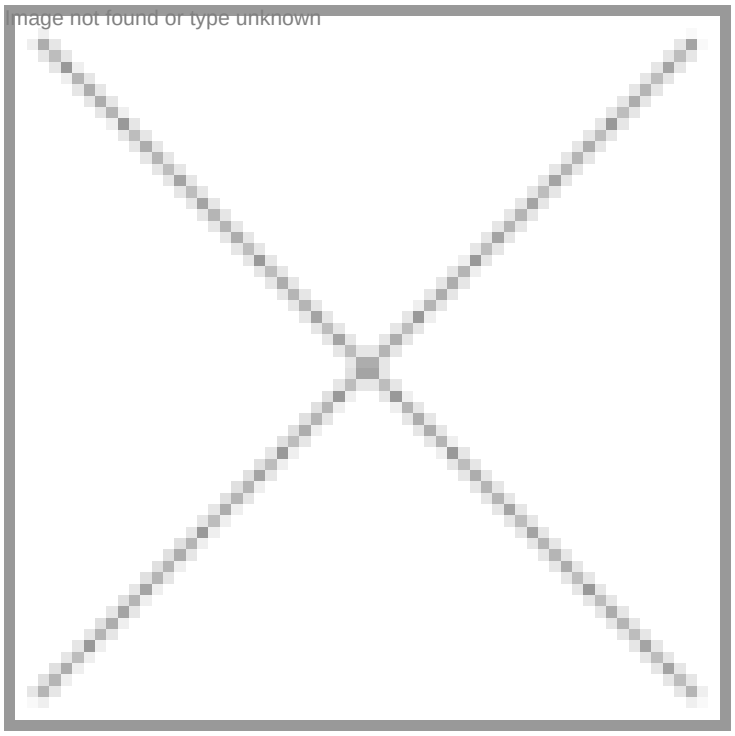
BioSpectrum the business of Bio & Health Sciences

Industry wave

11 August 2003 | News



Biotechnology is a field that has opened up new vistas for job seekers in recent years. As the industry expands in terms of activities and numbers, there is a long line of hopefuls waiting to enter this sunrise segment. Many students pursuing their engineering courses in various disciplines are planning to opt for biotechnology. It is important that they know what specific skills would be required by the growing biotech industry.

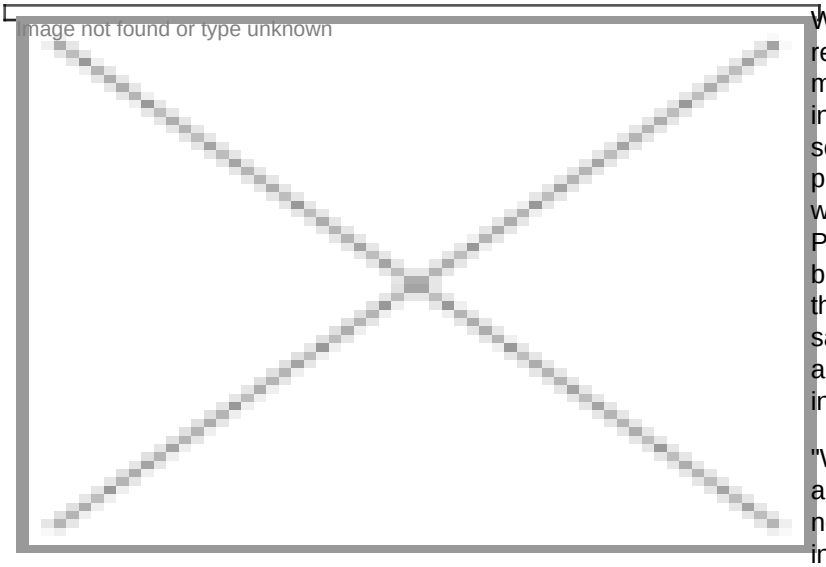
The scientific and technical talent in engineering , process development, manufacturing and rapidly developing clinical research capabilities in India is recognized all over the world now. At the macro level this is fine. But companies would be very happy to get people with the right skills who could start straightaway with minimal internal training. And as many of the leading biotech companies pursue expansion, a Big Bang effect in recruitment is expected soon

"Success for Indian biotechnology will largely depend on creating the lowest cost base for innovation, a strategy pursued by other nations including China. India needs to differentiate itself through high-value innovation. It is imperative to evolve fiscal and regulatory policies that alleviate capital intensive research and manufacturing, long gestation timelines for product commercialization and investments in patenting and technology licensing," said Kiran Mazumdar Shaw, chairman and managing director of Biocon India Ltd.

This big bang effect in biotech industry is not a sudden outcome. More biotech-related jobs are available now than ever before, thanks to recent industry dynamics. With many of the biotech pieces falling into place now, this sector is all set to change the dynamics of material sciences, agriculture and medicine.

Molecular chemistry, organic chemistry, botany and biology have been the building blocks for biotech companies in the past. Now computer science is nearly as important as other segments. Biotech companies are relying on computer programmers more than ever before.

"The science of biotechnology together with the peripherals of this sectors will sprout numerous job opportunities. The opportunities include business development in contract research in the various segments of biotech, financial management of biotechnology, legal issues related to intellectual property rights , ethical issues and intellectual property rights," said Villoo Morawala-Patell, founder and CEO, Avesthagen, Bangalore.



What do companies look for specifically while recruiting people? Said S Sowmyanarayan, assistant manager, Strand Genomics, "Requirement from an individual is the ability to contribute either in life sciences or IT when working in a team comprising of professionals from both fields. The basic qualifications we look for are a master's degree or a doctorate(Ph.D). There are quite a few people getting trained in bioinformatics today. The posts offered will depend on their qualification, experience, aptitude and ability. The salaries are benchmarked against industry standards and would be comparable with any other industry including IT."

"We are employing around 60 people in Avesthagen and get a very raw set fresh from the academia. They need rigorous training to be reshaped to fit the industrial bill. An international scientific advisory committee is with us, which pulls us up every year on this score. Right now we have with us Dr David Frisch from the US who is training our personnel on genome sequencing and studies. Preferences are given to post-graduates and doctoral degree holders," observed Morawala-Patell of Avesthagen.

Also, companies would like even scientists to have a better understanding of the business processes and environment. Of course, interpersonal skills, the ability and willingness to learn, to mould, to change are other things that employers look for in potential candidates.

Companies feel that educational institutions could provide the industry with candidates with more ready-to-use skill sets. The industry too would like to work with the academia to make this happen.

"For best-trained manpower, the institutes and the industry need to work together in developing better talent in this sector. The sector is growing at an impressive rate and companies, which understand the 'real issues' of the industry will only survive in the long run. Working with such companies will result in overall development for professionals in this sector." said Strand's Sowmyanarayan.

Added Ocimum Biosolutions CEO Anuradha Acharya, "We need good Masters and PhD level programs in biotech manufacturing. It could be in conjunction with an existing department like chemical engineering and biotech department. More training is needed for the people coming out fresh from colleges."

Sartorius AG, a German based company has a lot of expectations from its Indian wing. Especially so because the German major is placing its bets on the Indian talent to provide it great results in bio-manufacturing.

"The most important asset of any company today is brainpower. Active knowledge management therefore is one of our primary tasks. The challenge is to provide knowledge at the right time and place. The creative and intellectual think tank in India can and shall drive growth for Sartorious in Asia and the Sartorius Group as a whole." This are the words of Prof. Dr Utz Claassen, Group CEO and chairman of the executive board, Sartorius AG.

There are companies like Ranbaxy Laboratories and Wockhardt, which were primarily pharma companies, now investing heavily into biotech. Their requirements are slightly different from the pureplay biotech players.

"There will be a demand for well-trained people in the field and the hiring is expected to go up significantly in next few years.

But as such now the manpower available in this field is not adequately trained. We will not take a chance, because we cannot afford to make any mistakes as we are dealing with drugs and possibly recombinant drugs. We take people from IITs and other regional colleges of excellence. We plan to employ about 20 to start off and then progress slowly. Also the manpower available in this sector is not adequately trained. We need to develop programs to increase innovation amongst our students and there are only a handful of institutes to encourage that. The truth is that most companies are looking for people who can do the job efficiently and not just a person with a degree. However, a degree from a reputed institute like IIT helps get across the resume filtering round." said Dr Kulvinder Singh Saini, director- biotechnology and bioinformatics, Ranbaxy.

He too recommends that students should be provided more hands-on training in addition to the theoretical knowledge. As of now the thesis projects for MSc and PhD are only "academic" in nature, with little consideration about the industry expectations."

According to Habil Khorakiwala, chairman of Wockhardt, "In our continuing thrust of developing leaders within a leading organization, we have initiated a unique management program with the renowned London College of Management. This three-year program makes it possible for our field personnel to acquire a MBA degree specializing in sales and marketing from the college. While the program brings the latest in the field of sales, marketing and strategic planning to our sales force, it also enables them learn from the best in the industry. Wockhardt also offers an attractive scholarship linked to the work performance of the personnel. This is a major step in creating our own virtual university - the Wockhardt Institute of Learning."

There is a strong demand for individuals with degrees in the life sciences and computer sciences and multiple years of programming and database development experience. Typical combinations include a PhD in molecular biology, cell biology, or biochemistry and biosciences and in computer sciences. Life science PhDs, largely self-taught in key computer skills with industry experience have good opportunities. People who emerge from the few doctoral programs in bioinformatics also will be "incredibly marketable", especially those with industry experience.

Many Indian companies have introduced separate packages for their biotech employees. They are looking for people who have skills in

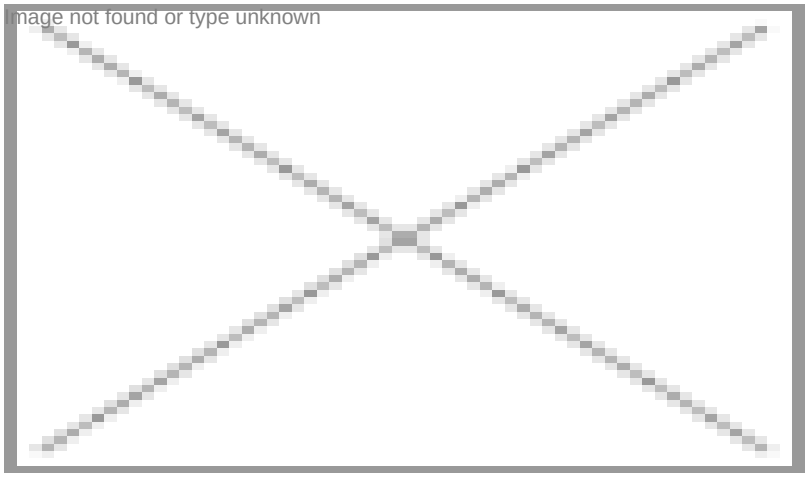
- Gene manipulation of microbes and animal cells.
- Capacity in downstream processing and isolation methods.
- Skills in extraction and isolation of plants and animals products.
- Competence in recombinant DNA technology of plants and animals.

Biocon, as a leading player in biotechnological solutions, is seeking capable and focused individuals who can contribute significantly to its growth. It is on the look out for professionals in manufacturing, quality assurance, research & development and marketing in the areas of enzymology, microbiology, biochemistry, biochemical engineering and pharmaceutical sciences.

Aurigene, a Bangalore based drug discovery company, creates opportunities to enhance knowledge, provide the freedom to make mistakes and take risks in driving the organization towards its goals. Teamwork and multi-tasking across functions form the foundation of their philosophy. Aurigene is looking for the talented individuals who relish teamwork and those who have a passion for drug discovery, high integrity in research as well as daily life, ability to experiment and innovate, keenness for collaborative work, desire to be challenged and respect for individuals.

According to VV Raghavan, managing director of Lotus Labs, a Bangalore- based contract research organization, " For the next three years, I think drug discovery and molecular biology will be the hot areas in biotech sector. As far as our company is considered we are into clinical trials and are looking for the students who have completed MPharm, MBBS, MD and MSc(analytical
chemistry)."

"The catch here is, while the biotech sector is poised for a boom just as the IT sector in the Nineties, it should not be over- hyped. There needs to be a focus on fundamental issues: Are we funding the sector adequately? What are the chances of original R&D and manufacture of biotech products? Are we again going to breed a set of professionals whose career fortune will swell and ebb with any slight change in the trends? Unless our efforts are directed at these fundamental issues, career opportunities are bound to stagnate beyond a point and India will not be able to join the biotech bandwagon," says MG Arun, editor, Pharma Bio World.



It is also true that India has a large skilled workforce that can work on research, manufacturing and sales of biological products, as well as use its strengths in IT to analyse data (bioinformatics). Once there is more clarity on the legal aspects of clinical trials, even that is a big opportunity.

There is absolutely no doubt that biotechnology is going to be a major determining force in the discovery of new medicines and improved agricultural productivity. With developments like the sequencing of the human genome, it is not far off when we will have medicines that would strike at the root of "hereditary" diseases like diabetes. Biopharmaceuticals are going to play a big role in treatment of diseases in the future.

Roby Ajith