

# POWDER

## NEWS



### Customer-specific mixes spearhead growth in China

*With dramatic growth in recent years, China is becoming one of the most important markets for the Höganäs Group.*

Höganäs (China) Ltd is part of Höganäs AB, the world's largest producer of iron and non-ferrous metal powders. This year the Shanghai-based subsidiary is to make a number of major investments to keep pace with China's surging demand for iron powder and customer-specific mixes.

Originally established in the early 1990s as a joint venture company with a Chinese partner to produce atomized powder in Shanghai, Höganäs (China) Ltd has become the market leader by sales of high-quality iron powder in China.

Adam Lee, Marketing Manager of Höganäs (China) Ltd says: "We are working in a growing market with huge potential, supplying atomized powders and customer-specific premixes and bonded mixes to customers not only in China, but also other Asian countries such as Korea and Taiwan. Our long-term ambition is to serve the whole of Asia."

Powder production began at Qingpu in Shanghai in 1995 and over the years, the facility has developed considerably, becoming a base for a growing sales team, central distribution and the technical support organization. "What we offer is not only products, but a package of services with advice and support on materials and processes," states Adam. "Being close to the customer is important and we offer a good local service."

Iron powder production in Shanghai is currently taking a time-out as plans are made to increase capacity. Land and premises have been acquired that will enable expansion at the Qingpu site and fulfil the aim of resuming local production in a larger, state-of-the-art atomizing plant.

Customer-specific mixes have played a major role in sales growth. A new mixing station opened in 2000 to boost output,

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and a second mixing station, focusing on bonded mixes, is being built to start operating in mid-2005.

Ulf Holmqvist, Senior Vice President Höganäs AB, says, "Demand for customer-specific mixes is increasing and Höganäs (China) Ltd is investing in order to provide more complex customer mixes." Ulf considers that this move will put the company in pole position to serve not only local producers of industrial and other components, but also the growing influx of international automotive companies that are setting up production in China.

Other major investments in Shanghai include the increasing of annealing capacity and the establishing of a technical centre, scheduled to open in June 2005.

"The Tech Centre will concentrate on customer-focused development," says Per Lindvall, the new President of Höganäs (China) Ltd, who took up the position in March. "Most of our products are customer-specific and the centre will give us the chance to bring Höganäs AB technology closer to our Chinese customers and provide a faster service."

According to Per, Höganäs (China) Ltd is clearly showing its commitment to the Asian market through continued investment. "For me, the challenge is taking the traditional technical expertise of Höganäs AB and making it part of the exciting market developments in China. We are investing in

a base for long-term development in China and the rest of Asia."

### New Tech Centre for Asia

The Tech Centre in Shanghai, China, will become the third of its kind within the Höganäs Group. It will complement, and work with, the existing Technical Support organization at Höganäs, Sweden, and the Tech Centre of North American Höganäs Inc. at Stony Creek, which opened in 2001 and supports customers in North and South America.

The new Tech Centre is currently taking shape at the Qingpu site in Shanghai. Heading the project is Björn Lindqvist, who will be Tech Centre Manager when the facility opens in June.

"Initially, we will have a staff of four engineers focusing on P/M technical support using laboratory and equipment resources similar to those available at the central laboratories in Höganäs and at Stony Creek in the US," says Björn. "Our resources will include an advanced press, a sintering furnace, mechanical test equipment and a modern metallographic laboratory. This will enable us to study the dimensional behaviour of components, material properties and carry out advanced examinations of material microstructures."

"As the market is very oriented towards customer-specific mixes, our test mix station will be extremely important," he continues. "Using the station, we will be able to provide

customers with test mixes in either 25 or 250 kilo formats."

Björn is looking forward to serving the Chinese market. "We will be able to give customers in China faster, more local support. Typical cases will involve helping customers to get the best out of materials and processes based on their production conditions and the process equipment they are using."

In the long term, the Tech Centre will support customers throughout Asia. "Initially we will be helping customers in China and Taiwan, but that is just the first stage," explains Björn. "Our resources and staff will be built up and the long-term intention is to extend coverage to other Asian markets such as Korea, Japan, South East Asia, Australia and India."



Adam Lee,  
Marketing Manager  
Höganäs (China) Ltd



Per Lindvall,  
President  
Höganäs (China) Ltd



Ulf Holmqvist,  
Senior Vice President  
Höganäs AB



Björn Lindqvist,  
Tech Centre Manager  
Höganäs (China) Ltd



# Flying start

## FOR STARMIX™ IN NORTH AMERICA



*The new Starmix™ plant is helping customers in the pursuit of tighter tolerances.*

Production at the new Starmix™ plant in Stony Creek, Pennsylvania, began in November 2004. The plant's capability to tailor the bonded mix, Starmix™, to meet tight tolerances is attracting enquiries and sample requests from customers not only in North America, but from around the world.

Ryu Goto, Market Manager for P/M Powders at North American Höganäs Inc. says: "The Stony Creek Starmix™ plant has the most advanced technology available, which enables more accurate and consistent mixes. With more consistent mixes one can achieve higher productivity and better control of tolerances. It also enables our customers to produce parts with very complex shapes with less distortion. As a result of this, we are getting a lot of interest from makers of high-performance parts."

"Before production start up, we performed extensive qualification testing of the product and the equipment at various major customers and the outcome was very positive," states Ryu. "The customers were very impressed with the results."

"What we now deliver direct from Stony Creek are engineered, customized products. We can identify and deliver the best combination of properties for a specific application," explains Ryu.

The new Starmix™ plant complements the wide product range of North American Höganäs Inc., which has produced atomized iron and steel powders at the state-of-the-art Stony Creek facility since 2001. The new plant also improves service to US customers by providing direct delivery of locally produced, customized bonded mixes with shorter lead times.

"Customer feedback since we started production has been very good," says Ryu. "One customer is in the process of eliminating a secondary operation in the component production by switching from a standard premix to a customized Starmix™ produced here. The customer is very pleased with the production cost reductions that will be achieved."

### The world of Starmix™

Stony Creek is the third production plant for Starmix™. The product is also made by the Höganäs Group at units in Sweden and Japan.

Starmix™ is a bonded mix, a metal powder concept pioneered and patented by Höganäs AB. The first organically bonded mix carrying the Starmix™ name was launched in the mid-1980s.

Today, bonded mixes are increasingly replacing premixes in gear production and other high-performance applications as they offer opportunities to improve efficiency and productivity as well as obtain tighter tolerances and complex shapes.

Good filling performance and minimal segregation are essential if P/M technology is to meet the demands for close dimensional tolerances in high performance parts. Starmix™ products are designed to address these issues by bonding ingredients to reduce segregation and enhance filling performance.

The advantages of Starmix™ over unbonded premixes have been documented and highlighted by Höganäs R&D in numerous technical presentations, and include:

- Better filling performance
- Minimal segregation
- Less weight variation
- Less dusting
- Productivity increases during compaction
- The dimensional stability to deliver better final tolerances

The Starmix™ product and production process have been continuously enhanced, and in recent years advances have been made in key areas such as filling characteristics, dusting and lubrication. The continuous development process focused on Starmix™ has created greater possibilities to tailor mixes for customers' applications.



Ryu Goto,  
Market Manager  
for P/M Powders  
at North American  
Höganäs Inc.

# LEADING WITH A



*Claes Lindqvist,  
President and CEO of  
Höganäs AB*

***Claes Lindqvist looks back at his eventful years as CEO and forward to a future that offers exciting growth opportunities for Höganäs AB.***

In early 2005, Claes Lindqvist, President and CEO of Höganäs AB, announced that Höganäs AB had increased its global market share from 33 per cent to 35 per cent in 2004. Back in 1990, when Claes became CEO, that figure was 20 per cent. Now, almost 15 years later, he will retire in connection with the 2005 AGM, satisfied that a 15 per cent rise in global market share was achieved while he was at the helm of the Höganäs Group.

Writing in the 1994 Annual Report, the first following the Höganäs AB listing on the stock exchange, Claes stated: "The development of expertise is today a highly prioritized area within Höganäs AB." and added "We are investing major resources in developing new application areas through

our own projects and above all through partnership with customers..."

If these comments sound familiar, it is because they remain high priorities for Höganäs AB today. The ability to sustain, and invest in, prioritized activities for long-term growth – competence development and product development – has, as Claes explains below, laid the foundation for the company's success over the past 15 years and for future growth.

#### **How would you compare Höganäs AB now with the company in 1990?**

"There have been a lot of advances. The company has grown in terms of sales, size and the knowledge that it offers. When I started, sales were under SEK 1 billion. Last year, the figure was SEK 4.1 billion. Back then we had a staff of 900 in Sweden and 175 abroad. Now, we number just under 800 in Sweden and just over 800 in other countries. And, we have built up the R&D side considerably. In the early 1990s there were some 45 people involved, today there are around 130."

#### **What kind of phase was the company in when you joined?**

"The company was growing and globalising. Early challenges included continuing the build up of production and atomization capability

in India, and the negotiations and projects that led to the official opening of the plant in China in 1996. We were able to achieve excellent volume growth of around 20 per cent some years in the 1990s. Although there were a few years when sales fell, we never had two in a row. Last year the rise was a healthy 13 per cent."

#### **What has been the most important decision made during your time as CEO?**

"There have been many. But, if I was to pick one I would probably choose the selling off of the shareholding in the Hoeganaes Corporation in 2000. This move opened the way for our own organization and operations in North and South America and led to many other very significant events such as the acquisition of Belgo Brasileira and the building up of production capacity in Brazil, the opening of Stony Creek and the acquisitions of Pyron and SCM."

#### **Is there any aspect of the company's progress that is particularly satisfying?**

"I am very proud of how the competence of the company has developed over the past 15 years. It was already a company with good expertise when I joined, but it is so much stronger now in terms of the collective

# LONG-TERM VIEW



competence it can offer customers. It has been very stimulating to work in a company that has exceptionally skilled people working all over the world.”

## What has been the biggest challenge?

“One of the biggest challenges has been creating opportunities for growth. Our business requires a long-term view. A lot of patience is needed, as it can take a long time between concept and finished product. It takes time to develop new products and it takes time to working closely on applications with customers. With this in mind, our major long-term investment in R&D has been vital to our continued success. And it is R&D that will produce the breakthroughs and new products to create future opportunities for growth.”

## Which product areas offer growth potential?

“There is R&D in progress in a lot of exciting areas with good prospects. On the press powder side, the growth opportunities are in more advanced high-performance components for automotive applications such as gears for manual and automatic gearboxes, and connecting rods.

Soft Magnetic Composites are something that we have been developing for a while now.

There is a very promising future for these products with many new areas of application.

Since the mid-1990s our strategy has been to run internal development of high-alloy powders and we are securing niche markets. One for the future is diesel filters for vehicle exhaust systems. Environmental legislation is driving this development and we are looking at major growth in this application starting in 2006, principally in Europe, Japan and USA.”

## Which markets provide best possibilities for growth?

“We believe that the product development areas I mentioned will generate growth in all major markets. But, we believe that growth in general will be strongest in Asia, particularly in China and India. We have plans to gradually expand production in China to meet future demand.”

## What are the most important priorities now for future growth?

“I feel it is important to continue along the same long-term path. To invest in R&D and competence development, and to capitalise on the many growth factors that exist in cooperation with customers. The company has a very exciting future.”

## Milestones 1990-2005

### 1992-96

A joint venture with a Chinese partner leads to production of metal powder in China and formation of the wholly-owned subsidiary, Höganäs (China) Ltd.

### 1994

Start of raw powder deliveries to German company, Mannesman DEMAG's iron powder production plant. Höganäs AB is listed on the Stockholm Stock Exchange.

### 1999

Acquisition of Belgo Brasileira Ltd, which is renamed Höganäs Brasil Ltda.

### 2000

Höganäs AB sells off its shareholding in Hoeganaes Corporation.

US iron powder producer, Pyron Corporation, is acquired.

Powdrex Ltd, UK is acquired and becomes part of the Coldstream division.

### 2001

Opening of the new atomizing plant in Stony Creek, USA.

### 2003

Acquisition of US specialty metals producer SCM Metal Products, Inc.

# TECHNICAL SUPPORT TAKES ON more active role



*Active, practical, preventative – Technical Support is no longer just involved in solving immediate problems.*

Ian Howe, Technical Support Manager in Höganäs, Sweden, outlines the changing role of the department.

## What is Technical Support and how does it help customers?

"We deal with short-term issues relating to existing technology and help with problems concerning material and process choices. Speed and accuracy are essential. Customers need the right information at the right time. Technical Support is a very important tool for customers, particularly for smaller and medium-sized companies.

However, problem-solving is only a part of what we offer. Nowadays, we say that our goal is to collect and collate relevant information on practical aspects of P/M and to offer active practical support and advice to customers." (see box)



Ian Howe,  
Technical Support  
Manager,  
Höganäs AB, Sweden

## What resources do you have?

"The company's overall strategy is to be the market leader not only in iron powder production, but also in terms of high-quality products, Technical Support and R&D. The company allocates major resources

to our area, so the level of Technical Support is number one for P/M.

At Höganäs in Sweden, we have a nine-strong department including four engineers, four technicians and myself. This combined competence on materials and the practical aspects of powders and processes enables us to provide complete solutions. Practical testing and analysis facilities are shared with R&D at the central laboratories."

## How does Technical Support fit into the overall organisation?

"Technical Support is part of the marketing department. We work alongside R&D, which deals with long-term development, Technical Marketing and Product Support which provide specific information on existing products."

## Which geographical area do you cover?

"Previously we served customers globally, but as there are now parallel functions at Stony Creek, we cover the world apart from North America. We work very actively with the Stony Creek Tech Centre and we draw benefits from each other's experience and activities. In the long-term, Asia will be covered by the new Tech Centre in China, so our focus will be more on Europe, South America and Russia."

## How is Technical Support changing?

"Traditionally, Technical Support has been from the materials perspective. Today, we also try to look at things from the customer's perspective. We deal far more with the

hands-on side and offer more practical expertise in the customer's process.

For this to work, the first stage is to continue building up our internal competence and understanding of P/M, so we are involved in extensive education and training both internally and out in the field, learning from our customers, press manufacturers, sintering furnace manufacturers and others.

This is all part of a general move towards providing more active support. Nowadays, we actively inform in a preventative way about optimizing materials and improving processes. All this involves more active contact with the customer and the market. It means sitting down with customers and emphasizing how powders, parameters and processes are interconnected and must be optimised to give you the right costs, performance and quality."

## Technical Support at Höganäs

### The team:

Ian Howe, Marcus Bergsten, Yang Yu, Britt-Marie Johansson, Maria Forsum, Magnus Andersson, Daniel Nilsson, Peter Johansson, Alberto Poey

### Technical expertise in:

Problem solving, Specifications/standards, Materials selection, Properties/testing, P/M processing

### Typical issues include:

Dimensional control, Robustness, Sintering, Pressing, Secondary operations, Avoiding typical problem/pitfalls, Aсталoy CrM/CrL, Warm compaction

# POWDER PEOPLE

## Activity in Asia

The new President of Höganäs (China) Ltd and Höganäs Taiwan Ltd is **Per Lindvall**, who took up his position in March 2005. Per joined the company from the world leader in protective equipment, Bacou-Dalloz, where he was Vice-President Asia-Pacific, based in Hong Kong, heading sales and marketing operations in Asia.

Per, 54, started up operations in Asia for Bacou-Dallouz back in 1990 and has helped to build up a network of subsidiaries in Hong Kong, Australia, Korea, Japan, China and most recently, India, over the past 15 years. He has travelled extensively worldwide in a career that also included a period as MD and Export Director for Master Plast, a subsidiary of Nobel Industries, and considers himself a "global citizen", but it is the Asian market that he finds most appealing.

"I know the Asian market pretty well after so many years," say Per. "Asia is the future. This is where the pulse is, where things are developing, where people work hard and have a positive view of life. All this makes it a very exciting market to work in."

**Björn Lindqvist** took up his new position as Technical Manager of Höganäs (China) Ltd in November 2004. One of his initial tasks is to set up the new Shanghai Tech Centre ahead of its opening in June (see page 2).

**Olof Andersson**, who was previously at Höganäs Belgium S.A, will officially start working for Höganäs (China) Ltd this summer as Technical Service Manager for China, Korea and Taiwan. **Gunnar Skoglund** will keep his present position as Technical Manager until 2006.

**Joon Park** has been appointed as President of Höganäs Korea Ltd. He started his career with Höganäs Korea as a Sales Engineer in 1992 and for the last few years has held the position of Sales Director.

After a long and successful career with the company, **Göran Wastenson** the President of Höganäs Japan K.K. retired in November 2004. His successor as President of Höganäs Japan K.K is **Carl Eklund**.

Carl has worked for a wide range of specialized technology-based Swedish companies in Japan, including Lafarge Svenska Höganäs, since 1979. He joined Höganäs

Japan K.K after five years as head of the joint Volvo Co in Japan, which covered Trucks, Construction Equipment, Volvo Penta and Buses.

"I hope my experience in Japan and in automotive-related business will bring benefits to the Höganäs AB business," says Carl. "My role is to take Höganäs to the next level in Japan. We are now one of the three suppliers in Japan with a 30 per cent market share. The next step is to become the preferred Development Partner for new P/M developments by our key customers."

"Our aim is to be No. 1 supplier of iron powder in turnover and volume, selling value added products and actively contributing to the growth of the total P/M market by cooperating with our key customers to expand P/M applications," concludes Carl.

## New Managing Director in Belgium

**Roger Hjerth**, 46, was appointed as new Managing Director of Höganäs Belgium S.A. in February 2005. He was formerly Managing Director and CEO of the Norwegian company EFD, Europe's largest supplier of induction equipment for automobile, tube and cable production and for the electro-technical and mechanical industry.

His predecessor as Managing Director of Höganäs Belgium S.A, **Staffan Paues**, was in February 2005 appointed to a new position for special assignments within the Höganäs Group.

## In brief

After a period working as an Account Manager within the North American Höganäs organization, **Fredrik Vinnerborg** has returned to the Technical Marketing department in Höganäs to become Manager for Technical Marketing, with responsibility for press powder for P/M structural parts.

**Ola Andersson** joined Höganäs AB in 1999 and has worked in Technical Support and product development of SMC material within R&D. He has now taken up the position of Application Manager Chem/Met dealing with all the applications in this broad area such as oxygen absorbers, iron fortification, magnetic paint, raw material for metallurgical and chemical industries, etc.



*Per Lindvall,  
President,  
Höganäs (China) Ltd  
and Höganäs Taiwan Ltd*



*Björn Lindqvist,  
Technical Manager,  
Höganäs (China) Ltd*



*Olof Andersson  
Technical Service Manager,  
Höganäs (China) Ltd*



*Joon Park,  
President,  
Höganäs Korea Ltd*



*Carl Eklund,  
President,  
Höganäs Japan K.K.*



*Roger Hjerth,  
CEO,  
Höganäs Belgium S.A*



*Fredrik Vinnerborg,  
Technical Marketing  
Manager,  
Höganäs AB*



*Ola Andersson,  
Application Manager  
Chem/Met,  
Höganäs AB*

# EVENT SCHEDULE 2005

*Each year Höganäs AB unveils a number of significant developments via technical presentations at conferences around the world – and 2005 will be no exception.*

Members of the Höganäs R&D team will present papers at most of the events below. R&D at Höganäs AB currently has three prioritized areas – Soft Magnetic Composites (SMC), high-performance metal powders for components and high-alloy materials.

#### **PMAsia 2005 Conference and Exhibition**

April 4-6, 2005  
Hilton Hotel, Shanghai China  
A new conference and exhibition dedicated to advancing PM technology in Asia.  
[www.PMasia2005.com](http://www.PMasia2005.com)

#### **2005 SAE World Congress**

April 11-14, 2005  
Cobo Center, Detroit, MI, USA  
[www.sae.org/congress](http://www.sae.org/congress)

#### **PM Auto 2005**

April 17-21, 2005  
Isfahan-Iran  
4th International Conference on Powder Metallurgy of Automotive Parts  
[www.mpmiran.com](http://www.mpmiran.com)

#### **Motortech 2005**

April 20-22, 2005  
Makuhari Messe, Chiba, Tokyo  
[www.jma.or.jp/tf/english](http://www.jma.or.jp/tf/english)

#### **7th International Brake Colloquium**

May 5-6, 2005  
Serrano Convention Center  
Gramado - RS - Brazil  
[www.brakecolloquium.com.br](http://www.brakecolloquium.com.br)

#### **International Electric Machines and Drives Conference**

May 15-18, 2005  
Hilton Palacio del Rio Hotel  
San Antonio, TX, USA  
[www.iemdc05.com](http://www.iemdc05.com)

#### **Uluslararası Toz Metalurjisi Konf.**

May 18-22, 2005  
Sakarya University, Turkey  
[www.epma.com](http://www.epma.com)

#### **16th International Plansee Seminar**

May 30-June 3, 2005  
Reutte, Austria  
[www.epma.com](http://www.epma.com)

#### **The 7th International Technical Exchange & Products**

June 16-18, 2005  
Wuhan, China  
Exhibition on Friction Material  
[www.cfsma.org.cn](http://www.cfsma.org.cn)

#### **PM<sup>2</sup>TEC2005**

June 19-23, 2005  
Montreal, Canada  
International Conference on Powder Metallurgy & Particulate Materials  
[www.mpif.org](http://www.mpif.org)

#### **Sintering 2005**

August 29-September 1, 2005.  
Technology and Applications of Sintering  
Grenoble, France  
[www.emse.fr/sintering05](http://www.emse.fr/sintering05)

#### **Nutrition Safari 2005**

September 19-23, 2005  
Durban, South Africa  
The 18th International Nutrition Congress  
[www.puk.ac.za/iuns](http://www.puk.ac.za/iuns)

#### **Euro PM2005**

October 2-5, 2005  
Prague Congress Centre  
Prague, Czech Republic  
International Conference & Exhibition  
[www.epma.com/pm\\_2005/welcome.htm](http://www.epma.com/pm_2005/welcome.htm)

#### **SMMA Fall Technical Conference**

October 5-7, 2005  
Sheraton Chicago Northwest  
[www.smma.org](http://www.smma.org)

#### **23rd Annual Brake Colloquium & Exhibition**

October 9-12, 2005  
Omni Championsgate  
Orlando, Florida, USA  
[www.sae.org/events/bce](http://www.sae.org/events/bce)

#### **PTECH 2005**

October 26-29, 2005  
Salvador, Brazil  
Fifth International Latin-American  
Conference on Powder Technology  
[www.metallum.com.br](http://www.metallum.com.br)

For a daily update of presentations please visit [www.hoganas.com](http://www.hoganas.com)

## Höganäs

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