

A3 Center

A3 Leather Innovation Center

University of Lleida (UdL)



ACCIÓ

Generalitat de Catalunya

tecnio catalonia



About the center

A3 Leather Innovation Center is a research group of the University of Lleida (UdL) in the facilities of the Campus of Igualada in applied research to leather, chemistry and biotechnology sectors, adding knowledge with more than 50 years of experience in the world of leather. A3 Center focuses on innovation, quality and the environment, and offers training, research, technology transfer and dissemination, with a transversal approach and focusing particularly on the sustainability of manufacturing processes and application of new technologies and advanced materials. The activities of A3 Center are addressed to the entire value chain of the leather sector to incorporate innovative and sustainable leather products in the market to improve the competitiveness of companies.

Technology portfolio

A3 Center specializes in the development of innovation projects, research and technology transfer for the different actors of the value chain of the leather sector (slaughterhouses, tanneries, manufacturing companies, chemical companies, waste treatment), as well as the training of researchers specialized in leather. R + D + i of new processes, technologies and products in leather and textile sector focused on improving environmental impact. Technical, analytical, expert and advisory services. Valorization of by-products and waste as source of raw materials. Development and optimization of bioprocesses. Biotechnology of forest and agricultural residues. Extraction of polyphenols from vegetable sources. Application of nanotechnology in leather, paper and textiles to obtain innovative properties. Study of the life cycle of products and processes. Study of the application of the circular economy concept in the chemical and tanning sector.

Most relevant projects

A3 Center participates in research projects for private entities and competitive calls for national, European and international. Currently, research activities are being carried out on 7 approved projects, 4 at the state level (in the CDTI calls, Collaboration Challenges, CIEN Strategic Program) and 3 at the International level (in the H2020, Eurostars and Innoglobal calls) in various areas such as new leather finishing resins free of volatile organic compounds (VOCs), sustainable polymers to reduce water in laundry, new properties in automotive leather through nanotechnology, enhance training, modernization and competitiveness of the textile, leather and footwear sectors of the EU and new solutions for sports footwear that improve safety, protection, comfort, performance. NoVOCs, PoBeCo, NanoTop, NewCrSal, S4TCLF, SPORT & FUTURE.

Relevant equipment

A3 Center has chemical and instrumental analysis laboratories equipped with various analytical techniques: HPLC-DAD chromatography, GC-MS chromatography, atomic absorption (AAS), thermal desorption (TD-GC-MS), differential scanning calorimetry (DSC), spectroscopy (ICP-OES), water and environment laboratories. Laboratory of physical tests of diverse materials endowed with all the necessary instruments to analyze the characteristics of resistances, fastnesses and parameters of quality according to the international norms. The center also has a fully equipped experimental plant (twenty pilot drums and auxiliary machinery for wet processing and for finishing skins) for the pilot-industrial level of leather tanning and finishing. The experimental plant has a wide capacity to carry out tests that reproduce prototypes generated in the various R & D projects carried out.

Key enabling Technologies



Nanotechnology

Application of nanotechnology in textile and leather materials to confer new properties: antibacterial capacity, self-repair, resistant to dirt and water; the result of new surface finishing processes and the application of nanotechnology.



Advanced materials

Materials (leather and fabrics) advanced to improve their biodegradability and sustainability for the introduction of technological solutions that take into consideration the premises of the Circular Economy.



Biotechnology

Recovery of by-products and treatment of waste and effluents. Applications of residual collagen in other sectors. Obtaining microorganisms of industrial interest. Development and optimization of bioprocesses. Extraction of polyphenols.



Advanced manufacturing

Replacement of chemical processes through cheaper and more sustainable bioprocesses (in depilation, bleaching, dyeing, etc.). Enzymatic processes.

Leading sectors



Agri-food industry.



Advanced manufacturing.



Leather. Textiles.



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Director

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Surface area (m2)

1600

Staff

17

PhD holders

11

<http://a3center.cat/index.php/ca/>