Chemical Crusaders

BHADRESH K. PADIA, NITESH H. MEHTA AND VINEET A. SHROFF are chemical engineers from IIT-Bombay who have long shared a common passion for the environment that turned into a cleantech company they have been running for almost a decade now.

But the genesis of this company lies further down in time. Padia, Mehta and Shroff along with three others, who shared a passion for applying their knowledge of chemistry to work for the environment, discussed the possibility of setting up a company in 1996.

“We were six of us in the early days of our journey, but three could not get their families to support their decision to set up Newreka and dropped out,” says Padia, Co-Founder and Director, Newreka Green Synth Technologies, which finally began a year later in ’97. Newreka is looking to tackle the problem of waste from the chemical industry—using the founders’ knowledge of green chemistry, which looks to improve the efficiency of chemical processes to reduce the amount of waste created. It measures something called the E Factor. This is the ratio of the amount of waste created per unit of production. “The chemical industry, which includes pharmaceuticals, dyes, pigments, industrial chemicals, agro chemicals and others, uses knowledge and processes that are age old,” Padia says. In the process, most of these industries create a large amount of waste that pollutes water bodies and ground water resources. “The pharmaceutical industry, for example, produces 50-100 kilograms of waste for every 1 kilogram of product,” Padia says. This waste is then treated according to norms set by the government and then thrown out as
We realized that most companies do not want to pay for knowledge or when we re-engineer their processes differently. So we cover our costs by selling these secret, customized catalytic formulations,” Padia says. The cost of the catalytic formulation depends on the size of order and level of customization. Newreka works mainly with liquid waste and has recycling solutions for acidic effluents, alkaline effluents and neutral effluents. The company carries out its research around various chemical processes to create more efficient ways of performing chemical reductions, nitration et al. “Our solution is a recycle-at-source one and we approach it from a profitability perspective. This means that when we approach the companies we work with, we do not tell them that if you use Newreka’s technology you will create lesser waste, but we focus more on how it will improve their output and profitability,” Padia says.

One of Newreka’s customers is a maker of drugs for the treatment of AIDS. “Companies working on anti AIDS drugs produce up to 178 kilogrammes of waste for every kilogram of product,” Padia informs. This company has not thrown out a single drop of water in the last four years, Padia boasts.

Newreka has filed nine patents so far for its products and is filing three to four patents every year for its processes. It currently has about five customers in the pharmaceutical, agro chemicals, fine chemicals and dye industries. There are another 20-25 companies in the pipeline, Padia says, expecting rapid growth this year.

—Shruti Chakraborty

Switch to Save

When an auto-dipper for automatic control of automobile headlamps failed to take-off due to market uncertainty Lakshman Rao, 50, took a U-turn with his business plan and shifted focus to developing energy efficiency systems. A qualified chartered accountant, Rao became a clean technology entrepreneur when he incorporated Kakatiya Energy Systems in 1999. The Hyderabad-based entity is the innovator of Nature Switch (NS), an energy saving system for indoor and outdoor lighting controls that has been sold as a ready-to-use product since 2002.

“It took us three years to stabilize Nature Switch before we perfected its field parameters. About 2005 onwards the entire design was frozen,” says Rao, Managing Director, Kakatiya Energy Systems. The fundamental product is essentially a device that has the capability to sense solar radiation and does not get confused with artificial light. So