Monthly Coverage Dossier
May 2017

IIT-Madras offers M Tech degree through remote learning

The first programme is for the automobile sector and the institute is planning to expand it to communication, information security and aerospace

IIT-M makes white light from pomegranate, turmeric extracts

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IIT Madras is a campus of choice for high ranking JEE students

Date: 5th May 2017
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Page no.: 16
Journalist: Prachi Verma & Rica Bhattacharyya
Professor: Prof. V Jagadeesh Kumar
Headline: IITs Tweaking Seats for Programmes in Line with Demand
URL: http://economictimes.indiatimes.com/news/industry/services/education/iits-tweaking-seats-for-programmes-in-line-with-demand/articleshow/58523440.cms

IITs Tweaking Seats for Programmes in Line with Demand

What's Hot, What's Not

IIT Delhi may lower number of seats in some streams in its B-Tech programmes that are not popular

IIT Kanpur to adjust or divert seats from less-popular programmes to more-popular ones

IIT Bombay introduced BS Economics & PhD in Centre for Policy Studies recently

IIT Madras to launch interdisciplinary dual-degree programmes as an option for existing students

Rica Bhattacharyya & Prachi Verma Dadhwal

Mumbai | New Delhi: Some of the country's premier technology institutes are tweaking the number of students in some of their courses, and/or, introducing new or interdisciplinary programmes in keeping with a government directive to plan their courses based on popularity and employability.

Indian Institutes of Technology (IITs) in Delhi and Kanpur, for example, plan to reduce the number of seats in unpopular courses and divert them to popular ones. The latter may even stop its nuclear engineering technology programme due to lack of interest from students.

"As the employment opportunities are limited under this programme, we are looking at merging this with mechanical engineering," said Manindra Agrawal, deputy director at IIT Kanpur. "A call would be taken soon on this," he said.

"Another reason for merging this programme with mechanical engineering is the fact that we have not been able to get teaching faculty," Agrawal said.

IIT Kanpur is also reducing the number of seats in metallurgical engineering, which is not seen to be so popular, and offering as many seats in more popular programmes.

The ministry of human resources development (MHRD) recently told all centrally funded technical institutions, including IITs, to close centres and end courses that have seen a decline in the number of applicants in the past three years. The ministry also told them to introduce new courses and disciplines only after analysing market opportunity, employability and requirement of higher education.

IIT Delhi is considering lowering the number of seats in some streams in its BTech programmes that are currently not popular. However, the total number of seats under B-Tech at IIT Delhi would not reduce as the institute plans to increase seats in more popular programmes. "The popularity of a programme much depends on the employment prospects," said V Ramgopal Rao, director at IIT Delhi.

He said the institute does not plan to shut down any centre.

An IIT Bombay spokesperson said the issue of revision in seats allocation or closure of any discipline does not arise because all the seats get allotted in the joint counselling process.

The institute is considering new programmes in line with government directive. It introduced BSc Economics and PhD in Centre for Policy Studies from the autumn session of 2017.

The HRD ministry recently told all centrally funded technical institutions to close centres and end courses that have seen a decline in the number of applicants in the past three years

The proposal for new programmes is mooted by the programmes committee of a department, which, in turn, is examined by the programmes committee of the institute for possible recommendation to the senate. Senate takes the final decision.

IIT Madras, too, does not plan to reduce the number of seats in any course or stream. It also has no immediate plans to introduce new programmes, said V Jagadeesh Kumar, dean (academic courses).

However, IIT Madras is introducing interdisciplinary dual-degree programmes as an option for existing students to choose. "We also plan to start online MTech programmes for industry personnel," Kumar said.

Date: 5th May 2017
Publication: The Hindu
Edition: Chennai
Page no.: 3
Journalist: NA
Headline: Carbon Zero Challenge for students

Carbon Zero Challenge for students

CHENNAI

IIT-Madras and the U.S. Consulate of Chennai, along with Industrial Waste Management Association, Energy Alternatives India and Ventureast, have launched Carbon Zero Challenge, a competition to identify solutions to energy-related problems. Participants should submit ideas on czeroc.com/ before May 31.

Date: 8th May 2017
Publication: The Times of India- Education Times
Edition: Delhi
Page no.: 3
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: Degree Upgrade

DEGREE UPGRADE

From the upcoming 2017 academic session, BTech students of IIT Madras will have the option to upgrade to an MTech programme and get a five-year dual degree in BTech-MTech by indicating the same in their third year. Right now, this opportunity to undertake the MTech degree is available in four areas — advanced materials & nano technology, biomedical engineering, computational engineering and data science — which are highly sought after domains at present. Gradually it may expand to include more areas. Under this, a BTech student from any branch of engineering can upgrade to these, provided they meet certain academic requirements. "This initiative will not only enable students to study and earn an added qualification in an area of their choice, but will be also useful to those who may have missed out getting their preferred discipline at the time of entering the institute. For instance, a student pursuing BTech in metallurgy maybe able to pursue BTech-MTech (DD) in data sciences by opting for this scheme," said Bhaskar Ramamurthi, director of IIT M.

Date: 9th May 2017
Publication: The Economic Times
Edition: Mumbai
Page no.: 14
Journalist: Prachi Verma & Rica Bhattacharyya
Professor: Prof. V Jagadeesh Kumar
Headline: IITs Tweaking Seats for Programmes in Line with Demand
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Date: 10th May 2017
Publication: ET Now
Edition: Electronic
Journalist: NA
Professor: Prof. Krishnan Balasubramanian
Headline: IITs on global landscape: Views from IIT Delhi, Bombay, Madras

Date: 10th May 2017
Publication: Vistara
Edition: Magazine
Page no.: 18
Journalist: NA
Headline: IIT Madras Ranked the Best in India

IIT Madras Ranked the Best in India

Ranked first in the Engineering category under the National Institutional Rankings Framework (NIRF) by the HRD Ministry in 2016, Indian Institute of Technology Madras has much more to it than just academics. The Institute is known specifically for its translational and transformational research and innovation. It has come up with some path-breaking innovations like Amrit Nanotechnology-based water purifier that removes arsenic from water. The Institute takes a lot of pride in its alumni spread across the globe, with several of them at leadership positions in academia, research, industry, business and in the start-up space.

Date: 11th May 2017
Publication: The Times of India
Edition: Kochi
Page no.: 8
Journalist: Manash Gohain
Professor: Prof. Bhaskar Ramamurthi
Headline: IIT-Madras offers M Tech degree through remote learning

IIT-Madras offers M Tech degree through remote learning

Manash.Gohain
@timesgroup.com

New Delhi: You can now get an M Tech degree from Indian Institute of Technology, Madras, without being physically present on the campus and at your own pace.

In a first of its kind initiative, IIT, Madras, has taken its teaching process out of the confines of the campus. It has recruited 31 M Tech students who will not have anything to do within the physical boundaries of the campus but will complete their course from their workplace. The first programme is for the automobile sector and the institute is planning to expand it to communication, information security and aerospace.

User-oriented impact programmes, tailor-made for corporate employees, are in practice for some time now.

Corporates sponsor fresh graduates as well as employees. However, till now they are required spend a year in the campus.

"The programme we are launching is M Tech in automotive technology for the industry employees who wish to upgrade their qualification and skills. A part of the curriculum is common to what we teach at IIT, Madras, and a part if it will be tailored to their specific needs," said IIT-M Director Bhaskar Ramamurthy.

In this model, a coordinator and classroom would be set up at the industry location and teaching will be imparted by IIT-M faculty in the evenings.

This doesn't require employees to take leave or travel to other locations.

The first programme is for the automobile sector and the institute is planning to expand it to communication, information security and aerospace

Date: 12th May 2017
Publication: The Times of India
Edition: Delhi/Mumbai/Bangalore/Ahmedabad/Hyderabad/Chennai
Page no.: 17
Journalist: Manash Pratim Gohain
Professor: Prof. Bhaskar Ramamurthi
Headline: In a first, IIT Madras offers M Tech degree through remote learning
URL: http://timesofindia.indiatimes.com/home/education/in-a-first-iit-madras-offers-m-tech-degree-through-remote-learning/articleshow/58635722.cms

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Date: 12th May 2017
Publication: Business Insider
Edition: Online
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: IIT Madras is offering M. Tech degree through distance learning
URL: http://www.businessinsider.in/IIT-Madras-is-offering-M-Tech-degree-through-distance-learning/articleshow/58641485.cms

IIT Madras is offering M. Tech degree through distance learning

Getting a degree from one of the most prestigious engineering colleges, and that too without attending classes in the campus, is about to become a reality.

IIT Madras is now offering a M. Tech degree through distance learning process, a first of its kind initiative.

In the first step, 31 M. Tech students have been recruited for the automobile sector who will not be physically present inside the campus and would rather complete their course from their workplace.

The programme is set to be expanded to communication, information security and aerospace sectors as well.

In the recent past, there has been a trend of user-oriented impact programmes, which are custom-made for corporate employees. Under these programmes, corporate companies sponsor the education of fresh graduates and employees. However, till now they are required spend a year in the campus.

"The programme we are launching is M. Tech in automotive technology for the industry employees who wish to upgrade their qualification and skills. A part of the curriculum is common to what we teach at IIT, Madras, and a part if it will be tailored to their specific needs," said IIT-M Director Bhaskar Ramamurthi .

The new programme would place a coordinator and classroom at the industry location, where evening classes would be conducted by IIT-M faculty till the end of the course.

Date: 17th May 2017
Publication: Gadgets Now
Edition: Online
Journalist: Manash Pratim Gohain
Professor: Prof. Bhaskar Ramamurthi
Headline: In a first, IIT Madras offers M Tech degree through remote learning
URL: http://www.gadgetsnow.com/tech-news/in-a-first-iit-madras-offers-m-tech-degree-through-remote-learning/articleshow/58638984.cms

In a first, IIT Madras offers M Tech degree through remote learning

You can now get an M Tech degree from Indian Institute of Technology (Madras) without being physically present on the campus and at your own pace.

In a first of its kind initiative, IIT Madras has taken its teaching process out of the confines of the campus. It has recruited 31 M Tech students who will not have anything to do within the physical boundaries of the campus but will complete their course from their workplace. The first programme is for the automobile sector and the institute is planning to expand it to communication, information security and aerospace.

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Date: 25th May 2017
Publication: Samachar Kranti
Edition: Kota
Page no.: 6
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: IIT Madras at the top

भारतीय प्रौद्योगिकी संस्थान मद्रास सदैव अग्रणी

चेन्नै। निरंतर दो साल से देश के शीर्षइंजीनियरिंग कॉलेजों में स्थान प्राप्त और विश्वविद्यालय आधारित प्रथम भारतीय रिसर्च पार्क की जन्मभूमि के तौर पर, भारतीय प्रौद्योगिकी संस्थान मद्रास छात्रों के लिए रोजगार, अनुसंधान, उद्यमिता, अकादमिक तथा खेल उत्कृष्टता में बहुत से अनूठे अवसर प्रदान करता है। प्रो. भास्कर रामामूर्ति, डायरेक्टर, IIT मद्रास कहते हैं कि संस्थान छात्रों को अलग तरह से कुशल बना रहा है। "यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाला, और संपदा सृजक बनना होगा।"हम एज्जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं। चाहे यह प्लेसमेंट, रिसर्च, अकादमिक कार्यक्रमों या खेलों की बात हो, एज्र मद्रास सदैव अग्रणी रहता है।

Date: 25th May 2017
Publication: Kota Reporter
Edition: Kota
Page no.: 5
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: IIT Madras is making students skilled

अलग तरह से छात्रों को कुशल बना रहा IIT मद्रास

कोटा। निरंतर दो साल से देश के शीर्ष इंजीनियरिंग कॉलेजों में स्थान प्राप्त और विश्वविद्यालय आधारित प्रथम भारतीय रिसर्च पार्क की जन्मभूमि के तौर पर, भारतीय प्रौद्योगिकी संस्थान मद्रास छात्रों के लिए रोजगार, अनुसंधान, उद्यमिता, अकादमिक तथा खेल उत्कृष्टता में बहुत से अनूठे अवसर प्रदान करता है। प्रो. भास्कर रामामूर्ति, डायरेक्टर, IIT मद्रास कहते हैं कि संस्थान छात्रों को अलग तरह से कुशल बना रहा है। "यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाले, और संपदा सृजक बनना होगा।" हम एक्जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं।

Date: 25th May 2017
Publication: Samachar Jagat
Edition: Jaipur
Page no.: 6
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: IIT Madras offers great opportunities to students in terms of job, research and academics

आईआईटी मद्रास देता है छात्रों को रोजगार, अनुसंधान, अकादमिक कार्यक्रमों के श्रेष्ठ अवसर

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प्रो. भास्कर रामामूर्ति, डायरेक्टर, आईआईटी मद्रास कहते हैं कि संस्थान छात्रों अलग तरह से कुशल बना रहा है। ''यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाला, और संपदा सृजक बनना होगा।'' हम आईआईटी जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं। चाहे यह प्लेसमेंट, रिसर्च, अकादमिक कार्यक्रमों या खेलों की बात हो, आईआईटी मद्रास सदैव अग्रणी रहता है।

भारत सरकार द्वारा भारतीय प्रौद्योगिकी संस्थान मद्रास की स्थापना 1959 में राष्ट्रीय महत्व के संस्थान के तौर पर की गई थी। प्रौद्योगिकी और विज्ञान के विभिन्न क्षेत्रों में संस्थान द्वारा की गई गतिविधियों को 16 अकादमिक विभागों तथा कई उन्नत अंतरअनुशासनिक अनुसंधान अकादमिक केंद्रों में अंजाम दिया गया है। अध्यापन तथा अनुसंधान के लिए संस्थान में 100 से ज्यादा पूर्णतया सज्जित प्रयोगशालाएं हैं। आईआईटी को दुनिया भर में इसके बौद्धिक नेतृत्व और इंजीनियरिंग तथा शुद्ध विज्ञान के हर एक प्रमुख विषय में सतत् नवोन्मेश के लिए मान्यता प्राप्त है।

आईआईटी को भारत सरकार के मानव संसधान विकास मंत्रालय के राष्ट्रीय संस्थागत रैंकिंग फ्रेमवर्क वेबसाइट जारी की गई रैंकिंग में 2016 तथा 2017 के लिए इंजीनियरिंग संस्थाओं में पहला स्थान और समग्र संस्थानों की रैंकिंग के लिए 2017 में दूसरा स्थान दिया गया है।

Date: 25th May 2017
Publication: Jaipur Ki Awaaz
Edition: Jaipur
Page no.: 2
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: IIT Madras offers great opportunities to students in terms of job, research and academics

आईआईटी मद्रास देता है छात्रों को रोजगार, अनुसंधान, अकादमिक कार्यक्रमों के श्रेष्ठ अवसर

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प्रो. भास्कर रामामूर्ति, डायरेक्टर, आईआईटी मद्रास कहते हैं कि संस्थान छात्रों अलग तरह से कुशल बना रहा है। ''यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाला, और संपदा सृजक बनना होगा।'' हम आईआईटी जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं। चाहे यह प्लेसमेंट, रिसर्च, अकादमिक कार्यक्रमों या खेलों की बात हो, आईआईटी मद्रास सदैव अग्रणी रहता है। भारत सरकार द्वारा भारतीय प्रौद्योगिकी संस्थान मद्रास की स्थापना 1959 में राष्ट्रीय महत्व के संस्थान के तौर पर की गई थी। प्रौद्योगिकी और विज्ञान के विभिन्न क्षेत्रों में संस्थान द्वारा की गई गतिविधियों को 16 अकादमिक विभागों तथा कई उन्नत अंतरअनुशासनिक अनुसंधान अकादमिक केंद्रों में अंजाम दिया गया है। अध्यापन तथा अनुसंधान के लिए संस्थान में 100 से ज्यादा पूर्णतया सज्जित प्रयोगशालाएं हैं। आईआईटी को दुनिया भर में इसके बौद्धिक नेतृत्व और इंजीनियरिंग तथा शुद्ध विज्ञान के हर एक प्रमुख विषय में सतत् नवोन्मेश के लिए मान्यता प्राप्त है। आईआईटी को भारत सरकार के मानव संसधान विकास मंत्रालय के राष्ट्रीय संस्थागत रैंकिंग फ्रेमवर्क वेबसाइट जारी की गई रैंकिंग में 2016 तथा 2017 के लिए इंजीनियरिंग संस्थाओं में पहला स्थान और समग्र संस्थानों की रैंकिंग के लिए 2017 में दूसरा स्थान दिया गया है।

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आईआईटी मद्रास देता है छात्रों को रोजगार, अनुसंधान, अकादमिक कार्यक्रमों के श्रेष्ठ अवसर

चैन्नई। निरंतर दो साल से देश के शीर्ष इंजीनियरिंग कॉलेजों में स्थान प्राप्त और विश्वविद्यालय आधारित प्रथम भारतीय रिसर्च पार्क की जन्मभूमि के तौर पर, भारतीय प्रौद्योगिकी संस्थान मद्रास छात्रों के लिए रोजगार, अनुसंधान, उद्यमिता, अकादमिक तथा खेल उत्कृष्टता में बहुत से अनूठे अवसर प्रदान करता है।

प्रो. भास्कर रामामूर्ति, डायरेक्टर, आईआईटी मद्रास कहते हैं कि संस्थान छात्रों अलग तरह से कुशल बना रहा है। ''यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाला, और संपदा सृजक बनना होगा।'' हम आईआईटी जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं। चाहे यह प्लेसमेंट, रिसर्च, अकादमिक कार्यक्रमों या खेलों की बात हो, आईआईटी मद्रास सदैव अग्रणी रहता है।

भारत सरकार द्वारा भारतीय प्रौद्योगिकी संस्थान मद्रास की स्थापना 1959 में राष्ट्रीय महत्व के संस्थान के तौर पर की गई थी। प्रौद्योगिकी और विज्ञान के विभिन्न क्षेत्रों में संस्थान द्वारा की गई गतिविधियों को 16 अकादमिक विभागों तथा कई उन्नत अंतरअनुशासनिक अनुसंधान अकादमिक केंद्रों में अंजाम दिया गया है। अध्यापन तथा अनुसंधान के लिए संस्थान में 100 से ज्यादा पूर्णतया सज्जित प्रयोगशालाएं हैं। आईआईटी को दुनिया भर में इसके बौद्धिक नेतृत्व और इंजीनियरिंग तथा शुद्ध विज्ञान के हर एक प्रमुख विषय में सतत् नवोन्मेश के लिए मान्यता प्राप्त है।

आईआईटी को भारत सरकार के मानव संसधान विकास मंत्रालय के राष्ट्रीय संस्थागत रैंकिंग फ्रेमवर्क वेबसाइट जारी की गई रैंकिंग में 2016 तथा 2017 के लिए इंजीनियरिंग संस्थाओं में पहला स्थान और समग्र संस्थानों की रैंकिंग के लिए 2017 में दूसरा स्थान दिया गया है।

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आईआईटी मद्रास देता है छात्रों को रोजगार

चेन्नई (एजेन्सी)। निरंतर दो साल से देश के शीर्ष इंजीनियरिंग कॉलेजों में स्थान प्राप्त और विश्वविद्यालय आधारित प्रथम भारतीय रिसर्च पार्क की जन्मभूमि के तौर पर, भारतीय प्रौद्योगिकी संस्थान मद्रास छात्रों के लिए रोजगार, अनुसंधान, उद्यमिता, अकादमिक तथा खेल उत्कृष्टता में बहुत से अनूठे अवसर प्रदान करता है। प्रो. भास्कर रामामूर्ति, डायरेक्टर, आईआईटी मद्रास कहते हैं कि संस्थान छात्रों अलग तरह से कुशल बना रहा है। "यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाला, और संपदा सृजक बनना होगा।" हम आईआईटी जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं। चाहे यह प्लेसमेंट, रिसर्च, अकादमिक कार्यक्रमों या खेलों की बात हो, आईआईटी मद्रास सदैव अग्रणी रहता है। भारत सरकार द्वारा भारतीय प्रौद्योगिकी संस्थान मद्रास की स्थापना 1959 में राष्ट्रीय महत्व के संस्थान के तौर पर की गई थी। प्रौद्योगिकी और विज्ञान के विभिन्न क्षेत्रों में संस्थान द्वारा की गई गतिविधियों को 16 अकादमिक विभागों तथा कई उन्नत अंतरअनुशासनिक अनुसंधान अकादमिक केंद्रों में अंजाम दिया गया है। अध्यापन तथा अनुसंधान के लिए संस्थान में 100 से ज्यादा पूर्णतया सज्जित प्रयोगशालाएं हैं।

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आईआईटी मद्रास देता है छात्रों को रोजगार, अनुसंधान, अकादमिक कार्यक्रमों के श्रेष्ठ अवसर

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आईआईटी को भारत सरकार के मानव संसाधन विकास मंत्रालय के राष्ट्रीय संस्थागत रैंकिंग फ्रेमवर्क वेबसाइट जारी की गई रैंकिंग में 2016 तथा 2017 के लिए इंजीनियरिंग संस्थाओं में पहला स्थान और समग्र संस्थानों की रैंकिंग के लिए 2017 में दूसरा स्थान दिया गया है।

गृहशक्ति ने

मुंबई । फुलर्टन इंडिया होम फ
लिमिटेड, जिसका परिचालन गृहश
अंतर्गत किया जाता है, ने गृहलक्ष्मी की
जाने की घोषणा की है। यह एक ऋण
विशेष रूप से महिला कर्जदारों के लि
गया है। यह उत्पाद शहरी एवं अर्द्ध-
वेतनभोगी और उद्यमी महिलाओं को
के लिये एक घर बनाने में मदद
प्रोत्साहित करता है। इन ऋणों की ब्या
कम है। आवासीय ऋण के लिये ब्या

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आईआईटी मद्रास देता है छात्रों को

रोजगार, अनुसंधान, अकादमिक कार्यक्रमों के श्रेष्ठ अवसर

चैन्नई। निरंतर दो साल से देश के शीर्ष इंजीनियरिंग कॉलेजों में स्थान प्राप्त और विश्वविद्यालय आधारित प्रथम भारतीय रिसर्च पार्क की जन्मभूमि के तौर पर, भारतीय प्रौद्योगिकी संस्थान मद्रास छात्रों के लिए रोजगार, अनुसंधान, उद्यमिता, अकादमिक तथा खेल उत्कृष्टता में बहुत से अनूठे अवसर प्रदान करता है।

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Headline: IIT Madras ahead in providing job opportunities

रोजगार अवसर प्रदान करने मे अग्रणी भारतीय प्रौद्योगिकी संस्थान मद्रास

चेन्नै। निरंतर दो साल से देश के शीर्ष इंजीनियरिंग कॉलेजों में स्थान प्राप्त और विश्वविद्यालय आधारित प्रथम भारतीय रिसर्च पार्क की जन्मभूमि के तौर पर, भारतीय प्रौद्योगिकी संस्थान मद्रास छात्रों के लिए रोजगार, अनुसंधान, उद्यमिता, अकादमिक तथा खेल उत्कृष्टता में बहुत से अनूठे अवसर प्रदान करता है। प्रो. भास्कर रामामूर्ति, डायरेक्टर, IIT मद्रास कहते हैं कि संस्थान छात्रों को अलग तरह से कुशल बना रहा है। "यहां के छात्रों को नौकरी प्रदाता, समस्याओं का समाधान करने वाला, और संपदा सृजक बनना होगा।"हम IIT जैसे संस्थानों को नए क्षेत्रों में नौकरियां उत्पन्न करने वाले इंजन के रूप में देखते हैं। चाहे यह प्लेसमेंट, रिसर्च, अकादमिक कार्यक्रमों या खेलों की बात हो, IIT मद्रास सदैव अग्रणी रहता है।

IIT Madras is a multi-cultural campus

Date: 3rd May 2017
Publication: The Hindu
Edition: Chennai
Page no.: 20
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: The IIT-Chemplast ground has a new name
URL: http://www.thehindu.com/todays-paper/tp-sports/the-iit-chemplast-ground-has-a-new-name/article18366034.ece

The IIT-Chemplast ground has a new name

Venue will be re-laid with working starting in June

SPECIAL CORRESPONDENT
CHENNAI

In a pleasant function, here on Tuesday, the IIT-Chemplast ground was re-named K.S. Narayanan Centre for Cricketing Excellence.

N. Sankar, Chairman, Sanmar Group, was greeted by players of Chemplast-Sanmar's two TNCA first division teams, Jolly Rovers and Alwarpet, as he and IIT Madras Director, Professor Bhaskar Ramamurthi, inaugurated the newly renamed ground. The ground will be re-laid, with working starting in June. Bharat Reddy, President Corporate Affairs, Chemplast-Sanmar, said, "The ground has been extensively used in the last 18 years and the lack of water too has taken a heavy toll on the outfield. It has been decided to resurrect the ground to its old charm and beauty."

He added, "IITM, on its side, has assured constant supply of recycled water to maintain the ground."

The ground and its facilities, including the lovely pavilion and the varied practice pitches, had helped many cricketers such as R. Ashwin, M. Vijay, Piyush Chawla, Jayant Yadav, K. Vigensh and T. Natarajan evolve, Bharat Reddy said.

He highlighted the role of the support staff K. Ram Mohan Rao, G. Jayakumar, N. Ajay Radha, Shymsundar, Vasanthraj and Dhanasekar in guiding the cricketers.

He said, "Most player have benefited from Jayakumar's one-on-one sessions. M. Vijay is a huge beneficiary of the same. Jayakumar is regarded one of the best batting coaches."

The relationship with IITM had grown over the years, he said.

"They have always come forward to help with our requests."

Reddy said, "Chemplast firmly believes that the best of facilities should be provided to budding cricketers to express their game and to bring excellence on the field."

He added, "All this is possible only because of the passion displayed towards cricket and sports by the late K.S. Narayanan, and subsequently N. Sankar, N. Kumar and Vijay Shankar."

Re-christened arena: N. Sankar, centre, along with Bhaskar Ramamurthi, left, and Vijay Sankar survey the K.S. Narayanan Centre for Cricketing Excellence. • M. VEDAI

Date: 3rd May 2017
Publication: The New Indian Express
Edition: Chennai
Page no.: 15
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: Hub of cricket rechristened after leading light in golden jubilee celebrations
URL: http://www.newindianexpress.com/sport/cricket/2017/may/03/hub-of-cricket-rechristened-after-leading-light-in-golden-jubilee-celebrations-1600385.html

LOCAL EXPRESS

Hub of cricket rechristened after leading light in golden jubilee celebrations

CHEMPLAST Sanmar Limited, flagship company of the Sanmar Group, is all set for golden jubilee celebrations on May 6. The group runs the Jolly Rovers and A Newport CC clubs in the TNCA Senior Division League and their home ground is ITT Chemplast.

On Tuesday, as part of golden jubilee celebrations, the group renamed the ITT Chemplast Sanmar cricket ground as KS Narayanan Centre for Cricketing Excellence. N Sankar, chairman of Sanmar Group and Bhaskar Ramamurthi, director of IIT-M, unveiled a plaque to mark the occasion. India Test opener Murali Vijay and players who represent the two clubs were present on the occasion. "KS Narayanan, former chairman of Sanmar Group, was a patron of sports. So it is befitting that the ground is named after him," said Bharath Reddy, in charge of cricket and president, corporate affairs, at Chemplast Sanmar.

International R Ashwin, Piyush Chawla, Jayant Yadav are some of those who play for Jolly Rovers. In last year's series against England, Vijay, Ashwin and Yadav were part of the XI in the Mumbai Test, which is a unique feat for a club.

The ground too is an important one and has hosted several first-class matches over the years. The Indian team too has trained at this ground, with Sachin Tendulkar being bowled over by the severe atmosphere.

Income Tax win

Anand Subramanian (60) and Mann R Bohra (61) helped Income Tax beat Integral Coach Factory by 80 runs in the Venkateswara Cup, organised by TNCA.

Officials at the renaming of the ITT Chemplast ground on Tuesday | B SAMPATH KUMAR

Date: 3rd May 2017
Publication: The New Indian Express
Edition: Chennai
Page no.: 4
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: State-of-art ZLD lab at IIT
URL: http://www.newindianexpress.com/states/tamil-nadu/2017/may/03/state-of-art-zld-lab-at-iit-1600356.html

State-of-art ZLD lab at IIT

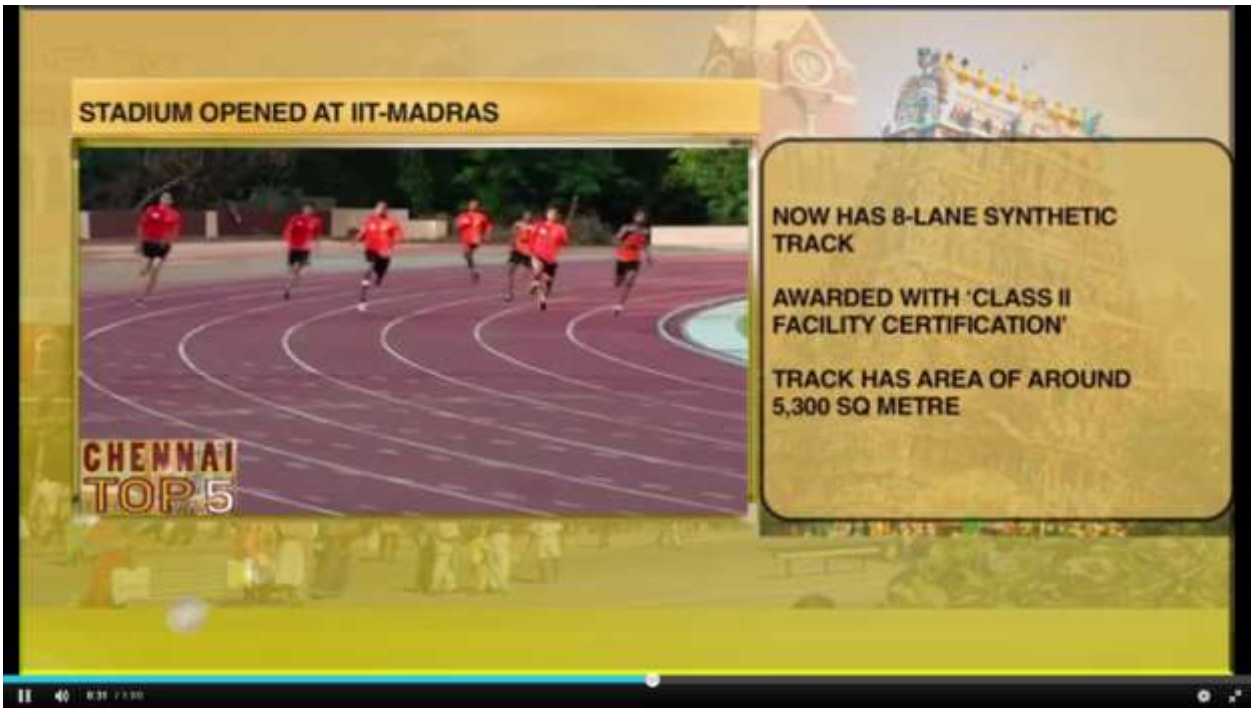
A state-of-art zero liquid discharge (ZLD) research laboratory, inaugurated at IIT will work with user industries to provide necessary testbed facilities for evaluating various new/modified technologies related to ZLD development for target industries. The objective of the facility is to provide solutions to industry specific needs. The chemical composition of effluents from different industries are unique and needed a special focus. Five PhD students are manning the laboratory and trying different membranes on effluent types. The laboratory has an UV photocatalytic reactor, which can treat even emerging effluents. Bhaskar Ramamurthi, director, IIT Madras, said IIT's Centre for Urbanisation Building and Environment (CUBE) would undertake pilot scale trials of the innovation technologies at industrial sites also. The lab was sponsored and inaugurated by N Sankar, chairman, The Sanmar Group. ENS

IIT Madras Director Bhaskar Ramamurthi (second left) with N Sankar, chairman, Sanmar Group, in the city on Tuesday | D SAMPATHKUMAR

Date: 3rd May 2017
Publication: The Times of India
Edition: Chennai
Page no.: 7
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Stadium to be inaugurated at IIT-M

Stadium to be inaugurated at IIT-M: Indian Institute of Technology Madras will be inaugurating its new stadium - 'Manohar C Watsa Stadium' at its campus on Wednesday. It will be inaugurated by Prem Watsa,Chairman of Fairfax Financial Holdings. The stadium will include a state-of- the-art 400 meter eight-lane synthetic track

Date: 4th May 2017
Publication: News X
Edition: Electronic
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Chennai Wrap- stadium opened at IIT-Madras
URL: http://www.newsx.com/video-gallery/159845-chennai-wrap-rk-nagar-bypoll-bribery-case-stadium-opened-iit-madras



Date: 4th May 2017
Publication: DD Podhgai
Edition: Electronic
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: Prem Watsa inaugurates stadium at IIT Madras

Date: 4th May 2017
Publication: Deccan Chronicle
Edition: Chennai
Page no.: 5
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Renovated stadium at IIT-M inaugurated

Renovated stadium at IIT-M inaugurated

Chennai: The renovated stadium with a state-of-the-art synthetic track at IIT-Madras campus here was inaugurated on Wednesday. The stadium is named Manohar C Watsa Stadium after the father of Prem Watsa, a 1971-batch chemical engineering graduate of IIT Madras, who inaugurated the stadium. Prem Watsa, chairman of Fairfax Financial Holdings, is one of the 150 alumni to be designated as a Distinguished Alumnus by the institute. A press release said the track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform. Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track. Facilities for other disciplines such as shot-put, football, and cricket have also been provided inside the inner bowl of the track, it said. In addition, the gallery has been renovated with new flooring and an entrance gate with access to the differently-abled. The track has been awarded Class II Athletic Facility Certification by the International Association of Athletic Federations (IAAF).

Date: 4th May 2017
Publication: Business Standard
Edition: Online
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Renovated stadium at IIT-Madras inaugurated
URL: http://www.business-standard.com/article/pti-stories/renovated-stadium-at-iit-madras-inaugurated-117050301170_1.html

Renovated stadium at IIT-Madras inaugurated

The renovated stadium with a state-of-the-art synthetic track at IIT-Madras campus here was inaugurated today.

The stadium is named "Manohar C Watsa Stadium" after the father of Prem Watsa, a 1971-batch Chemical Engineering graduate of IIT Madras, who inaugurated the stadium.

Prem Watsa, Chairman of Fairfax Financial Holdings, is one of the 150 alumni to be designated as a "Distinguished Alumnus" by the Institute.

A press release said the track area is about 5,300 sq.M. With provisions for long jump, triple jump and a pole vault platform.

Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track.

Facilities for other disciplines such as shot-put, football, and cricket have also been provided inside the inner bowl of the track, it said.

In addition, the gallery has been renovated with new flooring and an entrance gate with access to the differently-abled.

The track has been awarded "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF).

Date: 4th May 2017
Publication: India Education Diary
Edition: Online
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: Prem Watsa inaugurates stadium at IIT Madras
URL: https://indiaeducationdiary.in/prem-watsa-inaugurates-stadium-iit-madras/

Prem Watsa inaugurates stadium at IIT Madras

Chennai, May 03, 2017: Shri Prem Watsa, Chairman of Fairfax Financial Holdings, inaugurated the Manohar C Watsa Stadium at the Indian Institute of Technology Madras during a function held here on Wednesday, May 03, 2017. A 1971-batch Chemical Engineering graduate of IIT Madras, Shri Prem Watsa is one of only 150 alumni to be designated as a "Distinguished Alumnus" by the Institute.

Shri Prem Watsa's generous contribution has enabled the Institute to renovate the Institute's stadium and construct a state-of-the-art 400-meter 8-lane synthetic track in the stadium, in memory of his father Manohar C Watsa.

The track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform. Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track. Facilities for other sports such as shot-put, football, and cricket have also been provided inside the inner bowl of the track.

In addition, the stadium spectators' gallery has been renovated with new flooring and an entrance gate with access for the differently abled. A walker pathway, with a width of 3m, has also been constructed along the periphery of the synthetic track. The track has been awarded with "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF).

The inauguration comes in time for the 52nd Annual Inter-IIT Sports Meet, scheduled to be held on the IIT Madras campus during December 2017. It is worth noting that for nine consecutive years, from 1972 to 1980, IIT Madras has won the General Championship, more often than any other IIT.

Speaking on the occasion, Shri Prem Watsa, Chairman of Fairfax Financial Holdings, recalled that during his time at IIT-Madras, the sports team unexpectedly won the Inter-IIT Sports Meet. And when he returned to IIT-Madras campus about nine years later, he had learned that IIT-Madras had not lost even once in that nine-year period. He told the students to win the Inter-IIT again this year and "make Prof. Bhaskar more proud that he already is." He also added the five years he spent at IIT-Madras were the best years of his life.

Prof. Bhaskar Ramamurthi, Director of the Indian Institute of Technology Madras, pointed out that Shri Prem Watsa was the Sports Secretary in 1971.

Speaking on the occasion, Prof. Bhaskar Ramamurthi, Director of the Indian Institute of Technology Madras, said “Our students have benefitted greatly from Mr. Prem Watsa’s generosity, and this stadium with its world-class facilities is one more example of his munificence. We are grateful to him. We are proud of his accomplishments and our students consider him a role model.”

Commenting on IIT Madras’ success over the years, and the role the renovated Stadium will play in future years, Prof. Santhosh, Faculty Advisor-Sports, IIT Madras, mentioned that “This synthetic track will provide a unique experience for the athletes of our institute as well as the those from other IITs, and we expect a few records to be broken during this year’s Inter IIT Sports meet at IIT Madras”.

Prof. Ligy Philip, Chairperson of the Engineering Unit, IIT Madras, expressed pride in how the Stadium had turned out, observing that “the track and associated facilities were developed on par with international standards in the midst of forest cover. The development was made in such a way as to not hinder the movement of wildlife on campus.”

Prof. R Nagarajan, Dean of International and Alumni Relations, IIT Madras, welcomed the benevolent gesture by Shri Prem Watsa as another instance of an alumnus reconnecting with a personal touch. “Prem was a sportsman in his time as a student, and this reflects his desire to give back in a way that resonated with him. He was the Sports Secretary of Jamuna Hostel, and also later the Institute Sports Secretary. He used to play hockey for the institute, and also quite a lot of table tennis. In fact, IIT Madras started winning the Inter-IIT trophy during his tenure as the Institute Sports Secretary. So, this is something very special to him and to the Institute.”

Date: 4th May 2017
Publication: DT Next
Edition: Chennai
Page no.: 3
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Stadium at IIT-Madras renovated

Stadium at IIT-Madras renovated

CHENNAI: The renovated stadium with a state-of-the-art synthetic track at IIT-Madras campus here was inaugurated on Wednesday. The stadium is named 'Manohar C Watsa Stadium' after the father of Prem Watsa, a 1971-batch Chemical Engineering graduate of IIT Madras, who inaugurated the stadium. Prem Watsa, Chairman of Fairfax Financial Holdings, is one of the 150 alumni to be designated as a 'Distinguished Alumnus' by the Institute. A press release said the track area is about 5,300 sqm with provisions for long jump, triple jump and a pole vault platform. Facilities for other disciplines such as shot-put, football, and cricket have also been provided inside the inner bowl of the track, it said. The track has been awarded 'Class II Athletic Facility Certification' by the International Association of Athletic Federations (IAAF).

Date: 4th May 2017
Publication: India Today
Edition: Online
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Renovated stadium at IIT-Madras inaugurated
URL: http://indiatoday.intoday.in/story/renovated-stadium-at-iit-madras-inaugurated/1/944892.html

Renovated stadium at IIT-Madras inaugurated

Chennai, May 3 (PTI) The renovated stadium with a state-of-the-art synthetic track at IIT-Madras campus here was inaugurated today.

The stadium is named "Manohar C Watsa Stadium" after the father of Prem Watsa, a 1971-batch Chemical Engineering graduate of IIT Madras, who inaugurated the stadium.

Prem Watsa, Chairman of Fairfax Financial Holdings, is one of the 150 alumni to be designated as a "Distinguished Alumnus" by the Institute.

A press release said the track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform.

Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track.

Facilities for other disciplines such as shot-put, football, and cricket have also been provided inside the inner bowl of the track, it said.

In addition, the gallery has been renovated with new flooring and an entrance gate with access to the differently-abled.

The track has been awarded "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF). PTI SS ROH

Date: 4th May 2017
Publication: The Times of India
Edition: Online
Journalist: Rachel Chitra
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: New stadium opened at IIT-Madras
URL: http://timesofindia.indiatimes.com/city/chennai/new-stadium-opened-at-iit-madras/articleshow/58499718.cms

New stadium opened at IIT-Madras

CHENNAI: Fairfax Holdings chairman Prem Watsa inaugurated the Manohar C Watsa Stadium at IIT-Madras on Wednesday.

"I was a very keen sportsman during my student days. It really was a great source of pride for me that IIT-Madras started winning the inter-IIT trophy during my tenure as sports secretary. I was the first sports secretary of Jamuna Hostel and later of the whole institute. Apart from hockey, I was also pretty keen on table tennis," said Watsa, a 1971-batch chemical engineering graduate from IIT-M.

Prem Watsa, who is one of the 150 alumni to be designated as a "distinguished alumnus" by the institute, has helped renovate the institute's stadium for 400-meter, 8-lane synthetic track in memory of his father Manohar C Watsa.

The track area is around 5,300 sqaure metre with provisions for long jump, triple jump and a pole vault platform. Two warm-up practice steps have also been constructed adjacent to the track and facilities for other sports such as shot put, football and cricket have been provided inside the inner bowl of the track. In addition, the spectators' gallery has been renovated with a new flooring and an entrance gate with access for the differently-abled. A walker pathway, with a width of 3m, has also been constructed along the periphery of the synthetic track.

The track has been awarded with "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF) and will not hinder movement of wildlife on campus.

"The inauguration comes in time for the 52nd Annual Inter-IIT Sports Meet, scheduled to be held on the IIT-Madras campus during December 2017. It is worth noting that for nine consecutive years from 1972 to 1980, IIT-Madras has won the general championship more than any other IIT," said Bhaskar Ramamurthi, director, IIT-M.

Date: 4th May 2017
Publication: Andhra Prabha (clip attached)
Edition: Hyderabad
Page no.: 6
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: Prem Watsa, started the new stadium of IIT-Madras

ఐఐటి-మద్రాసు కొత్త స్టేడియంను ఆవిష్కరించిన ప్రేమ్‌వత్సా

చెన్నై : ఫెయిర్‌ఫాక్స్ హోల్డింగ్స్ చైర్మన్ ప్రేమ్‌వాత్స బుధవారం నాడు ఐఐటి మద్రాసులో మనోహన్ సీ వాత్స స్టేడియంను ఆవిష్కరించారు. తాను విద్యార్థిగా ఉన్నప్పుడు క్రీడలపై ఎక్కువ దృష్టి పెట్టేవాడినని, తాను స్పోర్ట్స్ సెక్రెటరీగా ఉన్నప్పుడు ఐఐటి మద్రాసు ఇంటర్ -ఐఐటి ట్రోఫీలు గెలుపొందడం తనకు గర్వంగా ఉందని ప్రేమ్‌వాత్స అన్నారు. తాను జమునా హాస్టల్‌కు మొట్టమొదటిసారి స్పోర్ట్స్ సెక్రెటరీగా ఉన్నానని. .. అటు తర్వాత మొత్తం విద్యా సంస్థకు సెక్రటరీ అయ్యానన్నారు. హాకీతో పాటు టేబుల్ టెన్నిస్‌పై ఎక్కువ మక్కువన్నారు. ప్రేమ్‌వత్స ఐఐటి -ఎం 1971 బ్యాచ్‌కు చెందిన కెమికల్ ఇంజినీరింగ్ గ్రాడ్యుయేట్. ప్రేమ్‌వత్స ఐఐటి 150 మంది పూర్వ విద్యార్థుల్లో ఒకరు. కాగా ఐఐటి మద్రాసుకు చెందిన స్టేడియం 400 మీటర్లు, 8 లైన్ల సింథటిక్ ట్రాక్‌ను పునరుద్ధరించడానికి ఆయన చేయూత నిచ్చారు. తన తండ్రి మనోహర్ సీ వాత్స స్మృతి చిహ్నంగా ఈ స్టేడియం పునరుద్ధణకు ఆయన తన వంతుకృషి చేశారు.

Date: 5th May 2017
Publication: India.com
Edition: Online
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: Renovated stadium at IIT-Madras inaugurated
URL: http://www.india.com/news/agencies/renovated-stadium-at-iit-madras-inaugurated-2095656/

Renovated stadium at IIT-Madras inaugurated

Chennai, May 3 (PTI) The renovated stadium with a state-of-the-art synthetic track at IIT-Madras campus here was inaugurated today.

The stadium is named "Manohar C Watsa Stadium" after the father of Prem Watsa, a 1971-batch Chemical Engineering graduate of IIT Madras, who inaugurated the stadium.

Prem Watsa, Chairman of Fairfax Financial Holdings, is one of the 150 alumni to be designated as a "Distinguished Alumnus" by the Institute.

A press release said the track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform.

Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track. Facilities for other disciplines such as shot-put, football, and cricket have also been provided inside the inner bowl of the track, it said.

In addition, the gallery has been renovated with new flooring and an entrance gate with access to the differently-abled.

The track has been awarded "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF).

Date: 5th May 2017
Publication: Kalvimalar
Edition: Online
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: IIT-Madras gets synthetic track
URL: http://kalvimalar.dinamalar.com/news-details.asp?id=23963&cat=1

IIT-Madras gets synthetic track

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Date: 5th May 2017
Publication: Chennai Online
Edition: Online
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: Chennai Gets All New 'World Class' Stadium
URL: http://chennaionline.com/article/chennai-gets-all-new-world-class-stadium

Chennai Gets All New 'World Class' Stadium

Chennai, May 4: Shri Prem Watsa, Chairman of Fairfax Financial Holdings, inaugurated the Manohar C Watsa Stadium at the Indian Institute of Technology Madras during a function held here on Wednesday, May 03, 2017. A 1971-batch Chemical Engineering graduate of IIT Madras, Shri Prem Watsa is one of only 150 alumni to be designated as a "Distinguished Alumnus" by the Institute.

Shri Prem Watsa's generous contribution has enabled the Institute to renovate the Institute's stadium and construct a state-of-the-art 400-meter 8-lane synthetic track in the stadium, in memory of his father Manohar C Watsa.

The track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform. Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track. Facilities for other sports such as shot-put, football, and cricket have also been provided inside the inner bowl of the track.

In addition, the stadium spectators' gallery has been renovated with new flooring and an entrance gate with access for the differently abled. A walker pathway, with a width of 3m, has also been constructed along the periphery of the synthetic track. The track has been awarded with "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF).

The inauguration comes in time for the 52nd Annual Inter-IIT Sports Meet, scheduled to be held on the IIT Madras campus during December 2017. It is worth noting that for nine consecutive years, from 1972 to 1980, IIT Madras has won the General Championship, more often than any other IIT.

Speaking on the occasion, Shri Prem Watsa, Chairman of Fairfax Financial Holdings, recalled that during his time at IIT-Madras, the sports team unexpectedly won the Inter-IIT Sports Meet. And when he returned to IIT-Madras campus about nine years later, he had learned that IIT-Madras had not lost even once in that nine-year period. He told the students to win the Inter-IIT again this year and "make Prof. Bhaskar more proud that he already is." He also added the five years he spent at IIT-Madras were the best years of his life.

Prof. Bhaskar Ramamurthi, Director of the Indian Institute of Technology Madras, pointed out that Shri Prem Watsa was the Sports Secretary in 1971.

Speaking on the occasion, Prof. Bhaskar Ramamurthi, Director of the Indian Institute of Technology Madras, said “Our students have benefitted greatly from Mr. Prem Watsa’s generosity, and this stadium with its world-class facilities is one more example of his munificence. We are grateful to him. We are proud of his accomplishments and our students consider him a role model.”

Commenting on IIT Madras’ success over the years, and the role the renovated Stadium will play in future years, Prof. Santhosh, Faculty Advisor-Sports, IIT Madras, mentioned that “This synthetic track will provide a unique experience for the athletes of our institute as well as the those from other IITs, and we expect a few records to be broken during this year’s Inter IIT Sports meet at IIT Madras”.

Prof. Ligy Philip, Chairperson of the Engineering Unit, IIT Madras, expressed pride in how the Stadium had turned out, observing that “the track and associated facilities were developed on par with international standards in the midst of forest cover. The development was made in such a way as to not hinder the movement of wildlife on campus.”

Prof. R Nagarajan, Dean of International and Alumni Relations, IIT Madras, welcomed the benevolent gesture by Shri Prem Watsa as another instance of an alumnus reconnecting with a personal touch. “Prem was a sportsman in his time as a student, and this reflects his desire to give back in a way that resonated with him. He was the Sports Secretary of Jamuna Hostel, and also later the Institute Sports Secretary. He used to play hockey for the institute, and also quite a lot of table tennis. In fact, IIT Madras started winning the Inter-IIT trophy during his tenure as the Institute Sports Secretary. So, this is something very special to him and to the Institute.”

Date: 5th May 2017
Publication: Trinity Mirror
Edition: Chennai
Page no.: 2
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: Fairfax Financial chief renovates IIT Chennai stadium, renames it

Fairfax Financial chief renovates IIT Chennai stadium, renames it

Chennai , May 4: The renovated stadium with a state-of-the-art synthetic track at IIT-Madras campus here was inaugurated today.

The stadium is named "Manohar C Watsa Stadium" after the father of Prem Watsa, a 1971-batch Chemical Engineering graduate of IIT Madras, who inaugurated the stadium.

Prem Watsa, Chairman of Fairfax Financial Holdings, is one of the 150 alumni to be designated as a "Distinguished Alumnus" by the Institute.

A press release said the track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform. Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track.

Facilities for other disciplines such as shot-put, football, and cricket have also been provided inside the inner bowl of the track, it said.

In addition, the gallery has been renovated with new flooring and an entrance gate with access to the differently-abled.

The track has been awarded "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF).

Date: 7th May 2017
Publication: Careers360
Edition: Online
Journalist: Harshita Das
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: IIT Madras opens its new renovated stadium
URL: http://www.engineering.careers360.com/articles/iit-madras-opens-its-new-renovated-stadium

IIT Madras opens its new renovated stadium

A new renovated stadium opened at Indian Institute of Technology (IIT) Madras has opened its renovated campus on May 3, 2017. Prem Watsa, Chairman of Fairfax Financial Holdings, inaugurated the Manohar C Watsa Stadium, named after his father, at the IIT Madras campus.

According to the institute, Watsa's contribution enabled IIT Madras to renovate the institute's stadium and construct a 400-meter, 8-lane synthetic track in the stadium. The track area is about 5,300 sq.m. with provisions for long jump, triple jump and a pole vault platform. Two warm-up practice steps of size 20 x 2.4 x 1.8 m have also been constructed adjacent to the track. Facilities for other sports such as shot-put, football, and cricket have also been provided inside the inner bowl of the track.

In addition, the stadium spectators' gallery has been renovated with new flooring and an entrance gate with access for the differently abled. A walker pathway, with a width of 3m, has also been constructed along the periphery of the synthetic track. The track has been awarded with "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF).

Speaking on the occasion, Watsa recalled, "The five years I spent at IIT-Madras were the best years of his life." He added that during his time at IIT-Madras, the sports team unexpectedly won the Inter-IIT Sports Meet. And when he returned to IIT-Madras campus about nine years later, he had learned that IIT-Madras had not lost even once in that nine-year period. He motivated the students to win the Inter-IIT again this year. "

The 52nd Annual Inter-IIT Sports Meet is scheduled to be held in Madras campus in December, 2017.

On behalf of IIT Madras, Prof. Bhaskar Ramamurthi, Director said "Our students have benefitted greatly from Mr. Prem Watsa's generosity, and this stadium with its world-class facilities is one more example of his munificence. We are grateful to him. We are proud of his accomplishments and our students consider him a role model."

Date: 15th May 2017
Publication: The Hindu
Edition: Chennai
Page no.: 5
Journalist: NA
Alumni: Mr. Prem Watsa
Headline: IIT-M stadium renovated

IN BRIEF

IIT-M stadium renovated

IIT-Madras has a new state-of-the-art 400-metre 8-lane synthetic track in its stadium. It was recently inaugurated by Prem Watsa, chairman of Fairfax Financial Holdings. It has been awarded with "Class II Athletic Facility Certification" by the International Association of Athletic Federations (IAAF). The opening comes in time for the 52nd Annual Inter-IIT Sports Meet, scheduled to be held in December.

Date: 22nd May 2017
Publication: The Hindu
Edition: Delhi/Mumbai/Bangalore/Hyderabad/Chennai
Page no.: 2
Journalist: Janani Suri
Alumni/student: Nitisha and Charan
Headline: Much cherished 'Guru'
URL: http://www.thehindu.com/education/much-cherished-guru/article18514773.ece

HANGOUTS

Much cherished 'Guru'

We could sit here and chill for hours...that's IIT-M's Gurunath Student Facility Centre

JANANI SURI

SPECIAL ARRANGEMENT

In harmony: Amid nature.

At the entrance of the world-famous 250-hectare campus of IIT Madras, one could take a few minutes to admire its beauty. Featuring beautiful mysterious woods, a shopping complex, a swimming pool, and plenty of places to eat, it is little wonder that the campus is called "a city" of its own. So, in this green city, where would one go to relax and blow off steam?

At every corner of this campus, you never know what you might find in the midst of nature. On a casual stroll, one might see groups of students in The Quark, a red-brick food court. The two-floor Himalaya Mess, with its rolling green lawns, provides another charming hangout spot and delicious food.

All-purpose oasis

However, when you pass by Gurunath Student Centre – located amidst a group of trees, exuding a relaxed vibe – it is evident that this place is not just a spot cherished by students but an integral part of IITM.

"We come here for everything – juice, ice cream, biriyani, even birthday cake," says Nitisha, a second-year chemistry student.

Located just a few feet away from most of the student accommodations, the student centre sells everything one needs – from stationery, toiletries, electronic items to shoes and college T-shirts. The facility includes an ATM vestibule, a xerox shop, a salon, and a travel desk, making it a blend of information and utility.

> **We usually come here for everything – juice, ice cream, biriyani, even birthday cake.**
>
> NITISHA

Umbrella-shaded tables arranged outside enable the IITians to relax and sit back with delicious food. A bakery, an ice cream shop, a fast food centre, a milkshake parlour and a fruit vendor all in one place, no wonder this centre is indispensible to students, all times of the day.

"We could sit here and chill for hours," says Charan, a fourth-year student of engineering design.

Another attractive feature of "Guru", as it is affectionately referred to by students, is its harmony with nature. Groups of deer can be seen there at times, lazing around on the lawns, and are as much a part of the environment as the shops.

"The deer mostly come here when there is no traffic," adds Nitisha.

IIT Madras is an industry friendly Institute

Date: 1st May 2017
Publication: The Hindu
Edition: Delhi/Kochi
Page no.: 4
Journalist: NA
Headline: Device to reduce accidents

Device to reduce accidents

IIT-M and Harita Seating Systems Limited recently developed Intelliseat, an Internet of things device to monitor drivers. It operates independently and can be used for in-vehicle status information as well as help a central tracking by owners.

Date: 3rd May 2017
Publication: The Hindu Business Line
Edition: Delhi/Mumbai/Pune/Bangalore/Chennai/Kolkata/Ahmedabad
Page no.: 3
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: Chemplast Sanmar funds research lab at IIT-M
URL: http://www.thehindubusinessline.com/companies/chemplast-sanmar/article9677349.ece

Chemplast Sanmar funds research lab at IIT-M

OUR BUREAU

Chennai, May 2

Chemplast Sanmar, an early mover in utilising zero liquid discharge concept at its manufacturing facilities, has funded a ZLD research laboratory at IIT Madras.

At the inauguration of the research facility in the Department of Environment Engineering, Vijay Sankar, Deputy Chairman, Sanmar Group, said the group is committed to the concept of water recycling, preventing discharge of effluents into the environment and avoiding ground water exploitation.

It uses ZLD at its units in Mettur, Cuddalore and Karaikal where it has invested ₹53 crore totally. It has also invested ₹35 crore in desalination plants at its coastal facilities in Cuddalore and Karaikal to avoid ground water exploitation, he said.

The establishment of the Chemplast Sanmar ZLD Research Laboratory set up with an outlay of ₹1 crore coincides with the Golden Jubilee celebrations of the Sanmar Group.

The lab was inaugurated by N Sankar, Group Chairman. It will carry out basic and applied research and industry funded projects.

Bhaskar Ramamurthi, Director, IIT-Madras, said the ZLD lab will work with the Centre for Urbanisation, Building and Environment. It will undertake pilot scale trials of innovative technologies at industrial sites also.

Date: 3rd May 2017
Publication: Dinamani
Edition: Chennai
Page no.: 3
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Headline: Chemplast Sanmar funds research lab at IIT-M

சென்னை ஐஐடி–இல் புதிய ஆராய்ச்சி சோதனைக்கூடம்

சென்னை, மே 2: தொழிற்சாலைக் கழிவுகளை வெளியேற்றும் புதிய செயல்முறை ஆராய்ச்சி பரிசோதனைக் கூடத்தை சென்னை ஐஐடியில் (Zero Liquid Discharge) சன்மார் குழுமத்தின் தலைவர் என். சங்கர் செவ்வாய்க்கிழமை திறந்து வைத்தார்.

இதுகுறித்து வெளியிடப்பட்டுள்ள செய்திக்குறிப்பு:

சன்மார் குழுமத்தின் முக்கிய நிறுவனமான கெம்ப்ளாஸ்ட் சன்மாரின் பொன் விழாவை (50-ஆவது ஆண்டு) முன்னிட்டு, கழிவுகளை வெளியேற்றும் செயல்முறையைப் பற்றி ஆராய்ச்சி செய்வதற்காக இந்த சோதனைக்கூடம் நிறுவப்பட்டுள்ளது.

பரிசோதனைக் கூடத்தை திறந்து வைத்துப் பார்வையிடும் (இடமிருந்து) சன்மார் குழுமத்தின் தலைவர் என். சங்கர், சென்னை ஐஐடி இயக்குநர் பாஸ்கர் ராமமூர்த்தி.

ரூ.1 கோடி முதலீட்டில்...: இந்த புதிய பரிசோதனைக் கூடத்தை அமைக்க கெம்ப்ளாஸ்ட் சன்மார் ரூ.1 கோடியை முதலீடு செய்துள்ளது. சென்னை ஐஐடி சுற்றுச்சூழல் பொறியியல் துறையில் அமைக்கப்பட்டுள்ள இந்த ஆராய்ச்சிக் கூடம், தொழில்துறை தனங்களில் புதுமையான தொழில்நுட்பங்களின் மாதிரி சோதனைகளை மேற்கொள்ளும்.

ஐஐடி-ன் உயிரி-தொழில்நுட்பத் துறை உள்ளிட்ட பல்வேறு துறைப் பேராசிரியர்கள்,

இணைந்து இந்தப் பரிசோதனைக் கூடத்தில் செய்யும் ஆராய்ச்சிகள் செயல்வடிவம் பெறும் என்று செயலர் ஐஐடி இயக்குநர் பாஸ்கர் ராமமூர்த்தி [illegible] தெரிவித்தார்.

Date: 4th May 2017
Publication: The Hindu Business Line
Edition: Chennai / Delhi / Mumbai / Pune / Bangalore / Hyderabad / Kolkata / Kochi / Ahmedabad
Page no.: 2
Journalist: NA
Headline: Funding for infra projects will be a concern, says L&T official
URL: http://www.thehindubusinessline.com/companies/infra-projects-funding-cause-for-concern/article9679087.ece

Funding for infra projects will be a concern, says L&T official

OUR BUREAU
Chennai, March 5

Long term funding for large infrastructure projects will continue to be an issue till banks are fully recapitalised and the government comes out with new mechanisms and models of funding, according to Subramanian Sarma, CEO & MD, L&T Hydrocarbon Engineering.

In an interaction with media persons on the sidelines of a seminar on capital projects at the IIT Madras, he said, "till banks and the nation are fully recapitalised" long term funding will be an area of concern.

Also, all the stakeholders including "contractors and enterprises need more fiscal discipline," he said.

They cannot afford to have 'highly leveraged' portfolios.

Countries in growth phase need huge funds and "need it critically" and the government has to come out with models for financial support including public-private partnerships.

In recent years, debt servicing has become a serious challenge in the sector, he pointed out. DK Ojha, Director, Infrastructure and Project Monitoring Division under the Union Ministry of Statistics and Programme Implementation, said the division will be coming out with a revised standard contract bidding document by the year-end.

This will create a win-win situation and encourage private sector participation in large projects.

Over the last decade the government has increasingly played the role of facilitator.

Date: 4th May 2017
Publication: The Times of India
Edition: Chennai
Page no.: 4
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi and Prof. Ligy Philip
Headline: New effluent treatment lab at IIT Madras
URL: http://timesofindia.indiatimes.com/city/chennai/new-lab-at-iit-m-to-develop-tech-for-zero-effluent-discharge-for-industries/articleshow/58497689.cms

New effluent treatment lab at IIT Madras

TIMES NEWS NETWORK

Chennai: A laboratory to develop technologies that can provide industry specific solutions for effluent discharge was launched at the Environment Engineering department of Indian Institute of Technology, Madras campus on Tuesday.

The Zero Liquid Discharge (ZLD) laboratory was set up at a cost of ₹1crore by Chemplast Sanmar, on the occasion of its 50th anniversary.

Students and faculty members can collaborate with industries and can carry out research on zero liquid discharge.

Zero liquid discharge is a process of recycling wastewater and reusing it, leaving no effluent or discharge, saving money and the environment. The laboratory will provide necessary test bed facilities for evaluating various new and modified technologies related to ZLD development for industries.

"ZLD is mandatory in many industries. Industries like textiles have ZLD technology, but they have many issues in this. We will look in to those problems and come up with solutions," said civil engineering professor Ligy Philip.

Date: 5th May 2017
Publication: Microgrid Media
Edition: Online
Journalist: Andrew Burger
Headline: India's Juice Power Moves Forward with Solar Microgrids Program
URL: http://microgridmedia.com/indias-juice-power-moves-forward-solar-microgrids-program/

India's Juice Power Moves Forward with Solar Microgrids Program

Renewable and hybrid energy mini and microgrids are playing a growing role in expanding sustainable energy access across the Indian subcontinent. A June 2016 draft proposal from India's Ministry of New and Renewable (MNRE) included a target of installing 10,000 or more clean energy microgrids nationwide, part and parcel of a broader based goal calling for renewables to supply 40 percent of electric power generation capacity by 2030.

Indian and foreign-owned microgrid industry players are keen to capitalize on supportive government policy framework. That list includes Italy's TerniEnergia, which announced it has signed a contract with India's Juice Power to build the first of three smart grid-connected renewable energy microgrids the latter intends to build in Bangalore, Calcutta and Mumbai.

The microgrid design, engineering and construction contract is preparatory to a US$10 million EPC framework agreement (Engineering, Procurement and Construction) the two parties signed at the end of December. That agreement entails engineering and construction of renewable energy generation plants and associated energy management infrastructure, TerniEnergia explains in a press release.

Italy's TerniEnergia

The renewable energy microgrid TerniEnergia is to build for Juice Power is to include 3.5 megawatts (MW) of solar PV generation capacity, as well as energy storage and smart grid management systems at a cost of around US$3 million. More broadly, the three solar-storage microgrids Juice Power intends to deploy are to be located on-site at industrial and wholesale distribution facilities in the automotive, tobacco and logistics sectors.

TerniEnergia launched its solar PV development business in Sept. 2005, then proceeded to expand and diversify via a series of mergers and acquisitions. A separate environmental management company, TerniGreen was established in June 2010. The two merged in 2012.

TerniEnergia management moved on and acquired Free Energia, a developer and vendor of intelligent energy management systems, in Oct. 2014. A merger with Lucas Alternative Energies followed in March 2015 and the new company began construction of two utility-scale solar power plants in South Africa one month later.

Management then diversified further, entering the dual-fuel market with the acquisition of New Gas Trade and incorporation of TerniEnergia Gas & Power in Nov. 2015. Most recently, TerniEnergia expanded into the energy efficiency market with the acquisition of Greenled Industry, a vendor of LED lamps and lighting. All told, TerniEnergia had a market presence in Athens, Bucharest, Crackow, London, Cape Town and Johannesburg, as well as Milan and Rome, as of Dec. 2016.

The Expanding Market for Renewable Microgrids

The Italian diversified "green" energy company faces some stiff competition in India and other countries where distributed renewable energy is on the rise. The world's largest power and energy engineering multinationals are eager to gain substantial shares in these markets. ABB is one among them.

In November, ABB and IIT Madras, part of India's premier national engineering college, announced they were joining forces to develop an intelligent, adaptive power management platform capable of integrating and managing multiple local microgrids, both off- and on-grid. Some 50 percent of the renewable energy generated in India passes through ABB equipment, management pointed out recently.

Furthermore, ABB has built more than 30 microgrids worldwide. In addition, it's in the midst of installing microgrids globally across its own manufacturing facilities.

Date: 6th May 2017
Publication: DT Next
Edition: Chennai
Page no.: 5
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi
Alumni: Mr. Prem Watsa
Headline: Chronicles of a steady rise to top
URL: http://www.dtnext.in/News/Business/2017/05/06075532/1033048/Chronicles-of-a-steady-rise-to-top.vpf

Chronicles of a steady rise to top

CHENNAI: On Thursday, the city-based Chemplast Sanmar completed its 50-year journey. N Sankar, Chairman, Sanmar Group, whose association with the company dates back to May 4, 1967, the founding day of the company recalls the trials and tribulations that shaped this Rs 3,000 cr entity.

He said, "Back then too, it was the crème de la crème (of those championing the cause of industrial development) who participated in laying the foundation of the company that was testing uncharted territories." Sankar highlighted the difficult infancy following the birth of the company on '4.5.67.' The joint venture with BF Goodrich, a major manufacturer of PVC (Poly Vinyl Chlorine used for industrial purposes), was forged after long-winding negotiations.

Sankar recollected that thereafter too, luck seemed to elude the company, which faced a catastrophic shutdown of its Mettur plant due to corrosion and crash of PVC price by 50 per cent. "It had to go through the regular global economic cycles and commodity pricing issues. Superimposed on this were the domestic problems such as 100 per cent power shutdown, campaigns against plastic use, sudden drop of duties and political turbulence. But surmounting all these challenges, Chemplast registered a gradual and steady growth."

He also acknowledged the contribution of co-creators in this huge business enterprise. Starting as a small company with 6,000 tonnes per annum capacity, Chemplast has now diversified into hydrogen peroxide, laying down the path for executing projects such as expansion of suspension PVC to 1 million tonnes annually and doubling paste resin capacity.

The company has a proud 70-year-link with the TVS group, and Venu Srinivasan, the Chairman, TVS Motor, who is a close confidante of Sankar. Sankar also recollected the valuable associations of Cabot Corporation (whose CEO Sean Keohane came from Boston) and supplier Supreme Industries (represented by MP Taparia, MD). On the research front, Chemplast has tied up with IIT Madras to kick-start a research lab on Zero Liquid Discharge, for which a sum of Rs 1 crore was handed over to Bhaskar Ramamurthy, Director, IIT-M.

Billionaire investor Prem Watsa (left) with N Sankar, Chairman, Sanmar Group

With a little help from friends

Sankar also touched upon Prem Watsa, the Indian-origin Canadian investor heading Fairfax, who he refers to as a true friend. Their funding connection ($300 mn for a 30 per cent stake) had been forged on values, integrity and principles aimed at further enhancing Sanmar's reputation.

Watsa was guided by the 'reputation is more important than profits' philosophy of the Sanmar Group. He expressed his pride in associating with the company whose values mattered most for a stakeholder like him.

His firm Fairfax (acronym for fair, friendly acquisitions) founded after he completed 13 years in Canada, in 1985, has invested $5 billion over 20 years of their many associations in India (Thomas Cook, Sanmar, ICICI Lombard). Despite the long presence, it is the Modi regime that has the Hyderabad-born and IIT-Madras bred Watsa upbeat about investing in India. The reason: the transformative stance taken by the PM. "His business-friendly policies, his ability to weed out corruption at the top (ministerial and administrative levels) and his intent of working for the country and not personal gains," made the investor draw Modi's comparisons to Singapore's late PM Lee Kuan Yew.

Though he is happy to meet young entrepreneurs such as the Ola promoter, it is an entrepreneur's track record that inspires him to put his money on. "We are investing for long-term and backing honest people. We believe in principle-based investments," he said. On the country's development agenda, Watsa's response was "in 1982, the economy of India and China were at the same level. Today, China is at $11 trillion, whereas India is $2 trillion. But under Modi, it will grow substantially," is how he signed off.

Date: 14th May 2017
Publication: The Hans India
Edition: Online
Journalist: NA
Headline: BIT Institute of Technology signs MoU with IIT-Madras
URL: http://www.thehansindia.com/posts/index/Education-&-Careers/2017-05-14/-BIT-Institute-of-Technology-signs-MoU-with-IIT-Madras/299862

BIT Institute of Technology signs MoU with IIT-Madras

Hindupur: BIT Institute of Technology (BITIT) here on Saturday entered into a Memorandum of Understanding (MoU) with IIT-Madras. The IIT professors will train students of BITIT in more than 20 Quality Enhancement in Engineering Education (QEEE) courses.

Accordingly, online tests will be conducted twice a semester. As many as 315 students were awarded certificates for excelling in the tests. College Chairman Chandra Mohan distributed the certificates to the students at a programme held at the college campus on Saturday. College Principal and staff appreciated the students.

Date: 20th May 2017
Publication: Voice and Data
Edition: Magazine
Page no.: 38
Journalist: NA
Professor: Prof. Bhaskar Ramamurthi & Prof. Venkatesh Balasubramanian
Headline: Beating driver fatigue

Beating driver fatigue

IoT-based solution to overcome road accidents

Recently, IIT Madras was in news for an interesting product launch. Co-developed by Harita Seating Systems Limited (HSSL) on a technology transfer agreement from IIT-Madras' Engineering Design Department, Intelliseat, a 24x7 Performance Monitoring Solution was launched to reduce road accidents caused by driver fatigue.

Intelliseat is an Internet of Things (IoT) device that monitors the driver 24x7 and is confined within the existing footprint of regular seats. This system operates independently and can be used for in-vehicle information of status as well as help a central tracking by fleet owners. It can also be used for driver training and fleet risk evaluation, which would eventually have a bearing on the overall fleet maintenance and ownership cost.

The sensors embedded to the seat monitor the presence of driver in the vehicle, their behavior, performance and fatigue. This information can be used to warn the driver in-vehicle or to communicate with the fleet operator in real time.

This can help them to take necessary action instantaneously as well as use the information to benchmark drivers and train them. Intelliseat has road tested in commercial vehicles in south India.

IIT-M and Harita Seating Systems Limited (HSSL) have joined hands to address the epidemic of road accidents by collaboratively developing viable and cost effective products to enhance road safety using the technology and knowhow developed by the Rehab Station Bioengineering Group, Department of Engineering Design, IIT Madras. First of the products in this initiative, Intelliseat has been developed and is being launched on this occasion for commercial use.

Highlighting the significance of the product, during the launch, Prof. Venkatesh Balasubramanian, Department of Engineering Design, IIT Madras said, "In this endeavor with HSSL, we have been in a position to translate conceptual work performed in the lab to a viable product that is road ready. This system can not only make the roads safer but can also have a big impact on driver benchmarking/training, fleet insurance, etc."

Speaking on the occasion, Prof. Bhaskar Ramamurthi, Director, IIT Madras said, "IIT Madras is pleased to be associated with HSSL in this critical area of research and development. India has an unconscionably high rate of traffic accidents, and technologies that can reduce accidents due to driver fatigue are sorely needed."

IIT Madras is a research-focused Institute

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Professor: Prof Ashok Kumar Mishra
Alumni: Dr Vikram Singh
Headline: Innovation award

Innovation award

A former research scholar from Indian Institute of Technology Madras has received the BIRAC Gandhian Young Technological Innovation (GYTI) Award 2017. Vikram Singh, earlier with the institute's chemistry department, was awarded for his project titled 'White Light Emission from Vegetable Extracts'. He was guided by Ashok Kumar Mishra, a professor in the department. Singh says, "I will use the Rs 15 lakh award grant to continue my research on white light emitting material from plant sources. I plan to research on RGB emitting carbon quantum dots from vegetables/ fruit extract."

The BIRAC (Biotechnology Industry Research Assistance Council)-SRISTI award for biotechnological/medical/healthcare innovation is given to a technology with the potential to reach the masses and/or address a social need with the available solution.

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Gandhian tech award for IIT-M scholar

CHENNAI: A former research scholar from the Department of Chemistry, IIT Madras, won the prestigious 'BIRAC Gandhian Young Technological Innovation (GYTI) 2017 Award' for his project, 'White light emission from vegetable extracts'.

Dr Vikram Singh was bestowed the award, which carries a grant of Rs 15 lakh, at the Rastrapati Bhavan. The GYTI Awards celebrate the spirit of student innovation in all fields of engineering, science, technology and design through extremely affordable/frugal solution or the ones pushing the technological edge.

Dr Singh said, "Receiving the award was a big honour for me and I am delighted. I will be using the award grant to continue my research on white light emitting material from plant sources. I plan to research on RGB emitting carbon quantum dots from vegetables/fruits extract."

Dr Singh elaborates that his project will have working application in the field of light-emitting diode (LED), which is used to make back light displays, light bulbs and tuneable lasers.

(L to R) Dr Francis Gurry, DG of the World Intellectual Property Organization (WIPO), Prof Ramesh Mashelkar, former DG of the Council of Scientific & Industrial Research (CSIR) presenting the award to Dr Vikram Singh

"Conventional LED use s both organic and inorganic dyes to create white light. In my project, I used a combination of pomegranate and turmeric to recreate the same. We get white light by combining red, green and blue emissions. We derive the red and blue emissions from the pomegranate, while the green emission is extracted from the turmeric. When we combine the emissions in equal quantity, it emits white light," says Dr Singh.

The BIRAC-SRISTI award for biotechnological/medical/healthcare innovation is given to a technology having the potential to reach the masses and/or address a felt social need or making it extremely affordable, compared to the available solutions. Dr Singh's project gains more credence due to the cost-effective method of creating white light.

"The approach I took to creates white light is cheap, environment-friendly and a green source, when compared to the conventional methods such as using phosphorous," he adds.

Prof Ashok Kumar Mishra, Department of Chemistry, who helped guide Dr Singh explains, "Plants are rich sources of many classes of molecules that absorb light and emit it in the visible wavelength ranges. Our reported work shows that judicious choice of such molecules can provide cheap and environment-friendly sources of white light emission systems. This is essentially a 'proof of concept' work and further research is necessary to address the issues of molecular/material stability and device compatibility."

Dr Singh and Prof Mishra worked on the project for two years before publishing their results.

"The groundwork for the project was laid in 2012. The research findings were submitted in December 2014 and the same were published in the Nature Scientific Report in June 2015," says Dr Singh.

Dr Singh is currently conducting experiments to further the project.

"We still need to conduct more experiments to establish sustainability and electro luminous emission before the project can be used as a viable alternative to creating LED," concludes Dr Singh

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Mobile app for efficient use of ambulances

Aims to reduce the time taken to reach accident spots

R. SUJATHA
CHENNAI

The State government will soon launch a mobile user app to deploy 108 ambulances more efficiently and quickly.

The app could reduce the time spent on getting the preliminaries completed. At present, it takes three minutes between the time of the call and despatch of the ambulance.

The app, developed by the students of the Indian Institute of Technology - Madras during a hackathon over six months ago, is designed to track the latitude and longitude of the caller. The event was part of the National Health Mission's project aimed at achieving the Sustainable Development Goal of reducing 50% of deaths caused by road traffic accidents, said a senior health official.

"Deaths due to RTAs are the fourth biggest burden in Tamil Nadu. When despatching ambulances, there are three important decisions: location of the accident, location of the ambulance and how many ambulances will be needed," the official said. "The app helps to locate the caller. We ask the caller if he is in sight of the accident. Then, the call centre person will put him on a conference call with the driver. The caller is then asked to provide further information about the number and type of vehicles involved. This would help us to decide how many ambulances should be despatched," said an official.

Poor record

With the most number of road accidents in the country, Tamil Nadu is looking to address the issue

- State tops the list in road accidents; 13.8% share in the country.
- With 15,642 deaths, ranks 2nd in the number of deaths
- Tops in number of persons injured in accidents with a share of 15.9%
- Persons with minor injuries in road accidents were the highest in Tamil Nadu at 70,321

Aim of the State government is to reduce road traffic accidents by 50% in three years. 95-98% deaths occur due to RTAs. It is the 4th biggest cause of death
HEALTH OFFICIAL

SOURCE: MINISTRY OF ROAD TRANSPORT AND HIGHWAYS TRANSPORT RESEARCH WING

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IIT Madras Selected for IEEE 'Spectrum' Award for Development of Solar Micro Grid Technology

The Indian Institute of Technology in Madras has been selected by the Institute of Electrical and Electronics Engineers for its IEEE 'Spectrum Technology in the Service of Society' Award.

The award, among two IEEE Spectrum Magazine awards announced — SpaceX was honored with the IEEE 'Spectrum Emerging Technology' Award — was given to IIT Madras for the development of solar DC micro grid technology, which team is led by Prof. Ashok Jhunjhunwala.

The IEEE awards are given in recognition for outstanding contributions to the advancement of the theory and practice of electrical, electronics, communications, environmental and safety technologies, computer science and engineering, engineering education, as well as the allied branches of engineering and the related arts and sciences and technologies and their application.

IIT Madras, in conjunction with industrial partners, relies on solar-powered direct current micro grids. For homes not connected to the grid, a 125-watt micro grid can serve as the sole source of electricity, IEEE, which is headquartered in New York, said.

For connected households, the micro grid acts as a backup power supply to let lighting and essential appliances continue operating even during brownouts, it added.

IIT Madras began field testing the DC micro grid systems in 2014. The grid will enable homes to be fitted with energy-efficient DC devices such as LED bulbs, television, cellphone chargers and brushless DC motor-based fans, which are designed by IIT Madras, the institute said.

To date, thousands of Indian villages remain in the dark. The micro grids serve as a solution to power the villages.

The low-maintenance micro grid can potentially eliminate dependence on expensive diesel fuel and the grid, IEEE said.

With funding from India's Ministry of Power, IIT Madras has two large-scale projects under way that will reach more than 100,000 households.

IIT Madras, SpaceX and 19 other award winners will be recognized at the 2017 IEEE Summit and Honors Ceremony in San Francisco, Calif., May 25.

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Alumni/former research scholar: Dr. Vikram Singh
Headline: IIT-M makes white light from pomegranate, turmeric extracts
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IIT-M makes white light from pomegranate, turmeric extracts

This could be used in applications such as tunable laser, LEDs and white light display

R. PRASAD

Dr. Vikram Singh, former research scholar in the Department of Chemistry, IIT Madras won the BIRAC Gandhian Young Technological Innovation (GYTI) Award 2017 for his work on producing white light emission using natural extracts.

Dr. Singh and Prof. Ashok Mishra from the Department of Chemistry, IIT Madras used a mixture of two natural extracts – red pomegranate and turmeric – to produce white light emission. The researchers used a simple and environment-friendly procedure to extract dyes from pomegranate and turmeric.

While polyphenols and anthocyanins present in red pomegranate emit at blue and orange-red regions of the wavelength respectively, curcumin from turmeric emit at the green region of the wavelength. White light emission is produced when red, blue and green mix together. This is probably the first time white light emission has been generated using low-cost, edible natural dyes. The results were published in the journal *Scientific Reports*.

"We had to mix the two extracts in a particular ratio to get white light," says Dr. Singh, the first author of the paper; he is currently at Lucknow's CSIR-Central Drug Research Institute (CDRI). By changing the concentration of the two extracts the researchers were able to get different colour temperature (tunability).

Honoured: Dr Vikram Singh's work has been recognised with the BIRAC Gandhian Young Technological Innovation award. SPECIAL ARRANGEMENT

"When we mix the two extracts and irradiate it with UV radiation at 380 nm, we observed energy transfer (FRET mechanism) taking place from polyphenols to curcumin to anthocyanins, which helps to get perfect white light emission," says Dr. Singh. For FRET mechanism to take place there must be spectral overlap between the donor and acceptor.

Energy transfer

In this case, there is a perfect overlap of emission of polyphenols with absorption by curcumin so the energy from polyphenols is transferred to curcumin. Since there is also a perfect overlap of emission of curcumin with absorption by anthocyanin, the energy of curcumin is transferred to anthocyanin.

As a result of this energy transfer from one dye to the other, when the extract is irradiated with UV light at 380 nm (blue region of the wavelength), the polyphenols emit in the blue region of the wavelength and transfers its energy to curcumin. The excited curcumin emits in the green region of the wavelength and transfers its energy to anthocyanin, which emits light in the red region of the wavelength.

"Because of the energy transfer, even if you excite in the blue wavelength we were able to get appropriate intensity distribution across the visual wavelength," says Prof. Mishra, who is the corresponding author of the paper.

Without turmeric

Taking the work further, the duo produced carbon nanoparticles using pomegranate and to their surprise it was producing fairly green emission. So instead of using turmeric to get green wavelength, the researchers used carbon nanoparticles made from pomegranate extract. "We could get white emission, though it is not as white as when we use turmeric. It's slightly bluish but well within the white zone," says Prof. Mishra. "It is an attractive to use a single plant source to create white light emission." The principle by which the pomegranate extract and carbon nanoparticles made from the extract is the same as in the case when pomegranate and turmeric extracts were used. The results were published in the *Journal of Materials Chemistry C*.

Though this natural mixture of dyes can be used in a wide variety of applications such as tunable laser, LEDs, white light display, much work needs to be done in terms of photostability and chemical stability before it becomes ready for translation. Biosystems have an inherent tendency to breakdown and so this has to be addressed.

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Professor: Prof. Abhijit P. Deshpande
Headline: Technology to detect entry of elephants into villages

கிராமப்புற மேம்பாட்டுக்கு புதிய கருவிகள் கண்டுபிடிப்பு

யானைகள் ஊருக்குள் நுழைவதை தெரிவிக்கும் தொழில்நுட்பம்

- சென்னை ஐஐடி தொழில்நுட்ப மேம்பாட்டுக் குழு தகவல்

கி.ஜெயப்பிரகாஷ்

சென்னை

'நாட்டின் முதுகெலும்பே கிராமங்கள் தான். கிராம முன்னேற்றமே நாட்டின் முன்னேற்றம்' என்று தேச தந்தை மகாத்மா காந்தி கூறியுள்ளார். கிராமங்களின் பொருளாதாரத்தை மேம்படுத்த உதவும் வகையில் நாட்டில் உள்ள ஐஐடிகளில் கிராம தொழில்நுட்ப மேம்பாட்டுக் குழு அமைக்கப்பட்டு செயல்பட்டுக் கொண்டிருக்கிறது.

கிராமப்புறங்களுக்கு தேவையான தொழில்நுட்ப வசதியை மேம்படுத்தவும், அங்குள்ள பிரச்சினைகளுக்கு நிரந்தர காணும் வகையிலும் தொடர்ந்து ஆய்வுகள் மேற்கொள்ளப்பட்டு வருகின்றன. சென்னை ஐஐடியில் 2004-ம் ஆண்டு முதல் இயங்கி வரும் கிராம தொழில்நுட்ப மேம்பாட்டுக் குழு, இதுவரையில் 45 வகையான புதிய தொழில்நுட்ப கருவிகளைக் கண்டுபிடித்துள்ளது.

குறிப்பாக, நெசவாளர்கள் உற்பத்தியை அதிகரிக்க புதிய கருவி, பனைமரம் ஏறுவதற்கு புதிய கருவி, விலங்குகள் கிராமப் புறங்களுக்கு வருவதை முன் கூட்டியே அறிவிக்கும் தொழில் நுட்ப வசதியும் கண்டுபிடிக்கப் பட்டுள்ளன.

இதுதொடர்பாக சென்னை ஐஐடி கிராம தொழில்நுட்ப மேம்பாட்டுக் குழு பேராசிரியர் அபிஜித் பி தேஷ்பாண்டே, திட்ட அதிகாரிகள் சந்தியா சீதாராமன், ஸ்ரீஹரிஸ் ஆகியோர் 'இந்து'விடம் கூறியதாவது:

மத்திய அரசின் முதன்மை அறிவியல் ஆலோசகர் அலுவலகத்தின் கீழ் இயங்கும் இந்த மேம்பாட்டுக் குழு, கிராமப்புற பொருளாதார மேம்பாட்டுக்கான ஆய்வுகளையும் புதிய கருவி களையும் கண்டுபிடித்து வருகிறது.

இதற்காக ஒவ்வொரு ஆண்டும் மத்திய அரசு பட்ஜெட்டில் இருந்து ரூ.40 லட்சம் வரை ஒதுக்கீடு செய்யப்படுகிறது. இது தவிர, பல்வேறு அரசு சார்ந்த நிறுவனங்களும் தேவையான அளவுக்கு நிதி உதவி செய்து வருகின்றன. இதுவரையில் மொத்தம் 45 வகையான கருவிகள் கண்டுபிடிக்கப்பட்டுள்ளன. தற்போது 5 திட்டப்பணிகளும், புதியதாக 10 திட்டப்பணிகளையும் மேற்கொள்ளவுள்ளோம்.

பனைமரங்களில் ஏற புதிய கருவி, கொசுபாய்களை எதிர்ப்பு உற்பத்தியை அதிகரிக்க புதிய கருவி, உட்வை தேவைக்கு பயன்படுத்தும் சிறிய கால்வாய் பாலம், உட்கார்ந்து நூல் சுற்றும் சுயிறு ராட், தரமான மண்பானை சக்கரம் இயந்திரம், பெடல் தறி, செயற்கைக் கால், வாழை இலை பிரிக்கும் இயந்திரம், நீர் கால்வாய்களில் மின்சாரம் உற்பத்தி செய்யும் வைக்ரோ ஜெனரேட்டர், அகத்தணணர் சுத்திகரிப்பு, சோலார் மின்சார வசதியுடன் சுவரை மாற்றும் நிறுவனிகளுக்கான 3 சக்கர வண்டி, மாற்றுத் திறனாளிகளுக்கான கைத்தடி உட்பட மொத்தம் 45 விதமான கருவிகள் சென்னை ஐஐடியில் உள்ள பல்வேறு துறைகளுடன் இணைந்து கண்டுபிடித்துள்ளோம்.

இந்த கண்டுபிடிப்புகள் கிராமப்புற மக்களைச் சென்றடைய, தேர்வு செய்யப்பட்ட 40-க்கும் மேற்பட்ட தன்னார்வ தொண்டு அமைப்புகளுடன் இணைந்து பணியாற்றி வருகிறோம். எங்கள் குழுவினர் கிராம மக்களை சந்தித்து இந்த புதிய கருவிகளின் செயல்பாடுகள் குறித்து பயிற்சி அளித்து வருகின்றனர்.

தமிழகத்தில் நீலகிரி உள்ளிட்ட சில இடங்களில் யானை போன்ற விலங்குகள் விவசாய நிலத்தில் நுழைந்து பயிர்களை சேதப்படுத்துகின்றன. இதேபோல், கிராமங்களில் உள்ளே சென்று தாக்குவதால் மக்கள் தொடர்ந்து அச்சுறுத்தப்படுகின்றனர்.

எனவே, இந்த பிரச்சினைக்கு நிரந்தர காணும் வகையில் கோயம்புத்தூரில் உள்ள ஒரு தனியார் கல்லூரியுடன் இணைந்து ஆய்வு மேற்கொள்ளப்பட்டது. ஆனைகட்டி கிராமத்தில் இருந்து சுமார் 3 கி.மீ தூரத்தில் சென்சார் தகடுகள் பூமியில் புதைக்கப்பட்டு தொடர்ந்து கண காணித்து வருகிறோம். இதற்காக சிறப்பு கண்காணிப்பு கேமராக்கள் மற்றும் தனி சாப்வேர் உருவாக்கப்பட்டுள்ளன.

> **தகடுகள் மீது விலங்குகள் பாதம் பட்டவுடனே அடுத்த சில நொடிகளில் கிராமத்தின் முக்கிய பிரமுகர்கள், வனத்துறையினருக்கு செல்போன் மூலம் உடனடியாக தகவல் செல்லும்.**

இந்த தகடுகள் மீது விலங்குகள் பாதம் பட்டவுடனே அடுத்த சில நொடிகளில் கிராமத்தின் முக்கிய பிரமுகர்கள், வனத்துறையினருக்கு செல்போன் மூலம் உடனடியாக தகவல் செல்லும். மேலும், கிராமங்களில் நிறுவப்பட்டுள்ள பொதுவிளம்பரங்களில் "அலாரம்" அடிக்கும் புதிய வசதி ஏற்படுத்தப் பட்டுள்ளது.

தற்போது, இதற்கான முன் னோட்ட பணிகள் நடைபெற்று வருகின்றன. அடுத்த சில மாதங்களில் இந்த புதிய நுட்பம் பயன்பாட்டுக்கு வரும். பின்னர், தேவையான இடங்களுக்கு அரசு நிறுவனங்களின் நிதி உதவியுடன் விரிவுபடுத்தப்படும். இதன்மூலம் விவசாயம் மற்றும் கிராமப்புற மக்களை பாதுகாக்க முடியும். இதனால், விவசாயிகளுக்கும் என்னித பாதிப்பும் ஏற்படாது.

தற்போது தமிழகத்தில் வெட்டப் பட்டு வரும் சிமெண்ட் கருவேல மரங்களை பல துண்டுகளாக வெட்டி, எரிபொருளாக பயன் படுத்த வழி துண்டுகளாகவும், வேர்கடலை, எள், தேங்காய் உள் ளிட்ட பொருட்களைப்பயன்படுத்தி வீட்டிலேயே இயற்கை வழியில் எண்ணெய் தயாரிக்கும் கருவி உட்பட 5 புதிய நுட்பப்பணிகளை மேற்கொண்டு வருகிறோம். இதுதவிர, கிராமப்புற சந்தைகளில் விவசாயிகள் பயன்படுத்தும் வகையில் குரிய மின்சாரம் மூலம் இயங்கும் சிறிய வகையான பிரிட்ஜுகள், பழங்களை தரம் பிரித்து எண்ணெய் கருவிகள் உட்பட மொத்தம் 10 புதிய நுட்பங்கள் குறித்து ஆய்வுகளை மேற்கொண்டு வருகிறோம் என்று அவர்கள் கூறினர்.

Date: 10th May 2017
Publication: Phys Org
Edition: Online
Journalist: NA
Professor: Prof. Ramachandra Rao
Headline: Looking at light to explore superconductivity in boron-diamond films
URL: https://phys.org/news/2017-05-explore-superconductivity-boron-diamond.html

Looking at light to explore superconductivity in boron-diamond films

More than a decade ago, researchers discovered that when they added boron to the carbon structure of diamond, the combination was superconductive. Since then, growing interest has been generated in understanding these superconducting properties.

With this interest, a research group in India focused on a Fano resonance in a heavily boron-doped diamond (BDD) that involves the vibrational mode of diamond. The researchers, from the Indian Institute of Technology Madras, report their findings this week in Applied Physics Letters.

In probing the vibrational properties of BDD films, the researchers used Raman scattering and presented a comprehensive analysis of the Fano effect as a function of boron concentration and the excitation frequency used in the Raman measurement.

Fano Effect
The Fano resonance in a diamond can be seen in Raman scattering, which is a resonant scattering of light that involves an incident photon interacting with a vibrational mode of the diamond and in the process shifting the photon energy, and therefore its frequency, up or down by the energy of the vibrational mode. Interference between scattering from a discrete transition like the zone center vibrational mode in diamond, and that from a continuum background resulting from the boron-induced impurity band, produces an asymmetric-shaped signal known as a Fano resonance.

"Fano parameterization is a well-thought-out experiment by us to understand the nature of impurity band evolution with boron doping that leads to superconductivity in diamond," said Ramachandra Rao, a co-author of the paper. "Our objective was to gain a deeper understanding of the interaction of light with the impurity band by varying the boron concentrations in diamond films and also by using various laser excitations."

"An increase in boron concentrations increases the impurity bandwidth," said Dinesh Kumar, the paper's first author. "The Fano resonance is sensitive to modification in the impurity bandwidth brought about by the increased boron concentration in BDD."

The group looked closely at the interaction, systematically studying heavily doped samples in the semiconducting and superconducting regimes using ultraviolet and visible wavelengths of the laser excitation sources for the Raman measurement.

The asymmetric Fano line shape revealed that the phase shift in diamond undergoes a remarkable change that can be tuned either by the impurity bandwidth or by the scattering frequency.

Reaching a Higher Temperature

The researchers also wanted to gain better understanding of the relationship between the doping and superconductivity to learn how the superconducting transition temperature in BDD can be increased. Superconductors offer no electrical resistance to the flow of current. To reach this state, however, the materials must typically be in extremely cold temperatures, close to absolute zero. Over the last 10 years the superconducting transition temperature in diamond has increased and is now near 10 kelvins (or about -263 degrees Celsius). This is much less than the theoretically predicted value of 55 K.

While 55 K is still too low for practical applications, understanding why BDD's transition temperature is so far below the theoretical limit may provide insights into how to improve the transition temperatures of other superconductors. Increasing the temperature in BDD remains a problem in the doping process, during which researchers inadvertently damage the structure of the diamond lattice.

"Due to heavy boron doping, the diamond lattice undergoes a complex transformation resulting in an increase in the disorder of the system, which is detrimental to the superconducting properties. We have explored this problem at length by tuning the boron concentration in the present study," Rao said.

Date: 11th May 2017
Publication: The New Indian Express
Edition: Chennai
Page no.: 2
Journalist: SV Krishna Chaitanya
Professor: Prof. Ligy Philip
Headline: What drought? Check out IIT Madras, it's an oasis
URL: http://www.newindianexpress.com/cities/chennai/2017/may/11/what-drought-check-out-iit-madras-its-an-oasis-1603523--1.html

WHAT DROUGHT? CHECK OUT IIT MADRAS, IT'S AN OASIS

IIT-M setting standards

Total area
618 acres

Built-up area
7.76 lakh square metres

Lawn area
1 lakh square metres

Parking area
19,655 square metres

Green belt
12.70 lakh square metres

Population
20,000

Households
1,158

Hostels
22

SV KRISHNA CHAITANYA @Chennai

STORIES about water reserves having dried up, crippling lakhs of lives in different parts of the country, including Tamil Nadu, are common in the news these days. In contrast, the Indian Institute of Technology Madras (IIT-M), has an inspirational story to tell. Though the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) has cut the supply by half, the premier institution is facing no crisis and, in fact, has excess water at its disposal that is being diverted to fill waterbodies on the lush-green campus. There are even plans to sell it!

IIT-M has desilted the freshwater lake, which has the capacity to store 180 million litres, taking inflow from storm water drains, so, not a drop of rainwater is wasted. In January, IIT-M commissioned a state-of-the-art 4 MLD (million litres per day) Sewage Treatment Plant (STP) using the latest Sequential Batch Reactor technology which treats raw sewage to drinking water standards. A fully-automatic Treated Water Distribution System has been laid with 20 km long pipelines connected to every household, hostel and academic block. This enables optimum utilisation of treated water. The flushing, gardening and air conditioning, which accounts for 40% of total usage, is taken care of by treated water.

IIT-M has a population of about 20,000, of which 9,000 are students (an equal number are residents) and a floating populace of 2,000. The institute's one-day requirement is 2.8 MLD and the CMWSSB supplies 1.2-1.8 MLD. The gap is being bridged by tapping local freshwater resources and waste water recycling.

Speaking to *Express*, Ligy Philip, Chairman (Engineering Unit), IIT-M, says: "We have a freshwater treatment plant near the lake which can supply 0.8 MLD for drinking purposes. The STP treats close to 30 lakh litres per day, including 8 lakh litres of waste water generated by the IIT-M research park. We send back 8 lakh litres of treated water to the research park for their utilisation and 10 lakh litres is routed for flushing and upkeep of greenery. So, the remaining 10-12 lakh litres is in excess, which is being diverted into ponds. Once those are full, two groundwater recharge wells are dug up, each having a capacity of 0.5 MLD. This will replenish the fresh water lake. Overall, nothing is wasted," she explains. Philip adds that IIT-M is looking for buyers for the excess treated water.

> **We have a freshwater treatment plant near the lake which can supply 0.8 MLD for drinking purposes. The Sewage Treatment Plant treats close to 30 lakh litres per day.**
>
> Ligy Philip, Chairman (Engineering Unit)

A visit to some of the facilities in the campus is enough to understand how successful its water distribution system is. Ponds are full, with fish and birds flocking the vicinity. The lawn area, cricket ground and newly inaugurated Manohar C Watsa Stadium bears no sign of drought.

D Rajavel, assistant executive engineer, IIT-M, says the infrastructure should hold strong for the next 50 years. "A decade back, the demand for water was 1 MLD, but now it has gone up to 2.8 MLD. It would be extremely difficult to maintain such a large campus otherwise," he says, before adding that the entire mechanism was realised in the last three years, in a phased manner, at a cost of about ₹20 crore.

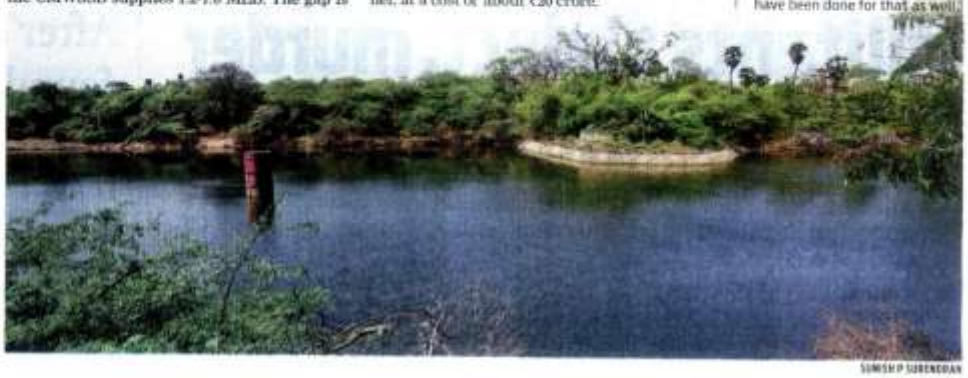
SUMESH P SURENDRAN

Treated water quality

As per new Central Pollution Control Board (CPCB) norms, these are key parameters in accessing the quality of treated water. IIT-M's STP has fulfilled all key parameters and has extra UV filtration and ozonation to kill any pathogens or bacteria.

Back-up plan

IIT-M has 6 open wells and 12 borewells, which are not yet used. It has permission to draw 4 lakh litres per day from these sources in case of need. Ligy Philip, Chairman (Engineering Unit), said water can be drawn from the lake till June end. In July, the demand will shoot up to 3.5 MLD since new students and parents will arrive. All hostels, guest houses will be full. So, necessary arrangements have been done for that as well.



SUMESH P SURENDRAN

Date: 12th May 2017
Publication: Outlook
Edition: Online
Journalist: Sunderarajan Padmanabhan
Professor: Prof. Soma Guhathakurta
Headline: President Presents National Technology Awards
URL: http://www.outlookindia.com/website/story/president-presents-national-technology-awards/298848

President Presents National Technology Awards

President, Pranab Mukherjee, on Thursday presented the national awards for excellence in technology to mark the 19th National Technology Day.

The award winners included Prof Phani Kumar Pullela of CMR Institute of Technology, Bengaluru and Dr. Soma Guhathakurta, Adjunct Professor in the Department of Engineering Design at the Indian Institute of Technology, Chennai, and Director (Bioengineering), Messrs Synkromax Biotech of Chennai.

The two got their awards for being the best in biotechnology products and process development and commercialization. Prof. Pullela got it for his development of a new cost-effective method for molecular diagnosis of infectious diseases and Dr. Guhathurta for developing an indigenous pericardial patch scaffold, which is a lifesaving implant for critical cardiovascular patients.

The other award winners included Numaligarh Refineries Limited, Guwahati, Indian Institute of Petroleum, Dehradun and Engineers India Limited, New Delhi, for successfully commercialising indigenous technology in the public sector, and Vikarsh Nanotechnology and Alloys, Pune, and Pluss Advanced Technologies, Gurugram for being successful in commercialization of technology among Medium, Small and Micro Enterprises.
Further, Amrita Technology Business Incubator, Kollam, Kerala got the award for being the best technology business incubator and IITM Incubation Cell, Chennai got the award for being the best emerging technology business incubator.

Bellarix Aerospace, Mysore, Padmaseetha Technologies, Chennai, and Nanoclean Global, Gurugram, were chosen as the best start-up companies and an NGO from Dehradun, Himalayan Environmental Studies and Conservation Organisation got the award for using biotechnology for social development.

Date: 12th May 2017
Publication: Dinakaran
Edition: Chennai
Page no.: 10
Journalist: NA
Professor: Prof. Soma Guhathakurta
Headline: Award for IIT Madras

சென்னை ஐஐடிக்கு விருது

19வது தேசிய தொழில்நுட்ப தினம் டெல்லியில் கொண்டாடப்பட்டது. சென்னை ஐஐடிக்கு தேசிய தொழில்நுட்ப விருதை ஜனாதிபதி பிரணாப் முகர்ஜி வழங்கினார். அருகில் மத்திய அறிவியல் மற்றும் தொழில்நுட்ப அமைச்சர் ஹர்ஷ் வர்தன்.

Date: 13th May 2017
Publication: Jagran Josh
Edition: Online
Journalist: Sangeeta Krishnan
Professor: Prof. Ashok Mishra
Alumni: Dr Vikram Singh
Headline: Two researchers from IIT Madras generated white light from turmeric and pomegranate
URL: http://www.jagranjosh.com/current-affairs/two-researchers-from-iit-madras-generated-white-light-from-turmeric-and-pomegranate-1494594810-1

Two Researchers from IIT Madras generated white light from turmeric and pomegranate

May 13, 2017 09:03 IST | SANGEETA KRISHNAN

Two researchers from the Department of Chemistry at IIT Madras successfully produced white light using a mixture of two natural extracts - red pomegranate and turmeric.

The experiment was conducted by former research scholar Vikram Singh along with his colleague Ashok Mishra. Both the researchers used a simple and environment-friendly procedure to extract dyes from pomegranate and turmeric.

Key Highlights

• While polyphenols and anthocyanins present in red pomegranate emit at blue and orange-red regions of the wavelength respectively, curcumin from turmeric emits at the green region of the wavelength.

• White light emission is produced when red, blue and green mix together.

• This is the first time that white light emission has been generated using low-cost, natural and edible dyes.

• The results were published in the journal Scientific Reports.

• Vikram Singh won the BIRAC Gandhian Young Technological Innovation (GYTI) Award 2017 for his work.

Speaking on the achievement, Singh who is also the first author of the paper stated that they had to mix the two extracts in a particular ratio to produce white light.

Currently, Singh is at researching at Lucknow's CSIR-Central Drug Research Institute (CDRI).

Date: 14th May 2017
Publication: The Sunday Standard
Edition: Delhi
Page no.: 12
Journalist: SV Krishna Chaitanya
Professor: Prof. Ligy Philip
Headline: What drought? IIT Madras is an oasis

What Drought? IIT Madras is an Oasis

IIT-M SETTING STANDARDS

Total Area
618 acres

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By S V KRISHNA CHAITANYA

Chennai: Stories about water reserves having dried up, crippling lakhs of lives in different parts of the country, including Tamil Nadu, are common in the news these days. However, the Indian Institute of Technology Madras (IIT-M), has a different story to tell. Though the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) has cut the supply by half, the premier institution is facing no crisis and, in fact, has excess water at its disposal that is being diverted to fill waterbodies on the lush-green campus. There are even plans to sell it!

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TREATED WATER QUALITY
As per new Central Pollution Control Board norms, these are key parameters in accessing the quality of treated water. IIT-M has extra UV filtration and ozonation to kill any pathogens or bacteria.

BACK-UP PLAN
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SUNISH P SUKUMARAN

Date: 14th May 2017
Publication: The Economic Times
Edition: Online
Journalist: NA
Professor: Prof. S Mahalingam & Prof. Amal Kanti Bera
Headline: This is how a clutch of scientists around the country are working to decode cancer
URL:http://economictimes.indiatimes.com/articleshow/58662414.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

This is how a clutch of scientists around the country are working to decode cancer

The molecular modelling lab of D Sundar in IIT-Delhi does not have fancy gadgets and apparatuses. His students work mostly on computer simulations, mapping the mechanism by which ashwagandha, an ayurvedic herb native to India, can be a potential candidate for treating cancer. The findings of his lab are "transported" to their collaborators in Japan where test tube experiments are done for further validation.

Sundar and his team have been, for the past decade, trying to decode the mechanism by which ashwagandha can kill aggressive cancer cells. Their findings were recently published in the journal Cell Death and Disease of the Nature Publishing Group. The study recommended that bioactives from ashwagandha can be candidates for further research and development of new drugs for cancer treatment.

"Experiments have revealed that both alcoholic and water extracts from the ashwagandha leaves possess considerable anti-cancer activity. We adopted bioinformatics approaches at IIT-Delhi to resolve the protein targets and their mechanism of action and are convinced that such an approach on other herbs has tremendous potential for drug discovery for cancer prevention and treatment," said Sundar, a DuPont young professor in the department of biochemical engineering and biotechnology (DoBEB) at IIT Delhi.

Welcome to the multi-disciplinary research platform where scientists from different labs in the country are unfolding the enigma behind cell proliferation and demystifying the science behind cancer formation.

The experimental canvas of these scientists is vast — from fleshing out new therapeutic targets to identifying potential candidates for cancer drugs to improved methods for early detection. All these experiments have a common goal: to find ways to defeat the deadly army of cells.

Date: 16th May 2017
Publication: The Hindu Business Line
Edition: Chennai/Delhi/Mumbai/Pune/Bangalore/Hyderabad/Kolkata/Kochi/Ahmedabad
Page no.: 2
Journalist: TE Raja Simhan
Professor: Prof. Venkatesh Balasubramanian
Alumni/PhD scholar: Soma Guhathakurta
Headline: A Made-in-India patch to mend hearts
URL: http://www.thehindubusinessline.com/specials/emerging-entrepreneurs/a-madeinindia-patch-to-mend-hearts/article9699843.ece

Soma Guhathakurta, Adjunct Professor, IIT Madras, Department of Engineering Design and Director, Bio Engineering Division, Synteraktus

A Made-in-India patch to mend hearts

Cardiovascular surgeon Soma Guhathakurta develops a low-cost biomaterial that can replace imported patches

TE RAJA SIMHAN

At 50, cardiovascular surgeon Soma Guhathakurta enrolled for a PhD at IIT-Madras with an ambition to develop a human-heart valve.

But her advisor Venkatesh Balasubramanian, Head of Rehabilitation Bioengineering Group, suggested she work on developing a biomaterial for valves. Diverted to the creation of India's first tissue-engineered pericardial patch developed from the sack of a buffalo's heart.

In three years, she got her PhD for a dissertation on a biomaterial derived from bovine pericardium. This is a tissue-engineered patch for humans and animals from buffalo collagen.

The research led to the development of a low-cost, life-saving, natural, biomaterial that can replace imported patches.

Now, 61, Guhathakurta's research has resulted in the development of Synteroscaff, a bovine pericardial patch for critical cardiovascular patients. "Till this research, the patch was imported and was expensive. However, we ensured the patch is available at half the cost," she said without disclosing the cost.

Guhathakurta stopped practising medicine to become a research student, and has commercialised her invention with the backing of Chennai-based SyntheMax Biotech. The firm has invested about ₹1 crore in a unit in Sriperumbudur, on the western outskirts of the city, to manufacture around 1,000 Synteroscaff patches a month, she said.

Balasubramanian said Synteroscaff was designed in the lab, then translated into a stable and affordable critical healthcare product. "This is an example of a life-saving product that was designed and made in India for the world," he said.

Leading hospitals such as Madras Medical Mission, Fortis, Kauvery, SRM and ICF have tested the patch on patients.

Suresh Rao, Director, Children's Heart Centre, Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute, Mumbai, in a testimony to the company said he has used Synteroscaff patch for corrections inside and outside the heart of children with congenital heart defects. The product could generate short-, mid- and long-term data from India that could clinically validate the product in India and across the world.

The Central Department of Biotechnology awarded Guhathakurta with the Biotech Product Process Development and Commercialisation Award for 2017.

"Our invention is India's first import-substitute, biomedical device [application wise]," Guhathakurta said.

The advantage of Synteroscaff is that it integrates with the patients' bodies and functions as their own tissue. Cardiothoracic and cardiovascular surgeons require a lot of biomaterials in operation theatres. Bovine collagen is similar to human collagen and is unlikely to have bio-compatibility issues. Once the buffalo cells are removed, immunity issues are not there as the tissue material is compatible, she said. Though imported biomaterials — synthetic and biological — are available in the market, there are issues such as availability and cost. Further, imported biological patches are processed and preserved using glutaraldehyde, which is toxic.

> Synteroscaff patch integrates with the patients' bodies and functions as their own tissue.

Integrated with system

Even though restenilisation of patches is not recommended, it is practised to reduce costs, she said. "We don't realise that when the patches are resterilised, mechanical or other properties go down, and there is always a danger of infection." Whereas, Synteroscaff gets integrated with the system as body's own and with blood supply. "This was the whole idea of my research so that the material grows with the body" she said.

The patch was validated in the lab and also by large and small animal studies with unique experiments. It may not make liver or kidney, but it can be used where a patch work or sling work is necessary or for repair of less-complicated organs.

Date: 17th May 2017
Publication: Swarajya
Edition: Online
Journalist: NA
Professor: Prof. Venkatesh Balasubramanian
Alumni/PhD scholar: Soma Guhathakurta
Headline: Finally, A Made-In-India Heart Patch For Critical Cardiovascular Patients
URL: https://swarajyamag.com/insta/mending-indian-hearts-with-patches-made-in-india

Finally, A Made-In-India Heart Patch For Critical Cardiovascular Patients

Her grit to quit practice as a cardiovascular surgeon and take to research instead, at age 50, had Soma Guhathakurta joining the Indian Institute of Technology (IIT), Madras, for a PhD. She wished to develop a human-heart valve.

But on the suggestion of her adviser Venkatesh Balasubramanian, Head of Rehabilitation Bioengineering Group, she took up the task of developing a bio-material for valves. The result is India's first tissue-engineered pericardial patch developed from the sack of a buffalo's heart.

A decade after she earned her PhD for a dissertation on a bio-material derived from bovine pericardium, her efforts have resulted in the development of 'SynkroScaff', a bovine pericardial patch for critical cardiovascular patients. "Till this research, the patch was imported and was expensive. However, we ensured the patch is available at half the cost," she said, as reported by Te Raja Simhan in the Hindu Business Line.

The patch, unlike other interventional measures, integrates with the human body and functions as its own tissue. It is said to be better than imported bio-materials, which are not just expensive as not easily available but also toxic owing to the processing and preservatives used.

"Our invention is India's first import-substitute, biomedical device [application wise]," said Guhathakurta, who was also awarded the National Award for excellence in technology by President Pranab Mukherjee earlier this month.

Date: 18th May 2017
Publication: The Times of India
Edition: Chennai
Page no.: 4
Journalist: Amrutha Varshinii
Headline: Building a sustainable future
URL: http://timesofindia.indiatimes.com/city/chennai/building-a-sustainable-future-for-upcoming-architects-civil-engineers/articleshow/58726183.cms?

MISSION ADMISSION
toimissionadmission.com

Choosing a course after school can be confusing as a simple 'no' or 'yes' can be career-changing. While a plethora of options at hand is convenient, reaching an informed decision could be cumbersome. To help students make a better choice, TOI lends a helping hand with 'Mission Admission'. Today's focus: **Architecture & Civil Engineering**

Building a sustainable future

Grads Have To Be Integrated Into Green Construction Practices That Are Now Trending, Say Experts

Amrutha Varshinii
@timesgroup.com

The sharp curve on Greams Road often makes several commuters stop and stare at a large building with foliage shooting out of concrete slabs. The structure, MRF's 'iconic building building', was designed by celebrated architect Charles Correa and stands as a prototype for a 'green building' whose mantra is sustainable and eco-friendly. A whole industry today, fuelled by global trends and national projects like smart cities, wants to create such designs. And this is good news for students of architecture and civil engineering.

Sustainable engineering today is not limited to rainwater harvesting and solar panels. It includes studying the mechanism of light and wind movement, understanding how water and solid waste can be treated and reused, and devising solutions to help buildings stay cheap on heating and cooling to conserve energy.

Industry experts say it is necessary to integrate numerous architecture and civil engineering graduates into sustainable building practices. Heeding the signs, institutions offering under-graduate courses have already included footprinting and experimental research, ranging from construction of bricks out of waste (IIT Madras) to having smart roofs (Anna University).

At Loyola Institute of Technology (LIoT), this year, 15% of all civil engineering projects have been on sustainable construction. Rajatha Jemima Anand, the institute's principal, said they plan to consolidate several engineering electives and give students the option to learn more about sustainable buildings.

"Our students have come up with solutions like using plastic bottles as construction material, using them to design slabs and floor pads. There are ideas to use non-biodegradable items as well," she says.

IITs too are playing an unprecedented role in setting the trend. The recently established IIT Jammu which will be moving to a new campus has already been certified by accreditation agency GRIHA as a five-star green building. This is a rare distinction conferred on structures that have key aspects demanded by a green building — starting from smart design, to reusable materials, energy/water efficiency optimizing sun and air movements, light and wind circulation.

Deepak Kashyap, head of civil engineering at IIT Jammu, says the institute is moving out with new green engineering trends every year. "There's focus on reusing construction material from demolished buildings. This will cut a lot of cost and help use resources, left already. This is very much in vogue among researchers at the moment," he says.

Sustainable or 'green' development is to be needed because of fast depleting natural resources, says C N Raghavendran, president of the Indian Green Building Council (IGBC), Chennai Chapter. Raghavendran, who is actively pushing the case of green construction, says the phenomenon is rapidly picking up across the country.

"Even 10 through a few decades ago, presently India has 4.5 billion sqft of registered green buildings under IGBC certification," says Raghavendran, who also conducts college-level competitions to generate solutions for several issues faced by civil engineers and architects.

GOING GREEN

SMART SOLUTIONS GREEN CONSTRUCTIONS ARE GAINING GROUND IN THE GLOBAL AND INDIAN MARKET, SAY EXPERTS

WHAT'S TAUGHT

Architecture:
- Climatically responsive architecture
- Environment and behaviour
- Urban design
- Energy efficient buildings
- Environment control and design

Civil Engineering:
- Waste management
- Geomatics engineering
- Environmental survey
- Sustainable use of materials
- Case studies of sustainable structures

PAY SCALE Starting from ₹3lakh

SCOPE
- Green building consultant
- HVAC consultant
- Sustainable architect/civil engineer
- Project designer
- Architectural service manager
- Transit architect

DID YOU KNOW?
- Infosys Pune, I-flex Bangalore, Cybertecture Egg - Mumbai are some commercial buildings which are sustainable and have been optimally designed to allow maximum light and save energy
- India ranks third among the top 10 countries for LEED (Leadership in Energy, Environment and Design) and in 2016 nearly 450 projects in the country earned LEED certification. (US Green building council)
- Green buildings are projected to grow 20% in the country by 2018
- India ranks number two in green building footprint according to the world green building index

Mail your feedback or queries about career options and courses to missionadmission.toichennai@gmail.com

WHERE TO GO

INSTITUTES OFFERING ELECTIVES IN GREEN/ ENERGY EFFICIENT CONSTRUCTION THROUGH CIVIL ENGINEERING & ARCHITECTURE

Indian Institute of Technology, Bombay & Hyderabad
National Institute of Technology, Trichy
School of Architecture & Planning (SAP), Anna University, Chennai
SRM University, Chennai
CEPT University, Ahmedabad
J J School of Architecture, Mumbai
School of Planning and Architecture (SPA), New Delhi

ADMISSION PROCEDURE

Eligibility
NATA - National Aptitude Test in Architecture
Joint Engineering Exam
(JEE Mains & JEE Advanced)
Class 12 marks

Date: 18th May 2017
Publication: Web India 123
Edition: Online
Journalist: NA
Professor: Prof. Ashok Jhunjhunwala
Headline: State achieved major breakthrough in solar power: AP CM
URL: http://news.webindia123.com/news/Articles/India/20170517/3109586.html

State achieved major breakthrough in solar power: AP CM

Andhra Pradesh Chief Minister N Chandrababu Naidu today said that Andhra Pradesh achieved a major breakthrough in the solar power sector and he is keen on holding an international conference with major energy storage chain players, who can provide game changing innovative solutions for solar storage. Holding a review meeting on the progress of Amaravati project here, the Chief Minister said that India is blessed with abundant sunshine throughout its varied masses. However, India has not still recognised the full potential of the solar power.He underlined that there is an urgent need to take up studies in advance solar energy storage technologies, which would ultimately pull down prices of solar power. "If solar energy is available for less than Rs.2, it's a major breakthrough for India," Mr Naidu said. India will become a manufacturing hub for the world if we achieve a breakthrough in storage of solar power, he added.The Chief Minister held detailed discussion on advance power storage technologies. It was suggested that Ashok Jhunjhunwala, Professor in the Department of Electrical Engineering, Indian Institute of Technology, Madras, be contacted as he is using solar-DC innovation, to decentralised solar power by 2030 in India and his aim is see that India gets 50 per cent of its peak power from solar. The Chief Minister said that the Energy University in Ananatapur will start operating from this year and the varsity will offer specialised courses in power technologies.UNI DP RJ 2251

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Page no.: 2
Journalist: C Shivakumar
Headline: State preparing plan to build 8.03 lakh affordable homes for urban poor
URL: http://www.newindianexpress.com/states/tamil-nadu/2017/may/19/tamil-nadu-preparing-plan-to-build-803-lakh-affordable-homes-for-urban-poor-1606431.html

ON THE HOUSE

State preparing plan to build 8.03 lakh affordable homes for urban poor

C SHIVAKUMAR @Chennai

THE total requirement for urban housing for slum and non slum households under 'Pradhan Mantri Awas Yojana Housing For All' scheme in the State is 8.03 lakh, according to a demand survey done by Tamil Nadu Slum Clearance Board. The State, which signed an MoU with the Union government, had to conduct a survey for assessing the actual housing requirement. It is a basic necessity following which the State has to come out with a Housing for All plan of action.

According to census figures, the State has a total of 16.34 lakh urban slum households of which 7.35 lakh live in the 12 corporations. The State currently requires an additional 12.94 lakh houses to be provided to the urban poor 6.72 lakh of which are required in the 12 corporations.

As per the Housing For All mission, the houses constructed should either be in the name of the female head of the household or as joint ownership. The annual income limit for beneficiaries under the economic weaker section is about ₹3 lakh per year. For beneficiaries under the low income group, the number is between ₹3-6 lakh per year.

Sources said that the State is now on constructing affordable houses for the slums and non-slum households. It is learnt that the guidelines for building affordable houses have been prepared. The affordable homes have been distinguished under three categories with areas up to 40, 60 and 75 square metres.

Similarly, the Slum Clearance Board is looking at innovative methods to construct housing for poor as mandated by the scheme. "Among the available new technologies in the construction sector for building tenements, the Slum Clearance Board is looking at prefabrication, monolithic construction and Glass Fiber Reinforced Gypsum," source said.

In fact, prefabrication is being used in three ongoing projects in Moorthingar Street in North Chennai, Sholinganallur in South Chennai and Erode.

The Slum Clearance Board is also encouraging tenders where any approved technology is acceptable for implementation. Institutions like IIT Madras, National Institute of Technology Trichy and Anna University are engaged in evolving new technologies, TNSCB sources said.

Meanwhile, the Slum Clearance Board has proposed to conduct a workshop on technology innovation along with the Building Materials and Technology Promotion Council (BMTPC) in mid-June for technocrats, engineers, builders and developers.

Four new variants

Prefabrication: Used for multi-storey projects. Columns, beams, lintels with sunshade are manufactured to the given dimension in factories or precast yards and brought to sites during implementation.

Monolithic construction: Modular formwork made out of aluminum plastic composites are used for walls, floors, slabs, chars together with window openings, cast in one place.

Glass Fibre Reinforced Gypsum: Consists of building panel products made of calcined gypsum, plaster, reinforced with glass fibres for mass scale building construction.

Pre-engineered building: Entire structure is pre-sheared, pre-punched, pre-drilled, pre-welded and pre-formed in factories before being shipped to the site for erection.

Date: 20th May 2017
Publication: Construction World
Edition: Magazine
Page no.: 77
Journalist: (Authored article by Prof. Ravindra Gettu & Dr Moghul Sirajuddin)
Professor: Prof. Ravindra Gettu
Alumni: Dr Moghul Sirajuddin
Headline: Mitigating Concrete Cracks

MATERIAL ADVANTAGE

Mitigating Concrete Cracks

Concerns of cracks appearing on concrete slab soon after placing are serious. RAVINDRA GETTU and MOGHUL SIRAJUDDIN offer solutions.

In recent years, there has been a continuous increase in the use of mineral admixtures in concrete for higher performance and more durability, or just to decrease the amount of cement used. Materials like fly ash and slag, being finer and less reactive than cement, reduce bleeding (i.e. separation of excess water from concrete), which, in general, is good. However, this makes concrete more vulnerable to plastic shrinkage in hot and dry environmental conditions, especially as the early strength of such concretes may be lower.

Consequently, plastic shrinkage cracking is a serious concern nowadays, especially in slabs, decks and pavements. A common complaint among builders and contractors is that floors and slabs crack, just after the concrete is placed, especially during hot days. Also, this seems to be occurring more often during the past few years rather than a decade or two earlier. Such cracking causes leakage, and necessitates costly repairs and delays during construction. Cracks that appear within a few hours on concrete can be attributed mainly to plastic shrinkage or contraction that occurs owing to high evaporation when the concrete is still wet or plastic. The best way to avoid such cracks is to cure the concrete by covering the surface to reduce evaporation immediately after placing, and then to spray or sprinkle water. However, this may not always be possible or done as efficiently as it should be, because of water or labour shortage or simply the logistics. Therefore, we need to assess ways to mitigate the problem.

The assessment

In a research lab by Prof Ravindra Gettu and Moghul Sirajuddin at the IITM-Lafarge Laboratory for Durability and Long-Term Performance of Concrete, Department of Civil Engineering, IIT-Madras, several concretes were subjected to hot-dry wind in a specially designed chamber to assess the dependence of the cracking on the cements and additives used normally in construction sites in India.

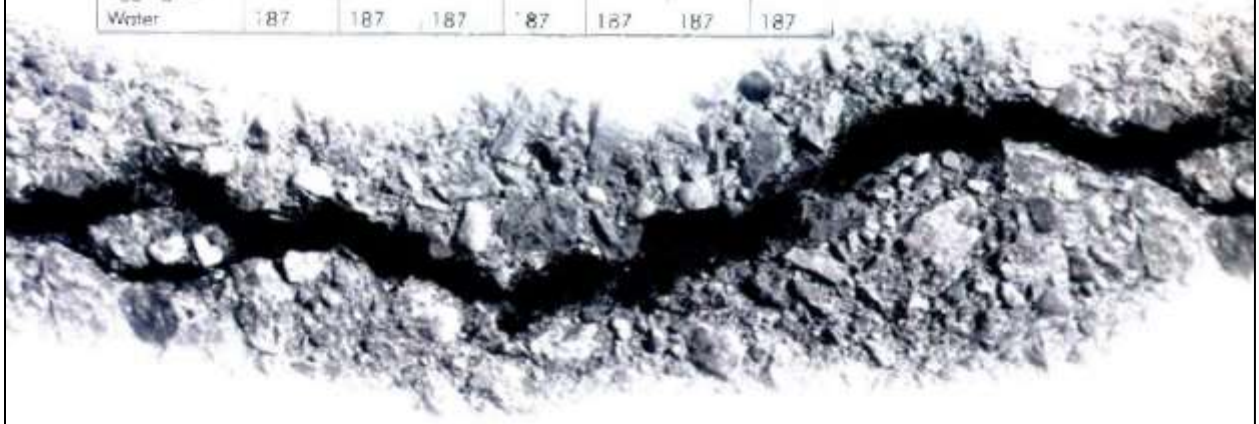
Mix Proportions of Concrete Mixes

Constituents	Control Mix	Fly-ash mixes			Slag mixes		
	CM	FA15	FA30	PPC	SG15	SG30	PSC
Cement	340	289	238	340	289	238	340
Mineral admixture	0	51	102	0	51	102	0
Coarse aggregate (20-10 mm)	703	696	689	698	707	700	707
Coarse aggregate (10-4.75 mm)	377	374	370	375	377	376	376
Fine aggregate	796	788	780	790	794	792	794
Water	187	187	187	187	187	187	187

and water binder ratio were fixed as 340 kg per cu m and 0.55, respectively, for the entire study. The mix proportions of all the concretes used are provided in the table.

What was done?

The control mix (CM) and the mixes with SCMs (FA15, FA30, SG15 and SG30) were first tested and the mix with the highest potential for plastic shrinkage cracking was selected to investigate the efficiency



The materials were tested in the laboratory by simulating adverse evaporation rates caused by high temperature and wind velocity. Crack mitigation measures such as special shrinkage reducing admixtures and fibres were assessed. Also, the benefit of surface-applied curing compounds on plastic shrinkage crack reduction was studied. The parameters investigated included the rate of evaporation of water from the surface of the concrete, crack initiation time, and crack widths.

The objectives

The study had two major objectives. First, to investigate the influence of supplementary cementitious materials (SCMs) and blended cements on plastic shrinkage cracking, and second, to control plastic shrinkage cracks using shrinkage-reducing admixtures, fibres and curing compounds. Two supplementary cementitious materials – fly-ash (Class F) and granulated blast furnace slag – and two blended cements, portland pozzolana cement (PPC) and portland slag cement (PSC), were analysed. The SCMs replaced ordinary portland cement at 15 per cent and 30 per cent by weight, while blended cements completely replaced ordinary portland cement. The binder content of shrinkage reducing components and curing compounds. Three slabs were cast for each concrete and exposed to the above-mentioned environmental conditions for 24 hours. The cracked specimens were later allowed to cool for 24 hours. The crack lengths were measured by getting the length of a thread placed along the cracks, while the widths were measured at regular intervals of 1 cm along the crack using a handheld microscope. From the measured data, cracking potential is quantified in terms of crack area, length, and maximum and mean widths. For obtaining the crack initiation time, the slabs were visually inspected at intervals of 30 minutes

The outcome

Results indicate that the addition of supplementary cementitious materials in concrete increases the potential for plastic shrinkage cracking with an increase in their replacement dosage. The incorporation of fly-ash and slag at a cement replacement level of 15 per cent increased the crack area by 20 per cent and 120 per cent, respectively. At 30 per cent replacement of fly-ash and slag, the crack area further increased by 40 per cent and 300 per cent, respectively. Further, the use of blended cements with fly-ash and slag (ie PPC and PSC, respectively), resulted in much higher crack areas. Similarly, the crack length, mean crack width and maximum crack width also increased significantly with the replacement of ordinary Portland cement with SCMs and with the use of blended cements.

The benefits of using fibres, glycol-based shrinkage reducing admixtures (SRAs) at a dosage of 1 per cent and 2 per cent, and different curing compounds at an application rate of 5 sq m per litre were evaluated. Polypropylene fibres that are fine and short were effective in limiting cracking when added at a dosage of about 1 kg per cu m of concrete; they cost about Rs 300 per kg and help significantly in saving construction time. The incorporation of SRAs contributed significantly in controlling plastic shrinkage cracking. At a dosage of 1 per cent, the positive effect of SRA was reflected in the reduction in crack area by 40-65 per cent. At a SRA dosage of 2 per cent, two products completely eliminated cracking, while the other two reduced cracking by about 60 per cent. Further, the application of curing compounds on the surface of concrete was found to be useful in controlling cracking by lowering the rate of evaporation. Among the four curing compounds tested, the acrylic-based products eliminated cracking, while the other two curing compounds – which were water and wax-based – reduced cracking only by 29 per cent and 44 per cent, respectively. Therefore, shrinkage-reducing admixtures and curing compounds have been found viable for mitigating plastic shrinkage cracking in concretes with supplementary cementitious materials.

Major findings

- Guidelines can be formulated for mitigating plastic shrinkage cracking in buildings, roads and slabs.
- It is found that concretes that incorporate large amounts of fly-ash and slag or PPC, if not cured properly, can experience earlier and more extensive cracking than conventional concrete that is made only with OPC, if exposed to high evaporation rates.
- The most effective way to stop or drastically reduce plastic shrinkage cracking is by mixing about 1 kg of short and fine polypropylene fibres to every cubic metre of concrete.
- Other ways to mitigate such cracking is the addition of glycol-based, shrinkage-reducing agents or spraying the fresh concrete with acrylic-based curing compounds to reduce the evaporation of water from the surface.
- Proper and prolonged curing (for keeping new concrete moist) is essential to limit cracks and improve durability.

About the author:

Dr Ravindra Gettu is the Associate Dean for Consultancy and Sponsored Research, and Professor of Civil Engineering at IIT Madras, Chennai.

Moghul Sirajuddin is a scientist at Aditya Birla Science and Technology Company, Mumbai, and holds a MS degree from IIT Madras.

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Page no.: 3
Journalist: NA
Headline: Govt might build houses for poor using gypsum tech

Govt might build houses for poor using gypsum tech

The Union government is planning to use everything under its disposal to bring in cost-effective alternative building technology. One such option to be implemented has been developed by IIT-Madras, to provide 'pucca' houses under 'Housing for All Mission' by 2022.

The development comes after a committee headed by the Ministry of Housing and Urban Poverty Alleviation submitted a report last year after assessing Glass Fibre Reinforced Gypsum Wall Panel (GFRG) technology, developed by IIT-Madras, as a cost effective alternative to conventional material.

The technology could bring in a revolution in home building. Experts say construction costs are likely to be reduced by 15 per cent. The technology uses less built-up area, unlike conventional technology, which relies on huge beams. It also reduces use of cement, sand, steel and water and concentrates on recycling of industrial waste gypsum, which is readily available. Currently, India has 64 million tonnes of raw material gypsum in 10 locations on the coastal regions.

The government is also deliberating on manufacturing facilities to produce quality GFRG panels and to ensure their widespread availability at an affordable price. Sources say the committee's report suggested setting up plants at four locations initially - Bharuch in Gujarat, Paradip in Odisha, Tuticorin in Tamil Nadu and in a suitable location in Andhra Pradesh where gypsum, natural gas, CNG and liquefied natural gas are available.

The idea is to have plants along coast where waste gypsum is abundant. The next phase will see plants set up near the market and interior urban centres with bulk transportation of calcined gypsum plaster with a 12-month shelf life. Sources said an Indian standard code on design of GFRG Panel: Code of Practice for Design of GFRG Panel for Buildings' is being prepared.

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Professor: Prof. Sumesh Thampi
Headline: The mechanics of programmed cell death unravelled
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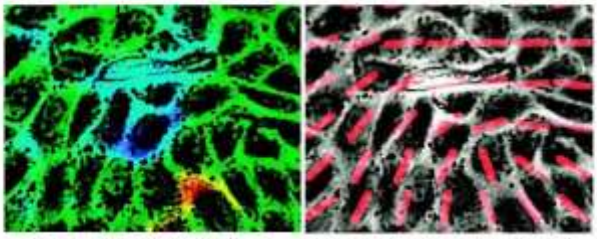
The mechanics of programmed cell death unravelled

In a first, the study reveals that imperfect alignment of cells in tissues can trigger individual cell death

SHUBASHREE DESIKAN

A recent study has found a new triggering mechanism for programmed cell death (apoptosis). Unlike earlier known trigger mechanisms that involve chemicals being released by the cell destined for death, this is a physical mechanism. The study has found that a particular type of imperfection in the alignment of the cells appears to be correlated with the position of the cell destined to die. The results of the collaborative study was published in *Nature*.

The group has studied this correlation experimentally using five different kinds of epithelial tissue. Epithelial cells are those that line the outside and inside of our organs. These cells play a protective role and cells often undergo some kind of damage and need to be removed. This happens through a process of programmed cell death known as apoptosis. The cell destined for apoptosis is pushed out of the layer it inhabits in the epithelial tissue and then dies.



Microscopy: (Left) Cells forming a defect coloured according to stress, with blue colour indicating higher stress. (Right) Red arrows indicate alignment of cells, with the whole defect having a comet like apex.

SPECIAL ARRANGEMENT BY

Cells in the epithelial layer usually are arranged neatly and regularly, like bricks on a wall, where the axes of the bricks are all aligned parallel to each other. But at times there is a defective alignment of the axes of the cells. Among the different types of defect, there is one where the tilt of the axes varies gradually — radiating out from a point, like a comet. The cell destined to die lies close to the head of the comet-shaped defect and is eventually pushed out of the layer of cells and apoptosis takes place.

Physics reasons

"The study tells you that it is not just biochemistry but physics, or precisely, mechanics, that can affect cell extrusions (the pushing out of cells from the layer they inhabit). That means you may be able to think about situations where applying forces might make cells behave in a particular way," says Sumesh Thampi from the Department of Chemical Engineering, IIT Madras, an author of the paper.

Collaborative study

While the theory and simulations were developed by members from Oxford, the experiments were carried out by groups from Singapore and the measurement of the force on the cells was done using techniques developed by a group from Paris. "It is hard to pinpoint the beginning of the work, it arose through discussions...and then we designed new simulations and experiments to test our ideas," Julia Yeomans of The Rudolf Peierls Centre for Theoretical Physics, Oxford, and a Principal Investigator of the project told *The Hindu* in an email.

Traction force microscopy was used to measure and compute the pressure on individual cells in the monolayer.

"We developed an original way to compute the stresses inside cell colonies using statistical methods (Bayesian inference). The computation of such stresses has been done by only a few labs for cells migrating on substrates..." says Benoit Ladoux of CNRS and University Paris Diderot (France) and Mechanobiology Institute, Singapore, a Principal Investigator of the project.

Now that the link between mechanics and cell extrusion has been established, it is for future experiments to determine how external pressure can be used to control, for instance, the development of tumours and prevent them from spreading uncontrollably.

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Journalist: Sarita Singh
Professor: Prof. Ashok Jhunjhunwala
Headline: Made in IIT solar plant powers thousands of rural homes
URL:http://economictimes.indiatimes.com/articleshow/58848114.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Made in IIT Solar Plant Powers Thousands of Rural Homes

Sarita.Singh@timesgroup.com

New Delhi: A solar plant of the size and cost of a centre table on your rooftop can insure your home against power cuts and halve your electricity bill. IIT Madras has invented such a solar rooftop installation – smaller and cheaper than present installations.

At a cost of ₹20,000, the rooftop plant and storage system can run couple of tubelights, fans, charging points and a TV. A higher model can run all essential load minus washing machine and air conditioners of a middle-class and reduce dependence on normal electricity supply.

The rooftop plant has been installed under CSR and government sponsorship in 15,000 rural homes and was successful in facing a three-day power cut during Chennai floods in December 2015.

An official in the Solar Energy Corp of India said to install a rooftop of the present technology, a middle-class family will require 1kWh solar rooftop and storage costing about Rs 1.2 lakh and a space of about 100 sq ft.

Rural Electrification Corporation (REC) has electrified 4,000 off-grid homes in Jodhpur and Jaisalmer districts of Rajasthan and 7,500 homes in Assam using this solar plant. Another 12,000 more homes are being taken up in hills of Assam, while some grid-connected installations have been undertaken in Odisha, Karnataka, Tamil Nadu, Telangana and Andhra Pradesh.

EASY ELECTRICITY

At a cost of ₹20,000, the rooftop plant and storage system can run tubelights, fans, charging points and a TV

On Thursday, the solar power system was recognised by The Institute of Electrical and Electronics Engineers (IEEE), New York, as 'Technology of the year 2017 in the service of humanity'.

The solar inverterless DC system is cost and energy-efficient as unlike other solar power systems, it does not convert direct current (DC) produced by a solar installation into alternate current (AC). The system comes with a full DC wiring.

Each time a unit of AC is converted into DC, there is a 15% loss of energy.

A DC system is 2.5 times more efficient than the AC system and hence requires lesser space, said IIT-M professor Ashok Jhunjhunwala.

While a 125W rooftop solar, a 0.5kWh lead acid DC battery, and few DC electrical appliances will cost approximately ₹20,000, a basic 500W solar power and 5 kWh lead acid storage will cost a bit over Rs 40,000 without taxes, he said.

A 125W solar installation will require 30sqft space, while 500W requires 50 sqft of space, said Venkat Rajaraman, chief executive officer of Cygni Energy that is commercialising the technology.

Jhunjhunwala said a solar-DC microgrid could help break the logjam that the domestic power supply currently faces in India.

Date: 27th May 2017
Publication: Business Insider
Edition: Online
Journalist: Anushree Singh
Headline: This made-in-IIT solar plant is illuminating thousands of rural homes in India
URL: http://www.businessinsider.in/This-made-in-IIT-solar-plant-is-illuminating-thousands-of-rural-homes-in-India/articleshow/58858087.cms

This made-in-IIT solar plant is illuminating thousands of rural homes in India

You may not be victim to any more power cuts and could even halve your electricity bill, thanks to IIT Madras' new solar rooftop installation.

It's both smaller and cheaper than present installations. Priced at Rs 20,000, it can run tubelights, fans, charging points and a TV. If you go for a higher model, it will be able to run all essential load except washing machine and air conditioners.

As a part of CSR and government sponsorship, the rooftop plant has been installed in 15,000 rural homes. It was successful in facing a three-day power cut during Chennai floods in December 2015.

Now, to install a rooftop of the present technology, a middle-class family would require 1kWh solar rooftop and storage costing about Rs 1.2 lakh and a space of about 100 sq ft.

On Thursday, the solar power system was recognised by The Institute of Electrical and Electronics Engineers (IEEE), New York, as 'Technology of the year 2017 in the service of humanity'.

The solar inverterless DC system is cost and energy-efficient as unlike other solar power systems, it does not convert direct current produced by a solar installation into alternate current.

The system comes with a full DC wiring. Each time a unit of AC is converted into DC, there is a 15 per cent loss of energy. A DC system is 2.5 times more efficient than the AC system and hence requires lesser space. While a 125W rooftop solar, a 0.5kWh lead acid DC battery, and few DC electrical appliances will cost approximately Rs 20,000, a basic 500W solar power and 3 kWh lead acid storage will cost a bit over Rs 40,000 without taxes.

It is believed that a solar-DC microgrid can help break the logjam that the domestic power supply currently faces in India. Even as its a great start, data with REC shows that about four crore households are yet to be electrified in India.

IIT Madras is an innovation and entrepreneurship hub

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Page no.: 21
Journalist: Anand J
Headline: India has more startup incubators than Israel
URL: http://timesofindia.indiatimes.com/business/india-business/india-has-more-startup-incubators-than-israel/articleshow/58544625.cms

India has more startup incubators than Israel

Anand.J@timesgroup.com

Bengaluru: The government's initiative to establish 30 incubators in educational institutions last year under the Startup India programme has enabled India to surpass Israel as the country with the third highest number of startup incubators and accelerators. India now has 140 such institutions, ahead of Israel's 130, says a report by IT industry body Nasscom and consulting firm Zinnov. India added 40 new incubators/accelerators in 2016. China and the US have the highest numbers.

Incubators and accelerators perform the critical function of giving founders clear direction and advice on what is working and what is not. Some accelerators also help startups to find customers and funding. The US has more than 1,500 incubators/accelerators.

PLAYING CATCH-UP

US over	India	Israel
1,500	140	130
**China and US have highest numbers	India added 40 incubators in 2016	

Source: Report by Nasscom/ Zinnov

"Our aim was not to create billion-dollar valuations, but build remarkable companies that solve problems," Sangeeta Gupta, senior VP at Nasscom, told **TOI**. Nasscom too incubates startups through its Startup Warehouses in different cities. "The Indian startup ecosystem is at a growing stage, where accelerators and incubators are also maturing along with the ecosystem," Gupta said.

The report said that more than 50% of the institutions were outside the metro cities, thus helping startups to be created and nurtured across the country. The report contrasted this with the UK, where 60% of the institutions were in London. "Some 66% of the incubators established in 2016 were in tier 2 and 3 towns," Gupta said.

Around 50% of the incubators are in academic institutions, like IIT-Madras' Rural Technology and Business Incubator (RTBI) or IIM-Ahmedabad's Centre for Innovation Incubation and Entrepreneurship (CIIE). Around 10% of the incubators and accelerators are supported by corporates like PayPal, Target, SAP Labs, Cisco, Microsoft and Airbus. Government supported institutions include Kochi's SmartCity, T-Hub of Telangana and Nasscom's Warehouses.

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URL: http://knowstartup.com/2017/05/government-setup-7-research-parks/

Government plans to setup 7 new research parks to bolster R&D for startups

Keeping in line with the initiative that the GOI has taken up to boost the Indian startup scene, in a fresh line of events, the system is all set to fulfil its promise of setting up of seven new Research Parks modelled on the Research Park set up at IIT Madras. The Government said that the new Research Parks in institutes will be set up with an initial investment of about $15.4 Mn (INR 100 Cr) each.

These research parks would propel innovation through incubation and joint R&D efforts between academia and the industry. The proposed parks will be up at IIT Guwahati, IIT Hyderabad, IIT Kanpur, IIT Kharagpur, IISc Bangalore, IIT Gandhinagar, and IIT Delhi.

The IIT Madras Research Park has agreed to enable companies with a research focus to base themselves in the Park and leverage the academic expertise of IIT Madras. It leverages best practices from globally successful Research Parks such as Stanford, MIT, and Cambridge.

The centre at IIT Kharagpur is already under construction. The Research Park at IIT Gandhinagar is being set up by the DST which has sanctioned about $13.8 Mn (INR 90 Cr) and disbursed an initial instalment of about $6 Mn (INR 40 Cr). The remaining five are being set up by the Ministry of Human Resource Development (MHRD) and DST at IIT Guwahati, IIT Hyderabad, IIT Kanpur, IIT Delhi, and IISc Bangalore.

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Page no.: 2
Journalist: (Authored article by Prof. Thillai Rajan)
Headline: VC impact: The picture beyond the pixels
URL: http://www.thehindubusinessline.com/specials/emerging-entrepreneurs/vc-impact-the-picture-beyond-the-pixels/article9699842.ece

VC impact: The picture beyond the pixels

Size, growth, sustainability and outlook are key to PE-VC firms in deciding their investments

THILLAI RAJAN A

My professional pursuits give me numerous opportunities to interact with venture investors. Invariably, most of these discussions steer towards the returns that the venture capital firms have been able to generate from their investments. While most venture investors proudly display their successes on the sleeve, they have been also frank in admitting that the venture industry in India as a whole has disappointed investors in terms of returns.

The quantum of investment involved has been significant – during 2014-16, the total estimated investment by PE and VC investors in India has exceeded ₹4 lakh crore. If the performance on returns has been ambivalent, what has been the contribution of venture capital investments in India? A recent joint study with Venture Intelligence provided interesting perspectives.

Points to ponder

The first is size. In the Indian context, smaller companies face numerous barriers to access external or public capital and equity markets. Many of the start-up, technology firms have several years of negative earnings, making access to debt funding also difficult. Our analysis showed that the biggest contribution of PE and VC investors has been to provide capital to smaller companies. While this finding is consistent with expectation, our results give an indication of scale. VC-PE funded companies are just one-sixth of the revenues or asset size of all listed companies.

The second is growth. Revenue growth of VC and PE companies has been more than twice that of other benchmarks that we analysed, indicating that PE-VC firms invest in those companies that have high potential for growth. While smaller companies are likely to clock higher growth rates as compared to the larger firms, the growth spread between PE-VC funded companies and benchmarks is considerable, indicating that all of it could not be attributed to the size effect. A significant characteristic of PE-VC funding is their willingness to provide capital not just for organic growth, but also for inorganic route such as acquisitions.

The third is sustainability. PE-VC investment is associated not just with top line growth but also with growth in asset creation. Revenue growth achieved through various forms of promotional measures can only provide short-term benefits and cannot be sustainable. Our results show that PE funded firms have higher growth rates in asset creation. The asset growth rate of VC-PE funded companies was over 2.5 times the corresponding growth rates of other benchmarks we analysed. The growth in assets indicates that the higher revenue growth of PE funded companies is supported by tangible investment in assets, thereby ensuring that the revenue growth rates can be sustainable in the long term. Investment in asset creation provides benefits over many years, as compared to "cash-burn" in operational expenses.

The fourth is outlook. The profit growth and return on assets for VC-PE funded companies are negative. Our inference is that VC-PE investors look beyond the short term in their investment decision making. Being in the growth phase, VC-PE funded firms need to make significant investments in assets the benefits of which can be realised only in the future years. The biggest contribution of PE-VC investors is thus to seek out companies that have strong prospects in the long term, despite short-term weak performance. Such companies would find it difficult to access investment from other sources, and if not for the support of PE-VC investors would have found it difficult to survive.

Objective of venture firms

Ships are safer in the harbour. But that is not where they are supposed to be. The objective of venture firms is to provide risk capital and not indulge in safe investments. Our results show that VC firms have not significantly deviated from their raison d'être.

While the critics could point to the poor returns, to quote Theodore Roosevelt, "The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds...and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat."

(The writer is Professor, Department of Management Studies, IIT-Madras and International Research Affiliate, Coller Institute of Venture, Tel Aviv University, Israel. He is also a co-founder of YNOS Venture Engine. This research was done in partnership with Venture Intelligence.)

Comparison of firms with and without PE funding

Comparison of VC-PE funded firms with other benchmarks

Parameter	VC-PE funded companies (%)	Benchmarks: Firms with no VC-PE investment (Listed) (%)	Sensex (%)	Nifty (%)	Nifty midcap (%)
5 year revenue CAGR	40	15	17	17	18
5 year asset growth CAGR	46	16	18	17	18
5 year profit CAGR	-73	-31	15	14	16
Average RoA	-8	0.30	17	14	15

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Journalist: NA
Headline: Greenvironment Innovation & Marketing India wins Grand Challenges – Karnataka
URL: http://indiaeducationdiary.in/greenvironment-innovation-marketing-india-wins-grand-challenges-karnataka/

Greenvironment Innovation & Marketing India wins Grand Challenges – Karnataka

Chennai: Greenvironment Innovation & Marketing India (P) Ltd., an IIT Madras incubated company, has recently won the 'Grand Challenges – Karnataka' for their product- Real Time Monitoring & Troubleshooting system for Water & Wastewater Management.

The Real Time Monitoring [RTM] system is part of Operation & Maintenance of fresh & recycled water treatment plants through which the customers achieve assured ROI & life cycle support on their water utilities investments. RTM is an IoT based solution that communicates data in the form of efficiency metrics of water & wastewater treatment plants and gives alerts/insights to the plant manager to take timely action–or act before issue arises.

Grand Challenges is a joint initiative by Karnataka State Biotechnology and Information Technology departments and IKP Knowledge Park under the newly launched Start-up Policy of the government, to scout for new technologies or innovations that can offer solutions to some of the longstanding issues pertaining to the state of Karnataka. From among 24 participants, Greenvironment was one of the 3 companies selected to "build a Real Time Quality & Quantity Monitoring System for Water & Sewage Management in the city of Bengaluru".

Starting from May 2017 the RTM system is being tested and proved in different sites of Sewage discharge and will continue for 6 months. Greenvironment has received a grant-in-aid of Rs 10 lakh for the pilot study. The first RTM system has been installed for a 7 lakh litres/day capacity sewage treatment plant at Purva Riviera, Marathahalli, Bengaluru. By July, the RTM systems will be installed at 3 additional sites in Bengaluru city.

Speaking about the innovation, Mr. Varun Sridharan, Director and Founder, Greenvironment Innovation & Marketing India (P) Ltd. said, "If we manage our sewage/effluent treatment plants efficiently and discharge the treated water, we will be able to see sufficient clean water in our water bodies throughout the year, Greenvironment's smart technology capabilities can make people aware of the benefits and importance of recycling and reuse of wastewater".

About Real Time Monitoring [RTM]: Small scale decentralised wastewater treatment systems especially for residential, commercial buildings and industries show a large fluctuation in their influent water quality loading and, therefore, they require an efficient operation for treatment of organic matter, solids other impurities. However, the requirements to lower running costs, most of the treatment systems are being forced to operate with a minimum number of unskilled operators. It is too costly for customers to employ

a local expert to maintain plant properly. We have recognised these problems and developed real-time monitoring systems for any existing or new treatment plants. This system has been developed to give local operators a guideline that would allow them to arrive at an optimal strategy in the early stage of a process disturbance. The solution serves as a key information needed for efficient operation, and help to transfer knowledge from the experts at a remote control centre to local operators in real-time.

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Publication: Chennai Patrika
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Greenvironment India wins Grand Challenges – Karnataka

Chennai, 15 May, 2017: Greenvironment Innovation & Marketing India (P) Ltd., an IIT Madras incubated company, has recently won the 'Grand Challenges – Karnataka' for their product- Real Time Monitoring& Troubleshooting system for Water & Wastewater Management.

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Journalist: NA
Professor: Prof. Krishnan Balasubramanian
Alumni: Daniel Raj David, AS Harikrishnan and R Karthik
Headline: Big Idea- Playing Watch Guard
URL: https://www.outlookbusiness.com/enterprise/big-idea/playing-watch-guard-3552

Big Idea- Playing Watch Guard

It was the fateful night of December 2, 1984. An undetected leakage in a pesticide plant released the poisonous methyl isocyanate gas that claimed around 20,000 lives and left half a million marred for life. Newspapers across the globe called it the world's worst industrial disaster then. Thirty years later the Bhopal Gas Tragedy continues to haunt the victims as they seek justice in the capital city of Madhya Pradesh in central India. Down south in the city of Chennai, three final year engineering students and their professor have developed an algorithm-based solution that could help prevent such a catastrophe in the future.

Incubated in IIT Madras with a grant of 1 million, DeTect Technologies, was founded by Daniel Raj David, AS Harikrishnan, R Karthik and professor Krishnan Balasubramanian. Having earned accolades and prize money at several start-up competitions, the team officially launched their start-up in February 2016 with an initial investment of 2.5 million. David, CEO, of the company explains the goal they set out with, "We wanted to build a cutting-edge technology to monitor asset management systems and save lives lost due to avoidable leakages".

The start-up has developed a product called the Guided Ultrasonic Monitoring of Pipeline Systems (GuMPS). At the centre of it all is a sensor that has the ability to monitor long-range oil and gas pipelines and provide real-time data of a defect and also provide forecasts. The latter is where the innovation comes into play, as a pipeline crack is not a sudden occurrence but a gradual process. And DeTect's sensor can identify sections of a pipeline that are prone to corrosion within a timeframe and thus alert the company and its client in order to avert a leak. The team's major breakthrough lies in developing a sensor that can operate in temperatures ranging from -20°C to 350°C, as such are the mercury levels at which fluids pass through an oil or gas pipeline. DeTect's second product is a manually controlled robot, Scope-I that can enter a pipeline and scan it thoroughly for a possible leak.

Apart from averting an industrial disaster, the pipeline management system will end up saving crores for the oil and gas companies who end up having to shut down an entire pipeline during a leakage due to inability to detect the exact spot. Such is the potential benefit of GuMPS, that the start-up managed to sign up industry behemoth Reliance Industries as its first client. It is currently in talks with seven other leading players in the sector such as Tata Petrodyne, the Adani group, British Petroleum, etc. The cost of the product could vary from 100,000 to 1.5 million depending on the pipeline structure, temperature and extent of the certification. In addition to sensor installation costs, the start-up charges a 10% fee to provide the licensed software to a client.

The enterprise is confident that its pipeline management system has the ability to compete with peers outside India as well. “We want to take the products in the international market; USA, West Asia and Singapore are our prime targets,” David adds. With a clear roadmap in place, it might not be a surprise if DeTect Technologies ends up achieving its revenue estimate of 2.8-3 crore for the first of year of operations.