

# Productivity Enhancing Systems under a Microscope

## An in-depth look at the Indian Laboratory Analytical Instruments Market

According to industry experts, the Indian Laboratory Analytical Instruments Market, has earned revenues of more than \$762.5 million in 2012 and estimate this to reach \$2,370 million in 2018. Here's a look at the technical advancements taking place in the industry despite facing hurdles such as non-stringency in governmental laws and norms.

Analytical instruments cater to different sectors of the market and its growth is dependent on the growth and performance of those sectors. In general, close to 60 per cent of the market is for pharmaceuticals and life science applications and the rest can be divided into government laboratories (such as CSIA, ICAR, ICMR, etc.), academic institutions, food and environmental, chemicals and petrochemicals, clinical, etc. Agreeing President, Indian Analytical Instruments Association (IAIA), KV Venugopalan says, "The pharmaceutical market continues to be one of the most important markets for most companies and includes biopharmaceutical industry and clinical research organizations. Food quality and safety is another important segment that would see significant investment going forward. As part of the capacity building measures undertaken by the government of India, we also see continuing investment in the academic sector." Government funding too serves as



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the fulcrum for laboratory analytical instrument procurement in India and government institutions and research laboratories continue to be key customers for analytical instrument vendors.

Talking on supplementary growth drivers of the industry, Industry Manager, Electronics & Security, Frost & Sullivan, Deepa Doraiswamy avers, "Apart from contract research organizations, the environmental and geochemical research sectors are driving growth. Strong emphasis is being laid on meeting regulatory compliances and standards for most of the end users. These norms are pivotal for major procurement of laboratory analytical instruments in India. Also, the Indian market is highly driven by demand from the end-user segments and is gaining momentum due to customization for specific applications."

### Customized instrumentation

Seconding Doraiswamy's statement are Sales Director, PAMAS India, Bijou Chatterji and Country Business Head - Life Sciences & Chemical Analysis Group, Agilent Technologies - India, Dr Siva Kumar Pasupathi. "Demand for customized instrumentation from end-user segments such as the pharmaceutical and drug delivery sectors, is definitely driving the laboratory analytical instruments market in

India. Regulations mandating quality assurance activities, especially in the pharmaceutical sector, further accelerate the market's growth."

According to Chatterji, customized instrumentation is highly demanded all over the world. "Since the laboratory analytical instrument market is a highly specialized field, a lot of background knowledge is needed to support the customer and provide exactly what he wants." In order to do this successfully he strongly recommends continuous training and up-gradation of knowledge of the sales team, while simultaneously educating the customer adequately.

Contrary to this opinion, Venugopalan, avows that customization is not normal in the industry except maybe for specific products and applications. He says, "Generally users procure standard instruments for specific applications." Managing Director, Phenomenex India Pvt Ltd, Nick Mitchell also opines that while the demand for customized instrumentation is present, it is slightly waning. "The global economic slowdown is affecting all nations and India is no different. Pricing considerations and the decline of the rupee have put life science vendors in a precarious position, as the interest in

increasing market share has to be very carefully weighed against maintaining expectations for the bottom line. These are indeed challenging times."

### Investing in R&D

Technology and R&D play a vital role in challenging times and the same is responsible for propelling a growing market like that of the Indian laboratory analytical instruments. Concurring the same, Doraiswamy opines, "The domestic SMEs, OEMs and distributors are unable to afford higher R&D spends due to budgetary constraints and insufficient capital backing. MNCs, which face no such constraints, have an upper hand compared to domestic participants."

Testifying this statement is Agilent Technologies. Being a technology driven organization, the company has been substantially investing in its R&D operations. Elaborating on the same, Dr Pasupathi avers, "Agilent Research Laboratories identify and enable synergies across our businesses to create competitive differentiation and



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President, Indian Analytical Instruments Association (IAIA), KV Venugopalan

compelling customer value. Research to advance bio-analytical measurement addresses solutions for chemical analysis and life sciences. This enable new understanding of living systems, more precisely analysis of organic and inorganic compounds, accelerated drug development, and medical research for the diagnosis and treatment of disease.

This research benefits from the trends of miniaturization and integration that are converging nano-scale science and engineering with biological understanding." In PAMAS, about 10 per cent of the turnover is spent on their R&D. Phenomenex has

three major areas of R&D investment and that includes solid and stationary phase developments (organic/inorganic chemistry), column engineering and packing technologies development.

### Technological advancements

With that kind of investment in R&D, it's no wonder then that the analytical instruments industry sees advanced and improved technology with regards to applicability. Currently, there have been major developments in technical infrastructure and offerings in liquid chromatography (which has high speed and performance requirements),

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*Industry Manager, Electronics & Security, Frost & Sullivan, Deepa Doraiswamy*



***“Demand for customized instrumentation from end-user segments such as the pharmaceutical and drug delivery sectors, is driving this market in India.”***

*Country Business Head - Life Sciences & Chemical Analysis Group, Agilent Technologies - India, Dr Siva Kumar Pasupathi*

implementation of rules and regulations, is one of them. “There are problems in various levels, ranging from non-stringency in policy making, lack of in-depth analysis in formulating norms, and major delays in promulgating necessary legislation or industrial reformation. These, along with lethargy and improper implementation of regulations have a negative bearing on the Indian laboratory analytical instruments market,” orates Doraiswamy.

These roadblocks and systemic flaws have caused a void in the growth in segments such as environment safety, food and beverage safety and the agricultural sector, rendering these markets under tapped. “Thus, there is an urgent need for stringent regulations in the above mentioned sectors to explore their potential demand. Currently, only the pharmaceutical sector has stringent policies in place. Above all, quick implementation is the need of the hour,” asserts she.

### **Government’s helping hand**

Slow implementation of government laws and regulations in several consumer segments dampen the adoption process across different segments in this market. “In order to promote manufacturing in India the government should design various models encompassing benefits in the form of subsidies/tax/Special Economic Zone (SEZ)/open policies and infrastructure,” opines Dr Pasupathi. Product Manager, Brand Scientific Equipment Pvt Ltd, Sainathan A, avers that the government could help the scientific community by providing safety and

mass spectrometers (hyphenated techniques combining superior chromatographic and spectroscopic techniques) and elemental spectroscopy (due to progress in detection of trace metal levels, micro particle measurements and contamination levels in the environmental and food safety sectors).

Instruments today are being redesigned to best fit the requirements and needs of the operator. Elucidating the same with an example, Chatterji asserts, “Advancement in automation and simultaneous development of applicable software could be an example. Systems are designed to analyze high quantities of samples without human interference. Many of these redesigns can be adapted to the existing system resulting in newly improved features regarding reliability, sample preparation and reduced testing time.” Venugopalan opines that ‘faster, better, smaller, cheaper’, is the guiding mantra for most organizations in designing new systems for the analytical market. “Informatics is another area which is making rapid progress. As the number of systems in a lab is increasing and each is churning out large quantities of data, it becomes critical to manage it to get the right information for decision making.

Data archival is also important, particularly for those in the regulatory environment such as the pharmaceutical industry.” Mitchell asserts that supercritical fluid chromatography is expanding and gaining traction as an analytical technique in conjunction with mass spectrometry. “The

coupled technique will find a complimentary segment to technologies like UHPLC and UHPLC/MS hyphenated techniques. The core shell technology has a number of competitive entrants joining the market place as the realized benefits of ultra-high performance HPLC analyses are being observed without having to take the significant capital investment expenditures associated with the typical UHPLC instrument platforms.”

### **Hampering growth**

Despite the kind of investments and advancements in technology that the sector has witnessed, there are issues that surround the industry. Non-stringency in governmental laws and norms, along with slow-paced



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*Managing Director, Phenomenex India Pvt Ltd, Nick Mitchell*



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## EXHIBITION

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honouring international patents. "Assured safety to intellectual property, a steady flow of highly skilled scientific human resources through centres of excellence, a conducive tax structure and an overall infrastructure can help this industry flourish and add value to the society," opines he.



*"Assured safety to intellectual property, a steady flow of highly skilled labor, a conducive tax structure and overall infrastructure can help this industry flourish."*

*Product Manager, Brand Scientific Equipment Pvt Ltd, Sainathan A*

A strong R&D base with multi-disciplinary capability is mandatory to develop modern instrumentation. The Indian analytical industry being small and fragmented does not have the capability to make such investments and focused efforts and support from the government is mandatory to make any progress in this area. Currently most of the critical components and materials essential for manufacturing high technology instrumentation is not available in India and has to be either developed or imported. Multinational companies must be encouraged to start their manufacturing operations in India.

Concurring Venugopalan states, "However, the current duty and tax structure acts as a deterrent for local manufacturing as customs duty on complete system is lower than the components for manufacturing. In addition, the buyers have to shell out additional central excise duty and sales tax on locally manufactured goods making it prohibitively expensive compared to imports." On a concluding note, he also says that creating technology parks, like IT/ITES parks, with tax and duty benefits will go a long way in supporting the industry efforts in attaining self-reliance in this critical component of our scientific and economic growth.

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