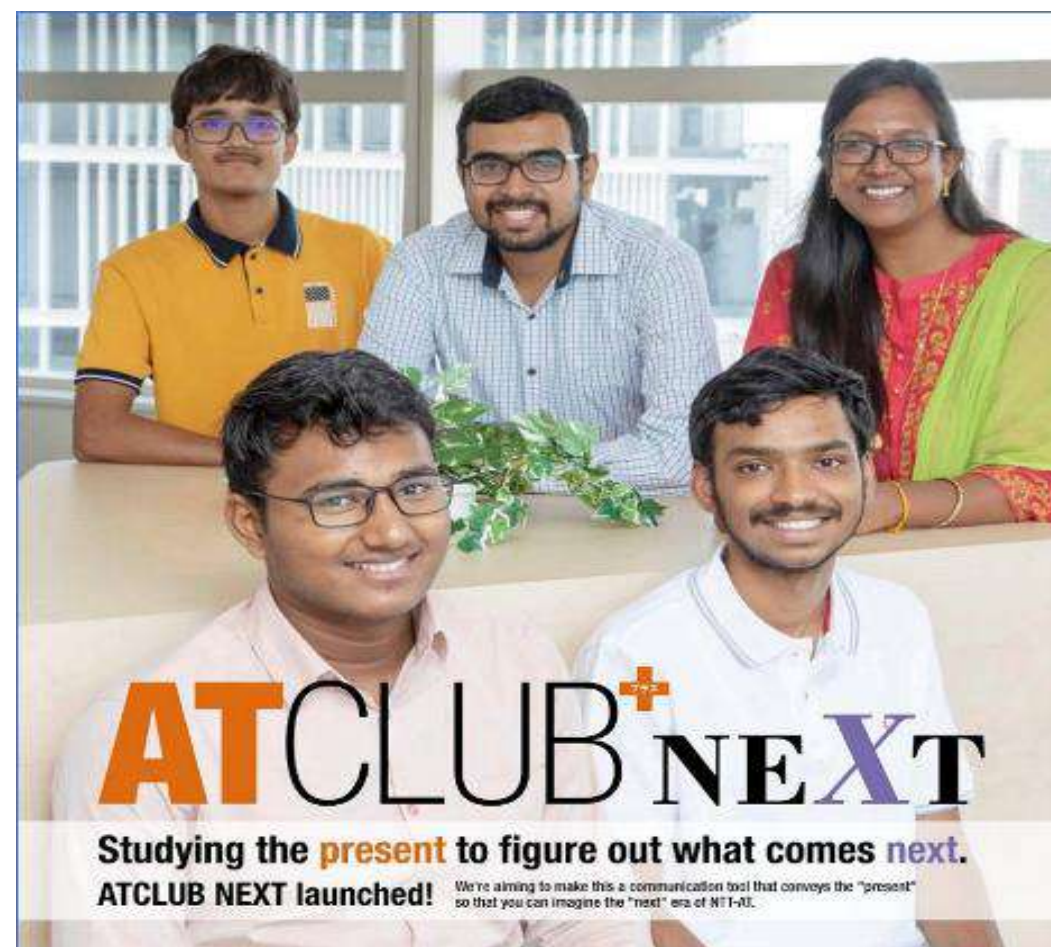
## NTT Advanced Technology Corp., Japan

Collaboration between IIT Hyderabad and Japan has a long history from the establishment of the university supported by JICA and JETRO. On the other hand, our collaboration is relatively new, IITH and NTT-AT signed an MOU on collaboration between research and human exchange in 2019, and we have been providing the opportunity for internship and placement since then (<https://www.ntt-at.com/news/docs/release190412-e.pdf>). We would like to greatly appreciate Prof. Kotaro Kataoka, for his efforts in starting our collaboration.



*With Former Director Prof. U. B. Desai*

The Internship program has been started in May 2019, soon after the MOU, the five students stayed 2 months in Japan and they experienced not only Japanese work culture, but also enjoyed the cross-cultural exchange with our employees. Their experiences are introduced in our newsletter ATCLUB, and their live voices are also available in YouTube video (<https://youtu.be/MwCScGQsluU>). As a result of this experience, they became a big fan of Japan, and some of them are decided to work in Japan.



*IITH Interns voiced in NTT Newsletter*

We visited the campus several times to participate in events, such as JAPAN DAY and Academic Fair sponsored by JICA or JETRO in order to let students know more about NTT-AT. Furthermore, we have become a sponsor of SHIRU CAFE so that students can feel closer to us.

### **JAPAN DAY 2019:**

<https://www.jetro.go.jp/biznews/2019/09/7d95a9b5fd6950cf.html> in Japanese

### **Academic Fair 2019:**

<https://www.jica.go.jp/india/english/office/topics/press191030.html>

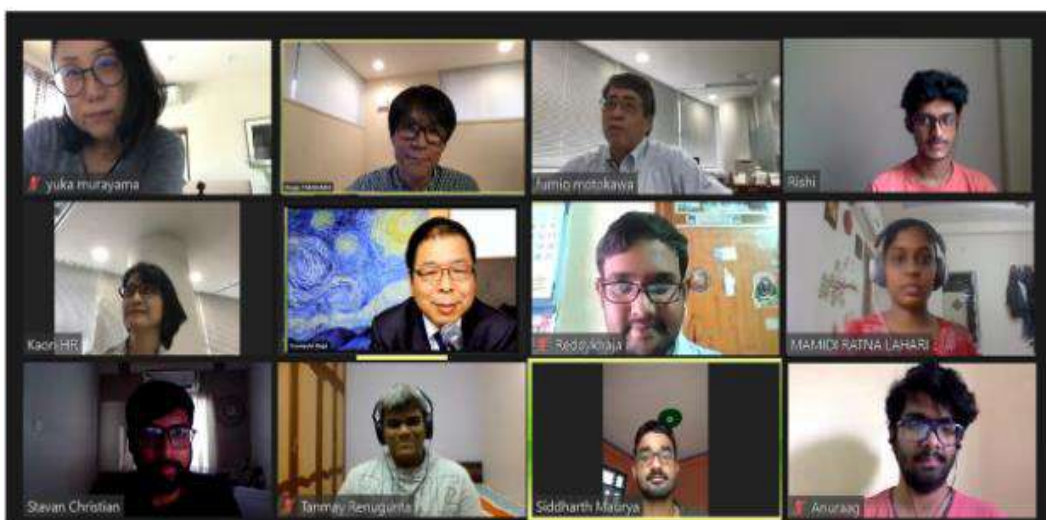


*Visit to Shirucafe*

*Continued...*

The second intern in 2020, due to the influence of COVID-19, unfortunately, the students were unable to come to Japan and the intern was forced to hold remotely. However, they did a great job, we were impressed at the high ability of the students and the novelty of their ideas.

COVID-19 also influenced the arrival of recruited students in Japan. They are still forced to stay in India, however, during this time of patience, they are studying Japanese and IT for the future and are waiting for the day to work in Japan. This situation was taken up by JETRO news [global eye \(https://youtu.be/J64npf6Lxyc/\)](https://youtu.be/J64npf6Lxyc/).



***IITH Students during an Online Session***

Once again, I would like to appreciate IITH members for continuing a good relationship with us, NTT-AT. I hope that this relationship will be further strengthened by accumulating the number of students who will experience internships and come to Japan to work. The impact of COVID-19 is still severe, and the 2021 intern will also be held remotely. We look forward to welcoming you with an interesting program.



***Dr. Tsuneyuki Haga,  
Senior Vice President,  
Executive Manager of Human Resource  
Department  
NTT Advanced Technology Corp., Japan***

## Shirucafe & Enrission Japan

*Konnichiwa to IITH,*

IITH & ShiruCafe collaboration go more than just a relationship, it's more like both between us which has only grown stronger through time. Many don't know that Our first SHIRUCAFE outside Japan was set up in IITH. Since then, we have always had a wonderful and cordial relationship with the Management, Placements and the ever-friendly students of IITH the years.

We at SHIRU CAFE are more than just a café we provide refreshing drink to the students, help them understand life in Japan and the working culture and to interact with our Japanese Interns working at the café. The Interns have nothing but a good experience working & staying at the campus and many have made good friends from the IITH & thrust us many would love at a chance to come back to IITH.

We have helped the placements team also in connection with companies from Japan and help many students via internships in Japan. The current situation doesn't allow us to travel to and from Japan but once things get back to normal, we are sure to get students to Japan via placements or Internships.

We couldn't be prouder of our association with IITH and look to continue many fruitful years helping the students and adding value to IITH.

### Testimonials of Students who did an internship at SHIRUCAFE IITH

#### 1. Mr. Tatsuya Fuji, University of Tokyo

What impressed me during my time at IITH was the Indian students' quest for technology. In Japan, there is an idiom that going to India will change your life, and I was no exception, and I was influenced and decided to become an engineer after returning to Japan.

#### 2. Miss. Mitsuki Kagiya, Kobe University

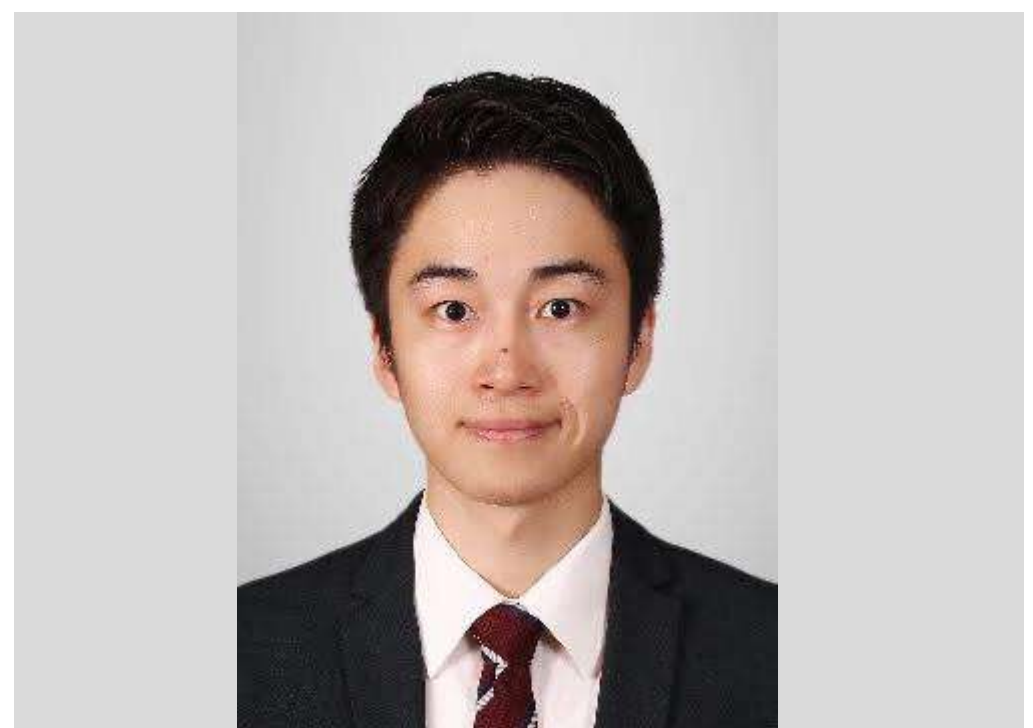
I am very grateful to IITH. Everyone brought out what I wanted to do and supported me. Everyone I met at IITH valued me and I never felt out of place. There are many people in India who study abroad or find employment in Japan, so Japan and India are not distant countries.

#### 3. Mr. Hiroki Kino, Nagoya University

I was happy and unexpected that the kindness of IITH students, professors, and staff would save me so much. Although Japan and India have different national traits, I realized that they have a wonderful relationship that respects the differences, so I hope that more people will be deeply involved and make this relationship grow.

*Sayonara until we meet again, stay safe.*

### Team Shirucafe & Enrission Japan



*Mr. Kazuki Hatamori,  
International Division Head,  
Shirucafe & Enrission Japan*

## Suzuki Motor Corporation – Japan

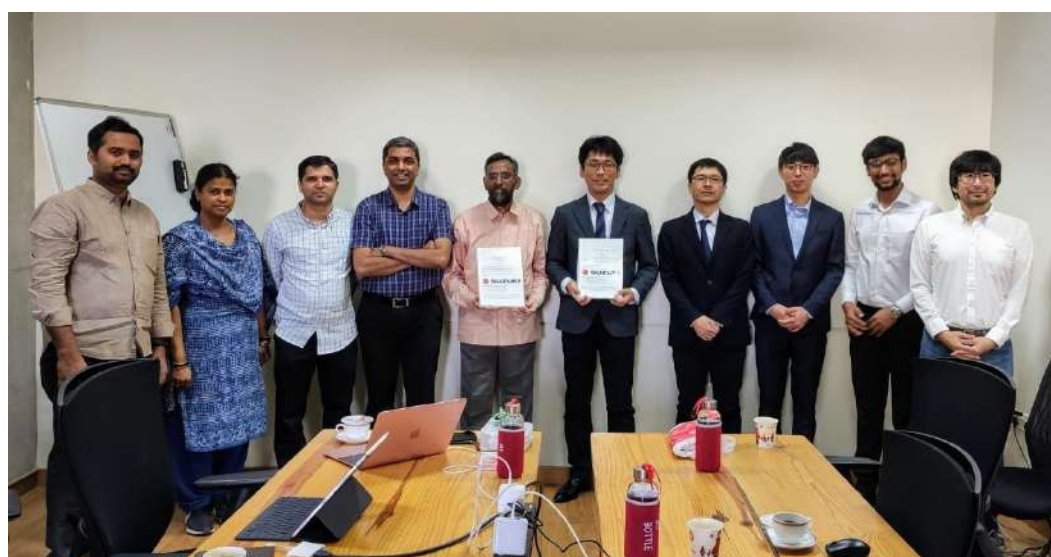
### *A win-win partnership*

IIT Hyderabad and Suzuki Motor Corporation have a strong collaboration since the inception of IIT Hyderabad. Suzuki was one of the companies that joined the “Support Consortium for IITH” in 2009.

Since then Suzuki Motor Corporation (SMC) has supported IIT Hyderabad in many ways particularly in the domain of Human Resource Development, including, providing internships to students, sponsoring professors and researchers from IITH to come to Japan and conduct long term research with Japanese universities.

The relationship became stronger when SMC directly recruited 2 undergraduates from IIT Hyderabad in 2019. Since then, both the employees (Vipul Jindal and Prathyusha Thammineni) have played a key role in driving the partnership between IIT Hyderabad and Suzuki Motor Corporation, Japan.

In February 2020 SMC signed MoU with IIT Hyderabad to enable joint research and development. The MoU has paved way for SMC to conduct multiple research collaborations with the bright minds of IIT Hyderabad. Currently, more than 10 professors inside IIT H are involved with Suzuki for various Research activities.



***MOU Signing Ceremony at IIT Hyderabad with Prof Murthy, Director -IIT Hyderabad***

Currently, we have nine IITH alumni working inside Suzuki. I feel many of the IITH alumni inside SMC are very passionate and want to create something new for society. I am sure, they face many day-to-day challenges in Japan because of the language gap, culture gap, Food, etc, but even then, as the following pictures are showing, they have been performing greatly in the company.



***Mr. Vipul Jindal (IITH Alumnus) giving a talk, representing Suzuki Motor Corporation at the Embassy of India in Japan***



***Ms. Prathyusha T (IITH Alumnus). giving a talk at IITH, representing Suzuki Motor Corporation***



***Mr. Raja Gopinath (IITH Alumnus) giving a demo, representing Suzuki at the Tokyo Motor Show***

***Continued...***





***Mr. Khateeb Noor (IITH Alumnus) with his team members inside Suzuki Motor Corporation.***



***Dr. Pradeep P. (IITH Alumnus) working with his colleagues in Suzuki Motor Corporation HQ***

Suzuki is very happy and thankful to be one of the partners for IIT Hyderabad and has many expectations from IIT Hyderabad teachers and students going forward.

I look forward to seeing the relationship between IITH and SMC grow many folds in the coming year and hope IIT Hyderabad will keep supporting Suzuki Motor Corporation Japan.



***Mr. Kazunobu Hori  
Managing Officer  
Executive General Officer  
Human resource and General affairs  
Suzuki Motor Corporation, Japan***

## A mini-IITH in Japan

I completed my dual degree (MTech+PhD) from the Department of Computer Science & Engineering, IITH in 2019. Under the Suzuki Foundation Research grant, I joined Shizuoka University as a researcher for 1 year.

Currently, I am working as an IT Consultant for a Japanese company. In 2013, I read in news about Japan providing assistance and collaboration to IITH. Going to Japan had been a lifelong dream for me. Moreover, when I came for the interview, the faculty was welcoming, friendly, open-minded and talked about opportunities for collaborative work with Japan. That moment I felt like I was destined to join IITH although I got admission to older IITs.

I enrolled on a 4-week Creative Arts course on Photography by the renowned Polish photographer Tomasz Sobiecki. The course opened up my perspective of seeing things and made me fall in love with photography. I started capturing memories of people and events at IITH.

When I was the event coordinator of Infocus (photography club), Infocus received the best club award of IITH. Eventually, my friend-circles tease me as the “Photographer of IITH”.

It is hard to point out my least enjoyable subject.

There were hardships and deadlines with every subject. But overcoming the hardships became enjoyable and satisfying.

I was an active member of Infocus, the photography club of IITH since the beginning. Along with Dileep (ex-coordinator), we started club programs such as Humans of IITH, Campus Xplore, and Photowalks. Along with Vipul, we

successfully introduced vending machines on the campus, to alleviate the scarcity of shops.

IITH days is filled with full of enjoyable and unforgettable memories. Clicking photos of people, events, Humans of IITH, and photo-walks on campus with friends were some of the most enjoyable times.

Every year, I looked forward to Holi celebrations, ice-cream nights, Elan nights to hang out with friends. IITH gets lots of opportunities for internships and collaboration with Japan, which are hard to get otherwise. So, make sure you explore and get involved.

The research mindset, openness and flexibility of faculty makes IITH unique and appealing.

An increase in funding for research would help IITH take the next step to become a top institute in the world. I feel it is important for both IITH and alumni to stay connected and help each other grow.

In 2016, I had the opportunity to do an internship at the Suzuki Motor Corporation headquarters, Japan. I experienced the software development process that was happening in their IT Division. Courses in Data Mining, Linear Algebra, Programming and TA-ship helped me prepare to deal with problems that arise in my current job.

Life in Japan is like a learning curve. Difficult to adapt initially - cultural shocks, language problems, food adjustments, etc. Once I understand the system, life becomes systematic and enjoyable.

*Continued...*

It is admirable to see the Japanese giving attention to details in every aspect of their life. People are extremely polite, there are many sightseeing places. Last but not the least, the presence of 200+ IITH alumni is a welcoming sign and it gives a feeling of there is a mini-IITH in Japan.

I may be reached via my e-mail address: [konjengbam.anand@gmail.com](mailto:konjengbam.anand@gmail.com)



***Dr. Konjengbam Anand,  
MTech & PhD, Department of Computer  
Science & Engineering, IITH (2019) &  
Researcher, Shizuoka University***

## Studying abroad make you learn a lot

I am Brijesh. I completed MSc in Physics from IITH in 2015. I came to Japan in 2016 to pursue my PhD. I got a PhD. in Physics from Osaka University in 2020. Currently, I am working in the R&D department of a manufacturing company in Kyoto, Japan.

In the last year of my Bachelor's degree, I decided to do my master's in one of the IIT's. I sat for the IIT JAM exam. I failed in my first attempt, but I cleared the exam on the second attempt. After the counselling, based on the rank I got into IITH. Although IITH was not my first choice, I was happy to join any IIT at that time. I think I enjoyed quantum mechanics the most. The subject is quite interesting and, It was well taught by the lecturer. Maybe the subject I least enjoyed was Computational Physics. I was in the dance club for a year. I also played in the cricket tournaments at IITH. The basics of physics I learned helped me during my PhD. and also helping me in my current job.

When our team won the cricket, tournament is the best moment I can recall from my life @IIT

Hyderabad. I want to say to the existing students at IITH that, if possible, study or do an internship abroad for at least 1 year. I am sure you will learn a lot of things. Providing students with a chance to study abroad through IITH-Japan collaboration, for me is the best about IITH.

I can be contacted through email; my email ID is [brijphysics@gmail.com](mailto:brijphysics@gmail.com)



***Mr. Brijesh,  
MSc, Department of Physics, IITH (2015) &  
Analytical Engineer at HORIBA Advanced  
Techno, Co., Ltd.***

## IITH was one of the best decisions, I took

I am PARCHURI Pradeep Kumar and I pursued my masters and graduated from the Department of Materials Science and Metallurgical Engineering (MSME), IIT Hyderabad in 2016. Later the same year, I have joined the Joining and Welding Research Institute (JWRI) of Osaka University to pursue doctoral studies and graduated in 2019. Currently, I am working for Suzuki Motor Corporation, Japan in Research and Development section.

Pursuing an education in IITs is a prestigious and privileged feeling that motivates many youths of India to join IITs. In the same way, I also dreamt to join IITs. I somehow got into IITH by chance as I missed the opportunity to join IITKGP. However, I realized joining IITH was one of the best decisions I have ever made that taught me several things and guided me to where I am currently.

I enjoyed learning the courses taught by Dr. Subhradeep Chatterjee and Dr. Saswata Bhattacharjee of IIT Hyderabad. The way they teach and excites while explaining the topics to students made me fascinated and enthusiastic, which always motivates me to work hard.

If I have to say, the lectures of Prof. BS Murthy and his student Mr. Veera Sreenu stirred my thoughts and created passion toward research when I was in my Bachelors. To be specific the topics of Physical Metallurgy, Mechanical Metallurgy and Joining and Welding are my favorite subjects.

Although I could not contribute as an organizer to most of the events organized at IITH I could enjoy playing badminton at IIT Hyderabad.

I could get hands-on experience to operate a secondary scanning electron microscope (SEM) and used a little of ABAQUS and MATLAB for my research. I could also use the X-Ray diffraction technique.

Hands-on experience on SEM and X-RD helped me to continue my research at Osaka University. Other than such specialized training, the logical scientific reasoning skills and passion for research I learnt at IITH from my supervisor Dr. Subhradeep Chatterjee and several other professors in MSME have greatly helped me to finish my doctoral studies in time. The best moment I would say was receiving an Academic Excellence award during my second semester. And of course, my graduation ceremony and being awarded the JICA Scholarship to pursue my higher studies in Japan.

I want to say to fellow IITHians that you are privileged to be at IIT Hyderabad and of course you have earned it through your hard work. Hope you will continue the same for your personal and professional growth and parallelly for institute growth.

Being a new IIT is the best thing that I consider the best about IITH that motivates and encourages the students as well professors and management to give their best in order to take the institution to another level. At the same time being a new institution pose challenges in terms of infrastructure, funds etc., However, IITH is somehow blessed and it could cross all those barriers in a short period of time to compete with all the other institutions with its invaluable efforts.

*Continued...*

I do not know how the infrastructure in the MSME department is, but during my studies it was mediocre, and I could hardly use several machines due to lack of funding and time were taken to repair the machines. Providing proper funds and get any machine repaired on time is one of the important things any management could do to a research institute/group, which keeps the researchers encouraged and motivated always. Hope IITH is already doing it.

I am working with Suzuki Motor Corporation Japan for about a year. Working with Japanese companies exposed me to their innovative and great technologies that are of world standards and working culture, industrial problem-solving approach, dedicative nature toward work and importantly, respecting every job. I am currently enjoying working with Suzuki to develop new materials and manufacturing techniques for automobiles.

Although it is challenging every day in a Japanese industry where the working environment is also in Japanese. However, on the other hand, it is fun facing those challenges rather than giving up and it turns into joy when you see yourself battling and winning those challenges and that put a satisfying smile on your face at the end of your day. I could also observe and understand how well-organized Suzuki and how they divided all the departments inside the company to make an automobile.

I feel so fascinated by the thought sometimes that we all-around 20,000 (roughly) employees work together to manufacture an automobile that has around 20,000 parts (roughly). Well, I am still a newbie here at Suzuki to write more about my experience at Suzuki. So...

Let me talk about my student life experience instead. I consider myself to be privileged to be an awardee of the JICA-IITH scholarship. The

initial support to settle in Japan and medical insurance that all the scholars receive during their studies from JICA is a great support that anyone could receive from any scholarship.

I sincerely convey my gratitude to both IITH and JICA for that. Not only that, I could join one of the best institutions in the world for welding, which is the Joining and Welding Research Institute (JWRI) of Osaka University. Also, I could join Prof. Kazuhiro Ito who is the best supervisor one could get to pursue their doctoral studies. He and my lab mates were very supportive during my initial days to adopt to the new conditions over here and encouraged me to speak in Japanese. They have always backed me up in my research as well in my personal life in Japan. That helped me to cope up with the Japanese culture and tradition very early and made me considerably fluent in Japanese.

I am very adoptive, probably because the institutions that I have studied taught me that (RGUKT, Nuzvid and IITH).

Thus, it was not very difficult for me to adjust here and to lead a normal life. I could attend 12-14 national and 2 international conferences during my studies at JWRI and that shows how much research exposure one gets by studying at prestigious institutes of Japan.

While I was studying at Osaka University, I could get a chance to work as an intern at Suzuki Motor Corp., through JICA-IITH Friendship annual meet, which eventually opened the doors to get placed here to continue my career in Japan. Pursuing studies in Japan not just makes you disciplined in studies but also make you disciplined in your life in several ways.

*Continued...*



**Dr. PARCHURI Pradeep Kumar,**  
**Mtech, Department of Materials Science**  
**and Metallurgical Engineering, IITH (2016),**  
**Doctoral Studies, Welding Research**  
**Institute (JWRI), Osaka University (2019) &**  
**Research and Development section, Suzuki**  
**Motor Corporation, Japan**

**Picture for a Suzuki employees union monthly booklet, in Indian clothing with Japanese colleagues**

## Do not shy away from trying something new

**To summarize:**

I am Prathyusha, which means Early morning or Dawn. Someday, in the hope to live up to my name.

I graduated from a batch 2018 and now working as an R&D engineer at Suzuki headquarters, Japan.

**Why IIT?**

I was introduced to JEE in my 10th standard (high school). It felt new, fun and challenging. I signed up for the classes along with my friends. Meanwhile, luckily, I had some opportunities to speak to a retired professor from IIT (Kharagpur). The life he described at IIT seemed

like an alternate ideal universe (My school had a very traditional & pretty strict environment). With the constant support from my parents & teachers, I cracked JEE!

**Why IIT Hyderabad?**

I wanted to join the electrical department (cause I fancied inverters at that time lol) and with my rank, IITH seemed like a wise choice. In those times(2014), the director of IITH was from the electrical department and the department also had professors with great background(Prof. Kiran Kuchi etc.), connections with foreign universities and cool projects.

**Continued...**

## Subject enjoyed the Most:

“Internet of things” was a rising & hot topic then!

And why not!? You can communicate to the things around you from lights to buildings to what not, in a way we have never experienced before!

After all, “It is said communication is the key, Isn't it 😊”

## Subject enjoyed the Least:

Calculus/ AC systems/ signal processing.....The list doesn't end!

Honestly, although I could crack the exams with pretty good scores, I couldn't imagine and understand the concepts very well at that time.

At the risk of sounding like a nerd,

I believe We did not have a subject for the Internet of things as such until my final year. So, I and my friends had to work on it in our free time apart from the usual study subjects.

However, I received (and still receive) continuous support from a professor (Dr. Kotaro Kataoka) since my first year in terms of support for knowledge, funding, space for prototyping, attending hackathons....! I also got to intern at the University of Tokyo, some Indian companies & try out my own start-up in the meantime.

I was a coordinator for hospitality in the college tech fest- nvision. I also co-founded and designed events for the “student networking festival” which brings students from various kinds of streams like engineering, fashion, hospitality, hotel management, law etc. for networking while having fun together!

I tried Java coaching in my first-year summer holidays. I do not remember any of it!

## Yes, education and training prepared me for my current job role!

I work designing next-generation communication systems & applications for connected cars. So, yes – the Internet of things it is, again.

## No education and training prepared me for my current job role!

My job also requires me to:

1. Strongly coordinate & negotiate with my seniors, partner companies
2. Coordinate with my team to assign tasks/ work together
3. Create long term visions and roadmaps to achieve that.

I feel I am not originally good at these things. I am learning with time- It is both frustrating and fun!

However, I wonder if my education could have provided me with this kind of opportunities also or it is something to be realized and learnt on one's own!

The best moment I can recall from my life @IIT Hyderabad, Of course, the weekend parties, late-night chit -chats, projects....!

But the best one which still cracks me up is – In my starting days in IITH, I cut a USB charging cable to powerup an RFID reader from the AC current source rather than using a battery. That was the first & last time - My friends thought I was a genius!

*Continued..*

I want to say to fellow IITHians that you might not be good at things you haven't tried before. Do not let that shy you away from trying something new.

Best about IITH (from when I was there): The openness IITH provided for a student to pursue their interests can be anything!

Improvement area for IITH: The liberty of the college for not just academics but everything else was the best part of IITH. As IITH is growing bigger, rules and regulations are getting imposed to manage the big strength. But rules and regulations always take away liberty slowly and steadily. IITH Deans and the director should always be careful to find the right balance.

Best way to reach me:

**LinkedIn:**

<https://linkedin.com/in/prathyusha-thammineni-7bba64121>

**Instagram:**

<https://instagram.com/prathyushathammineni>

Do try and find to work and associate with a professor. They are always supportive and helping even after graduating!

It has been around 2 years since I moved to Japan.

My company has supported me to learn Japanese from a residential school(AOTS) for the first 3 months. \*\*It is my recommendation for people who come here. (at least to work). We also had around one-and-a-half-month training along with all the new employees. This time (although felt like torture) gave me the opportunity to meet a lot of people with similar hobbies and make a lot of new friends!

My department closely works with India, so I

did get the opportunity to visit India 2-3 times during my first year here and then hits COVID! Although COVID has changed a lot of plans including business trips(both national & international), it has given me an opportunity to work closely with my team (since all of us are stuck here!)

and to ponder more and explore Japan.

Me, along with a friend proposed an idea related to future mobility systems to my department. We are now working on the idea for the past 7 months. We secured a budget and team. We actively work on realizing the technical and business feasibility of the idea. In this process, we talk to different companies and universities over the world for idea brainstorming, collaboration, prototyping. This has introduced me to a lot of things very early.

Also, during my first year in Japan, I was part of organizing the IITH-alumni meet in Japan & got an opportunity to meet the new director of IITH and also introducing him to our company. We all could share some ideas on industry-university collaboration.

Now, I along with my friend, are responsible for starting and maintain around 8-10 collaboration projects including 10 professors and worth – xx crores. We are also aiming to build a sustainable model for Suzuki-IITH collaboration.

Apart from that, since COVID has restricted from travel, I spent my time (along with my friends) exploring new things like Salsa, Scuba diving, river rafting, skewing, Ice skating, Onsen. I realized my profound love for active things. I love riding and recently got my motorcycle license! I also go regularly swimming & recently started kickboxing along with to get some exercise.

*Continued...*



PS: \*\*When you move to any new country: This phenomenon, so-called culture shock consists of 5 stages – the honeymoon stage, frustration stage, adaptation stage and acceptance stage.

I have moved to Japan along with one of my closest friends from college. So, luckily, I already had a friend to share all the stages of culture shock including frustration & adaptation.

I have only mentioned the best parts of these two years. You are always welcome to ask me anything 😊



**Fujikawa, river rafting**  
**(Down left - Right before jumping off into the river)**



**Hokkaido, skewing trip**  
**You ring the bell in hope of lasting relationships!**



**Ms. Prathyusha,**  
**BTech, Department of Electrical**  
**Engineering, IITH (2018) &**  
**R&D Engineer, Suzuki Headquarters, Japan**

## Global Research and Cross-culture Workplace Journey

### I. Biography



#### — Clay hand impression @IITH

The above picture pretty much sums up my journey at IIT Hyderabad, starting with representing the IITH Basketball team at Inter-IIT to being ELAN coordinator for extra circulars. Abandoning the popular affection towards western countries, I (R. Sai Chandra Teja, EE10M06) choose Japan as the destination for my PhD studies leveraging IIT Hyderabad's unique collaboration with Japanese universities and industries. I am humbled to be a pioneer batch scholar of The FRIENDSHIP (Future Researchers at the Indian Institute of Technology Hyderabad to Enhance Network Development with Scholarship) project to pursue PhD at Osaka University.

### II. The tough decision

One of the tough decisions I have made was to resign from my first full-time job earned through Campus Placement at IITH. The factors I weighed to make the decision were through

self-evaluation and profile assessment by experts.

#### 1) Self Evaluation

Being an Idea Hamster and having learned research methodology through proper guidance I was able to publish my master's thesis work in a top IEEE Conference. So, I evaluated myself thinking with a little more guidance and access to advanced research facilities I would be able to finish a PhD in 3 years.

#### 2) Profile Assessment

Once I got the acceptance of PhD admission based on my research proposal seminar, I believe that the panel must have found my profile well poised for doctoral studies.

### III. The Journey Begins as an international student

Keeping the above assessments in mind joined Osaka University as a PhD student resuming my master's thesis work. Little did I know that PhD is not just only about the research findings, but critical evaluation of the findings is also equally important. Japan labs have defined weekly meetings to update the progress, I tried to come up with different design ideas that would improve the performance of the circuit. I kept on brushing-up the ideas, but a year passed on with no results.

Our Advisor suggested all the PhD scholars work together so that research can be ramped up. Collaboration with two other seniors translated into good results for their projects but did not help much on mine. They were happy but I was frustrated having no good results. Searching for self-confidence I have applied to an apprenticeship program through Osaka university: the program allows you to be an interim Vice-president of the participating Japanese SMEs.

*Continued...*

Initially, they rejected my application citing no Japanese language skills but when I insisted on the apprenticeship experience, they considered my candidature. The program allowed us to be shadowing the President of the company whose routine starts with Morning briefings and sales meetings until lunch. After lunch we either have a field visit talking to employees on the line or talk to prospective customers. Some takeaways from tagging with the president were how effectively things were carried out with ease and a positive attitude. On the 3rd day, they had a disruption due to the negligence of a worker which affected the delivery of the product. The next day, instead of a blame-game, they put the entire day to come up with a mitigation plan to avoid this situation in the future without affecting the delivery. It was a great learning experience that while society usually waits for a mistake to bring you down to your knees, we need to focus on learning from the mistakes and devising a mitigation plan.

With this positive outlook, I returned to research. Attending a domestic conference and presenting my research, my perspective of searching for extra-ordinary results has changed after listening to other presentations. I learned that research is more about what value it adds to the current system performance. This boosted my confidence and I attended International Ideation conferences in Indonesia, India, and China. I started investigating the value added to the system by coming up with our logical figure of merits. Now we had the results, and I was expected to draft a manuscript. Drafting a manuscript for a reviewed journal is a different ballgame altogether requiring concise and effective representation of the findings. But I persisted. With my first article published and second paper under preparation, I found myself in hot water when I was attending a workshop in the United Kingdom. Now, I was in my final year and the scholarship term was about to finish. In a hurry, I submitted my second article and

received the acceptance just a week before my PhD final year progress meeting. It boosted the confidence to accelerate the third paper with some preliminary results.

While writing the thesis we received the review of the third paper which questioned the basis of the paper and requested clarifications on the assumptions in the modelling of the second article. Arguably, when everything was falling in the line, suddenly the entire thesis became questionable. The committee asked for a new publication as the basis of the third paper was weak and the second article needed clarification. So, we had to send an erratum of the second article clarifying the underlying assumptions to the reviewer.

#### ***IV. Entering a Cross Culture Workplace***

Everyone was surprised about the fact of me getting a job without language skills and a degree. It was with a lot of doubts about my capabilities and with an urge to make the best of the opportunity I joined the R&D Center of a semiconductor MNC in Japan.

Real challenges began with 1.5 hr. one-way commute and long weekend travel to Osaka to continue my PhD experiments. In the rush of the everyday routine life during the commute journey I had an opportunity to take a pause and revisit my insecurities.

##### **1) Self Evaluation**

Without a PhD degree, I questioned my capabilities as a researcher and as a professional. With comments from Japanese supervisors about how intimidating working for an MNC could be with the overtime work culture and language barrier. With all the feedback, I had no confidence whether I would be able to handle and the work pressure and adapt to the cross-culture work environment. But one thing I had learned from sports is that participation is important than winning.

***Continued...***

## 2) Profile Assessment

Having attended 5-6 job interviews, realized the importance of language for an R&D position. The company which I joined luckily had 2 out of 3 interviews in English. The interview experience was freakishly encountering an English interviewer for the first time. By the end of the interview, I was wonderstruck with a straightforward plain-spoken interviewer who instilled confidence in me with honest feedback to face the other interviews. If an MNC recruitment panel believes I am eligible to work at the R&D, then there must be some skill in me that is relevant.

## V. Mentor as a Blessing

After training joined the assigned department with the motivation to contribute in every possible way. There is a mentorship program at the company where all the newbies are assigned a mentor to take care of you and guide you in all the aspects of your job. With limited language capabilities, I was assigned to a project in a new domain with no prior expertise. If I have to describe my mentor then the adjectives: patient, detailed, helpful, and thoughtful would be on the top of my list. From effectively delegating, giving opportunities to taking responsibility with his support I started to sail my professional life believing that I can solve most of the problems. He is one of those role models whom we aspire to be and our go-to-person whenever we are in doubt.

## VI. A Big Leap

One fine day I was approached by the PAN IIT Japan chapter, who were planning on an India-Japan convention. With work and ongoing PhD, I was contemplating in the beginning but one of the motivations to join the team was to contribute back to my alma mater. Apart from my home institute IITH, the number of collaborations of IITs with Japanese universities

has been minimal and therefore there is a huge potential. I started to utilize the commute time solely for the preparation of the PAN IIT academic meeting. With a clear goal approached all the IITs for potential collaboration and received a positive response for taking up this initiative. Finally, after 8 months of preparation on D-day of convention 5-IITs (Deans, Directors, Professors), and 1-Research Lab from India have participated to exchange research ideas and explore possible collaborations. The impact and understanding from the PAN IIT Convention initiated a dialogue between my company and IIT Hyderabad.

Drawing the parallels on the collaboration of Japanese corporations with elite American universities pitched an idea of collaboration with IITs to my company. To my surprise, most of the executives have no knowledge about ongoing research at the IITs. Thereupon the first step was to explain about IIT system and the highlights of the research breakthroughs. I achieved this by benchmarking the academia-industry collaborations between the Japanese companies and the IITs. Japanese corporations have a chain of command and all of them need to be convinced of the importance of collaboration with a particular institute and its impact on the organization.

So, a yearlong of efforts in conceptualizing, planning, and coordinating led to the signing of an MoU between my company and IIT Hyderabad. This was the first collaboration of the company with an institute in India. The journey provided an opportunity to interact with the company Executives which was altogether a different experience. It helped me in understanding the thought process of a corporate leader and their intentions behind the series of queries as he is assessing the value-added to the company.

*Continued...*

## VII. Unexplored Territory

There is a huge potential untapped within the India-Japan space. With collective brainstorming and knowledge sharing especially the process we can make strides to make great collaborations.

Despite the presence of the big tech giants R&D centers in India, most of the Japanese industries have not explored or tapped upon the potential of the Indian market and its human resources. Japan is at the forefront of hardware development, such as robots and automobiles due to Japanese monozukuri (ものづくり, technological prowess, knowhow, and spirit of Japan's manufacturing practices). To lead the technology rave at a global stage Japanese firms, require a strong partner. Being the powerhouse of software development and the home of the youngest population, India is the best fit to be the synergic partner to Japan. Having global research and cross-culture workplace experience would like to extend my contribution in bridging the gaps and building strong partnerships between India and Japan in science & technology fields.

## Acknowledgement

I take this opportunity to acknowledge everyone involved in this journey. I also would like to thank my parents, colleagues, and friends for having insightful discussions and letting me challenge myself and explore different ideas.



**-2019 in Japan with Prof. B. S. Murty, Director, IITH and other friends**



**Dr. R. Sai Chandra Teja,  
M.Tech, Department of Electrical  
Engineering, IITH (2011),  
PhD, Osaka University,  
Worked at Kioxia Corporation, Japan &  
Founder & Director, CKM Vigil, India**

## Carpe diem!!! {one should enjoy life while one can}

My name is Surya Pratap Singh and I graduated from the Department of Chemistry, IIT Hyderabad in 2018. I joined the Graduate School of Human and Environmental Studies, Kyoto University, Japan as a Research student in Oct 2018 and currently, I am a second-year PhD candidate. My research theme is 'Photocatalytic Methane Conversion'.

I appeared for JAM in 2016 and successfully qualified for it. Upon counselling, I was allocated some other IITs including IIT Hyderabad. I joined IIT Hyderabad because it was the best IIT among the newly established IITs maintaining a balance between academic excellence and new explorations.

I have enrolled as a Master of Science (MSc) student in the Department of Chemistry, IIT Hyderabad. I enjoyed studying advanced concepts of Chemistry such as spectroscopy and symmetry in the first year while in the second year I was exposed to the research as I did a project as a part of the requirement of an MSc degree. I least enjoyed studying organic chemistry.

I also got an opportunity to learn Japanese Culture at IIT Hyderabad. It was a non-credit course and I enjoyed it. I also played cricket sometimes with friends.

The second year of M.Sc. was a time when I got a chance to work on a research project with a supervisor and other PhD students. Prof. Faiz Ahmed Khan was my supervisor and 'Synthesis of Stilbene Analogs' was the topic. I acquired practical hand-on research and learnt some techniques such as NMR, Mass spectroscopy; etc.

Advanced concepts and the techniques such as NMR, UV-Vis, XRD and IR which I learnt at IIT

Hyderabad are being utilized in my present role at Kyoto University. Thus, IIT Hyderabad builds a foundation for my research in Japan.

Cultural festivals such as open mic, DJ night and ice-cream parties were good. But I enjoyed the director farewell most where we talked for the last time with our friends from various departments before embarking on the next phase of life and career.

I just want to say to the existing students that IIT Hyderabad is the best place for you now. Make the most of it and come out with flying colors.

The cultural festivals and various games facilities in the busy academic environment are the best part of IIT Hyderabad. There should be some meeting regularly say quarterly where the director sir and students can interact directly. It will boost the confidence of students.

Initial days were difficult in a new country with new people speaking a new language. Starting from the names of groceries in the supermarket to the official forms all were in Japanese. There came Ms. Uotsu Mizuho from JICA (Japan International Cooperation Agency) and my supervisor, Prof. Hisao Yoshida in my rescue. Uotsu-san took care of my settlement in Japan while Yoshida-sensei (and his secretary, Mrs. Yuri Bonnicha) made sure that it happened smoothly. Yuri-san reserved the dormitory, Uotsu-san paid the bills. Yuri-san handed me over the admission fee and tuition fee invoices, some labmates helped me to fill in some particulars in Japanese and Uotsu-san made sure that the fees are paid on time.

*Continued...*

Now I have come a long way from there. It has been nearly two years for me living in Japan. Now I can read basic Japanese syllables (hiragana and katakana) and can communicate to some local to get along with him/her. The laboratories are equipped with advanced techniques and instruments and we get a world-class research environment in some of the leading universities in the world.

I study at Kyoto University and am working on “Photocatalytic Methane Conversion” in one of the few laboratories in the world working on this hot topic. My supervisor, Yoshida-sensei is kind and friendly to students and I have a frequent conversation with him about my research and my life. Talking with my peers in the laboratory also adds to my knowledge. I am enjoying the research.

There are also a considerable number of Indians in Kyoto making an Indian community that celebrate Indian festivals such as Holi and Diwali together with joy. I also went on some adventures such as hiking, river rafting with my Indian friends. I also made some international friends such as a Zambian friend, Lole. Lole and I are good friends and we sometimes enjoy by watching a movie together. Japan is a good country to live in and you can enjoy even more of it if you get good Japanese language skills. However, there is also another side of the coin.

A busy lifestyle, punctuality and a calm society are synonymous with Japan. Making a balance is the key to enjoy most and I think I am doing it pretty well. Please contact me if you want to know more about my life in Japan.

You can contact me by e-mail. Since IIT Hyderabad e-mail services are being terminated, here is my personal e-mail address: [suryapratapsng@gmail.com](mailto:suryapratapsng@gmail.com).

In the end, I just want to say that Carpe diem!!!



**Mr. Surya Pratap Singh,  
MSc, Department of Chemistry, IITH (2018) &  
Second-year PhD, Graduate School of  
Human and Environmental Studies, Kyoto  
University, Japan**

## Sky is the limit!!! Stay well connected with friends & alumni

Myself, Swapnil Chetan Ghodke, currently working as a Post-doctoral researcher in the center for Low-Temperature Plasma Sciences (cLPS) at Nagoya University. My interest in energy materials and applied technologies for the sustainable society has driven me to pursue a post-graduation in materials science (IIT Hyderabad, India - 2013), a PhD in crystalline materials science (Nagoya University-2016), and two post-docs. My expertise includes topics related to energy harvesting and energy storage such as Piezoelectricity, Thermoelectricity, and Li-ion batteries.

Back in 2011, when I got a call from IIT Hyderabad for MTech in materials science I was in dilemma to take the step. I made my decision based on one factor that all the new IITs were under a parent old IITs and for IITH it was IIT-Madras, so definitely the students would get a similar exposure, opportunities, and quality of education. Certainly, it was the best decision of my life.

It would be inappropriate to choose any favorite subject, as for the first time in my academics I have enjoyed the process of learning with world-class faculties, heartfelt gratitude to all the professors of MSME, specially Ranjith sir, Suhash sir, and Pinaki sir.

In extracurricular activities, I was involved with Robotics Club, through it I organized events (Pirates and Robowars) in ELAN-12 & 13 and mentored the Robocon-13 team.

I would say, I was trained for ethical researching activities. IIT-H education and training has provided a solid base through strong fundamental knowledge for my current research work.

IITH life was exquisite, as I received my

Academic excellence award from Bharat Ratna C.N.R. Rao sir, met late A.P.J Abdul Kalam sir, represented IIT-H at national ROBOCON meet, and of course, the time which I have spent with my best friends.

For IITH students sky is the limit, they can achieve all the success they want. I just want them to stay well connected with friends and alumni. The best thing about IITH is its belief in novel initiatives and innovations. In a digital era, an online forum for Alumni and students would be a great platform. I can be reached at [swapneelghodke@gmail.com](mailto:swapneelghodke@gmail.com)

### *Some memorable moments from my Japan Diary:*



*Continued...*

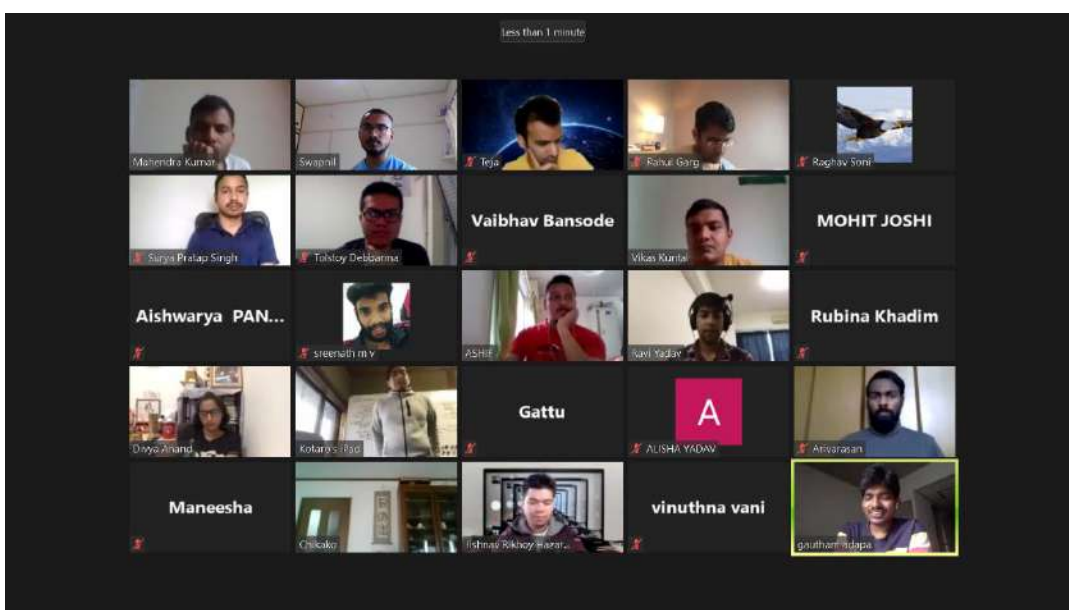




Continued...



*Dr. Swapnil Chetan Ghodke,  
MSc, Department of MSME, IITH (2013),  
PhD, Nagoya University, Japan (2016) &  
Post-doctoral Researcher, Nagoya  
University, Japan*



## My experience in Japan

I have visited Shizuoka University, Hamamatsu campus Japan as a special graduate student and stayed for almost 6 months during my PhD work. This was a result of the collaboration between my supervisor Dr. Badarinath Karri at IITH and Prof. Toshiyuki Sanada at Shizuoka which started as part of the JICA Friendship project. With their support, I had written a proposal targeted at Overseas Visiting Doctoral fellowship and while that did not materialize, my supervisors decided to go ahead with the research problem through various funding support they could obtain. As a result, I visited and stayed at Shizuoka University over three trips, first in October 2018 for 1 month, then in Jan-Feb 2019 for one month again and finally for a 4-month period from April to July 2019. The entire stay in Japan over these trips was a wonderful learning experience both in terms of culture and also in research.

The problem I worked on during my stay in Japan was related to my PhD research on the interaction between two different sized bubbles. Parallely I was also working on another problem where using an experimental technique to create bubbles at Sanada laboratory, we attempted to measure the dynamic surface tension of a fluid. There were many aspects of a Japanese university and laboratory that impressed me and I learnt from. Firstly, Japanese students are very hands-on especially when it comes to building facilities. While I was there, I observed a complete dismantling of a lab space and re-assembling to create a different set-up in a large room. The entire task was done by my host Professor and his students. It was really an eye-opening experience. Another thing I appreciated was how helpful the students were. Even though there was some difficulty in communication because they hardly used English while I did not know Japanese, they went out of their way to help me with the initial set-ups. After that, I was

also given full freedom to work on my own in doing the experiments and analysing the results. I got to learn new experimental skills – learning a new technique to create bubbles, setting up all the instruments. A side-aspect was how in the laboratory, once we complete our experiment, we need to dismantle it and keep it ready for the next person to do their experiments in the shared lab space. The students at my sensei's (Professor's) laboratory were very eager to learn English since they do not get too many opportunities or the need to talk in English with anyone for so long. So while I learnt and absorbed Japanese culture, they used my stay to enhance their English communication skills. One laboratory culture I was truly impressed with is how within the laboratory and offices, there are no housekeeping staff who come to clean. It is the responsibility of the student and the Professor to keep their respective areas clean. Truly an eye-opening cultural experience for someone like me who is used to comforts in India.

During my stay in Japan our host Professor arranged for both research based and fun trips to different places in Japan for both me and my guide Dr. Badarinath Karri. I had the opportunity to visit Tokyo University of Agriculture and Technology (Prof. Yoshiyuki Tagawa laboratory), University of Tokyo (Prof. Shu Takagi's laboratory) and Hokkaido University (Prof. Masao Watanabe laboratory). The researchers are well known in my field and it was good to interact and see the facilities in their laboratory and research being carried out. During the free time in these trips to Tokyo and Hokkaido we utilized the opportunity to travel around in these cities for sightseeing. Apart from these cities, I have visited Osaka, Nara and Kyoto as well on a personal holiday trip during one of the weekends.

*Continued...*

Hamamatsu itself gave me a lot of memorable experiences such as seeing the Hanabi fireworks show at Hamana lake, chariot parade near the city centre which is very much like a mini-Republic Day parade of India with different cultural chariots, Nakatajima Sand dunes and kite festival and finally trekking on Mount Fuji. I also saw the Pacific Ocean for the first time. It was really a humbling experience to see the vast blue ocean stretching all the way that the eyes could see. A riverboat ride near Kyoto was also a very different experience.

My trip to Japan was filled with memorable experiences seeing the scenic beauty of Japan and the polite and friendly people who were very helpful even though we did not know the language. My two cents to people visiting Japan for study/research is that you should be open-minded to experience a different culture. Japanese people embrace technology and are very tech-savvy, this is something that researchers coming to Japan can experience and learn from and of course, you can learn a lot from the cultural aspects of a laboratory to a student is like one's home to be maintained by the students themselves.



**Ms. Meenu Agrawal**  
**PhD Scholar**  
**Mechanical & Aerospace Engineering**  
**IIT Hyderabad**



**One of the memorable moment with friends in Japan**

## Internship experience @NTT

I am Desu Surya Sai Teja, an undergraduate student at IIT Hyderabad, pursuing my Computer Science Engineering final semester. During the summer vacation after my sophomore year, I got the privilege to work in Japan as an intern for NTT-AT during the summer break after my sophomore year.

NTT is one of the pioneers of telecommunication in Japan and NTT-AT is one of its principal subsidiaries that provide technological solutions to business problems. I was one of the five students selected based on the recommendation by our Professors. I interned in the AI department that works on products related to applications of AI for business. I was assigned to develop a Multilingual FAQ engine with business utility. I used an in-house developed language model that searched for an answer from a database for any given question and designed a prototype for an FAQ engine that works with Japanese and English. I used the FAQ engine to walk-through my presentation during my final evaluation.

On the other side, it's an excellent opportunity to experience the well-heard hospitality of the Japanese. During my internship, I learned about their work culture, their language, their traditions. I travelled to varied Japan locations during the weekends, experienced different trains, and the fastest Shinkansen (the bullet train). One thing that I observed during the travel is that the people of Japan are always willing to help beyond what you can imagine. For instance, if you are lost and not knowing the location, after a while, you will notice at least one person visits and asks you if you need any help, and he may drop you at the location though you just asked for the directions.

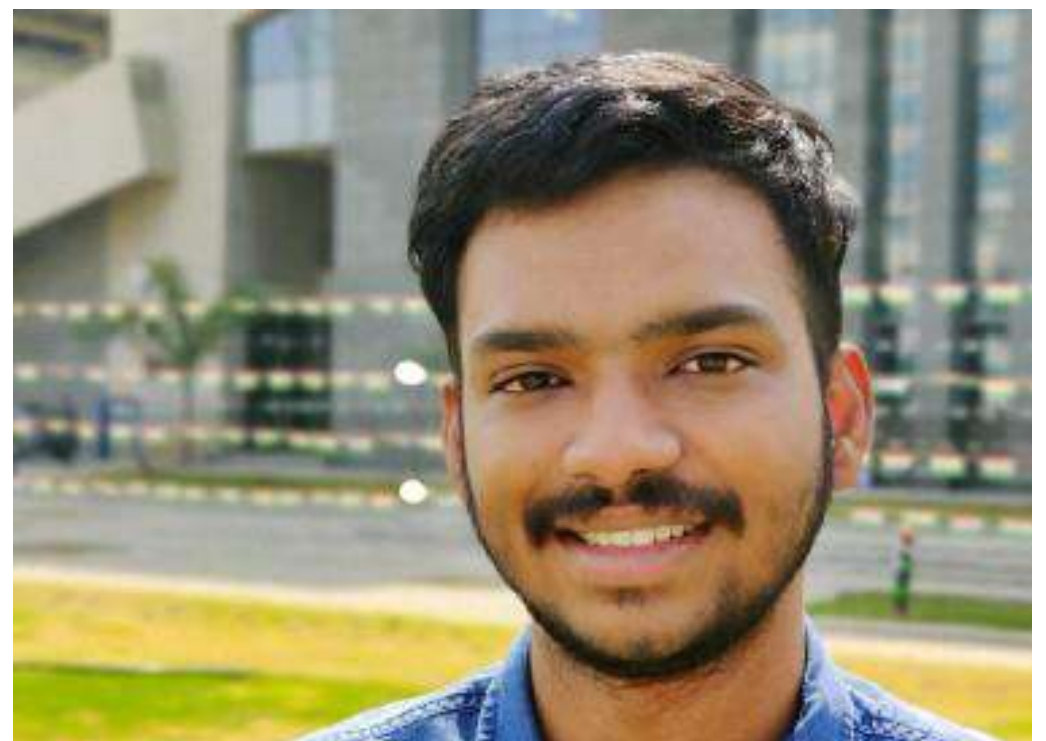
Thanks to all my colleagues at work, right from the beginning, every moment related to the

internship has become a beautiful memory.

Overall, my experience working in Japan with NTT-AT employees has been rewarding both as a great learning and enjoyable experience, and I thank IIT Hyderabad, NTT-AT, and Prof. Srijith P. K. for giving me this opportunity.



*With other batchmates at NTT R & D Center*



*Mr. Desu Surya Sai Teja  
Undergraduate Student  
Department of Computer Science &  
Engineering  
Project Intern, NTT – AT, Tokyo*

## Create IOT: CRIOT - Affordable & Accessible Smart Home

Dynamic. Intelligence. Comfort. These are the three key salient features that CRIOT Innovations aim to build their products. The name CRIOT originates from the phrase "Create IOT", at its core it aims to build IoT products that further bridge the gap between the physical and digital world. We are currently a team of 22.

The founders Varun Perumulla and Sai Mahidar Vanumu are 3rd-year BTech students from IIT Hyderabad. Varun is the creator of the brand Varun Peru, the founding head of E-Summit IIT Hyderabad and a curator at TEDx IITH among a host of other things. A passionate entrepreneur he was inspired by his father who pushed him to solve traditional problems in an unconventional way. Mahidar on the other hand is studying in the department of engineering science with mathematics and computing and is also a certified ethical hacker, SIH 2020 Winner among many other things. He is passionate about blockchain cybersecurity and machine learning.

The duo set out to create products that are not only limitlessly automated but also drive its growth through its unique approach towards the security of the products it offers. Data that is generated is to be stored locally so as to maintain the privacy of its customers which is pivotal for the company. The company follows a mix of B2B and B2C business models and is focusing especially on a subscription-based model for its revenue in the long run.

The duo has reached out to potential investors not just for funding but for valuable insights which they believe are crucial at this stage of the development. They have had their fair struggle with designing and developing the product and the pandemic has not made it any easier. A complicated circuit, voltage fluctuations and multiple attempts are what it took to overcome the struggles.

Their recent collaboration with Technocorpus, University of Tokyo has proved to be crucial for the company. The collaboration was majorly orchestrated with the advice and under the guidance of IIT Hyderabad's Dr. Kotaro. Dr. Kotaro has been a crucial adviser to the students all throughout the project. This collaboration was struck with the intention of CRIOT being able to provide more data apart from the geodata that UOT currently is at the disposal of.

This collaboration is set to be mutually beneficial to both parties as Technocorpus would be able to accurately define a unique person through the lifestyle authentication program.



*Continued...*

## Create IOT: CRIOT - Affordable & Accessible Smart Home

On the other hand for CRIOT Innovations, would be the first international collaboration that would set a precedent for further projects. It would also help the company gain validity of their products and would serve as a crucial experiment for further product development.

CRIOT strongly believes that such collaborations help companies gain new perspectives and learn more about the work ethic that is to be expected. Going forward CRIOT's main target will be to crack more such collaborations with universities across the globe. In the next few years, CRIOT aims to move smart homes away from the limits of luxury and make them accessible and affordable for all. The company intends to Eliminate conscious human operations and bring you closer to a home that is interactive, adaptive and limitlessly automated.



*Mr. Varun Perumulla, CEO (L) and  
Mr. Sai Mahidar Vanumu, CTO (R)  
CRIOT &  
3rd-year BTech students, IIT Hyderabad.*

*Continued...*

## Teaching Staff (October 2020)



*Dr. Suresh Kumar Garlapati*

### **Assistant Professor, Department of Materials Science and Metallurgical Engineering**

Dr. Suresh Kumar Garlapati is an Assistant Professor in the Department of Materials Science & Metallurgical Engineering in IIT Hyderabad. Before joining IITH, he worked as a research fellow in the Zepler Institute at the University of Southampton, UK, and as a post-doctoral research associate in the Department of Chemistry at the University of Manchester, UK. Prior to that, he pursued his PhD in Technische Universität Darmstadt and Karlsruhe Institute of Technology, Germany. He did his Masters in Metallurgical and Materials Engineering department at Indian Institute of Technology Madras, India, and received DAAD fellowship during his Masters. His research interests include printed electronics, oxide semiconductors, electrolyte gating, organic electronics, flexible electronics, gas sensors, and memristors.

**Life@IITH:** Although it is one of the second-generation IITs that are established recently, it has tremendous potential, in his view, to become one of the best institutes in India in the near future. The reasons are manifold, first it has a visionary, hardworking, and inspirational leader, Prof. B. S. Murty, who is striving to make the IITH a dream destination for students, faculty members, and staff. Second, it has a large number of young and dynamic faculty members, who are willing to become one of the best in their research and teaching. Third, it has highly motivated and very hardworking students, who are among the top in the whole country. Fourth, it has been establishing the state-of-the-art research facilities, in fact, some of these are better than older IITs. Fifth, the staff here are very supportive at all times. Besides these, it has many necessary facilities such as on-campus housing for faculty and staff, and hostels for students, health care facilities, schools, supermarkets, banks, student clubs, and sports facilities, among others. Therefore, he believes that IITH with its excellent vision and mission, and the people who are making continuous efforts to make them true will surely become one of the best institutes in India.

## Teaching Staff (November 2020)



*Dr. Mayukh Pahari*

### **Assistant Professor, Department of Physics**

Before joining the IITH, he worked as the Newton International Fellow at the School of Physics and Astronomy, University of Southampton, UK, funded by the Royal Society, UK and SERB, India. As a post-doctoral researcher at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, he worked in India's first multiwavelength satellite mission AstroSat. He earned his Ph.D. degree using the junior and senior research fellowships awarded by the Tata Institute of Fundamental Research, Mumbai. Astronomy and Astrophysics are his broad research area interests include black hole astrophysics, UV/optical/X-ray astronomy, spectroscopy and modeling, Active Galactic Nuclei, astronomical instrumentations.

**Life@IITH:** A very refreshing start and warm welcome by the colleagues. Both colleagues and staffs are helpful in settling down here. The first interaction with bright students was enjoyable and fruitful. Happy and proud to be a part of the vibrant IIT Hyderabad family.





*Dr. Alan Ranjit  
Jacob*

### **Assistant Professor, Department of Chemical Engineering**

Before joining IITH, Dr. Alan Ranjit Jacob worked as a post-doctoral researcher in the Department of Chemical Engineering at North Carolina State University, USA till 2020. In the year 2017, he obtained his PhD in Materials Science and Technology from the University of Crete, Greece. Prior to this, he earned his Master's and Bachelor's degrees in Chemical Engineering from the Indian Institute of Technology, Madras and the University of Calicut, India, respectively. His research interests include soft matter, colloids and interfaces, 3D printing, rheometry and rheology.

**Life@IITH:** The past couple of months at IITH as a faculty has been very challenging, exciting as well as professionally stimulating. Despite the Covid-19 lockdowns, the institute functioning remotely I was given a warm welcome and the transition process for me was seamless. Although face to face interactions with colleagues have been very limited that has not been a hindrance for my professional or social life because I virtually interacted with a lot of my colleagues. The year 2020 will be remembered for the pandemic and the negativity surrounding it but I will remember the year I joined IITH and the sense of positivity and hope for the future it gives me. I am very excited to be part of this amazing journey at IITH.

### **Assistant Professor, Department of Biotechnology**

B.Sc. in Microbiology and master's degree (M. Sc.) in Biotechnology from the University of Calcutta, Dr. Ray has obtained my PhD degree with an "Excellence in PhD Research" award from the Indian Institute of Technology Bombay in 2014. Subsequently, he worked as a postdoctoral fellow and/or a visiting scientist at the world's top-ranking universities and research institutes including the University of Cambridge, the University of Pennsylvania, the University College London, and The Francis Crick Institute. He has over ten years of experience in translational biomedical research with an outstanding track record of scientific publications (with an H-index of 20). He is associated with multiple leading scientific organizations including Human Proteome Organization (HUPO), US-Human Proteome Organization (US-HUPO), and Society of Biological Chemists (SBC), India. He was elected to the prestigious Royal Society of Biology in 2020. He is also an affiliate member of the Institute for Translational Medicine and Therapeutics (ITMAT), University of Pennsylvania, USA.

**Life@IITH:** I joined the Department of Biotechnology, Indian Institute of Technology Hyderabad in November 2020. It is a great experience to become a part of the vibrant family of IIT Hyderabad, which is one of the most prestigious teachings and research institutes in India. My current research interest is to understand the misalignments of circadian rhythms (biological clocks) in human diseases and clock-infection biology using multi-omics and systems-level approaches. I am also investigating how our daily rhythms could be modulated for therapeutic benefit. I am in the process of establishing a state-of-the-art research facility for investigating biological rhythms, chronomedicine, and human diseases at IIT Hyderabad.



*Dr. Sandipan Ray*

**Continued...**

I am enjoying life on the beautiful campus of IIT Hyderabad very much. The faculty quarters and the academic buildings are designed so impressively, and most of the basic amenities and medical necessities are available inside the campus. There are also adequate transport facilities within the campus. All in all, it is a great place to live, work, and to generate novel scientific ideas.

### **Assistant Professor, Department of Biotechnology**

Dr. Mehta earned a PhD from IIT Bombay where he explored the molecular mechanism of meiotic chromosome segregation, a process by which gametes are produced in humans. He developed several imaging approaches to quantify chromosome missegregation in live cells and his research provides an avenue for therapeutic development to treat genetic disorders, infertility and cancers. Because of his expertise in advanced imaging technologies and yeast genetics, he was offered a post-doctoral position at NCI/NIH where he developed Single-Molecule Imaging technology to quantify the dynamics of proteins in live cells at the single-molecule level. Using this method, he revealed the dynamics of transcription factor binding and chromatin remodeling at specific gene promoters at the single-molecule level. At IITH, he aims to establish research and teaching programs focusing on Single-Molecule Biophysics to understand chromosome biology and gene regulation. His basic science research efforts are geared towards developing therapeutics to treat infertility, genetic disorders and cancers.

**Life@IITH:** It is very nice to be here at IITH. I feel very welcomed here that motivates me to contribute to institutional success. I very much appreciate the vision of the IITH leadership for all-round development and improvisation. Overall, the IITH fraternity is very supportive and cooperative.



*Dr. Gunjan Mehta*

## Teaching Staff (December 2020)



*Mr. Srikar A. V. R.*

### **Assistant Professor, Department of Design**

Mr. Srikar is an Architect and Industrial Designer by profession. He is an alumnus of the National Institute of Design where he did his post-graduation in Product Design. He also did another master- Strategic Design and Innovation from Politecnico di Milano, Italy. Prior to joining IITH in 2020 as Assistant Professor, Mr Srikar has led global consulting assignments with iconic furniture manufacturing brands like Herman Miller and Steelcase. With 12 years of industry experience, he also worked in various capacities as a design leader with brands like Kohler, DuPont, Godrej and Nokia in the areas of R&D, Design and Innovation, Advanced Materials in Design, CSRs, Sustainability, Analytics, Workplace Strategy. He travelled widely and been an active visiting faculty in leading design and architecture Institutes in India and abroad. His research interests are in the fields of Product Design, Materials and processes, Workplace design and ethnography.

**Life@IITH:** Though working from home since my joining date, I am virtually surrounded by passionate colleagues in the department of design, young and bright students. This keeps me excited about everything design. Looking forward to a brighter 2021 and beyond.



*Dr. Ranabir Dey*

### **Assistant Professor, Department of Mechanical and Aerospace Engineering**

Prior to joining IITH in December 2020, Ranabir was a post-doctoral fellow in the Department of Complex Fluids at the Max Planck Institute for Dynamics and Self-organization in Goettingen, Germany. He continues to hold the position of guest scientist at MPI-DS. Before working at MPI-DS, he was a postdoctoral fellow in the Physics of Complex Fluids group at the University of Twente in the Netherlands. Ranabir did his B. E. from Jadavpur University, Kolkata, and obtained his M.S. and PhD degrees from IIT Kharagpur. His research interests are in the fields of active soft matter- specifically the behaviour of microswimmers, capillarity and wetting, and low Reynolds number hydrodynamics. He loves doing both experiments and mathematical modelling.

**Life@IITH:** Despite the pandemic and the consequential restrictions, my experience in IITH over the last two months has been really nice. The scientific discussions that I had with my colleagues, albeit sparse due to the present situation, were stimulating and fun. I have also started the process of building up my own group/lab from scratch- an endeavour I am very much enjoying. I am instructing a course from this semester, which I am also thoroughly enjoying. I must add that my interactions with the administrative staff during the period of my joining were really pleasant; they were very helpful. Specifically, the attendants at the guest house were very considerate and helpful during my quarantine period. Overall, I am very excited to be a part of IITH, especially because it is a relatively young IIT. This gives me the unique opportunity to make some significant contributions to the growth of IITH while shaping my own academic career.



*Dr. Neeraj Kumar*

### **Assistant Professor, Department of Liberal Arts**

Prior to joining IITH in 2020, he was a DBT-Wellcome Trust Early Career Fellow at IIT Gandhinagar and McGill University, Canada. He has an Undergraduate degree in Psychology from the University of Allahabad and a Master degree in Cognitive Science from the Centre of Behavioural and Cognitive Sciences, Allahabad. He completed PhD degree from IIT Gandhinagar. His research is primarily focused on investigating interactions between the motor and sensory systems in the human brain and draws upon a variety of principles in psychology and neuroscience.

**Life@IITH:** IITH has a vibrant ecosystem for research specifically for young faculty in a multidisciplinary field. My one-month journey with IITH has been exciting and looking forward to exploring and contribute to scientific research and teaching.



*Mr. Chinmaya  
Panda:*

### **Technical Officer, Electrical Engineering**

Prior to joining IITH, he had many years of work experience in two multinational companies as an “Instrumentation Engineer”. He also had worked at IIT Bhubaneswar on different research projects. He and his team have successfully commissioned two greenfield projects, designed one Application Specific Integrated Circuit at SCL Chandigarh and designed many embedded systems for the Govt of India at IIT BBS. Shri Chinmaya Panda has obtained his Masters of Engineering in “Embedded Systems” from Dr. Babasaheb Ambedkar University, Aurangabad and Bachelors in Technology in “Electronics and Instrumentation Engineering” from Bijupattnaik University of Technology, Odisha. He has Expertise in “Industrial Instrumentation and Automation”, “Integrated Circuit design” and “Embedded Systems Design”.

**Life@IITH:** At present, I can say that:

- I am highly privileged to work with a growing organization with national importance, which likes to excel on a global level by competing with the topmost educational research facilities of mankind.
- I am enjoying the Completely new culture, philosophy and well-developed research facilities of IIT Hyderabad.
- I am very much thankful to the faculty members of the MicroElectronics & VLSI group, for their continuous support, motivation and guidance, definitely, they are the makers of the brightest brains of the future.
- Simply I can say that I am happy at IIT Hyderabad from all perspectives, so will give my dedicated service for a longer duration.

### **Technical Officer, Central Workshop**

Prior to joining IITH, he has served more than 20 years in the Indian Navy. He has worked in technical, staff and managerial functions in various units of the Indian Navy, which includes Naval ships, Naval Dockyard/ Ship Repair Yards, Command Headquarters, training establishments and Indian Naval Safety Team. He has done his BTech (Mechanical Engineering) from Govt Engineering College, Thrissur and MTech (Information Technology) from IIT, Kharagpur. He has also undergone MS (Manufacturing Mgmt) from BITS, Pilani through distance learning mode as well as PGDM (Technical Mgmt) from Naval War College, Goa. He is presently pursuing his PhD in the area of “Big data analytics/ block chain technology in supply chain mgmt” as part time external scholar at NIT, Trichy.

**Life@IITH:** It has been an incredible experience so far for me. Having served the country for the last 20 years while being in the Indian Navy, there is definitely a feeling of continuity as well.... my current profile also enables me to serve the country by contributing towards the Research & Development efforts of the Institute. It is indeed a great privilege to work with some of the best minds in the country and aid them to achieve their research objectives. The positive environment in the Institute has also reignited my passion for learning. Seeing the well-conceived development plans for the institute and the passion among faculty, staff and students, I feel that IITH is well on its way to being one of the best institutes of higher education and research in the country.



*Cdr. Ajayakumar  
S. (Retd.)*



*Mr. Rajnesh MP*

### **Deputy Registrar, Dean Students' Office**

Mr. Rajnesh was appointed as Assistant Registrar at VNIT Nagpur in September 2014. Prior to joining VNIT Nagpur, he was working as Assistant Manager in "Executive/Officer Cadre" at Steel Authority of India (Bhilai Steel Plant), Maha Ratna Public Sector Undertaking under Government of India for a period of Five years. Prior to that, he worked as Engineer Software at Sasken Communication Technologies Lmt for about 2 years. Shri Rajnesh M.P has completed 11 years of service under Government of India.

He has obtained his Master of Technology (MTech) from IIT Roorkee and is presently pursuing Post Graduate Diploma in Materials Management (Stores and Purchase) from IIMM through distance mode.

**Life@IITH:** Presently, I am handling the duties of DR (Students) at IIT Hyderabad and my experience at IIT Hyderabad is completely different from my earlier roles. The responsibility of handling all students related activities during COVID has been challenging. I am looking forward to a more pivotal role where I can use my full potential and contribute significantly to the growth and progress of IIT Hyderabad. .

### **AE (Electrical), Construction & Maintenance Division**

Electrical Engineer with more than 11 years of experience. Obtained B.Tech(Electrical & Electronics Engineering) from JNTU Hyderabad in 2009 and started a career in M&E maintenance in Network, Data centers, Property & Facility Management, joined as GET in KAP Electromech Pvt. Ltd. worked at Divya Shree Developers, moved to Vodafone Mobile Switching Center(MSC) which is core part of Telecommunication Network System, joined CBRE South Asia Pvt. Ltd. in 2011 as Technical Executive and worked at Google & Pegasystems handling Asset Management Services, simultaneously obtained M.Tech(Power Electronics) from JNTU Hyderabad in 2014, joined Oakridge International School in 2014 as Asst. Facility Manager heading campus Facility operations. Joined IIT Hyderabad in October 2015 as Junior Engineer (Electrical) handling campus Construction and Maintenance works pertaining to Electrical, HVAC, FAS, FFS & ELV also worked for setting up of IIT Bhilai temporary campus in GEC campus at Raipur. Promoted to Assistant Engineer(Electrical) in October 2020.

**Life@IITH:** I am privileged to have associated with IITH, the great learning experience of CPWD procedures and large-scale construction of the permanent campus. I'm thankful to all my superiors, colleagues and IITH fraternity for their continuous support.



*Mr. Vanam Aneesh*



*Mr. Saikiran K*

### **Assistant Registrar, HR Section**

Mr. Saikiran joined the Institute on 26.10.2020 in the HR Section. He has done his Masters in IT and he was working as Assistant Registrar at IIT Bhubaneswar prior to his joining at IIT Hyderabad. He has 12+ years of admin experience in State/Central Govt. Academic Institutes.

**Life@IITH:** It's a wonderful feeling being a part of IIT Hyderabad! I have been thoroughly enjoying my work and my fellow colleagues and the functionaries are very friendly in nature.



*Mr. Kimidi Siva Shankar*

### **Assistant Librarian, Library**

Before joining IITH, he has worked in various prestigious academic and special libraries holding more than 14 years of LIS experience. His career in the LIS Profession kick-started in the year 2006 as a Network Assistant (typically a moving Librarian) working with Developing Library Network (DELNET) Delhi, Pune & Bangalore. Later, he was into a top b-school Indian School of Business (ISB), Hyderabad and served as an Associate in the Learning Resource Centre which is one of the finest libraries which he worked, then stepped into the special library of International Crops Research Institute of Semi-arid Tropic (ICRISAT), Patancheru an institute having a legacy of more than 40 years serving to the poor and poorest farmers in the semi-arid regions of India and the Sub-saharan African countries, he was bestowed to be a Library Officer serving to the top agricultural scientist's across India and Sub-Saharan African countries during the period (2011-2014). From, 2014 to 2017 he worked as SLIA in the Central Library of Indian Institute of Technology Hyderabad (IITH), he was a Scientist B (Library Science) from 2017 to 2020 in Information and Library Network (INFLIBNET) Centre, Gandhinagar which is an Autonomous Inter-University Centre (IUC) of University Grants Commission, New Delhi (Ministry of Education, Govt. of India). He hold a post-graduate degree in Library Information Science from Andhra University, Visakhapatnam and did his MBA in Marketing from Annamalai University.

**Life@IITH:** It was like Elon Musk's SpaceX rocket 'Falcon 9', I joined as a Senior Library Information Assistant (2014) and came back as an Assistant Librarian (2020), thanks to the Indian Institute of Technology Hyderabad (IITH) for this 'transformation'. I enjoyed working with IITH one of the topmost IIT in the Second Generation IIT's, which paved the way to explore and expedition with a great team in setting up the in-house institutional repository (RAIITH) the first and foremost IR amongst the second generation IIT's which brought laurels for my paper in the (LIFE) a National conference in the year 2017. I am blessed to be back @IITH to render my services to the faculty fraternity, researchers and the users working in this prestigious and premier Higher Education Institute of India.



*Mr. Datla Praveen  
Kumar*

### **AEE(Civil), Construction & Maintenance Division**

He obtained B Tech in Civil Engineering from the Biju Patnaik University of Technology and having 9 years of experience with Larsen & Toubro Ltd, a leading Engineering Conglomerate. During his tenure with L&T, he has worked in the construction of high-rise residential buildings and precast residential building projects involving the latest construction techniques. His specialization lies in the fields of Construction Project Management, Quality Management, Internal QMS auditing, process re-engineering and driving improvements in KPIs.

**Life@IITH:** It is a privilege to be part of the IITH family. I have received a lot of support and help from the administration, colleagues and superiors throughout this joining phase. I am very much excited to get this opportunity to be part of this campus that too in its development stage. This will not only give a varied experience of building it from the scratch but also a great sense of fulfilment in playing a part in its growth.

### **Sports Officer, Sports Department**

He has completed B Com (Comp) from Osmania University Hyderabad. BPED from rayalaseema college of physical education and MPED from university college of physical education Osmania University. He has worked as a physical education teacher in karuna high school and have trained football players for under 14-years, 16-years, 17-years and 19-years boys for Sangareddy Dist And Telangana State Team.

**Life@IITH:** I was working with IIT Hyderabad since last 11 years, I felt that I have learnt a lot here, I have worked with very experienced faculties and staff members. I feel like IIT Hyderabad is place of excellent people.

### **Sports Officer, Sports Department**

Mr. Vikram Bachelor of Arts from C.S.J.M University Kanpur U.P. and Bachelor of Physical Education & Master of Physical Education from HVPM College Amravati University, Maharashtra. He has also done Professional Diploma in sports coaching in Hockey from National Institute of Sports Patiala (NIS) merged with Sports Authority of India. His professional career in hockey sports includes a Silver medal in KVS National, zonal & SGFI. He got Selected 5 times all India Inter universities & Inter College meet. Played several districts & open tournament matches. He has served as a Sports specific volunteer in XIX Commonwealth games at Delhi 2010 in hockey Sports. Prior to joining IITH, he has served as a coach in the Coal Mines hockey team in Chandrapur, Maharashtra and worked in ST. Xavier's senior secondary school in Kannauj Kanpur, Uttar Pradesh.

**Life@IITH:** I have been working in IIT Hyderabad in the sports department since 2013. I feel very fortunate to work in IIT Hyderabad to explore my abilities. I am very thankful for my sports in charge, Sports secretaries, colleagues for their support and encouragement. I am performing my job with full enthusiasm. My life at IITH has been great so far and very wonderful people.



*Mr. Md. Akbar*



*Mr. Vikram Pratap  
Singh Bundela*



*Dr. Chavan Sagar  
Babanrao*

### **Veterinary Doctor, Biomedical Engineering**

Before joining IITH, he had worked as a Veterinary Scientist at the Indian Institute of Science, Education, and Research (IISER), Pune for 4 years. His tenure at IISER, Pune includes 6-month training on the creation of transgenic rodents with CRISPR/ Cas technology at University of Alabama at Birmingham, USA. He is a Veterinarian and lab animal breeder with masters in Animal Genetics and Breeding. He has 10 years of experience in the establishment and maintenance of Laboratory animal facilities and performing various experiments on laboratory animals. He imparts training to students and staff who wish to handle and perform experiments on laboratory animals.

**Life@IITH:** I was delighted after meeting my colleagues for the first time. My colleagues and faculties from the BME department extend all types of help to establish a new lab animal facility on our campus. After lockdown so many new persons joined the IITH along with me. It's a new beginning for us. Let's make this campus wonderful and successful by working together.

### **Lady Medical Officer, Clinic**

Prior to joining IIT Hyderabad as a Lady Medical Officer, she has worked in renowned hospitals and medical colleges in Kolkata as well as in Hyderabad, like Calcutta Medical College Hospital, Shambhunath Pandit Hospital, Nightingale hospital, Kolkata. As a Pulmonologist, she worked in Nizams Institute of Medical Sciences (NIMS hospital), Apollo Hospital Hyderabad & in Dr. VRK Medical College Hospital.

She did her MBBS from Calcutta National Medical College, Post-Graduation degree (Pulmonary Medicine – DNB) from Apollo Hospital, Hyderabad and PG diploma in Tuberculosis and Chest diseases (DTCD) from Medical College, Kolkata. She also has work experience in the USA healthcare system during her stay there, cleared US medical license examination (USMLE) and was awarded an ECFMG certificate.

**Life@IITH:** It is almost two years; I am working as a Lady Medical Officer at IIT Hyderabad clinic. I feel wonderful to serve IITH family members; students, staff, faculty and their families. Moreover, I am extremely happy working with friendly colleagues in a positive work environment. We have already started serving the IITH community with a 24/7 medical facility and are looking forward to getting our campus Hospital ready very soon. In the month of Dec 2019, we moved to beautiful IIT accommodation, and found a fantastic nature-touched, peaceful life, even in the pandemic time, with the availability of all basic facilities inside. Feeling really blessed to be part of the IITH family. Staying inside the campus is just like staying close to nature along with all growing modern amenities. Moreover, by staying inside the IIT Hyderabad campus I can enjoy and manage my family life and professional life.

I look forward to contributing more to the field of healthcare service with my best knowledge and experience.



*Dr. Baishakhi  
Chandra:*





*Mr. Pandicheri  
Madhu:*

### **Technical Superintendent, Mechanical & Aerospace Engineering**

He finished my B.Tech (C.S.E.) from University College of Engineering Kakatiya University and have Network Associate, System Administrator & Engineer certifications from Cisco & Red Hat respectively. Before joining IIT Hyderabad, he worked in the Technical Support Dept of EarthLink (ISP) and HP-Palm for 3.5 years and worked as a Teaching Assistant in the Hi-Tech Engineering College, also served in the IITH as a System Administrator (Project Mode) in the Mechanical & Aerospace Engineering Dept. for 9.5 Years. He has more than 12 years of experience in the field of System Administration/IT.

**Life@IITH:** It has been wonderful to be part of IITH. I have learned so much in the last 10 years.



*Mr. Surender  
Banoth*

### **Assistant Engineer(Civil), Construction & Maintenance Division**

Mr. Surender Banoth holds BTech (Civil Engineering) & MTech (Water Resources Engineering) from NIT Warangal having a total of 15 years of experience in the Construction Industry associated with Union Bank of India as Senior Manager in Middle Management Grade, Government of Andhra Pradesh, M/s. IJM (India) Infrastructure Ltd., Era Infra Engineering Ltd., and Maytas properties etc. Joined IIT Hyderabad in the year 2018 as a Junior Engineer (Civil) and selected as Assistant Engineer (Civil) in the recent recruitment process.

**Life@IITH:** It's a great pleasure to work in IIT Hyderabad with an excellent opportunity to learn and work on new construction activities/technologies going on in Phase – II construction project. Day to day improvement in working skills in associated with rich experienced superiors. I am very much thankful to my superiors and colleagues for their continuous support. Looking forward to contributing my best experience and knowledge to this premier institution.

### **Technical Superintendent, Chemical Engineering**

Mrs P.Gayathri is a Postgraduate (MTech) from N.I.T Warangal and BTech from Sri Venkateswara University, Tirupati. Before joining IIT Hyderabad, she served in various prestigious institutes like CSIR-Indian Institute of Chemical Technology, Hyderabad as a Project Fellow, Annamacharya Institute of Technology and Sciences, Hyderabad as an Assistant Professor and at Sree Padmavathi Mahila Viswa Vidyalayam, Tirupati as an Adhoc Faculty. She has more than 4 ½ years of Research and Development experience at CSIR-IICT in the Department of Energy and Environmental Engineering in the areas of Microwave based Clean Coal Technologies for Grinding, Dewatering and Desulphurization of various coal samples and their analysis using lab-scale studies, Anaerobic Digestion, Wastewater treatment and Long-term measurement of Ozone, NOX and CO at a remote site (TIFR, Hyderabad) to study the emission fluxes and change in their concentration. She taught B.Tech students for more than 2 years at different organizations.



*Mrs. P. Gayathri*

*Continued...*

**Life@IITH:** It's my great pleasure to be a part of IIT Hyderabad. I hope, I will enhance myself in terms of technical and analytical skills by using all the research facilities here in IITH. I will give my best for the growth of the institute.



*Mr. V. Bhadra  
Rao Koruprolu*

### **Technical Superintendent, Chemical Engineering**

Mr. V. Bhadra Rao Koruprolu is an MTech (Computer-aided Chemical Engineering) from Andhra University and is also pursuing PhD (Mineral Processing) from VIT University, Vellore. Before joining IIT Hyderabad, he served in various prestigious institutes/organizations like IBM Bangalore, IIT Hyderabad, and APPM Rajahmundry. He has more than 8 years of experience in the field of Mineral Processing. His areas of interest are Beneficiation studies on various ores like Graphite, Iron, Gold, Limestone and Rock Phosphate, etc.

**Life@IITH:** I am very happy at IITH in both professionally and personally. Thanks to IITH.



*Mr. T. Chengappa*

### **Technical Superintendent, Physics**

He is a post-graduate (MSc Physics in Condensed Matter Physics) from Sri Venkateswara University Tirupati, which is in Andhra Pradesh. He has secured an outstanding grade in his Post Graduation course. He has completed my BSc (Physics, Mathematics and Chemistry) course from S. V. C. R. Govt Degree College which is affiliated to Sri Venkateswara University Tirupati. During my graduation course, I received a merit Scholarship from Basic Research Education and Development Society(BREAD), Hyderabad. He has joined IIT Hyderabad in 2008 and associated with the Department of Physics. He is handling teaching, lab experiments of undergraduate and postgraduate teaching laboratories. In addition to this, he is handling some of the sophisticated research equipment and he has developed an experimental setup to prepare the Tungsten tips by Wet etching method.

**Life@IITH:** Being the first batch of staff members (S. No:7 in the first batch of staff members in IITH), It gives me immense pleasure to work with the best-dedicated employees of the IIT Hyderabad fraternity. Faculty, staff and students are more enthusiastic about their innovative ideas. I hope and wish IIT Hyderabad will be in its best position at national and international levels.



*Mr. Bhukya  
Ramakrishna*

### **Technical Superintendent, Civil Engineering**

Before joining IIT Hyderabad, I worked as an Assistant Professor at Rajiv Gandhi University of Knowledge technologies Basar (RGUKT-Basar). I took additional responsibility at RGUKT Basar they are the Training and placement coordinator, techfest coordinator, Sports coordinator, member of the BOS meeting. my area of Interest is Hydrology and Water Resources, Fluid Mechanics, Hydraulic Engineering, Irrigation Engineering. I have done post-graduation in Water Resources Engineering from National Institute of Technology Warangal (NITW) and graduation in Civil Engineering From Jawaharlal Nehru Technological University Hyderabad (JNTUH).

*Continued...*

**Life@IITH:** I recently joined the institute and have been enjoying the pleasant infrastructure of the institute, my work and the support of the staff and students. feeling honoured to be part of the great institute.

## Non-Teaching Staff (December 2020)



*Mr. Rajasekhar  
Jala*

### **Technical Superintendent, Electrical Engineering**

He is a Postgraduate (MTech - Communication Systems) from Sagi Rama Krishnam Raju Engineering College (Andhra University) and also holds a Post Graduate Diploma in (Electronic Product Design) from CDAC Hyderabad. He completed his Bachelors Degree from Vignan's Engineering College Vadlamudi. Before joining IIT Hyderabad, he served in various prestigious institutes like AP-IIIT, Rajiv Gandhi University Of Knowledge and Technologies RK Valley, Idupulapaya and ISTTM Hyderabad.

**Life@IITH:** Working @IIT Hyderabad is a Delightful experience. It's like an Opportunity to do satisfactory work in a nice environment. I feel happy and excited to work with our Electrical Engineering Department. In this journey, I have found a lot of helping and kind people. Thanks to the administrative and Recruitment section for their timely help. I hope to give my best of my work for organisational growth.



*Mr. K. Ramesh  
Kumar*

### **Assistant Registrar, Dean Students' Office**

MTech (Process Control and Instrumentation) from National Institute of Technology Tiruchirappalli, Mr. Ramesh has total 11 Years of experience (7 years from Delhi Transco Ltd & 4 Years from IIT Hyderabad).

**Life@IITH:** Earlier I worked in IIT Hyderabad in project mode and after a gap of seven years, I'm very happy to join back IIT Hyderabad and looking forward to exploring new assignments at IITH.

### **Technical Superintendent, Electrical Engineering**

Mr. Suresh Aldhandi is a Post Graduate (Electronics and Instrumentation) from VNR Vignana Jyothi Institute of Technology and Science Hyderabad. Before joining IIT Hyderabad, he served in Chaitanya Institute of Technology and Science Warangal. He has more than 4 years of experience in the field of measuring instruments and control systems. His areas of interest are: design PI/PID controller for large scale multivariable processes, Power quality improvement with FACTS devices.

**Life@IITH:** My favorite areas are Measurements, Instrumentation and Control systems. I have much interested to do research on design of PI/PID controllers for large scale multi variable processes with employing various advanced control strategies & improve power quality of grid connected renewable energy sources with FACTS devices.



*Mr. Aldhandi  
Suresh*



*Mr. Sairam M.*

### **Technical Superintendent, Biomedical Engineering**

Mr. Sairam is a Postgraduate (Biotechnology) from Osmania University and also pursuing a PhD in Human Genetics from Osmania University. Before joining IIT Hyderabad, he served in various prestigious institutes like ICMR-NIN, Dept of Genetics & Biotechnology, Osmania University. He has 8 years of experience in the field of Molecular Biology, Human Genetics, Animal Cell Culture. During his tenure at ICMR-NIN he had hands-on experience in handling rodent models, had experience in Biochemical and Immunological assays. Whereas his service in the Dept of Genetics had expertise in Mutational screening of Genetics diseases (especially Cardiomyopathy) and cell culture.

**Life@IITH:** My passion for interdisciplinary research always drove me to work in Biomedical Engineering, and I'm fortunate enough to join IIT-H; this opportunity has provided me with enhancing my skills and learn new things and motivates me to work with confidence. It's a friendly atmosphere that brings enthusiasm to me and had an opportunity to interact with people hailing from different regions to know & enjoy their culture & tradition. A peaceful atmosphere, pleasant climate and driving breeze especially in the evenings fill the campus with positive energy and makes life more vibrant. The extra circular activities like sunshine club events, the slow cycle race and plantation are refreshing our daily routine work. It's a wonderful experience overall to be a part of the most evolving department, i.e. Biomedical Engineering in the health sector domain.



*Mr. Rajkumar B.*

### **Technical Superintendent, Design**

Mr. Rajkumar is a Postgraduate (Mass Communications) from the University of Hyderabad and also holds a Bachelor of Fine Arts (Painting) from Potti Sreeramulu Telugu University. Before joining IIT Hyderabad, he served in various prestigious organizations including the National Institute of Open Schooling (NIOS) NOIDA, UP, Trainz Holdings Private Limited, Hyderabad, ICRISAT Hyderabad, Ubiquus Tech (India) Pvt. Limited, Hyderabad, and Tech Mahindra, Hyderabad. He has more than 11 years of work experience in visual communications, the primary areas of interest being transmedia branding, instructional design, art & illustration, calligraphy, photography, and filmmaking. Over the years, Rajkumar has built a large portfolio of professional illustrations, logos, newsletters, investor presentations, annual reports, invitations, posters, displays, brochures, animations, videos, as also innovative concepts in print and digital marketing collateral for businesses, NGOs and government organizations.

**Life@IITH:** Joining IIT Hyderabad as Technical Superintendent at the Design Department has given me a great opportunity to work with a faculty, considered among the most dedicated and skilled in India. I believe the cutting edge equipment and labs will provide exposure to take my creative outcomes to the next, higher level. My goal at IITH being to help mould India's best future visual communicators, I look forward to an intensely passionate and energizing engagement with students and faculty alike. I've been with the Design Department at IITH since early December. It's been a great journey so far; I'm sure that the coming months and years will be even more fun with innovative, creative projects.



*Mr. Krishnaswamy  
Bharani*

### **Technical Superintendent, Artificial Intelligence**

Mr. Krishnaswamy Bharani is a BTech Graduate in Electronics and Communications from Guru Nanak Engineering College. Before joining IIT Hyderabad, he served in various prestigious organizations like Cognizant and Bharat Electronics Limited, Bengaluru in various capacities. He has more than 7 years of experience in the field of Networking, Servers, Storage, Virtualization, Information and Cyber Security, Oracle Database, Network Security, and Managing and Maintaining of Data Center. His areas of interest are Network Virtualization, Data Center infrastructure Architecture and Cyber Security Architecture. He is certified in CISCO CCNA and VMWARE VCP-6.5 DCV and also attended various training on Oracle Database (11g) and Cyber Security (CISSP & CEH).

**Life@IITH:** The transition was smooth, and everyone was very welcoming. It's a great experience to work in IITH with an excellent environment to learn and work. IIT Hyderabad is a diverse Organization and an excellent place to work. The colleagues are helping and highly motivated. Looking forward to giving my best to one of the premier Higher Education Institutes of India.



*Ms. Yarajani  
Sravani*

### **Technical Superintendent, Materials Science and Metallurgical Engineering**

She has obtained BTech degree in Metallurgical Engineering from Jawaharlal Nehru Technological University, Hyderabad (JNTU CEH, Kukatpally). Before joining IIT Hyderabad, she worked for RANE (MADRAS) LIMITED, Bollaram as Asst. Manager-Quality (Metallurgy Lab). She has a total of 7 ½ years of experience in the field of Material Testing. Also acquired ASNT NDT Level-II.

**Life@IITH:** I am very privileged to work in IIT Hyderabad as IIT Hyderabad is one of the esteemed institutes. It has been an honor and valuable experience working and growing at IIT Hyderabad.



*Mr. Baba Aditya  
Varma P.:*

### **Sports Officer, Sports Department**

Mr. Baba Aditya Varma. P is a Postgraduate (Physical Education) from the renowned Sant Gadge Baba Amravati University. He holds his Bachelor's degree in Physical Education from the Sri Venkateswara University, Tirupati. He also obtained a Diploma in Athletics Coaching from the National Institute of Sports, Patiala. Before joining IIT Hyderabad, he was associated with Telangana State Sports School as an Athletics coach and has shown his metal in shaping 7 international medalists and around 80 national medalists. He has more than 13yrs of coaching experience. Also, he served as a coach for the Telangana state team and JNTU H athletics team. Presently he is pursuing his PhD under the supervision of Dr. N. S. Dilip from JNTUH.

**Life@IITH:** I feel to enrich myself in this atmosphere of excellence and to the achievements through the medium of sports and games. The working environment is very good. I got the complete support of my colleagues and FIC.



*Mr. Satheesh K.*

### **Telagamsetti: Technical Superintendent, Electrical Engineering**

Mr. Satheesh is a Postgraduate (Integrated Power Systems) from VNIT Nagpur. Before joining IITH, he worked in IIT-Bombay as an R&D Manager. During this time, he had designed and developed a Solar PV Cook-stove that won Rs. 1 Million as prize money from ONGC. With the additional funding from ONGC, he and his team did a pilot study on Solar PV Cook-stoves in India's first solar PV cooking village (Banchara, M.P.). He also owns a Guinness World Record for conducting a workshop to 5000+ school kids about Solar PV in one session. His areas of interest are Solar EV Charging Stations, Off-grid Solar PV Systems and Battery Management Systems. He loves tinkering with electronics, coding for embedded systems and Numismatics.

**Life@IITH:** My life at IITH is wonderful. It started with a warm welcoming smile from Prof. Shiv Govind Singh. My first task is to h/w debugging of a PCB, which was designed in IITH. After successful completion of it, I was assigned to take care of the PEPS labs in EE Dept. Currently, I'm taking care of license management & upgrading the lab equipment. I'm taking care of the R&D activities and use my knowledge & skills in the right way. I'm looking at IITH as a future R&D hub both for industries and academics.

### **Technical Superintendent, Civil Engineering**

Mr. K Srikanth is a Postgraduate in Environmental Engineering from the Indian Institute of Technology, Madras and obtained his B.Tech degree in Civil Engineering from Kakatiya Institute of Technology & Science, Warangal. Before joining IIT Hyderabad, he worked as Assistant Professor in MGIT and CBIT, Hyderabad. He has more than 7 years of experience in the field of Civil Engineering. He also has experience as a design consultant in Water Supply and Sewerage Networks design for ULBs. His areas of interest are Water & Wastewater Analysis & Treatment, Solid Waste Management, Design of Water supply systems.

**Life@IITH:** Recently joined the institute and have been enjoying the pleasant infrastructure of the institute and the support of the staff and students. Feeling honored to be part of the great institute.

### **Technical Superintendent, Civil Engineering**

Graduate (BTech, Civil) with distinction from Delhi Technological University (formerly known as Delhi College of Engineering). Before joining IIT Hyderabad, he worked for National Council for Cement & Building Materials (NCCBM) as Project Engineer. There, he has more than 4 years of experience in Third Party Quality Assurance (TPQA) Activities as per ISO 17020/17025 at various construction sites of clients including CPWD, PWD, MCD, etc. His areas of experience include site quality inspections as per relevant QAP, Mix Design, Non-destructive testing, field and lab testing, SCC, etc.

**Life@IITH:** Being a new employee in IITH, I have observed that working in IITH include every characteristic which a good job include like Creativity, training and development, a positive working environment and culture, work/life balance, open communication among fraternity members, etc.



*Mr. Srikanth K.*



*Mr. Gourav*



*Mr. Muriki  
Laxminarayana*

### **Technical Superintendent, Materials Science and Metallurgical Engineering**

Mr. Muriki Laxminarayana is a Postgraduate (Physics) from Osmania University. Before joining IIT Hyderabad, he served in various prestigious institutes like Hyderabad Central University, ARCI Hyderabad and BITS PILANI K. K. BIRLA GOA CAMPUS. He has more than 7 years of experience in the Field of Emission Scanning Electron Microscopy and 2 years of experience on XRD. His areas of interest are Electron Microscopy, sample preparation for SEM&TEM observations & X-ray diffraction.

**Life@IITH:** I am fortunate enough for getting a chance to work for IITH and that too on Transmission Electron Microscopes and FIB, which is giving me a chance to learn all aspects of electron microscopy.



*Ms. Ruchi Yadav*

### **Sports Officer, Sports Department**

Ms. Ruchi Yadav is a Postgraduate (Physical education) from Maharashtra University and holds a professional Diploma course in Basketball from Netaji Subhash National Institute of Sports Patiala, she served in various institutions like IIT Kanpur, Chhatrasal Stadium New Delhi, Oxford Sr. Secondary School. She has coached Junior and Sub Junior Teams Under SGFI and the Delhi State women's team in Nationals under the Ministry of Youth Affairs and sports. She has also coached the Kanpur district Senior Men's team for two years. She has more than 12 years of experience in the field of Physical training education and coaching Basketball at different levels. During her tenure at IIT Kanpur, she received appreciation awards from the Director, IIT Kanpur in 2013, 2014 and 2016.

**Life@IITH:** It is a great experience working with IIT Hyderabad for one month and I feel that the working environment is excellent here and also getting all the support from staff & faculty in charge and especially from Director Sir.



*Mr. Chinnam  
Sivateja*

### **Technical Superintendent, Materials Science and Metallurgical Engineering**

Mr. Chinnam Sivateja obtained his Diploma in Metallurgical Engineering from Govt. Polytechnic, Bellary and Graduated in Metallurgical and Materials Engineering from Mahatma Gandhi Institute of Technology, Hyderabad (JNTUH). Before joining IIT Hyderabad, he served in the Department of Metallurgical and Materials Engineering at the National Institute of Technology Rourkela for about 5 years. He has experience in the fields of Mechanical Testing and Characterization of materials and Microscopy.

**Life@IITH:** Wonderful experience has begun with a bit of tension on the first day of joining, about how this workspace would be? However, from day one itself our Faculty, Head of the department and Staff colleagues have comforted by extending their personal help in settling down here. Meeting with the Institute's head, our beloved director Prof. B. S. Murthy, on joining the organisation is exciting and expresses how each member of the IITH family is essential. The welcoming atmosphere made me feel our department and institute a home. Glad to be part of this community of Inclusive and Inspiring Teamwork in Harmony (IITH).

October 2020



NSS Club IIT Hyderabad and IIIT Raichur pay tribute to a great leader, the Father Of The Nation, Symbol of Peace 'Shri Mahatma Gandhi', on his 150th Birth Anniversary.

October 2020

IIT Hyderabad hosted 3rd Japan Day2020 on 2nd Oct'20. Reiterating the importance of Indian talents in Creation of new global business models for Japanese Companies, Mr. Takashi Suzuki, Director General, JETRO Bengaluru wished India, 150th Birth Anniversary of Mahatma Gandhi.



October 2020



IIT Hyderabad has taken a bold step towards AtmaNirbharBharat through AtmaViswaas, by developing a strong BTech program in Biomedical Engineering. Thereby inculcating biomedical education in young minds from the grassroots, with the BTech program for the first time among all IITs.

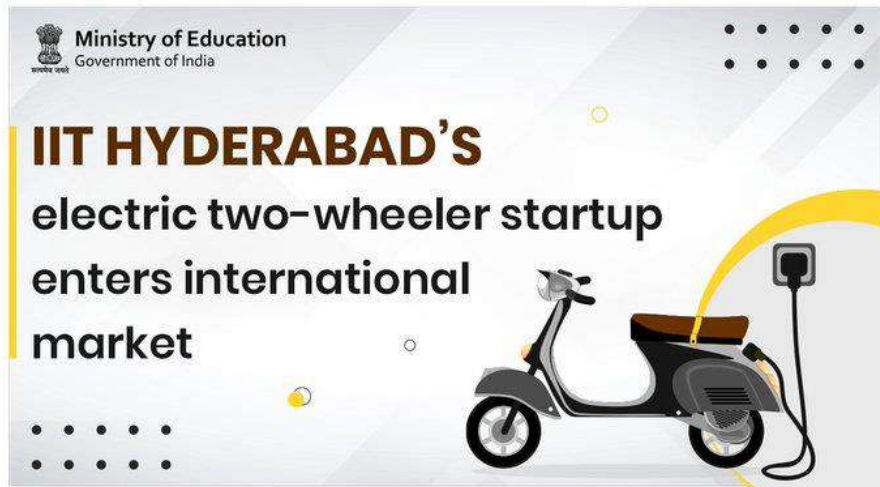
October 2020

IIT Hyderabad to collaborate with C-DAC India to establish a state-of-the-art 650 TFHPC facility under national computing mission. Purpose of this High-Performance Computing Centre is to solve grand challenges & problems of National Importance, to build 'AtmanirbharBharat'.





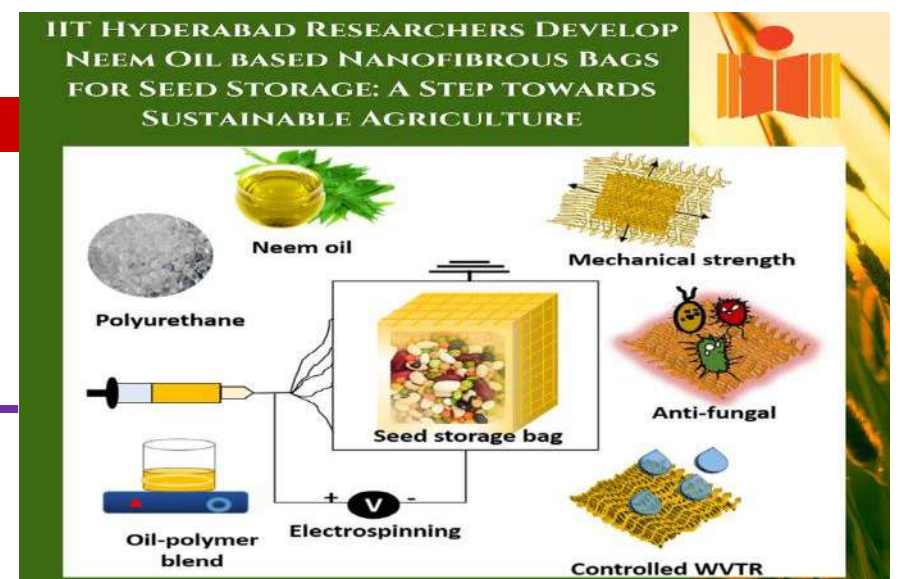
October 2020



IIT Hyderabad's incubated startup 'PURE EV' launched 'EPluto7G' - an eco-friendly two-wheeler in Nepal. 'PURE EV' works on the development of long-range & high-performance Lithium batteries.

October 2020

IIT Hyderabad Researchers Developed Neem Oil based Nanofibrous Bags for Seed Storage: A Step towards Sustainable Agriculture. It is first-ever attempt to fabricate nanofibrous bags to reduce the post-harvest seed storage losses.



October 2020



IIT Hyderabad and IIIT Raichur observed Vigilance Awareness Week 2020 on 27 Oct 2020. Integrity Pledge has been taken by Faculty, Staff & Students in Person & Virtual Mode.

October 2020

Some of the best scientific minds of India shared some findings today in a virtual press conference on the mathematical model "COVID\_19 India National Supermodel". It is significant that such models are being used by the policymakers to serve as input in making decisions.

### Key Conclusions: Future is What We Will Make It

- ❖ Upcoming festival and winter seasons may increase the susceptibility to infection
- ❖ Relaxation in protective measures can lead to a significant rise: **up to 26 lakh infections within a month**
- ❖ District and higher level lockdowns not much effective now
- ❖ All activities can be resumed **provided** proper safety protocols continue to be followed
- ❖ If all of us follow these protocols, the pandemic can be controlled by early next year with **minimal active symptomatic infections** by February-end

October 2020



IIT Raichur and IIT Hyderabad observed Rashtriya Ekta Diwas 2020 with a Pledge taken by faculty and staff.

October 2020

Dr Sparsh Mittal (formerly working for IIT Hyderabad, now working in IIT Roorkee Poonam Rajput & Subhrajit Nag from IIT Hyderabad have developed an AI-based solution that can sift through the video feed from CCTVs and find out people who are using mobile phones.



October 2020



Electrogeeks Club IIT Raichur organized its very first session of this Academic Year on 'Git & GitHub' to encourage students to acquire important concepts such as 'version control technology' & many more.

November 2020

IIT Hyderabad Students' startup won the Best ten startup award at 28th Annual HYSEA Award for Swatchh Air. SwatchhAir is a low-cost air sterilization system that reduces the overall viral load in the air.



November 2020



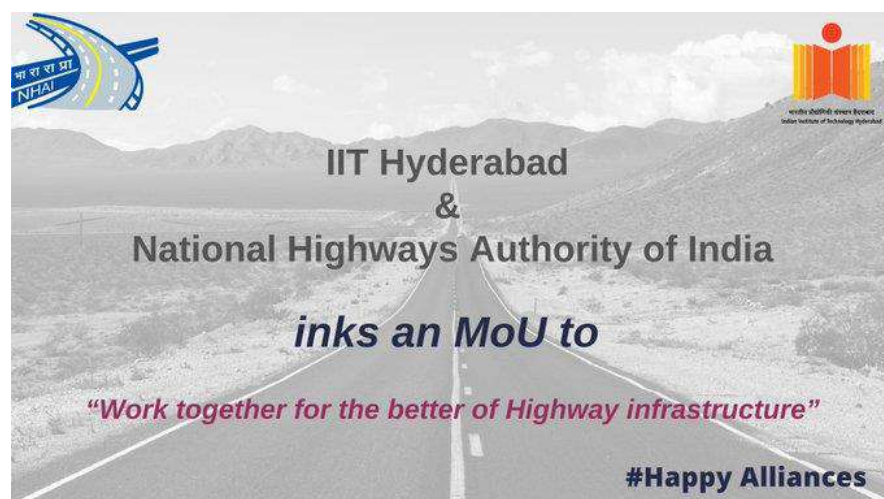
Women's Cell & Department of Liberal Arts IIT Hyderabad organized a webinar 'Impact of COVID-19 on Women in Academia' on November 4, 2020.

November 2020

Supporting AtmaNirbharBharat and startupindia initiative, i-TIC Foundation, IIT Hyderabad and NMDC limited launched the NMDC innovation and incubation centre (NICE) today to support Indian entrepreneurs working in deeptech sector.



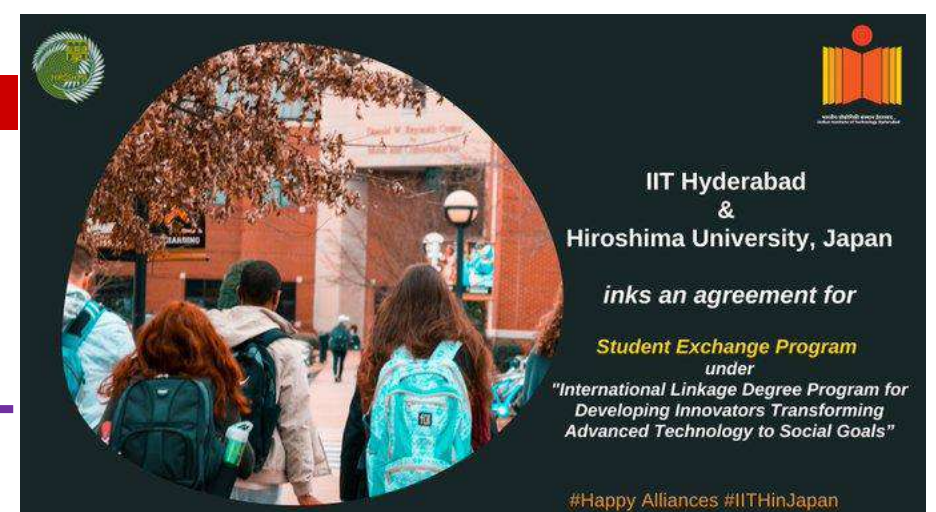
November 2020



IIT Hyderabad & National Highways Authority of India NHAH\_Official ink an MoU to "Work together for the better of Highway infrastructure".

November 2020

IIT Hyderabad & Hiroshima University, Japan inks an agreement for Student Exchange Program under "International Linkage Degree Program for Developing Innovators Transforming Advanced Technology to Social Goals"



November 2020



i-TIC, IIT Hyderabad and FICCI-FLO signed a pact for "Empowerment of women entrepreneur".

December 2020

Working towards the betterment of the nation, together we scale new heights. Supporting AtmanirbharBharat and startupindia, NMDC is promoting the nation's spirit of entrepreneurship and innovation through nice incubation and IIT Hyderabad by organizing launch ceremony of NICE



December 2020



IIT Hyderabad organized, a Fit India Freedom Run 'Week' for people inhabiting IIT Hyderabad, where a participant can start at any time, run, jog or brisk walk, or walk - you may pace yourself as you wish.

December 2020

IIT Hyderabad has signed MoU with Jeju Techno park, Korea & Honorary Consulate General of the Republic of Korea in Hyderabad "To share technological expertise, impart training (especially Big Data Analytics) & cooperate for joint R&D".





## IIT HYDERABAD

becoming greener every month. More than 10,000 saplings have been planted in a year making campus healthier and happening.



December 2020


It is being more than a year IIT Hyderabad is celebrating 1st Saturday of every month as Green Day. More than 10,000 saplings have been planting making the campus greener, healthier and happening.

December 2020


Minister of Education, Government of India Shri Ramesh Pokhriyal Nishank laid the foundation stone of TiHAN Autonomous Navigation Testbed at IIT Hyderabad.




December 2020



EML IIT Hyderabad  
Presents





**Tushar Gupta , IPS (Alumnus of IITH)**

ONE OF THE YOUNGEST TOPPERS OF CIVIL SERVICES EXAMINATION 2017 , AIR:113 WHO CLEARED UPSC IN HIS 1ST ATTEMPT

A talk on his journey from IITH to his service as an IPS officer followed by QnA session

IIT Hyderabad started its first EML lecture Academic year with its very own Mr. Tushar Gupta IPS. A talk about this journey from IITH to being an IPS Officer.

## INDUSTRY-ACADEMIA COLLABORATION

*NMDC, IIT-H to back deep tech startups*

Hans News Service  
Hyderabad

NMDC Limited, in association with IIT Hyderabad, launched an Incubation and Fellowship Programme on Wednesday. This initiative titled, NICE Programme (NMDC Innovation and Incubation Centre), is a joint programme between NMDC Ltd and I-TIC Foundation, a startup support system at IIT, aims to support deep-tech startups by providing them incubation and fellowship. Its objective is to promote the spirit of entrepreneurship and innovation and to support the Startup India movement.

NICE initiative is a five-year joint programme that would support 15 fellows and 15 startups by providing them financial aid, mentoring, co-working space, infra-structural benefits, and many more. With the total programme budget of Rs 10 crore funded by NMDC, NICE aims to support five startups every year with the financial aid of up to Rs 25 lakh to convert their proof of concept into a scalable business. The programme would also support five fellows every year with the monthly stipend of Rs

80,000 for 12 months to support their sustenance and prototype development.

The programme was launched by Sumit Deb, the NMDC CMD, in the presence of Prof B S Murty, IIT Director, at a virtual event. It was attended by NMDC directors P K Satpathy (Production), Amitava Mukherjee (Finance), Alok Kumar Mehta (Commercial), Prof Surya Kumar S, faculty in-charge of the foundation, incubated startups, students, faculties and team members of the organisations.

At the launch, Deb said NMDC always supported social causes which have potential impact on human lives.

The NICE initiative would be a go-to place for the young entrepreneurs to passionately pursue their entrepreneurship journey and create wealth for the benefit of society. "I invite young and enthusiastic entrepreneurs to take advantage of the initiative to pursue their dream of becoming a successful entrepreneur."

Prof Murty said the vision of IIT Hyderabad was to be the cradle for inventions and innovations. "This joint



- ▶ **Launch an Incubation and Fellowship Programme to foster innovation & entrepreneurship**
- ▶ **To support 15 fellows & 15 startups with financial aid, mentoring support, co-working space, infra benefits**
- ▶ **A budget of ₹10 cr funded by NMDC, which aims to support five startups a year with aid of up to ₹25 lakh**
- ▶ **Will support five fellows every year with monthly stipend of ₹80k for sustenance, prototype development**

programme is one important step taken towards the vision of IIT-H and the commitment to supporting entrepreneurship and innovations.

The programme would also act as a template for industry-academia collaboration to enrich the Startup India initiatives."

The event included the website launch by Deb, interaction with startups, type of support and information regarding the fellowship programme. Call for applications for the fellowship programme will start this month and can be applied through NICE website ([www.niceprogram.in](http://www.niceprogram.in)).

*IIT Hyderabad researchers come out with neem oil-based nanofibrous bags for seed storage*

## OUR BUREAU

Hyderabad, October 23

Researchers at the Indian Institute of Technology-Hyderabad have developed a neem oil encapsulated electrospun polyurethane nanofibrous bags for seed storage.

The real time storage experiment carried out for 75 days infers that 90 per cent seeds stored in these bags were uninfected, whereas 70 per cent seeds in commercial bags found to be infected with storage fungi.

Post-harvesting, proper storage of seeds is neces-



This is the first attempt to fabricate nanofibrous bags with the aim of reducing the post-harvest seed storage losses

sary to preserve the active germplasm of crops for longer period without compromising their viability and germination ability. There are numerous factors needed to be considered while storing the

seeds either as a food source or as seeds for next season.

This is a first-ever attempt to fabricate nanofibrous bags with the aim to reduce the post-harvest seed storage

losses. The research, partially funded by DST-IN-SPIRE faculty grant, was led by Chandra Shekhar Sharma, Associate Professor, Department of Chemical Engineering, IIT-Hyderabad.

Sharma said, "This fabricated mat possesses excellent load capacity and tensile strain values superior than the commercial polypropylene patterned sample. The real time applicability of pouches infers that any type of seeds can be stored for longer duration at normal room temperature conditions."

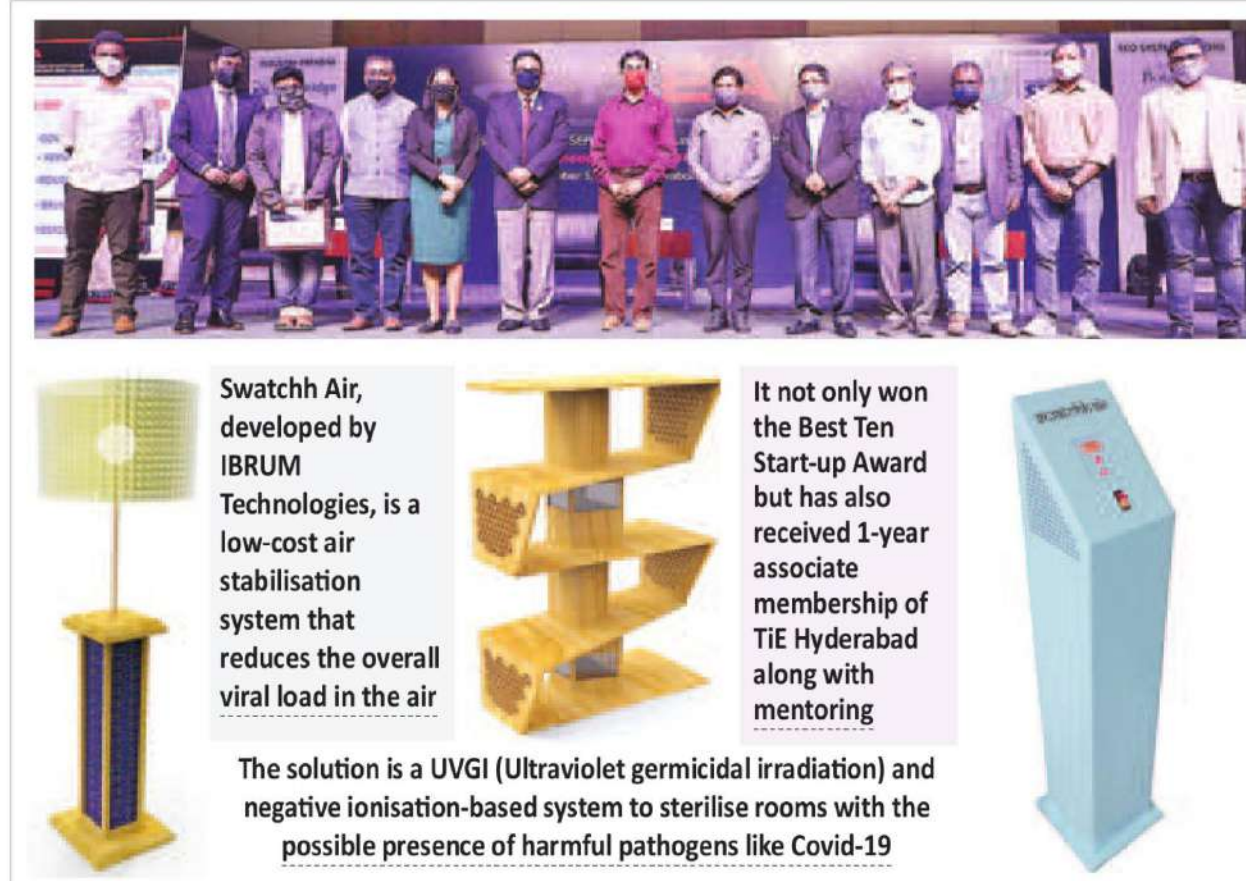
# IITH startup wins award for clean air tech

HYDERABAD

INDIAN Institute of Technology, Hyderabad, students' startup IBRUM Technologies, co-developed by Priyabrata Rautray (PhD scholar, Department of Design, IIT Hyderabad) and Nibedit Dey (former CfHE fellow, IIT Hyderabad), has won the best ten start-up awards (product category) at 28th Annual HYSEA (Hyderabad Software Enterprises Association) Awards for Swatchh Air. They were guided and supported by Prof Deepak John Mathew, Head of the Department, Department of Design, IIT-H.

Swatchh Air is a low-cost air stabilisation system that reduces the overall viral load in the air. The solution is a UVGI (Ultraviolet germicidal irradiation) and negative ionisation-based system to sterilise rooms with the possible presence of harmful pathogens like Covid-19. It not only won the Best Ten Start-up Award but has also received 1-year associate membership of TiE Hyderabad along with mentoring.

Highlighting the importance of such startup with high impact on the society and environment, Prof BS Murty, Director, IIT-



Swatchh Air, developed by IBRUM Technologies, is a low-cost air stabilisation system that reduces the overall viral load in the air

It not only won the Best Ten Start-up Award but has also received 1-year associate membership of TiE Hyderabad along with mentoring

The solution is a UVGI (Ultraviolet germicidal irradiation) and negative ionisation-based system to sterilise rooms with the possible presence of harmful pathogens like Covid-19

Hyderabad, said, "We are all proud of the team and we wish them to bring out many more innovative products in the years to come."

The product was conceptualised under the BUILD (Bold

and Unique Ideas Leading to Development) project scheme initiated by Director, IIT Hyderabad, to support the start-up's spirit and entrepreneurship among the students. It is based on founder's previous award-winning publica-

tion on "Design and development of a cost-efficient Air Sterilization System."

A working prototype has been deployed at IIT Hyderabad. There are two variants of the product, one is for air sterilisa-

tion and another for surface sterilisation. Air sterilization can be done in infected places, isolation wards, quarantine centers, and prevent further transmission. Its applications include places like Hospitals & Clinics, Operation Theaters, Patient Care, Special Wards and Isolation Wards, Quarantine Centres, Home - Personal Use and Small Offices.

IBRUM Technologies is now looking at mass production of the product to serve many more. With the support of potential investors to the entity in the coming future, the team is looking at the production of 1000 units per month which will cost around Rs. 12,000 to Rs. 15,000 per unit.

The team is also looking at making this product to occupy optimum space by converting it into useful interiors like side lamps and book shelves.

Speaking about this recognition, Priyabrata Rautray credited this achievement to the Director, Dean Students and other faculties of the IIT Hyderabad who were involved in BUILD Project for selecting Swatchh Air and giving financial support to make the prototypes. The first prototype was developed & deployed at IIT Hyderabad.

# TiHAN set to achieve Aatmanirbhar Bharat

HANS NEWS SERVICE  
HYDERABAD

THE TiHAN (Technology Innovation Hub on Autonomous Navigation) Foundation established in IIT-Hyderabad is a great step for achieving the objective of 'Aatmanirbhar Bharat', 'Skill India', and 'Digital India', said Union Minister of Education Ramesh Pokhriyal 'Nishank'.

After laying the founda-

- Country's first test bed for unmanned and connected vehicles in a controlled environment
- 'TiHAN Foundation' incorporated as a Section-8 company at IIT-Hyderabad



tion stone for TiHAN, the minister said, "TiHAN Foundation at IIT Hyderabad is a multi-department

initiative, including researchers from electrical, computer science, mechanical and aerospace, civil,

mathematics and design with collaboration and support from reputed institutions and industry." He said that the 'TiHAN Foundation' has been incorporated as a Section-8 company by the institute in June 2020.

It will essentially focus on the research and development of interdisciplinary technologies in the specific domain area of Autonomous Navigation and Data Acquisition Systems.

Continued on Page 7

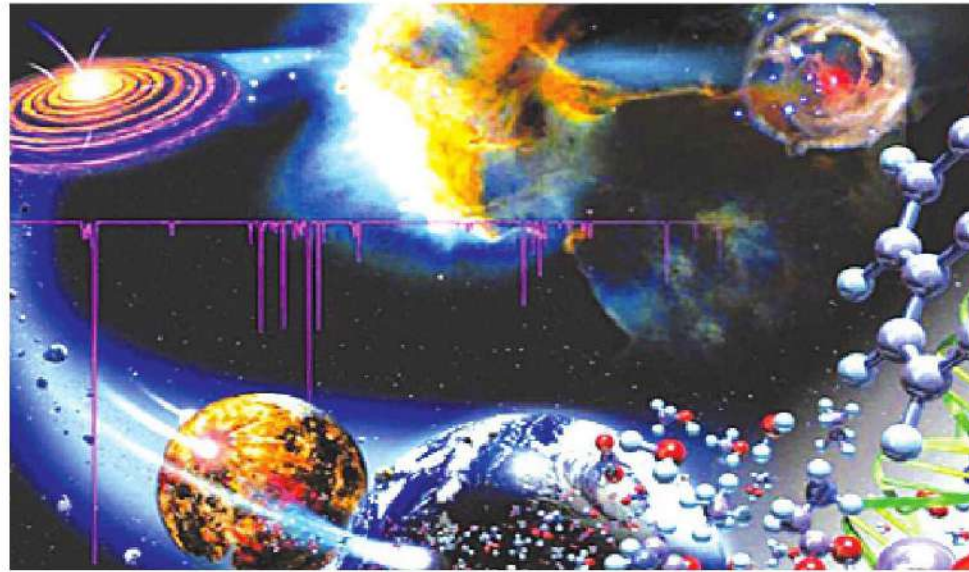
# IIT-H to conduct global meet on Astrophysics

HYDERABAD

A step towards national &amp; int'l collaborations in research

INDIAN Institute of Technology-Hyderabad will be hosting an international workshop on 'Laboratory Astrophysics with Intense Laser: Particle Generation and Application' on December 7-8. It is being organised by Dr. Vandana Sharma, Associate Professor, Department of Physics, IIT Hyderabad, in association with University of Oxford UK, Tata Institute of Fundamental Research and Central Laser Facility.

The workshop covers broadly the two topics like Intense Laser Physics - Generation and its Applications and Laboratory astrophysics with Lasers. Last date to register is November 25. Participants from different parts of the world will present results on laser particle generation, acceleration, detection and secondary emissions and their applications.



Dr Vandana Sharma, Conference Coordinator, said at the meet, "a different aspect of interaction of Lasers, called Laboratory Astrophysics wherein an active synergy

between laboratory experiments and theoretical modelling along with astronomical observation will be presented. The workshop will be held virtually for two days and is

composed of invited specialized lectures, student talks and poster presentations."

Speakers include eminent academicians like Prof Alex Schekochihin - University of Oxford UK; Prof Amrita Das - IIT Delhi; Dr Amit Lad - TIFR; Dr Brian Reville - MPIK, Heidelberg, Germany; Dr Charlotte Palmer - Queen's University Belfast, UK; Dr Hye-Sook Park - Lawrence Livermore National Lab, USA; Dr Ram Gopal - TIFR; Prof Robert Bingham - Rutherford Appleton Lab, UK; Dr Sivarama Krishnan - IIT Madras, and Prof Paul McKenna - University of Strathclyde, UK.

It is expected that this conference will lead the academia to a better understanding of this field and various successful national and international collaborations in future.

## IIT-H to offer B.Tech in bio-medical engineering

The first IIT to offer such a programme

SPECIAL CORRESPONDENT  
HYDERABAD

To train biomedical engineers in next-generation healthcare technologies and prepare them to work at the frontiers of healthcare innovations in the deep-tech industry or academia, IIT-Hyderabad is introducing a B. Tech course in bio-medical engineering.

It will be the first IIT in the country to offer the programme. Osmania University College of Engineering in Hyderabad is one of the few colleges that offers the programme in Telangana and Andhra Pradesh as of now.

The new B.Tech programme trains students to design medical devices, develop 3D imagers and microscopes, crunch mountains of healthcare data, recognise patterns in health and disease, simulate and predict spread of epidemics mixing medical needs with engineering technologies.

IIT-Hyderabad B.S. Murty said the curriculum is designed around four verticals - bio-imaging and sensing, bio-mechanics, bio-materials and bio-intelligence and artificial intelligence. "They rest on a single horizontal - core training in physiology, anatomy, systems science, mathematics, circuits, instrumentation, mechanics and algorithms," he explained.

### Indigenous devices

The programme will help bring out indigenous medical devices of high quality that serve all sections of the country, the IIT-H director asserted.

"One of the unique aspects of our programme is an advanced module on bio-medical product design, entrepreneurship, regulatory affairs and clinical immersion that brings in a core product design and development focus," he added,

## IIT-H placements kick off on a positive note

Phase-I placements: Total **222** job offers including 30 int'l offers

HYDERABAD

INDIAN Institute of Technology, Hyderabad, witnessed 222 offers (which includes 30 international offers) made from 63 companies during the Phase I of Campus Placements held between 1st-6th December 2020. The entire process was held online with students attending job interviews from their respective homes across the country.

This placement season started on a positive note with the 48 Pre-Placement Offers (PPO), as opposed to 37 PPOs in the previous academic year. The Phase II of Placements will begin during January 2021.

There is the same trend in international offers this year too when compared to last year. For the current placement year 2020-21, we have received 30 in-

ternational offers (as on day) from 08 companies across 2 countries (i.e. Japan & Taiwan). More international offers are expected in phase 2.

For placement year (2019-20), they received 38 international offers from 15 companies across 3 countries (Japan, USA & Taiwan).

A total of 500+ students have registered for placements across departments this year. For the Phase I of placements, a total of 116 (as on day) companies have registered, compared with about 150 companies in the phase I of last year (2019-20). A total of 244 companies had registered in the whole of last year (2019-20) which include 15 start-ups.

Including the accepted Pre-Placement Offers (PPOs), a total of 206 students have already been placed at the end of Phase I

Top recruiters during Phase I include Microsoft, Goldman Sachs, Jaguar Land Rover, MTX, BNY Mellon, Razorpay, Alphonso Inc, Bharti Airtel OPPO and TSMC. Phase II of placement services to begin by January

Placements for 2020-21 Academic Year. This compares favorably with the overall students placed in the entire previous academic year (2019-20), which was 295 students (including 37 PPOs). In the current placement year 2020-21, for circuit branches we have crossed more than 75% of placement during Phase-I. Most of the offers so far are from the IT/ITES sector, with few in core sector as well.

Speaking about the Phase I of Campus Placements, Dr. Pradeep Yemula, Faculty In-Charge (Placements), IIT Hyderabad, said, "We have anticipated a slowdown due to the pandemic and accordingly strengthened our student teams to adapt to the changing scenario. We are glad to see the placement season at IITH has started on a positive note."



# UAV tech hub inaugurated at IIT-H

STATE BUREAU  
Sangareddy

The Department of Science and Technology (DST) has sanctioned Rs 135 crore to the Indian Institute of Technology-Hyderabad (IIT-H) under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to set up a Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems for unmanned aerial vehicles and remotely operated vehicles (UAVs, and RoVs). The Technology Innovation Hub on Autonomous Navigation Systems for UAVs and ROVs at IIT-H will be known as 'TiHAN Foundation'.

The foundation stone for this facility was laid by



IITH Director Prof B S Murty speaking during the event.

Union Minister of Education Ramesh Pokhriyal Nishank in the presence of Union Minister of State for Education Sanjay Dhotre, Dr BVR Mohan Reddy, Chairperson, Board of Governors, IIT Hyderabad, Prof BS Murty, Director IIT-H, and other officials. Nishank

said, "TiHAN Foundation, established at IIT-H, will be a multi-departmental initiative, including researchers from Electrical, Computer Science, Mechanical and Aerospace, Civil, Mathematics, and Design with collaboration and support from reputed institutions and in-

dustry." Congratulating the TiHAN Team, Director IIT-H, Prof BS Murty said, "One major requirement to make unmanned and connected vehicles more acceptable to the consumer society is to demonstrate its performance in real-life scenarios. In general, both UAV and UGV testing may include crashes and collisions with obstacles, resulting in damage to costly sensors and other components. Hence, it is important to test new technologies developed in a safe, controlled environment before deployment".

All smart poles are enabled with communication providing technology with some poles designed with sprinklers to test the vehicles' performance during rain.

## IITs Caution Against Centre's Decision on Teaching Tech Courses in Local Languages

Cite industry needs, global job profiles besides faculty, textbook and research challenges

Anubhuti.Vishnoi  
@timesgroup.com

**New Delhi:** The heads of leading IITs have sounded caution on the decision of the Union education ministry to provide technical education at IITs and other engineering institutes in the mother tongue, preferably from the next academic session.

Directors of top IITs have cast doubts over the 'viability' of such a move in view of the employment opportunities, industry requirements and the globalised workplace, besides the huge logistical challenge this poses for IITs in terms of faculty, textbooks and reference material.

IIT-Bombay director Subhasis Chaudhary pointed out that not just IITs, no college is prepared to launch technical courses in regional languages as there is limited study material in Indian languages, besides the lack of teachers trained to teach in these languages.

"A student spends 4-5 years going through technical education but spends 30-40 years in the industry. We, as teachers, have to prepare students, however difficult it is either for us or the students, in a way that the industry finds it useful. We need

### Viewpoint

**IIT-Bombay** director Subhasis Chaudhary pointed out that not just IITs, **no college is prepared to launch technical courses in regional languages**

**IIT-Delhi** director V Ramgopal Rao pointed the **need for students' access to global research**

**BS Murty, director, IIT-Hyderabad**, said while it was natural for everyone to have the desire to learn in mother tongue, it was **not 'viable' at present**

**IIT-Goa** director, who is part of the content development team for offering technical courses in various languages, said **'extensive teachers' training is required to orient lectures in local languages'**

**IIT-Kharagpur** director, VK Tiwari, welcomed the move saying **adopting regional language in technical education is 'a necessary long-term goal'**

to have a stakeholders' meeting where the feedback from the industry is of supreme value. We need to assess the linguistic needs of the jobs that our graduates will man tomorrow. Various industrial bodies should take up the issue, discuss threadbare and provide appropriate feedback to the task force. Once the issue is settled, only then can we ask the question of viability," the IIT-Bombay director said in response to ET queries on the issue.

"English, as a medium of instruction in higher education, was thrust on us about 164 years ago through the Wood's Despatch, and if we are collectively convinced that it's time is up, then we should possibly do a very long-term planning on how to deboard English out of us and not our march to technological developments," the director cautioned.

IIT-Delhi director V Ramgopal Rao pointed the need for students' access to global research.

"Nobody should be disadvantaged due to the language barrier. I strongly advocate conducting of the JEE Advanced exam in various regional languages to broaden access to IITs. Thereafter, we need to help students with bridge courses to get a reasonable grip on the English language. Apart from our own textbooks and classroom teaching, an IIT student needs to be exposed to global research to manage the jobs of tomorrow. That is currently only available in the English language," Rao told ET.

He said this was a serious academic issue which needs detailed discussion in the IIT Senates.

Directors of IIT-Madras, IIT-Kanpur and BHU — who are on the task force set up by the education ministry — did not respond to ET's queries.

BS Murty, director, IIT-Hyderabad, said while it was natural for everyone to have the desire to learn in mother tongue, it is not "viable" at present.

IIT-Goa director, who is part of the content development team for offering technical courses in various languages, said "extensive teachers' training is required to orient lectures in local languages".

IIT-Kharagpur director, VK Tiwari, welcomed the move saying adopting regional language in technical education is "a necessary long-term goal".

Continued...

# Hub for remote operated vehicles set up in IIT

TIMES NEWS NETWORK

**Hyderabad:** Indian Institute of Technology, Hyderabad (IIT-H) set up a new technology innovation hub on autonomous navigation (TiHAN) for unmanned aerial vehicles (UAV) and remotely operated vehicles following a funding of ₹135 crore from the Department of Science and Technology, Government of India.

The foundation stone of 'TiHAN-IIT' Hyderabad, a testbed for autonomous navigation systems (terrestrial and aerial), was laid by the Union minister of education Ramesh Pokhriyal virtually on Tuesday.

The new hub has been established in two acres of land within the campus and the fac-

ilities are planned in phases. It will facilitate research grounds to investigate the functioning of unmanned and connected vehicles in a controlled environment by replicating different scenarios, ranging from frequently occurring to extreme cases that may ensue in real-life traffic operations.

**TECH TALK**

"With an essential focus on the research and development of interdisciplinary technologies in the specific domain area of autonomous navigation and data acquisition systems, this hub focuses on addressing various challenges hindering the real-time adoption of unmanned autonomous vehicles for both terrestrial and aerial applications," said Pokhriyal.

The testbed inaugurated by



**WILL HELP REPLICATE REAL-LIFE SCENARIOS**

- The new hub has been established in two acres of land within the campus and the facilities are planned in phases
- It will facilitate research grounds to investigate the functioning of unmanned and connected vehicles in a controlled environment
- It will help replicate different scenarios, ranging from frequently occurring to extreme cases that may ensue in real-life traffic operations
- All smart poles within the institute are enabled with communication providing technology with some poles designed with sprinklers to simulate rain scenario

the IIT-H is a first-of-its-kind facility in any academic institution in the country. "One major requirement to make unmanned and connected vehicles more acceptable to the consumer society and demonstrate

its performance in real-life scenarios. However, it may become dangerous," said BS Murty, director, IIT-H. "In general, both UAV and UGV testing may include crashes and collisions with obstacles, resulting in da-

mage to costly sensors and other components. Hence, it is important to test new technologies developed in a safe, controlled environment before deployment," he added.

All smart poles within the institute are enabled with communication providing technology with some poles designed with sprinklers to simulate rain scenario. "At present, there is no such testbed facility in India to evaluate the autonomous navigation of vehicles. Therefore, it is envisioned to address this gap by developing a fully functional and exemplary testbed facility dedicated to connected autonomous vehicles - CAVs - in a portion of IIT-H campus," said P Rajalakshmi, project director - TiHAN and professor, department of electrical engineering, IIT-H.

## If you want to do deep tech, you need to go beyond BTech

Students feel if Sachin Bansal could be successful with BTech, why do MTech. But it's a different world now

Arvik Das & Swati Rathor | TNN

For many decades, Indian engineering's big problem was brain drain. The best engineers would go overseas, mostly to the US, to do an MTech/PhD the moment they graduated. That has now dramatically reduced. Even in the IITs, no more than 5% today go abroad immediately after they graduate. There are plenty of well-paying jobs in India to keep them here.

But these well-paying jobs are now creating another kind of problem. As the world moves towards more complex technologies - AI, ML, quantum computing, 5G and more - industry needs better and better engineers. Those who do MTechs, PhDs. But few want to study beyond their four years of BTech.

V Ramgopal Rao, director at IIT Delhi, says IIT students are not aspiring higher, they are not using the brand to the fullest. "They think if Sachin (Bansal) can do with a BTech, why waste time in a PhD. What they don't realise is Sachin and Binny (Flipkart founders) were into business model innovation. Whereas if you want to start a company in AI or quantum computing, you cannot do that with just an undergraduate degree. You need higher knowledge. Indian startups are not deep tech, they are innovators of business models. Deep tech innovation is hurt by students not taking up higher education," Rao says.

### MTech, PhD IS A GREAT INVESTMENT

"Many do not pursue higher education but just do a BTech and then do a job. PhDs do not close your options, but open up more opportunities for you. It is a good investment to specialise in an area"

V Ramgopal Rao | DIRECTOR, IIT DELHI

"There has been very little IP-based technology development in our engineering ecosystem, and very little interaction between academia and industry. The reason is our engineering institutions' lack of focus on design and manufacturing"

Abhay Karandikar | DIRECTOR, IIT KANPUR

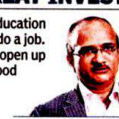
"We are working with industry to understand its requirements. We launched MS in e-mobility this year, and its syllabus has been developed after extensive discussions with automotive OEMs"

TG Sitharam | DIRECTOR, IIT GUWAHATI

The number of students who enrolled for a MTech programme fell to 135,500 during 2018-19 from 289,311 in 2014-15, as per the All India Survey of Higher Education (AISHE) done by the human resource development ministry. Even in the IITs, most of those who do an MTech are BTech graduates from tier-2 and 3 engineering institutions. "It is to find a good placement which perhaps may not be available for them at the undergraduate level. BTechs from IITs do not need another tag," says Rao.

Abhay Karandikar, director at IIT Kanpur, believes there's a pull also required from India's corporate research ecosystem, which will make it lucrative for students to pursue PhD. "We need to have an Indian industry which works on design, IP creation and then manufacturing," he says.

That pull is emerging, most prominently from the engineering and R&D arms of MNCs in India. Manu Saale, MD & CEO at Mercedes-Benz R&D India (MBRDI),



"In BTech, one gets to develop a general foundation, but MTech gives an opportunity to develop deeper focus. In the next five to 10 years, I expect all the MTech programmes will be industry oriented"

BS Murty | DIRECTOR, IIT HYDERABAD

"We are increasingly hiring students with Master's degrees. They bring in advanced mathematical and analytical systems knowledge which is not present in undergraduate classes"

Manu Saale | MD & CEO, MERCEDES-BENZ R&D INDIA

"To form innovation-driven technology companies, which drives on patenting, higher studies is the route"

Ajit Chaturvedi | DIRECTOR, IIT ROORKEE

which has about 6,000 employees, says the company is increasingly hiring students with Master's degrees. Master's students, he says, bring in advanced mathematical and analytical systems knowledge which is not present in undergraduate classes.

Hyderabad-based Cyient works with more than half of the top 100 global R&D spenders, and hires MTechs and PhDs for project leads and for roles such as innovation managers. Karthikeyan Natarajan, president & COO of Cyient, says that with innovation at the core of unlocking value for post pandemic growth, companies like theirs are looking for talent that can think out of the box and are comfortable with uncertainty. "Candidates with higher technology degrees and PhDs are trained to find solutions in crisis and they can be instrumental in creating innovation ecosystems for the future," he says.

Kaushik Banerjee, business head at staffing solutions firm Teamlease.com & Freshersworld,

com, says many tech firms are looking at research scholars to contribute to the complex algorithms they are developing. "With the usage of concepts like data science, AI, ML and deep learning, there is good demand for PhD degree holders with data science certification. Their role is to come up with path breaking algorithms, new product designs, patents on proof of concepts (PoCs) and R&D work," he says.

Medical Sciences (AIMS) so that a medical doctor can do a Master's programme in a biomedical related area," Rao says.

At IIT Hyderabad, Master's courses are being offered in additive manufacturing, e-waste resource and engineering management, and smart mobility - all of them emerging technology areas. "Over the last couple of years, IITs started taking BTechs directly into PhDs and therefore MTech was no longer mandatory for students who wanted to pursue research. In such a scenario, it became important to re-vamp MTech and we took a decision at IIT Hyderabad that our MTechs will be industry oriented. This will not only strengthen industry-academia relationships, but also lead to better placements for MTech students," says BS Murty, IIT Hyderabad director.

IIT Guwahati has launched a MS programme in e-mobility with the syllabus developed after collaborating with automotive makers. "We also started an initiative wherein every department faculty has to choose three industry experts and they can act as advisors to the department. They will not only help us understand the requirements of the industry but help us to bring changes to the curriculum which would benefit all students including ones doing MTech," IIT Guwahati director TG Sitharam says.

Virendra Tewari, director at IIT Kharagpur, says IITs have been working towards providing world-class laboratories and educational resources, as also international experience to research scholars. "At IIT Kharagpur, they can opt to study abroad for a year while pursuing their doctoral studies," he says.

Mercedes-Benz's Saale says as India aspires to be a global destination for product engineering and deep systems knowhow, higher education is an unquestionable value add.

## IIT-H ties up with C-DAC to set up HPC

TIMES NEWS NETWORK

**Hyderabad:** Indian Institute of Technology, Hyderabad will collaborate with Centre for Development of Advanced Computing (C-DAC) to set up a state-of-the-art facility under the National Supercomputing Mission for research and development activities.

An MoU has been signed by the institute, to enable scientists and researchers to carry out cutting-edge research in their respective domains and make India one of the world leaders in Supercomputing, in the virtual presence of Sanjay Dhotre, minister of state for education, communications, electronics & IT. "It is a great step in the direction of digital India, 'Make in India' and making Atmanirbhar Bharat," said Dhotre.

BS Murty, director, IIT-H, said that the purpose of this High-Performance Computing Centre (HPC) is to solve

An MoU has been signed to enable scientists carry out cutting-edge research. The institute will provide infrastructural support for the in-time set-up of the supercomputing facility at IIT-H

grand challenges and problems of national importance to build Atmanirbhar Bharat.

"IIT Hyderabad is a pioneer in the field of Artificial Intelligence. We are the first institute in the country to launch a B Tech programme in AI. With a strong base of close to 25 faculty in the department of AI, the institute is looking forward to such opportunities to come up with many more innovations and research achievements in the field," said Murty. He added that the institute had also signed a MoU with the Telangana government, which declared 2020 as the year of AI.

# IIT Hyderabad launches high-speed long-range model 'Etrance Neo'

Hyderabad, Nov 19: IIT Hyderabad-incubated Startup PURE EV is going to launch 'Etrance Neo,' its high-speed long-range model, on 1st December 2020. The new model offers a higher pickup and longer range combined with modern aerodynamics.

Etrance Neo offers a pick-up speed

of 0 to 40 kmph in five seconds. Its 2,500 Wh-patented battery offers the vehicle a range performance of 120 KM for a single charge in 'Eco Mode.' The scooter chassis is designed for higher speeds at par with the conventional ICE (Internal Combustion Engine) two-wheelers.

Etrance Neo will

be launched at ex-showroom price of Rs. 75,999 and comes with a patented battery and in-house technical developments for BTMS (Battery thermal management systems), to ensure a long life and high performance.

PURE EV, which raised funding in 2019 at a valuation of USD 35 million dollars, has

a 70,000 sq.ft. factory with manufacturing capacity of 2,000 EVs per month and a Battery Production Capacity of 10 MWh per month. The startup has dealers in 100 locations across 20 Indian States and recently launched its products in Nepal, with more export markets targeted in the near future.

Highlighting the unique features of 'Etrance Neo,' Mr. Rohit Vadem, Co-Founder and Chief Executive Officer, PUREV Startup, said, "The new model has better aerodynamic features for additional improvements in powertrain efficiency. The vehicle has faster pickup and longer range. It is being launched mainly targeting youngsters who will find this model very appealing."

The Key Features that set 'Etrance Neo' apart from its peers in EVs, as well as conventional two-wheelers, include

1. High efficiency drive train giving long range of 120 KM in Eco mode,
2. High torque motor giving best in class pickup,
3. Patented battery with long life cycles,
4. Sturdy mechanical chassis design at par with traditional ICE vehicles

# India past Covid peak

## Can control pandemic by Feb: Expert panel

**New Delhi:** A government-appointed scientific committee has said the Covid-19 pandemic seems to have peaked and is now on the decline and is likely to run its course by February next year.

The committee, headed by Professor M Vidyasagar of IIT Hyderabad, has used computer models to map the trajectory of the pandemic in the country. Its key finding has been that the disease is likely to have peaked in the middle of September and the total number of infections in India is unlikely to exceed 106 lakhs. So far, 75 lakh people in India have been infected, of which nearly 66 lakhs have recovered.

The committee claimed that the lockdown imposed in March has had a powerful impact on slowing



### LANDMARK FINDINGS

- Covid can be controlled by early next year with minimal active symptomatic infections by February-end
- Upcoming festival and winter season may increase the susceptibility to infection
- Relaxation in protective measures can lead to a significant rise, up to 26 lakh infections within a month
- 30% population are projected to have antibodies at present
- Cumulative mortality projected to be less than 0.04% of total infected

down the spread of the disease in the country. In the absence of the lockdown,

the death count would have gone up to 25 lakhs, it said. **Continued on Page 7**

### CITY LIGHTS

## IIT Hyd's Pure EV signs MoU with CSIR for LIB technology

IIT Hyderabad-incubated startup Pure EV is collaborating with CSIR-CECRI on indigenizing Lithium-Ion Battery (LIB) technology for electric vehicles. Pure EV has signed a MoU with CSIR-CECRI to undertake joint research on the



production of battery packs, validation of LIB cells and addressing the specific requirements to ensure the suitability of developed LIBs for critical performance at the Standard Operating Procedure (SoP) conditions. Lithium battery is the most reliable and commercially-viable choice for electric vehicles across the world. Currently, in India, Lithium cells are mainly imported from China, which is a very critical dependence necessary for final battery packs required for electric vehicles.

भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

#Moment of Pride

**IIT HYDERABAD**  
*Congratulates*

**Prof. Kanchana. V, Dept. of Physics for being chosen for the prestigious Fellowship of Royal Society of Chemistry (FRSC).**



Prof. Kanchana, V  
Head of Department, Department of Physics

**Dr. Kanchana. V.,**  
Professor,  
Department of Physics

**Dr. Avinash Eranki,**  
Assistant Professor,  
Department of Bio-Medical Engineering

भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

**IIT HYDERABAD**  
**Congratulate Dr. Avinash Eranki for being 2nd Young Investigator Award recipient to be sponsored by Bracco Suisse SA**



#Momentofpride

भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

**#MOMENT OF PRIDE**

IIT Hyderabad congratulates Prof. Subrahmanyam, Dept. of Chemistry for being chosen for the prestigious Fellowship of Royal Society of Chemistry (FRSC).




**Dr. Ch. Subrahmanyam,**  
Professor,  
Department of Chemistry

**Dr. Amirtham Rajagopal,**  
Professor,  
Department of Civil Engineering

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Indian Institute of Technology Hyderabad

**#MOMENT OF PRIDE**

IIT Hyderabad congratulates Prof. Amirtham Rajagopal, Dept. of Civil Engineering for being selected to serve as **Associate Editor** in the reputed "International Journal for computational methods in engineering science and Mechanics", a Taylor and Francis journal.



भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

**#MOMENT OF PRIDE**

**IIT Hyderabad congratulates**

**Dr. Chandra Shekhar Sharma**  
Associate Professor, Department of Chemical Engineering,  
Chairperson, Indian National Young Academy of Sciences  
(INIAS)  
Creative & Advanced Research Based On Nanomaterials  
(CARBON) Laboratory



**for being awarded the prestigious  
'Sarnajayanti Fellowship'**

**Dr. Chandra Shekhar Sharma,**  
Associate Professor,  
Department of Chemical Engineering.

**Mr. Alok Kumar Pandey,**  
BTech 2020 Graduate,  
Department of Chemical Engineering

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Indian Institute of Technology Hyderabad

**#Moment of Pride**

**IIT Hyderabad congratulates**

**Mr. Alok Kumar Pandey**  
(BTech 2020 Graduate, Dept. of Chemical Engineering)

**for being selected for the prestigious  
'TNAE Innovative Student Projects  
Award 2020'**



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Indian Institute of Technology Hyderabad

**#Moment of Pride**

**IIT Hyderabad congratulates**

**Mr. Chandrashekhar Lakavath,**  
PhD Scholar, Department of Civil Engineering

**for winning the first prize  
in the research work presentation (post graduate category)**

at  
**'CIVILCONCLAVE'**  
organised by IIT Roorkee



**Mr. Chandrashekhar Lakavath,**  
PhD Scholar,  
Department of Civil Engineering

**Dr. Mahendrakumar Madhavan,**  
Associate Professor,  
Department of Civil Engineering

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Indian Institute of Technology Hyderabad

**#Moment of Pride**

**IIT Hyderabad congratulates**

**Dr. Mahendrakumar Madhavan,**  
Associate Professor, Department of Civil Engineering

**for being selected to serve in the  
ASCE Cold Formed Steel Committee**



**IIT Hyderabad congratulates Prof. Tarun K. Panda (Dept. of Chemistry) for being one of the Top 5% of highly cited authors in Royal Society of Chemistry Journals 2019**



#Moment of Pride

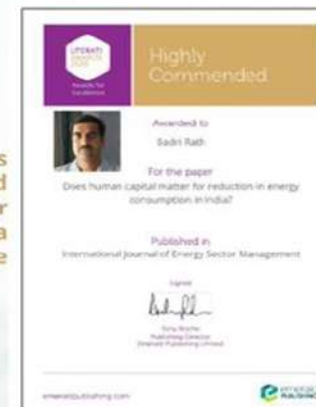
**Dr. Tarun K. Panda,**  
Professor,  
Department of Chemistry

**Dr. Badri Narayan Rath,**  
Professor,  
Dr. Vaseem Akram & Mr. Bhushan Praveen Jangam,  
Department of Liberal Arts

#Moment of Pride

**IIT HYDERABAD**  
*Congratulates*

Prof. Badri Narayan Rath and his students Dr. Vaseem Akram and Mr. Bhushan Praveen Jangam for their paper being selected as a Highly Commended Paper in the 2020 Emerald Literati Awards



#Moment of Pride

**IIT HYDERABAD**

*Congratulates*

Dr. Jyotsnendu Giri and his Team (Poulomi Polley, Ruby Singh, Suparna Basu, Sunil Yadava) for their paper published in Molecular Pharmaceutics 2019 being selected for Evonik RESOMER (R) award 2019 from Evonik Industries, Germany.



Dr. Jyotsnendu Giri



Poulomi Polley



Sunil K Yadava



Ruby Singh



Suparna M Basu

**Dr. Jyotsnendu Giri,**  
Associate Professor,  
Team Poulomi Polley, Ruby Singh, Suparna Basu, Sunil Yadava,  
Department of Bio-Medical Engineering

**Dr. Mudrika Khandelwal,**  
Associate Professor,  
Department of Materials Science and Metallurgical Engineering

#Moment of Pride

**IIT HYDERABAD**

*Congratulates*

Dr. Mudrika Khandelwal for being selected for NASI young scientist platinum jubilee awards 2020.





**Mr. Chaitanya Devaguptapu,**  
M.Tech, Research Assistant,  
Department of Computer Science & Engineering

**Team Pinaka,**  
Dr. Saurabh Joshi,  
Assistant Professor,  
Akash & Eti,  
Department of Computer Science & Engineering

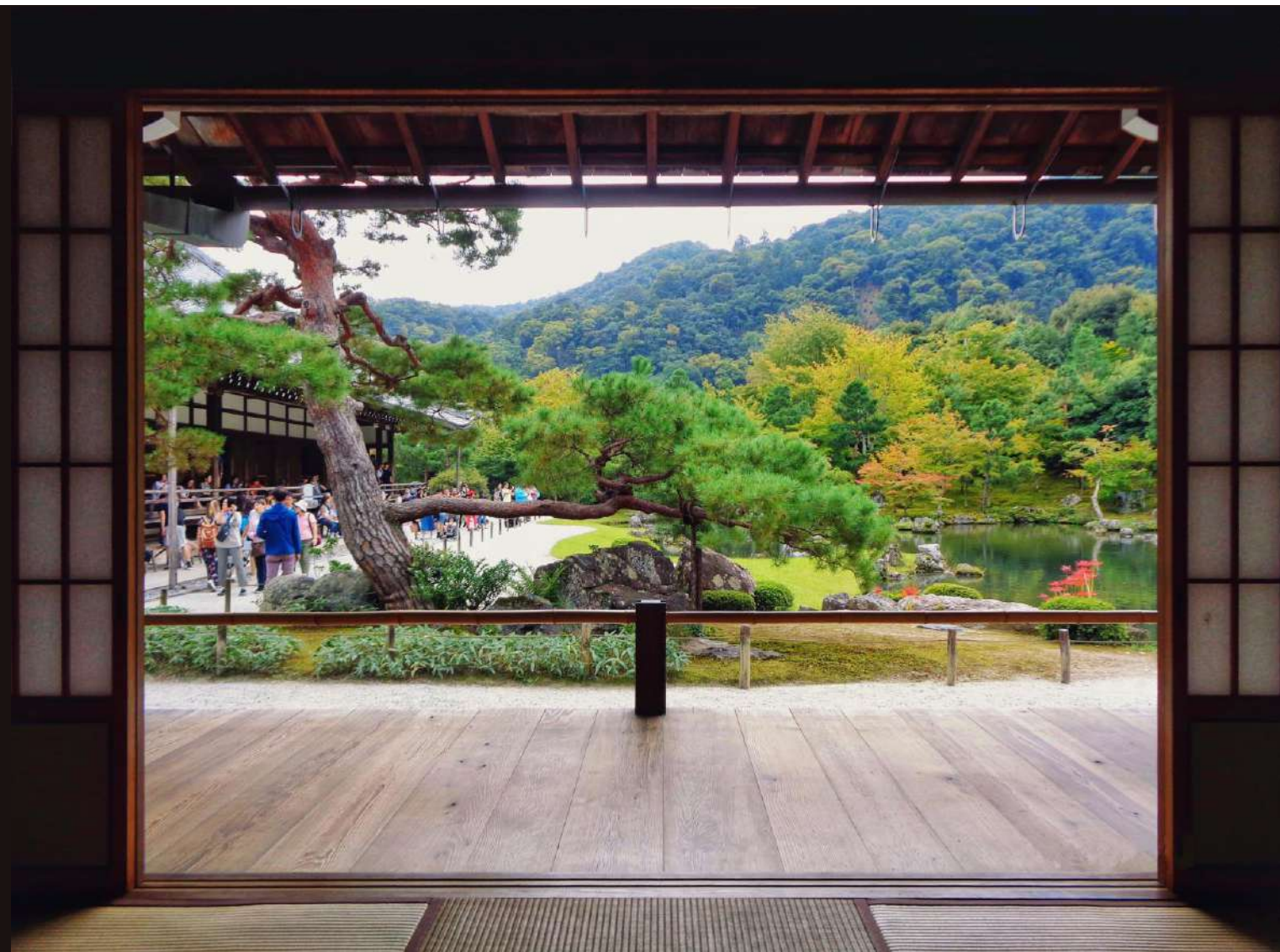


"A mesmerizing real nature's painting"  
Japan Photo Contest Online Exhibition 2020  
3rd Prize Winner  
Dr. Shiva Ji, Assistant Professor,  
Department of Design at IITH

**Description:** *I was amazed by the philosophy of bringing nature in the composition of natural elements in the frame at this Zen Buddhist temple - the painting has become alive to behold! The glance through perfect Hōjō hall wooden frames brings peace on glancing. I wish I could behold it forever!*

*The world-known Japanese gardens are traditional gardens whose designs are integral to Japanese aesthetics and philosophical ideas. It does not use artificial ornamentation and highlights only the natural landscape. Plants, trees and worn-out aged stone boulders are generally used by Japanese garden designers to suggest an ancient and faraway natural landscape and to express the fragility of existence as well as time's unstoppable advance. This is the most beautiful composition, of philosophical thoughts through the most natural means, what I've seen. The concentrated form of natural elements is designed with minimalism for inspiring reflection and meditation.*

**Place:** *Small Hōjō, Tenryū-ji Temple, Sagatenryuji Susukinobabacho, Kyoto, Japan*



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