



RAJESH SHARMA

Chairman & Managing Director
Ion Exchange (India) Limited

SPEAKING FROM EXPERIENCE

In what is certainly very unusual for many of today's generation, Mr. Rajesh Sharma has served the entirety of his career at Ion Exchange. Having joined as a trainee, today he is the Chairman and Managing Director of his beloved organisation. In this feature, he shares with us his passion for his work and his vision for the future.

Mr. Sharma started his career as a trainee with Ion Exchange in 1974. From the beginning, he felt fortunate to work in a culture of employee empowerment which emphasised values like customer satisfaction, service and quality. Varied experience and exposure to different technologies and operations of the company as a Field Engineer, Branch & Regional Manager and **Head** of the company's Export Division later helped him in his role of Deputy Managing Director in 1996 and then that of Managing Director. Mr. Sharma commented that he feels blessed that from the beginning of his career, he had the privilege of working with a great visionary and his mentor, late Mr. G. S. Ranganathan, the company's Founder and Chairman Emeritus from whom he learnt a lot.

After graduating, Mr. Sharma was attracted by the high brand equity and reputation that Ion Exchange enjoyed in the water industry and decided to join it. He was inspired by the way the company rapidly expanded its technology base through R&D, joint ventures, acquisition of technology and representative tie-ups which helped it to introduce state-of-the-art technologies in India. For instance, the company pioneered the production of world class ion exchange resins in India in 1965 and simultaneously commenced the design, engineering and supply of water treatment plants to India's industrial sector.

A challenge he faced while serving as the head of the international division was to enter the market and meet international standards. This not only helped them to upgrade their products and quality systems but also to establish their global presence. Time and again, Ion Exchange has successfully demonstrated that an Indian company can compete successfully with the best companies worldwide in quality, performance and service standards. They have thus helped prove the credentials and capability of the Indian water treatment industry.

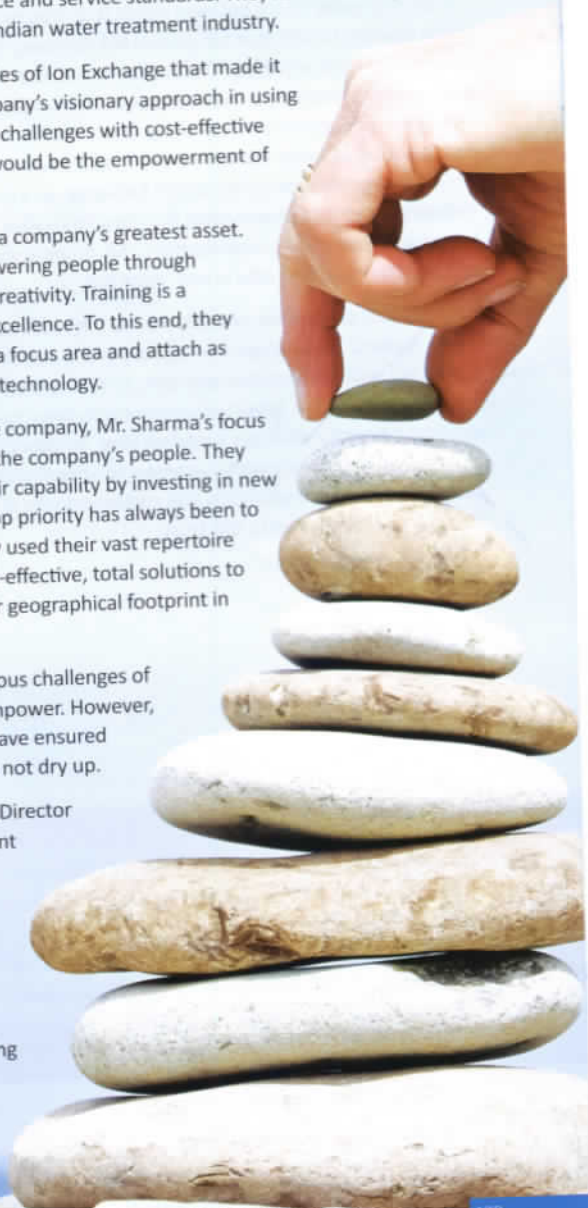
According to Mr. Sharma, of the key attributes of Ion Exchange that made it successful, the foremost would be the company's visionary approach in using technology to address emerging and future challenges with cost-effective solutions. Secondly, but no less important would be the empowerment of their people.

Mr. Sharma firmly believes that people are a company's greatest asset. Ion Exchange has always believed in empowering people through training and by encouraging initiative and creativity. Training is a powerful aid in building and maintaining excellence. To this end, they have made human resource development a focus area and attach as much importance to training as they do to technology.

As Chairman and Managing Director of the company, Mr. Sharma's focus has been on training and development of the company's people. They have remained focused on building up their capability by investing in new technology, R&D, people and training. A top priority has always been to put customers first. They have successfully used their vast repertoire of knowledge and experience to offer cost-effective, total solutions to every section of society and widened their geographical footprint in establishing a strong global presence.

As a leading company, they faced continuous challenges of poaching and consequent attrition of manpower. However, through training and development they have ensured that the trained manpower pipeline does not dry up.

Assuming the responsibility of Managing Director of the company was certainly an important milestone for Mr. Sharma. This gave him an immense opportunity and challenge to take Ion Exchange further ahead in providing innovative, cost-effective and sustainable solutions to their customers, leveraging their extensive service network, extending business to sectors like municipal and public health, charting new avenues for growth and expanding operations across the globe.



»» SUCCESS STORY

Mr. Sharma feels that their business is, by its very nature, essential to society and the environment. He sees Ion Exchange playing a dominant role in providing user-friendly solutions for water, waste water treatment and re-use. The company will continue to introduce state-of-the-art environment technologies that require less energy and fewer chemicals.

"To be the leader in our business which is so vital to people's lives and the environment". This is the powerful vision that has guided the company during the past 50 years and it is sure to continue to motivate them. The availability of fresh water is going to be a major constraint to our country's growth. An increasing population combined with industrial growth will lead to even greater pressure on fresh water resources. Increasing the availability of fresh water and conservation of water use will be two major drivers of the water industry in the next 50 years. This puts great responsibility on Ion Exchange, as a leader, to contribute in shaping the water industry's response by providing the most innovative, cost effective and sustainable solutions for water and environment management. Mr. Sharma assures us that they shall continue to channel all their strengths and efforts into doing this.

With his vast experience, Mr. Sharma has a few words of wisdom for the next generation of water leaders: The changes taking place in the outside world are opening up wide vistas in water and environment management, providing ample opportunity for sustained growth. The opportunities for the water industry are truly enormous. Focus on building up a long term relationship with customers based on trust, by providing the right solutions and advice as an expert. Working closely with customers to understand their operations and processes will help develop value added solutions. The customer looks at you for the most suitable solution and you must always live up to this trust.

“The industry has a huge responsibility in ensuring that customers are always given the right advice and solutions. Standards must be created by the industry to ensure that consumers get the right products and solutions to meet their needs. Integrity and honesty will help build the industry as well as its reputation. Water is not only a vital natural resource but a national economic resource too. It needs to be managed responsibly and judiciously to ensure its availability and conservation – we owe this to future generations.”



WATER ICON

MR. AJAY POPAT

President - Corporate Diversification, Corporate Marketing Group, Technology and Corporate Communication.
Ion Exchange (India) Limited

Q. How and when was the first step taken towards being a water professional?

It was destiny, when I planned to shift to Ion Exchange, after spending 14 years in the business of specialty chemicals. I fell in love with the water business very quickly and the love affair still continues!

Q. How many years have you been in the water industry and what do you find special about it?

I have been in the water industry for 21 years!

The special things about this industry are its diversity of needs across socio-economic and geographical users, as well as opportunities to develop innovative - rather, disruptive technologies.

Q. What are some challenges that you overcame in your journey to where you are today?

Well, the challenge was of being a fresher in this industry, as I mentioned earlier my prior experience of 14 years was in a different field. As a General Manager I was expected to lead and motivate a team of experienced water professionals. However, with excellent training on water and mentoring by seniors at Ion Exchange, I overcame this challenge very quickly.

Q. If given a chance to bring about one change in the industry, what would that change be?

We can categorise the water business in three parts - industry, homes and communities. For homes, I would like to have standards that will help a buyer decide on a product solely on its attributes/features to ensure safe and pure drinking water instead of aesthetics and price. For the industry, I would like to see a change through which it evolves into a 'mature stage' bringing much desired profitability. For the community sector I would like to see increased awareness of importance of safe water and sanitation.

Q. Today you are an inspiration to many, but who inspired you?

My inspiration is the organisation I have served for the past twenty one years – Ion Exchange. Its values and ethos continue to inspire me. The credit of creating such a great institution which has inspired so many water professionals in the industry goes to our late Founder Chairman Mr. G. S. Ranganathan and later to Mr. Rajesh Sharma for continuing in his footsteps, despite generation change and the challenges it brings in managing people and the organisation.

Q. Where do you see the water industry 10 years from now?

10 years from now, I see it in the 'mature stage' particularly in the way we compete; buyer's maturing through evolved choice on technology. With a compounded annual average growth rate of 9% sustained by investments in infrastructure, urban and GDP growth, the water industry will have a potential of Rs. 35,000 – 40,000 crores (5-7 billion USD) by 2025.

Q. We are proud to have you as one of the Water Icons for the year 2014-15. How does it feel to be a Water Icon?

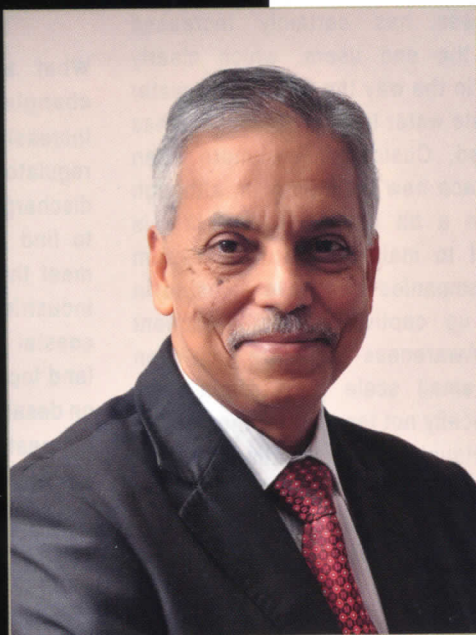
I am humbled by this recognition. I am sure such recognitions will also be motivating for many others who are involved in water industry.

Q. What message would you like to give our readers?

For all the readers, I would like to quote Mr. G. S. Ranganathan – "Treat water with the care it deserves".

Staying Ahead of Time

“Some thirty years back, as the market was not that evolved due to lack of environmental consciousness, it took us almost twenty five to thirty meetings to



convince our customer to buy a reverse osmosis system for waste water treatment,” recalls **Rajesh Sharma, Chairman and Managing Director, Ion Exchange (India) Limited**. Mr. Sharma shares his experience of the evolution of water and waste water treatment market in the country. In a candid interview with **Mittravinda**

Ranjan, he talks about his experience of four decades with Ion Exchange, which recently celebrated its golden jubilee of serving the water industry.

There was a time when water treatment was never considered as a critical aspect of running an industrial facility in India, but today the end users are much more sensitive towards the water challenge in the foreseeable future. Please share your experience of the evolution of market over the last four decades.

Early sixties was the dawn of industrialisation in India. Refineries, chemical and petrochemical manufacturing facilities, steel plants, power plants were mushrooming all over the country and there was significant demand for process water from these industries. This was also the time when, due to lesser awareness and lack of regulations on waste water discharge norms, waste water treatment was not really a core area of focus for the industry. Ion Exchange was ready with solutions for waste water treatment at that point of time but perhaps we were ahead of time for the Indian market.

By the eighties, industry had started becoming sensitive towards waste water treatment and this segment grew significantly towards the nineties. The last two decades, I would say, have witnessed the fastest growth of the waste water treatment market with the increase in corporate social responsibility coupled with stringent regulatory norms imposed by the pollution control boards at the state as well as central levels. However, the last decade has witnessed a fast growing demand for water and waste water solutions that have gone one step ahead, as there is more emphasis on recovery, recycle and reuse to conserve fresh water resources and minimise pollution.

How have the allied technologies sectors evolved with the changing market dynamics and how has Ion Exchange expanded the portfolio?

I am proud to say that Ion Exchange played a pioneering role in bringing water and waste water treatment solutions to the Indian market. In 1965 we pioneered the production of world-class

ion exchange resins in India, we now export 40 per cent of total production to Europe and the USA. Later we set up facility for engineering and fabrication in Hosur to become a wholly integrated water solutions provider.

It has been our constant endeavour to bring new technologies to the Indian market. In 1978, we introduced reverse osmosis (RO) to the Indian market, which can now be seen in almost every household. If I can recall correctly, it took us almost twenty five to thirty meetings to sell the first industrial RO unit. Later, we went on to set up our own RO membrane manufacturing facility in Gujarat in 1987.

What are your thoughts on changing end user behaviour?

Willingness has certainly increased among the end users, which clearly reflects in the way the demand for water and waste water treatment solutions has increased. Customers are more open to embrace new technologies, although they are a bit expensive, but this is confined to mainly large and medium scale companies who have invested in setting up captive effluent treatment plants. Awareness levels are high even among small scale players but it is economically not feasible for them to set up individual effluent treatment plants but instead rely on the common effluent treatment plants (CETP) set up for industrial clusters to treat waste water.

These CETPs are designed to handle a certain quality of effluent; it gets upset due to sudden increases in plant load factor or high toxic chemicals discharged by industries. It is the responsibility of individual industries to ensure that permissible quality of effluent is sent to the CETP.

Often, one reads about industries flouting norms or CETPs not working at various places or industrial effluents or sewage being dumped in the fresh water bodies. These are issues that need serious attention.

Companies are setting up goals for sustainable development through a cleaner environment, reducing pollution, producing less waste by adopting advanced technologies and conserving the environment and many MNCs and major Indian groups have set up internal goals. This is the reason many companies are adopting recycling technologies.

Those who are more environmentally conscious are opting for zero liquid discharge (ZLD) technology though it is a bit expensive as zero waste means that waste at the end has to be thermally evaporated or by solar evaporation. We have done five projects so far, one outside India and the rest in India, and a couple more are currently under execution.

What are the key drivers for the changing trends in the industry?

Increasing water scarcity and stringent regulatory norms on waste water discharge are compelling industries to find alternative sources of water to meet the growing water demand. Many industries are now being set up in the coastal areas due to water scarcity in land locked areas and these are relying on desalinated sea water as the resource to meet their requirements. Industries are now realising the need of adopting waste water treatment solutions as a value proposition; since the cost of fresh water supplies and cost of discharge of waste water when put together turn out to be more than the cost of recycled water, this justifies investment in waste water recycle.

Despite having regulations in place, we keep reading stories about industries flouting norms or CETPs not working at various places or industrial effluents or sewage being dumped in the fresh water bodies. What is the exact picture of pollution today in the country in your opinion?

If you look at the overall picture, there has been significant change in end

user mind sets, as a result of which the market has significantly evolved and can broadly be categorised into two groups. First, it is the large and medium scales who have invested in setting up their own capacities and the second is the small scale players who independently cannot install and run effluent treatment plants (ETPs). The government has set up CETP with the aim to treat the waste water generated by multiple small scale industries to a basic level. This is later transferred for final treatment before being discharged into the environment. As I mentioned earlier, these CETPs are designed to handle a certain amount of load and chemicals, which get upset due to sudden increase in plant load factor or chemicals that it is not intended to handle. It may be difficult to draw an exact picture, but by and large industries are trying to treat the waste although exceptions exist.

One of the major factors in the industries flouting the norms is the high cost of running the ETP facility. In my opinion, industries must be mandated to pay for effluent treatment costs just as they pay for other utilities such as power.

Talk about the overseas projects Ion Exchange has been working on and how is it to work on projects in other countries vis-à-vis India?

Ion Exchange has been involved in project exports for almost three decades and exports accounts for around 25 per cent of our revenue at present. We have diverse geographic presence across South East Asia, Middle East and South Africa where we have set up our offices. Each of these markets is unique and has their own set of challenges.

In South East Asia, we are present in Thailand, Malaysia and Indonesia which are similar to the Indian market to a certain extent yet different as they are more progressive and sensitive towards water issues. Middle East is a tough market as the customers are very particular about high quality standards and they believe in investing in high

end technologies. In Africa, South Africa is much more westernised. The rest of Africa has similar conditions like us. They want cost effective solutions which meet their requirements.

Municipal sewage waste (MSW) treatment is one of the most discussed in various forums but there is hardly any work done in that space in India, while in other countries like Singapore they are recovering water from sewage water and reusing water for various purposes. What kinds of opportunities exist in this space in a country like ours?

Municipal sewage waste treatment market is huge in our country. It may be difficult to give particular numbers as far as sewage waste generation is concerned, but as per our internal estimates, only ten percent of waste in rural areas and thirty percent of waste in urban areas is treated.

Singapore is another great example which is highly water stressed but they have chalked a clear cut road map to secure water supplies and have built the infrastructure to support the demand for the next 100 years. There, they have been blending treated sewage water with fresh water which they call New Water, but in India we have a mind-set and so this approach may not work in our country. Such steps can reduce the use of fresh water by almost 60-70 per cent and simultaneously reduce the stress on fresh water resources.

Ganga Rejuvenation is just one example of sewage treatment before it is discharged into the river. The plan was chalked out almost 25 years back and partly implemented. But the river has remained polluted because of under-design of plants and improper operation and maintenance.

What are the critical deciding factors for success of projects in this space?

These projects entail huge investments and require proper operation and

maintenance post implementation. Type of waste and the plant load are critical factors at the design stage which requires the segregation of municipal waste from industrial waste before the waste enters the recycling and recovery units. Urban planners are taking care of these issues now but in many old cities, where small cottage industries are present, harmful chemicals are discharged into the common municipal stream that upsets the sewage treatment programme. One such example is Dharavi in Mumbai, home to many leather processing and manufacturing units.

Traditionally, urban planners have been looking at integrated treatment plants; however I feel that having decentralised plants would make more sense. Each large colony should have an individual treatment plant instead of transporting the effluent across the city to a common place for treatment or a set of small colonies can have a common recovery and recycle unit. In fact, if such units are close to the agricultural land, water can be treated for removal of pathogens and used in agriculture as well.

We have been propagating the idea of setting up water recovery units in big societies in urban areas to recover and treat waste water which can be used for purposes other than in the kitchen, like it is done in the Middle East.

Scope and opportunities for players from the private sector in waste-water treatment industry

For example in France, the water industry was completely privatised a hundred years back and has the highest compliance levels. If you ask me, why do we need to have water filters at home? Should it not be the responsibility of the authorities to ensure continuous water supplies with the highest quality for its people?

In India, the Government has been outsourcing the operation and maintenance of water and waste water treatment plants to private sector companies for a short term of around

five years. This needs to change! Private players can of course play a major role in this segment in terms of investments but it will happen only if there are assured returns on investments in the business. Though regulations are in place, proper incentive schemes promising reasonable return on investments would certainly attract private players for investments.

Huge subsidies affect the top and bottom lines of companies and no one is ready to invest. For instance, the government offers subsidised water and in many cities the cost of treatment is more than cost at which water is sold to the customer, which makes the project unviable. This is one of the reasons why despite the availability of expertise, private players are not inclined towards investing.

The water challenge can be met only through the concerted efforts of government agencies and private players. The best possible approach would be through the PPP mode but the implementation is crucial. There is immense scope as the investment required in water and wastewater treatment is close to USD 100 billion and the PPP model can actually go a long way in addressing the issue.

Unfortunately, one does not get to hear stories of success of PPP model in India. What would be the critical success factors for implementation of this model?

Worldwide if you see, there are many success stories where the PPP model and privatisation have been made to work in the best interest of the stakeholders and society. France, as I said, privatised the sector a hundred years back to overcome the challenge and has one of the best water infrastructures.

The key for the success of the PPP model is that the ultimate cost must be borne by the end user. Unless the Government is ready to increase the tariff and until the private sector gets good ROI, the PPP model will not work. Another important

factor to make it more successful would be involving the community/stakeholders directly in the project by making them a part of the SPV to maintain transparency in the whole process so they are a part of entire decision making process. This is actually the practice followed everywhere outside India and has worked well for the success of the PPP model in France, which completely privatised the water sector. Thailand is another example where Mitsui is running the drinking water project; in Manila such water projects are also running successfully as people are ready to pay. In fact, we are pursuing one project in Manila, where despite it being a small country people are paying for the water.

The investment required in water and wastewater treatment is close to USD 100 billion; it cannot happen overnight and has to happen progressively. No one company can do it and it has to be a concerted effort based on a master plan as implementation is a major challenge.

What are your thoughts on future Market dynamics of water sector?

Growth opportunities are tremendous. The industry has been growing at almost 10-12 per cent. In fact, the bottled water industry is growing at almost 25 per cent. Consumer industry is growing at 20-25 per cent. There is a huge gap between the demand and supply and the gap keeps widening. Our population is growing, rapid industrialisation has created compelling demand for water, and so has the demand for agricultural needs which is currently at around 70-75 per cent.

Demand for everything is increasing. Water, which is the key raw material for almost everything shows an increase in demand. You need water for process, drinking, human consumption, agriculture. But the issue is depleting fresh water resources.

The entry barrier to water management is very low. Since this is technology based,

one does not need huge investments unlike major manufacturing industries that are highly capital intensive. So, many small players come into existence, offer cheaper equipment, which may or may not perform to optimum level and then finally within 5-6 years those players are out of the market. This is the process that has been going on for a long time.

The two basic things that need to be taken care of are conservation of fresh water resources and optimising the use of fresh water through maximum recycling of water; and the second is to make efforts to increase the percolation of water into aquifers through watershed development.

Water recycle and desalination will be the key growth drivers in the next 10 years because of water scarcity. This is where the industry is going to grow.

Please share the future plans and roadmap for the growth of Ion Exchange.

In terms of Ion Exchange, besides being part of India's growth story, we are increasing our focus on the international market. We intend to strengthen our base in all those countries where we have set ourselves up over the last 20 years. We intend to leverage this and increase revenues from exports which are currently at 25 per cent and take this to 50 per cent over the next 5 years.

We are continuously on a look-out for technology either through association with global companies or by developing our own processes. We are looking at technologies which will use less energy and chemicals and are more environmentally friendly. Technology might treat waste water – but if more sludge is created – then one form of waste does get reduced but another form of waste is generated. The goal though is to look for sustainable technologies which require lesser energy and a smaller water footprint. ■

INDION SWIFT - AUTOMATIC TWIN-BED DEIONIZERS FOR SUGAR MILLS

ion-exchange MUMBAI

Introduction

The latest **INDION Swift** range comprises a family of automatic twin-bed deionizers incorporating state-of-the-art counter-flow ion-exchange technology previously available only in much larger, custom-designed plant.

The operational cycle of these rapid-regeneration, packaged units is controlled by volume throughput, which is pre-programmed into the PLC according to the type of feed water. The ion exchange resins are never fully exhausted ensuring optimum deionizer water production at all times.

Regeneration takes approximately 35 minutes - after a minimum service cycle of two hours - minimizing the need for both, standby plant and the storage of large volumes of water. As regeneration of the cation and anion beds is simultaneous, the effluent streams are largely self-neutralizing, reducing waste disposal costs and environmental impact.

The **Swift** is exceptionally compact, and is skid-mounted on a corrosion-resistant frame which also accommodates a stainless steel multi-purpose pump. In addition to optimizing the performance of the plant during service and regeneration, the pump provides a number of re-circulation options to maintain the high quality of the water in the treated water tank.

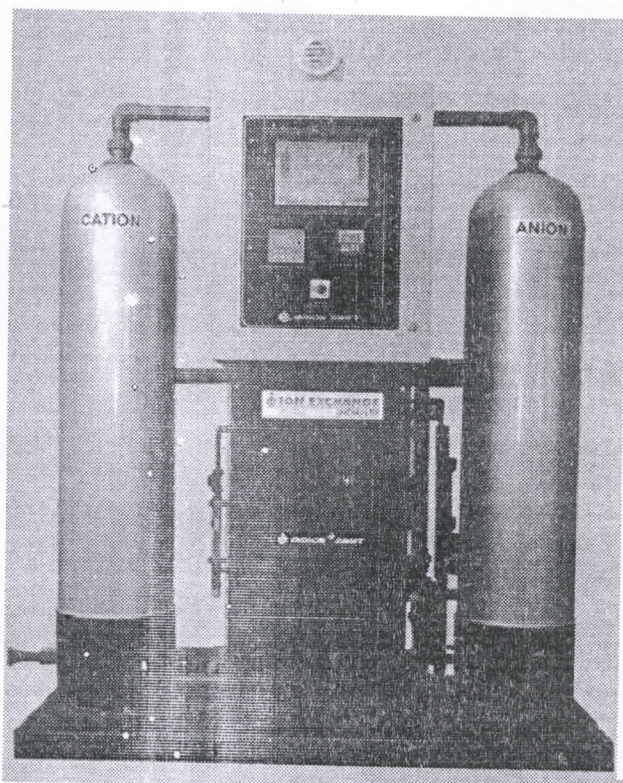
Product Description

The **INDION Swift Plus** features an additional cation polisher exchange stage which is accommodated on the standard, compact skid. As a result the **Swift plus** produces mixed bed quality water having a resistivity of always greater than 1 mg.ohms-cm for a minimum capital outlay. Running cost is low because no additional regenerant chemicals are required and no extra effluent is produced.

The units are made from FRP materials and hence last for long time. The cation and anion are packed bed units & regenerated by using Counter Current mode of regeneration. All the operations of plants are auto based on PLC. The regeneration of cation and anion is done at same time & hence the regeneration wastewater of the plant is neutral.

The **INDION SWIFT** is supplied with state of art technology Resin with Controlled Particle size having high bead strength, minimized bacterial contamination and less leachable thus providing high quality treated water.

The unit is Pre Piped, Wired, Assembled, and Tested at the factory thus reducing the installation time at the site. It is provided complete with Pre validated program with PLC control along with HMI touch panel displaying throughput, flow rate, Resistivity/Conductivity, etc. It is also provided with all communication links to DCS/SCADA/BMS.



Features

- Compact and Skid Mounted
- Pre Piped, Wired, Assembled and Tested at factory
- High quality Pneumatic Diaphragm Valves
- High strength controlled particle size Resin beads
- Mixed bed quality of water at minimum cost
- High chemical efficiency
- Quick Regeneration
- Simultaneous Regeneration of Cation and Anion Resin beds
- Stainless Steel Single Pump for Service, Regeneration and Recycle
- Automatic control by PLC
- Message display produces continuous read out of system status
- Can be connected to level sensors in chemical tanks to prevent regeneration when insufficient chemicals are available

Benefits

- Minimal installation and commissioning costs.
- Minimal Startup time
- Near Neutral Effluent

- Reduced Chemical cost and effluent generation
- Reduced Space (1/3rd of Conventional DM Plant)
- Reduced Capital cost in Civil construction due to less space and reduced storage tank
- Minimal Operator involvement
- Applications
- High purity water for Electronics, Industrial and Pharmaceutical segment

Specific Industry

- Electronics
- Large volume parenterals
- Electro Deposition paint - Automobile
- Manufacturers and spare parts manufacturers
- Bio technology
- Cosmetics
- Sugar
- Distillery
- Captive Power Plant
- Power Plant
- Petro Chemical Industry
- Chemical Industry