

Newspaper Clips March 8-9, 2015

March 8

IIT developing bio-hydrogen fuel from waste

<http://economictimes.indiatimes.com/news/science/iit-developing-bio-hydrogen-fuel-from-waste/articleshow/46491568.cms>

KOLKATA: Aiming to generate clean fuel from waste, a large-scale bio-reactor plant for producing hydrogen on a pilot level would be ready at IIT Kharagpur this year.

As part of a project funded by the Ministry of New and Renewable Energy, Professor Debabrata Das of IIT-Kgp's department of biotechnology is leading a group of Indian scientists from six institutes to produce bio-hydrogen (hydrogen gas) using waste.

"Our pilot plant of 10 m³ capacity would be ready within 3-4 months for which we are constructing a building inside the campus. Hopefully the pilot plan study would be done within a year and after that we can go for commercialisation of the technology," Das who has been working on hydrogen production for about 16 years told PTI.

He said oil major ONGC has already shown interest for higher scale studies of 100 m³ biohydrogen plants.

With fossil fuel reserves depleting, hydrogen holds the promise to provide clean and eco-friendly energy supply to meet the growing energy needs for transportation and power generation in the coming years.

Large-scale production of hydrogen gas for commercial use is now at R & D stage in India. According to experts, storage would be another challenge as hydrogen has a very low volumetric energy density and requires large space to store.

The National Hydrogen Energy Road Map has projected that one million hydrogen-fuelled vehicles would be on Indian roads and 1000 MW aggregate hydrogen-based power generating capacity be set up in the country, both by 2020.

Although hydrogen can be produced from fossil fuels and biomass, IIT scientists are trying to generate the gas from distillery wastewater with a vision of 'waste to energy'.

They are using dark fermentation process under which bacteria can work both in the presence and absence of light.

"We have isolated several organisms - one from the leaf of a particular tree and one organism from high oil containing soil. All are giving very good results," Das said.

Methane would also be produced in the process. The cost of production would be a critical factor in getting the technology move from lab to factories.

Besides IIT, researchers from other institutes like Allahabad University, Banaras Hindu University, Indian Institute of Chemical Technology (IICT) Hyderabad, Jawaharlal Nehru Technological University, Hyderabad, and The Energy Research Institute, New Delhi, are also involved in the project.

खाली पदों को भरने की एचआरडी मंत्रालय की कवायद

आईआईटी-आईआईएम में पढ़ाएंगे पेशेवर

स्कंद विवेक धर . नई दिल्ली

@ पत्रिका

patrika.com/india

भारतीय प्रौद्योगिकी संस्थान (आईआईटी) और भारतीय प्रबंधन संस्थान (आईआईएम) समेत सभी केंद्रीय शिक्षण संस्थान अपने यहां वैज्ञानिक, इंजीनियर, कलाकार, बैंकर, वकील और लोकसेवा अधिकारियों जैसे पेशेवरों को



फैकल्टी के तौर नियुक्त कर सकेंगे। इन संस्थानों में शिक्षकों की कमी को दूर करने के लिए मानव संसाधन

विकास (एचआरडी) मंत्रालय ने यह फैसला किया है। मंत्रालय ने इस बारे में दिशानिर्देश जारी कर दिया

है। आंकड़ों के मुताबिक, केंद्रीय शिक्षण संस्थानों में फैकल्टी जरूरत से 35 फीसदी कम है।

इस कमी को पूरा करने के लिए मंत्रालय ने अमरीकी मॉडल को अपनाया है। इसके तहत, ये शिक्षण संस्थान कुल स्वीकृत फैकल्टी पदों के 25 फीसदी पदों पर अलग-अलग क्षेत्र के पेशेवरों को नियुक्त कर सकेंगे।

ऐसा होगा खाका

- ▶ अकादमिक उपलिब्धियां एमटेक, पीएचडी, नेट नहीं मांगी जाएगी।
- ▶ इनका पदनाम असिस्टेंट प्रोफेसर और एसोसिएट प्रोफेसर ही होगा। ▶ अधिकतम 3 साल तक के लिए ही हो सकेगी नियुक्ति
- ▶ 1.2 लाख रुपए प्रति माह से अधिक वेतन नहीं दिया जा सकेगा

Consequences of Faculty deficiency in IITs

<http://www.thehansindia.com/posts/index/2015-03-07/Consequences-of-Faculty-deficiency-in-IITs-135975>

Premier institutes like Indian Institutes of Technology (IITs) admit students with great aspirations and getting an admission into an IIT is definitely not a cake walk for many. But the shocking discovery made in these institutions is that the faculty shortage is at peak with more than 16 IITs facing the lack of quality professors.

With the tough system practiced at the IITs, students may find it hard to cope up but the faculty shortage makes it even tougher for the new batch admitted. HRD Minister revealed that on an average, IITs have about 37 percent faculty shortage and newly admitted batch of students performance is not up to the mark.

To overcome the issue, IITs are planning to recruit back the retired professors. IIT Bhubaneswar, compared to the old IITs is offering 30 percent more salary. Other IITs including IIT Guwahati has faculty gap of 149 teachers, IIT Gandhinagar has 15% of retired professors and IIT Jodhpur need 76 percent more lecturers.

With Prime Minister Narendra Modi planning to set five more IITs in India, it is to wonder how the faculty shortage will be plugged.

How the masala magic works

An IIT study shows that Indian cuisine uses dramatically dissimilar ingredients, especially spices, to create distinct flavours

Rema.Nagarajan
@timesgroup.com

What makes Indian cuisine distinct from Western cuisine?

A team of complex systems experts from IIT Jodhpur who applied data analytics techniques on 2,543 recipes from across India have found the answer.

According to their finding, which has created ripples in the world of food science and gastronomy, combining ingredients with very different flavours in one recipe gives Indian cuisine a unique character. In fact, in Indian cooking more the number of common flavour molecules shared by two ingredients, the lesser the chance of them co-existing in a recipe. (Flavour molecules give an ingredient the sense of taste and smell peculiar to it.)

For example, red chilli powder and cumin share only six flavour molecules but this pair of ingredients can be found 406 times across Indian cuisine.

This research turns the accepted notion in Western cuisines — that two ingredients will go well together in a recipe if they share a large number of flavour molecules — on its head. For example, two pairs of ingredients that occur together frequently in American cooking are butter and milk, which share 73 flavour molecules and butter and vanilla, which share 32 flavour molecules.

So why were the computational researchers dabbling in kitchen science? Short answer: trying to answer a simple question — what makes Indian food special? Assistant professor Ganesh Bagler with basic training in physics and a PhD in computational biology along with his students Rakhi NK doing a PhD in biomedical text mining and Anupam Jain an MTEch system science student started by identifying the best repository of Indian recipes, which are well curated, formatted and covering several regional



Getty Images

cuisine to pair vastly different flavour molecules. But then this food tradition carries strong influences from outside the Indian subcontinent. Those ethnically from the subcontinent showed a strikingly strong pattern of negative pairing.

The Indianness of a recipe is not sensitive to the replacement of ingredients of any category except for spices. If we were to replace an ingredient of one category with another from the same category, say one vegetable with another, it would not change the molecular pattern of the recipe radically. But changing a given spice with another would destroy the negative food pairing. In a list of the top 15 ingredients in terms of their contribution towards food pairing, 14 are spices demonstrating their key place in Indian cuisine.

India has a tradition of

cuisines. That happened to be the Tarla Dalal's collection of recipes that includes eight regional sub-cuisines — Bengali, Gujarati, Jain, Maharashtrian, Mughlai, Punjabi, Rajasthani and South Indian.

From 2,543 recipes, they identified 194 ingredients, which were then divided into 15 categories — spice, vegetable, fruit, plant derivative, nut/seed, cereal/crop, dairy, plant, pulse, herb, meat, fish/seafood, beverage, animal product, and flower. Then a database of the flavour molecules present in these 194 ingredients was created. Each ingredient is associated with a set of flavour molecules which is the taste profile of that ingredient. Based on the flavour profile they looked at the 'food pairing' or sharing of flavour compounds in Indian recipes and discovered that more the extent of flavour sharing between any two ingredients, the lesser the chance of them occurring in the same recipe. An average Indian recipe contains seven ingredients but some can contain up to 40.

A flavour network was created to identify pattern of ingredients coming together in a recipe. This revealed the

POTPOURRI OF TASTE

Common ingredient pairs used in Indian cooking and the number of flavour molecules they share

> Red chilli and cumin | 6

> Red chilli and turmeric | 4

> Red chilli and asafoetida | 4

In comparison, ingredient pairs that share a large number of flavour molecules hardly ever feature in India cuisine

> Black bean and mung bean | 86

> Butter and milk | 73



Getty Images

distinct feature of food with least overlap in flavours occurring in one recipe. While this is a feature observed in some Asian cuisines, researchers found it very pronounced in Indian cuisine. This was referred to as negative food pairing only to distinguish it from the already observed phenomenon in Western cuisines like North American and Western European of positive pairing. (Cuisines from southern Europe and East Asia have shown a mild tendency towards pairing differently flavoured ingredients.)

Interestingly, Mughlai cuisine shows the least ten-

using food as medicine as Charaka Samhita and Bhavaprakasha, important Ayurvedic texts, refer to food or natural ingredients as medicine. Key molecular components in spices are reported to have various curative properties, one of the most celebrated among them being curcumin, a compound found in turmeric.

While the traditional use of spices may not have been based on the understanding of their molecular properties, using spices for flavour, colour and preservation might have led to empirical evidence-based understanding of their medicinal values.

March 9

Central team to visit HP to finalize land for IIM

<http://timesofindia.indiatimes.com/home/education/news/Central-team-to-visit-HP-to-finalize-land-for-IIM/articleshow/46497620.cms>

SHIMLA: A year after Indian Institute of Management (IIM) was announced for Himachal Pradesh, a team from the Union government is finally visiting the state to select the site for the prestigious institute. The team is scheduled to arrive at Nahan in Sirmaur district on March 12 to inspect the two sites already identified by the state government.

Interestingly, the central team had twice planned visit to the state in the past as well, but each time it had to be cancelled. Sources said that now the visiting team would include an additional secretary from the Union ministry of human resources and directors of IIMs in Ahmedabad and Lucknow. As per the earlier schedule, IIM classes were scheduled to start in Himachal Pradesh from session 2015-16 and till the time basic infrastructure is created the classes would run from a temporary campus. Sources said that the visiting team would also inspect accommodations identified at the temporary campus around Nahan and Paonta Sahib.

A senior government official said that the central team has already informed the state government about the March 12 visit to select the site for IIM. He said that besides inspecting the site, the team would also hold discussions about the temporary campus.

In the last budget speech, Himachal Pradesh was among the five states along with Punjab, Bihar, Odisha and Rajasthan where IIMs were announced. But till date work has failed to start as land required for the project has not been selected due to failure of the central site selection team to visit the state.

Last year in September, Himachal Pradesh chief minister Virbhadra Singh had met Union minister for human resource and development Smriti Irani in New Delhi and had requested her to send a site selection committee to finalize the site for IIM soon so that the work on this prestigious institution could be started at the earliest.

Sources said that the non-functional Agriculture Research Station at Dhaulakuan has over 500 acres of land, which can be used to house IIM. They said that basic infrastructure is available in the area and it will develop very rapidly after the IIM starts taking shape. In November last year, Himachal Pradesh government had also forwarded proposal to set up IIM in Sirmaur district after selecting two sites at Mauja Kolar and Dhaula Kuan areas of Sirmaur district where 1000 bighas of land was available at each identified site.

Auto body to launch road safety campaign for kids

HT Correspondent

■ hreporters@hindustantimes.com

NEW DELHI: As a part of the third United Nations global road safety week, the Automobile Association of Upper India (AAUI) is launching a road safety campaign for children. The idea behind the campaign is to make children the messengers in spreading awareness on safe driving practices.

The campaign is being flagged under the hashtag 'Save Kids Lives', on social media.

"Every year out of the total 1.2 million lives that are lost around the world to road accidents, 30% are children. Unless we instill a culture of road safety among children we cannot hope to change the situation," said TK Malhotra, president, AAUI.

The first workshop will be held on Thursday at IIT Delhi, where hundreds of children, parents, and young drivers will be addressed by traffic experts on the dos and don'ts of driving.

"Children deserve safe modes of transport. Roads must be made safe to allow children to walk to school. All school vehicles should have seat belts and strict safety examinations be ensured for drivers ferrying school children," Malhotra added. A global event, to be organised simultaneously in 10 countries, will take place in May this year.

Aaditi Isaac
@timesgroup.com

STIPEND STRESS

With a monthly stipend of Rs 5,000, PhD student Sandip Kumar Singh says he struggles to make ends meet. He is one of the many MPhil and PhD students demanding timely implementation of hiked stipends.

With Rs 5,000 from the University Grants Commission, the Jawaharlal Nehru University (JNU) student has to pay the hostel rent and mess charges, buy books and spend on facilities such as the internet. He needs to travel and present papers at seminars and symposiums conducted throughout the year in different parts of the country. The participation is evaluated but "so far, I have just been able to go for one or two seminars. Every time I hear about such an event in another state, I have to prioritise. I am not able to save any money," says Singh.

Earlier this month and last year,

many research scholars from JNU, All India Institute of Medical Sciences, Defence Research & Development Organisation, University of Delhi (DU), and Hamdard University as well as students in other parts of the country protested against the authorities' alleged lack of interest in raising stipends substantially since 2010.

The HRD ministry had announced a stipend hike, effective from February 1, 2015, for all scholars. While the Union department of science and technology and the Indian Council of Medical Research announced the revision in the stipend to be implemented from October 1, 2014, the UGC public notice stated that the fresh rates would come into effect from December 1, 2014.

"Every agency has announced different dates for the implementation of the new stipend," says Saket

> PENNYWISE

● JRF amount in science, humanities and social science revised from **Rs 16,000 to Rs 25,000** per month while SRF hiked from **Rs 18,000 to Rs 28,000** per month

● PG scholarship for GATE/Graduate Pharmacy Aptitude Test-qualified students for ME/MTech/MPharma, etc, raised from **Rs 8,000 to Rs 12,400** per month

Bahuguna, Delhi state secretary, Akhil Bharatiya Vidyarthi Parishad, who is a junior research fellow (JRF) pursuing an MPhil in linguistics at DU. He demands that the funding agencies streamline the process and fix one date for all students, irrespective of their field, to ensure uniformity. "Students who have chosen to take an MPhil or PhD have done so because of their passion. We keep stressing on competing with the best but genuine research does not seem to be promoted. Many PhD

scholars are married. It is difficult for them to run their households."

His views are echoed by Kanishka (who does not use a surname), a senior research fellow (SRF) at DU. "I am working on a project. I am responsible right from its conception to completion, complete my work on my PhD, look at the administrative work involved. Rs 18,000 are not enough."

>> DEMANDS

The students want the cut-off date to introduce the changed slab for all fellowships to be April 1, 2014, with parity among all funding agencies. They have also sought a single organisation to co-ordinate with all funders. Also, they have demanded that the fellowship and contingency amounts be increased for all — National Eligibility Test (NET), non-NET, Graduate Aptitude Test in Engineering, non-GATE, Master's and all professional course candidates as well as research assistants — whether they are working in extramural projects or as individual fellows. There should be no discrimination between NET and non-NET, GATE and non-GATE fellows, say the protesters in a charter.



Students want the revised awards to be effective from April 1, 2014, with parity among all funding agencies. They have also sought a single organisation to co-ordinate with all the funders

Number of students taking JEE rising by 10% in Bengaluru

<http://timesofindia.indiatimes.com/city/bengaluru/Number-of-students-taking-JEE-rising-by-10-in-Bengaluru/articleshow/46496829.cms?>

BENGALURU: Getting a seat in an Indian Institute of Technology (IIT) opens up new vistas of success. No wonder, the number of students from Karnataka taking the Joint Entrance Examination (JEE), the admission test for undergraduate courses in IITs and other premier engineering schools, is swelling.

Coaching institutes in the city charge anywhere between Rs 90,000 and Rs 2.5 lakh for one or two-year JEE coaching programmes. They say the number of aspirants is increasing by 6-10% every year, despite a steep increase in fees over the last three years. Thomas George, director, TIME (Bengaluru), said the number of students taking JEE coaching is up by 30% compared to two years ago. The reason: salary packages offered to IITians have been bigger than what's offered to B-school students during the last few years. TIME charges an annual fee of Rs 70,000 and conducts classes five days a week.

In most cases, the JEE coaching fee is equal to or more than the school/college tuition fee.

Suhaas G (name changed), father of a student, said he pays Rs 70,000 as coaching fee for his daughter every year.

"I PU exam toppers, who have also got good ranking in other competitive exams, have been trained in these centres. If we invest now, my daughter can get back the money in her first three salaries alone after graduating from IIT or NIT," he said.

Sanjay Sebastian, centre head for Giraffe, said for two years now, the PU department has been following the NCERT syllabus. CET and COMEDK questions papers too are being framed according to this syllabus. As a result, many students are joining only JEE coaching classes.

According to Giraffe, around 150 students were joining its JEE programme a few years ago, but the number has touched 500 now. The institute charges around Rs 1 lakh per student for its two-year programme.

Meghana K (name changed), a II PU student, said though her college offers coaching for competitive exams, she found it of little use. Teachers at coaching centres are available round the clock to clear doubts, she said.

TOI Social Impact Awards 2015: Rays of Asha brighten classrooms

<http://timesofindia.indiatimes.com/india/TOI-Social-Impact-Awards-2015-Rays-of-Asha-brighten-classrooms/articleshow/46497624.cms>

When a powerful idea fuels youthful energies, futures are formed. Asha for education, this year's Social Impact Award winner in the International category, began as an Ivy League discussion group set up by three Indian students in their mid-20s at Berkeley in April 1991.

VJP Srivatsavoy, Sandeep Pandey and Deepak Gupta began bouncing off ideas on Newsgroup — a PC network for information exchange and an Internet-based collaboration among scientists — and soon hit on the idea of starting a non-profit student research group that would spread education to the disadvantaged in India.

Today, Asha involves 500 people around the world who've helped shape more than 50,000 lives through 316 educational projects across India in 24 years. From preprimary schooling to professional education in slums and rural patches, Asha works with stakeholders and community groups, and catalyzes social and economic change by schooling unprivileged children.

Deepak Gupta, who now teaches at IIT-Kanpur, and oversaw the building of the Asha Residential School for migrant children in Kanpur Dehat recalls: "The idea spread like wildfire (on the Berkeley Newsgroup). There were so many who wanted to do something. They found a platform." According to Asha's website, it directed \$20 million towards children's education between 2001 and 2011. Social activist Aruna Roy, jury member at the Social Impact Awards, said: "Asha has Indians abroad doing something for the country. They collect small amounts from people concerned about the marginalized and the poor, and offer finance and fellowships. There are only two institutes I know that are working from abroad, Asha is one of them. It's a commendable way of helping India."

Pandey left Asha after associating with political issues, finally joining the Lok Rajneeti Manch in 2012. "My idea of education is based on empowerment," he said. The 2001 Magsaysay winner laments the absence of a Common School System — a corner stone for securing social justice in education as outlined by the Education Commission (1964-66) under DS Kothari.

Asha remains largely amorphous. What began as a venture of zeal and activism by three bright-eyed Berkeley students has transformed into a movement that no one person is prepared to take credit for. Ask Gupta or the self-effacing Pandey who should receive the award, and they start naming their grassroot workers, wanting no part of the glory. As the poet said, "*Mai to akela hi chala tha janib-e-manzil magar, log aate gaye, karwan badhta gaya* (I was alone when I started my journey towards my goal. But people began joining me, and the flock kept getting bigger)."