



## Heating equipment market TURNING THE HEAT ON

With growing awareness on energy conservation and other issues, chemical manufacturers are opting for sophisticated heat exchangers. Interestingly, the buying pattern of process industry has also changed. Today, companies do not buy heating equipment from fabricators; more preference is given to technology providers.

### ■ Prasenjit Chakraborty

**T**he chemical industry has undergone dramatic changes in India in the recent past. For instance, on the supply side, the market has undergone significant consolidation and restructuring. The industry has

also witnessed several mergers and acquisitions. Such developments certainly augur well for the industry. Another reason that boosts the confidence of entrepreneurs is that products manufactured in India are increasingly being accepted by consumers who are abroad. This clearly speaks volumes about the

enhanced quality of Indian products. Looking at the growth potential, many multinational companies have started producing their high-end technology products in India, thereby capitalising on the opportunities offered by the country.

In the process industry, heating equipment plays a major role in all kinds

of processing. The sectors like power, oil & gas, chemical, construction etc are pushing manufacturing units towards higher production. Heat transfers being an integral requirement for most of the process industries, various types of heat transfer equipment that provide performance, energy-efficiency and reliability are in high demand from the end-user segments. "Heat equipment or heat exchanger is used across the chemical process industry for heating or cooling the process fluids. An efficient heat exchanger facilitates energy savings, and in turn, cost savings for the industry. Heat exchangers are instrumental in quality product manufacture since the process is controlled by the heat exchanger through an instrumentation process controller," points out, V Gokul Das, Managing Director, HRS Process Systems Ltd.

A closer look tells that shell and tube exchangers still dominate the market. In the recent past, the market has witnessed significant growth in plate and frame exchangers. Like any other equipment, heat exchangers are also at an evolving stage. They are evolving in terms of design, performance, end-user specifications, new areas of applications, etc. "Heating equipment for chemical process industry has not changed much in generic terms. Primarily, shell & tube and plate type heat exchangers are used in the industry. Majority of these heat exchangers have fluid, which has



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**Robinson Fernandez**  
Senior Vice-President - Applications,  
GEI Industrial System

fouling tendency (typically cooling water). Hence, reducing or eliminating fouling becomes one of the key challenges for any sort of heat supply to the chemical process industry," says Gokul Das.

Today, many industries face process challenges and environmental issues, & hence look for latest developments in heat exchangers, featuring ease of installation, maintenance and cleaning. In order to solve such problems, the process equipment manufacturers are offering innovative solutions. For instance, *ECOFLUX*, a corrugated tube heat exchanger from HRS Process Systems, offers energy-efficient, cost-effective solutions to the chemical and petrochemical manufacturers.

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"*ECOFLUX* has corrugated tubes, which enhance its efficiency, thereby enabling uniform thermal processing and ensuring low fouling on heat exchanger surface," claims Gokul Das. Today, many companies have devised special heating equipment for various industries, with specialised equipment for certain applications in the same sector.

According to Robinson Fernandez, Senior Vice-President - Applications, GEI Industrial System, there is a huge potential to use waste heat in chemical industry. "Different processes generate large amount of heat and at the same time there is immense wastage. Till now, steam and electricity are being used as medium of heat. We should look for technology that can use the waste heat as the heating



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medium in the chemical process industry," he exhorts.

### Critical issues

The heating equipment for the chemical industry needs to address two key areas. One, energy efficiency vis-à-vis cost of the equipment and, second, reducing or eliminating downtime for maintenance, which can be due to fouling or wrong selection of equipment. This is possible through effective interaction between the user and the equipment manufacturer.

In the competitive scenario, every company has to act as one-stop-shop solution provider for dealing with all issues pertaining to heat exchange in the process industry. Another issue that also calls for focus is educating the industry on latest developments and availability of new technology. It is essential to educate customers on evaluating their conventional design and perform a cost benefit analysis with a newly designed heat exchanger, which will help them enhance the plant efficiency and save on cost. Though this practice is not in vogue in India, if done meticulously, it will solve many challenges and make chemical process industry stronger. "We have conducted studies on various industry sectors and have found many avenues in the existing process line, for the

customer to add heating equipment, which offers immediate pay back on investments, thereby providing a value-addition to the customer," opines Gokul Das. In many chemical process industries, 'heat recovery' is not still a common practice. There is also an immense scope for reducing the power costs (pumping costs) on heating/cooling medium by various heat recovery solutions.

### Significant changes

It has been observed that the chemical industry is evaluating the heating equipment in a better manner than before. "The customers are ready to evaluate new technology and are not afraid to take calculated risk. We have also observed that customers are more conscious to ensure a reduction in daily operating cost with incremental increase in capital cost," points out Gokul Das.

Today, the process industry evaluates the total energy cost, which often includes other equipment (like pumps) that would form a part of the energy cycle. "Nowadays, companies are shifting their buying pattern from a mere fabricator to technology provider even in case of heat exchanger," he says. Here is the important shift. Global warming has increased the pressure on process industry to reduce both energy usage and the associated CO<sub>2</sub> emissions. Buying heat exchangers from reputed companies reflects that chemical process industry is attaining maturity and at the same time addressing the issues of process efficiency and environment.

Another area pertains to evaluation of environmental impact while designing along with assessment on emission reduction in plants involving gases. Overall, the industry has started looking at heating equipment as key

process tool, which has the potential to make a big impact on process stability and performance.

### 'Warming up' to reach the next lap

In all probability, heating equipment sector will witness healthy growth in coming years, since the application of such equipment spans various industries. The boom in infrastructure, encouraging investment growth in oil & gas, petrochemicals sectors, etc will pave the way for sophisticated heat exchangers.

Besides, many new companies are being set up to address the growing demand for various chemicals and intermediates that make up for a host of consumer durables. With buoyant growth in pharma and allied sectors, demand is going to build up for chemicals, and thereby giving a boost to the heating equipment sector. ■

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