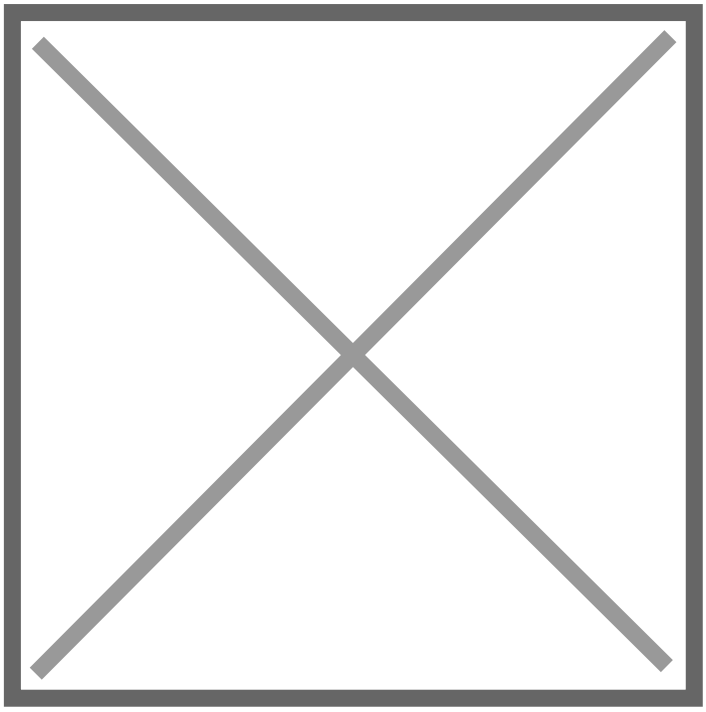
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India

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India's Top BT Institutions

Rajiv Gandhi Center for Biotechnology, Trivandrum, is India's leading biotech institution.

Rajiv Gandhi Center for Biotechnology (RGCB), Trivandrum, emerging as India's top biotech institute in 2006 was a surprise to BioSpectrum too. The Center has turned out to be the dark horse. So far it has managed to thrive without much fanfare and publicity, in a relatively low-key atmosphere.

Institutes like Jawaharlal Nehru University, Delhi; University of Hyderabad, Hyderabad; Institute of Chemical Technology, Mumbai; IIT, New Delhi; and Anna University, Chennai, are some of the well known institutes that enjoy top mind share in the biotech community . We all knew that the Rajiv Gandhi Center for Biotechnology was taking off in a big way focusing on research and development in a niche industrial area. The Centre was accorded the status of autonomous national institute. And the Finance Minister, P Chidambaram, presenting the 2005-06 Budget, proposed a Rs 521 crore outlay, an increase of Rs 76 crore over the previous year, to boost research in the biotech field. And the Rajiv Gandhi Center for Biotechnology was "upgraded" at the request of the Ministry of Science and Technology. (Until then, the institution was under the Kerala State Council for Science and Technology.)

The Union Minister for Science and Technology and Ocean Development, Kapil Sibal, said the move was meant to allow the Center to undertake more research as well as train more young scientists.

All these moves augured well for the Rajiv Gandhi Center for Biotechnology, which has 28 full-time scientists and doctoral students. Given the interest worldwide in employing biotechnology to improve human development, the Rajiv Gandhi Center for Biotechnology can be expected to do more. The facilities at the Rajiv Gandhi Centre would not only help the institution but also in projecting India as a potential destination for biotech research and business. In March, its proposal for a business incubator facility was cleared in principle by the State Biotechnology Commission.

Prof. M Radkakrishna Pillai, Director of the Rajiv Gandhi Center for Biotechnology, told that the RGCB Incubator Facility (RIF) would function as a non-profit unit to help young scientists who have the technological and organisational capacity to design and develop biotech products and processes but lack the financial resources to start an enterprise.

The RGCB has developed a drug based on a "one-time ayurvedic remedy" to fight the side effects of radiation. According to Prof. Pillai, the drug was the result of a collaborative research project involving a scientist, cancer physician and an ayurvedic medic using herbs, commonly available in the courtyards of homes in Kerala. This was the first time such a collaborative effort was being made. The final product of this effort should be available to those suffering from cancer for a mere 50 paise. A similar drug being sold in the US was priced at $200.

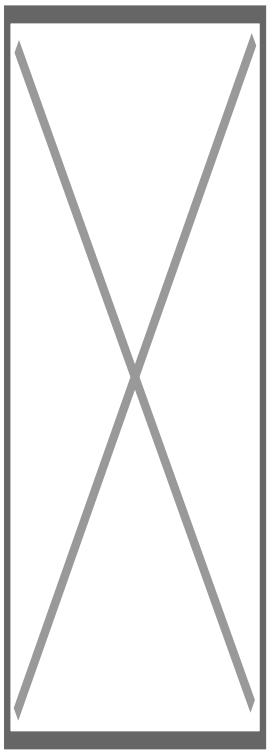
"Delivering discovery for the nation is our mission," said Prof. Pillai. "There are many who share the idea that biotechnology will follow information technology to become a mainstream focal point in the generation of a knowledge-based economy. Indeed, progress in biotechnology will rely on information technology and computational biology allowing deeper understanding of the nature of biological processes. If translating biotechnology to economic and social gain is the critical requirement for India, then the country's investment in Rajiv Gandhi Centre for Biotechnology (RGCB) is wholly justified. The institute's moment of reckoning came in February 2006 when the Union Finance Minister in the National Budget announced the decision to accord RGCB the status of an autonomous national institute, thereby confirming its stature as a center of excellence in biotechnology."

RGCB has adapted interdisciplinary mode of biotechnology research. The academic and research units at RGCB have clear objectives and goals. In medical biotechnology, RGCB scientists utilize information and techniques available in the post genome era to understand etiology, pathogenesis and disease course of acute and chronic diseases besides developing strategies for prevention and cure, including newer therapeutic molecules, vaccines and improved diagnostics. RGCB biotechnologists also work on the development of disease resistant pepper and ginger, two of the Kerala's important cash crops besides developing and characterizing medicinal plants and derivatives.

The institute's PhD program is one of the most sought after in the country and a major provider of trained manpower to academia and industry.

"I am confident that that RGCB will continue to lead the translation of biotechnology into nation building, providing leadership, scientific expertise and infrastructure for progress in biotechnology. My scientific, technical and administrative colleagues and I intend to apply our vision, passion, discipline and conscience to lead RGCB into a new horizon for biotechnology applications and development," concluded Prof Pillai.

Methodology



The BioSpectrum Top Biotech Schools 2006 study includes information pertaining to BTech, Masters and PhD courses but not of BSc. courses. This study, the third in our series, was conducted in November 2006. To maintain objectivity and avoid biases in ranking the institutes, BioSpectrum based its methodology on measurable and quantifiable data. As a result, the research team did not seek perceptions and opinions of stakeholders such as students or industry to rank the institutes. BioSpectrum team sent questionnaires to over 200 institutes and followed up with them. We received a total of 102 questionnaires.

Step - I : Identification of Parameters for Ranking of the Institutes

Like the previous year's studies, the parameters suitable for ranking of the institutes were identified in consultation with experts from the industry, education and R&D. Suitability of a parameter was decided after telephonic discussion with 15 experts. From the discussion it had emerged that Faculty, Industry Interface, Infrastructure and Placements were the most important parameters on which the institutes should be ranked. These parameters have been used for ranking of the institutes this year as well.

Step - II : Importance Ranking of the Parameters

Structured questionnaire was used to take opinion of 15 experts on relative importance of the four parameters prior to the study. Their opinion was taken in to consideration for deciding on weights to be assigned to each parameter. The following means emerged based on data received from experts:

Faculty and infrastructure had emerged as the two most important parameters ahead of placement and industry interaction. These two parameters get nearly two third importance in the overall ranking. In the present study also these weights have been applied to parameter scores of an institute to arrive at the final score.

Step - III : Data collection, Analysis and Ranking of the Institutes

A pre-tested structured questionnaire was sent to Directors/ Principals of Biotech institutes by the BioSpectrum team. BioSpectrum received responses from 102 institutes, colleges or departments. BioSpectrum scrutinized and validated the responses given by these institutes for accuracy, consistency and sufficiency of the data, data entry, analysis of the data and ranking of the institutes.

The research team spent considerable amount of time accurately analyzing the filled in data for each institute:

- For each institute, a score was arrived at for each parameter. For a particular parameter, the score was a composition of each of the sub-parameters. For example, Faculty score of an institute would be composed of faculty per student, qualification of faculty members, qualification of faculty members, research article contribution of the faculty to national and international journals, patents filed and granted.

- Infrastructure score would be similarly composed of capital expenditure on lab equipment and consumables, expenditure on books and journals, and availability of dedicated and shared PCs per student. Similar scores were arrived at for industry interaction and placement using sub-parameters.

- Appropriate and largely consistent weights were used for sub-parameters wherever necessary. To give an example, faculty members with PhDs and above were given a higher weight than non-PhDs to arrive at the qualification score. Similarly, publications in international journals were given a higher weight than publications in national journals. More recent publishing of papers, or more recent patents filed/ granted have been given higher weights during analysis.

- Sub-parameter scores were indexed with hundred points being granted to the institute with highest score for a particular sub-parameter. Indexed scores were than added up for each institute to arrive at the Total Score for a particular parameter. Scores were than averaged on hundred.

- Each of the parameters (faculty, infrastructure, industry interaction and placements) was further weighed as per weights provided by experts to arrive at the total score of an institute. The institutes were than ranked as per this score on an overall basis.

- The Ranking was done separately for the Public and Private Institutes.