TOP STORY

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INDIA'S TOP BIOTECH SCHOOLS

Ranking of top institutes imparting education in Biotech.

The last few years have seen the emergence of the Biotech industry in India. The industry is expected to cross a billion dollar mark during the current financial year. The rate of growth which was nearly 40 percent last year, may accelerate with some of the patent related hurdles getting addressed. As with many other areas, India's capabilities, be it in manufacturing, clinical research or services are well recognized worldwide.

The growth of this industry means a focus on the educational system from the point of availability of well-equipped educational institutes and colleges, which can address the need of trained manpower. Unlike other industries like IT and Telecom, the availability of options as well as the ranking of institutes/colleges are not well documented in the biotech industry.

Top 20 Ranking of Institutes Offering Biotech Courses

Parameter Scores of the Top 20 Biotech Institutes

The Overall Top 20 Ranking of Private Institutes

Ranking of all Institutes on Faculty Parameter

Parameter Scores of the Top 20 Private Institutes

The Best Institutes
Amongst all institutes and colleges, which are imparting education at the undergraduate and/or postgraduate level in Biotech, University of Hyderabad, Hyderabad emerges as the best top ranked institution in the country. It is followed by Anna University, Chennai, at the second position, University of Pune, Pune, at the third position, IIT, New Delhi at the fourth and JNU, New Delhi at the fifth position.

As one would expect, amongst Top 20 Biotech institutions in India, 16 are public and only four are in the private sector domain. Barring last few years in which private sector has invested money in higher education, education has largely been in the public domain. Amity Institute of Biotechnology, Noida, Vidya Pratishthan's School of Biotechnology, Pune, CSK HP Agricultural University, Palampur and Avinashilingam Institute for Women, Coimbatore are the four institutions in private sector which occupy slots amongst India's Top 20 institutions in Biotech area. It may further be observed that none of these institutions figure amongst top 10.

The Top 20 list is dominated by institutions in Northern and Southern parts of India. Eight colleges/ universities each figure in the list from North and South leaving only four in the Western region. The Eastern region is conspicuously absent from the list with no institution appearing in the Top 20 list.

As has been mentioned earlier, four parameters have been used to arrive at the overall score or ranking - Faculty, Infrastructure, Industry interaction and Placements. Even within Top 20, ranking of institutes vary substantially on these four parameters throwing up gaps, which can be addressed by the respective institutions. To take some examples:

- University of Hyderabad occupies top rank under Faculty but does not do well on Infrastructure or on Placements. On the latter two parameters, the University does not figure even in top 5 list for a particular parameter. It however, scores very well on Industry interaction.

- Anna University at Number 2 overall rank does consistently well on Faculty, Industry interaction and Placements. However, much more is required to be done on building up the Infrastructure for Biotech students.

- University of Pune tops in terms of its Placement score, does well on Faculty but needs to improve substantially both on Infrastructure and Industry interaction.

- Given its fourth overall ranking, IIT, New Delhi displays similar scores for Faculty, Industry interaction and Placements but leaves much to be desired in relation to other institutes on Infrastructure.

- JNU, Delhi does well on all scores but Placements does not seem to be its top priority.

To closely examine status with respect to Faculty, the institutes were sorted just on the Faculty score. While the top 5 institutes and their

Within Faculty, the top rankers on sub parameters include	
Faculty/ student ratio	Entomology Research Institute, Chennai
Qualification	University of Hyderabad, Hyderabad
Experience	University of Hyderabad, Hyderabad
Publications	University of Hyderabad, Hyderabad
Patents	University of Hyderabad, Hyderabad

rankings remain same as in overall, changes are observed after the fifth position. Newer institutions enter the top 20 list which is based only on the faculty score. It is further observed that only one private institute figures in the top 10 by Faculty namely, Amity Institute of Biotechnology.

Within Infrastructure, there are only two private institutes which fall in top 20 Infrastructure ranking. Moreover, none of the institutes fall in private domain in the top 10 ranking.

On the sub parameter scores of Infrastructure, the top rankers being

Library	Guru Gobind Singh Indraprastha University, Delhi
Lab Equipment:	Jawaharlal Nehru University, Delhi
Dedicated PCs	Institute of Engg. & Technology, P.U., Chandigarh

An analysis was also carried out to look at institutes more closely only on the Industry interaction parameter. There are seven private institutes amongst top 20 list of institutes sorted only on this parameter. Amongst the top 10, there is only one private namely, Kolhapur Institute of Technology, Kolhapur.

As regards the sub parameters relating to Industry interaction, the top rankers are:z

Products developed:
Univ of Hyderabad and Kolhapur Institutes of Technology

Sponsored projects:
IIT Mumbai

Royalty inflow:
Jawaharlal Nehru University, Delhi

It is interesting to note that private institutes domuch better on placement parameter. Amongst the top 10 institutes sorted only on this, there are five institutes from the private sector. Amongst the sub parameter scores of Placement, the top rankers are as follows:

Student placement:
Anna University, Chennai

Listed companies visiting:
University of Pune, Pune

Offers by listed companies:
University of Pune, Pune

The survey was conducted by BioSpectrum through CyberMedia Research

Methodology

In order to maintain objectivity and avoid biases, CyberMedia Research decided to base its methodology to rank institutes 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. Quantifiable data was collected from institutes directly using a structured questionnaire on different parameters.
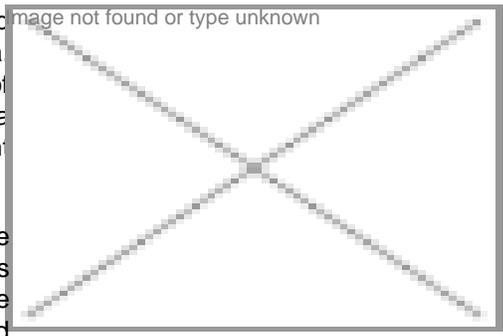
The parameters were identified in consultation with very senior experts from the industry, education and R&D through in-depth telephonic interviews. Discussions were held with as many as 15 senior personnel having in-depth knowledge of the industry. Experts felt that Faculty, Industry Interaction, Infrastructure and Placements were the most important parameters on which the institutes should be ranked.

Having zeroed down on parameters, about 30 experts were again contacted through a structured questionnaire to arrive at the parameter weights. The following means emerged based on data received from experts:

Parameter	Weights

Parameter	Weight
Faculty	32
Infrastructure	32
Industry interaction	16
Placement	20

Faculty and infrastructure emerge as the two most important parameters ahead of placement and industry interaction. These weights were applied to parameter scores of an institute to arrive at its final score.

The above parameters were further broken into sub-parameters as per discussion as follows:

A pre-tested structured questionnaire was sent to more than 300 directors/principals of Biotech institutes. The research team received responses from 95 institutes and colleges. Responses of 27 were rejected because they were only scantily filled. While a certain degree of verification was done, in most cases, data was taken as stated. Clarifications were sought in cases with extreme values or where units were doubtful.

Faculty

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

- Faculty per student
- Faculty qualification
- Faculty experience
- Publications by the faculty in national and International journals at different points of time
- Patents filed/granted both national and international at different points of time

• For each institute, a score was arrived at for each of the parameters. 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/student, qualification of faculty members, and experience amongst others. Infrastructure score would be similarly composed of capital expenditure on equipment, expenditure on books, and availability of PCs per student.

Infrastructure

- Expenditure on library
- Expenditure on lab equipment at different points of time
- PCs/ student (dedicated for biotech students)

• 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, more recent capital expenditure or more recent patents filed/ granted have been given higher weights.

Industry interaction

- Products developed by the institute in production
- Projects sponsored to an institute from private and government sources
- Royalty inflow at different times

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

Placements

- No. of students placed against needed
- Visits of prestigious companies for recruitment
- Placements offered by listed companies

• Each of the parameters (faculty, infrastructure, 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.

About CyberMedia Research

CyberMedia Research is a part of Cyber Media India Limited - a specialty media house, with nine publications including Dataquest, PCQuest, Voice&Data, Living Digital and BioSpectrum in the infotech, telecom, consumer electronics and biotech areas; and a media value chain with 12 websites, events and television. The group's media services include market research, content outsourcing, multimedia, gaming, and media education.

Leveraging on more than 400+ man-years of market research and consulting experience of more than a decade and a half and over 20 years of undisputed leadership in print and electronic media, CyberMedia Research has been formed to address emerging market opportunities. Positioned as a young, innovative and knowledgeable research agency, it has been successfully engaged with leading organizations such as Britannia Industries, Shaw Wallace, Schneider Electric, JWT, TBWA, Bunge Agribusiness, Aaj Tak, Star Group, Sony Entertainment, Nickelodeon, Pitch and Exchange4Media on various research assignments in the recent past.

Besides conducting traditional research, some of its proprietary methodologies and models include:

- CLASS Model for testing of TV commercials

- PARS (Perception Analyses and Reengineering System) for content analyses

- RTVA Model for viewers' analyses

- BrandSol for brand tracking

Agency's column on evaluation of new ad campaigns appears in PITCH (India's only advertising and marketing magazine) every month. Looking forward, plans are afoot to bring in unique predictive consumer analyses technology to India in

collaboration with one of the world's largest in the area.

Research Team

CyberMedia Research functions under the guidance of Ravi Sangal as its president. Before starting CyberMedia Research, Ravi Sangal steered the growth of well known IT market research agency, IDC India Ltd, for over 12 years. He is an alumnus of BITS, Pilani and IIT, Delhi. Ravi has been extensively quoted as industry analyst and is known for his sharp observations, timely and relevant inputs. He holds the distinction of being amongst the few analysts worldwide for accurately predicting the slowdown of the Indian Software export industry in 2001. He has been a key speaker at many national and international conferences of repute. He has been associated with United Nations as a consultant besides being an active IT committee member of Confederations of Indian Industries and FICCI.
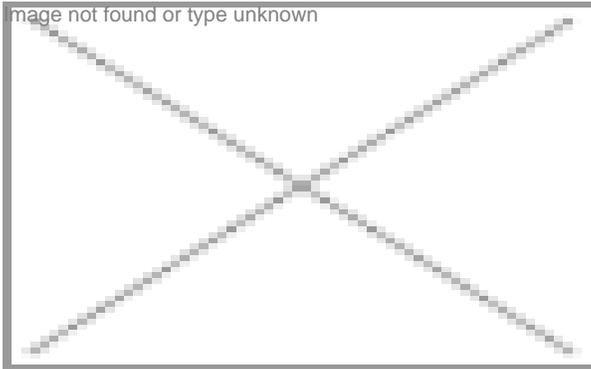
Sabina Anand is an electrical engineer from Punjab Engineering College, Chandigarh and a Post Graduate in the field of Advertising & Mass Communications from Narsee Monjee Institutes of Management Studies (NMIMS), Mumbai. She has about 4 years experience in advertising and market research. She has handled a range of market research assignments relating to product tests, concept tests, customer satisfaction and ranking studies. Her project management skills involve handling qualitative as well as quantitative researches. She has worked for some prestigious clients like Joyco, Whirlpool, Thermax and now BioSpectrum. A voracious reader, if she can find time from managing her baby.

Neha Sangal, an economics graduate from Lady Shri Ram College and a Post Graduate from Amity Business School, has worked extensively in the field of marketing before making major contributions in the area of market research. Specializing in quantitative methods, Neha has done extensive work in ad testing and conducts assignments independently for large organizations. Besides research, Neha is fond of traveling, listening to Indian Classical music and cooking.