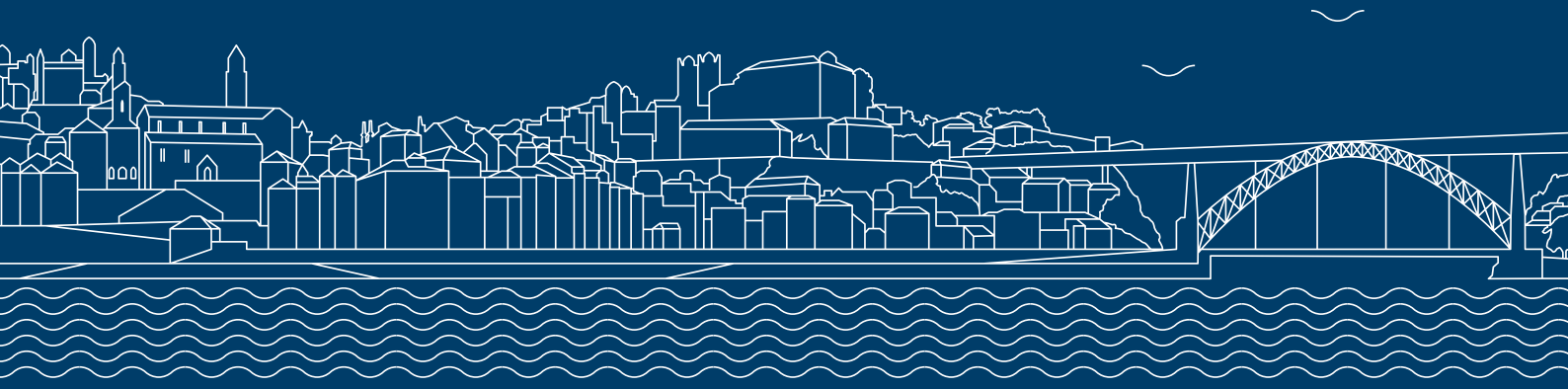
20th UITIC INTERNATIONAL TECHNICAL FOOTWEAR CONGRESS

Porto – 2018

16th – 18th MAY

FROM FASHION TO FACTORY

A New Technological Age



ctcp Portuguese Footwear Technological Centre | APICCAPS Portuguese Footwear, Components and Leather Goods Manufacturers' Association | UITIC INTERNATIONAL UNION OF SHOE INDUSTRY TECHNICIANS

HIGHLIGHTS

DATE
14th - 16th MAY 2018 | Factory Visits
17th - 18th MAY 2018 | Conferences

CITY/COUNTRY
Porto, Portugal

VENUE
Sheraton Porto Hotel & Spa
Rua Tenente Valadim 146, Porto, 4100-476
Portugal

Phone: **(351) 220 404 000**

GALA DINNER
Palácio da Bolsa

CONTACTS
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PORTO – MAY 2018

PARTICIPANTS	SPEAKERS	COUNTRIES	EXHIBITORS	FACTORIES' VISITS
500	30	35	45	18

WELCOME TO THE 20th UITIC CONGRESS

UITIC - International Union of Shoe Industry Technicians, CTCP - Portuguese Footwear Technological Centre and APICCAPS - Portuguese Footwear, Components, Leather Goods Manufacturers' Association are privileged to welcome you to the 20th UITIC Congress, being held in Porto for the second time. After several editions traveling through different continents, the UITIC Congress returns to Europe, the birth place of this event.

Twenty-two years have passed since the last time the UITIC Congress was held in Porto and in this period the worldwide footwear industry has changed dramatically. China emerged as the manufacturing hub of this industry, peaking at 2/3 of the world production; other manufacturers migrated its specialisation strategies to higher segments; sustainability, the environmental impacts of the industry's activities and a wide set of social responsibilities are now top of the line questions for the society. More recently, the massification of the Industry 4.0 principles - such as flexibility, digital technologies, customisation and the management of the ever-evolving relation between brands and final consumer - has invaded our lives promising a big wave of changes with potential to impact the business fundamentals.

By now, we are certain that digital technologies will significantly impact all the value chain. Production will be smarter, quicker, customer centric and closer to the final consumer. On top of this, the design process will be technologically boosted by the new knowledge of the consumer's preferences and the promotion and sales channels will have a huge degree of digital interaction with the final consumer. "A new Technological Age" is emerging and the footwear players must be focused in understanding all the opportunities that will emerge from here to ensure they are in a favourable position to make the most of it.

As we live in this new technological age, the selection of Portugal as the hosting country of the event wasn't innocent. During the last decades, the Portuguese footwear industry has emerged as a technological leader in several areas and Portuguese Shoes took an important position on the international playground. Portuguese footwear exports increased by 50% in the last 8 years, employment grew more than 20% and major international players consider Portugal an excellence manufacturing hub and a reliable business partner.

The curiosity around the Portuguese companies led the organisers of the 20th UITIC Congress to plan, for the first time, 3 full days of factory visits, giving participants a singular opportunity to get in contact with relevant technological leaders.

As a way of guaranteeing the best possible reflection during the UITIC Congress in Porto, the discussions panels were selected to demonstrate how the footwear value chain will change during the coming years. We look forward for an open and fair competition capable of attracting skilled workforce and lead the technology development. Thinking big, looking far ahead and a customised planning were central in the definition of the programme.

Finally, we warmly welcome all the participants of the 20th UITIC International Technical Footwear Congress to Porto and hope you have the opportunity to discover the Portuguese Footwear Industry and to enjoy the Portuguese culture and welcoming spirit.

ctcp Portuguese Footwear Technological Centre | APICCAPS Portuguese Footwear, Components and Leather Goods Manufacturers' Association | UITIC International Union of Shoe Industry Technicians

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PROGRAMME

MAY 14th MONDAY	EXTRA VISITS TO FACTORIES
08.30 am	**Start from the Sheraton Hotel**
	VISITS TO FACTORIES
06.00 pm	**Arrival at the Sheraton Hotel**

MAY 15th TUESDAY	EXTRA VISITS TO FACTORIES
08.30 am	**Start from the Sheraton Hotel**
	VISITS TO FACTORIES
06.00 pm	**Arrival at the Sheraton Hotel**
07.30 pm	**Welcome Cocktail at the Sheraton Hotel**

Check-In: 07.30 – 08.30 am / 05.30 – 08.00 pm

MAY 16th WEDNESDAY	VISITS TO FACTORIES
08.30 am	**Start from the Sheraton Hotel**
	VISITS TO FACTORIES
06.00 pm	**Arrival at the Sheraton Hotel**
08.00 pm	**Welcome Dinner at the Sheraton Hotel**

Check-In: 07.30 – 08.30 am / 05.30 – 09.00 pm

MAY 17th THURSDAY	CONGRESS 1ST DAY - Sheraton Hotel
09.00 am	**Opening session**
09.30 am	**Introductory lectures** • **Exponential technologies and emerging business models** Maarten Oonk | Deloitte Center for the Edge - USA • **Worldwide footwear industry** Vasco Rodrigues | Catholic University and World Footwear - Portugal • **Portuguese footwear industry** Alberto de Castro | IFD - Instituição Financeira de Desenvolvimento - Portugal
10.30 am	DISCUSSION PANEL – **EXPLORING EMERGING DESIGN & DEVELOPMENT TECHNOLOGIES WITH GLOBAL FOOTWEAR BRANDS** **Moderator:** **Matt Priest** | FDRA - USA • **Chris Hillyer** | Deckers Brands - USA • **Andreas Tepest** | Deichman - Germany • **Nicoline Van Enter** | Footwearists - Netherlands
11.20 am	**Coffee Break**

PROGRAMME

MAY 17th THURSDAY

11.50 am	SESSION 1 – **NEW PRODUCTS, NEW SERVICES** **Chairman:** Sergio Dulio | Atom Lab - Italy **Introductory lecture: Main evolutions for the footwear sector** Claude Eric Paquin | French Footwear Federation - France • **How fashion trends can be integrated into product development** Sara Andrade | Vogue - Portugal • **Sustainable fashion shoes 4 all - A new consumer and retail driven fashion shoes business model** Maria José Ferreira | CTCP - Portugal • **Individual Fitting for Virtual Footwear Retailing: Building a link from 3D CAD to Industrial Made to Measure** Audrey Golub | ELSE Corp - Italy • **Personalized digital last (a women's example), the tool required to enable mass customization** Carol McDonald & Andrey Golub | Gneiss Concept and ELSE Corp - USA and Italy
01.00 pm	**Lunch**
02.15 pm	SESSION 2 / PART 1 – **INTELLIGENT DEVELOPMENT AND MANUFACTURING** **Chairman:** Eugenio Di Maria | Shoe Intelligence • **Last analysis and modification software** Christophe Cumin | CTC - France • **3D printing is just one click away for footwear designers** Miguel Davia | INESCOP - Spain • **Virtual fitting room based on augmented reality** Javier Cortés Cameros | CTCR - Spain
03.40 pm	**Coffee Break**
04.00 pm	SESSION 2 / PART 2 – **INTELLIGENT DEVELOPMENT AND MANUFACTURING** **Chairman:** Bhabendra Nath Das | CLRI - India • **Shoes made without stitching and no lasting processes** Pedro Carvalho | AMF - Portugal • **Direct injection process excellence** Klaus Freese | DESMA - Germany • **Robot assisted manufacturing system** Sergio Dulio | ATOM lab - Italy • **The road towards mass development and manufacturing of custom made footwear** Linli Cao | BM Technology - China
05.20 pm	**First day closure**
07.30 pm	**Departure for the gala dinner at Palácio da Bolsa by bus - meeting point: Sheraton Hotel**
11.30 pm	**Return to the Sheraton Hotel**

Check-In: 08.00 – 09.00 am

PROGRAMME

MAY 18th FRIDAY	CONGRESS 2nd DAY - Sheraton Hotel
08.45 am	**Opening session** **UITIC General Assembly Report** Ives Morin | UITIC President
08.50 am	SESSION 3 – **SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES** **Chairman:** Miguel Martinez | INESCOP - Spain **Introductory lecture: The Brazilian example - Leather Sustainability Certification** Alvaro Flores | CICB - Brazil • **An integrated approach for a more sustainable footwear world** Vera Pinto | CTCP - Portugal • **Functional leathers by laser plasma technology** Francisca Aran Ais | INESCOP - Spain • **Injection molded biodegradable polyurethane shoe soles** Gnanasundaram Saraswathy | CLRI - India • **A new way for the end of life of leather shoes: Disassembling, sorting and valorization as new materials and energy** Régy Lety Soex | CTC - France • **CADS - A successful initiative for sustainable conditions in the shoe sector** Andreas Tepest | Deichman - Germany
10.30 am	**Coffee Break**
10.45 am	SESSION 4 – **NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT** **Chairman:** Françoise Nicolas | CTC - FRANCE **Introductory lecture: Addressing the challenges of recruitment and skills provision in the global footwear industry** Christine Powley-Williams | SATRA - UK • **Knowledge platform for transferring research and innovation in footwear manufacturing** Aura Miai | Gheorghe Asachi Technical University - Romania • **Human resources management 4.0 and work-based learning: A great match** Elisabeth Rouiller | ISC - Germany • **Learn2Work: a new approach to train factory workers** Matteo Pasca | Arsutoria - Italy • **How to transfer its knowledge to start-ups in the footwear industry: ADC the French example** Sophie Viot Coster | ADC Au-Delà Du Cuir - France
12.15 pm	**Closure Ceremony**
01.00 pm	**Lunch**

General Information
• Each participant will visit 4 companies per day. Participants go to the visits by BUS.
The meeting point is at the Sheraton Hotel.

Maarten Oonk | Netherlands

Deloitte

KEYNOTE SPEAKER

Exponential technologies and emerging business models

Maarten is a subject matter expert on digital transformation, disruption and shaping strategies within Deloitte Center for the Edge.

Maarten's has a profound understanding of business areas like Additive Manufacturing, Artificial Intelligence and Robotics and the broader contextual implications. He has written perspectives on shaping strategies, scaling edges, the Future of Mobility and the Future of Manufacturing. Prior to Deloitte, Maarten worked for over 7 years for TNO, a renowned R&D institute and chaired various international working groups on vehicle automation for the European commission. He holds a Master's Degree in Industrial Engineering & Management from Twente University.

Key words are digital technologies, new business models, ecosystems and platform business, result and content driven and engaging people. Maarten has been working as SME on various assignments for major clients and is an experienced key-note speaker on exponential change and emerging opportunities.

INTRODUCTORY LECTURES

Vasco Rodrigues | Portugal

Catholic University

KEYNOTE SPEAKER

Worldwide Footwear Industry

Vasco Rodrigues is an Associate Professor of Economics at Católica Porto Business School and the Executive Director of its Research Center in Management and Applied Economics (CEGEA).

At CEGEA, he has been involved in over seventy consultancy projects for public and private entities, including several on the Portuguese Footwear Industry.

Since its inception in 2011, he has been the scientific coordinator of the World Footwear Yearbook.

Vasco holds a PhD degree in Economics from the Portuguese Catholic University. He researches and teaches in the areas of Industrial Organization, Microeconomics and Economic Analysis of Law.

Alberto Castro | Portugal

IFD - Instituição Financeira de Desenvolvimento

KEYNOTE SPEAKER

Portuguese Footwear Industry

Born in Braga (Portugal), in 1952, holds an undergraduate degree in Economics by the University of Porto (Portugal) and a PhD in Economics by the University of South Carolina (USA).

Currently, Alberto Castro is a Professor of Economics in Catolica Porto Business School.

Outside the University, he has been a consultant for APICCAPS (Portuguese Footwear Association) for more than 20 years. He is Chairman of Instituição Financeira de Desenvolvimento (the Portuguese promotional bank) and non-executive director of Mystic Invest, S.A. He chairs the Audit Committee of Mota-Engil (the largest construction and public works Portuguese company) and Unicer (the largest portuguese brewery). He is a member of the Investment Committee of the Portuguese Venture Capital Initiative.

Alberto Castro is also involved in various civic activities ranging from being the Ombudsman of the Port of Leixões to Vice-President of the Association for the Museum of Transports and Communications as well as President of the Audit Committee of the Portuguese Red Cross.

DISCUSSION PANEL

EXPLORING EMERGING DESIGN & DEVELOPMENT TECHNOLOGIES WITH GLOBAL FOOTWEAR BRANDS

Matt Priest | USA

FDRA

MODERATOR

FDRA is the largest and most effective footwear association in the United States. In this role, Matt serves as the executive in charge of FDRA's day-to-day operations ensuring the association meets and exceeds its goal to be the footwear industry's business and trade association.

Before joining FDRA in February 2009, Matt served as Senior Advisor to Commerce Secretary Carlos Gutierrez and Deputy Assistant Secretary for Textiles and Apparel at the U.S. Department of Commerce. As Deputy Assistant Secretary, he oversaw programs and strategies to improve the domestic and international competitiveness of the U.S. footwear, fiber, textiles, and apparel industries. Matt was also Chairman of the Committee for the Implementation of Textile Agreements (CITA), which determines when market-disrupting factors exist in the domestic fiber, textiles and apparel marketplace. Previously, Matt served as Senior Advisor to the Assistant Secretary for Import Administration at the Commerce Department, where he advised the Assistant Secretary on textile and trade issues. Prior to his appointment, Matt was Legislative Director for Representative Sue Myrick of North Carolina, where he was an advisor in the areas of textiles, trade, and economic development.

In addition to his role as President and CEO of FDRA, Matt is a member of the Board of Directors at Soles4Souls. He also serves on the Industry Advisory Board at the College of Textiles at North Carolina State University in Raleigh. He has also served as an Executive in Residence at the College of Textiles and often guest lectures at the Georgetown University McDonough School of Business. Matt is also an honorary member of the Footwear Youth Leadership Group of the Taiwan Footwear Manufacturers Association. Matt earned his BA in political science from North Carolina State University. He lives with his wife and three daughters in Northern Virginia"

DISCUSSION PANEL

EXPLORING EMERGING DESIGN & DEVELOPMENT TECHNOLOGIES WITH GLOBAL FOOTWEAR BRANDS

Chris Hillyer | USA

Deckers Brand

KEYNOTE SPEAKER

As a Director of Innovation at DECKERS Brands, Chris Hillyer contributes to the evolution of the product development process as well as leading other innovation projects.

Chris got his start designing climbing equipment but quickly fell in love with the dynamic pace of footwear design as well as the wide array of materials and processes available.

His passion for innovation has allowed him to participate in the design of shoes for Olympic athletes, Mountain Bikers and even a penguin.

With the exciting new tools available for designers, developers and throughout the supply chain, Chris has become focused on re-envisioning the entire product creation process.

DISCUSSION PANEL

EXPLORING EMERGING DESIGN & DEVELOPMENT TECHNOLOGIES WITH GLOBAL FOOTWEAR BRANDS

Andreas Tepest | Germany

Deichman

KEYNOTE SPEAKER

Andreas Tepest, born 1966 in Germany, is the “Head of Global Quality Management” of DEICHMANN SE, Europeans leading retailer for shoes. He is responsible for the global shoe production and product quality and also coordinates all social compliance and sustainable activities, including the global BSCI audit program.

Before he started his carrier at DEICHMANN in 1996 Andreas Tepest worked as Production Manager at a leading shoe producer in Germany.

He is active in a number of national and international organizations, networks and projects e.g. as Deputy Chairman of the CADS-Cooperation at DSI, Member of the LWG-Leather Working Group, Member of national and international committees of DIN and ISO and also Member of the WMS working group - the leading shoe size system for children shoes in Europe.

After graduating from Germans Shoe Technician School in Pirmasens, he studied Technical Business Administration at the European Academy in Cologne. He is also a holder of the certificate as a REFA-Technician. REFA is the leading German association of organization in work design, industrial organization and company development.

DISCUSSION PANEL

EXPLORING EMERGING DESIGN & DEVELOPMENT TECHNOLOGIES WITH GLOBAL FOOTWEAR BRANDS

Nicoline Van Enter | Netherlands

Footwearists

KEYNOTE SPEAKER

Founder and creative director of The Footwearists. Nicoline Van Enter has training in journalism and engineering, she consulted with leading footwear brands around the world for more than 25 years - such as Timberland, Vans, Birkenstock, CAT and Diesel - as well as machine manufacturers like Atom or material suppliers like Stahl.

She is also a guest lecturer at various universities.

Known for a broad future vision, connecting seemingly unrelated things to create original and effective solutions, both for start-ups and established companies.

Over the years she has become an expert in applying new digital and biological technologies to footwear. For instance, she has been 3D printing wearable shoes for about three years now, which is why she is The Footwearists' main 3D printing teacher and consultant. Currently, she is also focusing on creating new biotech solutions for footwear.

SESSION 1

NEW PRODUCTS, NEW SERVICES

Sergio Dulio | Italy

Atom Lab

CHAIRMAN

Sergio Dulio studied aerospace engineering and graduated, magna cum laude, from the Polytechnic of Milan. He spent the first years of his professional career in the aerospace industry, working in Switzerland and Italy.

In 1984 he joined IBM as a member of the first technical support team to the 3D CAD/ CAM application CATIA. He continued this experience in the ICT sector. At the end of the eighties (1988) he had his initial contact with the footwear world. He started with the market introduction of the first families of shoe specific CAD/ CAM applications with the Austrian company ATOM+VICAM, and then as an expert in the area of leather cutting, as part of the technical staff of ATOM, one of the leading companies in the field of shoe machinery.

After almost ten years spent with the Italian National Research Council coordinating EU funded research projects in the footwear sector, in 2013 he has been appointed Head of ATOMLab, the Research and Innovation unit of the ATOM group, working in close contact with universities and research institutions in Italy and abroad.

SESSION 1

NEW PRODUCTS, NEW SERVICES

Claude Eric Paquim | France

FFF - French Federation of Footwear

KEYNOTE SPEAKER

Introductory lecture: Main evolutions for the footwear sector

Mr. Claude Eric Paquin, a French national born in Paris in 1947, is graduated from the Ecole des Hautes Etudes Commerciales (HEC) class of 1969, the leading French business school. Paquin graduated from the Harvard Business School in 1971 with an MBA.

He started his career in the banking industry where he served as an Executive Director for Societe Generale and the Midland Bank Group in France and outside of France from 1971 until 1991.

Paquin joined the Credit Lyonnais group in 1991 where he was in charge of the management and disposal of the group industrial portofolio worth about US$ 30 billion.

In 1995, he joined a private family holding company where he managed their different assets and he became CEO of the JB Martin group, one of the leading French shoe business, in 2007.

He was nominated Chairman of the Fédération Françaide de la Chaussure in April 2016 and seats in the Board of all the French leather institutions (CNC, CTC, etc).

Paquin is also Director of several companies based in France and China.

SESSION 1
NEW PRODUCTS, NEW SERVICES

Sara Andrade | Portugal

Vogue

SPEAKER

How fashion trends can be integrated into product development

The evolution of Fashion has seen very few changes as extreme as those brought by the 21st century. Although Fashion has been breaking down barriers throughout its history, the entire paradigm of the business around Fashion has never altered as much as with the arrival of the web and social networks. Nowadays, with a digital supremacy never seen before, it is easier to reach an audience, but more difficult to keep their attention; production techniques were upgraded to faster tools and more effective methods, but the consequence, also directly linked to a more distracted audience, forced the increase of work, doubling, tripling and sometimes quadrupling the production of annual collections; brands are more creative and focused on distinguish themselves, but the competition is also fiercer.

Will this unprecedent electrifying rhythm of the industry be sustained? In a world aiming to be more sustainable - a wish and a need - what is changing, what can be changed and how will things change in the future?

The same background is impacting magazines and media publications: in a cyberspace where anyone can be the bearer of news, regardless of being accredited media, how does one compete without undermining credibility? With quality. With being special. With making a difference. Just like in Fashion.

Graduate in Social Communication specializing in International Journalism /Started her career with Vogue Portugal, first joining the Fashion department, and later as Online Publisher by launching Vogue.pt. / Worked for GQ Portugal as Online Publisher / Nowadays is the responsible for the online platforms for both GQ Portugal and Vogue Portugal (now both part of the LightHouse Publishing Group portfolio) / Weekly guest on a radio program on M80 / Monthly participation in TV show Mundo das Mulheres (Sic Mulher) /Journalist

SESSION 1
NEW PRODUCTS, NEW SERVICES

Maria José Ferreira | Portugal

CTCP - Centro Tecnológico do Calçado de Portugal

SPEAKER

Sustainable Fashion Shoes 4 All - A new consumer and retail driven fashion shoes business model

SustainableFashionShoes4All aims to give rapid and sustainable response to consumer and retail fashion trends and preferences through analysis of interactions in both physical and virtual stores and development of new materials, product concepts and 'intelligent' manufacturing processes.

To implement the model, several solutions were developed and validated. An in-shop interactive exhibitor helps the consumer to choose or define a customized/ personalized product.

A smart phone application supports new products selection, specification and acquisition. Both solutions "embed artificial intelligence" to suggest alternative articles. A sales application advises shop managers of consumer requests and causes of lost sales.

A cloud-based system integrates the various solutions and then communicates relevant information to the entire value chain, for example to the designer or producer. Sustainable production of the new shoes is made possible using new processes and materials that can be customised in colour/drawings in a flexible way. An innovative intelligent vision system then automatically recognises coloured areas and ensures the effective integration of the new products into the production process, reducing steps, materials consumption and waste to a minimum.

New shoes based on leather and man-made fibres (patented concept) combine the consumer's aesthetic decisions with functional and circular economy attributes.

Degree in Chemistry, Master in Environmental Sciences, PhD in Environmental Engineering. | Head of the Research and Quality Department at CTCP. Coordinates National and European RTD projects. Responsible for CTCP Test and Research Laboratories. | Main areas of technical and scientific work include footwear materials and products, advanced manufacturing processes and sustainable development. | Coordinated more than 50 national and EU projects mainly in the fields of new materials, products, processes and environment, on behalf of since 1994. | Author in more than 75 publications or oral presentations, since 1990.

SESSION 1
NEW PRODUCTS, NEW SERVICES

Andrey Golub | Italy

ELSE Corp

SPEAKER

Individual Fitting for Virtual Footwear Retailing: Building a link from 3D CAD to Industrial Made to Measure

Taking their first major steps towards transforming the Fashion System, in September 2017, ELSE Corp - a Virtual Retail Company, with its main business partners, launched their innovative end-to-end platform for the Footwear Industry based on their key frameworks. The 'powered by E.L.S.E.' platform enables mass customisation, industrial made-to-measure and on-demand production, with experimental enhancements through machine learning, AI, deep learning & procedural modelling.

With the ambition to accelerate the transformation of the industry into a sustainable, transparent and traceable model, ELSE Corp offers B2B and B2B2C solutions to brands, retailers, manufacturers and independent designers; putting together front-end retail processes such as product personalisation, the 3D commerce of exclusive, personalized, made-to-measure products; with cloud-based back-end processes like mass customisation, virtual fitting and order generation for smart hybrid manufacturing. The company's core concept Virtual Retail or 'no stock retail', is an innovative hi-tech industrial process for 3D and Cloud based Mass Customization of fashion products. It represents a turning point for future methods of retail and manufacturing, providing new innovative strategies for the sales, design, production, distribution and marketing of fashion products.

The platform is the result of more than two years of technology research, numerous tests and pilot projects, carried out with partners and customers. During this long journey of "learning by doing", ELSE Corp has had the opportunity to work with key strategic partners, brands, retailers and other start-ups focused on customized footwear and industrial made to measure, as well as leading CAD, ICT and industrial production players.

Born in Kazakhstan, in 1976. | Graduate of Applied Mathematics & Software Engineering at the Polytechnic University of Minsk- Belarus (1998), has a PhD in Systems Analysis and Design for Innovative Technologies from the Minsk Polytechnic Academy (2001). | Graduated in 2012 at MIP Business School - Politecnico di Milano as "StartUp Program" Master program, and MIP granted the study as to a startup competition finalist in the "best e-commerce innovation idea" category. | Co-founder, EVP Product & Technology the CEO of ELSE Corp Srl- a Virtual Retail Company (www.else-corp.com) since 2016.

SESSION 1
NEW PRODUCTS, NEW SERVICES

Carol Mc Donald | USA
Gneiss Concept

Andrey Golub | Italy
ELSE Corp

SPEAKER

Personalized Digital last (a Women's Example), the tool required to enable mass customization

The footwear industry ought to give the customer what they really need: stylish shoes that fit and serve the intended function. This evolution of footwear will require adaptation of mass customization strategies and technologies across the value chain at an industrial scale and at a reasonable cost. The industry can achieve this by focusing on tools, essential for fit. These tools will involve improvements to data processing and digitizing personalized last production. Currently, customer related data can be obtained via smart phone apps, biometric scanners or legacy and expensive scanners which are subsequently applied to avatars, foot scans or manually acquired data. The IEEE 3D Body Process Industry Connections Group is developing scanning standards to ensure universally consistent quality information that can be used in transforming data into shoe lasts. Simulation of fit between scanned feet and footwear last comparison is usually the first step.

These standards will not capture every nuance needed for fitting footwear. Fit needs context in terms of movement, function, and compression tolerance of the foot. Consequently, technicians must be trained to implement emerging technologies, especially those related to foot shape and measurement, analysis and design implementation. Presently, custom fit methods involve time wasting expensive approaches involving multiple fittings, trial/test shoes and potentially painful "break in" periods. Contextualization of fit will give a new level of flexibility to manufacturers, allowing them to fulfill customer needs and result in brands becoming known for their attention to fit.

Co-owner Focus on mass customization of footwear and apparel manufacturing. | Over 30 years of experience in New Product Introduction and Sustaining Engineering covering Consumer products (Starbucks, Intermec, Microsoft), Medical equipment (Physio Control), Testing equipment (Fluke Networks), Fitness products (Precor) and Design Innovation (PNNL). Improved performance and reliability of both product and manufacturing processes with a Lean Manufacturing focus. | Worked to improve product quality and component design manufacturability (both domestic and international) with a focus on DfX – Design for Excellence thru DfM and DfA – Design for Manufacture and Design for Assembly. | Led Product Lifecycle Management (PLM) implementations for R&D teams (Precor) and an initial company-wide launch (Starbucks). | Received patents for Microcomponent Sheet Architecture. Shoe School – Introduction to Shoemaking, July 2014, Port Townsend, Washington B.S. Electrical Engineering, University of Washington, Bothell, Washington, December 2013 M.S., Mechanical Engineering, Oregon State University, Corvallis, Oregon B.S., Mathematics, University of Oregon, Eugene, Oregon.

SESSION 2 / PART 1

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Eugenio Di Maria | France

Shoe Intelligence

CHAIRMAN

Eugenio Di Maria, a multi-lingual journalist, born in Italy, who has worked in Europe and in North America for The New York Times, the Associated Press and the Fairchild Publications of New York. He has been stationed in France since 1978.

Eugenio entered the publishing business at an early age launching a magazine as a boy scout at 16 to collect money for his group's activities. Obtained a Master's Degree in journalism from Columbia University, New York (1974) and practiced journalism at The New York Times and The Associated Press for 5 years in Rome and New York (1970-75).

Moved on to and spent 13 years specialising as a business reporter for Fairchild Publications (Sportstyle, Women's Wear Daily, Footwear News etc.) both in Toronto, Canada and Paris, France. In 1990 Eugenio founded European Decision Maker Publications and has since built the business into one of Europes leading sports information providers.

EDM Publications is a publishing company, born in 1989 and based in France, which puts out a number of international business newsletters and special reports in English, the international language of business. The name stands for European Decision-Makers Publications, defining its main target.

EDM Publications stands for European Decision Maker Publications. It is an exclusive and international business information service that is not supported by advertising – only by subscriptions and book purchases.

SESSION 2 / PART 1

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Christophe Cumin | France

CTC Groupe

SPEAKER

Last analysis and modification software

Whether for fashion, sports or casual products, for women, men or children, customers are increasingly looking for new products. Who says new products speaks about design, comfort, customization or retailing channels. We are also told about new manufacturing techniques, new country of production, new materials. Many changes around us, but an element is always present, necessary, indispensable, unavoidable: THE LAST.

It's created by the designer, it's used by the designer and necessary to the manufacturer. It gives the shoe look, its comfort, so it must be adapted to the morphology of the foot that the shoe has to put on. So far there are no design rules, no control systems, and so far, too many designers and manufacturers are unaware of its importance. We propose you to present a software based on an anthropometric study of the feet and 40 years of experience of last design and development.

An analysis of 25 000 lasts and more than 10 000 people, which allows you to present software capable of: Analyze and measure a 3D file of a last; Compare it to a database of foot measurements; Give the analysis on the geometry of this last and give the corrections to be made to have a comfortable shoe keeping the original look; Modify automatically the last to give it a good fitting For "bespoke" use; Create a customized last perfectly adapted to a given foot.

This software makes it possible to analyze and create lasts adapted to a given population, to ensure a consistency in shoe fitting, to better satisfy the client from one model to another and from one season to another, and does not require special knowledge in last making. The customer will be able to choose among several lasts which is the most adapted, or modify an existing last. Ancestral know-how finally accessible to all for the wellbeing of all.

Has been working as Shoe Department Manager for the past 15 years in CTC. | Before was a Factory Manager for Palladium company in France and Sri Lanka, and Product Development Manager for Salomon footwear. | In CTC company Christophe has developed new courses in the field of shoe production or organization and has filed patents on the automatic lacing of the shoe. | In the past 10 years he has been working on training projects as well as research programs working closely with international companies always with the objective to allow the companies to get a better technical knowledge in order to better control the fitting and the quality of the products. | Since 2016, has been working with his team work on a software that will mathematize the design of the last, in order to control and optimize its geometry.

Miguel Davia | Spain
INESCOP

SPEAKER

3D printing is just one click away for footwear designers

3D printing in the footwear sector is gaining momentum and, according to current trends, is expected to increase in the coming years as more and more footwear companies will adopt this kind of technology.

Footwear CAD systems were initially conceived for technical work and high quality visual results, as for instance the hyper-realistic rendering of footwear styles; however, there were no further considerations or limitations other than visual appearance.

Due to the restrictions currently imposed by 3D printing systems (geometrically perfect models are required), footwear CAD systems should be adapted and further developed for the generation of valid geometric models that can be directly 3D printed, without the need of using intermediary systems for complex corrections that can hardly be implemented in such a traditional industry.

For this reason, INESCOP is working for the incorporation of the required features and functionalities for direct 3D printing into their footwear CAD systems, thus avoiding any further processing and leaving 3D printing just one click away for footwear designers.

PhD in Computer Science from the University of Alicante in May 2011. | Has been working for INESCOP since 2005 where he carries out activities related to the development of specific 3D software applications for footwear design and has participated in several research projects for the footwear sector. | Has published several articles in prestigious scientific and technical journals such as: The International Journal of Advanced Manufacturing Technology, Journal of Engineering Manufacture, Computer Aided Design and Applications, etc. | Member of the technical committee ISO / TC 137 (Footwear sizing designations and marking systems) representing INESCOP (AENOR, Spain). | Associate Professor at the University of Alicante teaching Computer Architecture and Engineering (4th year) for the degree in Computer Engineering, and Computer Modelling and Animation (2nd year) for the degree in Multimedia Engineering.

SESSION 2 / PART 1

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Javier Cortés Cameros | Spain

CTCR - Footwear Technology Center of La Rioja

SPEAKER

Virtual fitting room based on augmented reality

The CTCR offers a technology that can avoid the queues in front of the changing rooms and enable to try on footwear/clothes through virtual reality and augmented reality. The development consists on a virtual fitting room where the footwear and clothes are not only superimposed over the real image of the customer, but also can be adapted to his movements.

In this particular case, the development of the CTCR is focused on a footwear fitting room for the company Hergar (Callaghan), that is composed by a large format screen and some sensors. The combination of synchronised video techniques, Kinect sensors and video processing algorithms is the heart of this virtual fitting room, that acts as a mirror where the user is reflected with the shoes he has chosen superimposed, even if they are not available at the shop at the moment. The system is controlled by the user, who can navigate through the menus with his own body movements and select the suitable model and size without pressing any button.

The advantages offered by this virtual fitting room are:
- Customers will improve their shopping experience, due to the use of new technologies and the assistance of the virtual personal shopper.
- Customers will be able to try on the shoes even if they are not available in the shop.
- The company will obtain valuable data about the most visited products and the sales success percentage and even the first reactions of the customers to new models or prototypes.

Responsible of international projects of the Project Management office at the Footwear Technology Center of La Rioja (CTCR). | A Doctor in Material Science Engineering, and has Master Degree in nanostructured materials for nanotechnology applications and a Degree in Chemistry. | Javier Cortés Cameros has more than 5 years of experience in R&D management in different sectors. | Manages R&D&I projects, from the idea validation to the project implementation, in the innovation field in order to promote R&D mainly within the footwear sector and related industries. | Specialist in working with public administrations and companies at international and European level. "

SESSION 2 / PART 2

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Bhabendra Nath Das | India

CLRI

CHAIRMAN

Bachelor's Degree in Leather Technology, in First Class, from the University of Calcutta (1981). Master's Degree in Leather Technology, in First Class, from Anna University, Chennai (1989). Ph.D from Anna University (2006).

Trained Expert in Manpower Development with extensive training under the ITC/ SIDA project.

Worked in CSIR-CLRI in different capacities and served as the Head of the Shoe Design and Development Centre, CSIR-CLRI since its inception in 1992. / Chief Scientist and Cluster Chairman of Project Planning and Business Development and Appellate Authority, CSIR-CLRI.

Has been awarded several patents for products and technologies developed / Published 150 research articles in various journals including SCI peer reviewed journals. Author of several chapters in different books.

Current areas of research interest include therapeutic footwear, new material development and design of productivity enhancement systems.

SESSION 2 / PART 2

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Pedro Carvalho | Portugal

AMF

SPEAKER

Shoes made without stitching and no lasting processes

This new technology allows the production of shoes using traditional materials in the shoe industry such as leather, cordura or microfibers without the necessity of many standard production stages that have characterized the production of shoes since the beginning. No more stitching, no more Strobel, no assembly stages.

This is a process using only one injection machine and one injection mould, but there is no need for stitching or Strobel and no assembly process like standard production methods. We only need to place the pieces of leather or any other material in the mould and, in one injection stage, we have a shoe. That simple but allows so much more.

The location of production will not be a determinant factor, since direct costs will be about the same anywhere. But the advantages will not be only from the production and industrial side with much fewer stock levels. For the customer the benefits will also be numerous. Starting in the price but also in the perfect fit it allows and the countless customization opportunities that each model will provide. The automatization of the whole process will allow a full implementation of the principles of Industry 4.0, with a direct connection of customer to production and a permanent flow and monitorization of information.

Graduated in International Relations by the University Lusíada in 1994. | Received his MBA in Marketing in 2003 from the Portuguese Catholic University – ESADE Barcelona. | Teacher at University from 1994 to 2001. | Consultant at a Portuguese Textile Group from 1999 to 2003 and the Marketing and International Development Director at Portuguese Grupo Lena from 2006 to 2015. | In June of 2015 joined AMF, Lda, Toworkfor safety footwear brand, as Commercial Director, responsible for global commercial strategy and implementation plans.

SESSION 2 / PART 2

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Klaus Freese | Germany

DESMA

SPEAKER

Direct Injection Process Excellence

Worldwide rising labor costs, the decreasing availability of qualified employees for shoe production, and the relocation of some production facilities are all leading to an increasing demand for automated production technology. Using technically advanced methods of production –e.g. the direct injection process (DIP) – automated and smarter work processes have become possible. The integration of smart robots and the linking of production units result in highly automated production lines.

This presentation should explain the future-oriented aspects of the production factors: • equipment • shoe design • processed materials • qualifications of necessary personnel Hereby.

The reliable production and standardized processes that result will create a significant competitive advantage for innovative users. Current and future customer requirements as well as trends in the shoe industry can be met through automated and flexible production. There is increasing demand from the customer as the end user to influence the design of the shoes as well as the individually adapted sole properties.

Using the fourth industrial revolution (Industry 4.0) and the management of Big Data, opportunities for individual shoe production of a batch size of 1 in mass production are presented. The digital entry of individual customer data can be supplemented by static and dynamic foot scanners, resulting in different levels of adjustment, from "best-fit" and 3-D printed insoles to midsoles with adapted wearing or cushioning properties.

The possibility of individual selection of color design is additionally presented. To face the future challenges of the industry, shoe manufacturers need both innovative manufacturing technologies and high process reliability in sustainable production.

Born in on 3rd Nov. 1960. | Began to work by DESMA in 1976. | Graduate Engineer & MBA. | Board Member of the Industrial Union for Garments and Leather (a union of VDMA). | Member of Technical Advisory Board of the International Shoe Competence Center (ISC) Pirmasens, Germany. Member of Advisory Council for Bremen City University of Applied Science. | Member of Economic Committee of German Chamber of Industry and Commerce (DIHK).

Sergio Dulio | Italy
ATOM lab

SPEAKER

Robot assisted manufacturing system

The most recent advancements in robotics and automation are paving the way for a new generation of shoe manufacturing systems designed for high efficiency and flexibility, modularity and a perfect coexistence of automatic machines, robotic manipulators and human workers.

Such systems are intrinsically designed to comply with the Industry 4.0 paradigm, including a wide range of technologies from advanced robotics to RFID tracking, from Augmented Reality to simulation and Internet of Machines.

This paper presents the development work on-going at ATOMLab, the Research and Innovation Business Unit of the ATOM Group in Italy, on a new generation of systems aimed at reformulating the concept of process automation in footwear manufacturing.

The new solution, called RAMS which stands for Robot Assisted Manufacturing System, is based on a proprietary architecture (covering both how single, independent production cells and complete manufacturing lines are configured as well as their corresponding control logic) and on a number of innovative grippers for the manipulation of the lasts and of other components of the shoe and on a widespread use of vision and other kinds of sensors in the process.

The automation approach that is presented does not stop at the making room but it encompasses other phases of the shoe design and manufacturing process and it connects upstream seamlessly with retail, lending itself perfectly to become the funding block for a true “On demand” retail and manufacturing scenario.

SESSION 2 / PART 2

INTELLIGENT DEVELOPMENT AND MANUFACTURING

Linli Cao | China

BM Technology

SPEAKER

The Road towards Mass Development and Manufacturing of Custom Made Footwear

One of the major challenges to the shoe supply chain is mass development and manufacturing of custom made footwear. As each customer would have more or less different requirements regarding the size, the colour, the materials and the style of their shoes, it seems every one pair of shoes are unique.

However, from the supply chain perspective, multiple orders of different shoe styles from different customers could be received at once with similar delivery time. Traditional way of mass development and production will not work here. It requires a new process with new information technology or platform to manage mass development and production of small quality of shoes (from one pair to a few pairs, for example).

The new process is so called "Flexible and Quick Response" process along with flexible product development, resource planning and manufacturing execution software applications. We, together with Industrial Intelligent Shoe Park in Shang Dong, designed such an intelligent engine to support custom shoe making from taking the order in, developing it and delivering it back to customer, all in 7 days. The engine contains one top unit that is the central repository of product information across all lifecycle states plus the planning system next and the execution system next. The software engine then is supported with Internet of Things technology at the bottom to allow connectivities with equipment's and products, systems, and workers, providing powerful connectivity across the intelligent center.

The purpose of performing the analysis is to remove any possibility of duplication and redundancy in the process of development and making of the shoes, and to configure a lean path that is optimal in time to deliver. After the analysis is performed, the engine would start the so called "mass development and production" process based on pre-configured routs.

Started as a literature graduate but ended with degree and lifetime passion for computer application solutions for fashion. | Co-founder of BM Technology, a global IT consulting service firm with independent entities in US, Canada, Hong Kong and China. | Currently Executive Director at BMT China. | Post modern Consultant for end to end product information management (E2EPIM) diving into the Product Value Chain in the world of Internet of Value. Internet based PLM solution forerunner for Retail, Footwear and Apparel market with 19 years of experience on enterprise system R&D, implementation and integration.

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Yves Morin | France

CTC and UITIC President

UITIC General Assembly Report

President of the UITIC and CEO of CTC Group (France), an international company located in Europe and Asia, which is a leader in R&D, consulting, training, testing, inspection and certification for footwear and leather goods industries. He hold this position for 20 years since 1997 to 2018.

Before that he has managed international companies in Europe and Africa in several businesses such as consulting services, cosmetics industry or toy industry.

He is President of UITIC since 2010 and has chaired the congresses in 2013 in China and in 2016 in India.

He is Visiting Professor at IAE Lyon School of Management (France) delivering courses in Corporate Social Responsibility since 2003.

He has an MBA from EM Lyon Business School (France) and an MBA in Political Science from Lyon University (France).

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Miguel Martinez | Spain

INESCOP

CHAIRMAN

Ph.D, in chemistry since 1988.

Sub-director of the Spanish Footwear Technology Institute (INESCOP), where he is in charge of General management of the institute's activities, as well as the management and coordination of national, European and international projects with particular emphasis on international technology cooperation activities). The project's main areas of research focus on new materials and new or improved processes to be used in the footwear industry. Supervises the activities developed by the Enviorment and Biotechnology Departments.

President (2003-04) and Vice-President (2002-05) of the European Union of Rsearch Institutes For Shoes (EURIS).

Member of the "Footwear" European and International Comittees fos standardization (CEN/TC 309 & ISO/TC 216), and the leather Panel of the United Nations Industrial Development Organization (UNIDO).

Evaluater of the Spanich National R&D Scheme and of the European comission R&D Framework Programmes.

Author of almost 93 contribution to specialised journals releated to leather, footwear and enviornment. Co-author of 3 patentes. Supervisor of 3 Doctoral Thesis and 4 final Dissertations.

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Alvaro Flores | Brazil

CICB -

KEYNOTE SPEAKER

Introductory lecture: The Brazilian example - Leather Sustainability Certification

Sustainability and transparency of the footwear supply chain are increasingly important factors for final consumers, looking for quality products that are also sustainable in all tiers of their production process. In this sense, certification and labelling processes are tools that grant visibility to the positive practices of manufacturers and their suppliers. In Brazil, through an unprecedented tanneries initiative conducted by the Centre for the Brazilian Tanning Industry (CICB), a certification for the leather production process was created.

The Brazilian Leather Certification of Sustainability (CSCB) counts on the participation of the various links in the production chain, including the footwear industry. Using the concept of the sustainability tripod, CSCB considers the results of tanneries in economic, environmental, and social aspects. A sustainable tannery develops its activities with positive economic results, seeking to reduce inherent environmental impact of its activities, providing better working conditions to employees and respecting the surrounding community.

The certification process is based on implementation and compliance with principles, criteria, and indicators established by standards developed by the Brazilian Association of Technical Standards (ABNT) and audited by The National Metrology, Quality, and Technology Institute (Inmetro), signatory to the mutual recognition agreement within the framework of the International Accreditation Forum (IAF) and the International Laboratory Accreditation Cooperation (ILAC).

Chemical Engineer and Master in Chemical Engineering from the Federal University of Rio Grande do Sul (Universidade Federal do Rio Grande do Sul - UFRGS) with specialization in Leather and Post-Graduate in Marketing from the Superior School of Advertising and Marketing (Escola Superior de Propaganda e Marketing - ESPM). | Coordinator of the Brazilian Leather Certification of Sustainability program (Certificação de Sustentabilidade do Couro Brasileiro - CSCB), promoted by the Center of Brazilian Tannery Industries (Centro das Indústrias de Curtumes do Brasil - CICB). | Develops consulting and advisory services in industries, service providers and entities, having wide experience in the leather-footwear sector. | Professor of graduation and postgraduate, currently working at the Lutheran University of Brazil (Universidade Luterana do Brasil - Ulbra). | Author of "The Niches Revolution: From the Big-bag to Mass Customization".

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Vera Pinto | Portugal

CTCP - Centro Tecnológico do Calçado de Portugal

SPEAKER

An integrated approach for a more sustainable footwear world

Portuguese Footwear is associated to fashion, innovation, technology and quality, being supported by smaller or larger research and development (R&D) projects conducted by the Footwear Cluster. Currently, the Cluster is investing in the development of new materials, technologies and new concept of products that are, more and more, directed to segments or niches of consumers.

How can we produce more sustainable products in line with the circular economic model? What is the impact of the new materials and products? Are the new materials and solutions safer for the humans and environment? Can we reduce the environmental footprint of our products? Presently, these are questions that arise and are discussed frequently among the scientific and industrial communities.

Furthermore, consumers aim a more sustainable consumption and demand "truly green" eco products. FAMEST is the most recent integrated collaborative R&D project conducted by the Portuguese footwear cluster, involving 34 partners. This project aims to develop new footwear concepts, advanced materials and new technologies. One of the FAMEST research lines involves the development of an integrated approach to develop more sustainable and safe products for human and environment.

The integrated approach foreseen the implementation of methodologies to evaluate the risk of the new materials and products to the consumers & workers and to environment supporting their sustainable development. The LCA and eco-design will also be studied, as well as the valorisation of waste produced by the footwear cluster. This integrated approach will be presented to the audience.

PhD and Degree in Chemistry by Faculty of Sciences of Oporto University | Researcher at CTCP since 2004. | Has been managing and developing several National and European R&D projects in the field of footwear in close collaboration with industry, other research institutions and universities | Her research focuses on the development of new functionalized, advanced and sustainable materials and footwear products, as well as, on the implementation of testing methodologies | Author or o-author of several scientific & technical articles, book chapters and oral presentations.

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Francisca Aran Ais | Spain

INESCOP

SPEAKER

Functional Leathers by laser plasma technology

Nowadays, one of the major challenges faced by the leather industry is the implementation of more resource-efficient and sustainable production processes with a lower carbon footprint, according to current Directive 2010/75/EC on industrial emissions, contributing to the resource-efficient Europe flagship initiative under the Europe 2020 Strategy.

In this sense, conventional finishing treatments employed for obtaining functionalised leathers with water resistance, stain resistance, flame retardancy or antimicrobial properties, generally imply high energy and water consumption. Furthermore, many of these treatments require the use of certain chemicals, such as halogenated organic compounds (i.e. PFC's), organophosphorus compounds or biocides, etc., the use of many of which is restricted or under consideration by EU legislation, as is the case of the REACH Regulation and the Biocides Regulation.

As an alternative to the above mentioned finishing treatments and drawbacks, the LIFE Textileather project with the technical collaboration of INESCOP has demonstrated the technical feasibility of the patented Multiple Laser Surface Enhancement technology for the functionalisation of leather in a sustainable way. It combines plasma and laser sources and in the presence of inert gases, allows the surface modification at a nanoscale, without noticeably affecting leather appearance and touch feeling. In addition, it consists of a dry and continuous process.

Therefore, its application in the leather finishing process leads to a significant reduction in the carbon footprint, especially in the case of flame retardant and waterproofing treatments in terms of greenhouse gas emissions and water and energy consumption.

R&D coordinator at INESCOP since 2018. | PhD in Chemistry Science, University of Alicante, 2000 | University Expert on Plastics & Rubbers, UNED, 2003. | Since 1996-2003, Researcher in the Adhesives Department of INESCOP. 2003-2017, responsible of the microencapsulation and nanotechnology research line at INESCOP. | Coordination and collaboration on several European, national and regional research projects in the field of materials for footwear. | Member of different Standardization Committees.

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Gnanasundaram Saraswathy | India

CLRI

SPEAKER

Injection Molded Biodegradable Polyurethane Shoe Soles

Biodegradable polyurethanes have been used for biomedical applications so far. With the concept of green earth, in our previous work, Biodegradable Polyurethane (PU) Footwear Soling Materials were developed and characterized for physico-mechanical and biodegradable properties and presented during 18th UITIC congress, China.

The research work was continued with the kind support of PU footwear Industries in India for developing injection moulded shoe soles based on biodegradable PU. Injection moulded PU shoe soles are prepared using polycaprolactone diol, diphenyl methane diisocyanate (MDI), monoethylene glycol, water and tri amine catalyst. The reaction injection moulding system is optimized for isocyanate index and other processing parameters like cream time, tack free time and pinch time recommended for PU system.

To improve the flexibility of the soles, biodegradable PU nano-composites are prepared by adding the nanofiller in the control system and further optimized for Isocyanate index in each loading of filler to maintain the recommendation for Injection Moulding System. The injection molded shoe soles based on biodegradable PU nanocomposites were characterized by X-ray diffraction study (XRD), Infrared spectroscopy (ATR-FTIR), Thermogravimetric analysis (TGA), Differential scanning calorimetry (DSC) and Scanning Electron Microscopy (SEM).

Physical properties were determined by measuring hardness, density, Bata belt flexing, Abrasion resistance, tensile strength following standard test methods. The hydrolysis resistance performance test showed no significant change with increase in nanofiller content. The physical and chemical properties showed that the biodegradable polyester polyurethane composites with 0.5% clay based on Isocyanate index 89 perform best physical properties with good morphological feature.

Scientist in Shoe Design and Development, Centre CSIR-Central Leather Research Institute, since 2011. | Assistant Professor in Anna University, Chennai for M.Tech Footwear Science and Engineering since 2012. | Research Associate in a polymer laboratory, CLRI (2007 - 2011) and a Scientist Fellow under the Women Scientist Scheme (WOS-A) of DST, Govt. of India, in polymer laboratory, CLRI (2004 to 2007). | Project Associate in Shoe Design & Development Centre, Central Leather Research Institute (CLRI) (2001 - 2004). | Carried out in-house projects such as “Foot width studies of elderly diabetics”, “Development of new foot impression material for customized footwear applications” and “ANOVA and Z-score analysis for competence evaluation of testing laboratories”.

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Régy Lety Soex | France

CTC

SPEAKER

A new way for the end of life of leather shoes: Disassembling, sorting and valorization as new materials and energy

23 billions pairs of shoes are produced every year. The fate of used shoes is an environmental issue, and valorization of material has always been a tricky business.

The principal reasons that explain this situation are: • Footwear manufacturers pay attention to assemble with strength the components of the shoes, so that it's a tight task to disassemble them at their end of life. • Shoes are made with a large panel of components : textile, leather, polymers,... which implies the difficulty to sort them and find ways of valorization for each, when we want to implement a good recycling of the shoe. A recent R&D program lead jointly by AIR* and SOEX* permits to demonstrate at a pilot scale the ability to dessassemble and sort the different component of shoes, by coupling a mechanical grinding of the articles and an air-flowed material sorting system.

This program also aimed to find ways of valorization to the differents parts collected after the treatment of the used shoes, in order to propose a viable economic scheme. If valorization could be expected for the majority of the components collected (textile, polymers, metals), as secondary materials, the leather fraction collected stayed the most difficult to valorize.

To adress this issue, CTC* leads a study to test the opportunity to use the leather fraction, as combustible, into compact system using the gaseification principle. This kind of system offers a high rate of thermal recovery from the leather, and the compacity of the system is well adapted to small and medium company needing energy to heat their buildings or electricity for their industrial process. [AIR: french company providing consultancy on innovation and sustainable developement. SOEX: german company specialized in the recycling of used textile. *CTC: french company dedicated to the tannery, foorwear and leathergoods insdustries]

Sustainable Development Consultant for the last 15 years in CTC. | During this period, lead projects on various topics for the leather industries, such as life cycle assessment, carbon footprint, waste management and valorization, REACh compliance. | Field of activities goes from managing R&D projects for leather industries, to factory audits, or developing and doing courses in relation with environmental topics.

SESSION 3

SUSTAINABILITY, REGULATORY TRENDS IMPACTING ON FACTORIES

Andreas Tepest | Germany

Deichman

SPEAKER

CADS - a successful initiative for sustainable conditions in the shoe sector

CADS – cooperation for ashuring defined standards for shoe- and leather goods production e.V. has the purpose to secure the quality of footwear and leather goods, to distinguish footwear and leather goods whose quality is secured with a quality label, and to engage in public relations work for the manufacture and marketing of sustainable, non-toxic, environmentally compatible shoes, shoe materials and leather goods with social responsibility.

SESSION 4

NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT

Françoise Nicolas | France

CTC

CHAIRMAN

Françoise Nicolas started her professional career as a Service Manager being responsible for the management of real-time industrial equipment control projects in the iron and steel was responsible for the organization of the Maintenance Department and information systems.

Became a Project Manager at Clemessy from 1988 to 1990, being responsible for the management of a blast furnace repair project, with 9 more people. Functions in this project were mainly related to team management, relationship with the subcontractors, development of piloting software, project monitoring, costumer reporting and design and implementation of start-up procedures.

From 1990 till date, has been Director of Innovation and Industrial Expertise at CTC, managing the Industrial Expertise sector on Leather, footwear and leather goods.Has done technic-economic audits, consulting actions for organizations and development of information system, change management in the leather sector, achievement of sector studies in France and abroad, realization of opportunity studies for creation / modernization centre of expertise, training centre dedicated to the leather sector, analysis of skill needs and implementation of training in organizations.

Responsible for the management of innovation in the leather, footwear and leather goods industry and for the management of a team of consultancy and expertise and maintaining relationships with the companies of the sector.

SESSION 4

NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT

Christine Powley-Williams | UK

Satra

SPEAKER

Introductory lecture: Addressing the challenges of recruitment and skills provision in the global footwear industry

Despite advances in automation and production technology the footwear industry still relies heavily on a skilled labour force to meet the demands of global consumption of footwear. The industry is competing with many other manufacturing sectors to attract employees. The presentation will give some thoughts as to how some of the challenges faced might be overcome.

Assistant Director - Commercial at SATRA Technology Centre worked in the leather industry undertaking a variety of roles in manufacturing, product testing, funding procurement, training and management. | Studied at The University of Northampton (then Nene College) and is a qualified Leather Technologist. | Works Director of a UK garment tannery, Carr Tanning. | Worked in manufacture of kangaroo leather for footwear and accessories at Packer Tanning in Australia. | Spent 11 years at BLC Leather Technology Centre as Innovation and Training Manager. | Co-founder Leather of Wise, a leather problem solving and training consultancy.

SESSION 4

NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT

Aura Mihai | Romania

Gheorghe Asachi Technical University

SPEAKER

Knowledge Platform for Transferring Research and Innovation in Footwear Manufacturing

The Knowledge4Foot project, titled Knowledge Platform for Transferring Research and Innovation in Footwear Manufacturing, is running for a period of three years (2015-2018) within the framework of the Erasmus+ Program – KA2: Strategic Partnerships for Higher Education. The project is managed by a consortium of education and research organisations, enterprises, and other footwear and education stakeholders based in six different European countries, namely Romania, Belgium, Greece, Portugal, Spain and Croatia.

The project aims to contribute to fostering the excellence in tertiary level of training and education for product design and development, engineering and management by linking the three areas of education, research, and business-oriented innovation. As is the case with most sectors in today's competitive market, the footwear industry in Europe must rely on technological advancements and creative solutions to compete internationally.

As evidenced in a study led by the CEC under this project the level of research and innovation activities and the presence of employees skilled in research and development are currently insufficient to realise European footwear companies' innovation potential. Based on companies needs to bring the best of Europe's innovation resources to European footwear manufacturing, the Knowledge4Foot project develops sustainable solutions for students' internship in order to develop skills and competencies in area of project-based work focused on research, innovation and technological transfer.

The Knowledge4Foot Platform (http://www.knowledge4foot.eu) gathers innovative e-learning tools to update the training curricula of higher education.

Professor at Faculty of Textile, Leather and Industrial Management. | Ph.D. degree in Structures, Processes, and Technology for Leather Products. | Project Manager Coordinator/partner for 13 EU grants within the framework of LLP/ Erasmus+ programme and 4 national research grants. | Contributed at ESCO- European Skills Competences, Qualification and Occupation being member of TEXTAN Reference Group Manufacturing of textile, apparel, leather, footwear and other related products¨. | Current consulting and research interests: CAD system for Footwear Industry, Virtual footwear product development, Methods in product design, Continuing Education, E-learning.

SESSION 4

NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT

Elisabeth Rouiller | Germany

ISC

SPEAKER

Human Resources Management 4.0 and Work-Based Learning: A Great Match

Human Resources departments have long ceased to be what they used to be: hiring and firing machines that cater to staffing needs. You won't be surprised to hear that there is an HR version of industry 4.0, too: Human Resources Management 4.0, aka Sustainable HRM, has training and further education at its core.

Quality-conscious skilled workers and technicians are and will remain key assets for successful companies. Industry 4.0 means more complex and sophisticated production equipment and processes, and logically shoe manufacturers need knowledgeable staff; versatile people who can easily adapt to new technologies and consider the technical evolution as part of a natural life-long learning process.

How can companies tackle this challenge? This presentation pleads for work-based learning. It explains why the skill transfer from coach to trainee is the most human, the most efficient and most sustainable form of knowledge transfer. The implication of companies in vocational training pathways as providers of work-based learning could soon become the method of choice for some of the most important footwear production countries in Europe. And it offers the additional advantage of eradicating the time gap between the release of new technologies and their availability in vocational schools and training centres.

Researcher and communication specialist at the International Shoe Compentence Center Pirmasens / Germany (ISC). | Engineering degree in Leather and Shoe Engineering Professional Editor. | After graduation worked as Chief Editor for the German publication «SCHUHTECHNIK» and the English magazine «SAM – SHOES and More» at Hüthig Verlag, a publishing house based in Heidelberg / Germany. | Worked for the adidas Group in the innovation and communications fields. | Has been working for ISC for the past ten years, as well as for ISC's parent company PFI (Prüf- und Forschungsinstitut / Testing and Research Center Pirmasens e.V. Work is centered on communication as well as on European research projects focusing on sustainability and vocational training. | Lecturer and webinars organizers.

SESSION 4

NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT

Matteo Pasca | Italy

Arsutoria

SPEAKER

Learn2Work: a new approach to train factory workers

In 2016-2017 a team of European partners, under the guidance of CEC (European Footwear Confederation) have worked at the Learn2Work project. Objective of the L2W project is to develop a training program to grow the next generation of factory workers in the most important footwear manufacturing countries in Europe (Italy, Portugal and Spain).

The footwear industry in Europe is lacking new generations applying for manufacturing jobs while at the same time the average age of the footwear factory workers is growing and the unemployment rate among the youngsters is growing too.

The L2W project starts from the experience of the production schools in Denmark. The project aims at creating training environments that have a ""real world"" approach (means that students have to deliver real products to real customers) with a strong attention to soft skills. Nowadays companies are more and more looking for soft skills in potential candidates and these personal and social characteristics are becoming equally important than the hard skills (footwear competences).

The L2W is currently in its final phase. Training courses have been organized in Italy, Spain and Portugal using the training methodologies of the Danish production schools. During the UITIC congress it will be possible to share the experience of the entire project, analyze the outcomes of the training courses and discuss the opportunities for the future.

CEO at ARSUTORIA School and CEO at Edizioni AF. | has been working as director of ARSUTORIA School for the past 15 years | Before that was a management consultant in Arthur Andersen with a Degree in Electronical Engineering and an MBA in General Management. | In ARSUTORIA School has developed new courses in the field of shoe and bag design and engineering. | In the past 10 years has been working closely with the US footwear industry and has developed in-house training classes for leading international companies such as Adidas, Bata, Nike among the others. | During 2017 thanks to the Learn2Work project Matteo has developed and managed an IFTS course for the Italian districts of Vigevano and Parabiago where brands like Chanel, Hermes, Louboutin and Manolo Blahnik manufacture their shoes.

SESSION 4

NEW WAY OF TRAINING AND KNOWLEDGE MANAGEMENT

Sophie Viot Coster | France

ADC Au-Delà Du Cuir

SPEAKER

How to transfer its knowledge to start-ups in the footwear industry: ADC the French example

ADC is a French entrepreneurship program developed and financed by the leather industry.

The program is:
• Supported by retired and current executives of the sector
• Operated by relevant experts

In order to cover the global needs of the new managers, the content of the program offers among other things:
• Theoretical and practical trainings
• Individual coachings
• Executive mentoring
• Network meetings based on the specificities of the sector.

ADC aims to prepare the renewal of the sector by the management knowledge transfer.

Graduated from Edhec Business School in 2000. | Started her career as a Management Consultant. | In 2012, joined the leather industry by founding the company Les Cireurs, a ShoeShine service, which has been operating since the beginning at Le Bon Marché. The company was sold in 2015. | Since 2013, became General Manager of the Apologie women's shoes brand until its sale in license. | Consulting activities in support of Senior Executives. | Took over the management of ADC in January 2018.

PORTUGUESE FOOTWEAR INDUSTRY

The Portuguese footwear industry continues to be highly focused on the international markets exporting more than 95% of its production.

In 2017, Portugal has exported 83 million pairs of shoes to 152 countries across the 5 continents, with a total of 1.965 million euros. Last year was also the eighth consecutive year of growth in sales to the foreign markets. In this short period, the Portuguese footwear industry has presented an outstanding growth dynamic, increasing its exports revenue in rougly 50%.

In the last few decades, the Portuguese footwear industry has undergone rapid and intensive transformation. Footwear companies braced the challenge to modernize their facilities and production methods, also investing in the less tangible aspects that gave them that competitive edge. Nowadays, Portuguese companies are known worldwide not only for the quality of their footwear but also for the excellence of their service, the ability to deliver small series and always based on a quick response to the market needs and requirements.

The innovation process within the Portuguese footwear industry is a continuous one and its biggest challenge is to conciliate the tradition and know-how accumulated over generations with the most modern technology, flexibility, and top-level design. A challenge which has been at the same time one of its most distinctive features.

An industry with a total of 1.526 companies and employing 40.080 people, acoording to the latest numbers.

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