

DIPARTIMENTO DI CHIMICA E CHIMICA INDUSTRIALE



UNIVERSITÀ DI PISA

PROGRAMMA REGIONALE TOSCANA

PR FESR 2021-2027 OP1 OS1 Azione 1.1.4 "Ricerca e sviluppo per le imprese anche in raggruppamento con organismi di ricerca"

Bando n.2 "Progetti di ricerca e sviluppo per le MPMI e Midcap"

Nuovi processi di epilazione del pelo bovino e relativa valorizzazione mediante idrolisi enzimatiche (New sustainable approaches for hair removal step in the tanning process and valorization of the derived wastes)

ENZYCAL

The ENZYCAL project deals with the reduction of environmental impacts of the tanning process, proposing new sustainable approaches for hair removal step and valorising the derived wastes. Thus, the main outcomes of the ENZYCAL project are:

- Demonstration of the feasibility, on a real scale, of new enzymatic processes for the tanning treatment of hair removal, as a much more sustainable alternative to the current lime and sulphide-based calcification.
- Valorization of the recovered hair, studying both a new enzymatic hydrolysis process to obtain keratin hydrolysates, and adopting supercritical CO2 extraction processes to obtain melanin and structured keratin.
- Validation of the use of the obtained keratin hydrolysates, structured keratin and melanin in the tanning process, as raw materials for the formulation of regeneration and finishing products, and also in the food, cosmetic and pharmaceutical industries, where protein compounds deriving from the tanning process waste are currently widely used.

Involved partners:

- Dermacolor Srl
- Romarfree Srl
- Conceria Settebello SpA
- Streda Costruzioni Meccaniche Srl
- University of Pisa, Department of Chemistry and Industrial Chemistry
- Archa Srl

✓ Streda Costruzioni Meccaniche srl (www.stredacostruzionimeccaniche.it/)

✓ Dipartimento Di Chimica e Chimica Industriale Università di Pisa (www.dcci.unipi.it/)

Period: April 2024 – February 2026

Budget: € 1.500.000

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