Indian Express ND
05/07/2012
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# PM panel slams IIT entrance test

ANUBHUTI VISHNOI
NEW DELHI, JULY 4

THE Prime Minister's Scientific Advisory Council (PM-SAC) has drawn attention to the multiplicity of entrance examinations, backed the idea of a national test, and attacked the IIT entrance exam for its "negative effect on young minds".

Headed by Prof C N R Rao, the PM-SAC in a recent meeting has drawn up a checklist on essential steps for progress in higher education and commented on the malaise of multiple exams. It has singled out IITs for overburdening students.

"IIT entrance examinations not only have the reputation of being difficult and purposeful, but also have a negative effect on young minds. Youths suffer to succeed in the entrance examination, and lose excitement in education itself. Those who do succeed are already exhausted and not able to perform as well as fresh minds," the Council said in a submission to the PM. "Examinations have got increasing importance in the last few years. Entrance examinations have become a menace," the Council added.

# IIT-JEE format a boon for coaching schools

## Institutes claim the number of students has increased, following the HRD ministry's move to introduce a new format

KALPANA PATHAK & M SARASWATHY
Mumbai, 4 July

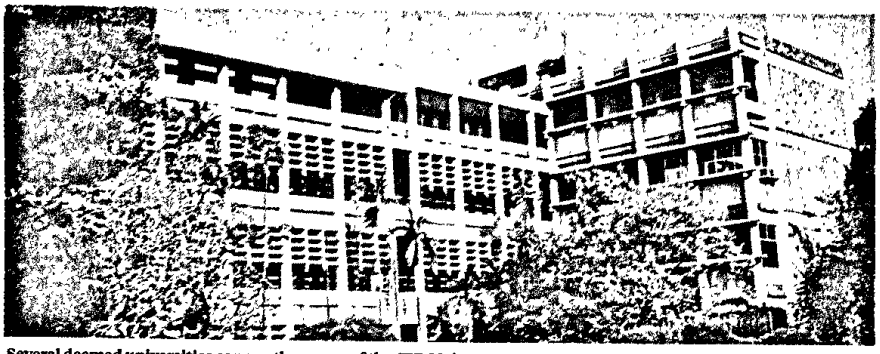
The idea of the Ministry of Human Resource Development (MHRD) to tweak the joint entrance examination (JEE) to discourage the coaching culture has done exactly the opposite so far.

Coaching institutes *Business Standard* spoke to said, with the MHRD insisting on inclusion of board marks as an eligibility criterion for admission to the IITs, admission to their programmes has gone up, and, in some cases, more than doubled.

"After Board examinations have been made a part of the admission procedure at IITs, enrolments for this year have more than doubled. There are about 1,200 students enrolled (for the 2014 exams), compared to 575 students last year. Further, the level of examination will get difficult now, as CBSE will set the JEE Main paper. Students and parents have understood that it will be difficult to get into the premier institutes without formal coaching," said Chandan Dikshit, planning and strategy head at Rao IIT Academy, an IIT-JEE coaching institute.

FIITJEE, another IIT-JEE coaching institute, says the number of applications this year will grow. "It is too early to give out the exact figures, as the admissions will go on till October. Since we had many students among the top rankers this year, there is a definite growth in students coming to us," said R L Trikha, director, FIITJEE.

It began when the MHRD concurred that due to the culture of coaching classes, schooling system has been thrown out of the window.



**Several deemed universities can use the scores of the JEE-Main exam to admit students after fixing a minimum percentage criterion**

So much so that students do not attend schools because of the pressure of such training programmes.

A committee, formed under Idi Chandy of IIT Madras, established a correlation between school performance and IIT performance, inferring that students were doing better in school. Thus, in a bid to promote school education and to dissuade the coaching culture, MHRD had been considering changing the IIT-JEE format.

Last week, it was decided that from 2013, JEE would be held in two parts — Main and Advanced. Students applying to the IITs would have to appear for JEE-Main. Only the top 1,50,000 who qualify from these would be eligible for taking the JEE-Advanced, to be held a few weeks after the Main exam.

The new test is an amalgamation of the All India Engineering Entrance Examination (AIEEE) and the IIT-JEE, where the Main exam will be equivalent to AIEEE, and Advanced to the IIT-JEE

For final admission to the IIT, based on the JEE-Advanced, a student should be ranked among the top 20 percentile of his respective Class XII Board. At present, any student scoring 60 per cent in their Class XII Board examination is eligible for a seat in the IITs. There are 32 Boards in India having different patterns of examination and evaluation.

While JEE-Main will be held by the Central Board of Secondary Education (CBSE), JEE-Advanced will be held by the IITs. Admission to the National Institutes of Technology (NITs) and Indian Institutes of Information Technology (IIITs) will be based on JEE-Main scores.

Several deemed universities can also use scores of the JEE-Main exam to admit students after they fix a minimum percentage criteria.

Praveen Tyagi, MD, IITians Pace, said, "This year, we have 13,000 students appearing for our entrance examinations in our integrated course, compared to 6,000 candidates last year. While last year we took 1,500 students, we will take 2,500 students this year." Tyagi explained this year there would be more students of AIEEE taking the JEE-Advanced, since there is a 30 per cent weightage given to the Advanced exam for admission to the non-IIT institutes.

At Kota-based Career Point Infosystems, around 25 per cent of students who had enrolled for an IIT-JEE coaching package have shifted to AIEEE (All India Engineering Entrance Examination) coaching, said the institute. "Students who know they will not qualify to be at the top 20 percentile have decided to opt out of IIT-JEE coaching and joined the AIEEE coaching instead. We have already seen a 25 per cent conversion," said Pramod Maheshwari, CEO, Career Point Infosystems, Kota.

### NEW TEST FORMULA

- **JEE will be held in two parts** – Main and Advanced – from 2013
- **3–4 weeks gap** between the two exams
- **New test is an amalgamation** of the All India Engineering Entrance Examination (AIEEE) and the IIT-JEE, where the Main exam will be equivalent to AIEEE, and the Advanced to the IIT-JEE
- **Only top 1,50,000 candidates** from the JEE-Main will qualify to appear in the JEE-Advanced
- **Admission to IITs will be based** on JEE-Advanced score
- **Students should rank among** top 20 percentile of their respective Class XII Boards to be considered eligible for the IITs
- **JEE-Main will be held by CBSE** and JEE-Advanced will be conducted by the IITs
- **Coaching institutes claim, with** MHRD insisting on inclusion of board marks as an eligibility criterion for admission to IITs, the number of students seeking admission has gone up, and in some cases, doubled.
- **At Kota-based Career Point Infosystems,** around 25 per cent of students who had enrolled for an IIT-JEE coaching package have shifted to AIEEE coaching

Career Point Infosystems, the only listed coaching institute, charges ₹80,000 for its IIT-JEE coaching package and ₹40,000 for its AIEEE coaching package.

# नहीं परवान चढ़ी 'एक देश-एक प्रवेश परीक्षा' मुहिम

- एनआइटी काउंसिल ने लिया आइआइटी से अलग राह का फैसला

जागरण ब्यूरो, नई दिल्ली : 'एक देश-एक प्रवेश परीक्षा' की चाहे जितनी बातें की हों, लेकिन वे मुकाम पर पहुंचती नहीं दिखतीं। अब एनआइटी काउंसिल ने अपने दाखिले के लिए अलग राह चलने का फैसला कर लिया है। वह संयुक्त प्रवेश परीक्षा मामले में आइआइटी सिस्टम का हिस्सा नहीं बनेगी।

राष्ट्रीय प्रौद्योगिकी संस्थान (एनआइटी) काउंसिल की बुधवार को यहां हुई बैठक में दाखिले के नए फार्मूले को अपनाने का फैसला हुआ है। देशभर के लगभग 44 राज्य शिक्षा बोर्ड के अंकों को नार्मलाइज (एक समान स्तर पर लाने) करने के फार्मूले को अंतिम रूप देने के लिए सीबीएसई चेयरमैन विनीत जोशी को जल्द ही एक कमेटी बनाने को अधिकृत किया गया है।

कमेटी में कुछ एनआइटी निदेशक, कोब्से (राज्यों की स्कूल शिक्षा बोर्ड की राष्ट्रीय परिषद) चेयरमैन व दूसरे विशेषज्ञ रखे जाएंगे। दूसरी तरफ भारतीय प्रौद्योगिकी संस्थानों में दाखिले के लिए आइआइटी काउंसिल ने जेईई-मुख्य परीक्षा में से टॉप डेढ़ लाख छात्रों की जेईई-एडवांस परीक्षा लेने का फैसला किया है। इसके बाद जेईई-एडवांस की मेरिट लिस्ट एवं राज्य स्कूल शिक्षा बोर्ड के टॉप 20 परसेंटाइल में शामिल छात्रों को ही आइआइटी में दाखिला देने का फैसला किया है।

गौरतलब है कि कपिल सिब्बल आइआइटी, एनआइटी समेत दूसरे सभी केंद्रीय इंजीनियरिंग शिक्षण संस्थानों में एक ही संयुक्त प्रवेश परीक्षा से दाखिले की बात कहते रहे है। अब सीबीएसई की तरफ से जेईई-मुख्य परीक्षा अलग होनी है। उसके कुछ हफ्ते बाद आइआइटी में दाखिले के लिए जेईई-एडवांस परीक्षा होगी।

बुधवार को यहां हुई एनआइटी काउंसिल की बैठक में शामिल एक निदेशक ने तो यहां तक कहा, 'जब हम आइआइटी सिस्टम का हिस्सा ही नहीं बन रहे है तो जेईई-मुख्य परीक्षा के बजाय हम पहले की तरह एआइईईई (अखिल भारतीय इंजीनियरिंग प्रवेश परीक्षा) नाम से ही प्रवेश परीक्षा करा सकते है'।

## एनआइटी में दाखिले का फार्मूला

- जेईई-मुख्य के अंकों को 60 प्रतिशत वेटेज
- इंटरमीडिएट बोर्ड के अंकों को 40 प्रतिशत वेटेज
- जेईई मुख्य व इंटर के अंकों को मिलाकर बनेगी मेरिट लिस्ट
- अलग-अलग शिक्षा बोर्डों के अंकों को नार्मलाइज करने के फार्मूले के लिए बनेगी समिति

## आइआइटी में दाखिले का फार्मूला

- जेईई-मुख्य के डेढ़ लाख टॉप अभ्यर्थियों को मिलेगा जेईई-एडवांस में बैठने का मौका
- आइआइटी-संयुक्त दाखिला बोर्ड कराएगा जेईई-एडवांस
- जेईई-एडवांस के अंकों के आधार पर बनेगी राष्ट्रीय मेरिट लिस्ट

एक अच्छी बात यह जरूर हुई है कि इन दोनों प्रवेश परीक्षाओं में बोर्ड के अंकों को वेटेज देने की राह जरूर निकली है।

**Business Standard ND 05/07/2012** P-8

# आईआईटी और रोटी

भारतीय प्रौद्योगिकी संस्थान (आईआईटी) में दाखिले की प्रक्रिया से जुड़े विवाद ने भले ही कोचिंग संस्थानों को परेशानी में डाल दिया हो लेकिन मुंबई में ऐसे ही एक संस्थान के प्रमुख ने कहा कि अगर इस प्रक्रिया की तुलना रोटी बनाने से की जाए तो मामले को समझना आसान हो जाएगा। उन्होंने कहा, 'मान लीजिये कि आईआईटी रोटी है तो इसे बनाने (प्रवेश पाने) के लिए आपको चाहिए आटा, नमक और पानी। आटे का स्थान पहले होने वाली प्रवेश परीक्षा के समान है और जिसका प्रतिनिधित्व अब कक्षा 12 की बोर्ड परीक्षा के अंक करेंगे। नमक की जगह प्रवेश परीक्षा ने ले ली है और हमेशा की तरह पानी कोचिंग संस्थानों की जगह पर है जो इन सभी को एकत्रित करता है ताकि रोटी बनाई जा सके। कहने का मतलब–आईआईटी में प्रवेश पाया जा सके।'

**Indian Express ND 05/07/2012** p-7

# NITs adopt CET: 40% for boards, 60% for JEE Main

EXPRESS NEWS SERVICE
NEW DELHI, JULY 4

ADOPTING the Common Entrance Exam, the NIT Council on Wednesday decided to give 40 per cent weightage to Class XII board scores and 60 per cent weightage to performance in JEE Main in determining admissions.

NIT aspirants will now not be required to appear for JEE Advanced as was originally planned and will appear for a single test — JEE Main. The 40:60 weightage formula will come into effect from 2013.

The new admission format will determine admissions to 30 NITs which enrol over 20,000 students. While CBSE will handle the administrative part of organising the JEE Main, IITs, NITs and states will work on the academic aspect of the exam. A meeting of IITs will be called to revise their admission format.

This marks a change from the decision taken at the May 28 joint council meeting wherein NITs had decided to accord 40 per cent weightage to board scores and 30 per cent each to performance in JEE Main and JEE Advanced. However, following the IIT Council's new decision dated June 27 to hold JEE Advanced on a separate date to draw up an IIT merit list, the NIT Council met on Wednesday to revise its proposal.

The Council has decided to set up a committee with NIT Directors on board to look into the issues relating to normalisation of Class XII Board marks on percentile basis. This group will coordinate with the Indian Statistical Institute, Chennai Mathematical Institute and Indian Institute of Science, Bangalore, to work on normalisation across school boards.

The IIT Council on June 27 decided that while Class XII board marks will be used as a cut-off for screening students for eligibility of admission to IITs, an IIT aspirant will have to be in the top 20 percentile of his board to make it to IITs. It is, however, JEE Advanced — a test that will be conducted and managed by IITs alone and held on a separate date from JEE Main — that will decide the IIT merit list. This new admission format will come into effect in 2013. JEE Main will serve to screen the top 1.5 lakh students who will appear for the JEE Advanced.

Hindu ND 05-Jul-12 P11

# NIT Council adopts new JEE

Special Correspondent

**NEW DELHI:** The National Institutes of Technology (NITs) on Wednesday adopted the new Joint Entrance Examination (JEE) system for admission to undergraduate engineering programmes from 2013. It has decided to give 40 per cent weightage to board results and 60 per cent weightage to the main exam for preparing the merit list.

However, the JEE was adopted with a small change as the students seeking admission to these institutes would not have to appear for the advance test as had been proposed earlier.

The 40 per cent weightage to the Class XII board results will be given after the process of normalisation of state boards' marks which would be looked at by a committee comprising NIT directors. The committee will look into validation of the formulae already proposed for normalisation of marks with the respective board results.

The Indian Institutes of Technology (IITs) had last week approved a formula for admission to undergraduate engineering programmes in centrally funded institutions which advocated the preparation of merit lists on the basis of the performance of the 20 percentile of successful board-exam candidates in the proposed advance test.

The government's proposal of a common entrance test for the IITs and other centrally funded institutes was rejected by IIT Kanpur and IIT Delhi, both of whose senates had announced separate entrance tests for their institutes.

Under the new system, for admission to all the centrally funded institutes like the NITs there would be 40 percentage weightage for performance in Class XII (after normalisation of marks), 30 per cent weightage for the main test and 30 per cent in the advanced test. However, for admission to IITs, the final merit list will include scores of the advanced test and the aspirant will have to be among the top 20 percentile in the State Board.

Maharashtra, Gujarat and Haryana have already announced their decision to adopt the government's proposal for their State-run engineering colleges. States and private engineering colleges can also adopt the common entrance test but will have to give minimum 40 per cent weightage to Board results. Several deemed-to-be-universities have expressed their willingness to adopt the common national test.

Times of India ND 05/07/2012 P-13

# NITs decide to give 40% weightage to board exams

TIMES NEWS NETWORK

**New Delhi:** With the 'one nation, one test' proposal still a distant dream, the National Institutes of Technology (NITs) on Wednesday resolved to give 40% weightage to class XII board results for entrance to their undergraduate programme from the next academic session. Aspirants for the central engineering institutes will appear for one exam that will have 60% weightage.

Students seeking admission to these institutes would not have to appear for the advance test as had been proposed earlier.

> Aspirants for the central engineering colleges will appear for one exam that will have 60% weightage

"The formula worked out is very simple...40% weightage to board results and 60% to the mains," R A Malshekar, chairman of the standing committee of NITs, said after a meeting chaired by HRD minister Kapil Sibal.

He said the 40% weightage to the board results will be given after the process of normalization of marks of the state board. A committee, including NIT directors, CBSE chairman and other experts, will look into the issues relating to normalization of class XII Board marks on percentile basis.

Officials said the committee would look into validation of the formulae proposed for normalization of marks with the respective board results.

The meeting was held just a week after the IITs decided that they will conduct their own test for admission to undergraduate programmes using the board exams only as a cut-off.

Only the top 20 percentile of each board will be eligible for admission to IITs.

According to the new formula, decided at a meeting of the IIT Council, all aspirants will give the JEE-Main exam. Of the approximately 12 lakh candidates, only the top 1.5 lakh will be qualified to appear for the JEE-Advanced test. The two tests will be held on separate days within four-six weeks of each other.

**ADMISSION POLICY**

# NITs agree to adopt single-test formula

By Prashant K. Nanda
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NEW DELHI

The National Institutes of Technology (NITs), an elite group of engineering colleges, on Wednesday agreed to opt for the common admission test devised by the central government.

The colleges will select students through a two-tiered process that will give 40% weightage to school board marks and 60% to the joint entrance exam, according to the decision taken at a council meeting headed by human resource development (HRD) minister Kapil Sibal, and attended by administrators of the NITs.

The 30 centrally funded NITs select at least 25,000 students every year, little over two and half times of the annual intake by Indian Institutes of Technology (IITs).

"It was decided that NITs will adopt the single-test formula from 2013," said an HRD ministry spokesperson.

"After detailed deliberations, the NIT Council decided that the NIT system would consider 40% weightage for performance in class XII Board marks normalized on percentile basis and the remainder 60% weightage would be given for performance in JEE Main and a combined merit list would be decided accordingly. The members of the council resolved to facilitate implementation of the new admission policy in close coordination with the CBSE," the ministry said in a separate statement.

The NIT council's decision also clears the road for IITs to have their own examination.

R.A. Mashelkar, chairman of the NIT standing committee, told news agency *PTI* that the "formula worked out is very simple"... and the 40% weightage to the board results will be given after the process of normalization of marks of the state boards.

A panel comprising directors of the NITs will look into the issue of normalization. HRD ministry officials said the committee would basically look into validation of the formula already proposed for normalization of marks.

On 28 May, Sibal had announced centrally funded technical institutes will admit students through a three-tiered process—40% to class 12 board, 30% each to JEE-Main and JEE-Advance.

A senate member of IIT-Bombay said NITs not staking claim to the Advance exam in a way is good. "Had they done that, it would have been difficult to hold an Advance exam with less number of candidates. This would have changed a number of things, including the possibility to have a subjective test." The senate member, too, did not want to be named.

The member, however, said that the HRD ministry is yet to send them the details of the 27 June IIT Council meeting, without which "IIT-Bombay can not have its senate meeting Thursday".

On 27 June, the government and the IITs agreed on a compromise that advances the concept of "one nation, one test", but effectively makes admission to IITs even more daunting than it has been. Under the plan, those aspiring for a seat in India's centrally funded engineering schools have to appear for a joint entrance examination (JEE)-Main. Only the top 150,000 would be eligible for taking a shot at an engineering seat in IITs through another exam called the JEE-Advanced, which would be held a few days later.

R.P. Sinha, chairman of the Bihar School board, said the move will give students of his "state a better chance to compete at the national level. We are ready to cooperate."

# अब एनआईटी में भी सिंगल एंट्रेंस

**नई दिल्ली | विशेष संवाददाता**

केंद्र सरकार ने आईआईटी के बाद एनआईटी और दूसरे केंद्रीय इंजीनियरिंग संस्थानों में एडमिशन के लिए भी सिंगल एंट्रेंस टेस्ट को अंतिम रूप दे दिया है।

मानव संसाधन विकास मंत्री कपिल सिब्बल की अध्यक्षता में हुई एनआईटी काउंसिल की बैठक में बुधवार को टेस्ट को मंजूरी दी गई। अगले साल से एआईईईई परीक्षा बंद हो जाएगी और ये नया टेस्ट शुरू होगा।

इन संस्थानों में एडमिशन चाहने वाले छात्रों को एडवांस टेस्ट देने की जरूरत नहीं होगी। साथ ही 12वीं के बोर्ड अंकों को भी 40 फीसदी का वेटेज मिलेगा। लेकिन इससे पहले सभी बोर्ड के अंकों को खास फार्मूले से एक समान किया जाएगा।

सिंगल एंट्रेंस टेस्ट के प्रारूप पर बढ़े विवाद के बाद पिछले महीने आईआईटी के लिए अलग प्रारूप तैयार किया गया था। अब एनआईटी और अन्य केंद्रीय संस्थानों के लिए भी इसका नया प्रारूप बना है। एनआईटी में बोर्ड के अंकों को 40 फीसदी की वेटेज देने पर सहमति बनी है। जबकि मेन टेस्ट को 60 फीसदी की वेटेज दी जाएगी। एडवांस टेस्ट सिर्फ आईआईटी में एडमिशन के लिए होगा। नए टेस्ट से लाखों छात्रों को राहत मिलेगी। मेन टेस्ट मूलतः एआईईईई के स्तर का ही होगा।

बैठक के बाद एनआईटी काउंसिल से जुड़े डॉ. आर. ए. माशेलकर ने कहा कि बोर्ड के अंकों को एक समान करने के लिए हालांकि फार्मूला पहले से तैयार है। इसकी प्रक्रिया और अंतिम रूपरेखा तैयार करने के लिए एनआईटी के निदेशकों की एक समिति गठित की जाएगी। बता दें कि आईआईटी के लिए अलग से एडवांस टेस्ट भी होगा जिसकी मेरिट से एडमिशन होंगे।

आईआईटी के लिए सभी बोर्डों के टॉप 20 पर्सेन्टाइल में आने वाले छात्रों का मेन टेस्ट की मेरिट से चुनाव किया जाएगा जिसके बाद डेढ़ लाख छात्रों को एडवांस टेस्ट में बैठने की अनुमति होगी।

परीक्षा का आयोजन सीबीएसई द्वारा किया जाएगा जबकि प्रश्न पत्र तैयार करने में एनआईटी, अन्य केंद्रीय संस्थान, आईआईटी और राज्य बोर्ड के प्रतिनिधि मदद करेंगे।

## एक टेस्ट से एडमिशन

- 20 नेशनल इंस्टीट्यूट ऑफ टेक्नोलॉजी हैं देश में
- 37 राष्ट्रीय इंजीनयरिंग संस्थानों में मिलेगा एक टेस्ट से दाखिला
- 35 हजार सीटें होंगी एनआईटी समेत दूसरे राष्ट्रीय संस्थानों में
- 14 लाख छात्र बैठेंगे इस प्रवेश परीक्षा में
- 40 फीसदी की वेटेज मिलेगी 12वीं बोर्ड के अंकों को
- 60 फीसदी अंक जुड़ेंगे मेन प्रवेश परीक्षा से

Amar Ujala ND 05/07/2012
P-10

# प्रवेश में बोर्ड के अंकों को 40 फीसदी महत्व देगा एनआईटी

**नई दिल्ली (ब्यूरो)।** एनआईटी काउंसिल इंजीनियरिंग के लिए वर्ष 2013 में प्रस्तावित संयुक्त प्रवेश परीक्षा में 40 फीसदी बोर्ड के प्राप्तांक को महत्व देगी। काउंसिल ने आईआईटी द्वारा अलग से डेढ़ लाख छात्रों के लिए कराई जाने वाली जेईई एडवांस परीक्षा से दूर ही रहने का फैसला लिया है। वह जेईई मेन परीक्षा को प्रवेश के लिए 60 फीसदी महत्व देगी। काउंसिल ने बैठक में यह भी तय किया है कि देश भर के स्कूल बोर्डों के रिजल्ट को नार्मलाइजेशन फार्मूला तय करने के लिए जल्द ही एक कमेटी का गठन किया जाएगा।

28 मई को आईआईटी एनआईटी कौंसिल की संयुक्त बैठक के बाद एनआईटी व अन्य केंद्रीय संस्थानों ने 40 फीसदी बोर्ड को महत्व देने के साथ ही 30-30 फीसदी महत्व

**आईआईटी द्वारा आयोजित जेईई एडवांस से दूसरी संस्थाओं ने बनाई दूरी**

जेईई मेन तथा एडवांस परीक्षा को देने का फार्मूला तय किया था। बाद में आईआईटी द्वारा पूरी परीक्षा प्रक्रिया का विरोध करने तथा नया फार्मूला तय किया गया। अब जेईई मेन परीक्षा के टॉप डेढ़ लाख छात्र जेईई एडवांस परीक्षा में शामिल होंगे, जो अलग से आईआईटी ज्वाइंट एडमिशन बोर्ड द्वारा आयोजित किया जाएगा। यही नहीं आईआईटी ने प्रवेश में इंटर बोर्ड के अंक को सीधे कोई महत्व न देकर सभी टॉप 20 पर्सेंटाइल छात्रों को जेईई एडवांस परीक्षा के लिए स्क्रीनिंग का आधार बनाया है। एनआईटी ने अब प्रवेश परीक्षा के लिए तय अपने नए प्रस्ताव में जेईई एडवांस परीक्षा को कोई महत्व नहीं देने का फैसला लिया है। इस पैटर्न को संयुक्त परीक्षा में शामिल होने वाले अन्य संस्थाओं द्वारा भी जल्द स्वीकृति मिलने की संभावना है।

जेईई मेन परीक्षा का आयोजन सीबीएसई के सहयोग से किया जाएगा। एनआईटी काउंसिल ने विभिन्न स्कूल बोर्डों के इंटरमीडिएट के परिणामों को नार्मलाइजेशन फार्मूला तय करने के लिए जल्द ही एक कमेटी गठित करने का भी फैसला लिया है। इस कमेटी में एनआईआईटी के निदेशकों के अलावा विभिन्न बोर्डों के चेयरमैन तथा विशेषज्ञ शामिल होंगे।

Indian Express Ahmedabad 14.07.2012 P-8

# Govt approves IIITs in Assam, Tripura and Rajasthan

**EXPRESS NEWS SERVICE**
NEW DELHI, JULY 3

MOVING forward on setting up of Indian Institutes of Information Technology (IIITs) on public-private partnership, the Union HRD Ministry has approved proposals of three states — Assam, Tripura and Rajasthan. The IIITs may, initially, be registered under the Societies Registration Act, 1860, and subsequently, would come under the umbrella of a Central legislation.

Eleven state governments have identified land and are also in the process of identifying industry partners. As many as 20 IIITs are proposed to be set up through PPP in order to address the challenges faced by the IT industry to set up a model of education which can produce best-in-class human resources in the sector. These institutions are conceived as self-sustaining, research-led institutions contributing significantly to the global competitiveness of key sectors of the Indian economy and industry with application of IT in selected domain areas.

The capital cost of each IIIT is Rs 128 crore to be contributed in the ratio of 50:35:15 by the Centre, state government and the industry, respectively. In the North-east, the industry participation for capital expenditure will be kept at 7.5 per cent and the Central government participation at 57.50 per cent while state governments at 35 per cent.

The state government will provide 50-100 acres of land free of cost. Each IIIT will meet its entire operating expenditure on its own within five years of commencement through students' fees, research and other internal accruals.

DNA Ahmedabad 04.07.2012 P-7

# IIT-D alumnus scrapes a fortune from e-waste

## Nitin Gupta's Attero Recycling extracts precious metals with zero landfill

**Promit Mukherjee** ◉ NEW DELHI

When Nitin Gupta and his brother wanted to dispose of a laptop in 2007, they weren't sure what to do with the machine other than to sell it in a nearby junkshop.

The 35-year-old IIT Delhi alumnus knew that the machine had a lot of precious metals which could fetch value than the few hundred rupees if it was sold as scrap. This realisation was the start of the India's first end-to-end electronic waste recycler – Attero Recycling.

The company which created an organised market for e-waste in the country has come a long way since. In five years, it has become the only e-waste recycler to provide end-to-end recycling with zero landfill.

However, Gupta, who started the company with his brother, feels that the organised market is very small and not making any substantial contribution to cut growing e-waste.

While about five to ten million cell phones are sold every month, close to 10 million computers, 80 million television sets and 10 million DVD players are sold every year in India, all of which have a certain lifespan.

After that, most of these find their way into the unorganised market, where the metal is extracted using environmentally hazardous ways and everything else is

**THE ENTREPRENEUR**

dumped in water bodies and landfills, he said. The market potential is huge, and hence his prime area of focus now is of creating awareness.

"Our teams in the metros are regularly interacting with corporates. We are also working with industry bodies such as CII and MAIT to spread awareness," Gupta, also the CEO of Attero, said.

The company is now planning to expand beyond Roorkee where it started its first plant. And the e-waste rules introduced by the government from May 2012 and aimed at reduction of hazardous substances in electrical and electronic equipment have come as a boost.

Under the rules, it is now mandatory for consumers to hand over electronic waste to designated collectors for proper disposal, while producers are required to take back e-waste for recycling.

The company that has set up a recycling hub in Bangalore to cater to the IT-heavy South in the next one year will look at places such as Chennai, Mumbai, Pune and Kolkata.

"We are trying to adopt a hub-and-spoke model, where regions with pockets of high concentration of hardware and information technology could collect the waste for us and do elementary recycling. This recycled waste can then be shipped to Roorkee, where precious metals could be extracted," said Gupta.

Companies which shied away from recycling will have to comply with the new rules, he said about the market potential.

While Gupta did not share financials, the company's 2.5 acre campus at Roorkee gives away the progress. With a 12-member research & development team working, Attero has filed five patents till date.

It has set up a plastic-to fuel-conversion plant for utilising non-recyclable plastic present in e-waste. It is the only company to undertake precious metal refining in the country.

"We worked on the process for two years, after which we perfected the technology of extracting metals from e-waste," said Gupta.

Tribune Chandigarh 04-07-2012 P-2

# IIT-Ropar, MIT tie-up on cards

TRIBUNE NEWS SERVICE

NEW DELHI, JULY 3

Renowned Massachusetts Institute of Technology (MIT), USA, could tie-up with the Indian Institute of Technology (IIT) at Ropar, Minister of State for Planning Ashwani Kumar told reporters today.

Ashwani Kumar, a Rajya Sabha MP from Punjab, said a major progress had been made in this regard during his recent visit to the US.

He said he had been told by the MIT that it would soon depute a team of senior staff to work out the modalities between the two institutes.

Ashwani Kumar had a meeting with senior faculty and deans of the MIT management, including Provost Claude R. Canizares, for a possible collaborative and consultancy venture. "The idea is to ask the MIT to advice and mentor the newly established IIT at Ropar so that it could become a centre of excellence in science and technology related education in Punjab."

Science and Technology Secretary Dr Ramasami, who is the chairperson of the Board of Directors of IIT-Ropar, has already written to Provost Canizares to speed up the move. Ashwami Kumar said, "Once it is done, it will change the scenario of education in Punjab."

Meanwhile, the Minister said a high-level expert group constituted by the Planning Commission was currently on a visit to Punjab. "It will shortly give a report on waterlogging, depletion of groundwater level and lack of availability of drinking water in various districts of Punjab," said the Minister.

Also, four projects involving an expenditure of approximately Rs 5.43 crore have been identified for additional funding in the border district of Gurdaspur by the Central Government under the Border Area Development Programme. "This will benefit villages located near the Indo-Pak border in Dinanagar, Fatehgarh Churian and Dera Baba Nanak blocks of the district," said the Minister.

# E-Yantra challenge at IIT-Bombay

Indian Institute of Technology, Bombay, has announced the launch of "E-Yantra Challenge", a competition in which participating students will be presented with robots developed at IIT-Bombay. They will have to develop solutions to pre-set tasks using these robots. This makes robotics accessible to students across a variety of disciplines such as computer science, information technology, electrical and electronics, and mechanical engineering.

The "E-Yantra Challenge" is open to all under-graduate students of engineering. Each group will have to programme a robotic platform and solve the given problem with whatever resources they are provided within a 12-week duration. Those who qualify will participate in the National Robotics Competition in theme-wise solving of tasks. This will then climax in a final competition at the IIT-Bombay Techfest in January. Interested participants can register at *www.iitb.ac.in.* Around 120 teams with a maximum number of four members in each team will be selected for the challenge.

## CAMPUS JOTTINGS

Indian Institute for Human Settlements has introduced a short-term course on "Integrated Urban Disaster Risk Reduction" which will be focusing on disaster preparedness. The course is aimed at professionals in the areas of building science, economics, sociology, urban planning, disaster recovery and business continuity.

The courses will be held from 9 a.m. to 6.30 p.m. in the Capital from July 17 to July 21. More information is available at *www.iihs.co.in.* The last date for applying is July 10.

Apeejay Institute of Mass Communication has invited applications for its post-graduate diploma programmes like advertising and marketing communication, corporate communication/PR and event management, TV, radio production and social media. All courses are for one year. Graduation in any stream is the eligibility criterion.

The application forms are available online and at the institute.

— **Vijetha S.N.**

# Big bang moment: Scientists may finally have found 'God particle'

## 50-Yr Search For Higgs Boson Ends In Triumph

**Geneva:** After a quest spanning nearly half a century, physicists on Wednesday said they had found a sub-atomic particle that may be the elusive Higgs boson, popularly known as the 'God particle', which is believed to confer mass on matter.

Rousing cheers and a standing ovation erupted at the European Organization for Nuclear Research (Cern) after scientists presented astonishing new data in their search for the mysterious particle.

**FULL COVERAGE: P 9**
▶ **From 13.7 billion years ago, P 16**
▶ **Father of the boson, P 9**

Many hailed it as a moment in history, and white-haired veterans of the quest shed tears of joy.

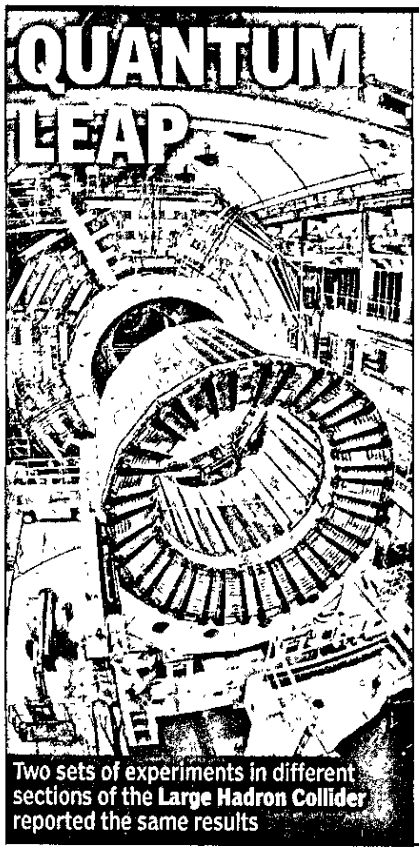
The new find is "consistent with (the) long-sought Higgs boson," Cern declared in a statement. "We have reached a milestone in our understanding of nature," said Cern director general Rolf Heuer.

He and others cautioned, though, that further work was needed to identify what exactly had been found.

"As a layman I would say we have it, but as a scientist I have to say, 'what do we have'?" Heuer told a press conference. "We have discovered a boson, and now we have to determine what kind of boson it is."

Finding the Higgs would validate the Standard Model of physics, a theory which identifies the building blocks for matter and the particles that convey fundamental forces.

Peter Higgs, the shy, soft-spoken Briton who in 1964 published the conceptual groundwork for the particle, was delighted. "I never expected this to happen in my lifetime and shall be asking my family to put some champagne in the fridge," the 83-year-old said. Higgs sat next to Belgian physicist Francois Englert, 79, who separately contributed to the theory. "I just want to say that my thoughts go to Robert Brout," said Englert, his eyes moist, as he lauded a fellow pioneer who died in 2011. AGENCIES



Two sets of experiments in different sections of the **Large Hadron Collider** reported the same results

**1 What is the Higgs boson?**
Higgs is the last missing piece of the Standard Model, the theory that describes the basic building blocks of the universe. In 1964, three scientists, Higgs, Brout and Englert, predicted it must exist to explain the most important property of all matter – its mass. However, Higgs boson was never experimentally confirmed – till now

**2 Why is it called 'God particle'?**
Nobel winning physicist Leon Lederman wanted to title his 1993 book 'The Goddamn Particle: If the Universe is the Answer, What is the Question?' But his editor changed it to 'God particle'. The nickname stuck though most scientists find it misleading

**3 How was it found?**
A 'Higgs boson-like particle' has been discovered at the $10bn Large Hadron Collider, 300ft underground near Geneva. LHC is designed to accelerate protons to very high speeds and then smash them together to create tiny fireballs, recreating conditions that prevailed when the universe was less than a trillionth of a second old

> "I never expected this to happen in my lifetime and shall be asking my family to put some champagne in the fridge

**Peter Higgs at Cern on Wednesday** (IN PIC WITH ATLAS EXPERIMENT HEAD FABIOLA GIANOTTI. IT WAS HIGGS WHO PREDICTED THE EXISTENCE OF HIGGS BOSON IN 1964)

**4 Why is the finding important?**
The discovery would confirm the Standard Model of physics. Other particles predicted by this theory have already been detected. With the missing Higgs boson now believed to be discovered, scientists can look at other riddles of the cosmos – like the mysterious dark matter and energy, antimatter, supersymmetry etc – with more surety

Hindustan Times ND 05/07/2012 P-1

# Finally, a glimpse of God

## QUANTUM LEAP More than 5,000 scientists help find clue to creation of universe

**Associated Press**
■ letters@hindustantimes.com

**GENEVA:** To cheers and standing ovations from scientists, the world's biggest atom smasher claimed the discovery of a new subatomic particle on Wednesday, calling it consistent with the long-sought Higgs boson — popularly known as the 'God particle' — that helps explain what gives mass to all matter in the universe.

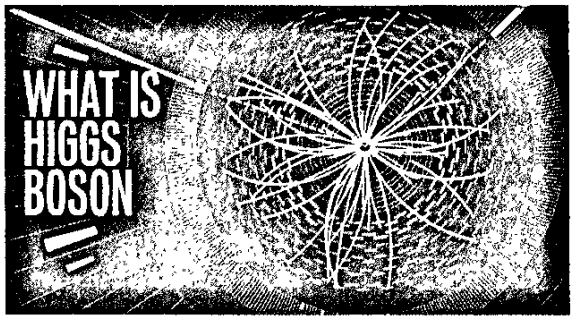
"We have now found the missing cornerstone of particle physics," Rolf Heuer, director of the European Center for Nuclear Research (CERN), told scientists.

He said the newly discovered subatomic particle is a boson, but he stopped just shy of claiming outright that it is the Higgs boson itself —an extremely fine distinction.

"As a layman, I think we did it," Heuer said.

CONTINUED ON PAGE 6

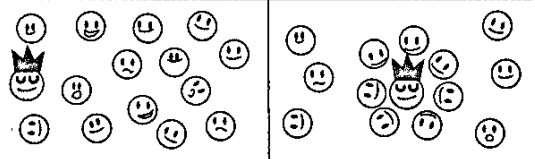
inside P15
» Higgs: A shy physicist
» Decoding the discovery
» Hawking lost $100 bet




■ A representation of proton-proton collision by CERN. AFP PHOTO

**Elusive Higgs boson, if found, would complete the standard model of physics. It is thought that matter obtains mass by interacting with Higgs field. If it did not exist, everything in universe would be massless**

**THE COCKTAIL PARTY ANALOGY**



Imagine a party where guests are evenly spaced in a room representing Higgs field, which is everywhere in universe. Suddenly, a celebrity enters

As celebrity passes through room, clump of guests surrounds her. Clump is harder to stop than one guest alone. So we can say that the clump has acquired mass

SOURCES: CERN, LIVESCIENCE.COM

## 'India is historic father of project'

**HTC & PTI**
■ letters@hindustantimes.com

**KOLKATA/GENEVA:** Many Indian scientists from the Saha Institute of Nuclear Physics, Kolkata, Tata Institute of Fundamental Research, Mumbai, Harishchandra Research Institute, Allahabad and Institute of Physics, Bhubaneswar, were involved in the world's most ambitious experiment.

"India is like a historic father of the project," said Paolo Giubellino, CERN spokesperson. The Higgs boson is partly named after Indian scientist Satyendra Nath Bose, who worked with Albert Einstein in the 1920s and made discoveries that led to the latter getting the Nobel Prize in particle physics.

# Finally, a glimpse of God

CONTINUED FROM PAGE 1

"We have a discovery. We have observed a new particle that is consistent with a Higgs boson."

The Higgs boson, which until now has been a theoretical particle, is seen as the key to understanding why matter has mass, which combines with gravity to give an object weight.

The idea is much like gravity and Isaac Newton's discovery of it: Gravity was there all the time before Newton explained it. But now scientists have seen something very much like the Higgs boson and can put that knowledge to further use.

CERN's atom smasher, the $10 billion Large Hadron Collider on the Swiss-French border, has been creating high-energy collisions of protons to investigate dark matter, antimatter and the creation of the universe, which many theorise occurred in a massive explosion known as the Big Bang.

Two independent teams of more than 5,000 scientists at CERN said on Wednesday that they have both observed a new subatomic particle — a boson. Heuer called it "most probably a Higgs boson, but we have to find out what kind of Higgs boson it is."

Asked whether the find is a discovery, Heuer answered, "As a layman, I think we have it. But as a scientist, I have to say, 'What do we have?' "

"It is consistent with a Higgs boson as is needed for the standard model," Heuer said. "We can only call it a Higgs boson — not the Higgs boson."

The leaders of the two CERN teams — Joe Incandela, head of CMS with 2,100 scientists, and Fabiola Gianotti, head of ATLAS with 3,000 scientists — each presented in complicated scientific terms what was essentially extremely strong evidence of a new particle.

Hindustan Times ND 05/07/2012 P-3

LANDMARKDISCOVERY

# God particle's Delhi-connect

**HT Correspondent**
htreporters@hindustantimes.com

**NEW DELHI:** While the world was celebrating the discovery of a new subatomic particle, professors at Delhi University's Physics and Astrophysics Department were having a small celebration of their own.

The team that helped make the discovery of this Higgs Boson like particle possible had on board five faculty members and eight PhD students — all from Delhi University.

The equipment being used to measure the energy of the Gammas from atomic particles has been prefabricated in India.

"More than 1000 Silicon based Pre-Shower Detectors were made in India and are taking data at CERN. The detectors are being operated and maintained by an Indian team," said RK Shivpuri of the Department of Physics and Astrophysics who is also the Principal Investigator of the research project 'Study of new particles with the CMS detector at the Large Hadron Collider and Heavy Ion Physics using LHC at CERN - CMS experiment.

Before starting on this project, the Indian team performed research and development of the detector.

Apart from Shivpuri, other professors involved in the project are Kirti Ranjan, Ashok Kumar, Ashutosh Bhardwaj and Md. Maimuddin

According to Shivpuri, the DU group also contributes in a significant manner to the software development of the experiment.

"Since billions of interactions are produces in a day, the amount of data is huge and in order to make sense of this data, the software effort needed is enormous. DU students and faculty are involved in this gigantic effort. DU is also a Tier 3 grid computing facility and we have access to the computing facility at CERN, Geneva," he said.

Three DU students will write their PhD thesis on Higgs search.

The significance of the particle is that it helps scientists understand the universe and how things work together. It explains how particles acquire mass.

# A new particle could be Physics' Holy Grail

Aspen, Colorado, July 4

PHYSICISTS working at CERN's Large Hadron Collider said on Wednesday that they had discovered a new subatomic particle that looks for all the world like the Higgs boson, a potential key to understanding why elementary particles have mass and indeed to the existence of diversity and life in the universe.

"I think we have it," Rolf Heuer, the director general of CERN, said in an interview from his office outside of Geneva, calling the discovery "a historic milestone". His words signalled what is probably the beginning of the end for one of the longest, most expensive searches in the history of science. If scientists are lucky, the discovery could lead to a new understanding of how the universe began.

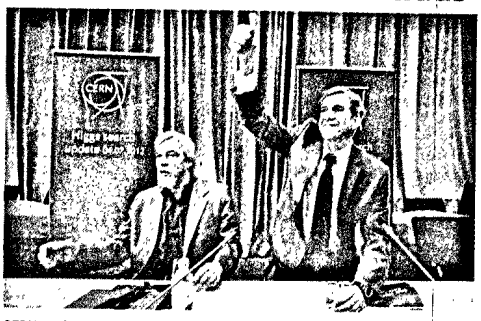
Dr Heuer and others said that it was too soon to know for sure whether the new particle, which weighs in at 125 billion electron volts, one of the heaviest subatomic particles yet, fits the simplest description given by the Standard Model, the theory that has ruled physics for the last half century, or whether it is an imposter, a single particle or even the first of many particles yet to be discovered. The latter possibilities are particularly exciting to physicists since they could point the way to new deeper ideas, beyond the Standard Model, about the nature of reality. For now, some physicists are calling it a "Higgs-like" particle.

"It's great to discover a new particle but you have find out what its properties are," John Ellis, a theorist at CERN, the European Organisation for Nuclear Research, said.

Joe Incandela, of the University of California, Santa Barbara, and spokesperson for one of two groups reporting data on Wednesday, called the discovery "very, very significant. It's something that may, in the end, be one of the biggest observations of any new phenomena in our field in the last 30 or 40 years, going way back to the discovery of quarks, for example".

Here at the Aspen Center for Physics, a retreat for scientists that will celebrate its 50th birthday on Saturday, the sounds of cheers and popping corks reverberated early on Wednesday morning against the Sawatch Range as bleary-eyed physicists watched their colleagues read off the results in a webcast from CERN. It was a scene duplicated in Melbourne, Australia, where physicists had gathered for a major conference, as well as in Los Angeles, Chicago, Princeton, New York, London, and beyond — everywhere that members of a curious species have dedicated their lives and fortunes to the search for their origins in a dark universe.

## DISCOVERY PROBABLY THE HIGGS



CERN spokesman Joe Incandela gestures next to CERN director general Rolf-Dieter Heuer during a press conference on Wednesday.

At CERN itself, 1,000 people stood in line all night to get into the auditorium, according to Guido Tonelli, a CERN physicist who said the atmosphere was like a rock concert. Peter Higgs, the University of Edinburgh theorist for whom the boson is named, entered the meeting to a standing ovation.

Confirmation of the Higgs boson or something very like it would constitute a rendezvous with destiny for a generation of physicists who have believed in the boson for half a century without ever seeing it. And it reaffirms a grand view of a universe ruled by simple and elegant and symmetrical laws, but in which everything interesting in it, such as ourselves, is due to flaws or breaks in that symmetry.

According to the Standard Model, which has ruled physics for 40 years now, the Higgs boson is the only visible and particular manifestation of an invisible force field, a cosmic molasses that permeates space and imbues elementary particles that would otherwise be massless with mass. Particles wading through it would gain heft.

Without this Higgs field, as it is known, or something like it, physicists say all the elementary forms of matter would zoom around at the speed of light, flowing through our hands like moonlight. There would be neither atoms nor life.

■Continued on Page 2
■See Edit: Sexy science, Page 8

## A new...

Physicists said that they would probably be studying the new Higgs particle for years. Any deviations from the simplest version of the boson — and there are hints of some already — could open a gateway to new phenomena and deeper theories that answer questions left hanging by the Standard Model: What, for example, is the dark matter that provides the gravitational scaffolding of galaxies? And why is the universe made of matter instead of antimatter?

"If the boson really is not acting standard, then that will imply that there is more to the story — more particles, maybe more forces around the corner," Neal Weiner, a theorist at New York University, wrote in an email, "What that would be is anyone's guess at the moment."

One intriguing candidate for the next theory they have been on the watch for is called supersymmetry, "SUSY" for short, which would come with a whole new laundry list of particles to be discovered, one of which might be the source of dark matter. In supersymmetry there are at least two Higgs bosons.

Dr. Incandela said, "The whole world thinks there is one Higgs, but there could be many of them."

Michael Turner, a cosmologist at the University of Chicago and chair of the physics center board, said, "This is a big moment for particle physics and a crossroads — will this be the high water mark or will it be the first of many discoveries that point us toward solving the really big questions that we have posed?"

Wednesday's announcement is also an impressive opening act for the Large Hadron Collider, the world's biggest physics machine, which collides protons and only began operating two years ago. It is still running at only half power.

Physicists had been holding their breaths and perhaps icing the champagne ever since last December. Two teams of about 3000 physicists each — one named Atlas, led by Fabiola Gianotti and the other CMS, led by Dr. Incandela — operate giant detectors in the collider, sorting the debris from the primordial fireballs left after proton collisions. Last winter they both reported hints of the same particle. They were not able, however, to rule out the possibility that it was a statistical fluke.

Since then the collider has more than doubled the number of collisions it has recorded.

The new results capped three weeks of feverish speculation and internet buzz as the physicists, who had been sworn to secrecy, did a breakneck analysis of some 800 trillion proton-proton collisions over the last two years. They were racing to get ready for a major conference in Melbourne that started on Wednesday and where they had promised an update on the Higgs search.

In the end, the CERN council, which consists of representatives from each of CERN's 20 member states, decided that the potentially historic announcement should come from the lab's own turf first.

Up until last weekend, physicists from inside were reporting that they themselves did not know what the outcome would be, though many were having fun with the speculation.

"HiggsRumors" became one of the most popular hashtags on Twitter. The particle also acquired its own iPhone app, a game called "Agent Higgs." Expectations soared when it was learned that the five surviving originators of the Higgs boson theory, including Peter Higgs of the University of Edinburgh, had been invited to the CERN news conference.

On the eve of the announcement, in what was an embarrassing moment for the lab where the Web was invented, a video of Dr. Incandela's making his statement was posted to the Internet and then quickly withdrawn. Dr. Incandela said he had made a series of video presentations with alternate conclusions so that the video producers would not know the right answer ahead of time, but the one that was right just happened to get posted.

But the December signal was no fluke.

Like Omar Sharif materializing out of a distant sandstorm into a man on horseback in the movie "Lawrence of Arabia," what was once a hint of a signal has grown over the last year, until it practically jumps off the chart, according to those who have seen it.

"I believe it now, I didn't before," said a physicist who was one of the first to see the new results but was not authorized to discuss them.

The new particle has a mass of about 125.3 billion electron volts, in the units of mass and energy — Einstein showed they are the same — that are favored by physicists, about as much as a whole Barium atom, according to the CMS group, and 126 according to Atlas.

Both groups said that the likelihood their signal was due to a chance fluctuation was less than one chance in 3.5 million, so-called "five sigma," which is the gold standard in physics for a discovery.

On that basis, Dr. Heuer said that he had decided only Tuesday afternoon to call the Higgs result a "discovery."

He said, "I know the science, and as director general I can stick out my neck."

Dr. Incandela and Dr. Gianotti's presentations were constantly interrupted by applause as they showed slide after slide of data bumps rising like mountains from the sea.

Fabiola Gianotti, of CERN and spokeswoman for the Atlas team, said one on point, "Why are you applauding, I'm not done yet. This is just beginning, there is more to come."

She noted that the mass of the putative Higgs made it easy to study its many behaviors and channels, "So," she said, "thanks, nature."

Gerald Guralnik, one of the founders of the Higgs theory, said he was glad to be at a physics meeting "where there is applause like a football game."

Asked to comment after the announcements, Dr. Higgs seemed overwhelmed, saying, "For me, its really an incredible thing that's happened in my lifetime."

In quantum theory, which is the language of particle physicists, elementary particles are divided into two rough categories: fermions, which are bits of matter like electrons; and bosons, which are bits of energy and can transmit forces, like the photon that transmits light.

Dr. Higgs of the University of Edinburgh, was one of six physicists, working in three independent groups, who in 1964 invented the notion of the cosmic molasses, or Higgs field. The others were Tom Kibble of Imperial College, London, Carl Hagen of University of Rochester, Dr. Guralnik of Brown University, and Francois Englert and the late Robert Brout, both of Université Libre de Bruxelles.

One implication of their theory was that this cosmic molasses, normally invisible and, of course, odorless, would produce its own quantum particle if hit hard enough, by the right amount of energy. The particle would be fragile and fall apart within a millionth of a second in a dozen different ways depending upon its own mass.

Unfortunately, the theory did not say how much this particle should weigh, which is what made it so hard to find. The pesky particle eluded researchers at a succession of particle accelerators, including the Large Electron Positron collider at CERN, which closed down in 2000, and the Tevatron at the Fermi National Accelerator Laboratory, or Fermilab, in Batavia, Ill., which shut down last year.

Along the way the Higgs boson achieved a notoriety rare for abstract physics. To the eternal dismay of his colleagues, Leon Lederman, the former director of Fermilab, called it the "God particle," in his book of the same name, later quipping that he had wanted to call it "the Goddamn particle."

Finding the missing boson was one of the main goals of Large Hadron Collider.

Both Dr. Heuer and Dr. Gianotti said they had not expected the search to succeed so quickly, a tribute they said, to the people who had built the collider and the detectors and learned to run them efficiently. "It's truly amazing," said Lisa Randall, a prominent Harvard theorist.

Dr. Heuer recently extended the current run of the collider an extra three months, to the end of the year, during which the experimenters say they expect to triple their data on the new particle, narrowing some its possible identities.

The collider will then shut down for two years for major repairs. When it starts up again, theories of both inner space and outer space could be up for grabs.

Although they have never been seen, Higgs-like fields play an important role in theories of the universe and in string theory. Under certain conditions, according to the strange accounting of Einsteinian physics, they can become suffused with energy that exerts an anti-gravitational force. Such fields have been proposed as the source of an enormous burst of expansion, known as inflation, early in the universe, and, possibly, as the secret of the dark energy that now seems to be speeding up the expansion of the universe.

Knowing more about the new particle will help put those theories on firmer ground, Dr. Turner of Chicago said.

So far the physicists admit, they know little. The CERN results are mostly based on measurements of two or three of the dozen different ways, or "channels," by which a Higgs boson could be produced and then decay.

There are hints, but only hints so far, that some of the channels are overproducing the Higgs while others might be underproducing, clues maybe that there is more than the Standard Model at work.

"This could be the first in a ring of discoveries," said Dr. Tonelli.

CERN will be examining the rest of the channels over the coming months and years, but the extra bounty of Higgs bosons suggests that the Standard Model is cracking, a prospect that the physicists find thrilling.

In an email, Maria Spiropulu, a professor at the California Institute of Technology who works with the CMS team at CERN wrote about the Higgs, "I personally do not want it to be standard model anything — I don't want it to be simple or symmetric or as predicted. I want us all to have been dealt a complex hand that will send me (and all of us) in a (good) loop for a long time." *NYT*

Hindustan Times ND 05/07/2012 P-10

# A quantum leap

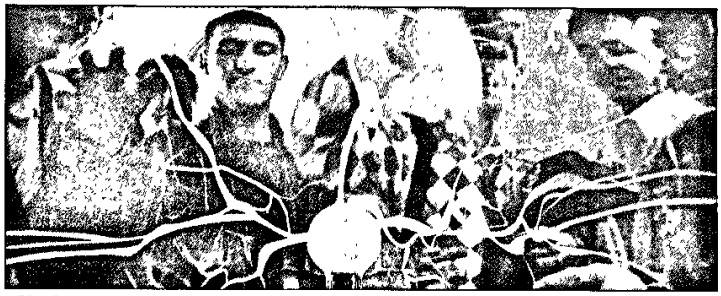
## The god particle will answer some of the most difficult questions before science

**Prakash Chandra**

Is the greatest hunt in modern science over? Scientists from two research teams, working independently of each other, have announced the results of an atom-smashing experiment in Switzerland where the Large Hadron Collider (LHC) at CERN may have finally found one of the most sought-after elementary particles: the Higgs boson.

Ever since Peter Higgs first identified the particle in 1964 as a by-product of the mass-giving field, the standard model of particle physics has considered the Higgs boson as the ultimate particle that explains why all the others have mass. Although Albert Einstein explained gravity, he couldn't find out why things have mass in the first place. Higgs showed how a field that clings to particles produces their mass, making them heavy. Particles of light are oblivious to this, while others wade through it like we do on flooded Delhi roads during the monsoons. In other words, particles can weigh nothing, but as soon as they are in the Higgs boson field, they become heavy. Hence the Higgs boson's nickname, 'God particle', as it gives mass to all matter. In that sense, the Higgs boson is actually hiding in plain sight — an enigma right in front of our eyes, as it gives all matter its mass.

For all its elusiveness, however, we know the ghostly Higgs has a tell-tale signature: it gives rise to a field that interacts with all other subatomic particles. During such interaction, these particles experience a drag that depends on their mass. So physicists hit upon the idea of slamming atoms at each other at high enough energies so that the Higgs would eventually be forced to reveal its 'tracks' in the resulting subatomic rubble. At least that is the theory.



• **Check it out: Students touch a gas-filled glass ball creating a plasma sphere at an exhibition in Berlin. The exhibit explains the scientific background of the Large Hadron Collider**

Technically, though, this is far more difficult than looking for that proverbial needle in a haystack for the Higgs is so unstable that it decays instantly, and can be detected only once in every ten trillion collisions. Hence the need for super-energetic colliders and highly sensitive detectors such as the LHC. The LHC occupies a 27 km super tunnel that crosses the Franco-Swiss border, in which proton beams are shot at over 99% of the speed of light in two parallel beams in opposite directions so that they crash into each other to create the mother of all experiments. Scientists hope the collisions occurring inside the giant machines will recreate the same conditions that existed in the first trillionth of a second after the big bang. And help track down the Higgs boson.

These are early days yet to say with any degree of certainty whether the Higgs has indeed been spotted. But the researchers owe their optimism to the fact that they are statistically able to rule out false alarms after a large number of collisions. Many more experiments and clarifications would be needed before the discovery is formally confirmed. But if and when that happens, it will literally revolutionise the way we look at the world around us. For finding Higgs will answer some of the most brain-bruising questions before science: what gives matter mass? What is the nature of dark matter and dark energy that account for 96% of the universe? How did the universe begin, and how will it evolve? The discovery could also help unify the four fundamental forces of nature: the strong and weak nuclear forces, gravity, and electromagnetic forces. And we will then know for sure whether, as string theorists believe, space-time holds dimensions other than our own.

*Prakash Chandra is a senior journalist*
The views expressed by the author are personal

Hindustan Times ND 05/07/2012 P-8

# UGC moves to ensure academic rights for students

**Vanita Srivastava**
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**NEW DELHI:** The University Grants Commission (UGC) is soon going to bring about a Students' Entitlement Regulation, which will allow a student to know his/ her specific academic rights and entitlements.

"The student must have complete knowledge about his rights relating to learning, living environment, physical activities, entertainment, sports facilities. If he feels that some specific right is not being met, he can complain," UGC chairperson Prof Ved Prakash told HT.

Once the regulation comes into effect, the student can demand for classes, reference books in library, journals to improve research facilities, adequate kind of accommodation and sports facilities.

"Our long term objective behind bringing about this regulation is to create awareness among students about their entitlement on the campus, which are of academic interest," he said.

**FILLIP TO STUDENTS' RIGHTS**

- Under the regulation, a student will be able to demand reference books in library, journals to improve research facilities, adequate accommodation and sports facilities
- Besides bringing about the regulation, plans are on to create a portal where students can post the inadequacies in a campus
- Universities will also organise seminars to help educate students about their academic rights.

Besides bringing about the regulation, he said plans were on to create a portal in which a student can post the inadequacies in his campus. "This would help the authorities know about the actual condition of the campus in academic matters."

The universities will also organise seminars to help educate the students about their academic entitlements.

Among other reforms, Prof Prakash said there was an immediate plan to start the facility of Joint Appointment in universities. "Under this facility, a person appointed by a particular institute can go to any other university as guest faculty," Prof Prakash said.

Besides helping meet the shortage of faculty, this facility will also be a great opportunity to share good resources, he said.

Maintaining that this would not just be confined to academic institutes, he said: "Experts from industry and other disciplines can be a part of this system. I am confident that this will ensure that good resources are made available to the students."

# Right concept, wrong place

## For the new Nalanda University to flourish, it must move closer to a vibrant urban centre where it will have access to a wider intellectual community

Philip G. Altbach

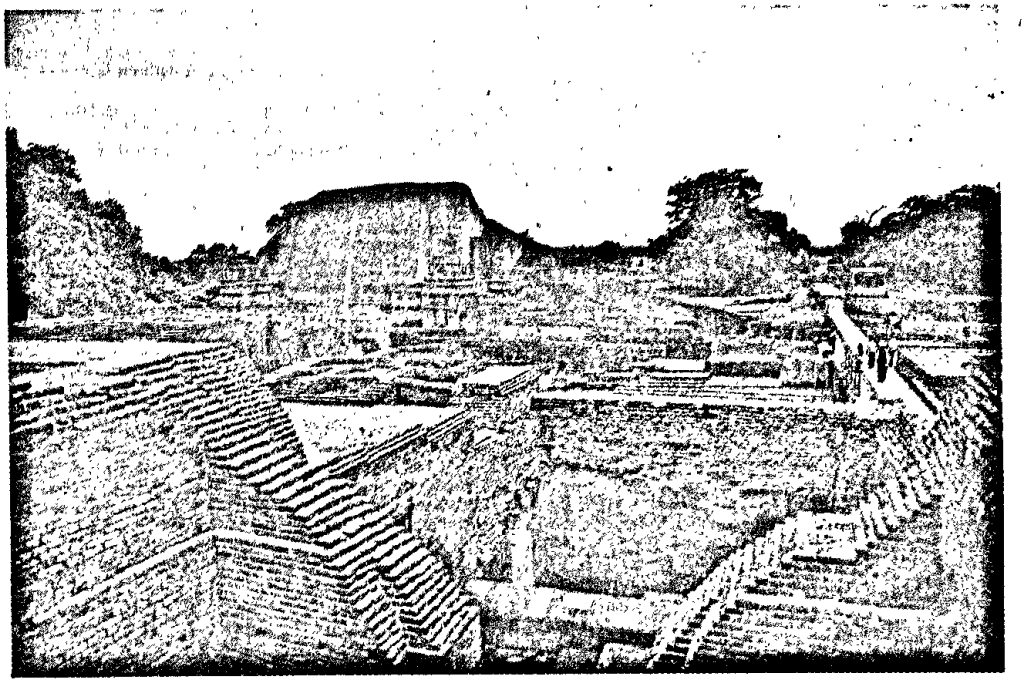
The Indian and Bihar governments, with the support of the East Asian Summit, are resurrecting the Sixth century Nalanda University, near its original site in rural northern Bihar. Significant funds have been earmarked for the project, and planning is now under way. Impressive international linkages have already been made. The concept, of course, is wonderful — to recreate in modern garb a true cultural and intellectual treasure of ancient India. The plan for the university focuses on the humanities, social sciences, ecology, and business studies — not the usual engineering and technology emphasis. But some serious practical and conceptual questions need to be asked.

### Location, location

The site of academic institutions is of key importance. For Nalanda International University, which wants to attract the best and brightest from India and the world, location is of special relevance. Are top students and faculty going to be attracted to rural Bihar? Perhaps, unfortunately, this option is not likely. The best minds want to be in the centre of intellectual, cultural, and political life. They want to be able to easily mingle with peers and value easy travel connections. The Internet assists scholarly communication, but it does not at all replace human interaction. They value amenities, not only good libraries and laboratories, but also art museums and even an array of attractive restaurants and coffeehouses.

The experience in India and elsewhere, in recent decades, is that it is difficult to build top institutions far from centres. Several of the original Indian Institutes of Technology (IIT) were located near but not in major urban centre. Thus, there was room to build a campus, while at the same time permitting relatively easy access to a wider intellectual community and to urban centre. Some of the new central universities, as well as the new IITs, located away from cities and communities are finding it difficult to attract the best faculty and students.

There are some examples of recently established "green field" academic institutions. Without doubt the most expensive is the King Abdullah University of Science and Technology (KAUST), located near Jeddah, Saudi Arabia. Located near a large city, benefiting from a multibillion-dollar endowment and an unlimited construction budget and connections with top universities overseas, its success is not assured. Luring the best academics to Saudi Arabia is not an easy task. It is significant that King Abdullah, who established the university, kept it separate from the Saudi government, with its own budget and endowment. He did not want the new institution to get bogged down in governmental bureaucracy. This example may have some relevance for India.



**HOW FAR IS THE AIRPORT?** *The best minds want to be at the centre of intellectual, cultural, and political life. A file picture of the ancient university.* — PHOTO: SPECIAL ARRANGEMENT

POSTECH, the Pohang University of Science and Technology, on the other hand, seems to constitute a significant success, although located in a provincial city in South Korea. Just 20 years old, it is well ranked globally. A private institution, it has benefited from the deep pockets of the Pohang Steel Company. The Japanese government located a technological university on the island of Okinawa, far from the Japanese mainland, several decades ago and made a huge investment. Many claim that it is a success, but the jury seems to be out.

### As "Development Projects"

Some of the great American public universities may also offer some insights. Most of the best of them were established in the 19th century in or close to urban centres — the University of California-Berkeley, for example, is near San Francisco and the University of Michigan is near Detroit, while the University of Illinois at Urbana-Champaign is in the middle of corn fields. While the latter is a fine university, it is not as distinguished as Berkeley or Michigan — and it suffers when competing for top faculty.

Governments in many countries decide on the location of new universities for many reasons. Students in an area may not have access to a convenient place to study. A particular region may be in need of investment or development. Or local politicians may have a loud voice. There are often very good arguments for placing higher education institutions in locales where they can contribute to economic growth, student access, or other laudable social goals. India has often been quite successful with this tactic.

But it is always a mistake to try to locate a top-level research university to meet development goals. The initial investment is large, and the chances of success are limited. The fact is that the needs of a research university are quite specialised and not comparable to those of an academic institution focused mainly on teaching.

### Can it work?

The new Nalanda's location is dictated by the site of the original Nalanda and not by specific development goals. However, most likely, part of the motivation is to bring resources and modernisation to Bihar — there is even talk of moving the site of an airport. The challenges facing the new Nalanda, in its effort to become a world-class university, are daunting. As noted, location is a highly negative factor, perhaps even a determining one. Money may also be an issue — building a top-class university is extraordinarily expensive, especially in a rural and undeveloped location — even with assistance of foreign donors and the central government. Funding for the first stages of development is significant, and levels of financial support must be maintained over time to ensure success. Nalanda International University, as an institution that plans, quite rightly, to stress ecology, development, peace studies, and similar "soft subjects," will find it difficult to obtain recognition in the global rankings, which largely measure the hard sciences. The best tactic here is to forget about the rankings, but this is not an easy thing to do. The involvement of many agencies, of both State and Central government, may create bottlenecks and bureaucracy — *which often seems to be the case in India as well as elsewhere.*

Perhaps the best course of action would be to keep the name and the spirit of Nalanda but move the university to a more practical location.

*(Philip G. Altbach is at Boston College in the United States.)*

Nav Bharat Times ND 05-Jul-12
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# साइंस और टेक्नॉलजी में लंबी छलांग लगाने को तैयार भारत

**वस ।। नई दिल्ली :** सरकार ने साइंस और टेक्नॉलजी के मोर्चे पर देश को नए मुकाम तक पहुंचाने का इरादा जताया है। इस मकसद से बुधवार को साइंस एंड टेक्नॉलजी राज्यमंत्री अश्विनी कुमार ने देश के टॉप साइंटिस्ट्स के साथ मीटिंग की। इसमें तय किया गया कि देश को सुपर कंप्यूटिंग के क्षेत्र में अव्वल बनाने के साथ-साथ गहरे समुद्र में खनन संबंधी सुविधाओं का विस्तार किया जाएगा।

**सुपर कंप्यूटिंग और समुद्र में खनन सुविधाओं का विस्तार करने को तैयार सरकार**

**सुपर कंप्यूटिंग से मिलेगी मदद :** तय किया गया कि सुपर कंप्यूटर से संबंधित क्षमताओं को बढ़ाने के लिए ठोस एक्शन प्लान बनाया जाएगा। अमल के लिए टीम बनेगी। सरकार का मानना है कि सुपर कंप्यूटिंग से मौसम की सटीक भविष्यवाणी मुमकिन होगी। नई दवाओं की खोज में मदद और जीनोम सीक्वेंसिंग का काम आसान होगा। सभी नागरिकों का इलेक्ट्रॉनिक हेल्थ रेकॉर्ड रखना आसान होगा और भूकंप संबंधी इंजीनियरिंग, संचार और कई अन्य कामों में मदद मिलेगी।

**गहरे समुद्र में खनन :** मीटिंग में तय किया गया कि साइंटिस्ट्स और ट्रेंड लोगों की टीम बनाकर समुद्र में खनन की दिशा में तुरंत काम शुरू किया जाए। गहरे समुद्र में कॉपर, टाइटेनियम, कोबाल्ट, प्लैटिनम, मैगनीज और निकेल का विशाल भंडार है।

Rashtriya Sahara ND 05-Jul-12 P2

# 'देश में होगी क्लाउड क्रांति'


नई दिल्ली में बुधवार को सीआईआई द्वारा आयोजित 'क्लाउड समिट 2012' में भारतीय क्लाउड क्रांति पर श्वेतपत्र जारी करते केंद्रीय संचार मंत्री कपिल सिब्बल।

नई दिल्ली (एजेंसी)। मानव संसाधन विकास मंत्री कपिल सिब्बल ने बुधवार को कहा कि देश में सूचनाओं और आंकड़ों को प्राप्त करने तथा उसके आदान-प्रदान के क्षेत्र में आने वाले दिनों में 'क्लाउड क्रांति' होगी और तब अधिक कंपयूटरों की जरूरत नहीं रहेगी।

सिब्बल ने भारतीय उद्योग परिसंघ द्वारा आयोजित क्लाउड सम्मेलन का उद्घाटन करते हुए यह बात कही। इस अवसर पर उन्होंने भारत में क्लाउड क्रांति के बारे में एक रिपोर्ट भी जारी की। उन्होंने बताया कि भारतीय संचार निगम लिमिटेड इस वर्ष देश में 12 डाटा सेंटर भी तैयार करेगा ताकि लोगों को सूचनाएं मिल सकें।

▶ तब अधिक कंप्यूटरों की जरूरत नहीं रहेगी : सिब्बल

सूचना एवं प्रौद्योगिकी के क्षेत्र में कंप्यूटरों की जरूरत नहीं रहेगी और सुदूर कंप्यूटरों के जरिए ब्रांडबैंड और केबल के माध्यम से लोगों को आंकड़ें तथा सूचनाएं मिल सकेंगी। उन्होंने कहा कि हम 4 जी दौर में आने वाले हैं और भविष्य में क्लाउड कंप्यूटिंग भी शुरू हो जाएगी। उन्होंने कहा कि अभी लघु एवं मझौले कंपनियों को उसकी अधिक जरूरत होगी क्योंकि वे बड़ी संख्या में कंप्यूटरों का इस्तेमाल नहीं कर सकते। उन्होंने आशा व्यक्त की कि आकाश- दो से जब क्लाउड कंपूटिंग शुरू हो जाएगी तो शिक्षा के क्षेत्र में भी क्रांति हो जाएगी। उन्होंने कहा कि क्लाउड कंपयूटिंग के बारे में सूचना एवं प्रौद्योगिकी मंत्रालय गोलमेज बैठक बुलाएगा जिसमें उद्योग जगत, अकादमिक जगत एवं तकनीकी जगत के लोग भाग लेंगे और यह विचार-विमर्श करेंगे कि क्लाउड क्रांति की रूपरेखा देश में कैसे तैयार हो।