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HOW IS INNOVATION PRACTICED ELSEWHERE? SOLVAY LIVE HAS MET FIVE MAJOR INNOVATION PLAYERS ON THREE CONTINENTS, ASIA, AMERICA AND EUROPE. IN EACH CASE IT IS THE SAME PASSION, ALBEIT WITH DIFFERENT APPROACHES, FOCUSING ON SUSTAINABLE DEVELOPMENT, OPEN INNOVATION AND SOCIAL PROGRESS.

Klabin brings innovation to pulp and paper

THE INNOVATIVE APPROACH OF BRAZIL'S PREMIER PULP AND PAPER COMPANY IS LEADING TO BENEFITS FOR THE COMPANY AND ITS CUSTOMERS.



Klabin

Innovation is at the heart of Klabin's strategic goals.

"Innovation is crucial to help us meet customer needs, conquer new markets, and focus on excellence in performance, in profitability and in product and service development," says Francisco Razzolini, Director of Projects, Industrial Technology and Supplies. At Klabin, innovation starts with the genetic selection of the most productive trees; those planted today are a third more productive than trees planted just five years ago. This provides an excellent foundation for supplying wood with properties that better meet customer requirements. At the same time, the company brings innovation to all its

industrial processes, to increase efficiency, reduce operating costs and cut emissions. *"We focus on producing more with less,"* adds Razzolini. This has involved the R&D department reducing the grammage of paper and board while maintaining the same material and printability properties. Another area of innovation is recycling. Half of the boxes made by the company are produced from recycled paper. Klabin is also part of a consortium including Tetra Pak for the complete recycling of paper, polyethylene and aluminum in composite packaging. Thanks to this world-first technology using a plasma system, it is feasible to recycle 100% of the aluminum, plastic and paper in long-life packaging.

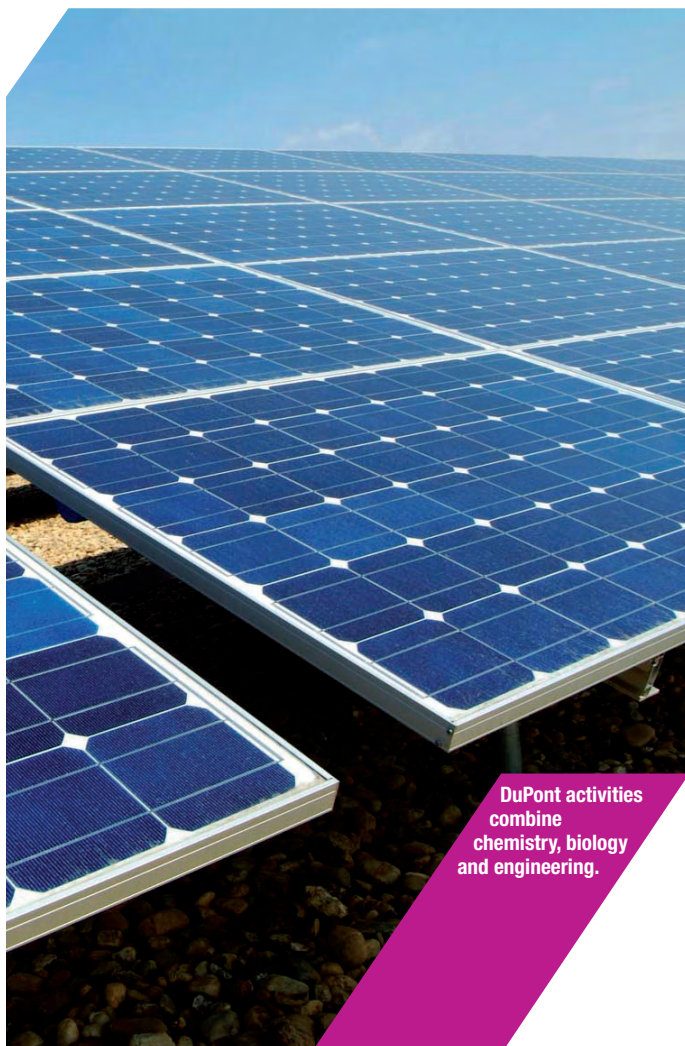
Innovation is a key element of the company's Sustainability Policy, which pursues ongoing reduction of environmental impacts. A prime example is the new ultra-filtration system to treat effluents at the Monte Alegre mill. It enables water to be returned to the River Tibagi with quality superior to the water originally taken out. The next step at the mill is to re-use the used water. This will reduce the volume of effluents and make important savings in water use. *"Over the last decade our innovative processes have reduced consumption of water from 50m³ to 30m³ per ton of paper produced, which ranks Klabin among the best integrated pulp and paper mills in the world,"* says Razzolini. ■

Responsible paper manufacturer

Founded in 1899, Klabin is Brazil's largest producer, exporter and recycler of paper. It has 17 industrial plants in Brazil and one in Argentina, and is organized in four business units – Forestry, Paper, Corrugated Packaging and Industrial Sacks. The company employs 13,400 people, has an annual turnover of BRL (Brazilian reals) 3.1 billion and a paper production capacity of 2 million tonnes per year. Klabin was the first company from the pulp and paper sector in the southern hemisphere to have its forests certified by the Forest Stewardship Council.

The Monte Alegre plant (Brazil), where water comes out cleaner than it came in.





DuPont activities combine chemistry, biology and engineering.

The strength of open innovation

RANDOLPH J. GUSCHL, DIRECTOR OF DUPONT'S CENTER FOR COLLABORATIVE RESEARCH & EDUCATION, EXPLAINS HOW DUPONT FOCUSES ON OPEN INNOVATION THROUGH COLLABORATION WITH EXTERNAL PARTNERS.

opportunities which are of significant interest to all parties involved.

FOCUS ON RESEARCH

"It's more of a portfolio focus," explains Guschl. "Instead of trying to do research in just about every area of chemistry, over the last four decades we have focused our research on the areas where the results will be marketable." Research programmes must also be sustainable. R&D Directors sift through each of their programmes to ensure that the introduction of a new technology or a new product line will reduce the carbon footprint in some way. This new way of collaborating with the external world has its challenges. Guschl identifies the main one as the culture of being successful doing things the old way: "Some of our scientific communities and leaders still cling to the old, internal research model, which can obstruct the progress we are trying to make with the new approach of open innovation."

must also recognize the people inside DuPont who work hard to find the right external partners and work with them to make the collaboration work." In India, collaboration has led to more than 2,700 previously off-the-grid villages being electrified using innovative solar systems. In Brazil, DuPont has joined forces with the Brazilian Ministry of Agriculture to develop the world's only automated DNA fingerprinting instrument to rapidly pinpoint sources of bacteria, thus enhancing food safety. In Greensburg, USA, DuPont and Wichita Habitat for Humanity are partnering to build affordable and energy efficient houses, after 95% of the town's houses were destroyed in 2007 by the worst tornado in American history. ■



In the 20th century, DuPont was known throughout the world as a chemical company. Today, it has been transformed into a science company; combining chemistry with biology and engineering. DuPont's pursuit of open innovation has been a key strategy behind this move. Open innovation represents a collaborative approach: working directly with customers, other businesses, and research organizations, to pursue new

REWARD SUCCESS

Another requirement is to reward success. "Open Innovation will require us to modify our rewards system," says Guschl. "We don't just reward the inventors of a particular technology but

Sustainable DuPont

DuPont's vision is to be the world's most dynamic science company, creating sustainable solutions essential to a better, safer and healthier life. Established in 1802, the company now operates in more than 70 countries and employs 60 000 people. DuPont offers a wide range of products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel. DuPont is recognised as one of the world's most innovative companies.



"The three ingredients to successful innovation: talent, technology and tolerance."

Express portrait

Dr. R.A. Mashelkar is President of the Global Research Alliance, a network of publicly funded R&D institutes incorporating over 60 000 scientists, and Director-General of the Council of Scientific and Industrial Research (CSIR). Deeply committed to the innovation movement in India, he is also Chairman of the National Innovation Foundation, the Reliance Innovation Council, the Thermax Innovation Council and the Marico Innovation Foundation. Honoured by 27 universities in four continents, in 2005 Dr. Mashelkar was the first to receive the "Stars of Asia" award from Business Week magazine.

Innovation in India: The power to transform

DR. R.A. MASHELKAR, A LEADING ARCHITECT OF INDIA'S SCIENCE AND TECHNOLOGY POLICIES, DESCRIBES HOW INNOVATION IS TRANSFORMING THE LIVES OF INDIAN PEOPLE.

Solvay live – What is your philosophy on innovation?

Dr. Mashelkar – I am particularly concerned with looking at how innovation can be transformational for society. This is particularly vital in India. We have super-rich people but also super-poor. We produce the most engineers of any country in the world, yet also the most illiterates. Innovation must be directed at meeting the needs of everyone in India.

SL – What are the key challenges and drivers of innovation in India?

Dr. M. – Our biggest challenge is that we are a resource-poor country. We therefore have to work hard to get "More From Less". Another challenge concerns the three ingredients to successful innovation: talent, technology and tolerance. We have talent in abundance, and are continuously increasing our technological capabilities. But we have to tolerate failure better, by being more open to take risk. Regarding drivers, we have top leaders who have repeatedly proved they can think out of the box and drive transformational innovation.

SL – Can you give an example?

Dr. M. – Ratan Tata, Chairman of the Tata Group, was constantly distressed to see parents transporting two, three or more children on the back of their scooters in the rain. He looked for an innovative solution. The result is the Tata Nano car, a radically small and inexpensive family car. Another example is the access to education through an innovative computer-based literacy programme, developed by F.C. Kohli and his team, again at Tata. It costs only \$2 per person and enables an illiterate person to read a newspaper within six to eight weeks. It could eliminate global illiteracy within five years!

SL – How do you define Gandhian Engineering?

Dr. M. – Gandhi believed in the welfare of all people, not just an exclusive few. Similarly, the principle of Gandhian Engineering is to make science and technology work for the benefit of everyone. It's about getting "More From Less For More" – not for more profit, but to extend the benefits of an innovation to more and more people. That, I believe, is the bottom line of transformational innovation. ■