

Ultrason is the trade name for the BASF product range of polyethersulfone (Ultrason® E), polysulfone (Ultrason® S), and polyphenylsulfone (Ultrason® P). The products withstand temperatures up to 220 °C without altering their properties, and they possess outstanding chemical stability.

## Epson introduces SureColor Dye-Sublimation Printer in America

Epson America launched on January 17, 2014 its latest dye-sublimation printer designed for the roll-to-roll digital textile market

The new Epson® SureColor™ F7170 joins the complete line of SureColor F-Series printers, including the F6070 and F7070, and integrates true roll-to-roll support for unmatched levels of performance, reliability, and image quality for the fabric production and soft signage markets. Designed exclusively by Epson, the optimised Epson MicroPiezo® TFP® print head and Epson UltraChrome® DS ink system enables the SureColor F7170 to deliver high quality printing for a range of dye-sublimation applications with superior dot control, precise and repeatable performance and excellent longevity.

A new highly accurate take-up reel and substrate system delivers winding accuracy between zero and .19 inches on transfer paper rolls for a wide range of digital textile applications, including flags, banners, home furnishings, and apparel manufacturing. Built for increased productivity, the SureColor F7170 also features a high capacity ink tank system with refillable bags to allow continuous printing through a full roll of media, without running cleaning cycles, and a new post-platen heater for faster drying times.

According to Catalin Frank, product manager, Professional Imaging, Epson America, Inc. “the SureColor F7170 was designed to enable digital textile producers to increase productivity, minimise downtime and maximise profitability.

The combined power of Epson’s MicroPiezo TFP print head technology, with an advanced feature set, and industrial level performance, enables customers to manage high quality dye-sublimation printing across a range of applications, all day, everyday”.

The Epson SureColor F7170 will begin shipping in summer 2014 through Epson’s select F-Series dealers. The product offers a standard Epson Preferred (SM) Limited Warranty, a one-year-program that includes toll-free advanced telephone access Monday through Friday, and usually next business-day on-site service.

## South Africa’s textile and clothing industry has benefited the least from growth in the clothing retail sector

Retail demand for clothing in South Africa has expanded significantly since the world recession. But the main beneficiaries have been foreign suppliers rather than the industry in South Africa itself.

The retail sector in South Africa has expanded as a result of an improvement in the distribution of goods and the development of suburban shopping centres, and a stimulation of consumer demand stemming from low interest rates, real wage increases, increases in government subsidies and low inflation.

Much of the required impetus to growth in the retail sector has come from an increase in disposable income and growing affluence among South Africa’s black majority -- particularly the emerging black middle class and “buppies”, or black up-and-coming professionals. However, the main beneficiaries of the expansion in retail demand have been foreign suppliers located mainly in Asia and other countries in Sub-Saharan Africa.

In fact, South African clothing imports increased by 53.5% between 2008/09 and 2012/13, from R8,079 million to R12,399 million (US\$1,457 million).

China, Mauritius and Madagascar were the sources of 99.8% of the growth of imports into South Africa in absolute terms over the four-year period. Imports from China grew by 59.0%, imports from Mauritius soared by 188.9% and imports from Madagascar surged by a staggering 644.7%.

South Africa’s domestic clothing industry, on the other hand, has consolidated substantially in recent years as factories have been closed and workers have lost their jobs.

At the same time, a number of the larger manufacturers have sought to preserve their market shares by forging financial links or strategic alliances with the major South African retailers.

But in spite of declines in the numbers of clothing factories and employees, output by the clothing industry reached its highest level for at least ten years in 2012, reflecting a sharp rise in labour productivity.

The South African government has recognised that the textile and clothing industry has the potential to become a significant employer within the country’s manufacturing sector.

Consequently, the government is pursuing policies to stop the decline of the industry and facilitate its growth.

of natural processes, such as fermentation, to transform raw materials into ingredients with nutritional or functional benefits. The goal is a closer collaboration with A\*STAR will enable Nestlé's team of food technologists, food engineers, chemists and microbiologists to share their knowledge and understanding in multiple areas of food science and to strengthen Nestlé's position as a global leader in food science, nutrition and technology.

## China's GDP grew 7.7 % in the fourth quarter 2013

China's fabulous growth rates can no longer be achieved, but GDP Gross Domestic Product grew 2013 at 7.7 %, matching the result of 2012. The same figure is also true on an annual basis

Former World Bank President Robert Zoellick met yesterday with high ranking officials from China and stated "China's leadership has recognised that China needs to change its growth model". He added: "It will not be a Big Bang process. We will see, in Chinese fashion, a series of steps, which if successful, will pick up momentum." Zoellick heads now Goldman Sachs' international advisory board.

7.7 % growth in the fourth quarter and against the same period of 2012 is a bit slower than the 7.8 % posted in the third quarter. That translates into 7.4 % growth on a quarter-to-quarter annualised basis, but China does not report such a figure as other nations casually do.

China's retail sales 2013 increased 13.1 %, in 2012 the growth rate was 14.3 %.

According to WSJ Wall Street Journal this lower retail figure shows also the toll paid for the anti-corruption rules.

China is looking forward to the pickup of international trade, foremost that the economies of Europe and the USA are improving. The World Bank estimates that world trade growth 4.6 % in 2014, for 2013 the figure was +3.1 %.

It is likely, that China will replace America as the world's largest trader in 2014. Exports grew in China 7.9 % in 2013 and the figure estimated in 2014 is 8.9 %.

Chinese observers indicate that exports for instance of shoes are picking up, but it is difficult to make a profit, because of higher costs of labour and materials and an appreciating Chinese currency.

On the other hand, the disposable income settled at 7 % in 2013, in 2012 it was 9.6 %.

The sales of cars remained unusually strong in 2013 (+14 %) and the beneficiaries were Ford, GM and BMW.

Industrial production in China slowed in December to 9.7 %, a second monthly decrease in a row.

New property under construction was up 33 % on the fourth quarter, however on consumer level, property sales growth is declining, meaning that developers will start to hold back in the months ahead.

The stock of total social financing (debt) is now twice the size of the Chinese economy, growing by a fifth 2013. GDP, including the effects of inflation, decreased to 9.5 %, and was dropping 18 % in just two years.

## Clariant closes sale of Detergents and Intermediates business

Clariant, a world leader in specialty chemicals, announced on January 7, 2014 the closing of the sale of its Detergent and Intermediates business to ICI International Chemical Investors Group

The total consideration of the sale amounts to CHF 58 million, out of which CHF 20 million in cash became due at closing. Worldwide 660 employees were transferred from Clariant to the new ICI business, which from now on will operate under the WeylChem brand umbrella.

The disposal of the Detergent and Intermediate business was announced on October 15, 2013 and followed the already divested Business Units Textile Chemicals, Paper Specialties and the Business Line Emulsions on September 30, 2013. The divestment of the Business Unit Leather Services to Stahl Holdings B.V. is expected to close over the next few months.

## BASF opens first Ultrason plant outside of Germany

On January 20, the German Chemical Giant BASF inaugurated the new plant for Ultrason® polyarylsulfone in Yeosu, Korea

Ultrason® is one of BASF's high performance thermoplastics. The new plant has annual production capacity of 6000 metric and is destined to serve better the growing market in Asia Pacific, and in particular it caters to China and Japan. The new plant is the first of its kind built outside of Germany and brings the company's global capacity to 18000 metric t annually. With this investment, BASF creates 50 new jobs at its Yeosu site. Ultrason is widely applied in the electronics, automotive and aerospace industries for the production of heat-resistant, lightweight components. Other popular Ultrason applications include membranes for water treatment, fittings for drinking water pipelines or food contact parts as in espresso machines, or microwave proof dishes. Ultrason is further used in the production of carbon fibre composite materials.



leg-up in terms of market share and momentum. Kent Bicycles is taking the opportunity to become one of those first movers with its facility in South Carolina.”

Walmart also announced that it will host its second U.S. manufacturing summit in Denver, Colorado (USA) in August 2014. This year’s summit will focus on connecting manufacturers in need of component parts to factories with excess capacity.

Walmart and the Walmart Foundation will additionally fund a five year programme of USD 10 million on innovation. They will be working with the U.S. Conference of Mayors to launch it in March. The fund will provide grants to innovators in the manufacturing sector and seeks to create new processes, ideas, and jobs that support America’s growing manufacturing footprint.

Simon stated: “If we want to grow manufacturing and help rebuild America’s middle class, we need the brightest minds in our universities, in our think tanks and in our towns to tackle obstacles to U.S. manufacturing. The USD 10 million fund will identify and award leaders in manufacturing innovation and help us all work together to create opportunity.

It is a proven fact that 72 % of Walmart suppliers believe that manufacturing in the U.S. will be cost favourable within four years or less. 40 different departments at Walmart are in active discussions with suppliers to manufacture in the U.S.

## New cool Black Master batches for textile fibres beating heat

The new product will be traded under REMAFIN® Cool Black, the tailor made master batches are intended to replace more conventional products that use carbon black pigments. Polypropylene (PP) carpet yarns made with the new Cool Black master batches are ideal for carpeting used outdoors on decks or boats where the heat of the sun can make dark surfaces uncomfortable to walk on. The same technology can be applied also in textile applications such as apparel and upholstery and in resins other than PP, including polyester and nylon.

REMAFIN® Cool Black has been developed at the Clariant facility in Dalton, Georgia (USA), specialising in the production of master batches that go into fibre based end products such as carpets and various types of textiles. The plant houses an application development lab with a pilot scale fibre line and yarn samples can be produced in almost any colour and new formulations can be tested.

Clariant engineers compared how yarn made with conventional carbon black pigments performed against Cool Black formulations. Yarns made with Cool Black master batches remained about 10 ° C and about 20° F cooler than the control samples. Acceptable colour saturation was

achieved at 7 % master batch loading, which was comparable to the loading used with carbon black master batch. More details are available to interested customers.

REMAFIN® Cool Black master batches developed in the USA are available globally through regional and local Clariant offices in more than 55 countries. Clariant Masterbatches business unit has outstanding knowledge about adding colour and functionality to synthetic fibres and can help create brilliant colourful solutions to carpets, clothing, automotive interiors, nonwovens and artificial turf. Additive master batches enhance durability, UV stability, flame retarding, anti-bacterial and many other performance properties.

## Singapore is gaining an important position in research

Important companies are seeking collaboration with research bodies in Singapore. BASF, the German chemical giant is entering a partnership with National University of Singapore (NUS), and Swiss Nestlé, the food giant with the Singapore government’s Agency for Science, Technology and Research, A\*STAR

BASF and the Graphene Research Centre (GRC) at the National University of Singapore Faculty of Science have partnered to develop the use of grapheme in organic electronic devices, such as organic light emitting diodes (OLED). The goal of this collaboration is to interface grapheme films with organic electronic materials for the creation of more efficient and more flexible lighting devices.

According to Dr. Josef R. Wünsch, BASF Senior Vice President Modelling & Formulation Research, stated: Graphene is a fascinating material, with regard to both its electronic properties and its mechanical strength. BASF has been engaged in the research of grapheme for several years and is now ready to enter partnerships with excellence research centres in order to complement and speed up the BASF device development”.

The NUS team at GRC will be responsible for the synthesis and characterisation of the grapheme. The researchers have already developed a patent pending methodology for the reliable growth and transfer of high quality grapheme films onto different flexible substrates that can be used in solar cells and lighting panels. BASF develops and provides organic active materials that allow for its integration into a device, jointly with grapheme films. Food giant Nestlé has entered into a strategic partnership with the Singapore government’s Agency for Science, Technology and Research, A\*Star, with the aim to set-up global research programmes in food science and technology.

The agreement will focus on areas such as nutrition, packaging, data analytics and biotransformation, the use



# World Textile News

## Karl Mayer's majority acquisition Liba changes its name

The integration of the two worldwide leading companies in the areas of development, manufacturing and delivery of warp knitting and technical textile machinery is implemented according to plan

LIBA Maschinenfabrik will be incorporated in the Karl Mayer group and under the name of Karl Mayer LIBA Textilmaschinenfabrik GmbH.

The project "Best of both worlds" is well progressing by designating solutions for products, processes and concepts. According to plan the project should be finalised in the first half year. Meanwhile the business of both parties in view to product and market approach will continue unchanged.

The total integration of LIBA into the Karl Mayer business unit structure will start after the completion of the above mentioned steps and should be concluded by the end of 2015.

## Walmart is bringing back manufacturers to America

TextileFuture has been reporting on the commitment of Walmart that it will buy an additional USD 50 billion in American products or USD 50 billion more than it does today 10 years from now

Walmart estimates that its USD 50 billion pledge, in the 10th year, will result in Walmart buying an additional USD 250 billion cumulatively over the next 10 years. This pledge is in an effort to grow U.S. manufacturing and encourage the creation of U.S. jobs.

In turn, Boston Consulting Group predicts that this USD 250

billion investment will create one million jobs, including the jobs in manufacturing and related services.

For the time being, TextileFuture notes that there are also textile and clothing manufacturers profiting. Since the U.S. economy seems to slowly recover, there are many companies deciding to bring production back to the U.S., especially because energy costs are much lower than in some emerging countries. It will be of interest to see if there is a real rebirth of textiles and clothing made in USA.

Back to Walmart, Walmart U.S. President and CEO Bill Simon joined 280 of the nation's mayors in Washington, D.C., at the U.S. Conference of Mayors Meeting to announce a new fund for innovation in American manufacturing and a new supplier commitment to bring production of bikes and jobs to South Carolina. Kent Bicycles announced its moving production from overseas to Clarendon, S.C. When at full capacity in 2015, they will have added at least 175 jobs and will be assembling 500,000 bikes annually. The company, based in Parsippany, New Jersey, expects to start production in the fall of 2014.

Arnold Kamler, owner of Kent Bicycles explained: "We look forward to bringing production to South Carolina. Our company moved all manufacturing overseas in 1990, because it was so much more cost effective. When Walmart made its commitment to U.S. manufacturing last year, it opened our eyes to restart some manufacturing here. We attended Walmart's August manufacturing summit (there were over 1500 attendees, including 500 suppliers, 34 states and government officials to discuss opportunities to create jobs, restore communities and drive economic growth) and were able to focus our efforts quickly and make things happen with South Carolina". He added: "Those that have already taken the risk to move or expand manufacturing in the U.S. tell us they are experiencing a first mover advantage – a significant





Results showed that in optimized statistical conditions, cotton fabric was produced with shrinkage of over 99% of the gram-negative bacterium of *Esherichia coli* and reduction of more than 97% of gram-positive bacterium of *staphylococcus aureus*. According to Dr. Ali Nazari, one of the researchers of the study, the created antibacterial properties are stable and they were created due to the production mechanism of species activated by titanium dioxide nanoparticles when they are exposed to ultraviolet light (UV-A).

Considering the stable antibacterial properties of the cotton fabrics produced in this method, the worries can be lessened for the feeding, growth and proliferation of harmful bacteria such as gram-negative bacterium of *Esherichia coli* gram-positive bacterium of *staphylococcus aureus* on the fabrics used in the production of clothes.

## Tehran hosts 1st apparel trade exhibition

The Iranian capital city of Tehran recently concluded its very first garments exhibition, the Tehran Apparel Fair, in order to introduce top Iranian apparel brands in the country to domestic consumers.

Organized by the Iran Textile Exporters and Manufacturers Association, the apparel fair saw nearly 45 Iranian clothing brands exhibit their latest products to domestic consumers, reports Press TV of Iran.

The main aim of organizing the event was to encourage domestic apparel producers in the country to invest in creating their own brands, and connect the manufacturers of garments to the distribution network.

Mahdi Yekta, secretary of the Iran Textile Exporters and Manufacturers Association, said the idea behind the fair was to make the Iranian customers aware about the high-quality apparel products manufactured by domestic producers.

More than US\$ 5 billion worth of clothing was imported officially and unofficially during last year in the country, despite local producers having the capacity to supply at least 60 percent of the domestic demand, he added.

According to Mr. Yekta, in order to empower the Iranian apparel market, domestic producers need to make efforts to create brands with which consumers identify and manufacture new high-quality products to meet with the Iranian customers' demand.

## Significant trade expected with Uzbekistan, says Iran

Iranian Ambassador to Uzbekistan Ali Mardani Fard expects significant development of Uzbek-Iranian cooperation in 2014, the ambassador said at a press conference in connection with

the 35th anniversary of the Islamic revolution on Feb.10.

After the establishment of diplomatic relations in May 1992, association between Iran and Uzbekistan is developing on the principles of mutual esteem and benefit thanks to the historic and cultural ties between the two countries, the ambassador said.

Throughout 22 years of diplomatic relations, nearly 50 intergovernmental and interagency agreements were signed on cooperation in various spheres that determine the directions of interaction.

Uzbekistan's location in the heart of Central Asia and Iran's geographical position as the nearest, secure and economical way of access for countries of the whole region to world markets through the Persian Gulf and the Oman Sea, is the most important prerequisite for the development of economic relations between Iran and Uzbekistan, according to the head of the Iranian diplomatic mission.

The two countries mutually complement each other in economic terms, allowing the import of high quality and affordable Iranian goods instead of the low quality and expensive products of some other countries.

Given the agreements signed between the parties in the field of transportation and trade and economy, the necessary conditions were created for the expansion of interaction and the implementation of the quadripartite agreement on the establishment of the Uzbekistan - Turkmenistan - Iran - Oman international transport and transit corridor that will give a strong impetus to the development of trade and economic ties.

The contacts between the representatives of business, parliamentary and government structures of the two countries have become active recently.

Iranian entrepreneurs participated in the work of the ninth International Cotton and Textile Fair in Tashkent. Close friendly contacts have been established between the embassy and Uzbekistan's Chamber of Commerce.

Iranian Minister of Industry, Mining and Trade Nematzadeh participated at the meeting of the council of prime ministers of the Shanghai Cooperation Council (SCO) member states.

During the visit the Iranian minister held fruitful negotiations with the Minister of Foreign Economic Relations, Investments and Trade Elyer Ganiyev and chairman of the board of Uzbekistan Railways State Joint-Stock Railway Company Achilbay Ramatov. Moreover, consultations were held with officials of Uzbekistan's Foreign Ministry on starting the implementation of the quadripartite agreement on the establishment of an international transport and communications corridor, during which the two parties emphasised the need for speedy implementation of this agreement.

"All this gives hope that we will see a significant rise in cooperation between the two countries, especially in the economic field in 2014," Ali Mardani Fard said.

# Iran Textile News

## Turkey to invest EUR15 m in Iran's textile industry

Turkish investors and Iranian businessmen have agreed to launch a joint textile unit in Iran's central city of Delijan. Iran and Turkey's trade volume currently stands at around \$30 billion.

The figure is scheduled to reach \$100 billion in nine years.

Iranian Oil Minister Bijan Namdar Zanganeh held a meeting with Turkish Prime Minister Recep Tayyip Erdogan in Ankara on Jan. 21, the Iranian IRIB News Agency reported.

"During the meeting we reached some good agreements to boost bilateral trade ties," Zanganeh added.

"Each country will form a group to continue the negotiations, so that we can finalize the agreements and sign the memorandums of understanding during the Turkish prime minister's visit to Tehran," he added.

Iranian oil minister also held a meeting with Turkish Energy and Natural Resources Minister Taner Yildiz.

The Iran-Turkey trade declined to 16 billion dollars in 2013 from 22 billion dollars in 2012.

Iran and Turkey have set a long-term target of \$100 billion for annual trade transactions.

The two countries have always stressed that their short-term annual trade target should be about 30-35 billion dollars.

## Turkish investors to set up textile unit in Iran

Turkish investors are set to launch a joint venture with Iranian businessmen for setting up a textile plant in central Iranian city of Delijan, reports ILNA.

The new textile plant would be set up at a cost of €15 million. This was disclosed during the visit of Iranian Oil Minister Bijan

Namdar Zanganeh to Turkey earlier this month.

During the visit, the two sides reached some agreements to boost bilateral trade ties, Mr. Zanganeh said.

Both countries would continue to negotiate further in view of finalizing the agreements and signing memorandums of understanding during the forthcoming visit of Turkish Prime Minister Recep Tayyip Erdogan to Iran.

In Iran, over 95 percent of textile production units are owned by the private sector. The textile industry accounts for 11 percent of production units and 12 percent of employment in Iran's industrial sector.

In 2013, Iran-Turkey bilateral trade declined to US\$ 16 billion from \$22 billion in 2012. Both countries have set a target of increasing annual bilateral trade volume to \$100 billion in the long-term and to \$30-35 billion in the short-term.

## Fabrics Resistant to Growth of Microbes Produced in Iran

Iranian researchers from Islamic Azad University, Yazd Branch, used the advantages of nanotechnology to produce cotton clothes with high antibacterial properties.

The product was synthesized by using titanium dioxide nanoparticles and can be used in textile industry, fabrics painting and completion, and the production of medical products.

In this research, a stable suspension of titanium dioxide nanoparticles and BTCA was produced after designing the experiments. Then, pad-dry-cure process was carried out and the suspension was deposited on the fabrics and after the radiation of ultraviolet (UV) light, the microbial values were measured quantitatively according to AATCC 100-2004 standard.



press  
release

## **DOMOTEX GAZIANTEP MACHINE-MADE CARPET FAIR WILL HOST VISITORS IN GAZIANTEP**

**Sector professionals will meet in Gaziantep from 26-29 May 2014 to establish new business connections and increase their trade volume.**

Hannover Fairs Turkey Fuarçılık A.Ş. is leading the way yet again and moving the Turkish offspring of DOMOTEX to Gaziantep, a city that holds the high ground as an exporter of machine-made carpets. A comprehensive show to be held under the title DOMOTEX Gaziantep Machine-Made Carpet Fair from to 26-29 May 2014 will open its doors to visitors at Gaziantep Ortadoğu Fair Centre. Exhibitors will have the opportunity to display their products in a unique ambience extended over an area of approximately 29,000 gross square metres.

Stating that Gaziantep is a real trade centre as the closest province of Turkey to the Arab world and with its robust industrial structure, experience in trade and tourism potential, General Manager of Hannover Fairs Turkey, Alexander Kühnel adds:

“Gaziantep has managed to become a major focal point of the world specifically in the production of machine-made carpets. As the Hannover Fairs Turkey team, we are very pleased to organize the DOMOTEX Gaziantep Machine-Made Carpet Fair at the headquarters of the Turkish carpet trade. We are constantly trying to identify the needs and expectations of exhibitors and visitors and conduct market research with our associations and partners. As a result of these efforts, we decided to gather the machine-made carpet sector together this year at Gaziantep Ortadoğu Fair Centre and we believe that this decision will leave all parties satisfied. DOMOTEX Gaziantep Machine-Made Carpet Fair will be organized with the collaboration of Gaziantep Chamber of Commerce.”

DOMOTEX Gaziantep Machine-Made Carpet Fair is the perfect opportunity for all companies that wish to establish business relations with Turkey and the Middle East. Bringing together visitors and exhibitors at a single venue, this fair aims to increase the trade volume of the sector. In addition, within the scope of the Special Program for Anatolian Delegations, professionals selected from different cities of Turkey will visit

DOMOTEX Gaziantep Machine-Made Carpet Fair. Promotion activities for the fair are provided through close cooperation with international TV and Radio channels, newspapers, web pages and other relevant media; and professional visitors from Turkey and the Middle East are directed towards the fair. As a subsidiary company of Deutsche Messe AG, Hannover Fairs Turkey Fuarçılık A.Ş. promotes the fair to target countries via its representative offices abroad and invites buyers from the Middle East to the fair. The trade show in 2015 will cover a wide product range like; handmade and machine made carpets, rugs and mats, textile floor coverings (wall-to-wall), resilient floor coverings, laminate, wood and parquet, textile machinery and accessories, fibres, yarns and textiles, artificial grass and sport floorings, laying, cleaning and application technologies, natural stone, marble and ceramic tiles.

About DOMOTEX worldwide:

Deutsche Messe Group of companies is the organizer of four DOMOTEX events worldwide.

DOMOTEX Gaziantep Machine-Made Carpet Fair (May 26-29, 2014 in Gaziantep) serving the Turkish and Middle Eastern markets, is organized by Hannover Fairs Turkey Fuarçılık A.Ş., a subsidiary of Deutsche Messe.

DOMOTEX asia/CHINAFLOOR, (March 25-27, 2014 in Shanghai) is the largest international flooring show in the Asia-Pacific region. The show is jointly organized by VNU Exhibitions Asia, Build Your Dream and Hannover Milano Fairs Shanghai, a subsidiary of Deutsche Messe.

DOMOTEX Russia, (April 1-3, 2014 in Moscow) joins international and domestic exhibitors as well as trade visitors from the Russian-speaking countries. The show is organized by Deutsche Messe RUS, a subsidiary of Deutsche Messe AG.

DOMOTEX HANNOVER, (January 17-20, 2015) is the world's leading trade fair for carpets and floorings. The show is organized by Deutsche Messe AG Hannover.