

Nolato Magazine

No. 26 / October 2015

New expanded version of The Nolato Spirit

➤ *Find out more on page 3.*

The art of testing a product before it's manufactured

➤ *Find out more on pages 10-11.*

Materials development and aesthetics

➤ *Find out more on pages 12-13.*

Investor interest in emissions reductions | Is 5G the key to the future?
New purification facilities in Beijing | A single contract | New ISO 14001
Planting trees and teaching sustainability in Mosonmagyaróvár

Supporting launch of OTC allergy spray

New packaging was needed when Sanofi gained approval to sell its allergy spray over the counter in the US.



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Rapid mould production for entire Nolato Group

Nolato Telecom's fast mould production makes high-quality moulds for all Nolato companies.



➤ *Find out more on pages 6-7.*

Similar mindset and proximity offer advantages

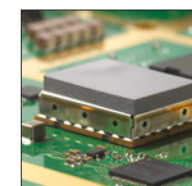
Similar mindset and proximity between supplier and customer make for easier production of the new Volvo XC90.



➤ *Find out more on pages 8-9.*

Efficient thermal management for electronics

CompaTherm, a new silicone material, efficiently diverts heat from sensitive electronic components.



➤ *Find out more on page 14.*



Hans Porat, President and CEO

Welcome to Nolato Magazine!

In recent years, Nolato has strategically repositioned the Group.

We have gone from a being a contract manufacturer that mainly made products to customer specifications, to becoming an advanced high-tech partner that supports customers from concept design to supplying finished products. This allows customers to make use of all the resources and skills available in our Group.

As usual, you can find out more in the current issue of Nolato Magazine. For example, about how we provided quick and efficient support to Sanofi for their launch of an over-the-counter allergy spray in the US. Or read about some of the components we're supplying for Volvo Cars' new XC90.

We also look out our extremely rapid mould production in China, the art of testing products virtually before manufacture, the new concept that's allowing customers to manage development projects to ensure all the necessary skills are involved from the start. And lots more besides!

Happy reading!
Hans Porat



Nolato Magazine is produced for our customers, shareholders and employees, and anyone else with an interest in the Group.
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Increased investor interest in carbon emissions efforts

There is growing interest among investors in business risks and opportunities regarding carbon emissions, and the best-known example of this is the Carbon Disclosure Project (CDP). This project works with investors around the world.

It involves 5,000 of the world's largest companies responding to an extensive annual survey about their work with carbon emissions. The CDP assesses companies' carbon emissions work based on the survey and produces documentation to aid investment decisions.

There are around 200 businesses in the Nordic region that report under the CDP and Nolato participated for the first time in 2014.

Positive experience

"So far our experience of this reporting has been positive," says Nolato's Head of Sustainable Development Torbjörn Brorson. "The results show that the Group's carbon strategy is leading to reduced greenhouse gas emissions. But there are areas that could be improved further, such as the reporting of our carbon emissions from transportation, raw materials and suppliers."

Legal requirements for the reporting of companies' greenhouse gases are constantly increasing. President Obama has announced new reporting requirements in the US, in Europe 6,000 businesses have

to report emissions data and in China over 20,000 firms will soon be required to provide reporting.

In autumn 2014, the EU adopted a directive for publicly listed companies to include sustainability factors as part of their annual financial reporting.

Proposed Swedish legislation

In Sweden, the government is currently following this up with a proposal for mandatory annual reporting of non-financial information that is required to understand a company's performance, financial position, earnings and the impact of its business. The proposed legislation would concern publicly listed companies and other companies that are of public interest, as well as other companies with more than 250 employees and sales of over SEK 350 million. The legislation would apply from the 2017 financial year.

Nolato has provided this type of information about its business for many years in its annual Sustainability Report, which is available to everyone on our website. It also contains information based on Global Reporting Initiative (GRI) guidelines.

Nolato is also a signatory to the UN Global Compact and reports information annually in accordance with the Global Compact principles on the environment, human rights, labour conditions and the combatting of corruption. ■

New Managing Directors for Nolato Hertila and Nolato Jaycare

Stefan Persson is the new Managing Director of Nolato Hertila. He succeeds Håkan Hillqvist, who is taking a less prominent role after 22 years with Nolato.

Stefan is currently Sales Manager at Nolato Hertila and has previous international experience in business development, sales and marketing. ■



Joe Barry is the new Managing Director of Nolato Jaycare. He succeeds Glenn Svedberg, who will continue as Managing Director of Nolato Medical Pharma Packaging and Nolato Cerbo.

Joe joins the Group from Bespak/Consort Medical, where he worked for nine years. Prior to this he worked at companies such as GE and Dow Chemical. ■





Our code of conduct:

Nolato's code of conduct provides guidance on how our business principles and values should be put into practice. It acts as an ethical compass to be followed by all staff within the Group, irrespective of workplace and function. The code of conduct applies to Nolato's Board members and contract-based staff as well. The code also sets out what we expect of our suppliers.

Our code of conduct is based on documents such as the UN Global Compact, international guidelines and conventions, and the ISO26000 social responsibility standard.

We respect human rights

- We treat all people with fairness, dignity and respect.
- We support and encourage diversity.
- We do not treat employees differently on the basis of their gender, religion, age, disability, sexual orientation, nationality, political views, social background or ethnic origin.
- We respect the right of all employees to form unions.
- We do not harass, threaten or discriminate.
- We do not tolerate child labour, illegal labour or forced labour.

New version of The Nolato Spirit with extended Code of Conduct

Nolato has a long tradition of responsible business practice, efficiency and professionalism. A new version of the Group's corporate values booklet, 'The Nolato Spirit', has now been produced.

Nolato has a long tradition of responsible business practice. It's part of the company's spirit to be a good employer and corporate citizen, and to take responsibility for what it does and always apply sound business ethics.

"We believe that a future-oriented, responsible approach is not only necessary from a sustainability perspective, but also that it creates opportunities and business benefits. Especially when combined with our strong focus on efficiency and professionalism," says Nolato President and CEO Hans Porat.

The Nolato Spirit brings together the Group's core business principles and values in terms of business mission, vision, how it achieves its vision and, of course,

Nolato's Basic Principles. The document also contains Nolato's Code of Conduct, which acts as an ethical compass to be followed by all Group employees, board members and others involved in Nolato's operations.

"It also sets out what we expect of our suppliers," notes Hans Porat.

The Code of Conduct has been expanded significantly since the Nolato Spirit was first published in 2009. The previously separate policies on the environment, quality management and information are now incorporated in the Code of Conduct. It is also based on Nolato's undertakings under the UN Global Compact, international guidelines and conventions, and the ISO 26000 social responsibility standard.

"This enhancement of our corporate values document places significant emphasis on the fact that everything Nolato does is connected," says Hans Porat. "We're helping to create a sustainable future by taking responsibility for all aspects of our business, in which both financial and non-financial factors combine and help take us forward." ■

BACKGROUND: The Nolato Spirit

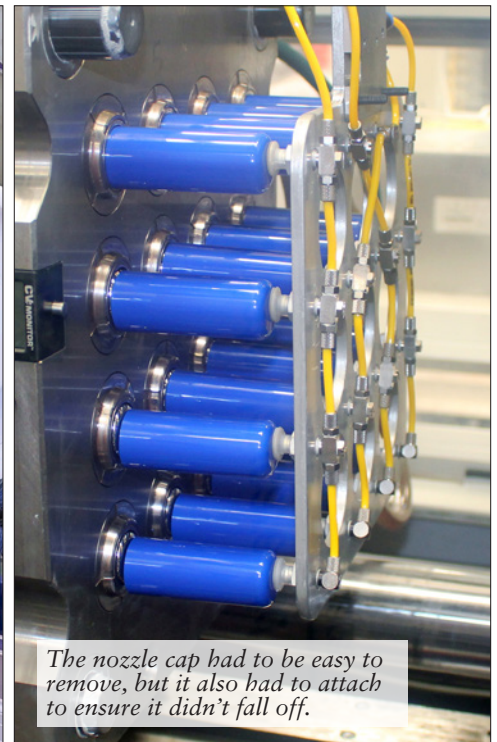
The Nolato Spirit booklet is available in Swedish, English, German, French, Hungarian, Mandarin, Romanian and Malay. It can be downloaded at nolato.com/sustainability

Quick and efficient support for launch of over-the-counter allergy medication in US

When global pharmaceuticals firm Sanofi received a license to sell its previously prescription nasal allergy spray Nasacort as an over-the-counter (OTC) medication, the company received quick and efficient support from Nolato to adapt the existing packaging for the consumer market.



Sanofi needed the new packaging to have the same dimensions as the old packaging in terms of size and shape in order to avoid having to refit filling lines more than was necessary.



The nozzle cap had to be easy to remove, but it also had to attach to ensure it didn't fall off.

Newcastle-based Nolato Jaycare has produced a 20 ml plastic spray packaging solution for Sanofi's Nasacort prescription nasal allergy spray since 2010. A few years later, the opportunity arose to sell the allergy spray as an OTC medication to consumers in the US, which required the packaging to be adapted to new requirements.

Customer and FDA requirements

Sanofi's needs were fairly clear: The OTC packaging would have the same dimensions as the old packaging in terms of size and shape in order to avoid having to refit filling lines more than was necessary. The nozzle cap had to be easy for consumers to remove, but it also had to attach firmly so it didn't come off when stored in a handbag or pocket. Also, there had to be no risk of the cap damaging the dosage pump when removed or replaced.

In addition to these specifications, the US Food and Drug Administration (FDA) had a raft of regulatory requirements for the packaging which had to be met before the medication could be approved for OTC sales.

Realistic simulations

Numerous options were examined during the initial design stages: Transparent or opaque colours? Etched text on the nozzle cap? Tamper-proof? All elements were scrutinised and studied using CAD images and photo-realistic simulations before the final design was agreed on.

Based on the CAD data, realistic prototypes were created using 3D printing, enabling Sanofi to proceed with developing the secondary, outer consumer packaging.

Process-critical testing

As with all development of pharmaceutical packaging, the next stage involved developing production-quality pilot moulds, including comprehensive validation, in order to conduct enhanced testing of the packaging. The tests and amendments carried out on the pilot moulds were critical to the process, as they ensured that the production moulds could then be produced with a minimum of adjustments.

"Throughout the development process there were a lot of teleconferences between our respective project teams in order to



make quick progress, both in terms of resolving issues and making decisions," says Nigel Lawrence, Technical Director at Nolato Jaycare.

These teleconferences were highly constructive, involving significant trust between the project teams, and they only had to meet in person a few times over the approximately 14 months of the project.

This efficient cooperation also meant that the project timetable was adhered to. Towards the end, work intensified on developing and validating various details in parallel with the FDA approval process. This ensured that no time was lost once all the licenses had been issued by the FDA.

Delivery on time

The new packaging was ready for production within the specified time. Sanofi achieved a highly successful launch of the

first OTC allergy spray on the US market. And the customer was satisfied:

"We utilised significant resources in introducing Nasacort to this new market, so it was hugely important for us to get the product to market exactly as scheduled. Nolato's work on the packaging project strongly contributed to this," says Robin Heath, Head of Supply Chain at Sanofi. ■



RAPID MOULD PRODUCTION

Nolato's mould shop in China specialises in the rapid production of moulds for products with high specifications on appearance and precise dimensions.

Rapid production of high-quality moulds for the entire Nolato Group

Nolato Telecom's extremely rapid mould production in Beijing makes moulds with high specifications on appearance and precise dimensions for all parts of the Nolato Group.



Fang Zhang measures a mould.

The telecom industry has long had a strong focus on short lead times for new models of mobile and speed to market is an important competitive factor in the battle for market share.

“Ten years ago one of Nolato's largest telecom customers told us: if you wish to continue being one of our suppliers you will have to supply production moulds for an entire project within two to three weeks at a reasonable cost,” says Mattias Bengtsson at Nolato Telecom.

Halving development time

“The standard lead time then was around five weeks, so it was a pretty tough ask. We had to virtually halve our development time,” he says. “But we took on our customer's request and started creating a world-class mould production unit at our telecom factory in Beijing.”

Since then, the watchwords for the work

and investment in Nolato's Beijing mould shop have been precision, automation and speed.

Highly automated

Being able to rapidly manufacture moulds for mass production of products with high specifications regarding appearance and precise dimensions requires facilities to have both high-quality equipment and skilled, experienced staff.

“The entire supply chain needs to work”, notes Mattias Bengtsson. From product design and mould filling simulation, through mould design, manufacture and verification to a production mould that is approved by the customer.”

“To achieve this we use only equipment of the highest international quality. And to minimise the risk of human error, and ensure maximum productivity and high precision, the shop is highly automated

with robots and handling systems combined with scanning of individual ID chips on all parts of a mould.”

All the necessary measurement data and machine programming for each element on the mould is stored on a central data server. All robots, production machinery and measuring equipment are connected to the server and have continual access to the information required to carry out their tasks.

The focus on automation and precision results in an absolute minimum of manual input and fitting during final assembly of moulds.

Complete control

“This approach also gives us complete control over all mould dimensions, which allows us to quickly produce a spare part or adjust the design,” says Mattias Bengtsson.

This efficient way of working results in a very high ratio of moulds produced per worker at the facility compared with most mould producers in Asia.

“Our staff turnover has been very low since we started, which makes for a stable organisation with a lot of knowledge and good procedures.”

More competitive

Nolato Beijing is entirely self-sufficient in terms of moulds for the production of mobile phone components. And it also produces a lot of moulds for other units in the Nolato Group.

“The short lead time combined with our many years of making moulds for products with exacting demands on precision and quality make the entire Group more competitive in this area,” notes Mattias Bengtsson. ■

BACKGROUND: Moulds

In injection moulding, components are manufactured by filling the cavity of a mould with warm liquid plastic. Once the plastic has cooled and hardened, the final component can be removed by taking the mould apart.

Cutting-edge purification equipment contributes to better Beijing air quality

Beijing’s poor air quality has long been the topic of much discussion and many residents are concerned about the impact of the pollution on their quality of life and health.

Traffic and coal-fired power stations are considered key causes of the problem and a number of measures are being taken to reduce emissions.

Cutting emissions from paint

As part of this work, the authorities have tightened requirements for industrial facilities. Nolato’s Beijing factory has taken a number of steps to reduce emissions from the painting of mobile phone components.

“The main action we’ve taken so far is replacing older purification equipment with more efficient purification processes,”

says Jörgen Karlsson, Managing Director of Nolato Beijing who has lived in Beijing with his family for many years.

Significant reduction

In 2014, a significant investment was made in new, cutting-edge purification equipment, which will lead to a substantial cut in the volume of emissions in 2015.

“Our focus on advanced purification technology has really been appreciated. We were visited by a TV crew who shot a detailed report about how the purification facility works,” says Jörgen Karlsson.

“We estimate the facility will deal with over 95 percent of emissions from painting, which is a good contribution to improving Beijing’s air quality.” ■



The new purification facility at Nolato Telecom’s paint shop in Beijing deals with over 95 percent of emissions from the painting of mobile phones.

Similar mindset and proximity offer advantages in work with Volvo Cars

Volvo Cars' new flagship SUV, the completely redesigned XC90, has just hit the roads. Following several years of development, the car marks the start of a new chapter in Volvo Cars' history.

The XC90 is the first car to be developed using Volvo Cars' new scalable product architecture (SPA) and, as well as containing a raft of new, in-house developed technology, it showcases Volvo Cars' new design approach.

In addition to the components for the new four-cylinder Drive-E engines featured in issue 24 of Nolato Magazine, Nolato is also supplying a number of other components for Volvo Cars' new premium SUV. Some are being supplied direct to Volvo Cars, while others are going to its tier-1 systems suppliers. This issue of Nolato Magazine takes a closer look at two interesting components for the new XC90: the cooling fan and the large plenum cover.

Premium fan for a premium car

The components for the cooling fan in the new Volvo XC90 are manufactured by Nolato Plasttechnik in Gothenburg.

The fan and its cowling are injection-moulded together with the casting of metal bushes for fitting in the car. This involves fairly large components and manufacturing takes place in two parallel injection moulding machines, one of them weighing 650 tonnes and the other 1,000 tonnes.

"Volvo Cars has very high specifications for these components," says Christian Meding, Head of Sales and Marketing at Nolato Plasttechnik. "The tolerances are very small and as the fan is in a premium car it needs to offer a premium function." So after each injection moulding, each fan

is balanced using a balancing machine and laser measuring equipment with a camera.

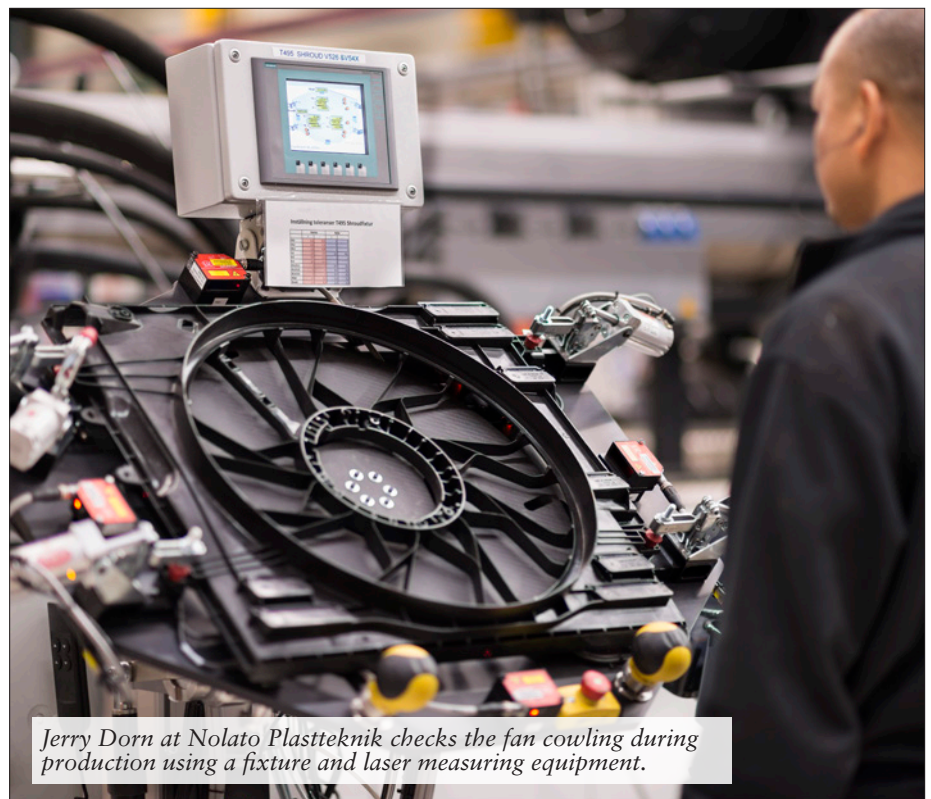
"There can be no possibility of fluctuations and noise when the fan is mounted in the vehicle," says Christian Meding.

Extensive cooperation with Brose

The fan and its cowling are supplied to Volvo Cars' systems provider Brose, a world leader in mechatronic products for

the automotive industry. In addition to fan systems, Brose also manufactures door modules for Volvo Cars in Gothenburg.

The cooperation with Brose began many years ago with simpler plastic components for its door modules. Since then, the collaboration has developed to involve increasingly advanced components with high specifications for tolerances and measurement during production.



Jerry Dorn at Nolato Plasttechnik checks the fan cowling during production using a fixture and laser measuring equipment.

“We’re very proud to have won this contract from Brose,” says Christian Meding. “These components show that Nolato is among the very best injection mould suppliers for the European automotive industry.”

Large screening component

The plenum cover is a component that spans the width of the car and covers the space between the bonnet and the windscreen. Its purpose is to conceal and provide insulation from the windscreen and under the bonnet towards the engine bay. It helps divert rain water from the windscreen to the drainage system.

It also covers the cabin air intakes, the brake and screen wash fluid containers and the windscreen wiper motors.

“This is a very large component,” says Klas Persson, Head of Sales and Marketing at Nolato Gota in Götene, Sweden. “It’s manufactured using two-component injection moulding in a 1,700 tonne injection moulding machine that’s nearly 20 metres long.”

Production takes place in a newly constructed facility equipped with an overhead crane that can lift 40 tonnes in order to handle the large injection moulds needed for this component.

High expectations

“It’s a pretty complex component with high specifications on performance and tolerances,” says Klas Persson. “And as it’s visible on the car, it also needs to have a high-quality appearance. As well as injection moulding, we also incorporate metal bushes to mount the fan in the car and fit gaskets.”

The gaskets are made from a rubber material that is mixed with nitrogen gas and injected direct onto the plenum cover with a precise thickness and shape. By adjusting the amount of nitrogen gas the density can be controlled to meet the customer’s exact requirements.

Openings are then fitted for refilling brake and screen wash fluid along with other features such as a bonnet gasket. The component is then delivered in special reusable packaging to Volvo Cars’ assembly plant in Gothenburg.

Early involvement in the project

“We became involved early on in Volvo Cars’ XC90 project and have supported the customer in developing this component by highlighting what’s possible to produce and how the injection mould could be formed,” says Klas Persson. “Early involvement has meant that the customer’s component is better adapted to smoother and more efficient production.”

Nolato Gota also manufactures the inlet

manifold for Volvo Cars’ newly developed series of engines, which are also used in the XC90.

“We’re pleased that Volvo Cars has entrusted us with these projects. Our two companies are quite close both geographically and in terms of mindset. This makes it easy to have joint technical meetings and to quickly get together instead of having to pre-plan long business trips. That makes things easier for both sides.” ■



Heidi Sandin, operator at Nolato Gota, with the large plenum cover, which is manufactured using a 1,700 tonne injection moulding machine that is 20 metres long.

Testing products before they're manufactured

How do you ensure everything is done correctly from the start of production while keeping control of costs and time?

All product development involves numerous uncertainties, such as: will this work in practice, have we chosen the right thickness of material, will this spring tolerate the number of compressions required by the customer? Uncertainties that depend

on uncontrollable factors such as what temperature the product will be used in, humidity and how the user handles the product.

It's pretty standard to try to avoid uncertainties by reducing the range for the high-

est and lowest application temperature, opting for more expensive materials and adding certainty factors such as thicker material. But these all lead to making the product more expensive than it actually needs to be.

"There are a lot of examples of a safety margin being added to all of a product's components," says Anders Nilsson, a technical physicist and product developer at Nolato Medical's Technical Design Centre (TDC). "Or where small adjustments are still being made here and there to get the product to work optimally years after the launch of the first version."

A simple example of the advantages of testing a product before it's manufactured:

Nolato's developers are able to use simulations at the design stage to identify, for example, that the spring in this automatic dosage device for subcutaneous medicines can only cope with five injections instead of the required ten. By continuing to conduct virtual testing, they are able to achieve an optimal design so the spring has exactly the right strength. Or perhaps come up with a completely different design that is even more innovative and sustainable. ■



Robust design

A significantly better solution is therefore to test the product virtually before it's manufactured so that a 'robust design' can be ensured from the very start.

"Robust design is based on optimising the product's ability to allow for the variations that occur in manufacturing, use and the environment in which the product is used," says Anders Nilsson.

This method is based on the approach developed in the 1950s and 1960s by Japanese quality management expert Genichi Taguchi. The approach has since been refined and adapted to the possibilities offered by today's advanced computer simulations.

"The first thing we do to achieve a robust design is to identify the requirements of the customer, users and regulatory authorities that the product has to meet. Some of these correlate with each other, so the first stage, and the one that provides the best value for money, is to develop a

design that fulfils these requirements,” says Anders Nilsson.

Virtual testing is best

Requirements that conflict with each other remain, however, and may be hard to resolve. Anders says there are four ways of managing these:

- 1 Ignore conflicting requirements and hope for the best.
- 2 Prevent conflict by, for example, setting reduced temperature ranges for use.
- 3 Turn the requirements into an advantage by adapting the design.
- 4 The same as point 3, but increase the effect by combining a number of factors that generate synergies.

“Obviously we aim to work according to these last two methods”, he says. “So in our projects we endeavour to avoid the traditional trial and error method, which can be expensive for the customer. Instead, we carry out virtual testing of all a product’s properties and functions using advanced computer simulations before the product is made. This allows us to test the product before it’s produced, which both reduces development costs and saves time.”

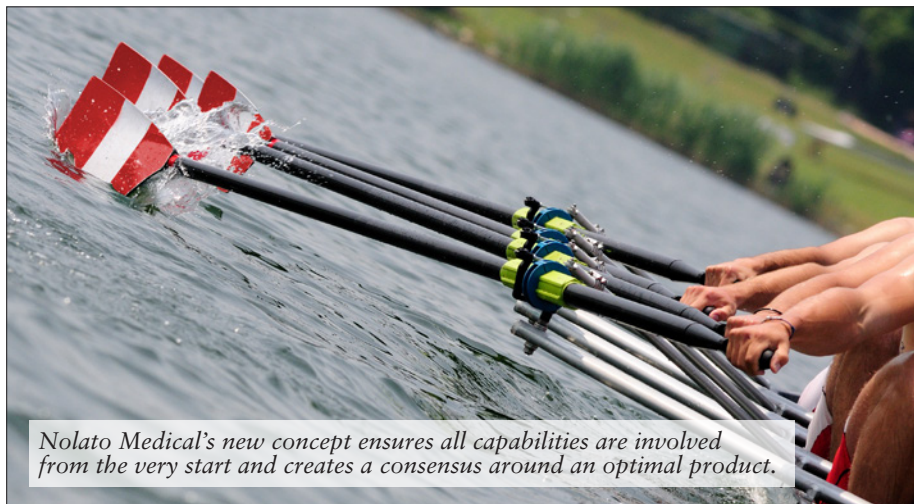
Get it right from the start

The challenge is to find smart solutions to resolve conflicting requirements. Developers use simulations at the design stage to identify problems and find good solutions.

“So in practice robust design is about being able to do things right from the beginning when the product starts to be manufactured,” says Anders Nilsson. “Before that we can perform virtual tests, make changes and find the best solutions while maintaining control over costs and time.” ■

BACKGROUND: Robust design

Robust design is a development methodology that makes it possible to test a new product virtually before it’s produced, allowing for the creation of a better product that is less sensitive to variations in production and use.



Nolato Medical's new concept ensures all capabilities are involved from the very start and creates a consensus around an optimal product.

A single contract and a single point of contact

Nolato Medical’s new network-based ‘Better Together’ concept, which was presented at this year’s Medical Camp, creates an even better basis for managing successful projects.

Making things easier for customers

This concept aims to make things easier for customers so they only need a single contract and a single point of contact for the entire process, from development to delivery of a new product.

Nolato Medical puts together a project team whose own capabilities are supplemented with skills from industrial designers, toolmakers and other resources needed for the project.

“It’s a bit like constructing a building, with the construction firm taking an overall approach and also including the relevant aspects for the electrician and plumber in the contract with the customer,” says Kristoffer Glowacki, Head of Technology and Sales at Nolato Medical.

Flexible teams

Unlike other companies in the medical technology market that have expanded their capabilities by buying up design companies and consequently being bound to always use that company, Nolato Medical can put together a team based on the customer’s needs.

“Our model is based on flexibility,” notes Kristoffer Glowacki. “If the customer wants a comprehensive team, that’s what we provide. But if the customer would prefer to work with a specialist design firm, we bring them into the team and include their services in our overall undertaking to the customer.”

More efficient and reliable

This new concept aims to achieve more efficient and more reliable project management. It also provides the entire project with the right structure.

In a fragmented project the suppliers have less influence later on in the project, which leads to their hands being tied and constant compromises.

Nolato Medical’s new concept is for all capabilities to be involved from the very start and create a consensus on how the product should be designed to achieve optimal results for all aspects of the work.

“Formalised cooperation with a single contract and a single point of contact for customers means all the parties involved are working towards the same goal. There’s no us and them, just a shared endeavour to deliver the product at the right time, with the right function, at the right quality and the right price,” notes Kristoffer Glowacki. ■

Attractive jewellery with advanced electronics

If you'd developed a method to make it easier to mass-produce a sustainable material with a natural beauty and an exceptionally smooth surface, wouldn't the obvious thing be to make a piece of jewellery from it?



Miragii, a highly reflective ceramic pendant, sparked significant interest among visitors at the trade fairs CES in Las Vegas and WMC in Barcelona. But Miragii isn't

just beautiful, it's also smart, which is what these trade fairs are all about.

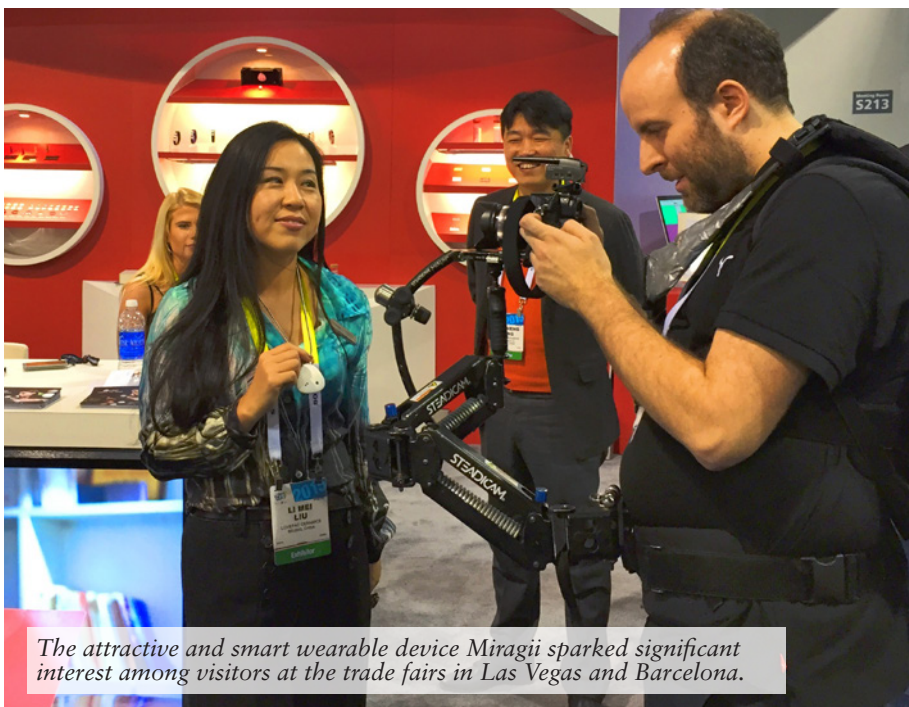
That's because Miragii is a high-tech wearable device, containing advanced elec-

tronics and functions enabling the wearer to leave their mobile in their bag. The wearable device vibrates when the phone rings and to see who's calling the user can project the information onto their hand.

Calls can even be answered using an integrated detachable hands-free unit.

This smart pendant has been produced by Chinese developer HTSmartech in close collaboration with Nolato. The jewellery is made of zirconia (zirconium dioxide), a highly durable ceramic that is chemical-resistant, has a natural beauty and an exceptionally smooth surface. In addition, the material is fully biocompatible, which means wearers of the jewellery won't suffer any allergic reaction.

Use of zirconia has previously been restricted by an extremely complicated production process. Together with researchers at universities in China and Europe, Nolato has developed a method to simplify the production process that is suitable for mass-production of products with high specifications for appearance and surface quality. ■



The attractive and smart wearable device Miragii sparked significant interest among visitors at the trade fairs in Las Vegas and Barcelona.

Meet Dan Wong ...

... Managing Director of Lövepac Converting, which developed the attractive material used for Miragii. Why are you getting involved in jewellery? It's quite a change from your usual business of manufacturing small cosmetic components for mobile phones! "We got involved in developing this exciting piece of jewellery because we saw it as a good way of demonstrating our knowledge of ceramic materials. And it's had the desired effect and generated significant publicity and lots of interesting customer contacts."

Are you planning to produce more items of jewellery?

"We don't plan to expand our customer offering with jewellery; the work on Miragii is intended to showcase that Nolato is a high-tech, innovative company that also has expertise in ceramics. It's a material that's of great interest which we'll soon also be seeing in mobile phones as it's suitable for cosmetic components and other features such as fingerprint readers. But we've also received enquiries from customers involved in many other fields."

What's so special about zirconia?

"It's an amazing material that is extremely durable, very hard to scratch, chemical-resistant, and has a natural beauty, an exceptionally smooth surface and high thermal stability. It's non-conductive and can be produced down to a thickness of only 0.1 mm." ■



It's an amazing material, says Dan Wong, MD of Lövepac Converting.



The new version of ISO 14001 requires environmental issues to be integrated into strategy and business plans, which is something that Nolato already does.

Nolato involved in developing new environmental standard

Nolato works with both technical standards and management system standards. All of the Group's units are certified to ISO 9001 for quality management and ISO 14001 for the environment.

Many of them are also certified to various industry standards, such as ISO 16949 for the automotive industry and ISO 13585 for medical technology. Within a few years all units should also be certified to the OHSAS 18001 health and safety standard (see issue 25 of Nolato Magazine).

All standards have a 'best-before' date and are regularly updated by the International Organisation for Standardisation (ISO). New versions of ISO 9001 and ISO 14001 are to be presented soon, after which certified companies will have three years to adapt to the new standards.

Easier to integrate standards

Nolato's Head of Sustainable Development Torbjörn Brorson is part of the Swedish interpretation group for the new standard. "A lot of comprehensive changes have been made and only one-third of the original content has been left unchanged. It will also be easier to adopt an integrated approach to working with ISO 9001, ISO 14001 and other management system standards as they are based on a shared structure and identical terms and definitions."

The ISO 14001 environmental management standard contains a new requirement for companies to identify the issues and interests that are relevant to understanding a company's situation and abilities to implement planned environmental measures.

Considering opportunities

"Another area that has gained attention is the requirement to focus not only on risks but also on opportunities within the area of the environment," notes Torbjörn Brorson. This includes an analysis of the link between environment and business benefits.

"Environmental issues are also to be integrated into a company's strategy, business plans and vision. That's something that Nolato has been doing for some years at Group level."

The new version of ISO 14001 also emphasises that it is the company management that is ultimately responsible for environmental and quality management work.

"Nolato has started working on adapting our systems to the new standards by bringing all the Group's environmental and quality managers together for an initial review of the changes," says Nolato's President and CEO Hans Porat.

"Our experience of these various ISO standards has been very positive and we obviously want the new versions in place." ■

New silicone material provides efficient heat dissipation

Thermal management is a hot topic. How do you efficiently divert the heat generated by electronic components to ensure they're not damaged?

Each new generation of electronic equipment gets smaller, while also offering greater capabilities and speed. But the combination of increasingly powerful and, consequently, hotter components packed tightly onto a small surface means the heat needs to be efficiently diverted away from active components. Otherwise the electronics could suffer damage.

This has resulted in thermal management becoming an increasingly important area for electronics engineers.

Heat sinks positioned above hot components have traditionally been used. But their efficiency is impaired by the fact that they do not have direct contact with the surface of the components.

“Filling this space with a thermal inter-

face material, TIM, dramatically increases the cooling effect”, says Johan Falk, business developer at Nolato Silikonteknik.

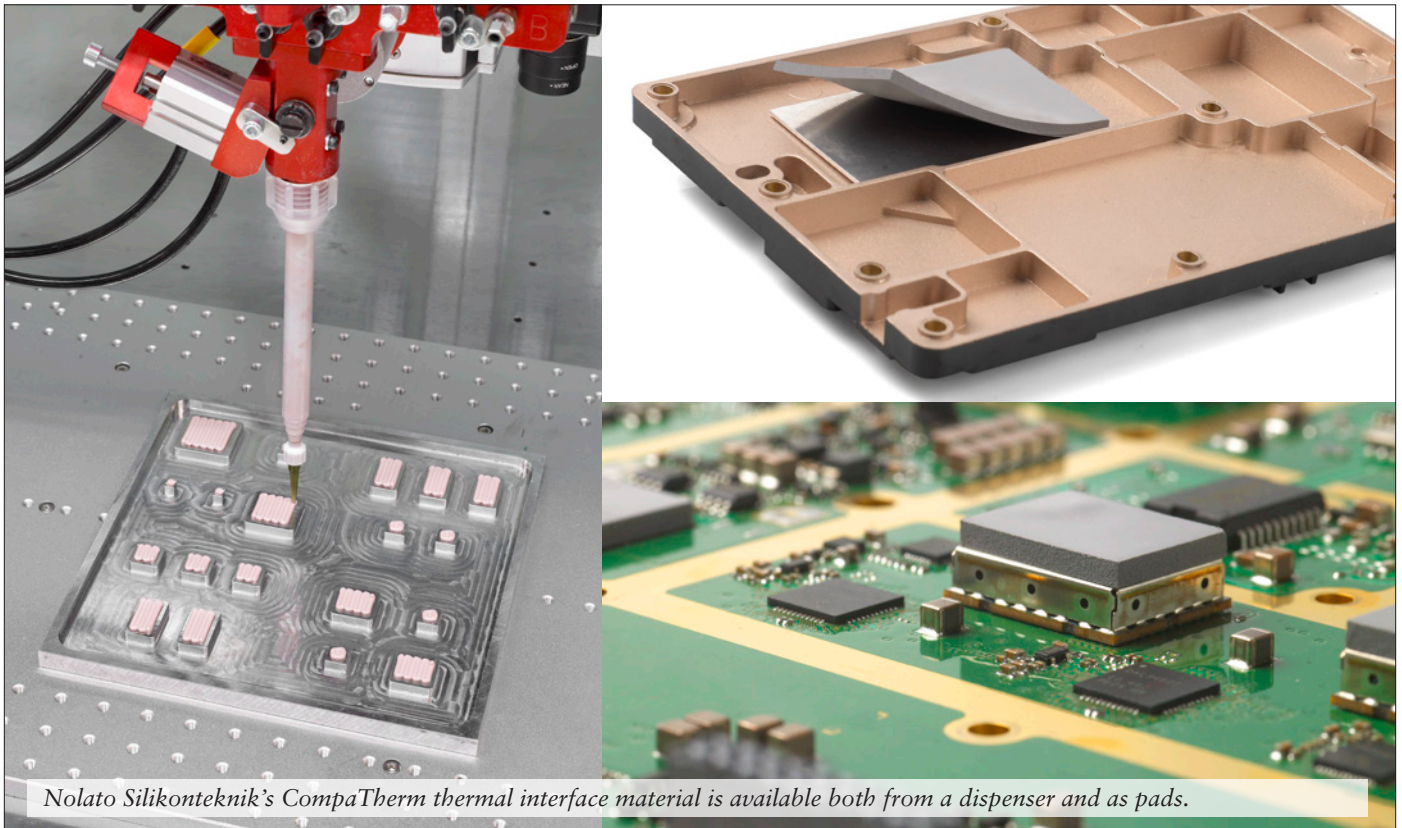
Thermal interface material

Nolato Silikonteknik has developed an effective TIM based on the company's extensive experience of solutions for electromagnetic compatibility (EMC). It is positioned directly against both the electronic component and the heatsink, filling the air pockets and irregularities that otherwise prevent heat dissipation.

The material is now used for more efficient cooling of electronics in the telecom, automotive, home electronics, IT and medical technology sectors.

“Our TIM, which we market under the CompaTherm brand, consists of silicone that contains a thermal interface material with an electrically insulating filler,” says Johan Falk. “This creates a soft but stable cushion that gives our product both good mechanical properties and an excellent ability to dissipate heat.”

CompaTherm is available in two forms; from a dispenser or as pads. ■



Nolato Silikonteknik's CompaTherm thermal interface material is available both from a dispenser and as pads.

SUSTAINABILITY IN PRACTICE

Planting trees and teaching kids in Mosonmagyaróvár

What do you do when you have to cut down trees when expanding a factory? You plant new trees. Then why not also take the opportunity to show children from the local school sustainability in practice?

When Nolato extended its Hungarian plant recently at Mosonmagyaróvár it had to cut down some trees to make way for the new buildings. Nolato Hungary's management decided to plant not one but four trees for every one that had been cut down.

Some of the new trees were donated to the town's parks and were planted there, with the rest being planted in green areas around the factory site.

Nolato also took the opportunity to invite year 8–9 year-olds from the local

school to teach them about sustainability in practice.

"The children also helped plant the new trees and then were given a tour of the factory," says Norbert Meleg, Head of Sales and Administration. "We explained the importance of companies being sustainable and how Nolato works with these issues, all at the school children's level."

The visit by the children was successful and they were then able to develop their experience further in the classroom. ■

