CHEManager EUROPE

7-8/2010 July-August

THE NEWSPAPER FOR THE CHEMICAL AND LIFE SCIENCE MARKETS

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(Photo by www.rolf-kleinmann.de)

Never Waste a Crisis

LyondellBasell Emerges from Chapter 11 Poised to Regain Credibility

Resilience – The 16 months LyondellBasell spent in Chapter 11 was a time of belt tightening and strategic rethinking. Having emerged from bankruptcy in April with a net debt load reduced from over $24 billion to approximately $5 billion and a new top holding company – LyondellBasell Industries NV – the company is planning a public listing on the New York Stock Exchange in Q3 of this year. Brandi Schuster and Michael Reubold spoke to Anton de Vries, LyondellBasell's senior vice president Olefins & Polyolefins for Europe, Asia and International, about the company's determination to re-establish credibility and its strategy for defending its position as the technology leader in polyolefins.

CHEManager Europe: Now that your company has emerged from Chapter 11, what will LyondellBasell's role be in the market over the next couple of years?

A. de Vries: We have just come out of Chapter 11, and our focus now is on regaining credibility, particularly in the financial world. We are working to serve our customers well, run our assets well and to prove that we have financial discipline. I don't see us making any big moves anytime soon; that would not fit in well with the situation LyondellBasell has been in over the last three years.

We expect the next couple of years to be difficult, particularly for our polymers portfolio, polyethylene, polypropylene, etc. The supply and demand balance is quite different than it was in 2006 – it was really more of a suppliers' market four years ago. This shift is putting pressure on our margins, meaning that both we and our competitors are facing a few more tough years.


Anton de Vries, Lyondell Basell's senior vice president Olefins & Polyolefins for Europe, Asia and International

How is your company positioned to make it through the coming years?

A. de Vries: We must take into consideration how quickly the new capacity comes on stream and how quickly it gets absorbed around the world. There are some weeks when the market seems to be doing reasonably well, then things happen like the financial crisis in Greece, and that leaves a lot of people scratching their heads. While the situation is uncertain and volatile, our position is still quite strong. Even though Europe, for example, is a mature market, we have a good market presence and asset positions there. We have also moved our portfolio to include more differentiated products with durable applications, which will serve to safeguard the company during this difficult period. Of course, we do expect some rationalization to take place as well.

You mentioned credibility. Do you think it has suffered among your customers?

A. de Vries: When a company gets into a Chapter 11 situation, it is inevitable that credibility will suffer – with suppliers, customers, financial institutions and quite frankly, even with the employees.

As far as our customers are concerned, we never stopped supplying products to them during Chapter 11, and we also remained committed to agreements, such as our volume rebate system in polymers. While our customers were uncertain during the first few months of Chapter 11, we were able to regain our credibility with them once they realized that it had no impact on our ability to supply them with products. This doesn't mean that we didn't suffer at all; in the cases where LyondellBasell was the sole supplier, some customers needed the security of taking on a second supplier.

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Newsflow

Dow Chemical said would become a global sponsor of the Olympics, hoping it can bring in more than $1 billion of revenue in the next 10 years by supplying material to build game facilities and bolstering its brand. Financial terms of the deal were not disclosed.

SABIC said second quarter net profit grew 177 % from a year earlier to 5.02 billion Saudi riyals ($1.34 billion), missing analysts' forecasts. The company said in a statement on the bourse website that the result was driven by new production units coming on line. Analysts had forecast an average of 5.6 billion riyals, according to a Reuters poll. Operating profit for the quarter was 9.14 billion riyals and earnings per share for the first half was 3.48 riyals.

Akzo Nobel has agreed to acquire the worldwide assets of Swedish-based company **Lindgens Metal Decorating Coatings and Inks**, including its majority stake in the **Server Boya** joint venture in Turkey. Financial details were not disclosed. Closing is expected to take place in the third quarter.

Reliance Industries is in talks with Texas-based Quicksilver Resources, including for a possible buyout of the U.S. firm that develops shale gas and coalbed methane, the Daily News & Analysis reported. The talks also include buying a part stake or partnering Quicksilver for one of its major projects called the Horn River Basin assets in British Columbia, the newspaper said, citing unidentified sources familiar with the development. A Reliance spokesman told the paper he would not comment on market speculation.

An Evolving Model

Dow Corning's Xiameter Sets New Trends

Trendsetter – Dow Corning jumped into unchartered waters back in 2002 with the launch of its Xiameter brand. Designed as an affordable way for the company's customers to buy standard silicones online, the business model was the first of its kind in the chemical industry. In 2009, the company revamped the model to offer more services to cater to more customer needs – making it something of an Amazon.com for silicones. Now that all Xiameter products can only be purchased via the website, many of the company's customers have to rethink the way they do business. Brandi Schuster spoke with European President and Xiameter Commercial Director Europe Klaus Hoffmann at the recent Handelsblatt Chemie 2010 conference about the relaunch and the kind of adaptations necessary for both the company and its customers.


Klaus Hoffmann, European president and Xiameter commercial director Europe

CHEManager Europe: What exactly is the difference now between the 2002 model and the relaunch that happened in 2009?

K. Hoffmann: To put it simply, the 2002 Xiameter model didn't have a strong link to the Dow Corning brand, and it was focused on high volume and customers for whom a deciding factor was price – we call them price seekers. Plus, all of the products we offered were available both under the Xiameter and Dow Corning brands.

In our new model, we have taken other customer segments into consideration – the security seekers, who want to have the assurance of supply and/or price stability; the convenience seekers, who appreciate the ease of doing business and getting services. And not only have we increased our number of Xiameter products from 400 to over 2,000, but it is also now possible for our distribution channel to buy via Xiameter.

If I am looking to buy commodities through Dow Corning, that means I have to make my purchase via the Xiameter website?

K. Hoffmann: Yes. Something else that has changed is the volumes. Before we were only selling in full truck loads – one product, full truck. While we still have minimum order quantities, they are much, much lower – all the way down to one pallet of product. As a consequence of not offering standard products under both brands anymore, we are now facing the challenge that our big customers now have to order from both Dow Corning and Xiameter.

You say "challenge." How are your large customers who order both commodities and specialty products adapting?

K. Hoffmann: It's really like any new business model lifecycle. We have some customers who got on with it right away and had absolutely no problems. Of course, we have also seen customers who were less convinced about the new model; those discussions are difficult, because we really have to separate the two business models from each other.

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Birth of a Global Materials Company

Dow Spinout Styron Hits the Ground Running

Up and Running – When the news broke in November 2009 that both Dow and BASF were looking to sell their styrene assets, the race to find buyers was on. Now, eight months later, BASF still owns its assets, saying that they are performing well and that they are in no hurry to sell. Dow, however, recently closed the sale of its Styron unit to global private investment firm Bain Capital Partners. Now a standalone company, Styron is setting out to maintain its leading position in latex and polystyrene production. Brandi Schuster spoke with Paul Moyer, Styron's vice president for plastics, about the brand-new company's outlook, its continuing ties with Dow and its strategy for remaining competitive.

CHEManager Europe: Mr. Moyer, Dow has a 7.5 % equity position in Styron; long-term supply, service and purchase agreements have also been made. To what extent do you plan on using the Dow name to leverage Styron?

P. Moyer: We'll continue to have a strong relationship with Dow; many of our plants are within Dow sites, and the company will also continue to provide many services to Styron – and vice versa. We also have our strong heritage from Dow, from the customer services we offer, to our focus on innovation and operational excellence. But now, instead of being one of many inside Dow, the products we offer now take center stage. We now have a much sharper focus on the customers we serve.

As an independent company, we are able to move much faster and we are able to concentrate on our key bread and butter products – latex and polystyrenes – in a way that just wasn't possible inside a large company.

How does Styron plan on positioning itself in the market?

P. Moyer: There are three important factors that we bring to the market: Our leadership position; our heritage; and innovation. We have a strong track record of successful, customer-driven innovation, and this is something we plan on accelerating. We are now able to intensify relationships with our customers to help them innovate and grow; and we have several interesting innovation projects in our pipeline.

To what degree is Styron backwards integrated? How affected are you by price volatility within aromatic raw materials?

P. Moyer: Looking at styrene monomers, we have a balanced supply portfolio. We produce our own in very competitive facilities, have long-term contracts with suppliers and we also buy on the open market as well. Looking out on the horizon as far as styrene is concerned, we are very pleased with this set up.

More and more styrene is expected to hit the market as the worldwide recession comes to an end. How does Styron plan on counteracting price pressure?


Paul Moyer, Vice president for plastics, Styron

P. Moyer: The pricing pressures from styrene monomers come and go with the volatility of the marketplace. Our pricing is really based on the value we bring to our customers and their applications. As I mentioned before, we're constantly working with our customers on innovation.

For example?

P. Moyer: Several years ago, we introduced a new family of polystyrene resins under the name Styron A-Tech. This new line of resins made it possible for our customers to use less material while still retaining the performance characteristics. That family of resins became the gold standard in the industry. We are now working with industry leaders on the next generation of these resins, which will be launched this year.

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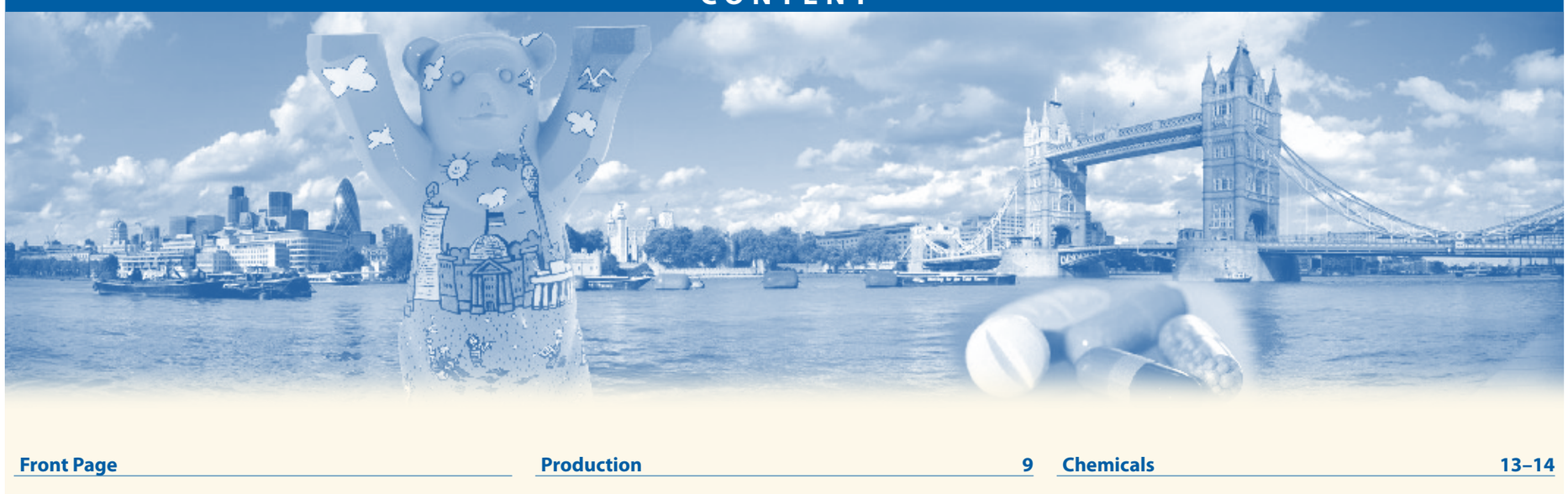
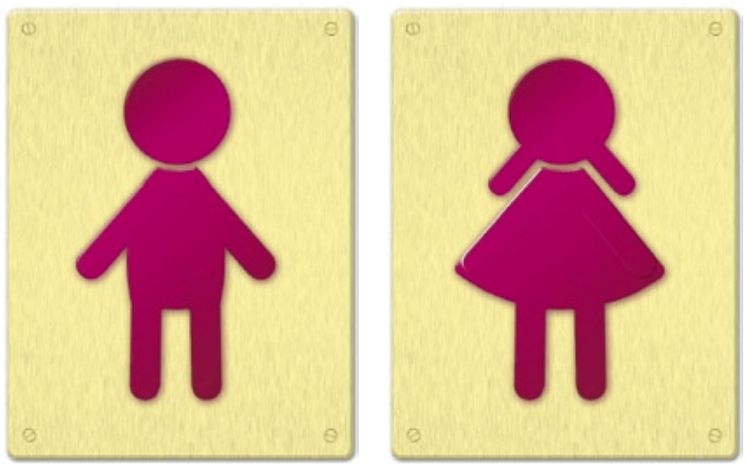


Novartis in $175 Million Gender Bias Settlement

Novartis has agreed to pay $175 million to settle a class-action lawsuit accusing the Swiss drugmaker of discriminating against 5,600 current and former female employees.

The settlement was announced less than two months after a Manhattan jury ordered Novartis to pay $250 million in punitive damages, after a six-week trial. That jury concluded the company's U.S. unit, Novartis Pharmaceuticals, engaged in a pattern of discrimination between 2002 and 2007.

Lawyers for the plaintiffs said it was the largest U.S. gender discrimination case ever to go to trial. In a joint statement with the plaintiffs' lawyers, Novartis said it will pay $152.5 million to eligible class members and pay an additional $22.5 million to improve companywide



complaint processes, oversight and performance assessment.

The settlement requires court approval. U.S. District Judge Colleen McMahon scheduled a Nov. 19 hearing to consider whether to approve it. ■

J&J Says Latest Drug Recalls Involved 3 Million Bottles

Johnson & Johnson provided additional details about its two most recent recalls of Tylenol and other over-the-counter drugs, saying the actions involved a total of about 3 million bottles of the medicines.

The company's latest recall involves 21 lots of medications – including Tylenol for children and adults, several forms of Benadryl allergy tablets and painkiller Motrin. But it did not disclose the number of affected bottles.

"We shipped approximately 2.5 million bottles of the affected lots involved in yesterday's recall," a company spokeswoman said, following media criticism about the dearth of information.

The company recalled four lots of Benadryl and one lot of Extra Strength Tylenol gels on June 15, also without specifying the number of bottles involved. It said that recall totaled about 500,000 bottles.

Both recalls were related to, but are in addition to, the company's Jan. 15 recall of 53 million bottles of widely used products, J&J said. They were all linked to odors traced to a chemical in pallets used to transport and store the medicines.

Excluding the two recent actions related to the Jan. 15 recall, McNeil Consumer Healthcare has issued four product recalls in the past year due to quality control problems at its plants, sparking a congressional investigation and scrutiny from the U.S. Food and Drug Administration.

One of McNeil's three main factories, located in Ft. Washington, Pa., has been closed while the company addresses problems cited by the FDA. ■

Reliance Eyes Third Shale Gas Deal in U.S.

Indian energy major Reliance Industries is close to acquiring a stake in a shale gas asset in North America, which will be its third such buy this year, local newspapers reported.

The acquisition of a 50% stake in the asset would be the biggest shale gas deal so far for Reliance, India's largest listed company, the Hindustan Times said, citing industry sources.

Officials at Reliance Industries could not immediately be reached for a comment.

The Business Standard said that Reliance's third shale gas deal would be in line with the company's last deal to buy a 45% stake in U.S. firm Pioneer's Eagle Ford shale acreage in south Texas.

In April, Reliance agreed to pay $1.7 billion to Atlas Energy to form a joint venture and own a 40% stake in Atlas' Marcellus Shale operations in the eastern U.S. ■

Evonik Establishes Independent Carbon Black Company

Evonik Industries is reorganizing its carbon black activities. On July 1, Evonik Carbon Black was founded as a legally independent management company under the umbrella of Evonik Industries. CEO is Jack Clem and Rainer Wobbe will take over the position of the CFO. The operational headquarters of the company, currently in Frankfurt, will move to Hanau-Wolfgang, Germany, on Oct. 1. The product portfolio and the relationship to the customer will not be affected by the spin-off. Evonik, the second largest manufacturer worldwide, produces carbon black at 17 sites in 12 countries on four continents. In the last fiscal year some 1,700 employees generated sales of about €1 billion.

Having spun-off the carbon black business, Evonik is examining three strategic options to develop its business further. The possibilities extend from optimization as an independent market unit, through a partnership solution, to sale of the business. ■

Henkel and BASF Coatings Set Up Research Joint Venture

BASF Coatings and Henkel have signed a joint venture agreement to develop innovative corrosion protection solutions for the automotive industry. The 50/50 venture, pending approval of the German anti-trust authorities, will be headquartered in Düsseldorf. The joint venture is anticipated to launch in early 2011.

The primary focus of the joint venture will be research and development. It is intended to bring together the unique competences of both companies in the areas of metal pretreatment and dip coating to develop products and processes that offer greater benefits in terms of cost, performance and environmental compatibility than the standard corrosion protection processes currently used within the automotive industry. Following a successful development of these products and processes Henkel and BASF Coatings intend to jointly market them in the automotive industry.

"A reduced number of process stages for metal pretreatment and corrosion protection would offer customers extensive benefits for the first phase of automotive painting," explained Paul Kirsch, corporate senior vice president Transport and Metal at Henkel. ■

Correction

Peter Summo
Vice president Construction Polymers, Wacker Polymers

Bernd Judas
Vice president Construction Silicones, Wacker Silicones

In issue 5-6/2010, we mistakenly mixed up Peter Summo and Bernd Bernd Judas' photos in the article, "Sustainable Building Solutions: Megatrends Drive Energy Efficiency and Carbon Dioxide Awareness in the Construction Industry. CHEManager Europe regrets the error.

DOW CORNING

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XIAMETER® brand standard silicones give me new ways to lower costs.

When sourcing materials, I like to take advantage when costs are lowest. Good thing market-based pricing from the XIAMETER brand ensures I always pay today's going price for standard silicones.

And with options like supply agreements and product family discounts, I'm finding lots of other ways to capture savings. That's why the XIAMETER brand from Dow Corning works for me.

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Never Waste a Crisis

LyondellBasell Emerges from Chapter 11 Poised to Regain Credibility

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India's Reliance Industries made several bids for LyondellBasell over the last few months. How does your company view competition from the Asian market?

A. de Vries: Quite frankly, we weren't surprised that there was an Asian competitor among the bidders for our company. The competition from Asia is getting stronger and stronger, and while they are mostly still local or national players – albeit in large countries – many have the ambition to become global players, just like Sabic has done. This is not necessarily a bad thing – it's actually pretty healthy. It's difficult to say if this will affect us in the long run.

LyondellBasell's strengths are currently based in the American and European markets, both of which are losing importance in comparison with Asia. How do you plan on taking advantage of the growth potential in the Asian market?

A. de Vries: For a company our size, we are underrepresented in Asia, like most European or American-European companies. However, we have been developing business in Asia, mainly through joint ventures in Japan, South Korea and Thailand. We have also invested in China in automotive polypropylene compounding, and we have joint ventures in propylene oxide in China and Japan.

The big investments in Asia are being made by the Asian players themselves, like Reliance in India and PTT in Thailand, and by the major oil and chemical companies, such as Shell, BASF and Dow.

Are there plans to increase the company's presence in Asia?

A. de Vries: We don't currently have any plans to start large investments in Europe, the U.S. or in other parts of the world. It is just too early to say. Once we have proven our credibility in a year or so, then this could be something for discussion with the management board and our shareholders.

So that means Europe will still have an important significance for LyondellBasell in the future?

A. de Vries: Taking our asset base and the European markets into consideration, Europe is clearly significant for our company. With assets in Germany, France, Spain, UK and Italy, and our joint venture with Poland's PKN, we are able to serve the market here in a big way. Also, we are now serving the European market more and more via joint ventures that we have established over the last ten years in the Middle East.

Speaking of the Middle East, LyondellBasell has three joint ventures in Saudi Arabia – Saudi Polyolefins Company (SPC), Saudi Ethylene and Polyethylene Company (SEPC) and Al-Waha – through which the company will market about 2 million tons of polypropylene and polyethylene per year. Which markets are you focusing on with these products? What significance does the European market have as far as these products are concerned?

A. de Vries: Major quantities of the products from those sites head east, to India and China. China will remain a rather large importer of polyolefins.

There are also a limited number of products that go to the European market, and we don't see that changing significantly over the next few years. The mainstream of the Middle East production in general goes east. This fact makes us dependent on the speed of growth in that part of the world. If the growth scenarios turn out to be disappointing, then, of course, the products will flow to other parts of the world. But one thing is certain: The cost position of the Middle East assets is by far the best. That means these assets can reach out to almost any market around the world.

Do you plan on expanding your product line or will LyondellBasell's main focus remain on the polyolefins market in the future?

A. de Vries: If we are talking about polymers, then we will build our position in polyethylene and polypropylene products and polyethylene, polypropylene technology, etc. As I said before, we need to demonstrate our credibility first; only then will we be able to consider other developments.

If you take LyondellBasell as it is today, it is a lot more than just a polymer company. While polymers do make up one third of our company in terms of turnover, we also have a chemical portfolio and a pretty large fuels business. We have a much more diverse portfolio than we did with Basell, which was almost a pure polyolefin player.

Could that mean that you are planning to divest some of the Lyondell product lines?

A. de Vries: It would be pure speculation to answer that. For us at the moment, the most important thing is to operate our assets well and to prove spending discipline.

LyondellBasell was considered to be the technology leader in polyolefins. How do you plan on defending this position as technology leader?

A. de Vries: We are still the technology leader in poyolefins and polypropylene, and we always have been. We are not planning any major changes in our strategy there – in fact, we plan on investing a considerable amount of money in research for polyolefins, more than most or almost any of our competitors do. This kind of investment is absolutely necessary in order to stay innovative and to come up with new products, new catalysts, and new processes – like we did in polypropylene with the Spherizone process a few years ago.

There is still quite a bit of innovation possible in that business, and we are spending the necessary R&D money to maintain, or even grow, that position further.

What is the difference between LyondellBasell before and after Chapter 11?

A. de Vries: The number one difference is, of course, the balance sheet. Before Chapter 11, we were a highly leveraged company, with over $20 billion in net debt on the balance sheet. Our current net debt level is only approximately $5 billion and our equity-debt ration is about 2:1. This is a very large change and puts our company into a completely different position.

The second difference is that we were in a real crisis situation for 16 months; that means we were much more prepared to make changes than if we had not been in a crisis. We used our time in Chapter 11 wisely, taking a lot of costs out, rationalizing assets, etc.

We took the old saying to heart: Never waste a crisis.

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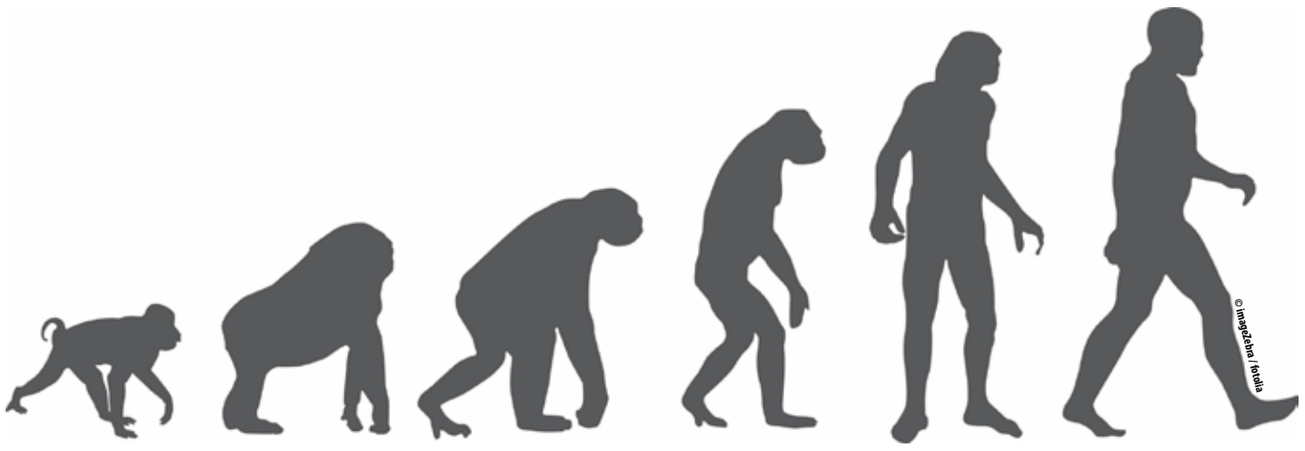
An Evolving Model

Dow Corning's Xiameter Sets New Trends



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And as a supplier, we do try to leverage our supplier base and position, and of course our customers try to do the same thing. But as we differentiate between the Dow Corning brand, which is focused on innovation and solutions; and the Xiameter brand, which is essentially focused on efficiency, then it is essential that we separate the two and the activities within each business model.

What kinds of companies are reluctant to go with this two-channel system?

K. Hoffmann: Well, there are the ones who see a mismatch within their own business models; they may have tried to run via an electronic data interchange in order to reduce their effort on that end. There are also customers who try to force their suppliers to use their business model – by this I mean the typical kinds of things, like vendor-managed inventory, consignment stock, etc. These are the companies who are now seeing the major challenge in changing their strategy in order to link it with the Xiameter model.

And how successful have you been in convincing some of these reluctant companies to take over the Xiameter model?

K. Hoffmann: We have been pretty successful overall, especially because of the option we now offer with our distribution channel. In the end, if a customer wants to order a Xiameter product the way he or she did in the past – via telephone, for example – it can be done, via distribution or they can do it via directly via Xiameter with a surcharge.

Of course, the most efficient option is that the customer places the order themselves, which is what the Xiameter model is designed for. In the case of customers who don't want to do the ordering themselves online and don't want to pay a fee for it, they are now able to order through a distributor. That way, they are using one of our distribution partners to order, which is similar to the way many customers are used to.

How is it possible to cater to the different needs of the three types of customers you've mentioned – price seekers, security seekers and convenience seekers – through Xiameter?

K. Hoffmann: We have built a couple of choices into the model for the convenience seekers, such as the distribution channel. As far as the security seekers and price seekers are concerned, orders can be placed up to 90 days in advance. Beyond that, we offer standard supply contracts or supply agreements, which are very simplified. We've managed to get it down to a little more than one page.

However, there are many customers who don't just fit into one of these three types. Depending on the product or manufacturing site, someone could be a price, security and convenience seeker all at once.

What happens if a server is down and the Xiameter site cannot be accessed?

K. Hoffmann: That is, as any web-based model, definitely a crisis scenario. Of course, in the case of such emergencies, customers can still place their orders on the phone. It should be said that this kind of vulnerability is really omnipresent nowadays. From manufacturing facilities all the way to our government economy, we are so dependent on IT that it is next to impossible for things to work without it. This is a fact of the world in which we live in.

In many emerging markets, customers value personal contact. How are you planning to integrate Xiameter into these countries?

K. Hoffmann: Yes, personal contact is definitely needed to build business, which is why we have put more resources in those regions, relatively speaking, than we have in our mature economies. Interestingly enough, it's amazing from which countries we are getting inquiries via the web. We're up to over 100 countries, and many of those inquiries are coming from emerging and developing economies. For us this means a change in mindset – just because a country is developing doesn't mean they used less IT facilities than countries with more mature economies. In fact, it is probably just the opposite.

So these are sorts of countries where Xiameter can take off?

K. Hoffmann: Right. If you go to the Middle East, Central and Eastern Europe, India, China, Southeast Asia, etc., they all fall in the same kind of pattern.

One of the challenges we are going to have in future in terms of sustainability and innovation are question of how we can reach those markets, finding out what they need and how we innovate so that they can really benefit. The needs in those countries are very different from those in the Western world. Most people can hardly imagine what needs people in those countries have. For example, while it's normal for us in Europe to have a washing machine, 85 % of the world's population still washes by hand. This means they don't need tabs, but rather completely different types of washing powders. This shows us how important it is to cater to the needs of customers in different regions of the world.

Xiameter has been around since 2002, but it is still being referred to as the new business model.

K. Hoffmann: Well, I think that the reason why we refer to it as a new business model is simply because we revamped it completely last year. We basically took what we learned over those seven years, built that into the new model and improved it significantly.

When we started Xiameter in 2002, we started a journey, jumping into unknown space. We were excited about the idea we had, but we didn't have a feel for how the market would react. It has been a success story, which we started at a moderate pace and now have accelerated incredibly.

www.xiameter.com

chemanager-online.com/en/tags/xiameter

The Birth of a Global Materials Company

Dow Spinout Styron Hits the Ground Running

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This is where we capture value on the marketplace. We bring a value proposal to our customers that allows them to use less material while maintaining a high standard of performance. That's our strategy as we go to market.

Are there plans to invest more in technology and capacity for polystyrene?

P. Moyer: While there won't be a lot more investment in capacity for polystyrene, we are investing in polystyrene technology and innovation in order to continue to differentiate Styron on the marketplace.

About 60 % of your workforce is in Europe. How cost competitive is polystyrene production at Styron's plants compared to other producers located in the Middle East or Asia?

P. Moyer: Compared to other kinds of plastic and rubber products, polystyrene is not a resin that tends to flow in great quantities across regions; therefore it's a logical consequence to produce close to the consumer. Our plants in Europe are very cost competitive. We are where our customers are today and where our customers and the growth will be in the future.

In North and Latin America, we go to market via the joint venture Americas Styrenics. Our European and Asian plants are in a strong position, both in terms of cost and logistics. All of our plants are cost competitive in the industries they serve.

New plants are cropping up in the Middle East and Asia, forcing older assets to close. Is Styron looking to divest any of its 20 manufacturing sites worldwide?

P. Moyer: That is not our intention moving forward. Our intention is for top-line, profitable growth.

Organic growth or will acquisitions also play a role?

P. Moyer: We will take it all into consideration. There are plenty of opportunities in the markets in which we participate, and we are always looking for opportunities as we move forward. There is nothing imminent, but that is certainly a part of our growth strategy.

Where do you see room to grow in the mature styrene market?

P. Moyer: Our product portfolio is very unique – we're not just about polystyrenes. We have products in the pipeline for all of the industries we serve, from consumer electronics to packaging, to automotive, to building and construction. There is plenty of room for growth across our entire portfolio.

What is your outlook for the rest of the year?

P. Moyer: We are excited. We have plenty of opportunities in front of us, and we want to continue the smooth transition to marketplace. Our goal is to continue to work with customers and help them grow and be successful together.

chemanager-online.com/en/tags/styron

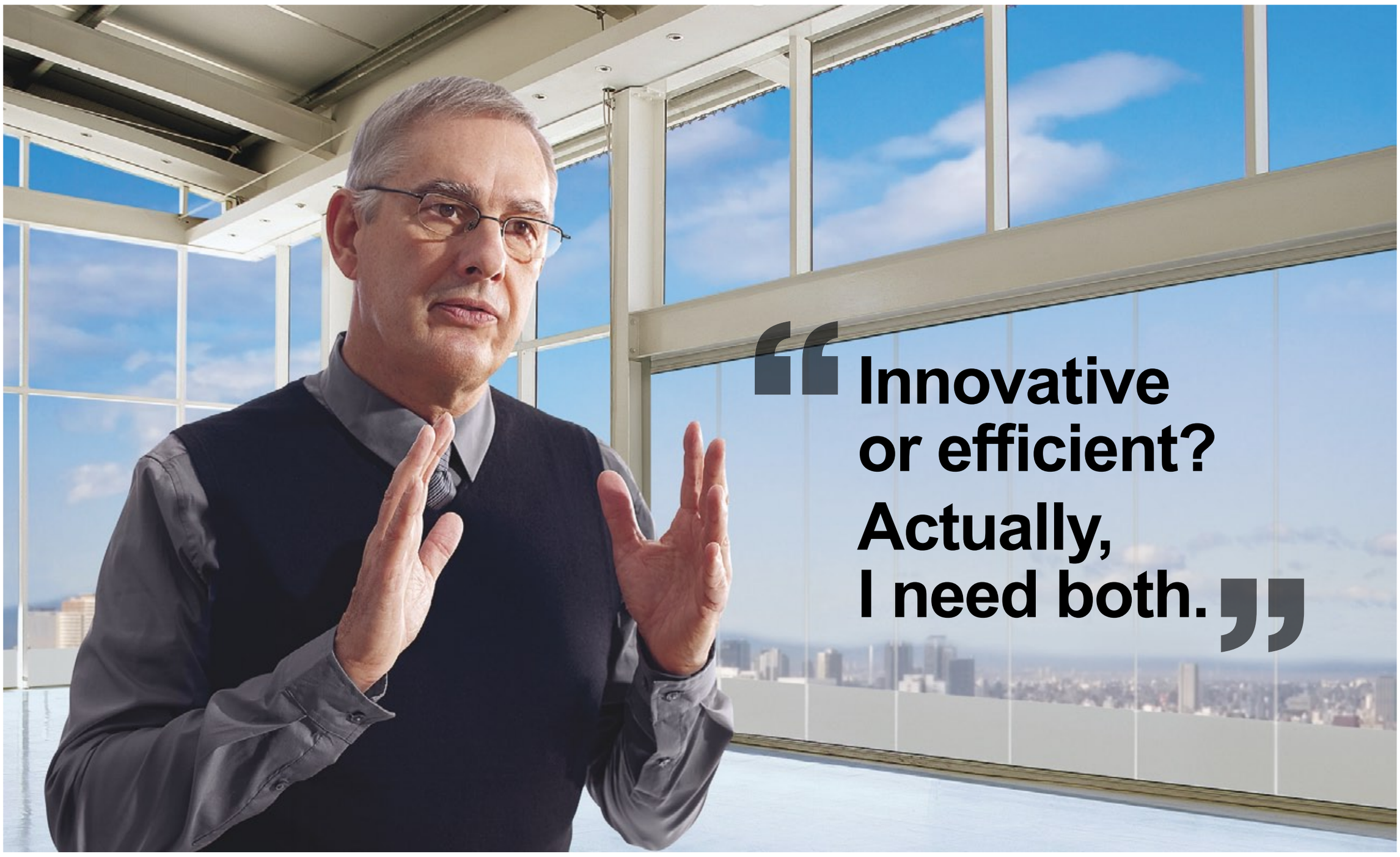
BASF Plant Science, Monsanto to Expand Collaboration

BASF and Monsanto have announced an expansion of their joint efforts to develop higher-yielding and stress-tolerant crops to include a fifth crop, wheat. In addition, the companies are increasing their investments in the collaboration, reflecting the strong leads and commercial prospects in the collaboration's early work. The collaboration that was established in 2007 includes the following crops: corn, soy, cotton and canola. In the original collaboration, the two companies dedicated a joint budget of potentially $1.5 billion; the new agreement will result in a potential additional investment of more than $1 billion by the companies over the life of the collaboration.

The terms of the original collaboration continue, with each company maintaining independent trait discovery programs, nominating from those programs specific candidate genes to advance for accelerated joint development. Projects will be jointly funded through each phase of development, and products that emerge from the joint development will be commercialized by Monsanto. The profits associated with commercialized products will be shared, with Monsanto receiving 60 % of net profits and BASF receiving 40 % of net profits.

With regard to the addition of wheat to the collaboration, the partners will initially focus on developing biotech products for the North American and Australian markets. The first enhanced yielding wheat product is expected to reach the market after 2020. This product will be followed by successive generations of higher-yielding wheat varieties. Wheat is the world's second largest commodity crop after corn and demand is expected to grow as millions of people in developing countries such as China and India become more affluent and increasingly add bread to their traditional rice-based diets.

Around 2012, the companies expect to introduce the world's first genetically modified drought-tolerant corn, pending regulatory approvals. Drought-tolerant corn, the first product emerging from the companies' joint pipeline, is designed to provide farmers yield stability during periods of low rainfall by mitigating the effects of water scarcity on corn plants. Field trials for drought-tolerant corn conducted in the Western Great Plains met or exceeded the target yield enhancement – an increase of roughly 7–10 bushels per acre over the average yield of 70 to 130 bushels per acre in some of the key drought-prone areas in the U.S. ■



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No Closed Doors

Social Media Changes the Rules for Crisis Communication

Worst Case Prep – Web 2.0 has its own set of rules. Facebook, Twitter and Co. have changed the way that humans communicate. Business and media are no longer able to make sovereign decisions on what information should make it into the public domain – Internet users decide this for themselves. In crisis situations, the Internet can act as a catalyst, upping the pace considerably. In order to make an immediate and appropriate response, professional concepts must already be in place.

Dr. Thorsten Hofmann
PRGS management consultancy

Operational disturbances as were seen at Hoechst in the 1990s, waves of redundancies, environmental scandals, damage to corporate image and criminal offences are among the classic scenarios of crisis communication in the chemicals industry. Today, these crises take on a new dimension in the form of Web 2.0. Whether they want to or not, today every company can become a hot topic for discussion in the virtual world.

Stories spread like wildfire on microblogging services like Twitter, on social networking sites, and on platforms such as Youtube or Flickr. Facebook, according to a January 2010 estimate, now has over 350 million active users. That represents an increase of 40% in a period of less than six months. If Facebook were a country, it would be the third largest on the planet.

The use of Twitter is also increasing rapidly. There are now over 100 million people tweeting on the net. The likelihood of crisis-relevant news and messages emanating from virtual communication platforms is growing. Unfiltered messages are disseminated on a global scale. The online forums of news media outlets, where everyone can proffer and broadcast their own personal opinion, accelerate this process.

Challenges Presented By Web 2.0

Nowadays, an increasing number of companies are taking seriously the idea of dialogue with the movers, shakers and opinion formers of the online community, social media networks and the blogosphere. Others, such as BASF, have demonstrated a committed approach by including more than 200 social bookmark services on their website. Services such as Twitter, Google, MySpace or Mister Wong are available directly through a share button. At the click of a mouse, the user is able to globally share and link BASF information on his or her network.

What goes without saying: The more actively social media is used, the more strongly it resonates with Internet users. Through Web 2.0, employees become communicators who can have direct and unfiltered exchanges with customers, journalists, and all other interested parties. This can have far-reaching consequences for corporate communication. To ensure credible communication, the nuances and rules of the social media world must not only be considered, they must then also be embraced in practice when interacting at this level. Continuous web monitoring is a must. Why? New crises can emerge through the internet simply because companies didn't know or failed to consider the rules of the game.

If Facebook were a country, it would be the third largest on the planet.

More Complex Structures, Greater Time Pressure and Global Presence

In times of crisis, maintaining public trust in the management and products of a company is of fundamental importance. Conveying precisely that message is the principal task of communication. Whoever is acting in a time of crisis must be in a position to speak on the subject. Web 2.0, however, with its direct network of different stakeholders, has reduced the reaction time available. Many more channels of communication must be simultaneously observed and integrated into the communication strategy.

News stories quickly slosh around from blogs to newsgroups or social networking sites, and are then spread via twitter to a broader public. Demonstrations over massive job cuts, as happened at Clariant in February of this year, are publicized around the world in seconds, and forums provide a voice for the employees of a company. Furthermore, the inhibition threshold for expressing negative opinions is considerably lower on the internet. And nothing is ever forgotten on the internet: Everything is always just a click away on Google or Wikipedia. Pictures from cell phones or videos are accessible to everyone at all times and in all places via Flickr and Youtube.

Objective: Maintain Room for Maneuver

Don't lose room for maneuver, or regain it as quickly as you can – the rules that apply in classic crisis communication also apply to Web 2.0.

The following points should be kept in mind in times of crisis:

- Permanent web monitoring: Observe the situation and the communication developments; comment on and discuss this (with primary sources if available) before an individual opinion becomes the group opinion, which could then be widely disseminated.
- Immediate information about the other stakeholder groups: The communication channels of Web 2.0 are the fastest and most direct way to keep the public informed. The most important of these is Twitter, because it is the fastest tool for spreading information.
- Staff briefing: Staff must be informed immediately about the crisis situation and the next steps. This must be done openly and promptly. Prescribed terminology must be established and always kept up to date. If the employees themselves are active in the social web, then they too will be considered as a point of contact and source in times of crisis.
- Activating dark site: The dark site contains the most important information for all stakeholder groups in the event of a crisis. Depending on the scale of the crisis, this site will become the "Online Crisis Management Center." It forms the nerve center for dialogue with stakeholders, the online community and the media. All information is focused here (press releases, hotlines, RSS feeds, corporate blogs where applicable).
- Background information: Information that is already available, as well as FAQ sections, must be amended and supplemented in the event of an acute crisis.
- Search engine optimization during the crisis: Check your Google ranking. Which search terms lead to which positions? Measures must be taken, where necessary, to counter this.

Crisis Prevention

Many risks can be identified in the early stages. While action in this phase cannot always prevent a crisis, it can help contain it. For this reason, professional crisis prevention is a prerequisite for responsible crisis management.

Besides traditional media monitoring, another important element of the early warning system is the monitoring of social media. Early signals, patterns and trends can be identified in the digital sphere through network analyses and topical analyses. One way to get a quick impression about upcoming topics and trends is by using Twitter. However, all relevant forums, blogs and Wikipedia entries should be professionally analyzed and evaluated.

The planning of procedural guidelines and codes of conduct during calmer times also provides helpful support in the event of a real emergency. The risks have to be carefully analyzed for all business processes, specific crisis and alarm procedures put in place, and the roles and functions of staff members must be determined.

Nobody is in the position to manage a crisis perfectly. However, advanced preparation does provide room for maneuver, so that the crisis can be managed in a professional manner that will limit the damage. It also serves to protect "soft values," such as trust and reputation – the values that companies have already spent large sums building up through advertising and PR. Values that are the basis for all the business activities of a company, regardless of whether they relate to customers, business partners, media or politics. Values that crisis prevention can help protect. In the end, it is the sum of errors that were detected early and the mistakes that were averted that separates good crisis management from bad.

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The five most important rules for social media communication:

- Listen: Before plunging headlong into the world of social media, listen carefully to who is saying what and how in the various communities.
- Be open and honest: Honesty and transparency are of utmost importance in social media. Disclose who you are and the interests you represent. Hushing things up is self-deception and is sure to backfire.
- Be concise: Long-winded and meandering explanations are a social media taboo. Additionally, you run the risk of your message being taken apart and then quoted out of context.
- Respond promptly and politely to comments: Social media are dialogue-oriented; so respond to comments quickly, politely and in a constructive manner.
- Only publish what you would also personally be willing to say at any time and what you would also be happy to see "in print" next to your name: Social networks provide us with a voice to convey our emotions and allow us to vent our frustrations. The effects, however, can be fatal.

www.chemanager-online.com/en/tags/social-media

Merck & Co Closing Sites in Post-Merger Restructuring

Merck & Co announced plans to close eight research sites and eight manufacturing sites as it restructures in the wake of its merger with rival drugmaker Schering-Plough. Merck's research network will include 16 major research and development facilities in the U.S., Belgium, England, France, Switzerland, Singapore and Japan. Merck will cut its manufacturing network from 91 facilities at the close of the deal in November to 77 facilities. Merck repeated its plan to reduce its workforce by 15% or about 15,000 jobs, as a result of the merger.It also backed its target of achieving $3.5 billion in ongoing annual savings in 2012. Merck expects the initial phases of the restructuring to result in savings of about $2.7 billion to $3.1 billion in 2012 toward the target. ■

Is Private Equity Ready to Get Hands Dirty Again?

Post-Lehman, European private equity has all but ignored the grimier end of life: the widget-makers, chemicals plants and facilities scrubbers that used to be mainstays of the buyout business.

But that may be about to change.

Debt for new deals has become less scarce and a bit cheaper. Industrial demand has staged a big recovery. And some funds are itching to take profits by offloading long-held portfolio firms, either to each other or public markets.

Since the crisis erupted, many deals have focused on bankable niches that proved almost recession-proof, such as shops selling knick-knacks for pets, or on big secular trends such as a switch to green technology or the rise of Brazil.

Data provider Preqin says industrial deals made up just 14% of buyouts by value this year. That was less than half their share of the market in 2008, and behind deals in both healthcare and the combined retail and consumer sectors.

For exits (sales of existing investments), the numbers are even worse. The share by value plunged to 9%, from 45% in 2008, although sales of basic materials companies are faring better.

Bankers and private equity executives say the recent €3.1 billion sale of German Cognis is a hopeful sign of change. Bigger chemicals maker BASF bought it after almost a decade in private equity ownership.

And CVC is contemplating an even-bigger three-way buyout of Spanish infrastructure firm Abertis.

Meanwhile, both economic data and stock market performance paint an encouraging picture, despite Europe's sovereign debt debacle.

Euro zone industrial new orders are rising at their fastest pace in a decade. And the industrial goods and services secto , up 11.3%, is the best performing bit of the Stoxx Europe 600 this year. Chemicals have been less impressive.

Names to watch include Spanish can-maker Mivisa, which Dow Jones says CVC is seeking to sell. In Germany, TowerBrook is planning to sell latex maker PolymerLatex, according to a source familiar with the situation.

Bankers say other potential candidates for a sale or listing include organic chemicals firm Perstorp, owned by PAI Partners, and Carlyle's AZ Electronic Materials.

A bit further out, Danish cleaning firm ISS, owned by Goldman Sachs's private equity arm and EQT, and Cinven's Italian jet engine maker Avio could be big draws, bankers say.

And as a source of new investments, companies shedding big units that are no longer core to their strategy include Anglo American, seeking to shift its building materials group Tarmac, and Compagnie de Saint Gobain, which has long flagged its glass bottle arm as up for sale.

Philip Wylie, a director at Houlihan Lokey, points to a "very dramatic" increase in industrially-focused activity.

"From a private equity perspective it's about riding the recovery and investing in technically well-positioned businesses," he said. ■

A New Century for Purchasing

Procurement in the Chemical, Pharmaceutical and Healthcare Industries

Status quo, quo vadis – Globalization, profound crises, new technological developments – these are the trends that are shaping business today. But where does procurement stand in light of these developments? Where is there potential and which trends must be urgently addressed? Consultancy Valueneer set out to answer these questions with its Global Procurement Study, in which more than 790 companies within all areas of industry from 62 countries participated.

Most companies in the chemical, pharmaceutical and healthcare industries are unable to implement available potential for cost reduction in procurement. Short-term potential – such as the financial crisis – is not being tapped. The main factor here is a lack of qualified employees in procurement; at the same time, strategically important positions remain unfilled.

Major Procurement Topics in Industry

In general, procurement in the chemical, pharmaceutical and healthcare industries has a strong operational focus. Price and offer analysis are of the highest priority, followed by demand forecast and analysis and management of supply shortages. Each of these areas of focus has an above-average relevance compared to other industries.

The most important strategic procurement topics are supplier evaluation, tendering and supplier qualification as well as searching for new suppliers. Compared to other industries, tendering in particular appears to be of particular importance for companies active in the chemical, pharmaceutical and healthcare industries. Meanwhile, the search for new suppliers has less importance attached to it; this means tendering is a standardized tool, but is not used as cost-effectively as possible.

Dominant Procurement Topics in the Industry

For day-to-day operations, the procurement department of most companies is well positioned. Observation of the dominant procurement topics shows that purchasing offices are seen as the place where orders are carried out and where supply is guaranteed.

However, when one looks into strategic procurement, a deviation can be observed. Only half of the working time that is considered to be optimal for strategic tasks is actually implemented in this area. While tendering has a higher priority in chemicals, pharmaceuticals and healthcare, less time is committed to this area. Accordingly, the qualified search for new suppliers also gets little attention on a day-to-day basis.

A closer look at the topic of tendering shows the following trend: Procurement departments do too little in this area relative to the total procurement volume, with few suppliers and, above all, with too few potential new suppliers.

This means that one of the most important measures for cost reduction in procurement – regular and broad tendering – is used insufficiently. This leads to unnecessarily high purchasing costs.

In almost 20% of the invitations to tender, no potential supplier is included; this negates the purpose of a tender and throws a considerable amount of savings out the window.

Measures to Take During a Crisis

Companies in the chemical, pharmaceutical and healthcare industries often have a hard time dealing with sudden changes in situations. Only 28% of the companies make use of new tenders – the most important lever – in order to take advantage of additional potential a financial crisis brings. Even with the support of existing suppliers, the companies in these industries are much more conservative than in other companies.

More than 60% of the analyzed chemical, pharmaceutical and healthcare companies instituted a temporary reduction of working hours, significantly more than in other industries. This resulted in less resources being available for important tasks.

Possible Contribution to Procurement Earnings

According to self-assessments conducted by purchasing managers, there is potential industry wide for cost reduction of an average of 10%. The financial crisis added another 6%. The short term turnover of just 2% of this potential is sobering. As far as the crisis is concerned, that means an unrealized potential of 4% remains.

Causes And Measures

One of the identified reasons for the poor implementation performance and the internal focus on the day-by-day business is the widespread organization of procurement under the chief operations officer (COO). This organization model is most common in the chemical, pharmaceutical and healthcare industries, with 63% in comparison to 42% in other industries.


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Success Factor Personnel and Incentives

A COO often focuses on maximal supply stability and does not see keeping procurement costs at a minimum as a main goal. This inevitably leads to performance disadvantages in this organizational model.

Procurement departments themselves in the chemicals, pharmaceuticals, health care have already recognized this. When asked which board member should ideally be responsible for the procurement department, nearly 80% of those active in purchasing said either the CEO or CFO.

Success in purchasing cost reduction is only possible with a sufficient number of qualified employees; the study shows that this is exactly what is missing. Particularly alarming is that procurement managers are not usually able to raise top management's awareness of the lack of resources and skills.

Almost half the companies in the chemicals, pharmaceuticals, healthcare industries said they don't have enough purchasing staff. Furthermore, one third of the companies asked evaluate their employee's skill insufficient. While a good 60% of procurement personnel in chemical, pharmaceutical, healthcare companies have a university degree, this provides no advantage in this case. Rather, the highly qualified academic personnel are not able to implement their knowledge in the daily business. In general, the study shows that an optimal procurement department needs "the right mix" of theoretical and practical thinking personnel.

The lack of available and qualified personnel is further intensified by missing or insufficient incentives. Managers and staff in procurement benefit too little and too rarely from achieved cost savings – only 44% of the managers, well-fifth less than in other industries, and only 29% of employees benefit from savings achieved. The motivation is much lower than is the case for sales representatives.

Sourcing Markets

The trend toward global sourcing will also continue to increase for companies in the chemical, pharmaceutical and healthcare industries. The current sourcing markets in this sector are expected to change even more distinctly. The traditionally strong sourcing markets of North America and Western Europe are becoming less important; meanwhile, China remains the fastest growing region for the chemical, pharmaceutical and healthcare industries.

Conclusion And Outlook

While purchasing in many industries achieved first major successes by the evolving from a "simple" buyer into a value-added interface between the internal and external operations over the past two decades, this process has been neglected in chemical, pharmaceutical, healthcare industries. This is due to the lower purchasing cost share and the excessive-focus on security of supply. Due to these shortfalls, these industries are lagging behind in terms of strategy, organization, processes and potential realization.

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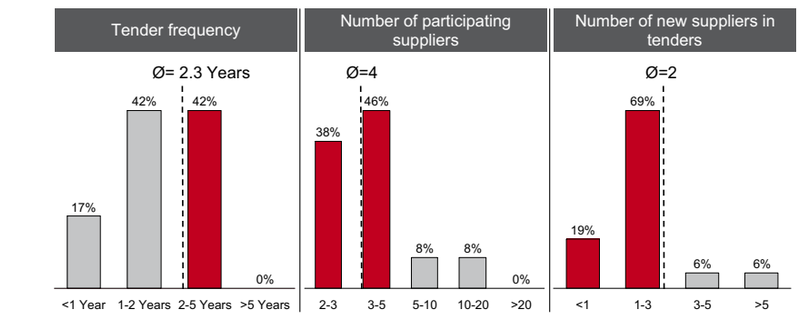
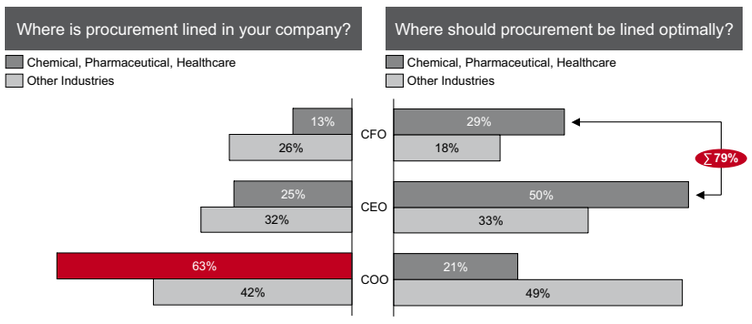
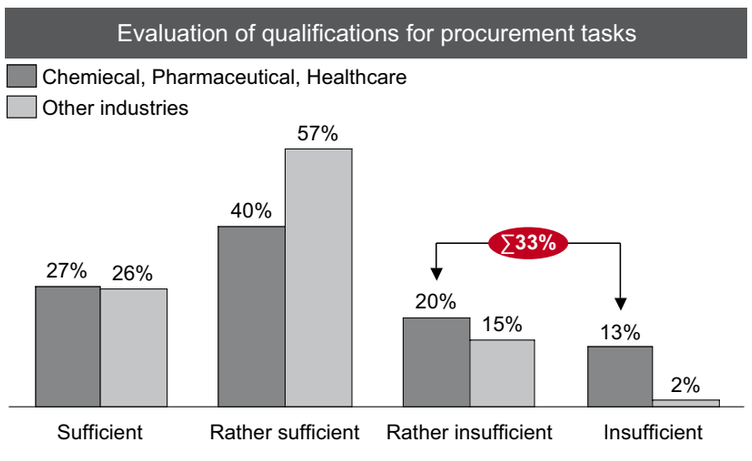






The Next Decade

Printed and Flexible Electronics in 2010

Exciting Developments – We have entered the second decade since the first printed electronics moved from academia to commercialization. The topic is now incredibly broad, encompassing inorganic and organic chemistries that may or may not be printed today and, judging by the many news sources now available, innovation is growing at a rapid rate. However, where are we in terms of commercialization? What is needed? Raghu Das of IDTechEx takes a look at not only the business of printed electronics, but also at exciting materials developments and opportunities.

In 2010, IDTechEx sees the size of the market as shown in table 1. However, of the markets in 2010, less than 0.1% of the OLED market consists of flexible devices, flexible photovoltaics are 0.7% of the quoted market and only 10% of the e-paper display market is devices on flexible substrates. Flexible electronics are much more mature for the decades old AC electroluminescence (almost all is made by screen printing), and the many mature markets involving conductive ink printed for heating elements, membrane keyboards, flex connectors,etc.

2010 sees the first commercial products involving the new flexible thin film transistor chemistries – from Plastic Logic for their QUE e-reader using organic semiconductors and from Kovio that print nanosilicon onto stainless steel. This is the first commercialization of such chemistries despite over 500 organizations (academic and commercial) active in developing printed/flexible transistors. Like many other early stage technologies, both of these companies (and many others in printed electronics that have been commercially successfully so far) have moved from the left of the value chain, i.e. being involved in materials supply, to the right, selling complete products.

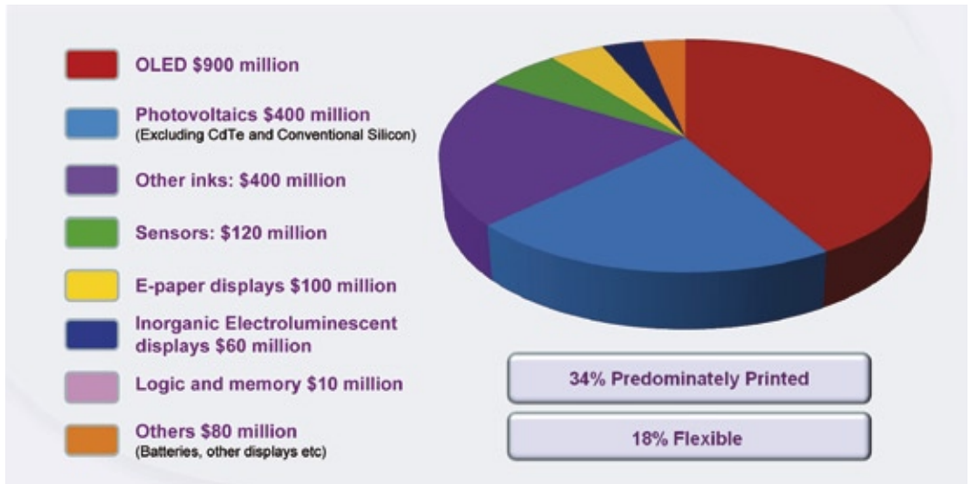
Chances For Consolidation

As with most other embryonic technologies, this industry is also very fragmented, and there is an opportunity for consolidation. There has already been some shakeout in OLEDs over the last decade and more recently in organic semiconductors, but few are putting together complimentary technologies to build a strong value chain proposition. Companies in East Asia have been shrewd in consolidating some of the displays business, such as PVI, Sumitomo and LG.

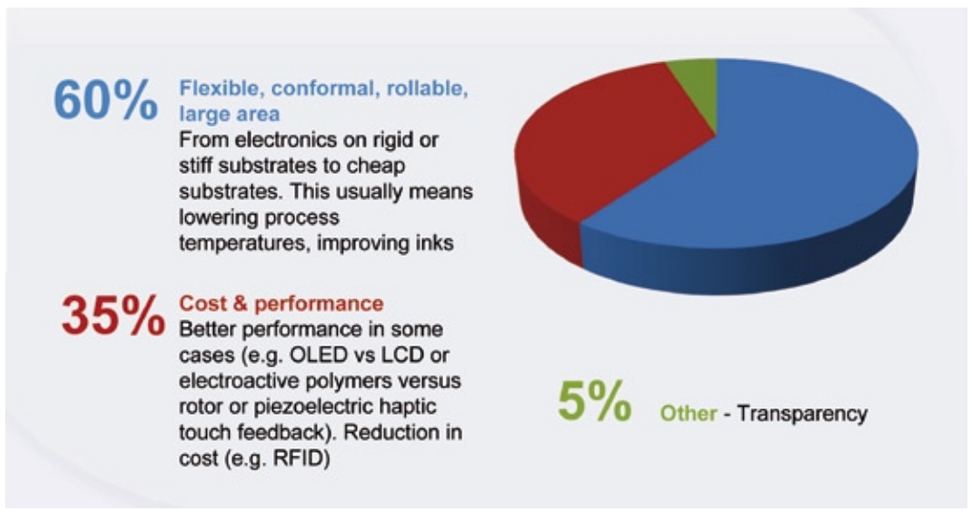
Almost by default, developers look to replace existing electronics or devices with the new electronics that they are creating. That is proving tough given issues with yield, R&D cost that needs to be recuperated and low starting volumes. The old silicon rules such as Moore's law may not apply here – many companies today are capable of cheaply making transistor circuits with a handful of transistors – but who is exploring the useful products that can be made that incorporate a dozen transistors? High volumes can only be created with modularity and basic building blocks – but this does not necessarily mean mimicking silicon ones.

Biggest Driver is Form Factor

More so than cost or performance, IDTechEx research finds that the biggest driver of printed electronics is form factor – devices that are flexible, conformal, rollable or large area. In most of these cases, the electronics are doing something that conventional electronics cannot do or struggle to do, and therefore are usually creating new markets. Competing on cost alone is difficult – many aspects of printed/flexible electronics promise to eventually be cheaper but can often start off at a higher cost base than the incumbent technology until manufacturing volume becomes significant.



The market for printed and potentially printed electronics in 2010



Leading market drivers for printed electronics

	83% Mainly Printed	75% Flexible
OLED $19 billion	30% (Displays) 97% (Lighting)	25% (Displays) 90% (Lighting)
Photovoltaics $17 billion (Excluding CdTe and Conventional Silicon)	85%	70%
Other inks: $2 billion	100%	85%
Sensors: $1.6 billion	98%	70%
E-paper displays $6 billion	100%	90%
Inorganic Electroluminescent displays $0.4 billion	100%	99%
Logic and memory $8 billion	90%	90%

The market for printed and potentially printed electronics in 2020

In 2020, IDTechEx forecast the markets to be as shown in table 2, with the value of the market that is predominately printed, or predominately flexible also indicated.

So far, role models of success are companies such as T-Ink that have used silver ink (where silver ink is in oversupply if one looks at the number of suppliers vs. demand) on 10 million McDonald's place mats, for example, or Power Paper that has created a cosmetic product using its thin flexible battery that is conformal to the body. Increasingly IDTechEx is asked by major consumer goods brands, consumer electronics and media companies for demonstrators of what the new printed/flexible electronics can do but it is surprisingly difficult to locate many. Over the next few years perhaps one indicator of success of the industry is the number of new demonstrators and products that are launched.

Materials Progress

The global recession did not slow materials development for printed electronics. In the face of the rising cost of silver, companies have developed nanosilver ink, so less silver is used, and even copper based inks, from companies such as NovaCentrix and Hitachi Chemical.

While most effort has been on organic semiconductors, display companies are now focusing on metal oxide semiconductors which have the benefit of being transparent and therefore do not block emitted light. In addition, organizations are working on nanosilicon and carbon nanotube inks as semiconductors – showing high performance.

Processing

The performance of many materials is good enough for early applications now, but there needs to be more understanding about printing these materials. If we look at conventional silicon transistors, we see that for almost 40 years the material itself used to make transistors did not change – but the drastic change in performance is attributed to higher resolution fabrication. Printing for printed electronics is still in its infancy.

Indeed, many are working now on optimizing materials for mass production rather than making gains in performance of single test devices. For example, if we look at organic photovoltaics (OPV), Konarka is now selling OPV modules made in a roll to roll process. In test conditions the cell has an efficiency of about 6% because it has a very thin active layer which is only about 100 nm thick. This prevents much of the charges that are created from the light from being recombined due to the small distance they have to travel. However, these cells are only 0.1 cm^2 in area – a standard size used to test the efficiency of "champion cells." In mass production, it is incredibly difficult to achieve that thickness reliably. Therefore, Konarka prints active areas which are about 200–500 nm thick. This thicker layer gives much better yield but efficiency drops to about 3% because now more charges recombine as they have to travel further to reach the electrodes.

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South Korea to Invest 15 Trillion Won in Batteries Through 2020

South Korea, Asia's fourth-largest economy, recently announced that the country's public and private investments for rechargeable battery were estimated at a combined 15 trillion won ($12.53 billion) through 2020.

The country's top chemical maker LG Chem and Samsung SDI have already established a strong presence in global rechargeable battery markets especially for hybrid and electric vehicles. South Korea's No. 1 crude oil refiner SK Energy joined the industry later.

South Korea aims to rank as the world's top producer in rechargeable batteries, the government said in a statement. It was not clear the breakdown of the public and private investment.

South Korea forecast the global rechargeable battery market would reach $77.9 billion in 2020, compared with $12.3 billion this year, thanks to rising demand for electric vehicles and energy storage on top of existing demand for mobile carriers including phones and laptops, the statement added.

SK Group, whose major businesses are in refining and telecommunications via SK Energy and SK Telecom, said earlier this month that it would invest 17.5 trillion won by 2020 to develop energy resources including rechargeable battery, and technologies.

LG Chem said in April that it was named the lithium ion battery pack supplier for Volvo's electric hybrid car program, while teaming up with Hyundai Motor, General Motors of the U.S. and China's Changan New Energy Automobile on auto batteries. ■

LG Chem Unit to Build Focus Electric Battery Packs

Ford Motor has selected LG Chem's U.S. unit Compact Power to supply battery packs for an electric Focus compact car for U.S. production starting in 2011, the automaker said. Compact Power will begin assembling lithium-ion battery packs from cells for the Focus electric car at a site to be determined, Ford said.

General Motors also chose Compact Power to supply batteries to its Chevrolet Volt extended range electric vehicle. The first cells for the Focus electric battery will be produced by LG Chem in South Korea, Ford said. Cells will be produced later at a new site in Holland, Michigan, it said.

U.S. production of the Focus electric vehicle is scheduled for Ford's Michigan Assembly Plant where the automaker also plans to produce the next gasoline-powered Focus car. The plant is being converted from SUV production. ■

Süd-Chemie Invests €60 Million in Lithium Iron Phosphate Production

Süd-Chemie is investing approximately €60 million in the production of lithium iron phosphate (LFP), a high performance energy storage material used in batteries for electric vehicle drives and other applications. On the new site of its wholly-owned Canadian subsidiary, Phostech Lithium. In Candiac, Quebec, the German group is constructing the first industrial production plant for LFP using a new, proprietary production process based-on wet chemistry.

Commercial production for series delivery will start in 2012 to reach a rate of 2,500 tons per year. Such volume, will allow the production of approximately 50,000 all-electric automobiles or, alternatively, up to 500,000 vehicles with hybrid drive per year. As a result of the high demand, Süd-Chemie is considerably expanding its production capacity for LFP based on its new wet chemistry production process a technology by which Süd-Chemie can already currently manufacture up to 300 tons of LFP per year at its site in Moosburg, Germany.

Besides electric vehicle drives, the LFP has great potential in high-performance storage batteries, e.g. for stabilizing peak supply or for storing photovoltaic electricity. In addition, LFP manufactured by Süd-Chemie is already successfully used in power tools, starter batteries for passenger vehicles, and electric scooters in Europa, Asia, and North America. ■

Production
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Ireland & UK Special

A look at the companies in the UK and in Ireland that are at the forefront of great innovations

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Chemicals

The Chemspec and FECC conferences made a big splash at the beginning of the summer

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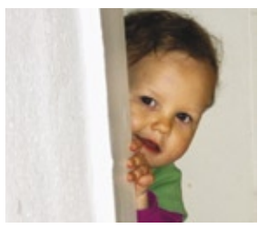

Sneak Peek

Find out what's coming up in our September issue of CHEManager Europe!

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Mobility For Simplicity

Highly Flexible Application of Remote I/O

Prevention – Sometimes it only needs the intelligent combination of suitable components in order to come up with an innovative solution to reach new levels of flexibility and efficiency in plant operation. One typical example is a mobile application employed by Glaxosmithkline (GSK). The solution is based upon the unique set of features offered by Pepperl + Fuchs Remote I/O modules. It fully integrates into the existing process control infrastructure and offers new options for preventive maintenance.

Rainer Hillebrand
Head of the Remote I/O system group at Pepperl + Fuchs

GSK in Cork, Ireland, is a globally positioned pharmaceutical company targeted at improving the quality of human life. The primary focus of GSK centers on development, production and marketing of innovative pharmaceutical products that help millions of people around the world. For their certified production processes, GSK employs advanced process control technologies to ensure the highest level of quality and reliability. Many projects in the process automation field are based upon Emerson Delta V in conjunction with Pepperl + Fuchs Remote I/O.

The Glovebox Project

Don Brady is a member of the engineering team at the GSK production plant in Cork, which is directed by Emmet Martin. He was responsible for the company's Glovebox project and was looking for a solution to provide the ongoing production processes with the highest level of convenience and flexibility. His idea was to develop a fully mobile process control equipment, which allows cost-efficient installation and fast relocation, while meeting all the safety requirements typical of the pharmaceutical industry.

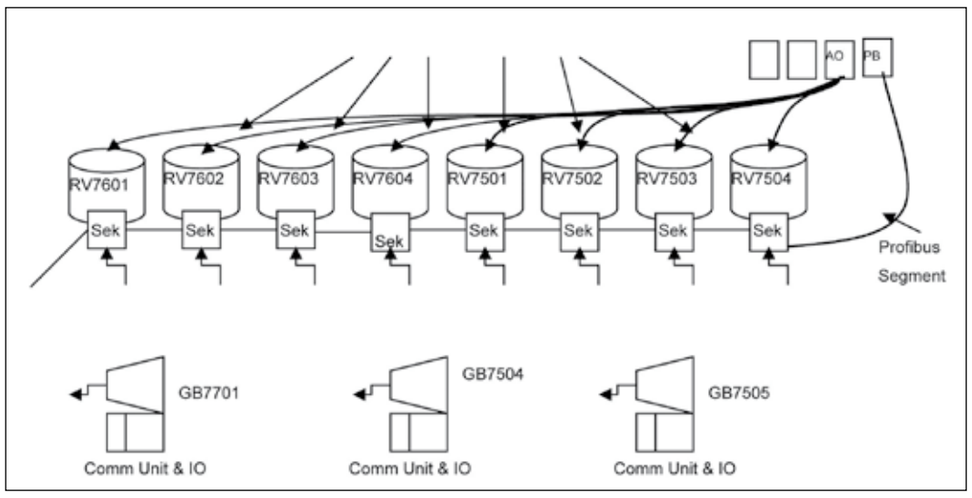
The main task of the system consisted of monitoring and controlling three identical mobile glove boxes, which are randomly used across eight processing vessels. For this purpose, each glove box was equipped with a small remote I/O module from Pepperl + Fuchs, which was wired to the respective devices for field instrumentation. After putting the mobile gloveboxes into place, the remote I/O only needed to be connected to the Profibus by means of an optical Profibus coupler in order to provide communication with a standard Delta V I/O. Each of the vessels featured an analogue output, which was directly connected to the respective terminals of the Delta V and allowed to determine, which glove box was attached to which vessel in order to display the respective user interface and graphics.

Intelligent Flexibility for Increased Efficiency

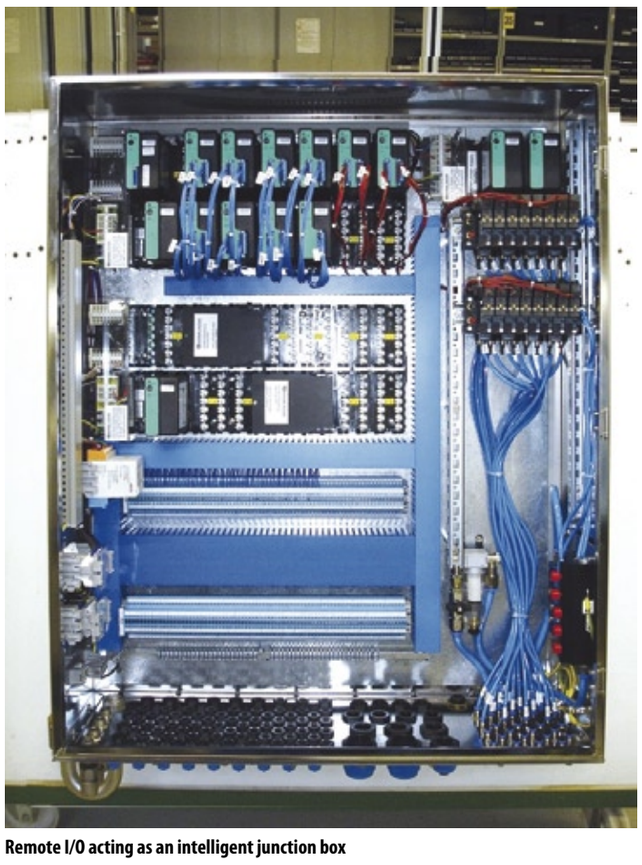
The new Glovebox solution resulted in a highly scalable and flexible process automation system perfectly matched to the processes employed at the GSK plant in Cork. The system provided a simple and time-saving way to relocate the process control equipment in order to easily adopt the automation system to changing process requirements.

An additional benefit was the automatic adjustment of the user interface to the changed set-up of the system. All graphics and references to the mobile devices are hidden automatically when not in use and automatically re-appear as soon as a new set-up is in place. Relocating the hardware does not require any system changes. There are also no I/O errors, since the solution provides the intelligence to automatically detect the presence of any of the mobile devices.

All components of the system are hot swappable – this also includes the power supplies and represents a vital aspect allowing relocating and maintaining the system without affecting plant operation. Changing a module does not require any manual configuration, since all functions of the module being replaced are automatically transferred to the new one via the gateway. This avoids any configuration errors and prevents the connection of incorrect modules. All circuits are galvanically isolated, while the complete system is based upon a redundant structure, in order to achieve maximum reliability and availability.



Eight vessels can be connected to three mobile Remote I/O stations as required.



Remote I/O acting as an intelligent junction box

Remote I/O With Built-in Intelligence

One major benefit of the Glovebox system at the GSK plant in Cork is the use of a Profibus communications infrastructure. This not only results in substantial cost savings due to reduced wiring requirements and the elimination of marshaling cabinets. It also offers considerable operating benefits due to centralized engineering and the support of requirements-driven maintenance.

Basically, a Pepperl + Fuchs remote I/O is an interface component, which is connected to the field devices and transfers their data streams via Profibus to the process control system. Three Hart compatible mobile remote I/O substations of the application are used to connect all the sensors and actuators being part of the control system. They also offer sufficient space for the pneumatic control valves, which are part of the system. Due to their outstanding built-in intelligence, they are also called intelligent junction boxes. Since they need to operate within the explosion hazardous area, they fully confirm to Zone 1 and Zone 2 specifications.

Preventive Maintenance

Hart field devices can be configured and parameterized independently of the control communication protocol, using PACTware as a separate engineering tool. For this purpose, Hart devices support the open, non-proprietary FDT concept and can be connected to the Remote I/O via the Profibus infrastructure of the process control system. Utilizing specific DVP1 features of Profibus, PACTware uses time slots between plant control communication and therefore does not interfere with normal plant operation. Profibus DPV1 services allow on-demand access to all device-specific parameters of Hart field devices via the FDT/DTM concept.

The Hart protocol enjoys increased popularity within the process industry, since it allows online monitoring field device parameters directly from the control room. This feature can be used for preventive maintenance and offers an ideal means to stretch regular maintenance intervals for reduced operating costs. Hart secondary variables can also be included into the process data exchange and used for control tasks. Since the introduction of Wireless Hart, the Hart protocol can even be used in connection with wireless devices.

Proven Key Technology

The engineering team at GSK was supported by Pepperl + Fuchs specialists from the early design stage all the way to factory acceptance test, installation and commissioning. They expressed full satisfaction with the results, especially pointing out to the substantial cost savings during installation and the truly simple operation. Ongoing plant operation has fulfilled all expectations and continues to demonstrate the outstanding reliability of the solution. For this reason, GSK has decided to continue using the Remote I/O technology from Pepperl + Fuchs for future projects.

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Dow, Mitsui form JV to Produce Chlor-Alkali

Dow Chemical said it would form a joint venture with Japan's Mitsui to construct and operate a new chlor-alkali facility at its Freeport, Texas, complex. The new facility, slated to have a capacity of about 800 kilotons per year, is expected to begin operations in mid-2013 and will be operated by Dow, the company said.

In a filing with the U.S. Securities and Exchange Commission, Mitsui said it would invest $140 million in the venture in which the two companies will have an equal stake. Dow has already completed the front-end engineering and design, and expects only a minimal capital outlay to start up the project.

Dow had shut down an older chlor-alkali facility at Freeport at the beginning of 2009 as the economy slumped and demand for basic chemicals declined. Under the project, Mitsui will sell chlorine mainly in Asia, including Japan, while Dow will be selling caustic soda in the U.S., a Mitsui spokesperson said.

Chlorine and caustic soda, products of the chlor-alkali sector, are basic materials in the chemical processing industry and used in the manufacturing of paper, textile, pharmaceutical and polyvinyl chloride. The venture will create about 50 long-term jobs at the location and about 500 construction jobs during construction, Dow said.

Construction of the plant is expected to begin in the fourth quarter and will replace the company's previously announced "Chlorine 7" project. ■

South Korea to Invest $2 Billion in Carbon Capture by 2019

The South Korean government recently said that the country's total public and private investment in carbon capture and sequestration would reach an estimated 2.3 trillion won ($1.92 billion) to 2019. Of the total, public sector investment would account for 1.2 trillion won, it said in a statement.

A government official said Korea Electric Power Corp (KEPCO) was currently leading local investment. The state-run utility said last September it would spend 2.8 trillion won to develop environment-friendly technology including carbon capture and storage by 2020.

South Korea, the OECD's fastest-growing carbon polluter and the world's No. 5 oil importer, a year ago vowed to invest 107 trillion won, or 2% of its annual GDP, in environment-related industries over five years staring from 2009. ■

Building For Generations

Boosting Biopharma Profits Through Sustainability

Triple Bottom Line – With environmental concerns now firmly at the top of the corporate agenda, adopting sustainable production practices is a must for all organizations in the biotech and pharma sectors. In addition to protecting valuable natural resources, its inherent efficiencies can also help to reduce costs and increase profitability. Kieran O'Daly reports.

Environmental sustainability is defined as the ability of the environment to continue to function indefinitely (Brundtland Report 1987). From a corporate viewpoint, this means minimizing environmental impact across all aspects of a company's operations by ensuring that any natural resources used in production processes are not consumed any faster than they can be replenished. In recent years, increasing numbers of companies across all industry sectors have adopted sustainability as the key ingredient and driver of their corporate social responsibility strategy. While this may have started out as merely a marketing exercise for some, for many others it has become central to their operating ethos and has brought significant long term bottom line benefits through increased efficiency, reduced costs, improved working environment and staff morale and enhanced brand reputation.

Sustainability At No Additional Cost

Many organizations mistakenly believe that incorporating sustainability into their operations will require significant additional capital investment over and above what they would anticipate already spending on commissioning a new plant or even retrofitting an existing facility. This need not be the case, particularly on green field projects, according to Andy Rayner, Group Director of Technology, PM Group, who heads up the company's sustainability arm.

The key to minimizing capital investment and reducing payback time, he says, is to identify critical project requirements and goals as early as possible and then incorporate them into the initial design concept. Employing 1,700 staff, PM Group is one of Europe's leading architecture and engineering design and project management firms. With 70 % of its business coming from the biopharma sector, it is currently working on several major multi-million euro green and brownfield projects worldwide, including facilities for Sanofi-Aventis in France, Genzyme and GSK Biologics in Belgium, and Wyeth in China and Singapore, respectively. The company was also involved in the development of a new cell culture facility for Centocor in Cork, Ireland, which was named sustainability category winner at the ISPE Facility of the Year Awards in 2009.

"Most sustainable design concepts can be implemented without any additional time or capital investment provided that the key project criteria are identified and incorporated into the design concept from the outset," Rayner explains. "Some projects can involve additional capital cost in the early stages, but offer payback in terms of operating cost savings over a number of years. Others won't provide payback in their own right but could, when assisted by capital grants from local government agencies, become more attractive and, therefore, it is imperative for all companies looking to implement sustainable designs to do their research beforehand and find out whether or not there are grants available to them to offset their investment."

Every organization will have its own individual requirements and goals and, depending plant and site type, implementation costs will vary. Some may want to neutralize plant operating costs entirely or reduce their carbon footprint, while others may just be looking for accreditation to standards such as Breeam (Building Research Establishment Environmental Assessment Method) or LEED (Leadership in Energy and Environmental Design).

"Whatever the ultimate aim of the project," Rayner adds, "it is important to remember that it will have a much greater chance of success if the specific criteria involved are identified, agreed upon and then incorporated into the design concept from the start. On all PM Group projects, regardless of size, we sit down with the client at the earliest possible opportunity to assess their requirements and then build our design solution around that. We also keep the clients closely involved throughout the entire process to ensure that their needs are being met."

Key Issues

There are a number of key issues to consider when implementing a sustainable design concept. First and foremost is site location. This is already decided in the case of brownfield or retrofit projects, but, with greenfield sites, important considerations include potential impact on the surrounding area and local community, the availability of requisite natural resources and the proximity of road, rail and other infrastructure. In the case of a new build, choosing the optimum orientation for the building can help reduce solar gain, and considered architectural design from the start can provide sustainability features that otherwise might not otherwise be possible.

There may be an opportunity to use to use renewable energy resources such as biomass, combined hear and power, geothermal, wind or solar, but for largescale manufacturing facilities, this may only be practicable for certain low power draw sections of the site such as office or warehouse buildings, Rayner says. A more realistic alternative where there is a large power usage may be to purchase "green" power from the grid.

Within the plant itself, sustainable design principles requiring little or no additional capital investment offer a wide variety of benefits, a reduction in energy costs not least among them. Choosing locally-sourced sustainable materials such as concrete thermal slabs to minimize heat loss and chill beam technology to cool office areas can significantly reduce energy usage. So, too, will smart use of lighting technology such as light pipes and occupancy sensors.

"Heating, ventilation and air conditioning is one of the biggest energy users in any facility, particularly in clean room areas," Rayner points out. "Technology and process changes mean that clean room operations are now more closed and use fewer staff than before, so it is important to use systems that take full account of this when assessing air change requirement rates as even a small reduction can significantly reduce energy usage. Closing off open clean areas will also reduce air change requirement rates. Other options that can help to drive down capital investment and operating costs include widening humidity control bands, reducing specific fan powers and the number of fume hoods, and installing primary/secondary air handling units."

Other important considerations are water and waste management, as both can be major energy users. Recycling where possible is key in both instances. Water efficiency can be optimized through rainwater harvesting, storm water management, high efficiency purified water generation systems, and high efficiency water treatment and water recovery systems. The use of reclaimed (grey) water for non-product contact water use functions will also reduce energy usage and cost, while temperatures on hot water-for-injections systems need to be monitored closely at all times. Minimizing waste throughout the facility will also help to drive down costs, particularly in instances where it may require heat treatment prior to disposal.

Getting It Right

Already an integral part of good engineering practice, there is no doubt that sustainable design is the way forward. Like any other discipline, however, it is important to avoid costly errors if its true benefits are to be realized and, according to Rayner, the most common mistake is a failure to get a clear definition of requirements and goals at the outset of the project as this can create major problems down the line.

"There is also the misconception that sustainability automatically adds cost – it doesn't," he points out. "Other common mistakes include failure to research grant opportunities or focusing too much on one area, possibly process or technology, and losing sight of overall lifecycle costs. Most sustainable design concepts are very simple and very cost-efficient to implement. If implemented correctly, with full input from all stakeholders, they have the ability to generate significant long term environmental and cost reduction benefits for all."

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Centocor – Award Winning

Centocor's new greenfield cell culture facility in Cork, Ireland earlier this year received regulatory approval to start sale of products manufactured on their site. PM Group and CRB Consulting Engineers provided site evaluation, master planning and permitting, architecture and engineering design, procurement, construction management support, and commissioning and qualification services on the project which commenced back in 2004 when Centocor approved funding to establish a new cell culture and purification site for two promising new drugs then in development.

The overall mission of the project – dubbed BioCork – was to have biologic API capacity approved for market by June 2010. It was completed well ahead of schedule, under budget and exceeded capability requirements in all areas, most particularly in the area of sustainability. Some 40 % more energy-efficient and with a 97 % smaller carbon footprint than equivalent Centocor facilities around the world, it was named Sustainability category winner in the ISPE Facility of the Year Awards in 2009.

Key facets of the project included the installation of a biomass (woodchip) boiler for base steam load and advanced membrane waste water treatment facilities, improved local traffic management and the planting of 70,000 trees to protect air quality and mitigate the visual impact of the project on the surrounding area.

QUMAS-Streamlining Compliance Across Life Sciences

Advertorial QUMAS has over 15 years experience in highly regulated industries, providing world class compliance solutions to over 250 customer deployments (some with 120,000+ users), including seven of the top 10 pharmaceuticals, four of the top ten biotechs, and five of the top ten medical device companies, as well as leading financial services firms.

The company's R&D headquarters are located in Cork, Ireland, with European sales offices in Dublin and Geneva. The company also has a U.S. headquarters in New Jersey and USA sales offices in New York and Boston.

QUMAS Solutions Overview

The QUMAS Compliance Solution consolidates and standardises regulatory compliance into a comprehensive framework that eliminates the cost of managing disparate and isolated applications. The three main elements of all QUMAS Solutions are:

- QUMAS DocCompliance – regulatory content management for electronic control of all documentation throughout the product lifecycle from R&D and trials, to manufacturing and sales & marketing
- QUMAS ProcessCompliance – workflow and process management for Deviations, CAPA, Change Control, Audit and so on
- MyQUMAS – web-based single point of access for monitoring and responding to all compliance activities

QUMAS also offers a number of pre-defined Packaged Solutions. Each Package is designed to address a specific business function and includes all required software, implementation services, training, and documentation to support that business function. Packaged Solutions, such as the QUMAS Quality Assurance Documents Package, QUMAS R&D Submission Documents Package or QUMAS Change Control Process Package, are scalable solutions that grow as the company grows, ensuring successful on-boarding while maintaining document control and regulatory compliance.

Benefits of QUMAS Packaged Solutions

Qumas Packaged Solutions, enable companies to get up and running with working solutions quickly and without long consulting engagements or expensive customisations. With a minimal upfront cost, every organisation, no matter how small, can have access to world class solutions.

- are ready to use out of the box and can be implemented, validated, and trained for go live all within 30 days. All of the configurations, materials, wizards and documentation required are supplied with the system
- are pre-defined and pre-tested and are backed with 15+ years of experience in delivering compliance solutions to small and large pharmaceutical, biotechnology, and medical device companies
- meet GAMP 5 Category 3 definitions, making them significantly easier to validate and deploy

QUMAS has an active user community (QUCOMM), chaired by Dr. Joerg Stueben of Boehringer Ingelheim, and client satisfaction is clearly expressed in the following client quotes:

- Janssen (J&J): "We chose QUMAS because its comprehensive compliance suite uniquely allowed us to install a single solution that we would previously have sourced from two or more vendors. The QUMAS Compliance Suite provides the company with a scalable compliance framework that can be rapidly rolled out across multiple divisions."
- NAPP Pharmaceuticals: "In addition to being the right solution that best met our user and technical requirements, QUMAS was the clear leader in terms of quality."
- HGSI: "We were under budget with this project and currently have over 700 employees under secure and controlled access using the system. We've achieved 100 percent better efficiency."
- OSI Pharmaceuticals: "With QUMAS, approval processes that might previously have taken weeks as a paper document circulated among multiple executives are now done in a day."
- Siena Biotech: "We were in the market for a flexible and up-to-date system for document management and found QUMAS Solutions to be the ideal fit for our organization, allowing the system to grow with the portfolio of the company."
- Chiesi Farmaceutici: "QUMAS was able to deliver an off-the-shelf compliance content management solution that is configurable to meet all our requirements. The QUMAS solution enables us to improve our time to market and to provide the regulators with better quality submissions, ensuring timely approvals."

Qumas sells directly to end-users as well as indirectly through resellers in the U.S., Germany, the Nordic regions and Italy. For more information visit www.qumas.com

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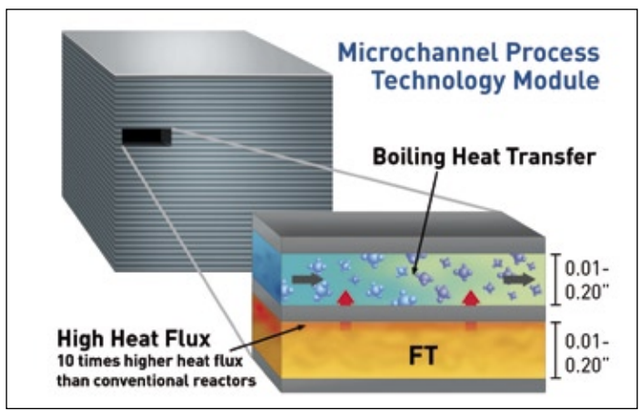
Great Technology Comes in Small Packages

Microchannel Reactors Make Winning Liquid Fuels from Waste a Reality

Challenge – The management of waste is a worldwide challenge, and so is the growing need for renewable energy supplies. The use of microchannel reactors to enable the distributed production of biofuels from biomass waste via the biomass to liquids process (BTL) offers one option for solving both problems at once. Derek Atkinson of the Oxford Catalysts Group explains how.

Derek Atkinson
Business Development Director, Oxford Catalysts

The FT microchannel demonstration plant at Güssing, Austria



The microchannel reactor

Microchannel technology offers enhanced heat and mass transfer

	Microchannel	Conventional
Heat transfer (W/cm^2)		
Convective	1–20	< 1
Boiling	1–20	< 1
Mass transfer (contact time in seconds)	0.001–0.3	1–10
Selectivity, % C5+	78–82	81–94
Selectivity, % CH_4	< 10	no information available
Alpha ratio	0.89–0.92	> 0.9
Contact time, ms	< 250	no information available
Catalyst life, years	not yet determined	2

(Data sources: Velocys test data and estimates from Nexant, Inc.)

Back in the early 1990s, when scientists and engineers at Pacific Northwest National Laboratory in Washington were considering ways to process nuclear waste leftover from the Manhattan Project (1939–1946) and stored in underground tanks sites scattered around the state, they came up with a big new concept for tackling the problem: distributed small-scale processing using microchannel reactors. The aim was to develop a way to process the waste in situ rather than transporting it to a large centralized facility. Velocys, Inc., now part of the Oxford Catalysts Group, was set up in 2001 in Ohio to further the development of microchannel reactor technology.

Although the idea of developing microchannel reactors to use for the distributed processing of nuclear waste didn't take off, the concept of using small-scale distributed processing concept using microchannel reactors has. The Oxford Catalysts Group have gone on to develop microchannel reactors for two applications: small-scale gas to liquids (GTL) plants for capturing associated and stranded gas both offshore and onshore, and small-scale biomass to liquids (BTL) plants for the distributed production of biofuels from feedstocks such as municipal, forestry and agricultural waste.

The Fischer-Tropsch (FT) process, in which synthesis gas (syngas), a mixture of CO and H_2 is converted into various liquid hydrocarbons using a catalyst at elevated temperatures, plays a key role in both. Because they don't contain aromatics or sulfur-containing contaminants, the liquid fuels produced via FT are typically of higher quality and burn cleaner than petroleum-based diesel and jet fuels, resulting in lower emissions of NO_x and harmful particulates. Distributed production systems, which make it possible to produce biofuels in small plants located near the source of the feedstocks and potential markets for the fuel, also reduce carbon emissions by avoiding the need to transport large volumes of waste to central processing facilities.

After winning a number of awards, the technology is now being put to test in the real world. The first practical demonstration of the use of FT microchannel reactors for BTL – jointly operated by the Oxford Catalysts Group and the Portuguese incorporated company SGC Energia (SGCE) – for the small scale distributed production of biofuels is now mechanically complete and undergoing start up at the biomass gasification facility in Güssing, Austria. The plant, which will use gasified woodchips from the existing Güssing gasifier, includes an FT microchannel reactor developed by Velocys, combined with a new highly active catalyst developed by the Oxford Catalysts Group.

Small Size – Big Performance

Microchannel process technology is a developing field of chemical processing that enables rapid reaction rates by minimizing heat and mass transport limitations, particularly in highly exothermic reactions, such as FT, or highly endothermic reactions, such as steam methane reforming (SMR).

This improved performance is achieved by reducing the dimensions of the reactor systems. In the FT microchannel reactors that lie at the heart of distributed BTL production systems, the key process steps are carried out reactor blocks that contain arrays of thousands of microchannels, each with diameters in the range of just 0.1–5 mm. In the reactors process channels filled with a highly active FT catalyst developed by Oxford Catalysts are interleaved with water-filled coolant channels.

The small channel diameter enables chemical reactions to be greatly intensified – the reactions occur at 10 to 1,000 times faster than in conventional systems – while still maintaining efficient and precise temperature control. This leads to higher throughput and conversion efficiencies. In contrast to conventional FT plants, where conversion rates of 60 % or less are common, FT microchannel reactors achieve conversion rates on the order of 70 %. The catalyst enables the reactors to achieve productivities that are orders of magnitude higher (defined as $kg/m^3/h$) for more conventional systems.

BTL Building Blocks

In contrast to conventional FT plants, which only work economically at capacities of 30,000 barrels per day (bpd) or higher, plants using small scale FT microchannel reactors are designed to produce 500–2,000 bpd of liquid fuels efficiently and cost-effectively. This is just one of the features that makes microchannel reactors particularly useful for distributed production systems.

Another is their small size– reactor assemblies are roughly 1.5 m in diameter – and modular construction. The entire FT microchannel demonstration plant for the Güssing demonstration is contained on a skid with a footprint just 20 feet long by 10 feet wide. The modular construction allows for greater flexibility in plant design and means that plant size can be increased by "numbering up," or simply adding more reactors. It also makes the plants more durable and easier to service because maintenance and catalyst replacement can be carried out by replacing individual modules, rather than requiring prolonged shutdown of the entire system.

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New Dimensions

Modern 3D Designs for Blister Packaging

Cutting Edge – The seemingly humble blister pack is the standard unit of primary pharmaceutical packaging in both Europe and most of the world. It is the critical means of ensuring the pharma dosage is protected against all potential degradents and is presented to the patient in the correct manner in compliance with their medication regime. It is, in fact, a sophisticated drug delivery system in its own right and has a number of critical functions to fulfil. Yet, even today the conventional standard in the blister packaging industry for the presentation of blister designs and drawings is a two-dimensional black and white format.

A number of years ago, Prodieco Pharmaceutical Components (PPC) challenged this standard by becoming the first company to introduce three-dimensional drawings and computer modelling to our customers to allow for greater detail and information to be conveyed to produce more consistent and sophisticated packs and to open up the design process to other often excluded key stakeholders in the package design process.

PPC chose the SolidWorks design system to bring the blister pack design into the 3D world, a standard design platform in many high tech and engineering based industries, yet almost unused in blister design.

The company initially used just one seat of this software for more complex pack designs but rapidly found that the advantages were just as strong for the conventional designs. Now all packs in PPC – irrespective of the product, company, machine and perceived level of complexity – are designed on a 3D platform as standard.

The company has followed up this change to a 3D format to its logical conclusion; now the blister tool design, machine programming and final tool verification are all carried out in full 3D as well, thus allowing for a closed loop, full 3D process.

PPC recently carried out an in-depth global voice of customer exercise to find out how the 3D blister designs were being received. Here is some of the feedback:

"We get an immediate understanding of how the finalized blister will look and more importantly how it will function."

"Less technical or even non-technical people are now able to input as appropriate to the design process. Marketing and supply chain often previously only inputted after the first blister was actually produced on the blister machine, which of course is too late."

"It speeds up communication both internally and between us and the tool manufacturer."

"We especially like the 3D animations of the packs, which allow us to explore functionally that was impossible before: child resistance, senior friendly, perforations, scoring, etc."

"Getting fully validated pocket geometry in 3D with our tooling is a huge help with our internal validation and verification procedures."

Rapid Prototyping

3D design was the first step in allowing the company to communicate with its clients in a 3D way. The next step was the introduction of a rapid prototyping service to allow PPC to further enhance the blister design for its customers. These prototype blisters have been a huge success ever since the very first meeting with a pharma company, where we actually brought rapid prototypes of their finished pack to the design discussion.

PPC now boasts its own rapid prototype machine in-house. Rapid prototyping can be defined as a group of techniques used to rapidly fabricate a scale model of a part or assembly using three dimensional computer aided design data. The company can now generate a rapid and fully colored prototype of a customer's finalized blister design using the 3D blister pack design. The use of rapid prototypes in the pack design process reduces the development time taken to get a new or modified pack to market; it also allows for multiple stakeholders to input. The list of advantages here is long: better overall design; optimized package functionality; increased operational efficiency; and increased product sales potential.

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Filtration, Simplified

The simplefilter's Name Says it All

Piece of Cake – When any chemical reaction is complete, a solid liquid separation procedure is usually required. This separation could be to recover a product or intermediate or remove impurities from the batch. In laboratories, Buchner filtration followed by tray or oven drying are usually the preferred options. In the larger scale pilot and process plants, filter dryers are often a common choice. The simplefilter is a simplified alternative to the more complex and costly technology of a filter dryer.

The simplefilter is a single-plate pressure filter designed with a contained off-loading via a nitrogen purged glove bag. This technology consists of a main vessel where the slurry enters, a filtration media attached to a swing-out base, a side discharge hatch/plug and a glove bag.

The slurry enters the main vessel via one of the nozzles on the dished head and is filtered by applying gas pressure usually in the form of nitrogen. If necessary, the cloudy filtrate may be pumped back around and re-filtered to ensure that all of the product/intermediate has been collected or impurity removed. The existing cake that now lines the filtration media from the first filtration will also act as a finer secondary filter media to aid the filtration.

At this point, the cake would be washed with a displacement or re-slurry wash. While it is still possible to cake wash within the simplefilter, this technology does not include an agitator, making the process of cake washing more basic and less homogeneous. The cake may now be dried or discharged as a wet cake, a reslurry or a dissolved product.

During the drying process, heat transfer is one of the most important factors. The simplefilter incorporates a heated base to complement the traditional jacketed style heating on the main vessel. The solids can be discharged through a plastic glove bag, which provides an ergonomic, contained discharge through the side discharge hatch and can be nitrogen purged and extracted for hazard protection.


Simplefilter

The vessel can be cleaned using spray balls or by flooding. It can also be easily inspected as the swing-out heated base has an assisted raise/lower which works on a manual ratchet mechanism and has c-clamps for the sealing of the vessel. This equipment is also fully mobile as a standard so that it can be used anywhere within the plant to make it more flexible.

Common Problems with Filtration and Drying Technology

Sustainability is quickly becoming increasingly important to the manufacturing companies today, including those in the pharmaceutical market. There is increased awareness of the need to choose more efficient technology – to not only reduce the carbon footprint, but also to cut costs during these unstable economic times. Having equipment with the capability of carrying out two processes within the one step has its obvious advantages, including installation costs, saving power and saving human resources. Maybe more importantly to a lot of pharmaceutical plants that use highly potent or toxic chemicals is that having one process vessel instead of two reduces the operator exposure possibilities and also reduces the product contamination risk during vessel transfers.

However, while combined filtration and drying equipment provides a more ergonomic and efficient answer to the pharmaceutical market, heel removal is vital, as the intermediate or end product is often very expensive. Keeping the discharge hatch low and level with the filtration media helps give maximum access to the intermediate or end product within the main vessel and avoids the bending while digging out of cake. A heel removal tool is then utilized to aid discharge across this level space, further maximizing product yield.

Simplefilter Applications

The simplefilter can be used in many applications as a result of some of its key features. With the easily changed filter cloth that can have a variety of pore sizes, the simplefilter is very versatile in the size of particles it can handle. Because the vessel is rated to six bar (90 psi) of pressure, the filtration can be achieved at many atmospheres of pressure, instead of the one atmosphere achieved with vacuum filtration with a standard Buchner. Also the different materials of construction also lend it to a wide variety of chemistries.


Assisted base raise/lower. A user friendly manual ratchet mechanism means no lifting assistance is required.

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A Future, Together

Scotland as a Capital for Chemical Sciences

Proud History – Sir Tom McKillop, the former CEO of Astrazeneca, encapsulated Scotland's relationship with the chemical sciences industry perfectly: "Scotland has a very proud history of innovation in the chemical sciences but we can't rest on our laurels. Be innovative and success will follow." The industry has a long and established history in Scotland. The country which gave the world innovators such as Joseph Lister has become a base for some of the world's biggest chemical sciences operators. Ineos, Exxon, Glaxosmithkline, Dow, Fujifilm, Merck KGaA and BASF are some of the major players which have made Scotland their home and helped make it home for the manufacture of basics, specialty, pharmaceuticals and consumer chemicals.

A hub for some 150 chemical and pharmaceutical companies, the Scottish sector is worth in the region of £9 billion, generating export revenue in excess of £3.5 billion per annum. One of the country's most productive sectors, it generates gross value added per employee of £181,000, provides employment for 14,000 skilled people directly and 70,000 through dependent services. Its universities and colleges produce in excess of 500 graduates per year, adding to the broad skill base that makes Scotland not only a key manufacturing destination for world leading companies, but a hotbed for industrially focused academic research.


Caroline Strain
Head of Chemical Sciences, Scottish Enterprise

A number of small to medium sized enterprises support companies across the world with the advancements and technologies developed in Scotland. And this is achieved through Chemical Sciences Scotland (CSS) – the joined-up approach taken by industry, academia and government in Scotland to make sure the country's chemical sciences industry isn't just successful today, but grows and becomes an even greater force in the future, to create high value opportunities for skilled people and innovative companies, and contribute to the solutions we all currently seek e.g. low carbon economy and renewables.

The Role of the Government and Agencies

Scottish Enterprise (SE) is a key driver in the development of Scotland's chemical sciences sector through the economic value the sector can create. Scottish-government funded, it is the country's main economic development agency whose remit is to generate sustainable economic growth through globally competitive companies, sectors and business environment. SE works along with its international arm – Scottish Development International (SDI) – seeking to generate more investment, particularly R&D into Scotland and to assist Scottish companies seeking to expand through entering new international markets. The sector has been identified by the government as one that will contribute to Scotland's ambitions of building a world-class economy. They recognize that although a key industry in itself, it also underpins its other key sectors; life sciences, and energy and provides many "enabling technologies."

Sector Success

Scotland's chemical sciences companies are securing significant contracts. Between 1998 and 2004, the sector experienced growth in turnover of 36%. This year's Informex event had an increased Scottish presence. Heavily supported by SDI, the Scottish companies that attended secured £500,000 in new contracts.

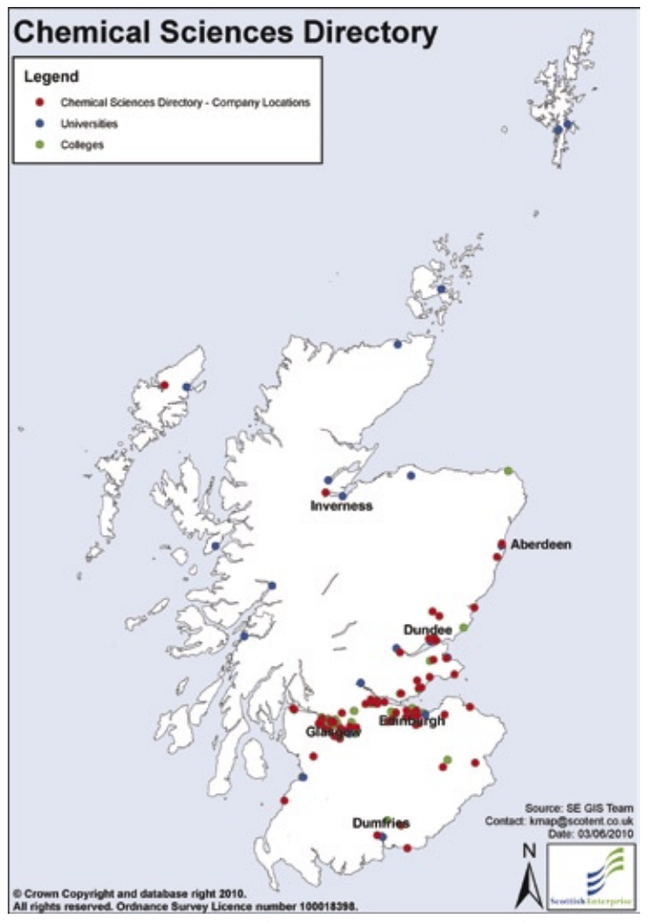
Scotland has 13 universities and six colleges providing chemistry, engineering, and education excellence for the sector. This ensures a local supply of work-ready graduates. Ineos' Engineers of the Future program, has been highlighted as best practice designing a seamless course from college, through university to master's degree level, designed with the businesses needs at its core, and enabling students to be employed throughout. A win-win situation for all concerned.

The Possibilities for API Manufacturing and Development

Scotland lies at the heart of the advancement of the chemical sciences sector – where research and technological development is key. Scotland has strength in depth across the whole process for API users, ranging from the very concept of drug discovery, testing, clinical trials, contract research, development and scale up, pilot plant and full scale production.

Currently there are a number of businesses involved in the development and manufacturing of APIs and this includes names such as Nicholas Piramal, Kemfine, Glaxosmithkline, Merck KGaA and Phoenix Chemicals. These businesses are able to offer GMP and cGMP facilities in a variety of scale of process.

Some of the smaller businesses are undertaking exciting developments such as Equatec, which is focusing on natural products and in particular Omega 3 and 6 lipids with cGMP specification, whilst Ingenza focuses on industrial-based bio-catalysts for the API and biofuels markets. The areas of process development and scale-up EPP work, both as CRO and small scale manufacturer, can then be taken to larger scale with our CMO operatives named above. St. Andrews Chemtech specializes in the lab to pilot plant scale up area, and Nitech is changing the whole manufacturing process through the development of its OBR (oscillating baffle reactor) system, which is reducing the size of reactors, reducing cost, quickening and shortening the process and increasing yield.



National Success: Some 150 chemical sciences companies operate in Scotland.

Caroline Strain, head of Chemical Sciences at Scottish Enterprise, said: "Scotland is ready for success. Our workforce is highly qualified and receives competitive salaries, offering attractive careers for technicians, professionals and graduates and offering companies access to world-class research." Companies such as EPP, Ingenza and Ni-Tech are vital components of the sector as a whole, advancing new technologies within the supply chain that are impacting upon chemical processes and helping the sector improve its competitiveness, and compete on a world stage.

"We aren't just ready to shape our own future; we're ready to contribute to the future of chemical sciences across the world."

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‘Creating Value Through Differentiation’

FECC Members Meet in Barcelona to Discuss Trends in Chemical Distribution

The Voice – The European Association of Chemical Distributors (FECC) gathered once again at the end of May for its General Assembly Meeting in Barcelona. The FECC, which represents over 1,200 companies, held this year’s congress under the motto, “Creating Value Through Differentiation.”

Along with conducting a Responsible Care (RC) workshop, the FECC also elected a new president and vice president.

FECC members unanimously elected Edgar E. Nordmann, chairman of the board of Nordmann, Rassmann (NRC), as its new president. At the same time Enea Marchesi, representing the Italian Association (Ass-ICC) was elected as FECC vice president and president of the International Council of Chemical Trade Associations (ICCTA). Peter Skou, Managing Director from R2 Group, was elected as FECC Treasurer for a two year period.

FECC’s Director General, Hendrik Abma, announced his decision of accepting a new position as executive director of a European association in the transport sector, and therefore leaving FECC later this year.

Responsible Care in the Supply Chain

This year’s congress also featured a RC workshop, “Responsible Care and Partnership in the Supply Chain.” Participants included companies’ RC Coordinators and National Associations, as well as of companies who are considering joining the RC initiative. RC coordinators and other experts in the field shared their experiences on how to successfully implement the RC program along the chemical supply chain. In addition, speakers provided the audience with practical examples and best business practices.

The FECC has also announced the addition of its third new member in 2010, Velox. The German chemical distributor is present in 12 countries, offering a Europe-wide basis an extensive product range and specific market know-how.

Newest Member Welcomed

Velox is active in the marketing and supply of specialty raw materials for the plastics, rubber, paint and coating industries. It counts with 100 experienced staff servicing customers in the majority of the European Union countries as well as in Russia and Turkey.

“Velox is pleased to now be a member of FECC. Through this membership, Velox will have a regular flow of information on coming laws and regulations governing our industry. Moreover [we] will take actively part in FECC initiatives such as Responsible Care, Product Stewardship and Good Trade and Distribution Practices,” said François Minec, general manager at Velox.

Online Tip

All presentations from the “Responsible Care and Partnership in the Supply Chain” workshop can be downloaded from the FECC website (www.fecc.com) or via http://bit.ly/ddLtgx.

FECC now brings together a total of 37 company members, as well as 16 national associations and 14 associate and affiliated members.

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Big In Berlin

Chemspec Europe Enjoys Heavy Traffic in Germany’s Capital; Concerns About Reach Growing

Fruitful Contacts – The Chemspec Europe opened its doors to the chemical community at the beginning of June for the 25th time, and the moods of visitors and exhibitors alike matched the summertime weather in the hosting city Berlin: mostly sunny. With a rough 2009 behind them, exhibitors were wary to pronounce the worldwide economic crisis as a relic of the past, yet most were cautiously optimistic about the development of business in 2010.

Quartz Business Media, the event organizer, said that floor space was 15% larger than in Barcelona in 2009 and estimates that total attendance was up by 10%. The organizer describes the show as such: Chemspec is a horizontal show, where exhibitors showcase diversified chemistry capabilities to a very wide range of industries.

The life sciences are clearly the most important and the addition of the Pharmaspec area since 2008, uniting suppliers of APIs and other pharma-specific products and services, has drawn in some important new visitors from the pharmaceuticals sector.

However, Quartz Business Media also reported visitors from a wide variety of sectors across the board: flavors and fragrances; personal care; industrial cleaning; water treatment; dyes and colors; electronics; speciality additives; photographic and imaging; photovoltaics; polymers; and general industrial chemicals were all represented.

Voices From the Show Floor

“It’s been one of the busiest shows we’ve had,” Dr. Jim Birnie of Sumitomo Chemical Europe told Quartz Business Media. “We have had as many meetings as we usually do; the difference has been that there have been a lot more spot calls and it has all been far more intense than before.”

Laurent Naraf, international business director for Azelis, echoed these sentiments: “Very good, very busy, very crowded. We have had a lot of positive meetings.”

Several companies used this year’s Chemspec Europe to resume exhibiting activities after a year or more absence. Dr. Michael Helwig, head of Lonza’s custom manufacturing for industrial specialities and life science ingredients, told CHEManager Europe that the return to the trade show had been positive for his company, reporting lots of traffic to the company’s stand and many meetings. Other companies who decided to exhibit after a break included DSM, Evonik Industries, Almac Sciences, Siegfried, DKSH and the Dishman Group.

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Reach: Ominipresent at the Chemspec Europe

This year’s Reach Corner, sponsored by ReachReady, also saw a lot of visitor traffic, particular from representatives from Asian companies. ReachReady’s director Dr. Jo Lloyd, for example, gave a presentation that was simultaneously translated into Mandarin for the benefit of visitors from China. With the next Reach deadline coming up on Dec. 1, Lloyd told CHEManager Europe that many companies are lagging behind due to poor project management.

According to a survey published by ReachReady at the end of May, one third of the Substance Information Exchange Forums (SIEFs) working towards a 2010 deadline had still not appointed a lead registrant. Encouragingly, as of July, about half of the SIEFs had registered a lead registrant.

The survey also showed 30% of respondents had little confidence that they would meet all their registration deadlines in time – even where a lead had been appointed.

The survey also revealed that many companies will face difficult business decisions after the Dec. 1 deadline has come and gone. Many companies reported that they don’t have control over meeting the deadline; they are reliant on their lead registrant (who is usually also their competitor) completing their obligations in time.

“It’s been one of the busiest shows we’ve had.”

Dr. Jim Birnie of Sumitomo Chemical Europe

The consequence of not meeting the deadline? Companies who continue to sell unregistered chemicals will be participating in illegal trade, Lloyd said.

Marc Kiener, Reach management consultant and CEO of Likedeelers, added that Reach hasn’t yet achieved the awareness it needs, and that many companies are just now beginning to look for assistance for the registration process.

Chemspec USA In 2011

In the weeks before the Chemspec Europe, Quartz Business Media surprised the industry by announcing the launch of a U.S. version of their show, set to take place in May 2011 in Philadelphia, Pa., three months after the Informex’s February show in Charlotte, N.C. For exhibitors and visitors alike, this means two major shows catering to the fine, custom and specialty chemicals market within three months of each other on the U.S. East coast.

Most visitors and exhibitors CHEManager Europe spoke with were skeptical about another U.S. show.

Many who helped keep Informex from encroaching on Chemspec’s European territory when UBM attempted to bring the show to Berlin in 2007 said they would do the same to protect the Informex. Many said that one trade show in the States is enough, and some went so far as to call Quartz Business Media’s move detrimental to the industry.

“Three trade shows in a year are enough,” said one exhibitor. “It’s about quality, not quantity.”

Steve Diprose, vice president at Quartz Business Media, said his team is responding to industry demand for an alternative show in the U.S., but also said they recognize that element of competition that the move is bringing into the market.

“It is uncertain … whether the U.S. will sustain two shows of similar scale operating annually,” he said. “That is for the market to decide in the fullness of time.”

Brandi Schuster in Berlin

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Working Toward a Cleaner Future

A.I.S.E. Develops and Promotes Ideas for Sustainability

Clean Thinking – It is through its Agenda for Responsible and Sustainable Cleaning that the International Association for Soaps, Detergents and Maintenance Products (A.I.S.E.) pursues the industry's vision to "benefit society by contributing to the sustainable improvement of the quality and comfort of life." This agenda is supported by two pillars of industry activity: the development and promotion of industry voluntary initiatives and active contribution to legislative and regulatory developments.

Health and safety have long been top priorities for A.I.S.E., and one of the association's key focuses is to work constructively with all stakeholders on regulatory issues affecting the industry. This is to ensure that these policy areas are adequately developed and implemented. As manufacturers of soaps, detergents and maintenance products, A.I.S.E.'s members are downstream users of chemicals, which means that most legislation of relevance to the chemical industry is also important to A.I.S.E. EU legislative activities of particular importance include securing an effective and workable implementation of Reach; an appropriate adaptation of the Globally Harmonized System for classification, labeling and packaging of substances and mixtures in Europe; and the successful development and adoption of the biocides regulation.

Important Initiatives

The group also believes that it has an important role to play in driving mainstream changes towards more sustainable consumption and production patterns. Over the course of the last 12 years, a number of initiatives have been developed by the industry in these domains, addressing the majority of the market, and thus, leading to substantial environmental and sustainable savings.

A.I.S.E. welcomed in July 2008 the publication of the European Commission's action plan on sustainable consumption and production/sustainable industrial policy (SCP/SIP). The series of proposals are designed to improve the environmental performance and use of products. The action plan also clearly recognizes the value of the role played by self-regulatory voluntary industry initiatives. The SCP/SIP in this light confirms the relevance of the various projects/campaigns led proactively by A.I.S.E.; it also provides a perfect framework for these initiatives. In this context, A.I.S.E. is also involved, in particular, on the revision of the Ecolabel criteria for its products, Green Public Procurement for the Industrial and Institutional market sector and the Retail Forum.

Examples of Industry Projects That Embody Best Practice

Launched in 2005, the Charter for Sustainable Cleaning aims to drive both industry and consumers towards more sustainable production and consumption patterns. It provides industry with the opportunity to implement sustainability procedures across the life-cycle, with independent verification and to report progress on a set key performance indicators (KPI) that measure economic, social and environmental aspects. The Charter covers a wide variety of activities and initiatives ranging from human and environmental safety of chemicals and products to eco-efficiency, occupational health and safety, resource use and consumer information. Charter members now total 104 companies, which represents more than 80 % of the total production of soaps, detergents and maintenance products in Europe. Other sectoral initiatives include the Laundry Sustainability Projects (LSPs), which aim to reduce the impact of laundry detergents on the environment by compacting products (washing powders and liquids) meaning that fewer resources are consumed (packaging, waste, CO_2).


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Engaging with the Consumer and Working Together

In the same way that industry takes forward sustainable production measures by ensuring more sustainable use of resources, consumers also have a key role to play in lowering the environmental burden by changing their behavior and following the advice on sustainable use of products. Voluntary industry initiatives such as Save Energy and Water which encourage consumers to use the 55 °C or 50 °C temperature wash-cycle on automatic dishwashing and Washright, which conveys tips to consumers on "saving water, energy and money" industry illustrates that sustainability is a shared responsibility between manufacturers and consumers. They also build on the Charter and LSPs.

In 2008, A.I.S.E., in conjunction with Cefic, developed a multilingual, user-friendly website which now reaches out to 345 million consumers in Europe. The site, www.cleanright.eu, sets a new standard for depth of information, transparency and interaction with consumers and stakeholders.

A.I.S.E. continues to seek opportunities for dialogue with stakeholders at European and national levels to learn and share best practices on sustainability. Since 2009 A.I.S.E. has participated in the EU Retail Forum. This forum allows retailers, public authorities, civil society organizations and industry to engage in discussions on how to go about achieving sustainable consumption patterns and how to promote these to consumers.

Looking Ahead to the Future

Looking ahead, the industry will build on the success of the Charter for Sustainable Cleaning with the proposed upgrade of the Charter. The forthcoming Charter scheme will complement current company sustainability procedures by addressing stakeholders' demands and adding a product dimension intended for products meeting a range of advanced sustainability parameters. The new version of the Charter will be rolled out from mid-2010.

It is through voluntary industry actions such as this one and others that A.I.S.E. can encourage consumers and manufacturers, alike, to modify their attitudes towards consumption and production of products, and at the same time assist them in delivering best practice and savings.

About A.I.S.E.

The International Association for Soaps, Detergents and Maintenance products, A.I.S.E., is a well-established industry association. With more than 50 years existence, it has a strong network covering 42 countries and representing the vast majority of this market through the 900 affiliated companies. Whether it is laundry detergent, hand soap or floor cleaners, the products made by A.I.S.E.'s member companies are used every day in homes, schools, offices and other public places, delivering cleanliness and hygiene for millions of people.

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The Opportunities of a Move

Sepawa 2010 Creates Scope for Topicality

Welcome to Fulda – High expectations have steered up for the 57th Sepawa-Congress and European Detergents (EDC) Conference, a congress that is to be "larger, more modern and more central." Hence there is keen interest among all participants now that the exhibition area – with 99 % being already booked – has been enlarged by and additional 20 poster stands compared to 2009. Due to this high demand, the exhibition probably needs to be enlarged once more.


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A move is hardly ever a mere question of addressing the logistics connected with the relocation from one place to another – in this case within Germany, from Würzburg to Fulda. Just with any move, the relocation of the congress has taken a lot of planning long before the actual moving date. In the process of "packing," there have been thoughts about what can be "taken along" and what can be "left behind." To drop ballast and make room for something new – a mind focused on the future promotes creativity, and readiness for departure enhances its realization. The Sepawa Board of Directors is doing just that for the upcoming Sepawa Congress from Oct. 13–14 in Fulda.

While the move from Bad Dürkheim to Würzburg was characterized by the growing internationality of the event, the move to Fulda offers the opportunity to make the conference the most well-rounded event in the industry.

A Stronger Profile for Greater Topicality

Ever since the EDC and the Sepawa Congress have been featured together, many visitors enjoy the freedom of choice between the various options. Numerous visitors appreciate the possibility to choose between excellent lectures in the fields of basic research and presentations focusing more on application and economic-issues. It is obvious that both these aspects – science and application – are of utmost importance, and this double-track profile of the Sepawa will be emphasized even more so in Fulda.

There will be one newly added theme block called "Forum for Innovations," which offers a greater scope for discussions on the corporate point of view. Short registration deadlines for contributions as well as more creative freedom provide this forum with a high degree of topicality so that lively discussions can be expected; lectures and presentations for the "Forum for Innovations" can thus still be submitted up to the Aug. 27.

The second theme block developed by the Sepawa will hence be more condensed. For the lecture series "Formulation Technology" the Sepawa was able to invite renowned experts; Prof. B. Lindman (Universität Lund) will open the series with the lecture "Interaction between polymers and surfactants gives synergistic effects in formulations". In the same way, the lectures on scientific foundation for reciprocal effects of polymers and surfactants as part of the EDC Conference will also feature internationally renowned speakers.

Synergies Instead Of Reservation

With the cooperation of the DGK (Association German Society for Scientific and Applied Cosmetics) another facet is added to the event in Fulda. The DGK, a society with 750 members of exclusively scientific orientation will extensively focus on the subject "effectiveness in cosmetics." Contributions to the legal aspects as well as to in-vitro and in-vivo test methods are also included in the program. These will also focus on special applications such as deodorants and hair cosmetics. According to Dr. Hartmut Schmidt-Lewerkühne, president of the DGK, the collaboration with the Sepawa creates new opportunities for both parties. Nevertheless, the association will keep its independence, so that DGK events during odd-numbered years remain unchanged; the next one being in 2011 with the theme "Safety and tolerance."

Young People and their Future in the Industry

Although the new location offers extended choices, this will not cause a gridlock as indicated by the theme of the keynote lecture. Futurologist Prof. Horst W. Opaschowski addresses the changing living conditions of the generation "up to and around 30" in his speech entitled "Rethink Prosperity." With a composed disposition in times of crisis, this generation will redefine prosperity in their own, more socially oriented system of values.

And although according to the forecasts of Opaschowski, university degrees will no longer guarantee a secure future, the Sepawa board of directors still wants to show recognition and transmit encouragement to graduates with outstanding achievements. Both events, the are therefore opened with the awards of young people standing at the start of their careers. In addition to this, students are granted free admission to the event as in previous years.

"To introduce young scientists to the industry, while at the same time offering a communication platform to those with much experience, is one of our goals and we are realizing with this event," said Prof. Ulrich Buller, chairman of the Sepawa and of the Fraunhofer-Gesellschaft. "It also includes the successful bridge building work between the large expert associations EDC, DGK and Sepawa, as well as the combination of high scientific quality with the latest product presentations."

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Air Products Appoints Julie O'Brien Corporate Sustainability Manager Air Products announced the appointment of Julie O'Brien to the position of corporate sustainability manager. In this new role, O'Brien is responsible for developing and managing the company's sustainability initiatives, practices and reporting worldwide. She will work with senior business and functional managers and Air Products' Sustainability Council to drive achievements against the company's sustainability growth strategy and improvement targets.

O'Brien joined Air Products in 1986 as a production engineer. Since then, she has served in a number of roles in environmental technology, corporate communications, and product safety, including leading Air Products' Responsible Care implementation and managing the company's Responsible Care Management System (RCMS) certification. Most recently, O'Brien managed product safety global regulatory compliance and ISO9001 and FDA compliance for gas products. ■

H. B. Fuller Adds Thomas W. Handley to Board of Directors H.B. Fuller Company announced that Thomas W. Handley was elected as an independent member to its board of directors, effective immediately. Handley's position expands the board to eight directors, seven of whom are independent.

Handley heads Ecolab's $1.4 billion global food and beverage division, and has more than 25 years of profit and loss (P&L) leadership experience in global business environments, including businesses in Asia and Latin America. Handley is a board member at the Ordway Center for the Performing Arts and Twin Cities Red Cross. He received a bachelor's degree in economics from Claremont-McKenna College and his MBA from the University of Chicago. ■

American Vanguard Announces Change in Amvac Chemical Senior Management American Vanguard has announced that Trevor Thorley, executive vice president & chief operating officer of the corporation's subsidiary, Amvac Chemical Company, has resigned from his position in order to pursue other business interests. Thorley joined the company in January 2009 and since that time has been involved in managing several different functions.

In conjunction with this managerial change, the company announced the promotion of James Lehman to the position of national sales manager. Lehman has served as Midwest regional sales manager for the last 18 months and has distinguished himself through superior achievement and as an effective leader. Lehman joined Amvac from a successful sales management career at BASF. ■

DKSH Appoints New Head for Specialty Chemicals and Ingredients Business China Sherman Chau has been appointed by Swiss-based DKSH as local business unit manager Performance Materials China. He brings 17 years of experience in the specialty chemicals industry. Chau comes to DKSH from specialty chemicals firm Clariant, where he held several management assignments. In his last position he was head of business unit industrial & consumer specialties (BU ICS) for Greater China and Korea. He holds a PhD in organic chemistry from the University of Hong Kong and an MsC in Biomedical Engineering from the Jinan University of Guangzhou. ■

Benoît Battistelli takes over as President of the European Patent Office Benoît Battistelli took up office as president of the European Patent Office (EPO). A French national, he succeeds Alison Brimelow of the UK, who has headed the EPO since July 2007. Battistelli was elected president in March 2010 by the Administrative Council of the European Patent Organization, the EPO's governing body. His term of office is five years. ■

ABB Executive Committee Member Anders Jonsson to Retire Anders Jonsson, a member of the ABB executive committee since 2006, will retire at the end of July after 34 years with the company. Jonsson is currently responsible for monitoring and coordinating ABB's overall cost reduction and global footprint programs. As of Aug. 1, these responsibilities will be assumed by the head of quality and operational excellence who will report directly to CEO Joe Hogan.

Jonsson joined ABB as a development engineer in 1976 and has held a variety of roles in the company's automation businesses in Sweden, Switzerland and China. Before taking up his current position, he ran the Robotics business for four years. ■

Baune Takes Helm at Akzo Nobel MCA Jürgen C. Baune has been appointed general manager of Akzo Nobel's worldwide MCA (monochloroacetic acid) activities, part of the company's Industrial Chemicals business. Baune succeeds Lars Andersson who will become director Product and Business Development of Eka, Akzo Nobel's Pulp and Paper Chemicals business.

Baune studied chemistry and obtained a PhD in metal organic chemistry at Münster University, Germany. He joined Akzo Nobel more than 20 years ago and has held a number of management functions in research and development, manufacturing and general management, including that of director Manufacturing & Technology of Akzo Nobel's Industrial Chemicals business unit. ■

Akzo Nobel Global Personal Care Appoints Ra'eda Asad Hair Care Project Leader The Global Personal Care business of Akzo Nobel Surface Chemistry has appointed Ra'eda Asad as hair care project leader, based in Bridgewater, New Jersey. Her responsibilities include leading the formulation and evaluation of personal care surfactant systems – including shampoos, conditioners and other hair cleansing products – and providing solutions and troubleshooting assistance to support current product lines and customer formulas.

Asad joins Akzo Nobel following successful tenures most recently at Johnson & Johnson Consumer Products Company in Skillman, N.J., and at Huntsman in Austin, Texas. As principal scientist at Johnson & Johnson Consumer Products, Asad's key responsibilities included optimizing product reformulations to improve performance, robustness and consumer-perceptible attributes while reducing cost; leading the efforts of the company's global formulation team to identify business opportunities worldwide. ■

Pfizer Exec Jumps Ship to Head AstraZeneca's R&D

Top Pfizer research executive Martin Mackay has left the world's biggest drugmaker to head research at rival AstraZeneca as both companies brace for patent expirations on their top-selling medications.

Pfizer will consolidate its research and development under Mikael Dolsten, who had worked with Mackay as co-head of research and development since October in a split of duties created from the company's $67 billion merger with Wyeth. Pfizer is betting on drugs from Wyeth, where Dolsten served as research head, to help it endure plunging sales of its Lipitor cholesterol fighter when the world's top-selling drug faces generic rivals late next year.

Pfizer said Mackay, a soft-spoken and personable native of Scotland, had resigned and left the company immediately.

He took on the new role of president of R&D at London-based AstraZeneca on July 1. Mackay had been the company's global research chief for two years and, after the Wyeth merger, led PharmaTherapeutics research at Pfizer, involving conventional drugs made from chemicals. Dolsten oversaw research of BioTherapeutics, biotech drugs made from complex proteins grown in living cells.

"That structure was unusual," Leerink Swann analyst Seamus Fernandez said. "It struck me as potentially a vetting period for Dolsten," to better assess his leadership skills.

Morningstar analyst Damien Conover said Dolsten is not well known by Wall Street and will be under pressure to galvanize Pfizer's underperforming laboratories. Wyeth brought Pfizer currently marketed biotech drugs, such as blockbuster arthritis drug Enbrel, but did not greatly remedy Pfizer's dearth of drugs in late-stage testing.

"So Dolsten has a pipeline that is not as strong as it needs to be to offset Lipitor's patent loss," Conover said. He noted, however, that Pfizer is developing treatments for Alzheimer's disease, arthritis and blood clots that have blockbuster sales potential should they eventually be approved.

R&D Pedigree

Dolsten has a medical degree from the University of Lund in Sweden and led drug research for Germany's Boehringer Ingelheim before joining Wyeth. He also had senior roles with other drugmakers, including AstraZeneca and Pharmacia & Upjohn.

"Anyone in leadership in R&D at Boerhinger Ingelheim, which has been an incredibly productive R&D organization over the last several years, should probably be viewed reasonably positively," Fernandez said.

Pfizer itself has produced few big drugs since introducing anti-impotence pill Viagra in 1998, despite its later acquisitions of U.S. rivals Warner-Lambert and Pharmacia and an

industry-topping annual $8 billion research budget.

"The Wyeth deal buys Pfizer a little more time after Lipitor's patent expires, but the company really needs to start kicking out some new drugs," said Miller Tabak analyst Les Funtleyder. "Otherwise, it will have to change direction, and move deeper into related areas of healthcare such as generics or consumer products."

For its part, AstraZeneca separated the two stages of R&D by having a head of drug discovery and a head of drug development, leaving some investors uncertain about its focus. Mackay's appointment brings the two roles together as the company overhauls R&D to prepare for patent expiries on top drugs like Nexium, for acid reflux, and Seroquel, for schizophrenia.

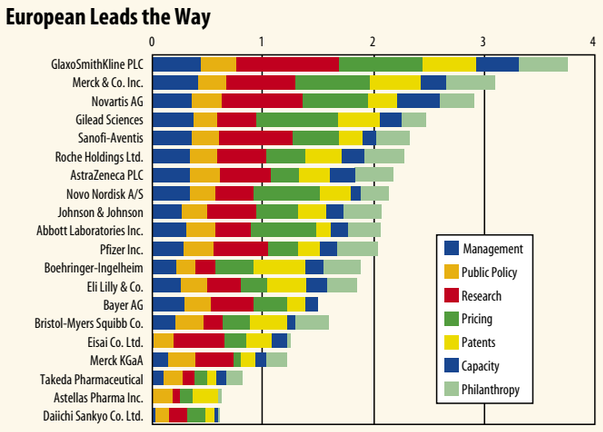
AstraZeneca spokesman Neil McCrae said a unified head of R&D would speed up decision-making and help allocate resources between different projects at a time of major change.

"We set out our strategy for R&D in January, which calls for some significant changes as we seek to improve the productivity of our pipeline," he said. "In addition, since the acquisition of MedImmune, it has become clear that we need a single point of accountability to manage the entire R&D portfolio."

Mackay has extensive experience working on both sides of the Atlantic. Prior to joining Pfizer in 1995, he focused on research into central nervous system diseases at Ciba-Geigy, now part of Novartis. ■

European Drug Companies Lead 'Access to Medicine Index'

European Leads the Way



Source: Access to Medicine Index © GIT VERLAG

India Heads Generics Index

	Access to Medicine Management	Public Policy and Market Influence	R&D for Ideax Diseases	Equitable Pricing, Manufacturing & Distribution	Patents and Licensing	Capability Advancement in Product Development & Distribution	Product Donations & Philanthropy	Overall Ranking
Ranbaxy Laboratories Limited	High	Medium	High	High	High	Low	Medium	1
Cipla Limited	Medium	Medium	Medium	Medium	High	High	High	2
Dr. Reddy's	High	High	Medium	Low	Low	Medium	Medium	3
Mylan Inc.	Low	Low	High	High	Low	No evidence found	Low	4
Sun Pharmaceuticals	Low	Low	No evidence found	Low	Low	Medium	No evidence found	5
Teva Pharmaceuticals Ltd.	Low	Medium	No evidence found	No evidence found	Low	No evidence found	Low	6

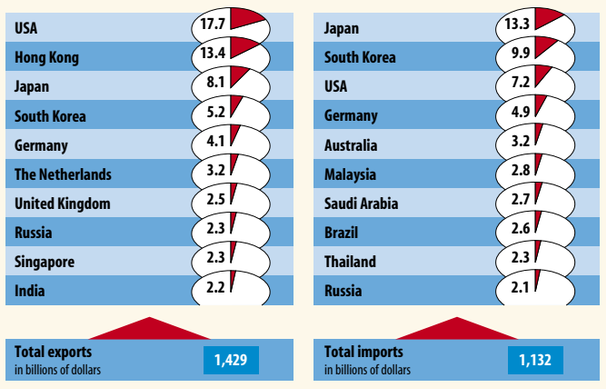
Source: Access to Medicine Index © GIT VERLAG

European pharmaceutical companies outcompete their U.S. counterparts in making medicines available to people in developing countries, but their lead is shrinking, according to the second Access to Medicine Index, released at the end of June. Compared to 2008, when the first index was published, pharma companies have given more insight into their policies and actions to increase people's access to medicines in developing countries, researchers say in a report underpinning the ranking. They identify more industry initiatives than two years ago, but also see room for improvement. Two years ago, seven European companies got a top-10 ranking. Also, generic drug makers, who do less research but produce low-cost off-patent drugs, now have a separate ranking. Ranbaxy Laboratories (India) and Cipla (India) top that list. The Access to Medicine Index ranks 20 of the world's largest pharmaceutical companies on their efforts to make sure that medicines are made for, and reach, people in developing countries. The Index encourages drug companies to compete and offers investors and others a way to compare their social responsibility records.

The Importance of Emerging Markets

China: The Most Important Trade Partner

So many percent of China's exports and imports fell upon these countries in 2008

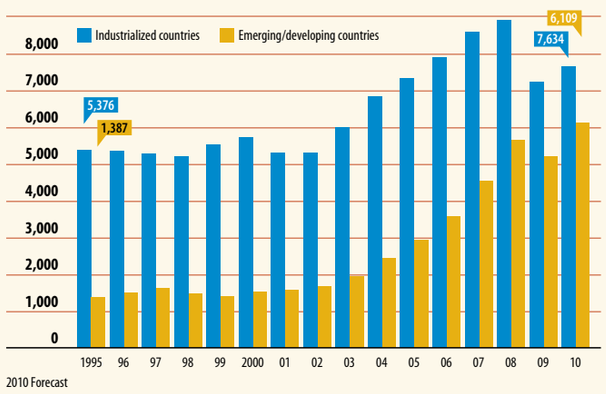


Source: IWF © GIT VERLAG

China has stood out for years with its strong export growth; the Asian powerhouse beat out Germany as the world's number 1 export country. In 2009, China boasted an export volume of $1.2 billion. The U.S., with its 18% share is the most important target country, followed by Hong Kong and Japan, respectively. The economic relationships between the U.S. and Japan are based on reciprocity — China sources a large portion of its imports from both countries. As a developing country, many wrongly assume that China's main exports are agricultural commodities, textiles or clothing. However, these classes of goods made up only between 3% and 13% of the country's exports in 2008. In the same year, China's processing industry made up 93% of the country's exports. Machines and electronic products are some of the most important export items.

Global Investments: Strong Recovery

Gross investments in billions of dollars



Source: IWF © GIT VERLAG

The global investment activity is expected to take an upswing in 2010, following the fall off in 2009. Most notably, governments and companies will be investing upwards of $6,100 billion in emerging and developing countries, more than ever before. The crisis is history — the world economy is already getting back up to speed. The International Monetary Fund expects a 4% increase for the price-adjusted world production. The global investment volume is even expected to gain up to 11% over last year, which means private and public players will be investing more than $13,700 billion worldwide. The impulse for worldwide investments is coming from emerging and developing countries, particularly from India and China. More than two thirds of the total growth in global fixed-asset investments will be allotted to the emerging and developing countries.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Element 112 named The heaviest chemical element known to science now has a name: The element with the atomic number112 was christened Copernicium in Darmstadt, Germany. Its name honors the astronomer Nicolaus Copernicus (1473-1543). An international group of scientists at Helmholtz-Zentrum für Schwerionenforschung (GSI) in Darmstadt was able to produce and prove existence of the massive element for the first time in 1996.

"Since its establishment more than 40 years ago, GSI has evolved into one of the leading accelerator laboratories for heavy ion research in the world; their largest successes are certainly the discovery of six new chemical elements," said Helge Braun, representing the Federal Ministry of Education and Research, during the christening ceremony.

Darmstadt is also the home and place of birth of one of the top newspapers for the chemical and life science industries in Europe – CHEManager Europe.

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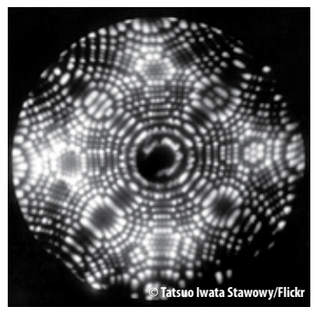
For Platinum Catalysts, Smaller May Be Better

When it comes to metal catalysts, the platinum standard is, well, platinum! However, at about $2,000 an ounce, platinum is more expensive than gold. The high cost of the raw material presents major challenges for the future wide scale use of platinum in fuel cells. Research at the U.S. Department of Energy (DOE)'s Lawrence Berkeley National Laboratory (Berkeley Lab) suggests that one possible way to meet these challenges is to think small – really small.

A study led by Gabor Somorjai and Miquel Salmeron of Berkeley Lab's Materials Sciences Division showed that under high pressure, comparable to the pressures at which many industrial technologies operate, nanoparticle clusters of platinum potentially can outperform the single crystals of platinum now used in fuel cells and catalytic converters.

"We've discovered that the presence of carbon monoxide molecules can reversibly alter the catalytic surfaces of platinum single crystals, supposedly the most thermodynamically stable configuration for a platinum catalyst," said Somorjai, one of the world's foremost experts on surface chemistry and catalysis. "This indicates that under high-pressure conditions, single crystals of platinum are not as stable as nanoclusters, which actually become more stabilized as carbon monoxide molecules are co-adsorbed together with platinum atoms."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Field ion microscope image of platinum. Each tiny bright spot corresponds to a platinum atom.

"Our results also demonstrate that the limitations of traditional surface science techniques can be overcome with the use of techniques that operate under realistic conditions," says Salmeron, a leading authority on surface imaging and developer of the in situ imaging and spectroscopic techniques used in this study. He is also the director of Berkeley Lab's Materials Sciences Division.

In this study, single crystal platinum surfaces were examined under high-pressure. The surfaces were structured as a series of flat terraces about six atoms wide separated by atomic steps. Such structural feature are common in metal catalysts and are considered to be the active sites where catalytic reactions occur. Single crystals are used as models for these features.

Somorjai and Salmeron coated the platinum surfaces in this study with carbon monoxide gas, a reactant involved in many important industrial catalytic processes, including the Fischer-Tropsch process for making liquid hydrocarbons, the oxidation process in automobile catalytic converters, and the degradation of platinum electrodes in hydrogen fuel cells. As carbon monoxide coverage of the platinum crystal surfaces approached 100 %, the terraces began to widen – the result of increasing lateral repulsion between the molecules. When the surface pressure reached one torr, the terraces fractured into nanometer-sized clusters. The terraces were re-formed upon removal of the carbon monoxide gas.

"Our observations of the large-scale surface restructuring of stepped platinum highlights the strong connection between coverage of reactant molecules and the atomic structure of the catalyst surface," says Somorjai. "The ability to observe catalytic surfaces at the atomic and molecular levels under actual reaction conditions is the only way such a phenomenon could be detected."

Coming up in CHEManager Europe 9/2010:

- **The next Reach deadline is coming up on Dec. 1. Is your company ready? Check out our in-depth special on Reach, which will cover everything you need to know, from SIEFs and lead registrants, to fulfilling your commitments to your customers within Reach and CLP. We will also look at what lies ahead after the deadline has passed.**
- **The CPhI is just around the corner; don't miss our short interviews with the industry's most important decision makers from companies such as Novasep, CABB, Saltigo, Dishman Europe and Hovione.**
- **Products can't get from the producer to the customer without packaging: Our special section examines new trends in tracking, such as Datamatrix.**

Coming to you on Sept. 16!

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