

WORLD LEATHER

THE WORLD'S NO.1 MAGAZINE FOR THE LEATHER INDUSTRY

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Volume 35, Number 2

Longevity and repairability mean so much
Students achieve colour-switch success
Jobs boom for French leather sector
APLF diary



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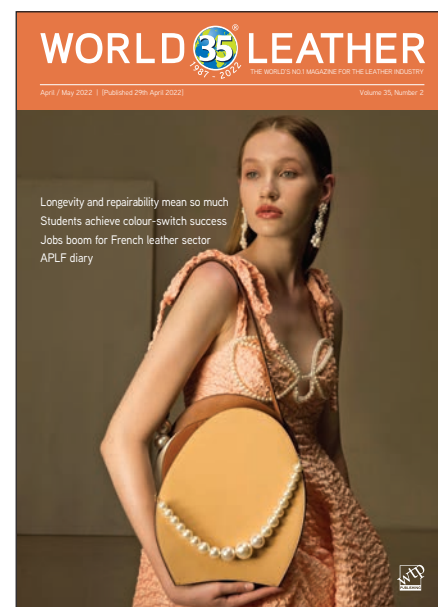
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The World Leather team has been publishing a new series of original, dynamic podcasts since 2019. The whole series is available on Anchor, Spotify, Apple Podcasts, Google Podcasts, Pocket Casts, Overcast and other podcasting platforms. Just search for the World Leather Podcast on the platform you prefer.



Cover image: A bag string of pearls on a leather bag from New York-based brand Cochains, which exhibited at a recent Tranoi event in Paris. CREDIT: COCHAINS



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FRANCE France's leather sector achieved export revenues of almost €14.7 billion in 2021, an increase of 23% compared with the year before, according to Conseil National du Cuir. China overtook the US, Italy, Hong Kong, Singapore and Germany to become the biggest market for French leather exports, contributing revenues of almost €2.5 billion. Exports to China grew by 162% year on year.

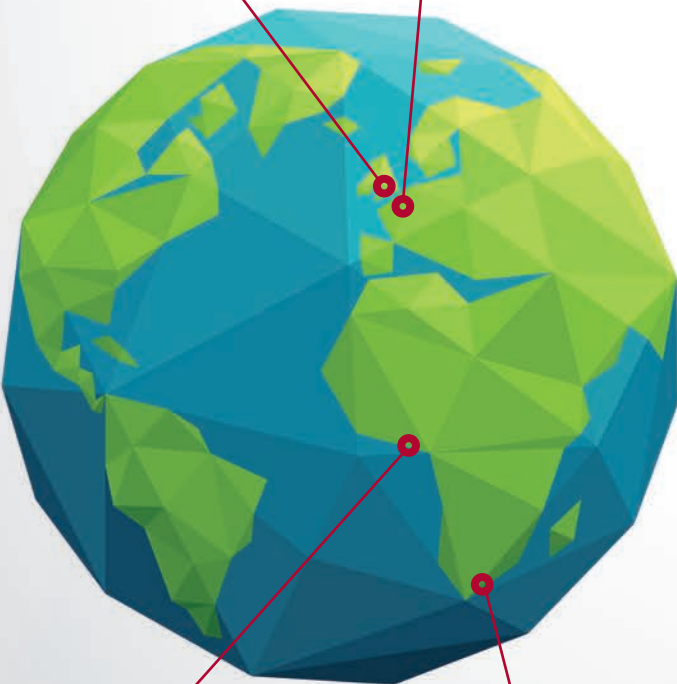
- Luxury group Kering has signed a partnership charter with France's labour, employment and integration ministry with the aim of giving young people, vulnerable individuals and people with disabilities better access to jobs.

UK The UK's Worshipful Company of Cordwainers is celebrating 750 years. One of the oldest livery companies, it was set up in 1272 to oversee the trade of shoemaking. The Cordwainer Footwear Awards will be held in June as a live event as part of the celebrations. Students on footwear design courses at De Montfort University in Leicester, the University of Northampton and London College of Fashion are eligible to take part.

SPAIN Spain's hide and leather sector earned the country more than €100 million in the first two months of 2022, an increase of 38% compared with the same period in 2021. Raw hides brought in €26 million, semi-finished hides €12.3 million and finished leather €63.3 million, growth of 15%, 28% and 52% respectively.

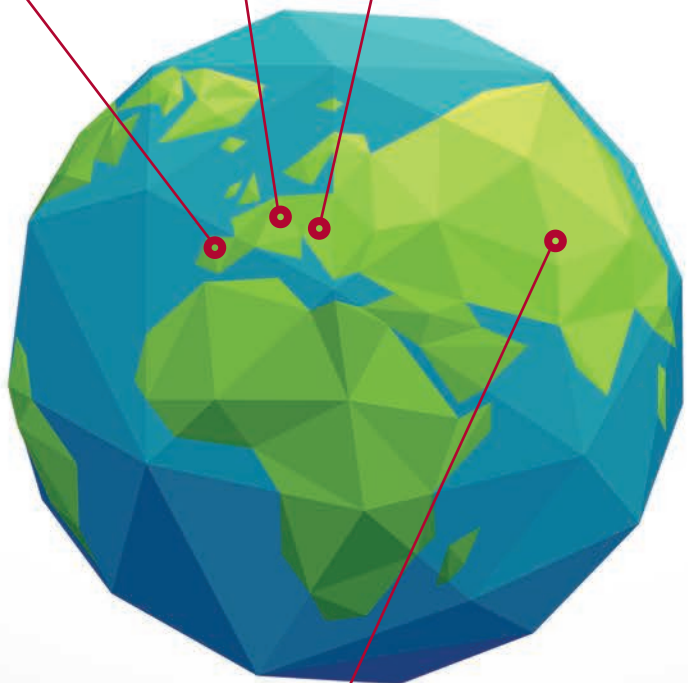
GERMANY As an indication of the important role the Indian industry now plays in the equestrian leather market, the country's Council For Leather Exports is supporting 30 companies at the Spoga Horse Fair in Cologne. Manufacturers of riding boots could also have a presence at the event. India's footwear exports to Germany in financial year 2019-2020 had a value of \$280 million.

HUNGARY Two meat industry organisations from Spain and one from Hungary will join forces in Brussels to present an animal welfare programme at the European Parliament. The campaign, 'European Animal Welfare of Ruminants', will aim to help livestock farmers achieve some of the environmental and animal welfare objectives the EC set out in Farm To Fork, a strategy it published in 2020.



NIGERIA GB Tannery, a supplier to luxury group Kering, is expanding its capacity to increase exports and employ more local people. It is also investing in digitisation to improve communication and sampling with its clients. The family run business in Kano has been operating for more than 100 years and has the capacity to process 1.5 million goat and sheepskins per year.

SOUTH AFRICA The South African Ostrich Business Chamber hosted an event to introduce an international delegation to the array of ostrich products produced in the Western Cape. Ostrich feather products are mainly exported to Hong Kong, China and the UK while the main markets for ostrich leather products are France, the US and Mexico. Almost 40% of the leather heads to Italian and French fashion houses.



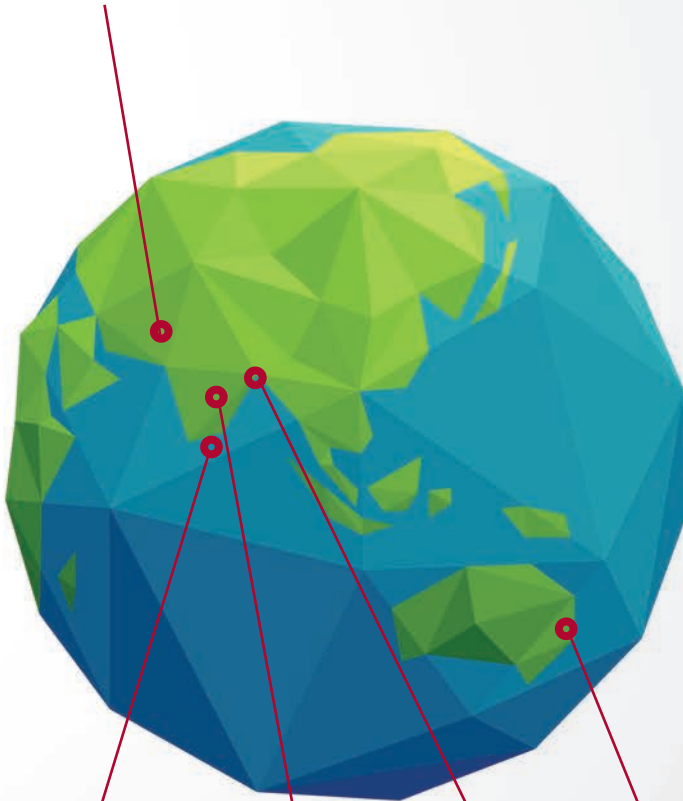
KAZAKHSTAN Italy's footwear manufacturers association, Assocalzaturifici, has said its event in Kazakhstan, La Moda Italiana@Almaty, sounded "a note of cautious optimism". It said "the entire Kazakh fashion community" attended, along with entrepreneurs, buyers, bloggers and influencers. Figures for the first 11 months of 2021 show Italian manufacturers exported 207,000 pairs of footwear to Kazakhstan.

PAKISTAN The country's leather industry achieved export revenues of \$735 million in the first nine months of the financial year, the period from July 2021 to March 2022. This represents an increase of almost 15% year on year. The country's leathergoods manufacturers contributed more than \$460 million, up by 8.5%. Tanners exported 11.75 million square-metres of finished leather, with a value of \$155 million, growth of 40% in volume and of more than 35% in value.

- The Pakistan Tanners Association is inviting expressions of interest from consultants for a project aimed at helping leather manufacturers in the Korangi tanning cluster, near Karachi, to reduce their carbon emissions. Qualified consultants have until May 18 to submit an expression of interest in the work. The project will involve undertaking a study of greenhouse gas emissions in Korangi and then recommending ways of reducing emissions.

US In the first two months of 2022, US tanners, packers and traders exported almost 5.6 million hides. Of these, just under 5 million were wet-salted and 600,000 were wet blue. In volume terms, the combined total is 27% higher than the same months in 2021. Wet-salted's volume growth is 30% and wet blue's is 10%.

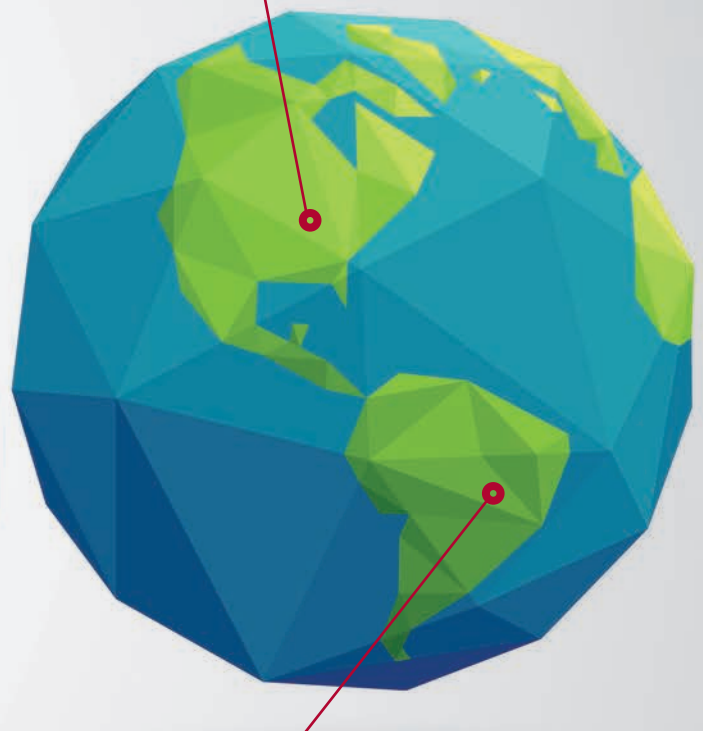
- US beef exports have come close to a value of \$2 billion in the first two months of 2022, according to the US Meat Export Federation. Global demand for US beef "continues to soar, led by excellent growth in value in key Asian and Latin American markets".



SRI LANKA Commodity exports from Sri Lanka were affected by covid-19, according to figures from the country's export development board. Leather industry exports in 2021 had a value of just under \$32 million, a drop of more than 300% compared with the figure for 2016, which was almost \$140 million.

BANGLADESH The country's leather industry has reported export revenues of \$896.8 million for the first nine months of the financial year, from July 2021 and March 2022, an increase of more than 30%. Leather footwear exports brought in nearly \$540 million, up by 28%. Finished leather contributed \$115 million and registered year-on-year growth of nearly 40%.

INDIA The chairman of India's Council for Leather Exports, Sanjay Leekha, has revealed the country's leather sector has achieved exports to the US with a value of \$1 billion for the first time. The corresponding figure for the previous financial year was around \$600 million. He believes the industry's turnover will increase from around \$12 billion in 2020 to \$30 billion in 2025.



BRAZIL The country's national tanning industry body, CICB, is celebrating its 65th anniversary this year. Its member companies represent more than 75% of the Brazilian industry by production volume. In the first two months of 2022, Brazil's exports of hides and leather brought in revenues of \$211.5 million, 2% higher than the same period last year.

- Leather chemicals group Silvateam is joining forces with Brazilian group JBS to host an event to promote debate and reflection about methane emissions from cattle, and about steps that can help decelerate global warming. The event will take place in person in São Paulo on May 4 and 5. Delegates will be able to attend online too. Speakers will include Professor Frank Mitloehner from the University of California at Davis, and Diana Rodgers, director of the film 'Sacred Cow'.

AUSTRALIA Australia's beef and veal exports declined by 14.6% to 887,682 tonnes in 2021, according to industry body Meat and Livestock Australia. Japan was the country's largest customer, importing 216,000 tonnes of beef, a 13% decline from 2020. This was because local production increased and the food service sector remained depressed as a result of covid-19 related disruption.

Smit & Zoon publishes 2021 ESG report

Leather chemicals group Royal Smit & Zoon has published its environment and social, governance (ESG) report for 2021.

It said major achievements included receiving the royal predicate from King Willem-Alexander of the Netherlands; in July 2021, the company became “Royal” Smit & Zoon.

It said the honour was “a visible reward for the efforts of seven generations of entrepreneurship, innovation, and care for our customers”. It said the award was also an incentive to continue along the road of sustainable innovation.

The company also highlighted its achievement in receiving a gold ranking from global business sustainability assessor EcoVadis, putting it in the top 7% of all companies EcoVadis audited last year.

It also pointed to its zeolite-based Zeology tanning system and the Nera brand it has set up to bring the technology to market, saying they had succeeded in moving “from concept to products” in 2021.

“The future of our industry depends on our ability to convince the end-consumer of the environmental, social and economic competitiveness of leather as a circular material,” Smit & Zoon states. “The technologies exist. However, we collectively need to do the right thing and attract the young generation.”

Project aims for more precision on carbon footprints

Specialist Milan-based leather consultancy Spin 360 and leather manufacturing group JBS Couros have announced a joint project.

JBS Couros is to invest €40,000 to set up a research centre, Biomat, which Spin 360 will run.

Biomat’s remit will be to carry out scientific studies into the environmental impact of a range of bio-based materials, including leather.

The founding companies said their aim was to compile “more precise information” about these materials and reflect more fairly the contribution that upstream activities, including livestock farming, make to their environmental footprint.

Non-pickling patent issued to Wuji firm

Local media have reported that the China National Intellectual Property Administration has issued a patent to Wuji Jingsen Leather Product Company, based in Hebei province, for a tanning process which does not involve pickling.



left to right): Adriano Boller from small business association Confartigianato; Luca Pretto from employers' association Confindustria; Mauro Pellizzari from tanning machinery manufacturer Gemata; Claudio Bortolati from tanning auxiliary producers association UNPAC; Dr Giorgio Pozza, Distretto scientific director; Paolo De Marzi from business association Apindustria; and Distretto president Riccardo Boschetti. CREDIT: DISTRETTO VENETO DELLA PELLE.

Zero-impact tanning wins a share of billions

The regional government of Veneto has formally approved a plan for spending its share of Italy’s post-covid recovery plan.

Italy is to receive €190 billion in loans and grants from the European Commission to help put its economy back on track after two years of covid-19.

Veneto’s regional council voted on how best to invest its share, €7.8 billion, and approved 16 projects that various organisations around the region had presented.

Collectively, these projects have the common aim of “relaunching development” in Veneto, the council states, adding that this meant making communities and businesses healthier, greener and more digitally connected.

One of the 16 strategic projects involves the region’s leather manufacturing cluster, the Distretto Veneto della Pelle. It has won inclusion in the region’s recovery plan for a project it has called ‘Tanning: towards zero environmental impact’.

The Distretto unveiled initial details of this project in the middle of 2021. In broad terms, it said it would draw up a masterplan for member tanneries, most of which are in the Arzignano-Chiampo cluster in the province of Vicenza, to follow.

It has set up a high-level technical-scientific committee to decide what actions tanners should take, basing the strategy on four principles. All of the raw material that Veneto tanners work with will come from by-products from the food value chain. They will establish what the Distretto has called “excellence” in terms of finding new uses for the by-products that derive from their own production.

Likewise, they will achieve the same high levels in the chemicals and machinery they use to make leather and in the water treatment processes they put in place. They will also follow the path already put in place by some Veneto leather manufacturers to comply with important certification programmes.

Through *World Leather’s* exclusive partnership with the Distretto Veneto della Pelle, the magazine will publish full details of the ‘Tanning: towards zero environmental impact’ project as it emerges and develops.

Local media have reported that the tanning project’s share of the funding will be €250 million.

Supported in research and development by a senior technical consultant at Hebei Leather Industry Association, the non-pickling method can significantly decrease the levels of salt added to cowhides, according to reports, as well as reduce the cost of processing hides by roughly \$315 for every 22 tonnes of hide.

Post-tanning wastewater treatment and recycling is also made much easier by the technique, since the wastewater does not contain chloride ions. As a result, the resource could even be reused for garden irrigation, Chinese media claim.

Local administrators across Wuji county are reportedly asking local tanneries to apply and promote the large-scale use of the new technology, to “trigger a new technological revolution and quality innovation in the tanning field”.

Buckman: Cost pressure unprecedented

Leather chemicals manufacturing group Buckman has said the prices of all of its products have risen from April 1 or as customer contracts allow.

It said the increases would vary depending on geography and the particular markets served but confirmed that all of its product offerings would be affected.

Buckman said the measures it was taking were unprecedented but necessary because of cost increases it was facing for raw materials, energy, packaging, fuel and logistics. The company argued that “proper price management” was essential if it is to be able to continue to supply its products to its existing customers.

At the same time, it said it would continue its efforts “to drive operational excellence” with the aim of minimising the impact of supply chain disruption and cost increases.

It concluded: “Current cost pressure is unlike anything that has been seen in the history of the specialty chemical sector.”

EU to demand durability guarantees

The European Commission has presented a much-anticipated package of European Green Deal proposals that aim is to “make sustainable products the norm”, to boost circular business models and “empower consumers for the green transition”.

These proposals aim to put in place new rules to make “almost all physical goods in the EU market” more friendly to the environment, more circular and energy-efficient throughout their entire lifecycle, from the design phase to daily use, repurposing and end-of-life.

They insist that consumers must be better informed about the environmental sustainability of products and better protected against greenwashing.

For example, new EU rules will come into force to ensure that consumers receive information at the point of sale outlining “a commercial guarantee of durability”, as well as information relevant to repair. The package suggests manufacturers, brands and retailers will be encouraged to publish “a reparability score” for the products they sell.

Longevity and reparability are two of the characteristics that make leather an ideal fit with any and all discussions about the circular economy.

Environmental claims, such as ‘green’, ‘eco-friendly’, ‘good for the environment’, will be allowed “only if underpinned by recognised excellence in environmental performance”, the document states. Voluntary sustainability labels covering environmental or social aspects will have to have third-party verification or be established by public authorities.

Bader Leather dedicates GM awards to Ukraine

Automotive group General Motors (GM) has named its top global suppliers for 2021. Leather manufacturer Bader Leather Group was among the winners, which number 134 suppliers from 16 different countries.

GM awarded a further distinction, its Overdrive Award, to companies that had displayed “outstanding achievement” in helping the automotive group meet its key priorities.

“This year’s Supplier of the Year event provided us with the opportunity to recognise our suppliers for persevering through one of the most challenging years the industry has ever faced,” said GM’s vice-president for global purchasing and supply chain, Shilpan Amin. “These top suppliers showed resilience and reinforced their commitment to pursuing sustainability and innovation.”

The general manager of Bader USA, Fernando Caccia, said: “This is a testament to our strong commitment to quality, excellence, partnership and sustainability worldwide.”

Mr Caccia added that the Bader team wanted to dedicate the awards to their colleagues at the facility Bader Leather has in Lviv, Ukraine. They and their families and friends have had their lives “turned upside down”, Mr Caccia said, by the war that began with Russia’s invasion of Ukraine on February 24.



CREDIT: TAPESTRY

Tapestry and WWF to set up leather tracing scheme

US-based luxury group Tapestry has donated \$3 million to the World Wildlife Fund (WWF) to develop a system to enhance traceability of the leather value chain in Brazil.

The goal of the programme is to combat deforestation in the Amazon and Cerrado biomes related to cattle raising by accelerating the development of a standard to certify deforestation and conversion-free (DCF) leather originating from Brazil.

Other portions of the grant will be dedicated to reforestation efforts in the highest risk areas of these biomes and support community partners to address the immediate threats that deforestation and climate change pose to local, vulnerable populations.

Joanne Crevoiserat, CEO of the group that owns Coach, Kate Spade and Stuart Weitzmann, said: “We will continue to invest in leather traceability and build on the progress that’s already been made. We are inviting other companies, both within and outside our industry, to partner with us in these efforts.”

In the coming months, the organisations will meet with leaders across industries to build a network to address the challenge.

Mauricio Bauer, WWF senior director of the beef and leather supply chains, said: “We believe the leather sector can and must establish a science-based, data-driven certification that goes beyond the processes currently in place.”

This year, Tapestry partnered Savory Institute’s Land to Market Program, a sourcing solution for regenerative agriculture. 🌱

New vice-president for ICT

The International Council of Tanners (ICT) has confirmed the appointment of **Bekir Burak Uyguner** as its vice-president.

He will take up the role of ICT president in 2023, succeeding **Professor Mwinyikione Mwinyihija**.

Bekir Burak Uyguner is a board member of Turkish leather manufacturer Uyguner, which specialises in finished leather for aircraft interiors, shoes, garments, leathergoods and furniture. He is the president of the Turkish Leather Industrialists' Association.

Technical director joins SLF

Non-profit organisation the Sustainable Leather Foundation (SLF), which aims to promote sustainability in the global leather industry, has appointed **Katie Kutskill** as its technical director.

She took up the role at the beginning of April, joining from automotive leather group Pangea, where she was sustainability officer and director of product development.

Ms Kutskill said the time was right for the leather industry to make "tangible, impactful change that showcases leather's inherent, sustainable qualities". SLF seeks to do this through its Transparency Dashboard, which links to a certification standard that assesses the compliance and performance of leather manufacturers against environmental, social and governance aspects of sustainability.

New role for former ICLT director

The former director of the University of Northampton's Institute for Creative Leather Technologies (ICLT), **Rachel Garwood**, has taken up a business management role in the commercial team of automotive leather manufacturer Lear-Eagle Ottawa.

Ms Garwood became director of the ICLT in 2011 after working there as a senior lecturer since 2008, but left last October.

She said she was enjoying engagement with the final part of the supply chain: the supply of cut and sewn leather parts for seating for major automotive brands.

Dr Martens' top creative is a familiar face

Footwear brand Dr Martens, headquartered in England, has promoted its former global footwear category product director **Darren McKoy** to the role of global creative director.

Before joining the brand in 2015, Mr McKoy worked for Asics, VF Corporation and adidas, among others.



Tanning machinery expert dies

It is with sadness that we report the death of our friend and colleague **Walter Landmann**, who wrote expertly about tanning machinery for *World Leather* from the magazine's launch in 1987 until 2017.

His contacts in the industry in Germany and Italy and his intimate knowledge of the markets there also made him an important business adviser to this magazine's founder, the late **Ray Wilson**.

Walter Landmann was born in Munich in 1927. He fled Germany as a teenager and spent most of World War II in Italy. When peace came, he studied engineering and developed a love of and fascination for machines that endured for the rest of his life.

Through this, he moved to the UK and began working for tanning machinery developer Norris Industries, a specialist in vacuum drying and spraying.

Former technical editor **Richard Daniels** recalls meeting Walter Landmann in this capacity in the early 1960s. Walter had come up with his own design for a tanning drum that drained the float as it rotated, something that is standard now but was a major breakthrough at the time.

To the industry's great benefit, he had time to set out his knowledge of tanning technology in a book called *The Machines In The Tannery*, and worked with Richard Daniels on a more general guide, *The Framework for Leather Manufacture*. Both titles are still of invaluable help to tanners all over the world.

Walter died on April 2. He is survived by his wife, Elizabeth, and their four children.

He said: "We'll continue to innovate and tell the brand story through the way we create, the processes we adopt and the way we interact with our wearers. But we'll always pay homage and respect to the heritage and history of the brand."

Chief product officer **Adam Week** added: "It's clear that Darren has been instrumental in inspiring Dr Martens' product strategy. He has led from the front to reinforce our iconic, original product while inspiring innovation that always touches on our heritage and, importantly, creating footwear that remains tough and durable - protecting our feet and our brand."

Mimosa bouquets for Arzignano women

Figli di Guido Lapi, an Italy-based supplier of vegetable tanning chemicals, delivered 500 bouquets of mimosa flowers to female tannery and factory workers around the Arzignano leather district to mark International Women's Day (March 8).

The mimosa was supplied by South Africa's NTE; Figli di Guido Lapi is its Italian agent. "It is a symbolic opportunity for our company that for over 100 years has been delivering mimosa as a plant extract for the tanning industry and for leather in particular," said the company.

Figli di Guido Lapi is part of the wider Lapi group, which includes FGL International, Finikem, Toscolapi, Gi-Elle-Emme tannery, Lapi Gelatine and Npa Mosè.

Real Leather Stay Different judges named

Leather and Hide Council of America (LHCA) has announced two judges for its 2022 Real Leather, Stay Different student design competition.

It had previously announced celebrity fashion stylist **Mike Adler** and the 2021 winner of the award, **Emily Omesi**, as judges for the 2022 competition.

They will be joined on the panel for the final in London on September 15 by **Christopher Koerber**, managing director of Hugo Boss's Ticino business unit, and by **Rosie Wollacott Phillips**, group sustainability manager of Mulberry.

Open to anyone studying art and design or has graduated from art and design higher education within the last two years, Real Leather, Stay Different aims to encourage a new generation of designers "to reconsider their relationship with leather" and other natural materials.

LHCA runs the competition in partnership with Arts Thread, an online platform for emerging artists and designers.

Donatella Versace: CEO 'the perfect partner'

The reason for ex-Alexander McQueen chief executive **Emmanuel Gintzburger's** recent departure from the Kering-owned brand has been revealed, following a recent announcement by rival group Capri Holdings, the owner of luxury brands Versace, Jimmy Choo and Michael Kors.

Mr Gintzburger will step into the role of chief executive of Versace on September 12. The appointment effectively cuts short the tenure of the Italian firm's interim chief executive, Michael Kors alum **Cedric Wilmotte**, who was originally set to leave his temporary position on December 31.

Capri CEO **John Idol** praised Mr Gintzburger's "proven record" of building global luxury fashion houses, adding that the executive's vision for Versace chimes well with the group's own ambitions and strategic initiatives.

Versace's chief creative officer, **Donatella Versace**, stated: "I am delighted Emmanuel has joined the Versace family. He has an amazing background in luxury; as soon as I met him, I knew he was the perfect partner to help us

take Versace to even greater heights."

Mr Gintzburger added he was "thrilled" to be joining the brand. "I have long admired the unparalleled style and fearless narrative of the house. I look forward to having the opportunity to partner with Donatella and the talented Versace management team to accelerate growth and strengthen the position of Versace as a leading luxury fashion house," he said.

Kangnai founder Zheng Xiukang dies

The founder of Wenzhou-based shoe brand Kangnai, **Zheng Xiukang**, has passed away.

China Leather Industry Association (CLIA) described Mr Zheng's death as a "major loss" to the country's leather and footwear industries.

He was a role model for a generation, CLIA said.

Well-respected as an early pioneer of mechanised production in Wenzhou, Mr Zheng was also a published author, a registrant of more than 70 technical patents and a contributor to national standards for leather footwear in China.

Over the years, the businessman served as vice-chair of the China National Light Industry Council, vice-chair of CLIA, executive vice-chair of Zhejiang Leather Industry Association and lifetime honorary chair of the Wenzhou Shoe and Leather Industry Association, among other commitments.

He was also the recipient of numerous awards for his entrepreneurship.

Successful student visit to Cartigliano

Students from the Galileo Galilei Technical high school in the leather-manufacturing town of Arzignano, Italy, travelled to tanning machinery manufacturer Cartigliano.

Technology that the students were able to view included Cartigliano's Just In Time drying and conditioning line and its radio frequency finishing process. They also observed a batch of bovine hides going through the whole Cartigliano drying process.

The team at the technology company said it had been delighted by the interest and inquisitiveness the students had shown and by the number of questions they asked. 🌐

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World Leather's publishing cycle and limitations on space make it impossible for us to run more than a carefully selected sample of news from across the industry. However, we publish hundreds more stories on *leatherbiz.com*. The site is updated every day with news from every continent and every part of the industry, making *leatherbiz.com* one of the most comprehensive archives of news anywhere on the web for the global leather industry.

We list below just a few of the headlines that have appeared on the site in recent weeks and can still be accessed.

27/04/2022

Australian project shows rotational grazing boosts carbon in soil
Amazon-Ferragamo partnership exposes crime

26/04/2022

Tyson CEO shares Washington DC testimony
Coach takes 'crafted to last' concept to Tokyo

25/04/2022

Ugg launches first boot from 'regenerative' sheepskin
Africa's top passenger car producer in 2021 was Morocco
eBay offers luxury brand seconds at 60% off

22/04/2022

Good use of hides helps earn accolades for Tyson plants
Roh Seoul broadens footwear offer

21/04/2022

More uncertain environment is no bar to growth for Kering
A good quarter for Stella International
Kangnai founder Zheng Xiukang dies

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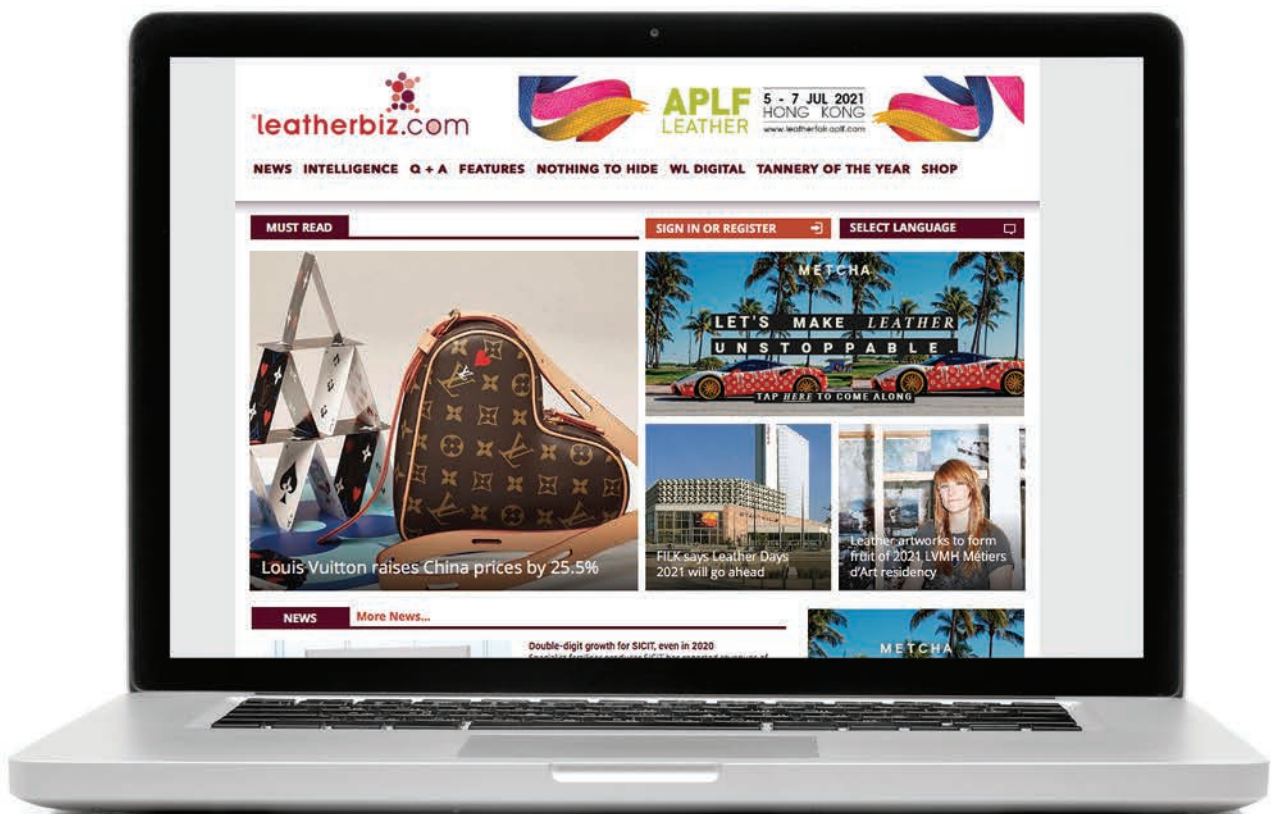
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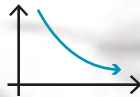
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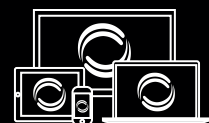
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Accuracy matters

The new president of the International Union of Leather Technologists and Chemists Societies took up the role at the start of 2022. He knows there is much work to do and that war makes most things even harder, but he still speaks optimistically about the leather industry's future.

In your message as IULTCS president at the start of this year, you expressed a high level of optimism. What effect has the war in Ukraine had on the way you view the rest of 2022?

The tanning industry has been badly affected by the war. First, because energy costs have gone very high. Some tanneries may face restrictions in electricity and gas supply. The second thing is that the war has also had a big impact on the price and availability of chemicals. The experience of my company, ATC, is that we are facing terrible problems with deliveries and the price of some of our raw materials has tripled. Delivery times that used to be two weeks are now two months. Let's say you want to buy ammonium salts: these are mostly produced in Ukraine and Russia. They produce those salts to make fertiliser for agriculture, but we use them too to make deliming agents. Well, the price has multiplied by four and the quantities available are very limited. The whole leather value chain is being impacted. Tanners who I have spoken to have said their customers want to wait before buying more leather because consumers are afraid of the situation and are reducing their purchases of shoes, handbags and so on. So the tanners, in turn, are putting the purchase and soaking of new hides on hold, saying they will work from wet blue for now because the future is too uncertain.

You highlighted the strong performance of the luxury leathergoods sector, dominated, of course, by major French groups, as one of the reasons you felt positive about 2022. What are the reasons why this sector is so strong?

We have good relationships with the top management in some of those companies. I have been in meetings with them recently and they are still optimistic. They are still producing, selling and exporting a lot and, if you see their turnover and profits, the figures are very impressive. Rich consumers have faced restrictions for two years because of the pandemic and have not been able to travel anywhere and, now that these restrictions are lifting in many places, demand is strong and the success of the big luxury groups continues. Those companies are very strong in marketing. For them it wasn't a problem that airport shops were closed; they redoubled their efforts to sell in their own-brand shops and the result was people queueing outside to buy things. These companies don't have enough products to satisfy the demand, which is why, every year, we see new leathergoods factories and new training schools opening, creating hundreds of new jobs in France. They need more leather too and the major calfskin tanneries in France have been owned by the luxury groups for the last ten years or so and they have invested a lot of money in them.

“Consumers now understand that shoes made from synthetic materials are a disaster.”

Jean-Pierre Gualino, IULTCS president



CREDIT: ATC

Does this make it hard for small, independent tanneries to compete?

Very hard, but many of those smaller tanneries are not producing calfskin. They work in sheepskin or bovine leather for shoe uppers instead. The most famous French tanners only really buy grade-one hides and don't bother with the other grades. If you are an independent, family-run tannery you have to try to create value from the other grades too. It takes a lot of effort to make good leather from that material and find customers for it. But in France, at most, we have around 50 tanneries, of all sizes, left. In Italy there are ten times more.

You said there had also been “a commendable recovery” in furniture and footwear. A fall in the use of leather in footwear has been a problem for many years. What are the indications you have seen of a change here?

It's true that the shoe market has been affected for many years by competition from synthetic materials, but tanners are optimistic. We sell chemicals all over the world and this is the message we are receiving from the tanners. They believe the shoe business will come back, that the change will come, even if this is not the market situation yet. And the reason is sustainability. Consumers now understand that shoes made from synthetic materials are a disaster. Leather, on the other hand, uses waste from the food industry and upcycles it. When you buy shoes made from leather, the levels of pollution and environmental impact are very limited, but so many brands choose to use the unfair figures from the Higg Index when trying to calculate carbon footprint. IULTCS is working with other groups such as Leather Naturally and the Leather Working Group to help tanners show accurate figures for leather's carbon impact. And when they are able to show those figures and help their customers to make a fair comparison, those customers will choose leather.

In your comments, you also said that automotive leather remained uncertain because of factors outside the control of the leather industry. What would you say to offer encouragement to companies producing leather for the car industry?



If customers have access to accurate information about environmental impact, they will continue to choose leather, the IULTCS president insists.

CREDIT: PREMIÈRE VISION

It's what we have said already: carbon footprint. Car-makers don't have the right information about impacts either. But no car company, except Tesla, has stopped offering at least some of their car seats in leather, so far. I know Volvo has said it will do this, but I don't think it has done so yet. We need to give those companies good, accurate, science-based information about the impact of leather so that they will continue to use it.

From an IULTCS point of view, which are the areas in which you hope to see progress during your time as president?

I hope to see progress in the regulation of chemicals under REACH. There are new demands to decrease the permitted quantities of bisphenol and other chemicals. Some luxury groups have reacted to this by telling tanners that they don't want them to use bisphenol any more. But they are confusing bisphenol A, which is toxic but not in use in the leather industry, with bisphenol F and S. Our job at IULTCS is to communicate the truth about these products.

What is the best way to achieve that?

Our role is to set up the right test methods. Today, there is no effective test method for checking the quantities of bisphenol F and S in leather. The tests in place are no good. We must try to set up a better test method and make sure it becomes the standard. If we don't, tanners will face problems in making leather, as they have with chrome VI. The European Commission said two years ago that it wanted to push the concentration limit of chrome VI from 3 ppm to 1 ppm, but it does not make sense. We have to talk to the Commission to make it clear that what it is asking for is not reasonable. This dialogue is very important. I fear that the only people talking to the decision-makers are campaign groups with an agenda and that government ministers and other people in authority listen to what these groups say without checking it with specialists. I'm trying to be more proactive as IULTCS president, trying to prevent these difficulties from arising. It's a big task and we are doing our best, but the leather industry is not very well known by the authorities. 🌱

A photograph of three lion cubs climbing a large, dark, textured tree trunk in a savanna environment. One cub is at the top, another in the middle, and a third at the bottom. The background is a blurred green landscape.

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Nothing to Hide: Standards and use limitations for chemicals in leather production

Executive summary

Responsible tanneries all over the world upcycle hides and skins, by-products of the meat industry, to create a valuable product instead of discarding it and letting it go to waste.

Chemicals are used in every step of leather production, but they are stringently regulated and tanneries provide safe, clean environments to work in.

The effects of chemicals on workers and consumers are well known. Production is carried out in a safe manner; chemicals are carefully controlled and good-quality leather does no harm. Quality checks and control of unwanted substances are necessary to protect leather processors and consumers.

For the consumer it is important that all tanneries and leathergoods manufacturers, as well as brands and retailers, comply with the EU legislation and other national regulations to protect the reputation of leather on a national and international scale.

Nevertheless, tanneries must constantly embark on innovation and to improve protection of human health and the environment from the risks that can be caused by chemicals, while ensuring the competitiveness of the tanning industry. The leather industry is not a part of the problem but a part of the solution. 🌱

About this essay

We first published essay seven in the Nothing To Hide series in the February-March 2015 issue of *World Leather*. Its author was Dr Alois G Püntener, and he has kindly provided this updated version of the essay as we drive forward with our updates of the series for the 2020s. Now retired, Dr Püntener is based in Switzerland and is still an active member of VESLIC, the Association of Swiss Leather Chemists and Technologists. He is well known in the wider industry as an inventor and innovator in the chemistry of leather production, with a host of patents to his name. He gained his doctorate in chemistry at the University of Stuttgart, Germany and spent time during his career working in Germany, France, the US and India, as well as Switzerland.

Carefully stored leather chemicals.

PHOTO CREDIT: WTP



PHOTO CREDIT: STAHL

Nothing to Hide:

Good practice and regulation keep industry safe

Chemicals are used in every step of leather production but they are stringently regulated and tanneries provide safe, clean environments in which to work. Responsible tanneries all over the world recycle hides and skins to create a valuable product. They are part of the solution, not part of the problem.

The use of leather dates back almost as long as recorded history, protecting our ancestors when they went out to hunt. They used a lengthy and fairly sophisticated process to tan hides and skins to make them durable: if they had simply dried the skin the resulting leather would have been too hard, if they had kept it moist, the skins would have rotted and decayed. The preparation of animal skins was one of our ancestors' first crafts, probably first carried out by women, and later, in the pre-industrial times, mostly by men. The animal skin was not only used as jewellery and camouflage or for protection but also for tools, household items and shoes – the shoemaker was one of the most important users in early times.

These original tanners developed innovative techniques and used basic chemicals to make the skin strong, durable and fashionable. The know-how was passed on from generation to generation, and

subsequent trade guilds protected the secrets of the process. It has never been reported that leather or leather-making was harmful or caused serious sickness.

In the past

Hide collectors were often confronted with anthrax. An infectious disease that primarily affects herbivorous animals such as cattle, pigs, goats and sheep, it can be transmitted from them to humans. Colds could occur in the beamhouse, but wetness is not the cause of rheumatism, although wetness certainly does not have a soothing effect, rather the opposite.

Dealing with the rotting skin released an unpleasant odour and tanners tended to be housed in particular areas, near flowing water, often downstream from the city. In 1700, Italian physician Bernardino

Ramazzini, who specialised in occupational diseases, reported that an accumulation of tannery waste, and particularly the smell, could be damaging to health¹.

At that time the unpleasant smells from waste and untanned skins were acknowledged, although it was clear that a skin should be tanned quickly and a vegetable-tanned skin gave the leather a special odour. The smell of leather was reminiscent of wood and nature. In fact, the tangy resin aroma of vegetable tanning agents had been recommended as a treatment for lung disorders and tanning liquor was used to treat some skin diseases.

The standard of cleanliness in European tanneries – as in many craftsmen's workplaces – was not high, but the tannery itself was not thought to be a bad working place.

In Johann Christian Gottlieb Ackermann's translation of Ramazzini's work it mentions that in the Polish city of Gdansk, which had been ravaged by the plague, only the tanners' street was not affected². We can probably assume that washing and maybe the disinfecting effect of the tanning liquors reduced the bacteria *Yersinia pestis*, transmitted by the bites of fleas.

Modern-day processes

The further development of leather production is closely connected with the rise of the chemical industry. Tanning changed from the domain of the trade guilds to industrial production. The leather industry has progressed immensely from those early times. New chemicals and tanning agents, new dyes and additives for handling and finishing have been invented. As a result, leather production has continuously improved with respect to the quality of leather, environmental protection, waste minimisation and disposal, the correct use of chemicals and industrial accidents. For example, the statistics in Germany show that people working in the leather industry are not exposed to health hazards to a greater extent than the rest of the population³.

The smell

Leather production still generates by-products, which find outlets in several sectors such as fine chemicals, photography, cosmetics and as soil conditioners and fertilisers. In order to avoid unpleasant smells, the putrefactive properties of animal skin must be eliminated. This is done when hides and skins are processed immediately after slaughter or by preservation with products such as common salt⁴.

Vital chemicals GHS, CLP, REACH, SDS

In the hands of a skilled tannery, with recipes for good tanning liquor and softening finishing oils, outstanding quality leather can be produced. Chemicals are used throughout the process, from the soaking to remove soil and other contaminants and to increase moisture, to tanning, and all the way to the finishing stage, when the leather is treated to give its final appearance and qualities. Knowledge of chemicals is extremely important when dealing with them, not only for worker protection and proper disposal, but also for the producer of leathergoods and the consumer.

The United Nations Conference on Environment and Development (UNCED) provided the impetus for the development of the Globally



Safety instructions for handling leather chemicals.

PHOTO CREDIT: SMIT & ZOON

Harmonized System of Classification, Labelling and Packaging of Chemicals (GHS)⁵ with Agenda 21, which was adopted in 1992. In Chapter 19 of Agenda 21, it calls for harmonisation of the classification and labelling of chemicals. We now have a globally standardised system for classifying chemicals and labelling them on packaging and in safety data sheets. It is updated regularly so that the current status must be consulted whenever there is a reference to the GHS.

On the basis of this labelling system, Europe implemented it as CLP (Classification, Labelling and Packaging) Regulation (EC) No 1272/2008, which came into force on 20 January 2009. Substances have been classified and labelled according to the CLP regulation. This has been mandatory for all available chemicals since December 2012. It is closely linked to REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulation, consolidated version (EC) No 1907/2006, which entered into force on 1 June 2007. Its main aim is to ensure a high level of protection of human health and the environment from the risks that can be posed by chemicals. It lays down provisions governing the manufacture, placing on the market and use of chemical substances and preparations. Chemical substances, which will be intentionally released, are also covered. Chemical makers have to demonstrate how the substance can be used safely and to communicate the risk management measures to users.

A core element of the REACH regulation is that the data transmitted to the European Chemicals Agency (ECHA) in the registration process is available to the public via an internet database⁶ in application of the principle 'no data, no market'. Here one can also find the regulation of CLP, BPR (Biocidal Products Regulation), POP (Persistent Organic Pollutants), etc., and the corresponding data.

To comply with REACH, a safety data sheet (SDS) must be sent to all recipients to whom the supplier has supplied the chemical. It must include information about the properties of the substance or mixture, its hazards and instructions for handling, disposal and transport and also first-aid, firefighting and exposure control measures.

Suppliers and recipients of safety data sheets are encouraged to check that the required information is provided. The format and content

of the safety data sheets are specified in REACH. A user needs to understand and read the safety data sheet and apply appropriate measures to adequately control the risks.

A safety data sheet has 16 sections:

SECTION 1:	Identification of the substance/mixture and of the company/undertaking
SECTION 2:	Hazards identification
SECTION 3:	Composition/information on ingredients
SECTION 4:	First aid measures
SECTION 5:	Firefighting measures
SECTION 6:	Accidental release measures
SECTION 7:	Handling and storage
SECTION 8:	Exposure controls/personal protection
SECTION 9:	Physical and chemical properties
SECTION 10:	Stability and Reactivity
SECTION 11:	Toxicological information
SECTION 12:	Ecological information
SECTION 13:	Disposal considerations
SECTION 14:	Transport Information
SECTION 15:	Regulatory information
SECTION 16:	Other information

Annex XVII of REACH includes all the restricted chemical substances. It shows a substance or a group of substances or a substance in a mixture, and the consequent restriction conditions.

Examples of restricted, limited or investigated substances that should not be found in leather include:

- dyes that can split off carcinogenic amines, carcinogenic and allergenic dyes
- chromium VI compounds, organotin compounds
- toxic metals such as, arsenic, barium, mercury, cadmium and lead
- formaldehyde content above the declaration limit
- short-chain chlorinated paraffins (C₁₀-C₁₃)
- polyaromatic hydrocarbons
- phthalates
- chlorophenols
- alkylphenols/ alkylphenol ethoxylates
- per- and polyfluoroalkyls compounds
- dimethylformamide
- dimethyl fumarate
- N-methyl pyrrolidone
- polybrominated diphenyl ether

This list is being continuously updated and should therefore be consulted frequently. It is intended to help tanners and other users of chemicals to take the necessary measures and to show that the manufacturing process does not use restricted chemicals, and that undesirable chemical substances will not be found in the end products.

Means of protection, biocide (BPR)

The global nature of the industry presents its own issues. Leather, semi-finished leather, or finished products are often transported over long distances, but in warm and wet climates this requires the use of biocide products to avoid damage to the leather. These products contain or generate active substances that defend against harmful organisms in order to prevent the leather from forming a coating or taking on an unpleasant smell from mould caused by incorrect transport or storage of the leather and goods made of leather.

The use of biocides is regulated in the Biocidal Products Regulation (BPR) Regulation (EU) 528/2012. The text was adopted in May 2012 and was applicable from September 2013. It concerns products placed on the market having biocidal products, which are used to protect humans, animals, materials or articles against harmful organisms like pests or bacteria, by the action of the active substances contained in the biocidal product.

The basic principle is that a biocidal product must be authorised before it can be made available on the market or used. This takes place in two consecutive steps. First, the active substance is evaluated and, provided the criteria are fulfilled, is then approved in a specified product-type. The second step is the authorisation of each product consisting of, containing or generating the approved active substances.

Safety data sheets (SDS) must also be created for biocides in accordance with the edification of the REACH regulation.

In Annex V to the BPR, the biocidal products are classified into 22 biocidal product-types, grouped in four main areas. The biocidal active ingredients for leather products are currently in the BPR Existing Active Substances Review Scheme for Product Type (PT) 9, 'Protective agents for fibres, leather, rubber and polymerized materials'.

Biocidal active ingredients are differentiated into existing active ingredients and new active ingredients. For biocidal products that contain existing active ingredients that were already on the market before May 2000, transitional regulations can apply.

At this time the following preservatives are often used in leather processing:

- 2-(thiocyanomethylthio)-benzothiazole (TCMTB)
- 4-chloro-3-methylphenol (PCMC)
- 2-phenylphenol (OPP)
- 2-octylisothiazol-3(2H)-one (OIT)

For products with these biocidal active ingredients, the current national legal provisions continue to apply until an evaluation by the ECHA (European Chemicals Agency). The point in time for this assessment of the active substances for the PT 9 cannot be foreseen as of now. However, this is likely to be expected within a few years.

Global industry

Social responsibility is becoming increasingly important. This refers not only to working conditions but also to wages. However, owing to cost pressures, much leather manufacturing has moved to developing economies, where about twice as much leather now comes from compared to the most developed economies⁷.

The industry is not free from incorrect behaviour and the damage caused to its reputation by a few bad actors cannot be taken lightly. It

is simply unacceptable that, while most tanners spend huge amounts of money and time building treatment plants and protecting the environment and workers, a small minority does not, behaving as though in developing countries, similar laws are not in place.

This leads the media to make the public think the worst cases are the standard; suggesting neither the owners nor the governments are looking after workers, the environment or consumers' health and safety.

The rules for good and safe working conditions including social behaviour must not only be regulated but enforced internationally. Otherwise, leather loses its good reputation.

One has to wonder why some leather buyers neglect tanneries that invest a lot of money in cleaning their waste, in good working conditions and in making high-quality leather. They should prefer such responsible enterprises, even if the leather is slightly more expensive.

In conclusion, it should be pointed out that the International Union of Leather Technologists and Chemists Societies (IULTCS) has the responsibility to prepare leather test methods for the International Organization for Standardization (ISO)⁸. It provides help and protection for the tanning industry worldwide by developing and publishing test methods that are explicitly relevant to good leather quality.

The technical work preparing and updating the ISO Standards is carried out by the three 'I Leather' test method commissions (IUC-IUF-IUP) of the IULTCS.

- IUC (chemical test methods)
- IUF (fastness test methods)
- IUP (physical test methods)

The chemical test methods also include procedures for analysing for unwanted chemicals and limit value determinations for some leather preservatives, ensuring a high level of protection for users. ☺

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A milestone in roller coaters

The brand-new line of leather finishing machines from Rotacoat is claimed as a milestone in the development of modern roller coaters. Combining specialism in machinery, industrial automation, leather, and related materials finishing, the Rotacoat project brought together a small team with decades of experience, driven by an innovative spirit and a desire for continuous improvement. At Tanning Tech 2021, its flagship machine, the J1 3400 was on display.

Rotacoat's cutting-edge models, from the J1 1800 to the J1 3400, combine advantages typically offered by machines equipped with rubberised conveyors, to those machines equipped with counter (pressure) rubber rollers. Designed to apply an array of finishing chemicals efficiently and very uniformly in reverse, such as resins for impregnation coats, hot and cold oiling, or even high viscosity products, such as filling agents, stuccos and pre-base preparations, the J1 range is suited to finishing both full grain and buffed leathers on raw material, covering whole hides and sides, splits and even sheep and goat skins of the softest type with a thickness of 0.4mm. With a conveyor speed of over 20m/minute, application rates of up to 50g/square foot are possible in one pass, where necessary. The fine working tolerance is attributed to a soft rubberised pressure roller driving an innovative thin conveyor belt where the combined thickness of the rubber coated drive roller plus the belt greatly offsets the uneven structure of the leathers. A motorised doctor blade that can be programmed via the touch screen panel ensures a constant and adjustable pressure with the engraved cylinder and allows the operator to measure out with great precision. Additionally, it greatly reduces the wear and tear of both the doctor blade and coating rollers. The touch screen panel also gives access to numerous pre-set parameters for various applications, and individual settings and working recipes can be saved for a given process or article that can be easily recalled aiding reproducibility but also affording a quick changeover from one application to the next.

Innovation in design has altered the machine's upper section, including the rotating roller change and the motorised doctor blade supports, to move up and down in relation to the rubberised conveyor to enable thickness regulation,



as opposed to movement of the conveyor as is seen in many traditional machines. This configuration provides greater precision and reliability as the guide carriage of the transport system underneath is unaffected by the opening/closing cycles which tend to compromise the belt's position and tightness. With reduced maintenance intervals (down-time) in mind, the rubberised belt can be changed quickly without any disruption to the workspace, as the guide carriage for the belt is mounted on rails, and with the reduced thickness of the belt also equating to reduced physical weight, replacement is

made easier as well.

Further innovations have been incorporated with measures aimed at eliminating any vibration at source, with all drives (either direct or via toothed belt), speed regulation of the engraved roller, feeding and transport belts, washing brush, etc., achieved by means of inverters.

The touch screen control panel, giving access to all functions, is fully compliant with Tannery 4.0 connectivity to a corporate network for bi-directional data transfer and internet connection for remote assistance, trouble-shooting and software updates. 🌐

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Quimser receives validation for biodegradability claims

In 2021, at the height of the coronavirus pandemic, Spanish chemicals company Quimser conducted in-house trials to show the biodegradability of their Sertan WT tanning chemistry (see World Leather Feb/March 21). By the end of the year, further work in collaboration with INESCOP, the Spanish centre for technology and innovation for the footwear sector, had certified a small range of crust leathers.

From the initial in-house studies, where different biodegradability tests were performed to compare chrome tanning with plant extract and the new Sertan WT tanning product, Quimser were able to show decisive conclusions that they were working with a product that provided both biodegradable and compostable leather.

To better understand the two concepts, a material is considered biodegradable when it can decompose within a reasonable time scale into other chemical elements by the action of biological agents, such as bacteria or enzymes originating from fungi, plants or animals, plus physical factors such as temperature and humidity. These natural environmental conditions transform these substances into carbon dioxide, water, and other chemical components. On the other hand, we consider a material compostable when, after being biodegraded, the resultant products present no harm to the environment and can be integrated into the natural ecosystem. By definition, biodegraded products act as nutrients for the natural environment.

The time it takes for a material to be biodegraded, composted and integrated by nature depends, among other factors, on the living organisms involved in the process, temperature, and humidity. According to the standard EN 13432 of the European Committee for Standardization (CEN), a material is considered compostable if it meets the following criteria:

- Degradation of 90% of its total mass in a maximum time of 6 months.
- Be completely fragmented into particles smaller than 2mm x 2mm after 12 weeks.
- Ecotoxicity of humus must comply with compostable material standards.

Table 1: Carbon (C) element content of the test material, both the collagen (positive control, C+) and the samples:

Materials	% Carbon
Collagen (C+)	50.98
Tanned wet white Sertan WT	28.18
EA-R-20144	44.27
EA-R-20143	39.95
EA-R-20099	43.43
Tanned chrome wet blue	41.08
Oxazolidine (INESCOP Control)	44.76

Table 2: % Relative biodegradability of each sample - Determination of relative biodegradability percent of the sample using aerobic microorganisms

Parameter	% Absolute biodegradation	% Relative biodegradability*
Collagen C+	78.9	100.0
Tanned wet white Sertan WT	71.8	91.0
EA-R-20144	35.5	45.0
EA-R-20143	58.7	74.4
EA-R-20099	8.1	10.3
Tanned chrome wet blue	0.4	0.5
Oxazolidine (INESCOP Control)	53.5	67.8

** For the calculation of % relative biodegradability, the % absolute biodegradation of collagen obtained in the test is taken as 100%. The % relative biodegradation of each sample is calculated based on the value corresponding to 100% relative biodegradability of collagen.*

- Does not contain heavy metals.

In effect, we can say that a biodegradable material is not always compostable, but a compostable material is always biodegradable.

According to its own laboratory tests for compostability, and the INESCOP laboratory analysis (ISO 20136: 2020 – determination of

degradability by microorganisms), leather tanned with the Sertan WT process was 91% biodegradable and compostable in 28 days, according to standard 13432 (ISO14855). In contrast, the results of wet blue chrome tanned leather gave, as a result, biodegradation of 0.5% and that of a crust tanned with plant

extracts (ref. EA-R-20099), a biodegradability value of 9-10%.

At the same time as the development of Sertan WT, the company's laboratory worked on the development of a range of retanning and fatliquoring products that were environmentally friendly and provided biodegradable, compostable and "eco-friendly" leather. Other current and future requirements and regulations were also considered for these products such as:

- The origin of the materials: Avoiding petroleum products and ecologically sensitive products such as fish or animal oils.
- Zero MRSL ZDHC restricted product lists.
- The UN Sustainable Development Goals (SDGs) (fish oils, deforestation).

The new products, Sertan ND, VGI, RD, DX, RN-S and RN-V that are in Quimser's Eco tanning portfolio, are free of formaldehyde, bisphenols, heavy metals, petroleum derivatives and are based on 100% natural origins. 🌱

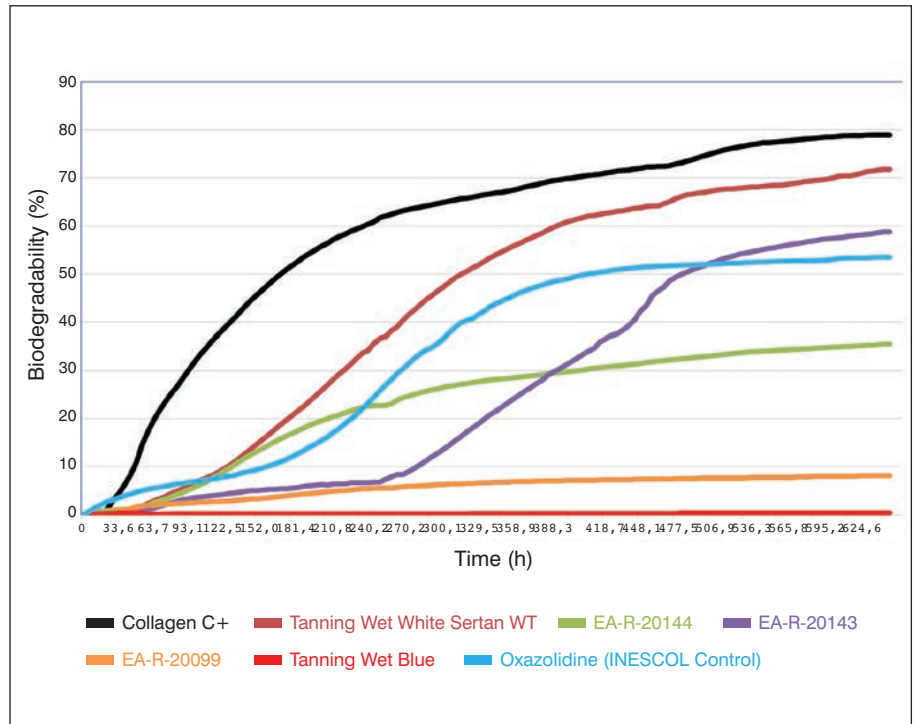


Figure 1: [INESCOP certification for EA-R-20144 (Leather) 45% biodegradable in 29 days; INESCOP certification for EA-R-20143 (Leather) 74.4% biodegradable in 29 days].

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A change of scene as APLF moves from Hong Kong to Dubai

Technical Editor Matthew Abbott provides a personal diary

With the 'on again-off again' nature of trade shows over the last year or so, it was good to be back to the familiar calendar event of a late March, long-haul flight to a leather trade show.

Having never exited Dubai airport, other than to be put up in the Emirates hotel just around the corner due to a missed connection for the island airport on Chep Lap Kok in Hong Kong, getting through passport control was a much more enjoyable task than that experienced in Hong Kong. As early positives go, the single flight – just enough for a good film, a drink and a few hours' sleep – also resulted in less jet lag with only a time difference of three hours for me. With Dubai airport a short taxi ride from the business district which housed the World Trade centre, the venue for APLF, and numerous hotels, logistics seemed to be another plus point. So far so good.

With a bit of time to spare the day before the show it felt only right to do a little reconnaissance – identifying the best route to the show ground. At this point, never was Noel Coward's phrase "Mad dogs and Englishmen go out in the midday sun" ever truer than at the time this was written. (Air-conditioning in the halls had better be good!)

Anyone who has spent any time setting up a stand at a trade show will understand that the transformation that takes place overnight is always impressive. Gone are the piles of dust and rubbish strewn in the aisles, to be replaced by miles of unforgiving "carpet" and bright show day lighting plus, to the delight of all, air-conditioning that at times gave a decidedly chilly experience (be careful what you wish for).

As would be expected, the first day of the show was abuzz with the excitement of being back in international company. Refreshingly, a show that starts at 10am seems much more civilised — should there actually be a Dubai version of Hong Kong's Joe Bananas then I'm sure this sentiment will be echoed.

The five halls, imperceptibly connected into one, seemed to be of a similar size to that of Hong Kong, and easy to navigate. For a "one off", as it was billed, exhibitor attendance for all parts (Leather, Materials and Fashion access) numbered over 460 from more than 30 countries. Specific to leather, over 350 exhibitors were listed from over 30 countries, including a first-time participation from Uzbekistan. It was no secret that some country pavilions saw greater exhibitor numbers due to their own government

Not the usual view on the street: Dubai's Museum of the Future, inspired by the human eye, is a 77-metre-tall building. Clad with 1,024 stainless steel composite panels adorned with Arabic calligraphy, it rests on a green plateau.

ALL CREDITS: WTP



assistance and it would be difficult to know just how many exhibitors were using previous years "credit" for their stands, but this in no way detracted from the show, nor that anyone was there to make up the numbers. Noticeable by their absence, though understood by the global situation that was still enforcing lockdowns and travel bans, were the Chinese. Had they been able to travel then this may have seen a very different show. Not to say that this would have been a desirable proposition to them, with Hong Kong clearly being a more advantageous location, but with their absence, most American hide merchants also saw little incentive to attend.

For visitors, the vast majority coming from anywhere west of Dhaka, the busiest parts of the show seemed to be amongst the machinery aisles in Hall 1 – quite the opposite in comparison to the last edition of the Tanning Tech show in Milan back in September, where the tanneries appeared to keep hold of the largest share of visitors. With a very good representation from the Italian industry, a positive outlook was talked of on many of the stands with multiple references to spending time with clients that wouldn't normally be seen – a possible reference to the higher number of visitors/tanneries from India, Bangladesh, and Pakistan. From the chemical companies showing, talk of supply, rising costs and, not so much the elephant in the room anymore, the situation in the Ukraine fuelled most if not all conversations. In a strange way, the global situation has made many of the "pricing" conversations easier. No longer is there a drawn-out negotiation to see who saves or who loses a fraction of a cent, such are the magnitudes of the current volatility, that it is almost taken as read that this is the situation and to move onto more fruitful conversation should be grabbed with both hands – we're all in this together and it would be much better to come out of it together. Again, the absence of a visual presence by the bigger chemical companies probably resulted in a lower footfall to a certain degree but it was noted that some off-site meetings and receptions had been arranged, allowing for some more personalised appointments to be held.

Aside from the usual on-stand trade discussions, Hall 1 housed a central stage that played host to several informative talks and presentations from industry stakeholders and NGOs. Topics covered included relationships between higher education and industry (ICLT), latest leather trends (METCHA) and education as a means to combat misinformation (Leather Naturally) amongst others. A noticeable trend regarding this latter subject was the number of companies displaying their affiliation to or recognition by the various auditing and "pro leather" bodies. Transparency in these times of misinformation, and the almost sleight of hand ways in which detractors of the wonderful material that is leather try to paint "alternatives" as wholesome and virtuous, need to be countered. It was also a launch point for the newly unveiled World Leather Day, a joint initiative between Leather Naturally and the Leather Working Group to recognise and celebrate leather on the 30th of March each year.

In standard trade show fashion, footfall lulls were witnessed around the usual lunchtime breaks and then towards mid-afternoon, but it must be said that there was still quite some activity until the last hour on most days. Yes, there was some packing away as soon as the lunchtime lull was felt on the final day, but things still seemed quite lively an hour or so before the official closing time. Sitting watching people leave



Calm before the storm. Concourse to the World Trade centre on set up day.

the showground in the late afternoon sun, from the comfort of a pizza restaurant, was far from witnessing a mass exodus but rather the ebb and flow of people heading back to their hotels or out to the more touristy spots to watch light shows and fountains before their time in Dubai came to an end.

With what can only be described as a successful show, the big question to be asked is where next? I doubt many would argue with Dubai as a location. With Singapore and Bangkok also put forward to attending exhibitors on the final day in a multi-choice questionnaire as possibilities, it is clear that some uncertainty surrounds Hong Kong, and that to try to pull more of the Asia Pacific regions into visiting and exhibiting are a high priority. That said, with high praise for this as an event, could this be all that would be needed to encourage more participation? With the hope of full travel bans being a distant memory in 2023, could the APLF show exist for one more season as a Middle Eastern show before heading back to its rightful home in the hustle and bustle of Hong Kong – a place the leather industry still holds dear to its heart... 🌍

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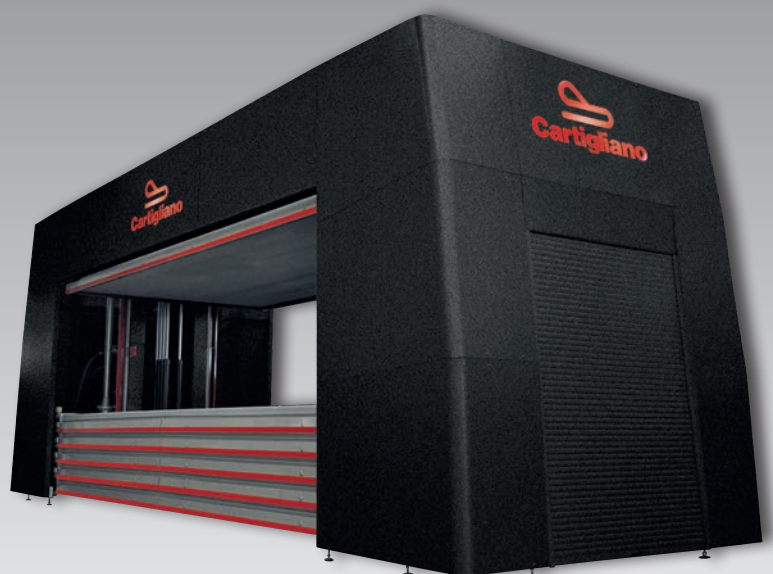
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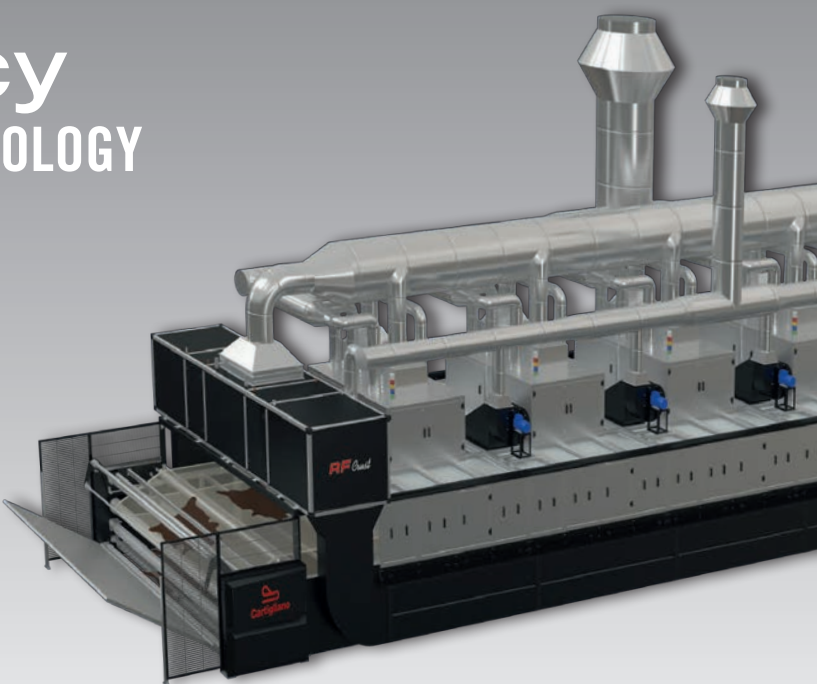
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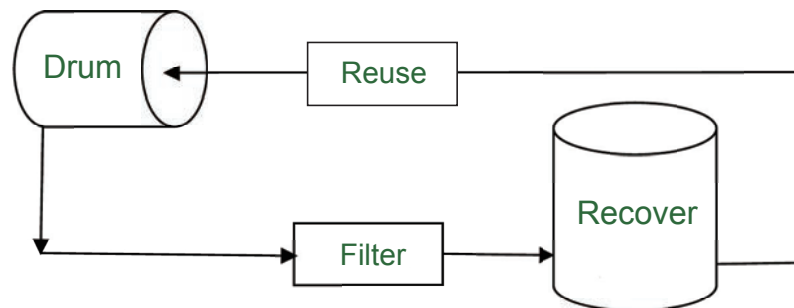
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Thermochromic leather for smart applications in fashion articles

Giorgio Pozza (Distretto Veneto della Pelle)

Carlotta Miele & Yassir Maatouqui (final-year students, ITS Green Leather Manager course, Arzignano)

A final-year project carried out by two of the students on the 'Green Leather Manager' course run by the main representative body of the leather industry in the Italian region of Veneto, il Distretto Veneto della Pelle, has explored the use of colour-changing smart coatings in leather for phone covers. This paper, jointly authored by the two students and by the Distretto vice-president who is responsible for the scientific content of the course, sums up the main findings of their study.

Every leather technician is aware that the whole process of leather making is rooted in well established chemical and physical principles. Acid-base reactions, homogeneous and heterogeneous phase equilibria, chemical bonding, polymer chemistry and colloidal systems are just some examples of the many applications of the physical sciences in the transformation of raw hides and skins into finished leather. Chemistry also plays a primary role in the design of the aesthetic properties of leather by putting into the tanner's toolbox an outstanding selection of dyestuffs, pigments, matting agents and other optical auxiliaries.

Colour is one of the first details that is perceived in an object and it is connected to the emotional aspects that, when it comes to commercial products, can strongly orientate buyers' choice. The aim of this study was to create unique, fashion-oriented leather articles with chromatic responsivity to temperature (thermochromism) by incorporating smart components into the coating layer.

A so-called smart coating is able to sense a change in conditions and respond to it in a predictable and conspicuous manner; in this case the coating layer was endowed with thermo sensitive properties that are triggered when the temperature exceeds 31°C and, as a consequence, is able to exhibit a colour change in correspondence with user's touch. The thermal responsivity is reversible and the colour returns to the original tone upon cooling; it is believed that the process can be repeated several thousand times before fading.

How thermochromism works

Thermochromism is the reversible change in the colour of a compound when it is heated or cooled. In most cases the colour shift occurs over a small or sharp temperature interval called activation temperature (TA). Although thermochromic species are available with activation temperatures ranging from -15°C up to 65°C, most applications are limited to cold (~10°C), body-heat activated (~31°C) and warm (~43°C)

temperatures. In general terms, thermochromic materials can be of organic, inorganic, polymeric or of sol-gel nature. In our case the choice fell on thermochromic organic materials, which usually consist of at least three components:

- colour former,
- colour developer,
- solvent.

Common colour formers are electron-donating leuco dyes that change colour when the pH is altered (more rigorously, they are defined as halochromic; some examples of such compounds are crystal violet lactone and thymolphthalein). Their reaction with the electron-accepting developer determines the position of the absorption wavelength, which causes the colouration and decolouration effect. Frequently used developers are typically weak acids such as gallates, phenols and hydroxycoumarin derivatives. The melting point of the solvent controls the temperature at which the colour of the three-phase composite changes: at low temperatures the solvent is in the solid form and the dye reacts with the developer giving rise to coloured complexes; at higher temperature the solvent melts and interacts with the developer, causing the decomposition of the complexes and converting the system into its colourless state (Figure 1).

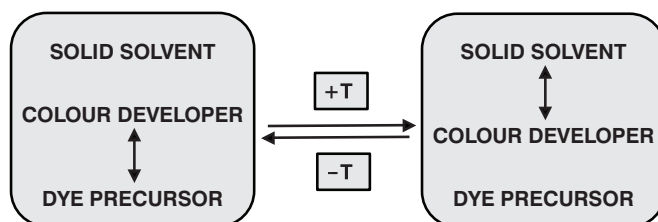


Figure 1: Mechanism of the thermochromic effect.

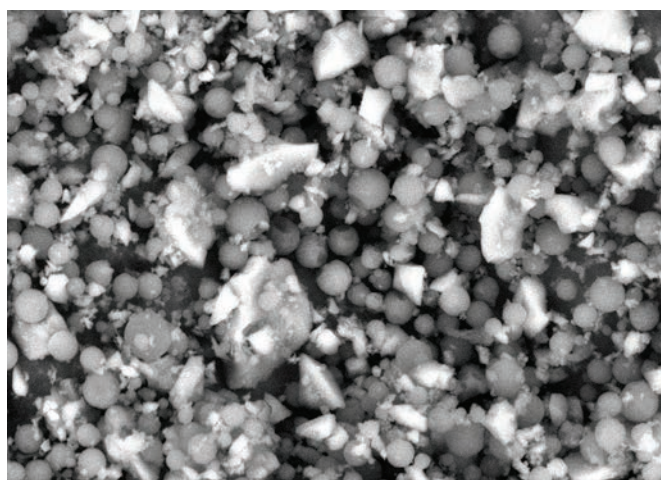


Figure 2: Microphotograph of an encapsulated thermochromic pigment.

CREDIT: STEFANO ROSSI



Figure 3: The half hide after the application of the first basecoat.

CREDIT: DISTRETTO VENETO DELLA PELLE

Table 1: Retanning recipe

Recipe	Retanning of thermochromic leather for phone cover			
Raw material	Glutaraldehyde-tanned wet white bovine leather, thickness 1.1-1.2 mm			
Weight	6.4 kg			
Notes	Initial pH ca. 4 (greenish colour of BCG in the cross section)			
STAGE	AMOUNT %	PRODUCT	TIME	pH
Soaking	300	Water, 30°C	30'	
	0.5	Formic acid (diluted 1:5)		
	0.3	Surfactant		
Drain				
Washing	50	Water	5'	
Neutralisation	50	Water, 30°C	20'	
	1	Calcium formate	60'	
	1.5	Sodium bicarbonate		
Washing	200	Water	20'	~6
Retanning	50	Water, 30°C	30'	3.8-4.0
	6	Dicyandiamide resin		
	4	Syntan (dihydroxydiphenylsulphone)		
	4	Tara tannin		
	2	Synthetic fatliquor	30'	
	3	Acrylic resin	40'	
	200	Water, 55°C	30'	
	1.5	Formic acid (diluted 1:5)	25'	
	1.5	Formic acid (diluted 1:5)		
Drain				
Washing	50	Water	5'	
Fatliquoring	200	Water, 55°C	10'	
	4	Filler		
	11	Synthetic fatliquor	50'	
	3	Styrene-maleic resin	30'	
	0.5	Formic acid (dilute 1:5)	30'	
Drain				
Washing	50	Water	5'	
Complexing	150	Water	10'	
	0.4	EDTA		
Drain				

Leuco dye / developer / solvent composites are by far the most important systems for achieving thermochromic properties using organic materials. The thermochromic system is protected from unwanted interactions by microencapsulation, a process by which very small droplets of the compound are dispersed in a liquid medium and coated with protective solid polymeric shells called microcapsules (Figure 2).

Each microcapsule, also called leuco dye pigment, contains the entire system required to reproduce the colour. The microencapsulation process produces spherical microcapsules of less than 20 µm diameter, typically 3-5 µm, a size that is over ten times larger than ordinary pigment particles; consequently, the thermochromic pigment is quite transparent and, in its uncoloured form, allows white light passing through it to let the viewer perceive the underlying surface.

The experiment

Half a hide of 1.1-1.2 millimetres thickness was tanned with glutaraldehyde and retanned with a mixture of natural and synthetic tannins in order to obtain a firm, undyed crust in hazelnut colour (Table 1). The hide was eventually vacuum-dried for one minute at 45°C, staked and buffed with 800 grit sandpaper.

The resulting crust was initially given the foundation of a tone-on-tone pigmented polyurethane-based basecoat (Figure 3) and subsequently cut into five square pieces. Four of the five pieces were further coated with

Table 2: Finishing recipe of thermochromic leather (PUD = Poly urethane Dispersion in water)

Recipe	Finishing of thermochromic leather for phone cover		
Raw material	Buffed chrome-free bovine crust, thickness 1.1-1.2 mm		
Notes	Half hide split in 5 pieces to get five different colours		
STAGE	AMOUNT %	PRODUCT	APPLICATION
Stucco	As needed	PU-based stucco	Roller coater 7-8 g/ft ² Stand overnight
Buffing	-	Sandpaper 280	Buffing machine
Embossing	-	Natural grain	Cylinder at 135°C, 140 atm
Tone-on-tone base coat	300	Matt PUD	3 passages
	100	PUD-polyester for adhesion	
	400	Water	
	40	Penetrating agent	
	20	Levelling agent	
	1:6	Pigment mix (caramel, white, black)	
Intermediate	100	Nitrocellulose	
	100	Water	
Ironing	-	-	Smooth rotopress at 82°C, 50 bar, 12 m/min; embossing was performed for the red sample only.
Pigmented base coat	50	Cationic wax	Complete coverage of the base colour
	32	Hard acrylic resin	
	18	Casein	
	68	Water	
	2	Crosslinker	
	21	Pigment	
Thermochromic effect	150	Cationic wax	3 passages
	98	Acrylic resin	
	53	Casein	
	203	Water	
	5	Crosslinker	
	150	Black thermochromic pigment	
Topcoat	400	Water	2 passages
	120	Silicone-based touch modifier	
	420	Matt PUD	
	350	Glossy PUD polycarbonate	
	60	Crosslinker	

four different colours (yellow, green, fuchsia and red), while the fifth was left with its original hazelnut colour.

The thermochromic effect was obtained with a black thermochromic pigment at 30% concentration compounded with a mixture of resins and waxes that was applied over the coated pieces. A PU-based topcoat was eventually applied to protect the surface, enhance its mechanical resistance and tune the touch to the desired feel. The referenced recipe is reported in *Table 2* for all five colours; the pigments used in the second basecoat are obviously dependent on the specific colour, except for the hazelnut sample, to which the second pigmented layer was not applied.

Testing

Some of the samples were subjected to selected tests in order to check their suitability for the intended use. The results of the rubbing resistance for four of the prepared colours (hazelnut was not tested) showed very good performance for all tested samples (*Table 3*). This is particularly valuable in view of the frequent manipulation of the

final article, a phone cover, for which a high rubbing fastness is requested.

The green and the hazelnut samples were also tested for accelerated ageing, exposing the relevant specimens at 50°C, 90% relative humidity for 96 hours (ISO 17228, Conditions 7B: extended general purpose ageing). In both cases no alteration of the surface was detected.

Table 3: Results of the rubbing tests

Test	Green	Fuchsia	Yellow	Red
Dry rubbing (1000 cycles)	4/5	4/5	4/5	4/5
Wet rubbing (200 cycles)	4	4	3	4
Artificial basic sweat (100 cycles)	4/5	4/5	4/5	4

Results and discussion

The five pieces of leather prepared as described were next applied to a rigid support to manufacture the corresponding five phone covers. These had a good appearance, with a uniform blackish colour and a pleasant touch, although the base colour is still partially visible since the thermochromic layer, despite being activated, is slightly transparent (*Figure 4*).

On the other hand, the leuco form of the pigment is not optically inert and produces a whitening effect that interferes with the base colour and makes it rather opaque. The origin of these two drawbacks is illustrated in *Figure 5*, which depicts the behaviour of two light beams, one of which penetrates the polymeric shell of a microcapsule (beam A), with the other reflected by it (beam B). When the pigment is activated, neither of the two beams can cross the particle; beam A is absorbed by the black dye contained in the interior of the capsule and beam B is scattered. Absorption is not complete (the pigment concentration is too low) and the underlying colour is still visible. In the leuco form, the microcapsule is transparent and beam A passes through it, although beam B is still scattered back to the observer producing a matting-whitening effect. This latter effect sharply increases with the concentration and can be attenuated, albeit partially, by adding small amounts of acetic acid in the thermochromic formulation.

As expected, the leather surface shows a deep change in colour when temperature crosses the TA (31°C in this instance), from black to the base colour. In particular, owing to body temperature, contact with the hands provokes a local temperature increase that triggers the thermochromic effect in correspondence with the warmer areas (*figure 6*), for example the user's handprint. The duration of the effect depends on the heat dissipation rate of the material and on the intrinsic dynamics of the thermochromic system; in this case, the colour change is still appreciable about one minute after the touch.

Concluding remarks

The purpose of this study was to use a thermochromic pigment to impart smart and innovative properties to a leather article. The leather samples were produced in five different base colours



Figure 4: The five covers.

Figure 6: Thermochromic effect.

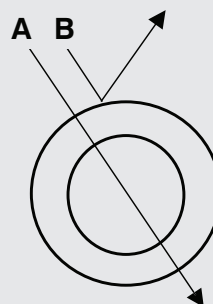
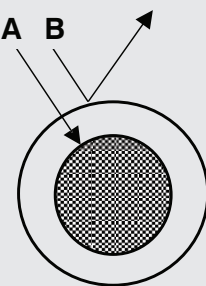


Figure 5: Activated form (left) and leuco-form (right).

and finished with a black thermochromic layer; they were used to upholster five phone covers showing a marked thermochromic effect when activated by the touch of the user. The pigment is embedded in the upper finishing coating layer and, in its black activated form, is capable of hiding the underlying colour. When the surface is heated to over 31°C, the pigment turns transparent and the colour of the basecoat becomes apparent. The physical-mechanical properties of the leather are adequate for the intended use and guarantee that the covers can be used over a long lifespan. ☉

Notes

- 1 J.L. Hu, 1 - Introduction to active coatings for smart textiles, Editor(s): Jinlian Hu, In Woodhead Publishing Series in Textiles, Active Coatings for Smart Textiles, Woodhead Publishing, 2016, Page 1.
- 2 Gunde, M.K., et al., Colorimetric properties of reversible thermochromic printing inks, Dyes Pigm., 2010, 876(3), 271-277.
- 3 Talvenmaa, P., Introduction to chromic materials. Editor(s): H.R. Mattila, In Woodhead Publishing Series in Textiles, Intelligent Textiles and Clothing, Woodhead Publishing, 2006, Page 197.

WORLD LEATHER

This article is part of an ongoing cooperation between World Leather and Il Distretto della Pelle.



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Welcome to the great materials 'Squid Game'

**Frank Brouwer, Renewable Chemistry Specialist
Stahl, Waalwijk, Netherlands**

One of my favorite TV shows of 2021 was Squid Game. Set in South Korea, it involves a group of contestants taking part in complex challenges for the chance to win a life-changing cash prize. Those who fail do not just lose the game; they are 'put to death'. Because they are in huge debt, the contestants have little choice but to take part – carrying on as normal is not an option.

As a specialist in renewable chemistry, this desperate situation reminds me of what is currently unfolding in materials science: everyone is looking for that one, perfect solution that will save the world (and capture the imagination of investors) – whether based on low carbon, renewable feedstocks (like biomass, captured carbon or recycled content), or circular design processes that include sustainable end-of-life solutions.

It seems that, for any single material to "win the games", the other options on the table all need to be eliminated.

Borrowing from another era

One thing everyone can agree on, however, is the need to move away from fossil-based raw materials.

For more than 200 years, oil, gas, and coal have been the backbone of societal progress. After all, it's carbon-based fuels and materials that have helped to propel economic growth, enhance living standards, and enable the global population to expand more than eightfold since the start of the industrial revolution.

But this massive expansion, powered by feedstocks we have "borrowed" from another epoch, has come at a huge cost. It is only in recent decades we have realised the extent to which mankind has disrupted the natural carbon cycle by removing fossil-based resources from the ground and adding them to the atmosphere.

The problem is, when your entire society runs on fossil-based materials, it is not so easy to wind back the clock.

No magic bullet

How can we fill this giant, carbon-shaped void? And how can we engineer products to have a lower lifetime impact – from sourcing the raw materials they are made from to managing end-of-life processes? For some, the solution lies in biomass, a plentiful and fully renewable resource. Others see captured CO₂ as the answer, and a natural evolution from society's current carbon dependence. Look elsewhere, and you will find researchers excitedly discussing how recycled materials offer solutions for all manner of products – and can solve society's waste problem in the process.

Rather than being used in combination, different materials and approaches are being pitted against each other in the race to find the single perfect material solution for our future society. The recycling industry, for instance, cites the amount of land and resources needed to produce biomass, while biomass specialists respond by listing the limitations of recycling, and pointing out how little of society's waste is currently being reused.

Solving the materials challenge, one puzzle at a time

This kind of dog-eat-dog thinking, however, isn't helpful. We may be starting to transition out of the fossil-fuel era, but we are still very much in the trial-and-error stage. The suggestion that we are about to stumble across some magic, one-size-fits-all solution to all our problems is wildly optimistic.

For a more realistic approach, the materials transition needs to be less Squid Game and more like an "Escape Room", the live role-playing concept where teams work together in pursuit of a single, shared goal: getting out of the room. The only way to meet this overall challenge is to solve lots of smaller, individual puzzles with varying degrees of difficulty. Once all the puzzles are solved, the door to the room opens to reveal the prize. In this scenario, everybody wins, and nobody dies.

Puzzles in the Escape Room cannot be skipped, but at the start of the game, no one knows which ones will lead to the end solution and which will turn out to be irrelevant. This is how we should approach the current materials challenge: we need to work as a team to solve all the different individual puzzles in our path. Nor can we speed up our path to the solution by skipping



CREDIT: STAHL

over potential solutions that do not look quite so promising – it is still too early to decide which ones will work and which won't.

Once we have identified all the workable solutions (and eliminated the unworkable ones)... that is when we can start creating combinations that will open the exit door to our current predicament.

50 shades of green

Another pop culture reference I find useful when describing the materials challenge is '50 shades of green'. Sustainability is often viewed in binary terms: a material is either "green" or is not. But, at this stage in the journey, we cannot afford to ignore any potential solution, however raw or imperfect it might be.

Take recycled feedstocks. As it stands, only about 6% of all waste is reprocessed to make new materials, but to say recycling is not a viable "green" option is misleading. It may be a very light green right now, but – with new technologies and increased government support – there is no reason why it cannot turn a much

deeper shade of green in the future.

This kind of thinking can be applied to any type of feedstock or material. To solve society's long-term sustainability challenges, we need all the solutions we can get our hands on – we shouldn't close the door on a possible option just because we have not yet fully perfected the technology.

Of course, this trial-and-error approach isn't sexy; making the best of the different materials we have available will not get investors excited – and they certainly will not make TV shows about it – but it is surely the most practical route we have to get out of our current carbon predicament.

At Stahl, we're proud to be part of this global hunt for the pieces of the sustainability puzzle. And we are looking forward to continuing internal and external collaborations to share our skills and knowledge. Whether through managing our products' lifecycles, using more recycled and bio-based feedstocks, or reducing waste and emissions across our entire value chain, every day we are getting one step closer to a future built on renewable chemistry. 🌱



Leather and the circular economy



Leather uses renewable raw materials



Waste from other sectors (meat and dairy) is the input for making leather



The material is long-lasting



Leather products are eminently repairable



Leather is in keeping with sustainable consumption and sustainable production and, thus, supports the UN's Sustainable Development Goals (SDGs)



Use of leather aids the battle against marine pollution, also part of the SDGs



The leather industry opens up pathways into the circular economy for companies of all sizes, including many thousands of small and medium enterprises



Leather content fulfils finished product manufacturers' desire to use recycled material



Finished products made from leather will meet criteria for green tax relief and for green procurement exercises



Leather manufacturing supports green employment commitments

Credit: WTP/Flaticon

Long-lasting and repairable

The European Commission presented a much-anticipated package of European Green Deal proposals at the end of March. Its aim is to “make sustainable products the norm” in the European Union, to boost circular business models and “empower consumers for the green transition”.

These proposals aim to put in place new rules to insist that “almost all physical goods in the EU market” have a low impact on the environment, and are more circular and energy-efficient throughout their entire lifecycle. This means the rules will apply from the design phase to daily use, then repurposing and end-of-life. They insist that consumers need to be better informed about the environmental sustainability of products and better protected against greenwashing.

For example, new EU rules will come into force to ensure that consumers receive information at the point of sale outlining “a commercial guarantee of durability”, as well as information relevant to repair. The package suggests manufacturers, brands and retailers will be encouraged to publish “a reparability score” for the products they sell.

How long is a long time?

There is well founded concern that fast fashion champions and the developers of fossil-fuel-based fibres that make their business model possible may insist that “durable” means a product that lasts a year or so. This is potentially a problem, but the thinking at the root of the proposals is positive.

The European Union wants new rules that will give consumers the right to know how durable and easy-to-repair products are before they buy them.

Brands can argue about what longevity and repairability mean in practice, but they cannot deny that these qualities are, suddenly, of importance and value.

These, as we have been saying and showing for years, are two of the characteristics that make leather an ideal fit with any circular economy idea. The leather industry has the ability to talk about them all day long and show countless examples of shoes that have lasted decades and bags that have grown only more beautiful with age as they pass, hand to hand, from grandmothers to mothers, and from mothers to daughters.

Greenwashers of the world beware

Environmental claims, such as ‘green’, ‘eco-friendly’, ‘good for the environment’, will be allowed “only if underpinned by recognised excellence in environmental performance”, the document states. Voluntary sustainability labels covering

environmental or social aspects will have to have third-party verification or be established by public authorities. It is greenwashers who ought to fear these changes. Makers of leather and of finished products that use leather need to stay on a path of continuous improvement and make their processes increasingly environmentally efficient, but fundamentally they only need to continue telling the truth.

Rage against the machine

Advocacy group Eco-Age has worked with the Geneva Center for Business and Human Rights to publish a report called *The Great Green Washing Machine*. Eco-Age founder, cinema producer Livia Firth, who has a high profile in sustainable fashion, instigated the report. The director of the Geneva Center for Business and Human Rights, Professor Dorothee Baumann-Pauly, joined forces with London-based sustainability consultant and former World Bank economist Veronica Bates Kassatly to write it.

It has taken the form of two white papers; the first appeared last September, the second in mid-March this year. Together, these white papers raise seven specific concerns about the way companies in the textile and apparel sector measure their environmental performance and share information about sustainability. They draw the conclusion that current sustainability assessments in the industry are “broadly incorrect”.

The Great Green Washing Machine says there are two reasons for reaching this conclusion, both of which are familiar to readers of *World Leather*. One is that the most frequent way of measuring the impact of fashion products is cradle-to-gate, rather than cradle-to-grave, and so ignores the products’ use and disposal at end of life. The second is that the current measurement methods assess impact by kilo of material. What really matters, the authors say, is impact per wear.

Material questions

It needs pointing out, although it ought not to, that there is a link between consumers being able and willing to wear or use a product lots of times and the material the product is made from.

The example *The Great Green Washing Machine* authors give is of a dress. A cheap dress might cost 12 ‘environmental impact points’ and if a



Products that last a long time and are easy to repair have strong circular-economy credentials. Credits: Lineapelle

consumer wears it once before throwing it away, the cost is 12 per wear. Another dress may cost 1,200 ‘environmental impact points’, but if its owner keeps it for years and wears it 100 times, its cost is also 12 per wear. The main difference, the authors point out, is that at the end of the 100-wear lifespan of the second dress, there would be one dress to repurpose or dispose of. Wearing cheap

clothes of the first kind each time over the same timeframe would leave you with 100 dresses to dispose of. The two scenarios, therefore, are not equal at all.

Leather’s struggle

Both of the white papers that comprise the full report are easily accessible through an online search. They are worth reading because they

The material a product is made from is an important factor in determining how long it will last and how repairable it will be.

Credits: JM Weston





Accurate data matters, but in telling its sustainability story, the leather industry only needs to tell the truth.

Credits: Gruppo Dani

explain in considerable detail what the seven concerns about sustainability claims are, and make recommendations for making sustainability metrics more meaningful. Specifically, the second white paper devotes an entire appendix to the leather industry's ongoing struggles with the most influential scoring system for fashion sustainability, the Higg Materials Sustainability Index (MSI), set up by non-profit organisation the Sustainable Apparel Coalition.

In the autumn of 2020, the global leather industry formally asked the Sustainable Apparel Coalition (SAC) to suspend the score it applies to leather in the Higg MSI. Industry bodies said that what the index presented had led to a negative perception of leather among some fashion brands and consumers, one that does not reflect that material's sustainable, circular nature. Applying the economic allocation method, the Higg MSI uses the high hide prices of 2013-2014 to arrive at the conclusion that a cattle hide should have a 3.6% share of the impact of the animal on global warming, eutrophication, water use, chemical use and resource depletion.

The Great Green Washing Machine acknowledges the leather industry's long-held argument that the economic driver of production needs to be taken into account. Hides would not be produced if there were no dairy and meat industries. And if the leather industry ceased to exist, the annual hide volume would continue unchanged. The authors also accept that, if you have to apply economic allocation, outdated figures from 2013 and 2014 are unlikely to provide the best basis for your calculation. They quote the president of the Leather and Hide Council of America (LHCA), Stephen Sothmann, as saying that, by historical standards, the period 2013-2015 witnessed record high global hide prices. Hides may never again be as expensive as they were at that time, so the allocation standard itself is based on an anomaly in the market. They also take LHCA's point that millions of unwanted hides in the US are going to waste each year.

Updated data

Based on this anomaly, two leather manufacturers, JBS Couros and PrimeAsia, have submitted more up-to-date information from the extensive lifecycle assessments (LCA) studies they have carried out on their own supply chains and the Higg MSI included separate scores for their leather in its 2021 updates. The authors of The Great Green Washing Machine make a number of comments about this. They conclude that the Higg MSI will take into account new information only if companies pay to have the Higg team assess the data, and that, even after seeing and verifying new data, it seems reluctant to alter its earlier, inaccurate assessment of hides and leather.

On the first of these points, we can say, without knowing how much it is necessary to pay the Higg MSI to have it assess new data, that it will be far less expensive than the cost of amassing all the new data in the first place: "a drop in the ocean" is one description we have heard. It would cost money to have a local accountancy firm check the figures and, therefore, it is only realistic to expect the team at the Higg MSI to charge something too. On the second point, while it is certainly true that there is no change yet to the baseline score for leather on the Higg MSI, some in the leather industry believe there could be grounds for "cautious optimism" that attitudes are softening and that such a change could come in future.

The index works on aggregate data and the more up-to-date information the leather sector presents to it, the easier it will become to convince it to make that change. In this way, PrimeAsia and JBS Couros have made initial contributions towards building that aggregate up and there are moves afoot for further additions of data from other leather industry LCAs. All of these will help move the needle in leather's favour.

These, too, are ways of lending weight to the industry's efforts to tell its story, which, it's worth repeating, is simply a case of telling the truth. ☺

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Shoes from Le Marche manufacturers Franceschetti and Loriblu.

Credit: Micam



Le Marche: a special case

The whole of Europe and, indeed, the entire world, has been horrified and dismayed that war could break out there again in 2022. Human suffering outweighs any other concern and the most urgent priority is to establish peace and allow families to rebuild their lives and their communities. Nevertheless, the business world, still in the early stages of recovery from the shut-shops-shock of the covid-19 pandemic, has had to try to keep up its own rebuilding efforts, in spite of the war and its consequences.

In the sphere of the global economy, these consequences have been widely discussed and are well documented. Energy prices, which were already on the rise, have soared. Supplies of grain from Ukraine are disrupted, pushing food prices up. Global agriculture is suffering because fertiliser is now in short supply and more expensive.

In normal times, trade goes the other way too and an inability to sell in Ukraine and the surrounding region (because of the war) and in Russia (because of sanctions) is affecting manufacturers of products including high-end shoes and leathers. In the important footwear-

The war in Ukraine has, understandably, dominated the headlines for months. One of the consequences that has largely gone unnoticed is its effect on the footwear sector in the Italian region of Le Marche.

producing region of Le Marche, there are fears that the fall-out from this presents an existential threat to many producers there, especially small- and medium-sized business. There are fears, too, that the artisan skills and craftsmanship in using leather to make some of the most beautiful and coveted shoes in the world could die out.

Discussion at Micam

Soon after the war began, senior government officials and representatives of the footwear industry in Le Marche took part in a hastily arranged discussion event on the first day of the Micam exhibition in Milan. The industry and its supporters in Le Marche wanted to present a series of arguments for treating the region as a special case and to secure as much assistance as possible to help its manufacturers stay in business.

The speakers left no one in any doubt that they regarded the human suffering in Ukraine as more important than business. From an industry point of view, though, they said Le Marche's shoe manufacturers would be harder hit than their counterparts in other regions of Italy.

The president of national trade promotion organisation ICE, Carlo Ferro, told the audience that, for Italy's wider fashion industry, Russia, Belarus and Ukraine represented 2.7% of overall export business. For footwear exports, he said the share of the countries involved in the war was 3%. For the footwear industry in Le Marche, however, he said the figure was between 9% and 10% of all exports.

Italy's junior minister for economic development, Gilberto Pichetto Fratin, took part in the discussion. He suggested that something the national government might be able to put in place for concerned companies was an extension of a moratorium on paying back loans they received during the covid-19 pandemic.

One senior representative of Le Marche's shoe industry, Annarita Pilotti, a former president of national industry body Assocalzaturifici, said this measure should come into place right away. "We are already paying back some of the loans we received," she said. "With interest."

Dominant position

This region on Italy's Adriatic coast comprises five provinces: Macerata, Fermo, Ancona, Ascoli-Piceno and Pesaro-Urbino. For decades, it has held a dominant position in the country's footwear manufacturing landscape. In 2010, there were 4,400 footwear companies in Le Marche but this figure had fallen to around 3,800 by the start of 2017 and has continued to drop. Of 72,000 employees that footwear manufacturers across Italy had in 2020, around 25,000 of them were in Le Marche. The industry is important enough for regional president, Francesco Acquaroli, to have travelled to Milan to take part in the Micam talk, which, incidentally, took place on a Sunday morning.

Mr Acquaroli described the situation in Ukraine as a crisis in the international arena because of its effect on the cost of energy and of a number of important raw materials. "For our region's economy, however, it's also a market problem," he said. "In Le Marche, a great part of our manufacturing capacity, and this is especially true of the footwear sector, has been focused on the markets in Ukraine, Russia and the surrounding region. This means our companies are facing a liquidity problem. And all this on top of having been weakened already by the crises of these years of the pandemic."

He said cash flow was his immediate concern and one that needed addressing right away to avoid creating "structural problems for the companies affected". He added that the region itself has "a limited capacity for offering financial help" and called on Italy's central government to step in. "It's a difficult and fragile situation," he said.

In a follow-up comment, an economic advisor to the



(Left:) Former Assocalzaturifici president, Annarita Pilotti, is fearful of the effects the war in Ukraine will have on the footwear industry in Le Marche.



(Right:) Le Marche's regional president, Francesco Acquaroli, says there is a limit to the levels of support his administration can offer and calls on the central government to help the region's footwear companies.

Credits: Assocalzaturifici / Regione Marche

regional government, Guido Castelli, asked that the central government lower the rates of value-added tax in Italy because, he pointed out, high sales taxes were preventing Italian consumers from buying Italian shoes. He said Le Marche was not asking for handouts. "What we want," he insisted "is help in setting up a system, a way of working, that will allow us to preserve what I would call, without descending into romanticism, our artisan traditions."

Open doors

Annarita Pilotti, who runs Fermo-based brand Loriblu, seemed more upset than optimistic after listening to the politicians' interventions. She said she has been appalled by the outbreak of war, adding: "Customers of mine, people I know well, have bombs falling on them now." She pointed out that hers is one of the thousands of families across Europe to have opened its doors to Ukrainian refugees. In Ms Pilotti's case, a buyer she has a commercial relationship with has sent his wife and children to Italy to take shelter with her; he has stayed behind to join Ukraine's war effort.

But she is afraid for the footwear business in Le Marche too. Her contention is that one of the reasons for the fall in the number of shoe producers in Le Marche over the past decade is that an earlier round of sanctions against Russia, after its invasion and annexation of the Crimean Peninsula from Ukraine in 2014, took companies by surprise.

"We know why the sanctions were imposed," Ms Pilotti says, "but for us it was devastating. Many of Le Marche's shoe companies closed, and many of our suppliers closed, too. The difficulties this situation presented were too much for small- and medium-sized companies to cope with and we lost them." She says it's a pity that sanctions have been necessary again and is fearful that the consequences could be equally devastating. "Sanctions seem to be the only response we have to try to prevent or bring an end to war," she adds. "It's a shame, and it's a shame that diplomacy, in spite of all the talking, seems to be of so little use." 🌐



Work on a handbag at the
École Hermès des Savoir-Faire.

Credit: Hermès



SUSTAINABLE



SMEs



GREEN JOBS

Just the job

France's leather sector achieved export revenues of almost €14.7 billion in 2021, an increase of 23% compared to the year before. These figures, released by the country's main leather industry body, the Conseil National du Cuir (CNC), include exports of raw and tanned hides and skins, footwear, leathergoods, gloves, leather garments and a number of other products, but not finished leather furniture.

China overtook the US, Italy, Hong Kong, Singapore and Germany to become the biggest market for French leather exports last year, contributing revenues of almost €2.5 billion towards the total. Exports to China, therefore, grew by 162% year on year. There was 40% growth in exports to the US, which achieved a value of more than €1.75 billion. There were also increases in the value of shipments to Italy, rising by 18% to reach more than €1.6 billion, and to Germany, up by 7% to pass the €1 billion mark. This helped offset decreases in export revenues from Hong Kong, Singapore and the UK.

Leathergoods contributed more than €10 billion towards the total, growing by 27% year on year. Footwear constituted the second-most important category, with revenues of almost €4 billion and growth of 15%. Together, leathergoods and footwear accounted for more than 95% of the total.

The major French leathergoods brands are committed to manufacturing many of their products on home soil. This has created a genuine jobs boom for the industry in the country.

Group portrait

This growth is good news for the big Paris-based luxury groups, for whom leathergoods are core products. Of course, not all of their revenues come from export sales, not all are attributable to leathergoods and not all of the individual brands that make up the groups are French: LVMH, for example, has Fendi (Italy) and Loewe (Spain) in its ranks; Kering has Gucci and Bottega Veneta (Italy) among its top leathergoods brands. Their recent results, in any

event, are jaw-dropping and, no matter where they sell, bags from Louis Vuitton, Saint Laurent and Hermès will have reached the point of sale from a factory in France.

LVMH achieved revenues of €64.2 billion in 2021, an increase of 44% compared to 2020 and of 20% compared to 2019. Its leathergoods division posted revenue figures of €30.9 billion, up by 46% on 2020 and by 47% on 2019. The group said the leathergoods division's performance in the fourth quarter of last year, with revenues of almost €9.6 billion, was a record. Growth continued in the first quarter of 2022, with revenues of €18 billion for the three-month period, a rise of 29% year on year.

Rival group Kering reported full-year revenues of €17.6 billion for 2021, growth of 35% compared to 2020 and of 13% compared to the pre-covid year of 2019. It, too, achieved ongoing growth in the first quarter of 2022, with revenues of almost €5 billion, up by 27% compared to the same three months in 2021.

For its part, Hermès reported full-year revenues of almost €9 billion for 2021. This is 40% higher than the figure it achieved in 2020 and up by 30% on its result for 2019. Its leathergoods division contributed €4.1 billion to the total, up by 27.8% year on year and up by 23% compared to 2019. Overall revenues for the first quarter of 2022 exceeded €2.75 billion, growth of 33% compared to the same quarter last year. Its leathergoods and saddlery division posted revenues of just under €1.2 billion for the quarter, up by more than 20% year on year.

Excellence at LVMH

It is because the best performing leathergoods manufacturing groups have a strong commitment to making products on home soil, and to preserving and passing on the skills and craftsmanship involved in making high-end leather products, that this growth is good for the French domestic leather sector.

Across the group, across the world, across all of the types of product it sells, LVMH employs more than 175,000 people. One of the initiatives it has put in place to recruit new workers and endow them with the skills required to manufacture its accessories, footwear and other products is its Institute of Métiers d'Excellence (IME), through which it strives to pass on the "exceptional creative, craft and skills"



A ceremony to honour graduates from LVMH's IME programme.

Credits: LVMH

that its employees need to have in their jobs (métiers). It also wants to have these diverse activities "unified by excellence". The programme covers 21 métiers in total; graduates on the leather side of the business can receive a formal state diploma in leathergoods manufacturing.

LVMH says it is committed to passing on these skills to new generations, to recognising people's unique contributions to the group, and to celebrating them. The IME is a vocational training programme with a work-study format that enables LVMH to pass on this savoir-faire or know-how to new generations, making new people from all backgrounds and "regardless of their initial qualifications" eminently employable. It launched IME in 2014 and now offers 31 different courses in

creative, craft and retail professions. Opportunities to take part have come up in Switzerland, Italy, Spain and Japan, as well as in France. More than 75% of IME apprentices have continued their studies or joined professions in which they can apply the skills they have learned, the great majority of them at LVMH brands or with one of the group's external partners.

Compass points

In 2021, Kering had over 42,000 employees but it, too, wants to expand this. One of its most recent moves in the employment arena was to sign a new partnership charter with France's labour, employment and integration ministry with the aim of giving young people, vulnerable individuals and people with disabilities better access to jobs.



Béatrice Lazat, chief people officer at Kering (left) signing a new partnership charter with France's minister in charge of integration, Brigitte Klinkert in April 2022.

Credits: Marc Piasecki / Getty Images for Kering

Kering said it was committed to recruiting young people on permanent and fixed-term contracts, paying particular attention to those from disadvantaged urban areas and those with disabilities. It said it is also committed to recruiting young people on work-study programmes across all of its occupations and offering internships.

It plans to establish partnerships with companies specialising in the employment of disabled people across France and will join forces with universities and schools to promote workforce integration, make its recruitment more diverse and improve its recruitment and training practices. The employment minister in charge of integration in France, Brigitte Klinkert, has welcomed the new partnership charter with the group, saying the high level of excellence in Kering's savoir-faire will offer "a compass" to help many young people find their way into the world of work.

Capacity expansion

Something of an anomaly in the recent Hermès results is that the figure for the fourth quarter of 2021, in isolation, was lower than the result the leathergoods side of the business achieved in the same quarter in 2020. Hermès said it had anticipated this fourth-quarter downturn because of "capacity constraints". It means it could have sold more handbags and other products if it had enough production capacity to keep up with demand. "Demand is very high," it confirmed at the time, "for new creations, such as the Della Cavalleria and 24/24 bags, and for the house's classics".

What's remarkable about this is that Hermès has opened nine new leathergoods factories since 2010 and more than doubled its workforce to reach 17,600 in 2021. Its efforts to build up production are far from over. It opened its nineteenth leather workshop, the Maroquinerie de Guyenne, near Bordeaux, in September last year. Numbers 20, 21 and 22 are already on track, with facilities scheduled to open at Louviers (near Rouen) this year, at Sormonne (north of Reims) in 2023, and at Riom (near Clermont-Ferrand) scheduled for 2024.

More recently, Hermès announced plans for a further two leathergoods workshops in 2025 and 2026 to support the success of this part of its business. It will build the new factories close to



The leather sector in France is thriving, creating thousands of jobs.

Credits: Philémon d'Andurain

locations where it already produces bags and other leathergoods. A new workshop will open in the town of L'Isle-d'Espagnac, near Angoulême, in 2025. This new production site will be close to existing facilities at Montbron, Nontron and Saint-Junien. A year later, another new leathergoods factory will open at Loupes, close to the Maroquinerie de Guyenne. These two facilities will take the total number of leathergoods factories that Hermès operates to 24. Every one of these is in France.

People-sized

These new factories will, naturally, create further jobs. Figures the company has already made public suggest it will employ 260 people at Guyenne and a further 500 between the two newest sites. In between, it aims to create 250 new jobs at its Riom workshop (located in a former tobacco factory), and 250 at Louviers. It says it likes its factories to be "people-sized", with no more than 300 people working in each one. There is a reason for opening many of these new facilities close to other Hermès workshops; existing employees will help

train new recruits and the sites will function in clusters.

At the same time, the company formally opened a new in-house training centre, the École Hermès des Savoir-Faire, in September 2021. This training facility, incorporated into the company's wider apprenticeship academy is accredited by the French ministry of education and will give employees who complete the course the same state diploma in leathergoods manufacturing as their counterparts at other groups can earn. They will then have their pick of Hermès leathergoods factories to work in. It is proud of the sustainable design of its factories and of making them lastingly attractive places to work. It says it wants its employees to have "somewhere beautiful in which to make beautiful things".

The leathergoods industry is on a powerful path of growth in France, one of the largest and most advanced economies in the world. The sector has struggled to stay alive in many markets where it once created healthy levels of wealth and employment, but in the France of the 2020s it is still flourishing. 🌱

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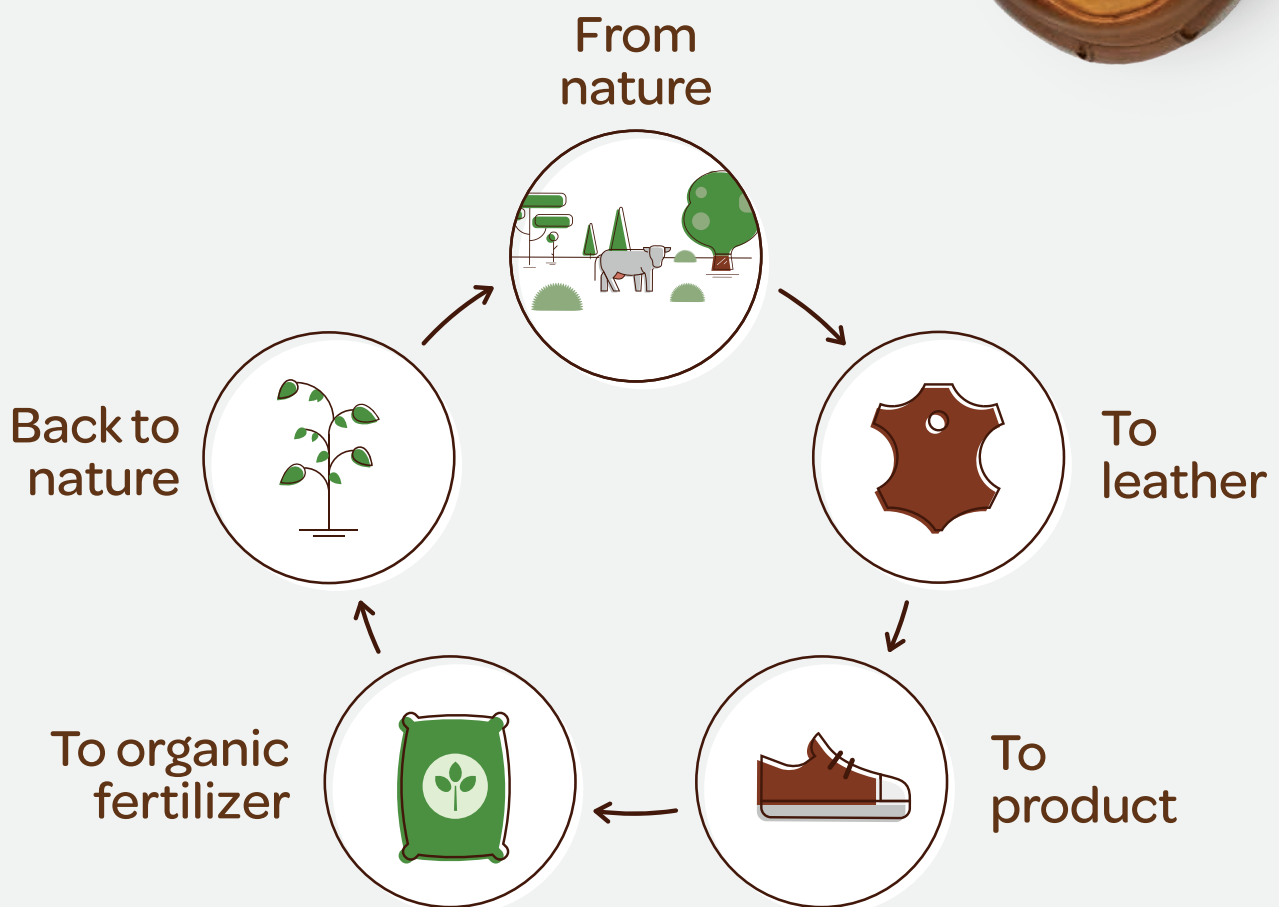
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Ecotan leather is free from metals, glutaraldehyde and other hazardous substances. **At the end of its life, it can be recycled into a fertilizer for organic agriculture.**

This tanning technology uses patent pending tannin based products and has been developed thanks to a partnership between Silvateam, Biofin, Fertilizzanti Certaldo and some of the world's best tanneries.



A small-scale farmer in Nigeria reaps the benefits of an International Fund for Agricultural Development (IFAD) programme to give communities there access to fertilisers.

Credits: IFAD/Bernard Kalu

Fertiliser matters



RENEWABLE



SUSTAINABLE



SMEs



RECYCLED



GREEN JOBS

The way non-profit group The Ellen MacArthur Foundation looks at things, three principles must be at the core of all our efforts to make economies more circular. We must eliminate waste and pollution, put the products and materials we consume back into circulation when we no longer want them, and we must contribute to the regeneration of nature. In the sphere of the global economy, these consequences have been widely discussed and are well documented. Energy prices, which were already on the rise, have soared. Supplies of grain from Ukraine are disrupted, pushing food prices up. Global agriculture is suffering because fertiliser is now in short supply and expensive.

All of leather's rightful claims to be part of the circular economy connect to one or more of these principles. Perhaps one of the less glamorous of these claims is that waste from the leather manufacturing process can have use and value in agriculture. Sludge is seldom glamorous, but for years creative companies have found ways to use it in fertiliser, giving it back to the earth. Agriculture and the food industry supply tanners with hides and skins to make leather; to use waste from leather production in turn to help farmers grow more food is completely circular.

All continents

Fertiliser projects with connections to tanning have cropped up on all continents in recent years. In 2020, on

One consequence of the war in Ukraine is a shortage, and huge hike in the cost, of materials for making fertilisers. This is sparking fears of food insecurity in the developing world. Waste material from leather manufacturing is already widely used in fertiliser production.

Now would be a good time for tanners everywhere to find ways of contributing to this effort.

presenting developments in its Ecotan range of technologies, Silvateam explained that the concept means using only natural products to make leather, with specialist partners ready take the material back at the end of a product's useful life for use in fertiliser production. The following year, Mexican tanning group Suelas Wyny signed up to start using the technology to make a range of leather called Nexta.

This coincided with a successful project in which an Igualada-based fertiliser producer, Labin, teamed up with some of the leather manufacturers in the Barcelona leather cluster to use tannery waste as raw material for products it went on to present to the agri-food sector as organic fertiliser.

Around the same time, Piel Color said it wanted to build a large, new, state-of-the-art tannery in Egypt. Converting leather waste into organic fertiliser was part of the plan there from the outset. And among a range of projects sparking interest among leather manufacturers in Asia, an initiative to turn solid waste into fertiliser was one of the few bright spots to emerge last year from the saga of Savar, the tanning cluster that the industry in Bangladesh has been striving to establish for 20 years now.

More recently, but more extensively, Brazil-based group JBS announced in March that it was setting up its own fertiliser manufacturing operation. A company called Campo Forte Fertilizantes, which will be based in Guaíçara in the interior of the São Paulo state, will have the capacity to produce 150,000 tonnes of fertiliser per year, using waste from across JBS's operations. The group said this move followed a pilot study from as long ago as 2016, but it has now invested more than \$25 million to get Campo Forte up and running.

Pioneers' path

Two Italian biotech companies, ILSA and SICIT, have been powerful pioneers in this arena. ILSA, for example, announced last year that, since launching a division of its own in Brazil in 2019, it had transformed more than 300,000 tonnes of waste from the Brazilian leather industry into fertiliser, taking waste from tanneries and subjecting it to thermal hydrolysis to create products that make soil more fertile. It turns tanning waste first into a type of gelatine, rich in organic nutrients and carbon, and then subjects the gelatine to a drying process to produce fertiliser.

For its part, SICIT uses residues from the leather manufacturing process to make amino acid- and peptide-based fertilisers. SICIT has estimated that every 1,000 kilos of raw hides yields around 250 kilos of finished leather and up to 600 kilos of solid by-products. Some of these by-products, including fleshings, hair, trimmings and shavings, are what SICIT calls "recoverable



A SICIT production plant close to the tanning cluster at Arzignano-Chiampo in Italy, Credit: SICIT

tannery residuals". SICIT has been attempting to put these residual materials to good use for more than 60 years now. Its products help plants, from seed germination to crop maturity, to leverage natural mechanisms and thrive. It set up a division in China in 2016 and one in the US in 2018. Milan-based group, Circular BidCo S.p.A, moved to acquire SICIT in July 2021.

Growing concerns

If more tanners around the globe could find ways now of passing waste material from their production operations to specialist partners in agri-business and bio-stimulant manufacturing, their timing would be good. As the war in Ukraine continues, the UN's International Fund for Agricultural Development (IFAD) says its concern is increasing, not only about the humanitarian crisis, but also about the impact rising prices and shortages of staple crops will have on the world's most vulnerable people. It warns that conflict in one region can often spark unrest in another as food insecurity and inflation exacerbate poverty and social instability.

Lebanon is an example of the countries that are currently being adversely affected by the consequences of the war. Russia is the largest exporter of grain in the world, and Ukraine the fifth-largest, according to *The Economist*. Lebanon imports 80% of its wheat from those two countries. Owing to the explosion at the port of Beirut in 2020, which destroyed the country's

most important grain silos, Lebanon can now only store about one month's worth of wheat at a time. With 22% of families there already food insecure, IFAD says, a protracted war in Ukraine will have severe consequences in Lebanon.

Planting season

At the same time, disruptions in global supply chains of agricultural inputs, including fertiliser, owing to the war could also have what IFAD calls "long-term negative consequences for small-scale producers", particularly as they start a new planting season and face fertiliser shortages and price hikes. For example, the agency says, two-thirds of people in the Central African Republic live in poverty. A major constraint for the country's food sector is poor agricultural inputs. Spikes in prices will impact use of fertiliser and yields, placing an added burden on the country's efforts to achieve food security and poverty reduction.

IFAD's response so far to the war in Ukraine is a call to protect the livelihoods of small-scale farmers and the rural poor, ensuring they can meet upcoming planting and harvesting seasons, and securing their immediate food security. "This means ensuring producers have access to key resources for production" it states clearly.

Tannery sludge may not look attractive to everyone, but if it can help alleviate the consequences of war and feed people in the developing world, no one could argue that it is without value. ☺

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Olive-leaf options

The chief executive of automotive original equipment manufacturer (OEM) Škoda Auto, Thomas Schäfer, is proud of the company's recent achievements in sustainability. Every April, like other brands in the Volkswagen group, it encourages its 45,000 employees to use one hour of work time on Earth Day to raise awareness about climate change and environmental protection.

For Earth Day 2022, Mr Schäfer said he wanted as many people as possible to take part in workshops to learn how they can take personal responsibility for spreading the word, and added that he hoped lively discussions would ensue. On earlier Earth Days, he pointed out, groups of employees had formed carpools, devised "micro-mobility solutions" to cut down on fuel consumption at its production sites, and begun insisting on having only locally sourced food at company events.

As an example of the "great success" he insists Škoda has had in improving sustainability in recent years, he pointed to

Leather manufactured using Wet-Green's tanning agent, developed from discarded olive leaves, has added to the sustainability story that Škoda is able to share with customers about its first purpose-built electric vehicle.

the new Enyaq iV sports utility vehicle (SUV), launched in 2021 as the company's first purpose-built electric car. "We continue to advance electric mobility," the chief executive said on Earth Day, before pointing to the sustainable options also on offer in the car's interior.

The EcoSuite version of Škoda's new Enyaq iV SUV.

All credits: Škoda Auto

Six design selections

Škoda has launched the Enyaq iV with no fewer than six design selections for customers to choose from for the interior of their vehicles: Loft, Lodge, Lounge, Suite, EcoSuite and SportLine. Half of these feature some leather and one of them, EcoSuite, tells a special leather story. The cognac-coloured leather on the seats in the EcoSuite version of Enyaq iV is produced using the Olivenleder tanning agent that Reutlingen-based start-up Wet-Green has developed.

Olivenleder is the result of a patented process. It is a vegetable concentrate based on an aqueous olive leaf extract. It is free from metals, is “completely harmless over the entire value chain”, Wet-Green states, and allows tanners to reduce the volume of acids, salts, syntans and dyestuffs they use compared to many traditional tanning methods. What is more, an entire step of the tanning process, the traditional pickling stage, is no longer required, the start-up insists.

Growing on trees

The extract is made entirely from leaves from olive trees. These leaves become available in large volumes in olive-growing regions of Mediterranean countries during the pruning of the trees and the harvesting of the olives and, traditionally, farmers have simply burned them. Wet-Green is providing these farmers with additional income by paying a fair price for the leaves and turning them into the Olivenleder tanning agent instead.

Wet-Green's Olivenleder tanning agent is part of the circular story Škoda is telling about its new vehicle.





Materials of the future

All of this appealed to the head of colour and trim at Škoda, Katerina Vranóvá. It is she who is responsible for the choice of materials that go into the company's car interiors, including that of the Enyaq iV. She says the EcoSuite version, with cognac-coloured leather made using Olivenleder, is a personal favourite in the new electric model. Fashion, architecture, daily life and the people she meets all provide Ms Vranóvá with inspiration, she says, but nature does, too, and she insists that the materials of the future will be materials we can make by recycling raw components and recycle again at end of life. Wet-Green says that Olivenleder works well with this because it is biodegradable and free from pollutants. It is not just less harmful than many alternatives, but something that is positively good for the environment the start-up insists. "Recycled materials, sustainable materials are the future," Katerina Vranóvá says. "We should go to zero-waste."

The leather in the EcoSuite interior is "definitely a favourite", she adds and she explains that the qualities she wants this and any material to bring to the design are comfort, timelessness, softness and cosiness. Škoda is among the automotive companies that think car interiors will increasingly become more like people's living-rooms. "For the Enyaq iV, we were inspired by the idea of stepping into your favourite kind of room and then taking it for a drive in an all-electric SUV," the head of colour and trim says.

Cognac-coloured leather, contrasting ebony panels and beige stitching make the EcoSuite design option a favourite of Škoda's head of colour and trim, Katerina Vranóvá.

Her favourite interior is, she says, "every inch, the definition of sophisticated fashion". She describes the colour combination, which contrasts the cognac-coloured leather with ebony panels on the doors, as beautiful, the leather itself as "sleek" and the beige stitching as one of the "precious upholstery details" that abound throughout. The overall effect is comfortable, but highly elegant, she says. "It's a magnificent choice," she concludes, "if you want to feel special every time you get in."

Parent group Volkswagen has applauded Škoda's decision to specify leather that uses olive leaf extracts as a tanning agent, saying: "To conserve natural resources and establish circular economies in the mobility sector, the use of more sustainable materials is more important than ever." And it adds that harvesting leftover materials, the way Wet-Green does for Olivenleder, can contribute to OEMs' efforts to make vehicles more sustainable. Wet-Green has pointed out that leather manufactured using its tanning agent is also in use in other parts of the group, in cars that Porsche, Audi and Volkswagen have already brought to market. 🌿

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Automotive company Polestar has said it wants to break away from traditional paradigms and has described using leather in car interiors as an “old notion”. But finding a leather supplier that can meet its sustainability and traceability requirements has led it to have a change of heart.

Sometimes the old notions are the best



Electric vehicle start-up Polestar once referred to the idea that high-end cars ought to have leather upholstery as an “old notion”. As part of its commitment to helping motorists transition from the combustion age to the electric age, it has marketed its standard vehicle interior choice as vegan. “Being a new player allows us to create a design language that is contemporary and doesn’t rely on traditional paradigms,” says head of design, Maximilian Missoni.

Its first model, the Polestar 1, went into production in 2019, with the Polestar 2 following in 2020. In its early public announcements about these cars, it made a series of comments that did little to boost the confidence of automotive leather suppliers. Mr Missoni insisted the Gothenburg-based company was challenging all the old notions of “what premium means in the car industry,” and that vegan WeaveTech upholstery and reconstructed wood “instead of leather and chrome” in the Polestar 2 was part of that. This model went on to win Best of the Best in Product Design at the 2021 Red Dot Awards.

Upgrades, at extra cost

However, this spring, Polestar published a series of “sustainability upgrades” for the Polestar 2 and has made it clear

Scottish Leather Group’s commitment to transparency has shed light on the sustainability benefits of leather for Polestar.

ALL CREDITS: POLESTAR

that leather upholstery is one of the options. Specifically, it says customers can choose zinc-coloured, ventilated nappa leather in an eye-catching ‘broken chevron’ design. It also says customers will have to pay 50,000 Swedish kronor (or €4,500) extra if they opt for leather. This means that, if leather is synonymous with “the old notions”, it is still something that Polestar thinks will drive enough desire among customers to convince them to pay a handsome premium for it. “One thing that is not changing as we go from combustion to electric,” according to chief executive, Thomas Ingenlath, “is that cars are a highly emotional affair for us humans.”

Head of sustainability, Fredrika Klarén, says the company has put leather into the upgrade mix for the Polestar 2 and is likely to keep it as part of the picture for future models because it has found “improved nappa leather upholstery with greater sustainability credentials”. She explains: “We require that all leather used in Polestar products must live up to the strictest



The Polestar 2 offers customers the option of having leather in the interior.



standards on animal welfare and the Five Freedoms, along with being fully traceable and chrome-free.” She says the company has found a supplier of leather that can fulfil all of these requirements: Bridge of Weir, part of the Scottish Leather Group (SLG).

Towards a climate-neutral car

Transparency, Ms Klarén goes on to say, plays a key role in Polestar’s sustainability work. It has published a lifecycle assessment (LCA) for the Polestar 2, showing, she insists, that its climate impact is half that of a petrol-powered car. “We have set ourselves a moon-shot goal of creating a climate-neutral car by 2030,” she continues. “We will not use offsets, but instead focus on eliminating supply chain emissions and on eliminating emissions from each of the 20,000-plus components that go into a single car. Circular solutions, energy efficiency, renewable energy sources and carbon-capture technologies will all play a pivotal part. It’s all about innovation, research, advanced engineering and collaboration.”

Innovation, research, advanced engineering and collaboration, along with a few old notions, are what have helped Bridge of Weir convince Polestar that leather, too, deserves to be part of the path to climate-neutral. SLG says that, for Bridge of Weir and the other leather manufacturing companies in the group, traceability begins in the fields of the suppliers from whom it sources cattle hides and ends only when its customers have received the finished leather they want to use in their products. “It is paramount for leather buyers to have full access to information,” its hide procurement director, Gareth Scott, has said. “They want to know where their leather comes from, how the animals that provide the raw material were cared for, how the hide was

harvested, treated and processed, and even the impact that supply chain shipping has on the environment.”

For some years now, SLG has been working on a traceability system that will enable it to laser tag and code all hides at the point of origin. Individual identification codes will remain with the hide throughout the tanning processes. Among the reassurances this will give to customers including Polestar is confirmation that the leather they are purchasing is from hides from UK farms that abide by the Five Freedoms Ms Klarén refers to (see panel).

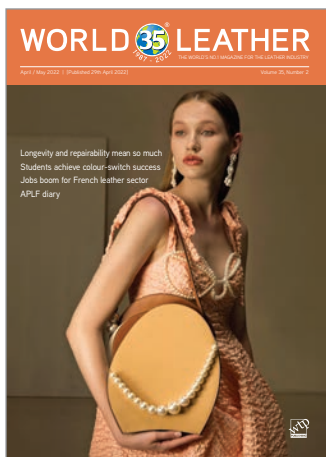
Five Freedoms

The Five Freedoms Principles are that the animals from which we obtain meat, milk and a range of by-products, including hides, must have:

- 1. Freedom from hunger and thirst**
- 2. Freedom from discomfort**
- 3. Freedom from pain, injury and disease**
- 4. Freedom to express normal behaviour**
- 5. Freedom from fear and distress**

Polestar also admires the patented, circular manufacturing process that SLG has in place at its Bridge of Weir tannery. The leather producer has completed its own LCA and now uses the results to present its collections as the lowest carbon-intensity leather available to the automotive industry worldwide. Polestar is one of a number of car companies that have put their trust in this. 🌱

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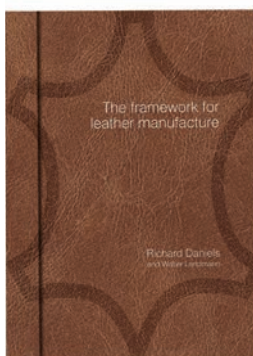
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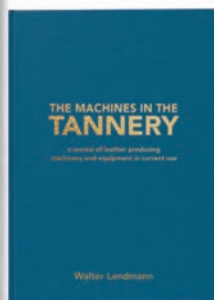
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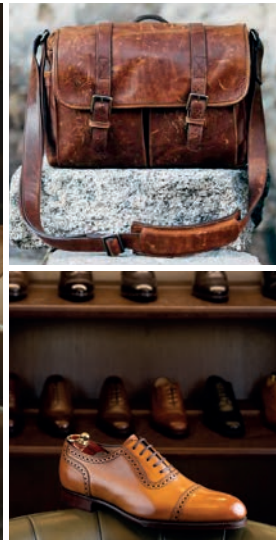
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