

An official
event of



THE 19th INTERNATIONAL TECHNICAL FOOTWEAR CONGRESS

FEBRUARY 03-05, 2016, Chennai, INDIA

Organized
by



CALL FOR PAPERS

We are pleased to invite you to present your work at the 19th International Technical Footwear Congress of the International Union of Shoe Industry Technicians (UITIC), which will be held on 3-5 February 2016 in Chennai (India). UITIC has entrusted the organization to the Council of Leather Export (CLE).

Footwear manufacturers and experts will discuss the “Future Footwear Factory”

WHAT KIND OF FUTURE THE FOOTWEAR INDUSTRY HAS TO START BUILDING?

FUTURE FOOTWEAR FACTORY: A STRATEGIC/VITAL/FUNDAMENTAL TOPIC

Modern digital technology has transformed consumer behavior, as have had sustainability matters including: environmental, fiscal and societal, all of which when combined, will irrevocably alter the entire footwear industry.

Since the first gathering of the UITIC congress in 1970, never has there ever been such a boundless period of technological transformation as the present, similar in amplitude to that of the 19th century industrial revolution. Previously discarded organizational and technological practices have remerged under a new modern context. Customization within design and manufacturing once thought virtually extinct, will now dominate the industry.

Advances in computer, chemistry, robotics and material science technology will continue to exponentially increase, at such a rapid pace that our current growth period will appear stagnate. The footwear industry, the foundation of fashion and our consumers, manufacturers and providers of logistical services will all be deeply impacted.

Sustainability must be one of the highest priorities for the footwear industry in order to remain competitive. Prolonged sustainability in this dynamic market requires companies to be agile, innovative, and technologically proficient, while forming closer relationships with the consumer.

With this in mind the 19th UITIC congress is pleased to present innovative solutions in manufacturing and operations for leading the industry into the future.

UITIC and CLE count on your cooperation to propose an attractive event to the worldwide footwear community!

1. HEADLINES OF THE CONGRESS

SESSION 1: A manufacturing based on the needs of the consumers

To understand the needs of the markets, including the niche markets, of the consumers and to answer them with new product and new materials. Innovative, realistic and concrete solutions are expected, in particular on the following subjects:

- **Consumers needs analysis**
- **Monitoring of the factors shaping fashions**
- **Permanent market research consumer-oriented**
- **Smart materials for footwear**
- **Innovation in footwear design**
- **Anthropometric population studies**

SESSION 2: Intelligent manufacturing/ Digital-Smart factory

Which will be the new technologies, the new information systems, the organizations, which will allow to produce more intelligently, quickly and economically? Innovative, realistic and concrete solutions are expected, in particular on the following subjects:

- **Intelligent factories (Industry 4.0)**
- **Smart Robotics in manufacturing processes**
- **New CAD-CAM platforms, new PLM, and new ICT peripherals**
- **Innovation in manufacturing processes**
- **Multiple and advanced applications of additive manufacturing (3D printing and others)**

SESSION 3: Sustainability and regulatory trends impacting on factories

This session will include all papers concerning companies CSR, energy conscious machines and processes and the efficient use of resources, use of ecological materials, labeling system avoiding consumers' confusion. Innovative, realistic and concrete solutions are expected, in particular on the following subjects:

- **Ecology & shoes**
- **Sustainability of factories.**
- **Labeling systems and market/consumer confusion**
- **Standardization and certification.**
- **Prevention of environmental risks**
- **Innovative tanning processes**

SESSION 4: Advanced retail and supply chain

The development of e-business and its impact on the logistics and the distribution, personalized products' development, new sales concepts, organization of the supply chain to anticipate market requirements. Innovative, realistic and concrete solutions are expected, in particular on the following subjects:

- **Next generation of 3D configurators and Augmented Reality**
- **Innovation in supply chain**

- Innovation in distribution systems
- Improved integration and management of the value chain

SESSION 5: Attractive footwear factories and new way of management

How to ensure that human resources are prepared to evolve with efficiency in the future footwear industry and that this industry is attractive for the generations to come. Innovative, realistic and concrete solutions are expected, in particular on the following subjects:

- Evolution of the initial training
- New methods for skill development
- New ways of management particularly with regard to new generation
- Development of the Footwear industry Attractiveness
- New know how required for advanced design and manufacturing

2. CALL FOR PROPOSAL - General Information

The Scientific Committee propose two categories of presentation:

- **Spoken presentation:** Speech (20 min) and questions
- **Visual presentation:** Poster exhibited during all the congress – Work Presentation during the breaks – formal presentation could be organized (depending of the scientific program schedule)

a. Submission Process:

- **The On-line abstract submission will be open soon on <http://uitic-congress.cleindia.org>.**
- **All abstracts must be submitted on-line not later than 30 September 2015.** Please note that abstracts sent by fax or regular mail will not be accepted. Abstracts submitted after this date will not be considered.
- **One presenting author may submit only two abstracts.**
- The author who submits the abstract will be notified the receipt of abstract and an assigned abstract number by organizers. Please refer to this abstract number in all correspondence. Please contact the Congress Secretariat if the notification is not received within a week of submission.
- Individuals may submit their abstract for consideration in either poster or oral presentation. Abstracts not offered an oral presentation will be offered a poster presentation. Abstracts should contain sufficient data to represent the proposed presentation and fall within the scope of the Congress. Abstract that does not include sufficient data or does not fall within the scope of the congress may be rejected.
- The abstracts will be reviewed by the Scientific Committee. **The presenting author will be notified about the final decision regarding the acceptance or rejection of the paper latest by 30 October 2015.** If you have NOT received a notification letter about your submitted abstract, please contact: uitic@cleindia.org-
- **All Full Papers must be submitted on-line not later than 31 December 2015.**
- Accepted abstracts will be published in the proceedings of the congress.
- The Scientific Committee reserves the right to allocate abstracts into sessions as they see fit in accordance with the overall programme objectives.
- **Further information on presentation requirements and preparation of posters will be provided in the web site in due time.**

b. Instructions to prepare abstracts and submission

- All abstracts must be written in English.
- All abstracts must be approved by all authors before submission. The presenting author will receive all correspondence concerning the abstract and is responsible for informing the other authors of the status of the abstract.
- Presenter Name & Title & Address— List the full name and title of the person who will present the paper. List the name of the department, institution and full postal address (including zip/postal code and country, e-mail).
- Authors' names and other details should be entered in the appropriate fields.
- Select the relevant session you are submitting your abstract.
- Select the presentation type (oral or poster).
- Title of abstract: it should be short but descriptive. Title should be entered in the "Title Field"
- Abstract text should be entered in the "abstract field". Abstract should be 200-250 words. The system will not accept the submission of the abstract if it is more than 250 words.
- Abstracts must use correct grammar and punctuation. Standard abbreviations may be used.
- Changes are not permitted after submission deadlines.

3. ADDITIONAL SCIENTIFIC OR TECHNICAL INFORMATION

SESSION 1:

A manufacturing based on the needs of the consumers: intelligent products and advanced components

- **Consumers needs analysis : no additional information**
- **Monitoring of the factors shaping fashions:** Continuous analyses of social and cultural behaviors, market and fashion trends, consumption patterns around the world, with the objective of incorporating this information to the market research to design fashionable footwear
- **Permanent market research consumer-oriented:**
 - Are analyzed continuously the preferences and perceptions of consumers regarding the footwear-leather products, considering aspects such as environmental sustainability, new functionalities footwear, safety, fashion, etc Virtual technologies will bring advances to product marketing and commercialization, including footwear customization, digital models of an individual's feet
 - Augmented Reality: this technology has the advantage of testing 3D design prototypes prior to manufacturing for consumer preference analysis.
- **Smart materials for footwear:**
 - Incorporation of material properties such as waterproofing, decreased flammability, increased biodegradability, self-cleaning, thermal comfort, anti-microbial, fragrance, color-change, elasticity and contour adjustment.
 - Use of nanotechnology to develop materials with biocidal properties that reduce odor and the risk of podiatric infections (particularly for diabetic foot), by incorporating hydrophobic materials with improved moisture management, footwear with adjusting thermal properties, and innovative materials with improved durability and strength.
 - Increased comfort through implementation of advanced materials which facilitate the healing, maintenance and proper circulation of the foot's epidermis. One emerging technology incorporates the use of micro-encapsulated materials in the form of polymers
- **Innovation in footwear design:**
 - Disruptive innovations in the design of footwear and Success Stories.
 - Active footwear, Functional footwear, Therapeutic footwear....
 - Digital mobile technology which obtains information regarding the users' activities, recording the individual's kinematics, dynamics and electromyography, doing so, will increase functionality and comfort.
 - Research and development of materials and designs for custom footwear aimed at improving the welfare of specific populations (children affected by obesity, contact allergic dermatitis, as well as other related diseases and disorders, diabetics and cerebral Plasay).
- **Anthropometric population studies:** studies measuring and sizing the feet of populations and specific ethnic groups' for the proper design for development of footwear components. Customized footwear for obese children and others. Research and development of materials for custom footwear aimed at improving the welfare of children affected by obesity, contact allergic dermatitis, as well as other related diseases and disorders.

SESSION 2:

Intelligent manufacturing/ Digital-Smart factory

- **Intelligent factories (Industry 4.0)** : where information flow at all levels permeating processes as well as products (intelligent products, see points above)
- **Smart Robotics in manufacturing processes:**
 - Robots are ideal for fast, precise, and repetitive operations. This potential has not yet been exploited in the manufacturing of footwear. Robots processes are more versatile than traditional and specialized machines. Robotic implementation results in: fewer machines, reduced human labor tasks and processes. Two emerging trends could be discussed: low cost, easy programming co-operative robots that can work side by side with human operators and mobile robots that can navigate freely in the production environment performing different tasks in different places.
 - Co-operative robots, factory servants and mobile robots change the look of the future factories, transform the paradigm of a labor intensive manufacturing process and rebalance the roles of humans and machines in the shop floor.
- **New CAD-CAM platforms, news PLM, and new ICT peripherals:**
 - New CAD-CAM systems that allow complete prototyping not only of components but of finished model-level footwear products as well. Development of engineering with high quality, precision, and value-adding. The use of innovative integrated design environments to effectively perform 3D prototyping.
 - New ERP system for better work flow management
 - Confirmation of the advantages with the use of ICT and the impact on the design and product development processes.
 - Impact of CAD-CAM technology in production processes
 - Full automation of manufacturing processes due to advances in CAD systems and integrated management software.
- **Innovation in manufacturing processes:**
 - Intelligent processes for footwear process control and distant control. New production technologies reduce labor costs, energy consumption, waste material, manufacturing downtime, inventory management, optimization of equipment.
 - Holonic Manufacturing Systems facilitates the collaboration of multiple companies in achieving shared objectives, by permitting the simultaneous product development with simulations, as well as, alternative models on a virtual level.
- **Multiple applications of additive manufacturing (3D printing and others):**
 - How these technologies change the way products are designed, requiring updated CAD tools and a different manufacturing setup (hybrid system) as well disrupting the traditional value chains.
 - Product development which incorporated the use of 3D printing for a comprehensive catalog of samples with variable densities, the upper in soft and flexible material and the sole with rigid and anti-slip materials.
 - How Additive Manufacturing may change the products and, consequently, transform the manufacturing processes. How it disintermediates the relationship between buyers and producers, the makers phenomenon, etc...

SESSION 3:

Sustainability and regulatory trends factories

- **Ecology & shoes:** Factors that add value from an ecological perspective, throughout the production footwear cycle, from procurement of raw materials, processing of inputs for production and concluding with finished products and waste disposal.
- **Sustainability of enterprises:** Sustainable attitudes and behaviors are increasing as enterprises modernize, affecting all production processes of the value chain. Thus, unsustainable production and consumption systems are reduced and eliminated; costs are marginalized by using natural resources to ensure the environmental impact of the goods produced and of the services are reduced. Therefore, there is greater emphasis on efficient technologies in production processes, recycling and recovery of raw materials and manufactured goods, the reduction of energy consumption, the incorporation of natural resources, waste volume reduction, and the efficient production of products eco-friendly to the environment.
- **Labeling systems and market/consumer confusion:** Are the labeling systems a marketing argument or a real initiative of transparency? Labels increase and sometimes generate a lot of confusion for the consumers. What should be done to really reassure customers, distributors and consumers?
- **Standardization and certification:** Footwear companies which implement modern manufacturing processes will have to adhere to standardization and certification processes, as well as, product certification.
- **Prevention of environmental risks:**
 - Industrial activities increases the risks to the environment and environmental health, as accidents in the handling of toxic products, animal health problems and food security, and new infectious diseases. How limit them?
 - For the value chain of the leather, footwear and tannery possible consequences would focus on increasing awareness about the sustainability of consumer products and concern about hazardous materials, emissions of greenhouse gases (GHG) emission of solid waste; wastewater treatment and environmental impact of production activities.
- **Innovative tanning processes :**
Improvements in environmental impact by the use of clean technology systems (TML)
 - Systems to increase the performance during the treatment of the hides.
 - Projects which increase productivity.
 - Quality assurance.

SESSION 4:

Advanced retail and supply chain

- **Next generation of 3D configurators and Augmented Reality:** This technology has the advantage of testing 3D design prototypes prior to manufacturing for consumer preference analysis.
- **Innovation in supply chain:** Important innovations are generated in logistics systems (storage + transport) and distribution to satisfy the new production and market requirements. The emphasis on product customization, brand value and customer orientation lead to innovative solutions in logistics and distribution systems. Among the possible consequences include the development of new technologies in data management, investing heavily in ICT and branding management, optimization of industry value chain and reconfiguration of storage and transportation services.
- **Innovation in distribution systems:**
 - Transformation of distribution channels: Progress in globalization and open markets together with the consolidation of the Internet as an important channel for conducting business transactions, has been a revolution in distribution channels. Today, any company oriented to product sales and consumer services considers the use of the Internet as a key channel for reaching consumers.
 - Consolidation and mastery of the Internet as a channel for the sale of certain consumer products will make a revolution in the traditional sales methods footwear sector. The sales process established by Internet are governed by very different marketing strategies to traditional. The adoption of new business practices in retail also rethinking the way how the store is conceived, especially in the sale of custom products and brands.
- **Improved integration and management of the value chain:** The development of new processes and tools for an integrated management of the footwear supply and merchandizing chain. Uniform quality management policies which extend to all manufacturing stages, guarantees quality of the finished product for the benefit of the consumer. Doing so, permits the forecasting of supplies, real-time monitoring of production processes, and increased coordinating to the members of the value chain.

Session 5:

Attractive footwear factories and new way of management

The integration of new technologies and new organizations will obviously have major consequences on training, and management. Each of them will have to be adapted to this new environment and to the expectations of the generations to come. The issue is important for the footwear factory. This is to propose some lasting solutions to develop new know-how, while maintaining the strategic ones, to define new ways of management adapted to the future necessary agility of the supply chain, to limit the turnover. In summary, it means to invest on the human capital in order to build the future.

During this session, it will be presented the projects concerning initial or continuing training, the setting of new ways of management, the initiatives taken to develop attractiveness, the identification of the know-how needed to move from traditional manufacturing to a connected manufacturing

- **Evolution of the initial training**
- **New methods for skills development**
- **New ways of management particularly with regard to new generation**
- **Development of the Footwear industry Attractiveness**
- **New know how required for advanced design and manufacturing**