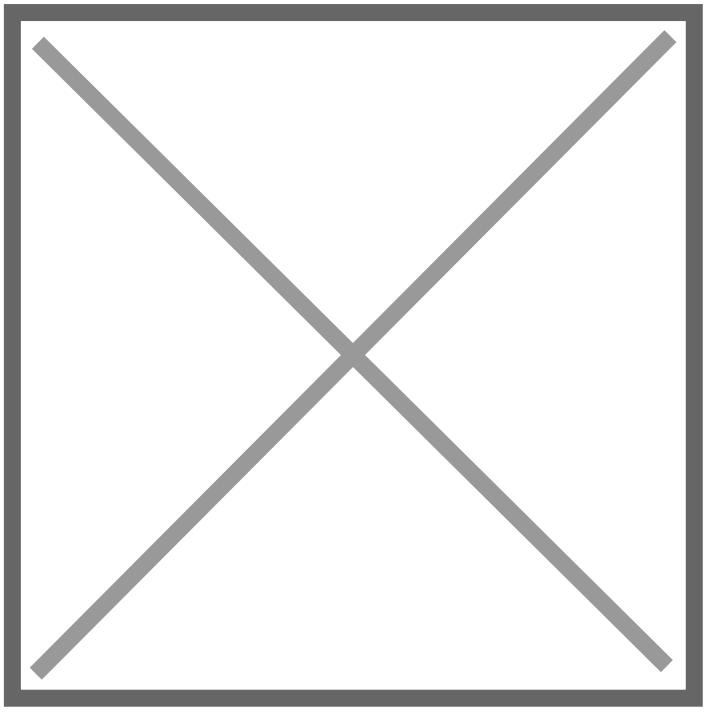
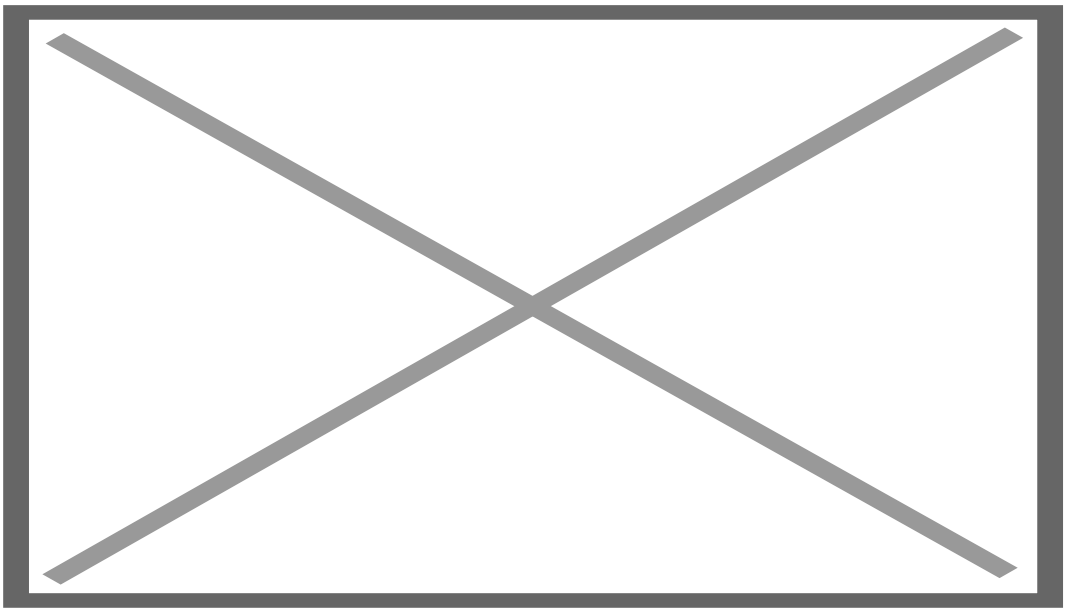
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BUOYED BY MARKET DYNAMICS

11 July 2011 | News



After showing decline due to economic downturn in 2009, the chromatography segment grew at a rate of 25 percent in 2010 due to investments and increased funding to the life sciences industry



The chromatography market in India is estimated to be around ₹1,100 crore. The segment holds close to one-third of the total biosuppliers market share. While the market is dominated by Agilent and Waters, Shimadzu and Thermo Fisher also have a strong presence in the segment. The segment is majorly divided into high performance liquid chromatography (HPLC), liquid chromatography (LC), gas chromatography (GC) and ultra-high performance liquid chromatography (UPLC).

The favorable market dynamics in India coupled with the technological advancements in instrumentation, have led to the growth of the separation market. The growth drivers for this market include the government investment in academics, life science applications, growth in generics and CROs, and therapeutic conversion to new biological entities. More efficient and faster analyses have led to significant new developments in chromatography in recent years, notably UPLC, monolithic

columns and hydrophilic interaction chromatography (HILIC).

The HPLC market witnessed strong growth opportunities of 25 percent for fiscal year 2010-11 and the total HPLC market of India is expected to be about ₹500 crore ($260 million). The tremendous increase in the number of quality control, method development, research and drug discovery laboratories has been the driving force for the HPLC market. The technological advancements with advent of systems for faster analyses have also opened up newer opportunities of growth. Of the estimated 3,000-plus HPLC units supplied, the pharma market accounts for about 70 percent.

Chromatography market in India is about ₹1,100 crore

Agilent, Waters, Shimadzu and Thermo Fisher are the major players in the segment

Gas chromatography witnessed a growth of eight percent in 2010

HPLC market witnessed strong growth opportunities of 25 percent in 2010-11

Total HPLC market in India is about ₹500 crore

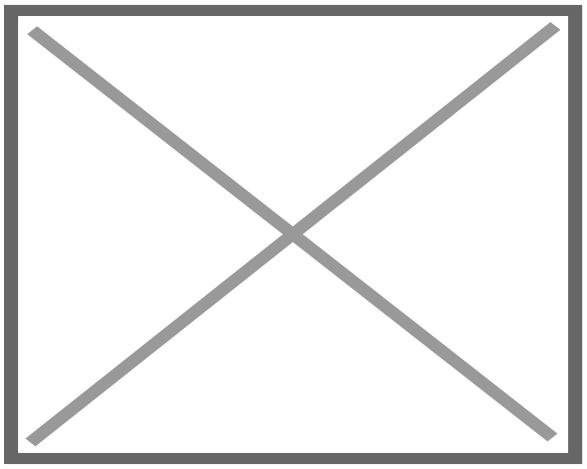
Ion chromatography market is quite small, but is increasing at a rate of 20 percent

Proteomics and other life sciences applications have propelled the growth in academia and biotech industries, accounting for about 10 percent of the market. National laboratories and other government institutes, also a major segment for HPLC, have an equal share in it. There are a host of other non-pharma industries like chemicals, pesticides, food and beverages, that use HPLC extensively. The demand from independent testing labs is increasing due to continued outsourcing from pharmaceutical industries. These segments will account for the remaining 10 percent share of the market.

Fast LC is indeed the growth engine today contributing to the enhanced growth of analytical HPLC. This technique is gaining wide popularity with a growth rate of 20 percent as per a market study. Fast LC applications can be accomplished with either elevated temperatures or increased pressure. According to BioSpectrum estimates, the LC market is about ₹300 crore, thereby accouting for 30 percent of the total separation market.

The UPLC has rapidly grown out of its infancy and moved into analytical labs. Monolithic columns also hold great potential for very fast separations. In 2004, Waters introduced Acquity UPLC Ã¢â?¬â?? Ultra Performance Liquid Chromatograph using columns packed with particle sizes of 1.7 micron and advances in instrumentation designed to deliver 15,000 psi. Other vendors have also brought out fast LCs with a similar objective and the additional feature of compatibility with standard HPLC equipment. Agilent offers rapid resolution liquid chromatograph (RRLC) mentioning that the method developed on a conventional HPLC can be transferred seamlessly to an RRLC. Shimadzu has launched ultra fast liquid chromatograph (UFLC) offering high throughput but without high pressure. Thermo has launched Accela High Speed LC that has been designed to optimize performance of subÃ¢â?¬â??two micron particle columns.

Another sub-segment, ultra-high-pressure liquid chromatography (UHPLC) due to its advantages in chromatographic resolution, speed, and sensitivity over conventional HPLC systems, has increased its presence substantially. This particular sub-segment is expected to gain another five to 10 percent of the market in the next two-to-three years. Waters in FY 2010-11 launched a new 1,290 Infinity UHPLC.



The Indian ion chromatography (IC) market is quite small as compared to the developed countries but is rapidly increasing at an estimated rate of 20 percent. Environmental monitoring and life sciences are leading in the use of ICs in India and 100 to 120 ICs are purchased annually. Dionex is leading the market in the high-end segment that requires gradient systems, especially in the biotechnology sector where it has unique chemistry. The low-end market is shared between Dionex and Metrohm.

Gas chromatography (GC), which is another big sub-segment, holds a considerable chunk of separation market. This sub-segment is said have grown at the rate of eight percent in 2010. In the case of Indian market, 1,300 GC units were estimated to be sold in 2010. Of the total GC units sold, Indian manufacturers hold close to 50 percent share with Chemito having the major share in the market.

Foreign manufacturers like Agilent, Perkin Elmer, Shimadzu and Thermo contribute to the remaining market. The acquisition of Varian by Agilent in 2010 also added fuel to the growth trajectory of the company and helped it in increasing its presence, especially in gas chromatography. The visible trend in this segment is the gradual shift towards GC-MS.

With government funding towards research and development set to register an increase and also the major MNCs investing

heavily in R&D, the chromatography segment is expected to maintain a 25 percent growth in the current financial year as well.