wallonia and brussels
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Discover a region that combines technical knowhow with quality of life

TURNING HEADS

LIÈGE ARTIST WOWS CROWDS IN SINGAPORE AND BRUSSELS

- Mons centre pioneers high-tech materials
- Astronomer Michaël Gillon shares the secrets of space

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Editorial

Liège academic Michaël Gillon has a new title: planet hunter. The astronomer hit headlines across the globe in 2017 for his discovery of seven rocky Earth-sized planets – fittingly, for a Belgian, named collectively as TRAPPIST-1. Gillon's speciality is planets outside the solar system. In our profile series, he tells us about his discoveries and his ground-breaking research.

Another example of international expertise comes in our focus on high-tech materials science. The University of Mons has forged a reputation for its quality research in this specialised field. We speak to the director of Materia Nova and two companies that collaborate with the materials centre. Meanwhile, merging technology and tradition is Limited Edition carpets in Mouscron. The pioneering company specialises in hand-tufted rugs and floor coverings that grace luxury brands at home and abroad. Enjoy the read!

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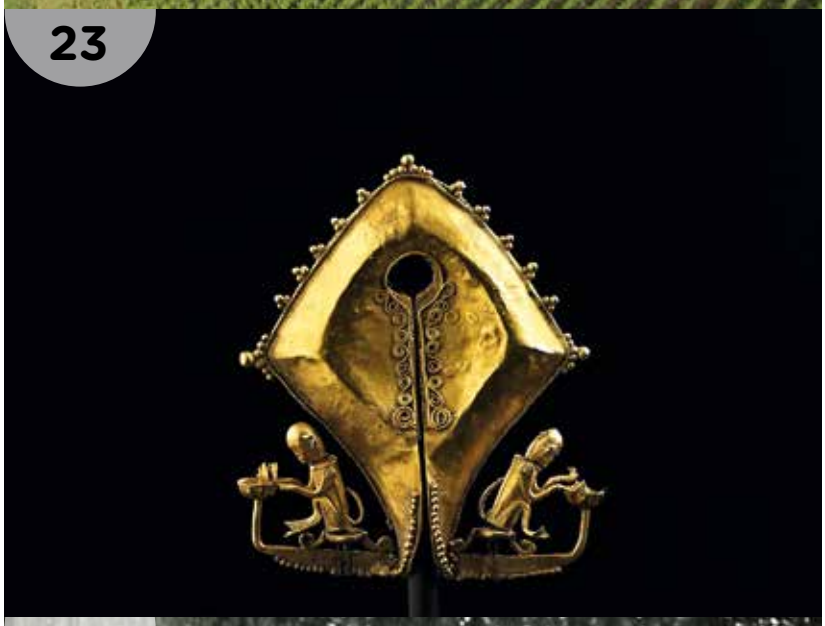

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Mélanie De Biasio © Jérôme Witz

Cover: Soft pink by NOIR Artist (see page 28)

BUSINESS BRIEFS

Liège-based chocolatier **Jean Galler** is expecting sales to top €30 million this year, following excellent results in the first eight months of 2017. Sales have been particularly good in Asia, where Japan moved into second place for country sales, edging France into third place. "We've opened sales points that are doing amazing business," Galler said. After signing an agreement with an ice-cream maker, Galler is now present in 17,000 points of sale in Japan, among them the airports at Okinawa and Tokyo. Galler employs 180 staff and is a supplier to the royal household.

Charleroi-based **MaSTherCell**, a specialist in the development of treatments in regenerative and cellular therapy, is to expand its facilities by 100%, for an investment of €5 million. The company also announced that it planned to double its turnover and number of employees by 2020. A spin-off from the Free University of Brussels (ULB), the company was acquired in 2015 by the Israeli-owned Orgenesis.

Namur start-up **Optimal Aircraft Design (OAD)** has secured a contract to develop a software application for use by the Chinese aeronautical constructor Comac. OAD is a one-man operation: engineer Didier Breyne, who created the company in 2007. The contract, by far the largest OAD has yet signed, concerns a particular application which, he told L'Echo, he is not able to discuss. However, it is known that Comac has ambitions to break the duopoly of Airbus and Boeing in aeronautical construction.

© Reuters/Francois Lenoir

A newborn Asian elephant bonds with family at Pairi Daiza animal park in Brugelette, near Mons. He was born on 19 September and is the first male offspring of Khaing Hnin Hnin and Po Chin. The zoo is home to 15 Asian and three African elephants

€1M MAKEOVER FOR UNDERGROUND CITADEL TOURS

The city of Namur has unveiled a new design for the underground guided tours at the Citadel. The tours cover 500m of the seven kilometres of tunnels, which were built over the centuries for military purposes. The new scenography follows renovation works in 2015 and 2016 and cost €1.125 million. The project is part of a plan to renovate the whole Citadel, at a total cost of €28 million. A cutting-edge lighting system was inaugurated in October. The €1.813 million project, largely financed by the Walloon Region, involved replacing existing halogen lamps by 295 led lights.

CELL THERAPY DEVELOPED IN WALLONIA CURES LEUKAEMIA PATIENT IN US

Biotechnology company Celyad, based in Mont-Saint-Guibert in Walloon Brabant, has announced the first successful cure of a leukaemia patient using its patented cell therapy CAR-T. The therapy was used on a patient suffering from intractable acute myeloid leukaemia (AML), a cancer of the blood. The patient, treated in the US, had not received chemotherapy before the use of CAR-T therapy. The patient was one of 14 being treated with CAR-T in a study taking place in the US and Europe.

HORMONE SPECIALIST SEES REVENUES SOAR

Liège-based Mithra, a specialist in women's health, has announced an increase of more than 50% in revenues for the first half of 2017 to €12.7 million, thanks to licensing agreements for its Donesta hormone therapy and its Myring hormonal contraceptive. At the same time, the company attracted new investment worth €26.1 million. "I am pleased to report significant progress during the first six months of the year, both in terms of advancing our pipeline programmes and delivering on Mithra's corporate objectives," CEO François Fornieri said on announcing the results.

LOCALS STAR IN GAME OF THRONES

Liège company Flying-Cam, holders of two technical Oscars, is now part of one of the most successful TV shows ever, thanks to its camera technology. The company was called in by the producers of Game of Thrones to provide the technology for filming an ambitious aerial sequence in the Loot Train battle scene in season seven episode Eastwatch. The Flying-Cam was used to give point-of-view shots seen from the back of one of the show's dragons, according to a detailed plan worked out beforehand. The company's technology has previously been used in the film series of Harry Potter and Mission: Impossible, as well as the opening sequence of the James Bond film Skyfall.

MIGRAINE EXPERTS MAKE HEADWAY

Cefaly Technology, based in Seraing near Liège, continues to make headway internationally with the spread of its technology for treating migraines. Cefaly is used externally to stimulate the trigeminal nerve with micro-pulses, using an electrode attached to the patient's forehead. Repeated clinical studies have shown that the treatment prevents future migraines and helps to reduce the use of oral medication by migraine sufferers. Cefaly Technology recently signed an agreement to supply its technology to 300 clinics specialising in neurology in South Korea.

NEWS BRIEFS

The University of Liège is celebrating its **200th anniversary** with a series of events, ceremonies and exhibitions. On 25 September, the academic year opened with the Dies Natalis music celebrations at the city's Salle Philharmonic and the presentation of three honorary doctorates. The recipients were Bernard Serin, managing director of Cockerill Maintenance & Ingénierie; Franco-Senegalese writer Fatou Diome; and Rolf Tarrach, president of the European Association of Universities. Celebrations continue until spring 2018 and include the exhibition I'll be 20 in 2030 at Liège Guillemins station (see p31).

La Louvière is raising awareness and campaigning in schools about how to **reduce food waste**. For four years, the town has been running cooking workshops by chef Damien Poncelet, and a selection of his recipes have been now published in a book called La cuisine zero déchet ou presque. The collection provides ideas for simple and tasty dishes that keep kitchen scraps to a minimum. As well as simple tips on using up leftovers, it offers advice on seasonal eating and supporting short food chains. The book is available at La Louvière town hall and via Ecoloups for €10.

The **Brussels Beer Challenge** is inviting brewers from around the world to test their beers in an international competition in Namur from 28-30 October. After Brussels, Liège and Louvain, it's the turn of the Walloon capital to host the competition. A jury of 40 independent experts from the four corners of the globe will be judging the entries.
brusselsbeerchallenge.com

IN THE SPOTLIGHT
Michaël Gillon

The 43-year-old is an astronomer and astrophysicist who led the team that found the TRAPPIST star system this year. The star's seven orbiting planets include three the size of Earth that may harbour life. Gillon, based at the University of Liège, has won the Balzan Prize and Time magazine named him in its list of the world's 100 most influential people this year

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I don’t know if life exists elsewhere. But I have an intuition that it must

How did your fascination for astronomy begin?

I was always passionate about life on other planets. I started with biology, because life on earth is fascinating. It was only 20 years ago that they began discovering exoplanets. In 2002, when they found an atmosphere on an exoplanet, I thought this was the right moment to search for life in other worlds. And I was lucky, because after I completed my master’s I met an astrophysics professor, Pierre Magain, who was involved in a European Space Agency mission, CoRoT, which was searching for exoplanets. I was then able to do a post-doctorate in Geneva, with the European experts on exoplanets. When I came became back, I was determined to do something with my university in Liège.

Was the TRAPPIST-1 discovery the highlight of your career?

It was an exceptional moment for me. The idea of looking for exoplanets around this small star came to me in 2008 – and it was not at all obvious that this star would have planets. The fact that after eight years we found not just one planet but seven was definitely the highlight.

You’ve gained an international reputation. Why have you stayed in Liège?

I don’t see myself leaving. My family is here, for a start. The countryside is lovely. And I have all the support I need from my university, from the Walloon region, and on the national level. The university has also backed the TRAPPIST telescopes: TRAPPIST-South in Chile and TRAPPIST-North in Morocco.

When will SPECULOOS, the Search for habitable Planets EClipsing ULtra-cOOl Stars, be ready?

Our northern hemisphere telescope, based in Tenerife, should be ready from the end of 2018, early 2019. It will look at 500 and 1,000 systems, and we are looking at six-20 planetary systems like TRAPPIST, which could mean several dozen planets. We’ll do this with the help of the James Webb telescope, which will be launched in 2019.

Your TRAPPIST discovery involved collaboration with other international researchers. Is there an exoplanet community?

I’m part of a network of international exoplanet hunters. Remember, we only really started in 1995, when the first exoplanet was discovered. Now there are a few hundred researchers, many of them very young. We have lots of complementary subjects. Some are looking for the planets. Others are looking at the structure of the planets, at their atmosphere, at building detection instruments, at traces of life. All that makes for a big community.

Do you think there is life on other planets?

I don’t know if life exists elsewhere. But I have an intuition that it must exist. Maybe in about 10 to 15 years we can discover traces in an exoplanet’s atmosphere of the different molecules that suggest signs of life, like oxygen, methane and water. But can we then conclude that this is life? We could, for example, find molecules that show physical rather than biological signs. This is a long-term process. There are lots of possibilities and this really is virgin territory.

Go fish

Profish Technology develops world-class monitoring tools to protect fish from industrial intakes

By Emma Portier Davis

• Profish founder Damien Sonny

Growing up near the banks of the Meuse in Namur, Damien Sonny spent his youth trying to catch fish and observing how they behave. That's when he wasn't watching movies by the marine ecologist Commander Jacques-Yves Cousteau.

Inspired by Cousteau, who said that man's real job was to salvage human nature, he went on to write his PhD thesis on fish downstream migration and the risks that fish encounter at industrial water intakes. From this work, Profish Technology, now 10 years old, was born.

"We developed a first technology using infrasound to deflect fish away from water intakes," says Sonny. The company's infrasound barrier was the first of its kind anywhere in the world, reducing fish mortality by about 80%.

Aside from achieving a world first, the timing was perfect. The EU's Water Framework Directive, among other environmental laws around the world, obliges industry to do its part to ensure biological diversity and ensure that plants minimise their impact on fish populations. One of the largest client groups for Profish Technology is hydroelectric power plants. The company has helped find a solution to Europe's conflicting goals of promoting hydroelectric power as a source of green energy while meeting its biodiversity goals.

"Most of the time, this renewable energy and its facilities create an obstacle to fish migration. Some fish species, like Atlantic salmon or the European eel, must migrate to the sea to accomplish their life cycle," explains Sonny. "This issue is touchy. On the one hand the hydroelectric sector is important to the EU strategy for achieving ambitious targets in carbon dioxide reduction, but on the other hand this activity has too significant an impact on fish biodiversity."

That's where Profish comes in. "All the large power companies in Europe have understood and are developing large R&D projects to combine sustainable hydropower and fish biodiversity protection, which is the position that Profish is supporting in its various projects around Europe."

After its initial success with the infrasound technology, the company started to realise that this was not a miracle solution, and that each site of water intake had to be examined individually. The company is now repositioning itself more specifically to offer monitoring services.

These include radio tracking using tags, the automatic fish counter – essentially a tunnel with laser curtains, which makes it possible to count fish and check their direction of travel – and acoustic imaging that provides highly accurate data. Such data is of crucial value for companies when they reapply for permits.

Its base in Wallonia has given it the impetus to look for clients outside its home market to survive as a company. Aside from Belgium, Profish boasts clients in Canada, Tahiti, Brazil, Ireland and Gabon, to name just a few. And while successful from its home base, the company opened its first office abroad, in France in 2015, and in 2018 it plans to open an office in Germany.

"Our ambition is to build a network of small profitable companies each following the same business model, adapted to the specifics of each country," says Sonny. "We have reasonable ambitions in terms of growth; we want to keep it in a controllable range."

And in echoes of the kind of words one might have heard from Cousteau, he says: "The main ambition is to keep on making good studies, satisfy our clients, feel like we are serving an environmental cause and, most importantly, cultivate the happiness capital of each member of the company."

profish-technology.be

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Most of the time, renewable energy and its facilities create an obstacle to fish migration

Biotech boom

Local biotechnology companies enjoy international platform

By Andy Furniere

© Lucy Pope

• Volition

The thriving local biotech sector is getting attention on the global stage, with the prestigious Nature Biotechnology magazine recently carrying an article about six Walloon biotech companies and the BioWin health cluster.

BioPharma Dealmakers, a quarterly magazine distributed with Nature Biotechnology, brings together life sciences companies and individuals looking for deal-making opportunities. Its June edition showcases the products in the pipeline, technologies, therapeutic focus and partnering strategies of Walloon companies Volition, Celyad, iTeos, PDC*line Pharma, ImmunXperts and GSK Vaccines.

Volition, in the Créalys science park at Isnes, near Gembloux in Namur province, focuses on blood tests for cancer diagnosis and screening. Initially it focused on colorectal cancer but now has pipeline projects in pancreatic and prostate cancer. It has developed its own biomarker discovery platform, Nucleosomics, which looks at fragments of cell nuclei released into the blood by dying cells. Its technology enables affordable and accessible tests that can be easily applied in any clinical setting.

"The article in BioPharma Dealmakers highlighted the power and simplicity of our approach and its potential to triage people screened for colorectal cancer by conventional stool-based testing," explains Mark Eccleston, business development director at Volition. "Our method could reduce the number of people who have to take more expensive and invasive tests, making people's lives easier and screening programmes more cost-efficient."

The Walloon government plays an important role in Volition's success. "We receive incredible support from the Walloon region, for example in the form of the initial grant that allowed us to establish our R&D set-up in the region back in 2010," says Eccleston. "We still get funding for new projects, travel grants for conferencing and outreach activities, support for our new R&D building and funding for clinical trials in Europe and the US."

The overall development of the Walloon biotech sector is strongly encouraged by BioWin, the region's health competitiveness cluster. BioPharma Dealmakers praised the system that addresses all elements of the drug development cycle – from research to marketing, via biomanufacturing, clinical trials and drug registration – which makes BioWin "a key contributor to the dynamic innovation ecosystem and economic output of Wallonia".

The magazine in particular devoted attention to BioWin's success in fostering the development of start-up companies in cancer immunotherapy. It presented the profiles of four such Walloon companies: Celyad, iTeos, PDC*line Pharma and ImmunXperts.

Celyad, set up in the Axis Business Park at Mont-Saint-Guibert, Walloon Brabant, is a clinical-stage biopharmaceutical company focusing on CAR-T cell therapies. It's currently working on a new immuno-oncology

treatment that has the potential to target and destroy cancer cells in both solid and haematological malignancies.

"We are currently running clinical trials to assess the safety and feasibility of our lead product, CYAD-01 immunotherapy, in patients suffering from blood, bladder, breast, colorectal, pancreatic and ovarian cancers," says spokesperson Marine Lhomel. "Our ambition is to successfully complete these trials by the end of 2018."

The goal of iTeos, based at the Biopark Charleroi Brussels South in Gosselies, Hainaut, is to deliver the next wave of immune therapies for treating inflamed and non-inflamed tumours. It aims to improve the frequency, depth and duration of patients' response to treatment and to extend the use of immunotherapy to more cancers.

iTeos has already demonstrated the success of its approach, licensing its IDO1 inhibitor programme to pharmaceutical giant Pfizer in 2014, with clinical studies now under way. Among its developments is the ambitious Sting agonist programme. "We want to effectively reboot the anti-tumour immunity in non-inflamed tumours," explains spokesperson Hendrik Thys. "This approach is seen as the next frontier of cancer immunotherapy."

PDC*line Pharma, at the Liège University Hospital Centre, is in the business of developing an innovative class of active immunotherapies for cancers. Its therapeutic cancer vaccines are based on plasmacytoid dendritic cells (pDCs), as referred to in the name of the company.

Their solutions should be more powerful in boosting anti-tumour antigens, molecules that are capable of inducing an immune response, than conventional vaccines and could be applied to any type of cancer. "We are currently focusing on the development of a clinical therapy against lung cancer," says Eric Halioua, president and CEO.

The last of the featured Walloon start-ups, ImmunXperts, is also based at the Biopark Charleroi Brussels South. It develops in-vitro tests to help other pharma and biotech companies select the best drug candidates in their early R&D phases.

All the start-ups point to the role of BioWin in their progress, and to the Walloon government in general and of the Directorate General operational for Economy, Employment and Research (DGO6) specifically.

"Thanks to the recoverable cash advances, a unique funding tool in Wallonia, Celyad has leveraged around €30 million to develop and expand its activities," says Lhomel of Celyad. Thys of iTeos underlines that in July 2017 his company received additional non-dilutive funding of €7.5 million. "The Walloon government is a long-term investor in iTeos Therapeutics through its investment vehicle SRIW," he says. PDC*line Pharma received a loan from the DGO6 as well.

The publication in BioPharma Dealmakers is an excellent way for the Walloon companies to increase their international visibility. "As a publicly traded company listed on Euronext and Nasdaq, we must raise our visibility to inform our various stakeholders about who we are and what we do," says Lhomel. "Being covered in the magazine is a nice opportunity to position our company in the international biopharmaceutical industry."

GSK Vaccines, with a local base in Rixensart, already has a strong international profile – as one of the world's leading vaccine companies – but used the coverage in BioPharma Dealmakers to seek new scientific partners to help create the next generation of vaccines. The company is looking to collaborate on the development of rapid-response vaccine platforms, new approaches to modulate the immune system and solutions against bacterial and viral diseases prevalent in the developing world.

> "Being in the magazine is an opportunity to position our company in the industry

Marine Lhomel, Celyad

Our survey says

Wallonia scores highly in a recent Europe-wide logistics study

According to a study of 50 European regions by business consultancy PwC, Wallonia is the fourth most attractive region in Europe for logistics stakeholders, and the most attractive in Belgium.

Based on the June survey, and at the request of Logistics in Wallonia, the Union Wallonne des Entreprises and AWEX, PwC produced a report to update a 2009 study by Cushman & Wakefield and highlight areas that could still be improved.

In its survey, PwC analysed and compared 50 European regions based on criteria that are decisive to setting up a distribution centre:

- The market's proximity: buying power and economic activities
- Work: availability, flexibility, productivity, employer-employee relationship
- Operational costs: cost of energy, workforce, property
- Distribution facilities: IT, proximity of cargo airports, maritime ports, density of the road network, boat routes and railway lines
- Availability of land: industrial parks and building land
- Regulation and taxes: political stability, administrative obligations, freedom to invest, transparency, effectiveness
- Competences: linguistic skills and logistics expertise

In addition to its advantageous geographic location, Wallonia has many assets for attracting new distribution centres: a market of 60 million consumers with a high buying power that can be accessed within four hours; a cargo airport that's listed among the top eight in Europe; the highest tonnage for inland river transport in Europe connected to Antwerp and Rotterdam; and effective rail connections, especially to southern Europe.

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Bernard Piette, director general of Wallonia's Logistics competitiveness cluster, also highlights the availability of workforce and property, although it is still necessary to "improve the perception and image of Wallonia on the international stage".

"For Wallonia to continue to be competitive, it is time to reconstitute a significant stock of large areas of land – more than 15 hectares – to attract large installation projects," said Pascale Delcomminette, CEO of AWEX, who agreed that a great deal of work remained to be done in terms of image.

Samuel Saelens, advisor at UWE, added: "It's important to specify that we did not choose the criteria in order to give ourselves an advantage: we wanted to have a frame of reference that allows us to understand where we are."

Daughter of the Meuse

Liège throws party to celebrate 80 years of its port

By Leo Cendrowicz

© somef

IN FIGURES

The Port of Liège stretches over 26km of quays, has 33 port areas, covers 3.7 square kilometres, accounting for some 8,900 jobs, and a further 13,250 indirect jobs.

Traffic has grown steadily over the years. It was up 40% in 2016, with 56,862 twenty-foot equivalent unit (TEU) containers handled. In waterway tonnage terms, it was up 6% to 15.5 million tonnes, while the total transport volume (rail, water, road) was up 12.2% to 20.6 million tonnes.

It was 80 years ago that Liège opened its port on the Meuse river, and it has now become Europe's third largest inland port after Duisburg and Paris. The anniversary was celebrated in June, with family events including cruises and tours.

Speaking at the occasion, Liège Port Authority president Willy Demeyer noted that while the port had only been in its current form for a relatively short time, just eight decades, it could trace its roots back over a millennium, to the 10th century, when Liège was handling trade with Holland, France, England and Germany. "The Meuse brought to Liège the most precious goods: wines from Alsace and France, Oriental spices, luxury carpets, Byzantine cloths, while taking local products like stone, slate, grain, wool and fabrics," he said

When the Albert canal was opened in 1937, linking Liège to Antwerp, it was a strategic economic link between Flemish and Walloon iron production and Limburg's coal mines. "Each end of this canal needed a port," he said. "Antwerp was there. We had to create Liège!"

Emile-Louis Bertrand, managing director of Liège Port Authority, said with freight traffic in Europe predicted to rise 60% over the next two decades, there was a risk of road gridlock if nothing was done to move shipping to other modes. "We need a modal system to shift road freight traffic towards waterways or rail," he said, appealing to public authorities to invest more in alternative transport modes.

The port is now developing the Liège Trilogiport, a 100-hectare multimodal platform along the Albert canal. Styled as a fully fledged 'logistical village' for vessel loading and unloading activities, it will transfer containers to trucks, goods trains or barges heading for various destinations across Europe.

portdeliege.be

MEET THE BRUSSELS EXPAT

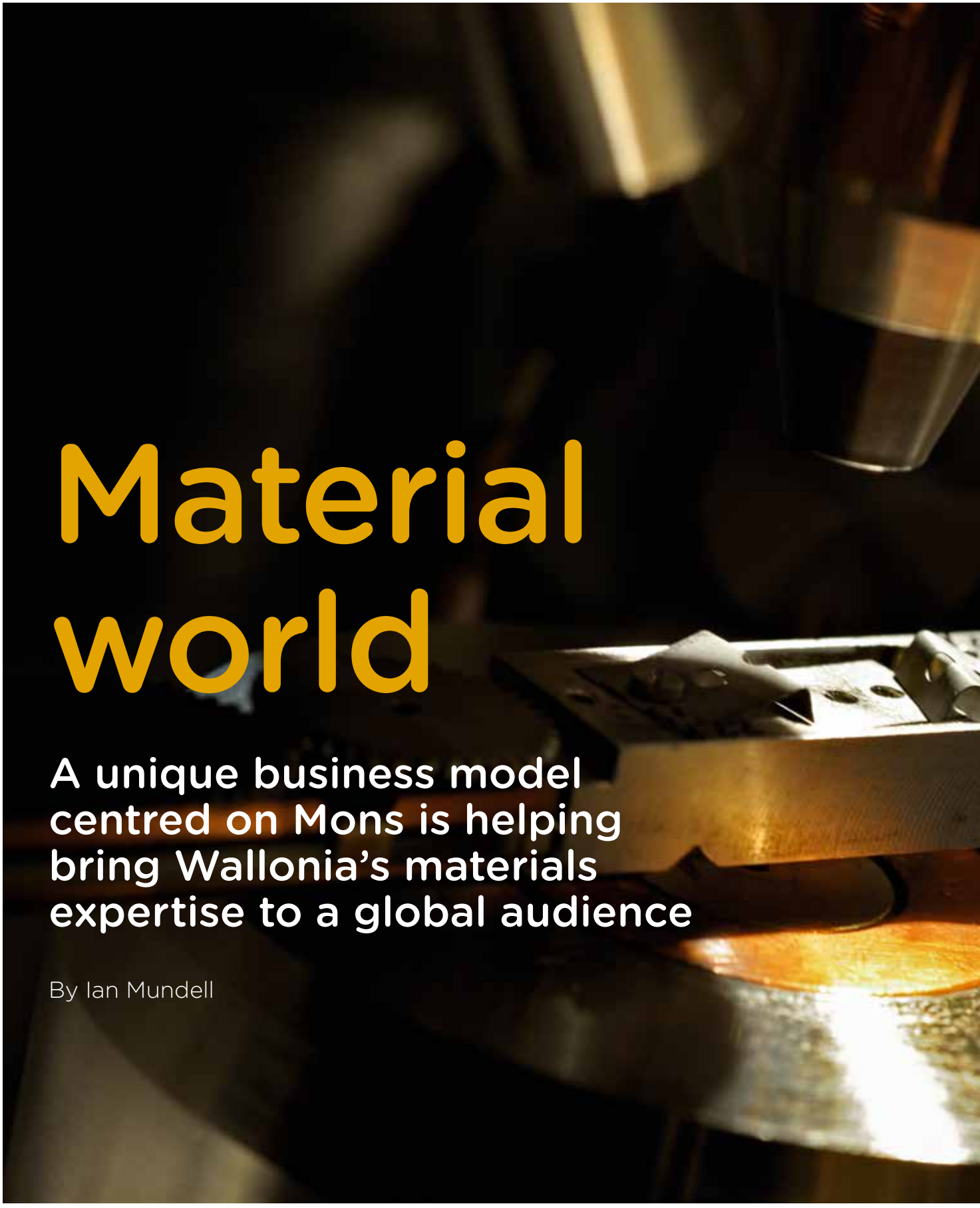
Adam Gerencser describes the value of family time and offline interests outside his role at the European Commission

My roots are Hungarian, though owing to the nomadic impulses of my parents I grew up on the move, mostly in Germany, North Africa and Australia. Then, as a student in Aberystwyth, Wales, I met my brilliant best friend Gina from Malaysian Borneo. A decade ago she became my wife.

Pursuing a childhood dream to work for the most ambitious utopian project on Earth, I left my management post at IBM and moved to Brussels in 2012. I joined the European Commission's directorate-general for translation, initially as a translator and workflow coordinator, then as a quality officer. In 2016 I moved into an advisory role. My role shifts with the policy priorities of my director, but an average working week usually sees me attending meetings, drafting briefing notes and papers, coordinating consultations and managing ad hoc projects. This requires me to take a broader view and engage with all aspects of multilingual policy, to ensure European citizens have timely access to legislation and key documents in their own language, and that translations are provided within a sustainable budget.

When not at work I mostly stay offline, pursuing my creative quests: I research and publish science fiction, study theology, volunteer, hoard far too many books, and host a board games club with my wife. Together we travel off the beaten track about once a month and relentlessly challenge every parenting cliché flung at us.

When it comes to work-life balance I've been fortunate. Thanks to my understanding boss, I've just spent four months on half-time after the birth of our daughter, able to fully enjoy what Brussels has to offer for families. The Belgian capital is like a large junction at the crossroads of Europe, where travellers meet to exchange tales and ideas. It's not a melting pot like London or Paris, as there isn't one overarching identity to melt into. Rather, it's a matrix of overlapping social and cultural bubbles – eurocrats, anglophones, Catholics, Hungarians, art lovers, parents. Here, you get to configure the life you want from a wide choice of social Lego bricks. What you build is up to you!



Material world

A unique business model centred on Mons is helping bring Wallonia's materials expertise to a global audience

By Ian Mundell

© Denis Lécuyer-Hansel

From energy-efficient glass for double-glazing to the red carpet at Cannes, materials science from Wallonia has already made its mark on the world. But there is more to come, as researchers and companies explore new ways of working together.

Wallonia's expertise in high-tech new materials is centred on Mons. The city's university is home to some of the best materials scientists in the world, such as Philippe Dubois, its professor of organic and macromolecular chemistry. When Thomson Reuters ranked the most influential researchers in the field between 2000 and 2010, Dubois was 18th on the list. Only two other Belgian researchers featured among the 100 names, both of them past or present staff at the University of Mons.

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We increase the speed of development and reduce the cost to the company

Luc Langer, Materia Nova

100-YEAR-OLD TECH FOR TODAY

When Frédéric Danneaux and Jean-Patrick Holvoet decided to set up their own company, they turned to the past for ideas. What they found was an innovation from the early 1900s that had not reached its full potential.

At that time, fish oil was used as a lubricant in marine applications. It is cheap, water resistant and very stable. Unfortunately, it smells terrible, which is not great when the marine application is a submarine. With this problem in mind, a method was developed that uses a plasma – a gas made up of charged atomic particles – to remove the oil's smell and also improve its lubricating properties. The technique was patented around 1909 and commercialised, but no one looked too closely at how it worked.

With the patents long expired, Danneaux and Holvoet were free to explore the method's potential. “Our idea was to look at the concept with today's technologies, and a better understanding of the chemistry,” says Danneaux. Initially they sought research partners in France and Germany, but were surprised to find an expert on their doorstep. “Materia Nova had competence not only in plasma technologies, but also in biotechnology and chemistry,” Danneaux explains. It also had a commercial mindset, which eased contacts with potential suppliers and customers.

Materia Nova carried out research on the physical and chemical aspects of the technique, then it worked on optimising the method for vegetable oils. The challenge now is for the start-up company, Green Frix, to scale up the process and bring some products to the market. Biological components for lubricants are one possibility. Another is ingredients for cosmetics, since the method both removes odour and improves oil stability. Finally there may be food applications, since the method hydrogenates oil without creating harmful trans fatty acids.

greenfrix.be

While building its academic reputation in materials science, the university also took steps to ensure that its research was put to good use. In 1995 it set up Materia Nova, a centre tasked with carrying out applied research and transferring new technologies to industry. It became independent from the university in 2001, but a close connection remains to this day, with combined research teams grouped around specialist facilities. “We still have this very strong link between the fundamental research done at the university and the applied

© AGC

research done at Materia Nova," explains Luc Langer, the centre's general manager.

"This is quite unique as a business model," he goes on. "It has the advantage that our researchers are in permanent contact with the technology that we will probably have to develop for industry in a few years' time. And, through our researchers, the university researchers can see the problems and requests that come from industry."

Materia Nova specialises in two broad areas of material science. The first is surface treatment and the production of smart coatings for materials as diverse as glass, polymers, metals, wood and textiles. One example of this is a long collaboration with AGC Glass Europe, devising coatings that make glass more energy efficient. The second area is polymers and composites, in particular biopolymers, materials which have their origin in nature. "The red carpet at the Cannes Film Festival is based on a biopolymer that was developed by Materia Nova and the University of Mons," Langer explains.

Larger companies sometimes only need academic research from the university and Materia Nova, or for an idea to be tested in the laboratory. After that they are free to take the results back in-house

AGC GLASS EUROPE

AGC Glass Europe is the European glass branch of the world's leading glassmaker, AGC (Japan). It has a long relationship with Materia Nova. The results of this collaboration are clear to see – or see through – in many of its products.

"When you buy a window, its energy-saving properties are due to special coatings on the glass," explains Lionel Ventelon, the company's R&D consortium manager. "The windows are transparent to the eye, but a mirror to the heat. And at AGC, these coatings and the equipment to produce them have been developed over the past twenty years with Materia Nova."

The relationship has several advantages for AGC. "When you are working day-to-day to optimise standard products or process, it's like being in a closed box," Ventelon says, "and it is sometimes difficult to see things from another point of view. Working with Materia Nova gives us that."

Materia Nova also helps when it comes to developing new technology, which during its early stages may be prohibitively expensive or risky for in-house development. In this situation, it can bring together companies from other sectors that might also find a use for the technology and develop it as a consortium, spreading the risk. An example is the recently launched WaliBeam industrial platform for ion implantation.

The close relationship also reassures AGC that this open innovation and similar partnerships will not compromise its commercial confidentiality. "With Materia Nova to manage those exchanges with other companies, we know that will help us to have a filter in terms of confidentiality."

Ventelon adds that an ability to cooperate, developed thanks to the Marshall plan, is one of Wallonia's strengths when it comes to materials science. "We are a small country, and we face plenty of challenges, but we know each other well. So when there is no competition, we are really aware of the value of collaborating and establishing consortia."

agc-glass.eu

for further development. However, they can also extend the partnership, working with Materia Nova on development and even industrialisation.

This last stage is carried out with two daughter companies: Nano4 in the field of nano-composites, and Ionics for surface treatment technologies.

When these two companies were set up, in 2011 and 2014 respectively, Materia Nova was a little concerned that industry might see them as potential competitors. The opposite turned out to be the case. "Once they knew we were involved in real industrial companies, we saw that the credibility of our research centre really increased," Langer recalls.

AGC Glass Europe even went so far as to become a shareholder in Ionics, turning the company into a joint venture.

Small and medium-sized companies come to Materia Nova with slightly different problems. They are less likely to have long-term research strategies, but instead need help innovating to improve or develop their businesses.

"For smaller companies, if you want to make a real success you have to do much more than think: here is a technical, scientific problem that we have to solve. It's about the business case in which you are involved, and that is a totally different job from doing research."

For example, a small company approached Materia Nova to develop a better coating to use in its business. The researchers designed a successful coating, but the company was left wondering where to get a machine to apply it. There was nothing on the market, and no manufacturer would be interested in designing a machine for just one customer.

"So we identified other small companies, in very specific areas, where this coating could also have an advantage," Langer says. Together they added up to a new market that a machine maker was happy to supply. This is an approach Materia Nova is keen to develop further. "What we try to do, more and more, is not only to use what we develop for one sector in another sector, but to bring them together to do the development together."

One example of this 'open innovation' is WaliBeam, a consortium set up to develop a surface treatment technology based on ion beams. "With this technology you can have more scratch-resistant glass surfaces, you can have windscreen wipers which make less noise, you can reduce the thickness of metal coatings on electrical connectors, you can decrease the temperatures at which automotive catalysers work," Langer says.

A company from each sector where there is a potential application has agreed to participate in the pre-industrial development of the technology. "The cost of the research is divided between the number of partners and we share the results," Langer explains. "What one company is developing will be given to the others, and vice versa. We increase the speed of the development, we reduce the cost per company."

A further project aims to help companies in the new materials sector emerge in Wallonia, by providing incubators that fit their needs. For example, the facilities must meet stringent standards to prevent water and air pollution, and to provide access to specialist equipment that would be prohibitively expensive for a start-up company.

"The intention is to build incubators specifically for materials science, and create a kind of ecosystem in Mons which includes the university, Materia Nova and other research centres," Langer says. "We have a green light for the project from the government, and we are now discussing construction with the architects. I hope that within two years the incubators will be ready to welcome new companies."

materianova.be

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The cost of the research is divided between the number of partners and we share the results

Luc Langer, Materia Nova

Wine not

Take a tour around Wallonia's most fruitful vineyards

By Sarah Crew

While brewing world-class beers may be a long-standing tradition in the region, the art of making wine is growing in reputation and volume.

Yet wine making in Wallonia is hardly a new occupation. The first vines were planted in the 9th century and by the Middle Ages nearly every village had its own vineyard. Booming hop production led to the decline of local grape growing, until a few pioneering growers revived the tradition in the early 1960s. Since then, the industry has slowly prospered and Wallonia now has 156 vineyards.

Cooler climes favour sparkling and white wines, though red varieties are increasing. Grapes vary from regional hybrids to international names such as pinots and chardonnay. Many vines are grown in microclimates, such as river banks, walled vineyards and south-facing slopes. There are four labels of quality promoting the larger producers: the AOPs Côte de Sambre et Meuse, Crémant de Wallonie and Vin mousseux de qualité de Wallonie, plus the IGP Vin de pays de jardin.

Despite a minority of vineyards selling their wares, wine production is flourishing, confirms Françoise Dargent, responsible for the wine sector at Apaq-W, Wallonia's agency for promoting agriculture. "Fortunately, supporting sustainable and local produce is in fashion," she says, adding that it's not difficult to be passionate about her job. Part of her mission is encouraging the public to visit estates and

• The fermentation vats at Ruffus

discover how local wine is produced: "One of the characteristics of Wallonia's vineyards is that each estate makes very different tasting wines."

Home-grown crops include the bigger professional vineyards such as Domaine des Agaises in Hainaut, better known under its brand name Ruffus. It's been winning awards for its zingy Champagne-style fizzes for a number of years. So popular is demand, customers need to place their orders in advance.

Namur province is home to a number of well-rooted estates. Growing vines on the banks of the river Meuse, near Profondeville, is Château Bon Baron. Equally garlanded, it supplies bottles to gastronomic restaurants in the region and beyond. Domaine du Chenoy and Domaine Ry d'Argent cultivate a variety of grapes on the same south-facing slopes in the Sambre-Meuse valley, while the nearby Château de Bioul produces predominantly white wine. Walloon Brabant's biggest producer, Domaine de Mellemont, has been growing traditional and lesser-known varieties since 1993.

These established names have inspired newcomers, who are gravitating towards sustainable and organic production. They include the Vin de Liège cooperative, which has been increasing its acreage and volume by raising funds through private investment. Behind the red and white vintages of Septemtriones, also in Liège province, is the Galler family, renowned for its chocolate.

Sparkling wine is the speciality of Domaine du Chant d'Eole, which cultivates the chalky soil of Hainaut, while organic wine is the business of Le Poirier du Loup at Torgny in Luxembourg province, the southernmost of the region's vineyards and also focused on tourism. Meanwhile, the far-west corner of Wallonia, Comines, is home to La Ferme Bleue, a white wine producer. Another recent convert to the art of growing grapes is the Clos du Chapitre at Nivelles-Baulers. Its owners have transformed 8.5 hectares of land previously devoted to raising cattle into a viable vineyard.

Since 2012, an association of winemakers in Wallonia have made it their mission to develop and protect vineyards in the region. It estimates that production will continue to increase and reach 1 million bottles a year. In 2015, winemakers produced 710,000 bottles; in 2016 that had grown to 850,000.

Wine tourism is also evolving, thanks to initiatives by the Wallonia tourist office and themed events promoting local gastronomy. The domains of Chenoy, Ry d'Argent and Villers-la-Vigne are among the producers spearheading rural tourism, an untapped asset in the region. Wallonia aims to be a destination for wine loves both home and abroad.

vigneronsdewallonie.be

Sacred rituals

Europalia brings the artistic traditions and contemporary performers of Indonesia to Belgium

By Georgio Valentino

The Europalia arts biennale has been building cultural bridges since 1969. Each edition focuses on one host country with a comprehensive treatment, showcasing everything from visual arts to dance to music to literature and film.

The current edition celebrates Indonesia, the former Dutch colony that's entering the 21st century as a vibrant, multicultural country. Both traditional and contemporary forms are included in this months-long cultural extravaganza, which involves dozens of institutional partners and spans not just Brussels but all of Belgium. The three themes that unite these various offerings are ancestors and rituals, biodiversity and exchange.

Europalia's twin flagship exhibitions, both hosted by Bozar, celebrate the traditional and contemporary sides of Indonesian culture. Ancestors and Rituals is an ethnographic showcase of that which unites all the populous country's hundreds of ethnic and linguistic groups: the importance accorded to ancestors, whether mythical or genealogical. The exhibition boasts more than 160 archaeological objects on loan from the National Museum of Indonesia. Many of them have never before been exhibited in Europe.

Power and Other Things explores the upheavals in Indonesian art since 1835 through the works of 21 Indonesian, European and Australian artists. The nearly 200-year span has seen Indonesia colonised by the Dutch, occupied by the Japanese and, ultimately

• Flores, eastern Indonesia, 19th century, wood and beads

emerge in 1945 as an independent state at the forefront of the nonaligned movement. The exhibition's title, drily borrowed from the legal jargon in which the demand for independence was couched, underlines the determining role of geopolitics in Indonesia's cultural history. The 19th-century works on show reveal colonial tensions while the more recent pieces attempt to locate that history in a contemporary global context.

Another highlight is the exhibition Archipel at La Boverie in Liège. Organised by the National Museum of Indonesia in collaboration with Belgian and French institutions, this historical survey approaches the Indonesian archipelago as a network of nodes within a larger, global network of economic, scientific and cultural exchange. But this isn't 21st-century globalisation 2.0. Indonesia has been a global crossroads for thousands of years. Archipel presents artefacts from ancient Sumatran and Javanese empires, Chinese and Indian traders as well as various early Muslim and European influences.

If many of these exhibitions hearken back to the old days, Grand-Hornu's contemporary art museum MAC's looks boldly forward with an exhibition of cutting-edge work by transdisciplinary Indonesian artist Jompet Kuswidananto. The immersive, site-specific installation On Paradise breaks artistic barriers in its presentation of Indonesia's colonial struggles. Kuswidananto is also working with contemporary American choreographer Meg Stuart and her Brussels-based company, Damaged Goods, on a new dance production to be premiered in the capital in the context of Europalia in January.

There's plenty more performance on the programme, including dance by Indonesia's most celebrated contemporary choreographer, Eko Supriyanto, and gender-bending performer Otniel Tasman as well as radical performance art by veteran stage provocateurs Teater Payung Hitam and loads of concerts, celebrating especially the traditional Javanese gamelan.

• Jompet Kuswidananto's Dark Play installation, 2017

Europalia has also extended an invitation to a dozen of Indonesia's most eminent writers. Declamatory poet Godi Suwarna is set to tour Belgium performing his dramatic Sundanese verse. The West Java-born artist doesn't just read his poems – he channels them and brings them to life on stage.

New York-based author Intan Paramaditha represents another generation. Writing both award-winning fiction and academic essays, Paramaditha explores gender and sexuality, culture and politics from a young, progressive vantage point.

Europalia also features film screenings and the second edition of the Europalia Curator's Award, encouraging young curators whose projects recognise the importance of biodiversity and ecological sustainability. Finally, the major research symposium Imperial Zombies, Modern Vampires and Contemporary Ghosts promises a critical airing of perspectives on postcolonial art in the 21st century.

europalia.eu

© Kinkorn

Art meets science

New museum to open in Louvain-la-Neuve in November

By Sarah Crew

Belgium's first large-scale university museum, Musée L, is destined to attract more visitors to Louvain-la Neuve. Opening on 18 November, the new cultural hub presents a dialogue between important scientific collections and major art works. Its displays will be unique: a Buddha sculpture placed in confrontation with a figure of Christ from the Middle Ages; ancient scriptures positioned opposite typewriters.

More than 800 works will be displayed in the permanent collection, representing just a fraction of the 32,000-plus natural history, science and art items belonging to the Catholic University of Louvain (UCL). The museum's collections originate from university professors and private donors and will be complemented by temporary exhibitions. The first show honours renowned Cameroonian artist Barthélémy Toguo.

The museum occupies a 4,000m^2 space in Place des Sciences. It also includes three experimental laboratories for visitors, an archive centre, offices, a studio, and a large space for activities and events.

Housed in the former science and technology library, the completely renovated structure is a soaring cathedral to art. The emblematic building by iconic Belgian architect André Jacqmain dates from 1969 and is a leading example of Brutalist architecture. The €10.4 million project has been financed by public and private funds.

museel.be

Warp and weft

Limited Edition has been putting the haute couture into rugs for a quarter of a century

By Clodagh Kinsella

Where does Giorgio Armani go when it wants a new rug for its showroom – or IBM when it needs to give its offices and HQ a new look? Step forward Limited Edition, a pioneering rug and floor covering company that's flying the flag for Wallonia's textile tradition.

Katia Dewitte founded the Mouscron-based brand in 1992 in her father's old woodwork shop. "The idea was to offer unique, tailor-made, high-end rugs for private clients, hotels and stores," she says. While the town was for a long time a hub of the local textile industry, Mouscron's factories have dwindled of late. Limited Edition keeps this heritage alive. "We want to be able to show our clients where our rugs and flooring products are manufactured and to introduce them to their creators," says Dewitte.

Besides the traditional jacquard rugs produced on its ultra-hi-tech looms, Limited Edition specialises in hand-tufted rugs. To create them, artisans use special tufting guns to prick strands of wool and other fibres are pricked into a canvas stretched on a frame. The threads that stick out are then chiselled to obtain a pleasing play of textures and reliefs. Designs are drawn from the archive or, for bespoke commissions, elaborated with the help of clients.

To date Limited Edition has produced some 150 collections. In the early days the fashion was for sisal rugs, but its portfolio now includes wool, mohair, bamboo, wildebeest skin, banana fibre and cowhide – this last one a major innovation of the past decade. Designs have up to 15 colours, and can take two years to develop.

In 2004, after five years of research, Dewitte's brother James founded a sister brand, 2tec2, which creates environmentally friendly woven vinyl and fibreglass flooring. Targeted at companies, its products are available in more than 120 countries.

What began as a one-woman operation specialising in rug edging has, over the decades, morphed into a multi-faceted group

• Cozy rug Angora

employing 190 people – split roughly equally between Limited Edition and 2tec2 – and bringing in €30 million revenue in 2016. "We grew by increasing our market share and acquiring other Belgian companies whose carpet-making expertise would otherwise have disappeared," explains Dewitte. Those acquisitions include weaving experts Arcade, the veteran New Franco-Belge factory and JM Desseaux Handtuft.

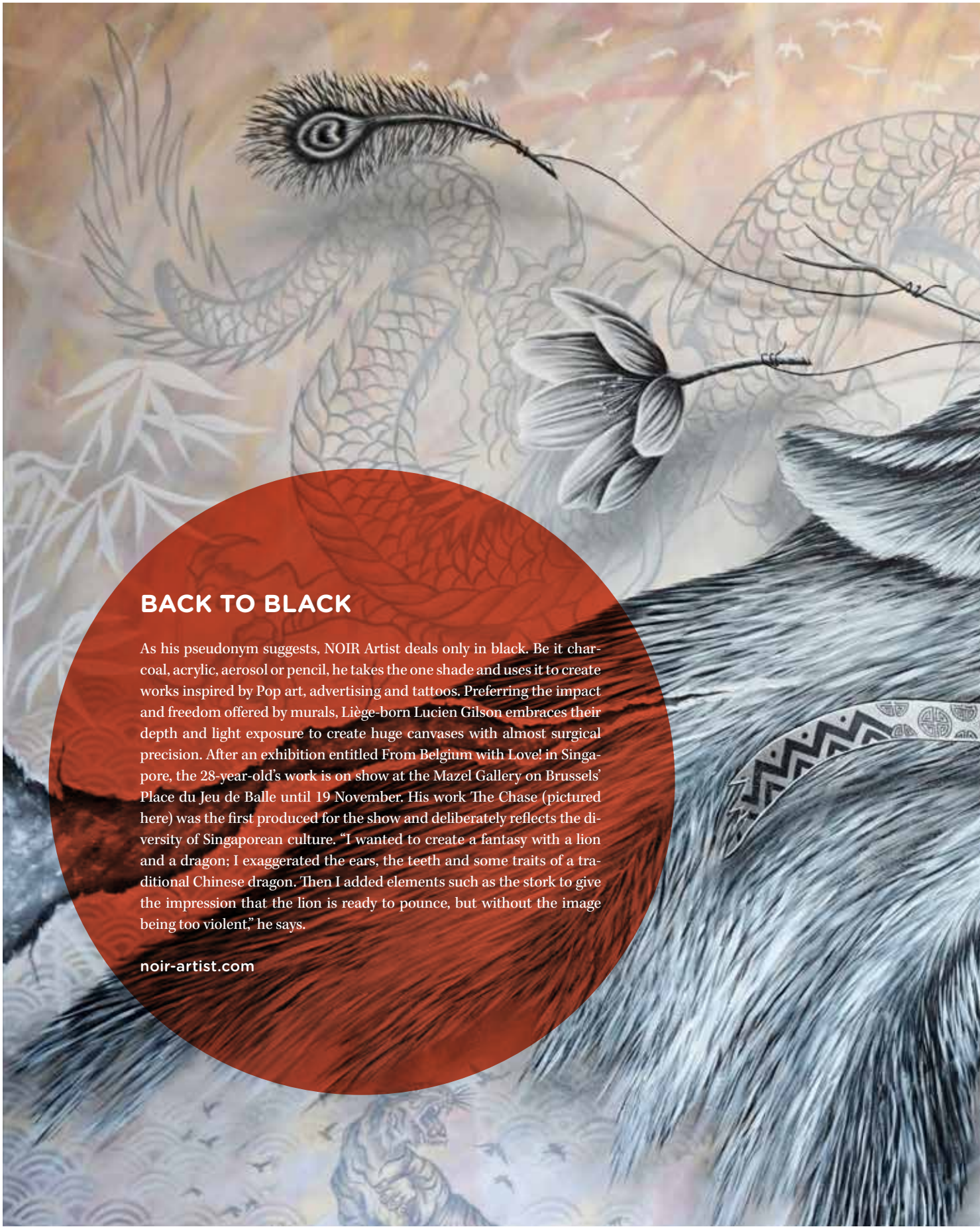
Handily, both 2tec2 and Limited Edition can also call on the services of their own in-house dyeing facility – Superdye dyeworks, a research and development asset that's unique in Europe. Add in France's Dreuilhe spinning mill, and the Coverfil mill in Mouscron, also now under its aegis, and the company controls the entire production chain.

Post-production, designs head off to the brand's Brussels and Paris showrooms, or are exhibited at trade shows like Milan's Salone del Mobile. With their compelling blend of contemporary aesthetics and timeworn artisanal techniques, they have attracted a starry array of clients worldwide: Armani and Microsoft, Dior, the Musée du Quai Branly in Paris, L'Oréal and LVMH.

Inspiration comes from regular research trips, painting or graphic design and might begin with a building or graphic design work. The 2011 collection Looping developed after a meeting with Dutch textile designer Hélène Dashorst, and drew on nylon boat rigging. More recently, chiming with a show at Antwerp fashion museum MoMu, they teamed up with Dirk Van Saene – one of the Antwerp Six group of designers – on a limited-edition rug inspired by Belgian painter Rik Wouters.

"Our collaborations with artists and designers allow our company and designers to go beyond their limits and continuously raise the bar when it comes to experimentation and never-before-seen innovation," says Dewitte. "We accept nothing less than perfection," she adds – an uncompromising stance that's still paying dividends after 25 years.

le.be



BACK TO BLACK

As his pseudonym suggests, NOIR Artist deals only in black. Be it charcoal, acrylic, aerosol or pencil, he takes the one shade and uses it to create works inspired by Pop art, advertising and tattoos. Preferring the impact and freedom offered by murals, Liège-born Lucien Gilson embraces their depth and light exposure to create huge canvases with almost surgical precision. After an exhibition entitled From Belgium with Love! in Singapore, the 28-year-old's work is on show at the Mazel Gallery on Brussels' Place du Jeu de Balle until 19 November. His work The Chase (pictured here) was the first produced for the show and deliberately reflects the diversity of Singaporean culture. "I wanted to create a fantasy with a lion and a dragon; I exaggerated the ears, the teeth and some traits of a traditional Chinese dragon. Then I added elements such as the stork to give the impression that the lion is ready to pounce, but without the image being too violent," he says.

noir-artist.com

3

4

Jean-François D'Or © Ligne Roset

1

© Visit Brussels / Eric Danhier

2

© Jérôme Witz

FESTIVAL

FREEDOM FESTIVAL

1

The annual Freedom Festival delivers a fortnight of politically engaged music and theatre as well as plenty of debates on the present political climate. Musical acts include Brussels trio Puggy (pictured at this year's Brussels Summer Festival) and Serbian bandleader Emir Kusturica and his No Smoking Orchestra. Among the theatre offerings are Catalan director Roger Bernat's interactive performance Pending Votes and Julien Bouffier's adaptation of French writer Sorj Chalandon's novel The Fourth Wall.

• 19-28 OCTOBER, THÉÂTRE NATIONAL, BRUSSELS

festivaldeslibertes.be

MUSIC

MELANIE DE BIASIO

2

Home-grown talent Melanie De Biasio is one of the world's leading jazz vocalists. The Charleroi-born artist released her new album, Lilies – featuring nine tracks of soulful lyrics – on 6 October and she's performing live in Brussels in December as part of a European tour that takes in the UK, France, Netherlands, Germany and Switzerland.

. 17 & 18 DECEMBER, ANCIENNE BELGIQUE, BRUSSELS

melaniedebiasio.com

EXHIBITION

I'LL BE 20 IN 2030

3

This immersive exhibition looks at the impact of science on our daily lives – on our birth, education, work, free time, environment, health and death. It's also a journey into the future, exploring and predicting the world we might live in tomorrow. In collaboration with the University of Liège as it celebrates its bicentenary.

. UNTIL 30 JUNE, LIÈGE GUILLEMINS STATION

europaexpo.be

EXHIBITION

FROM BELGIUM WITH LIGHT

4

Belgian designers, companies and industry have long been at the forefront of developments in professional lighting. From the days when Victor Horta first incorporated light into his architecture to the new era of consumerism ushered in with the Brussels World Expo in 1958, successive movements have shaped contemporary lighting design. This show looks back at the history and forwards to the future of lighting design and technology, light sources and connected systems.

. 19 NOVEMBER-25 FEBRUARY, CID, GRAND-HORNU

cid-grand-hornu.be

LET THERE BE LIGHT

Interior designer and scenographer Benjamin Stoz studied at the Académie Royale des Beaux-Arts in Brussels. He's the curator of From Belgium With Light, the latest exhibition at CID, Grand-Hornu's centre for innovation and design.

"In the 1980s, lots of lighting factories developed in Belgium. And over the past 30 years, these brands have become international references in the field of lighting design. The exhibition aims to explain this Belgian brilliance, which is still relevant today.

"The world of lighting is currently facing the abandonment of familiar light sources, such as incandescence and halogen, in favour of sources that use less energy. We're seeing a considerable technological surge in this field with LEDs and, more recently, OLEDs. The challenge for brands and designers is to keep the human aspect at the centre of all this technology.

"CID has a definite orientation towards the cultural and patrimonial aspects of design, and it's that vision that led me to present this project to Marie Pok, the museum's director. The exhibition reflects an important point in the history of Belgian design but above all it allows us to present the diversity of the contemporary lighting sector.

"It's very difficult to pick out a single favourite piece from the selection of 120 lights that are on display. Certain objects have become iconic or more readily identifiable with Belgian design, like the Torch lamp by Sylvain Willenz, Still by the designer Nathalie Dewez or the playful design of D2V2 by Danny Venlet for Dark.

"What would I like visitors to take away from this exhibition? That Belgium has talent! I really wanted to emphasise this facet of local design: the recognition and the international renown of our creators."

stoz-design.com

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Wallonia.be