AIIC 2025 CONVEGNO NAZIONALE ASSOCIAZIONE ITALIANA INGEGNERI CLINICI

P_34

TECNOLOGIE, SOSTENIBILITÀ, AMBIENTE
Il contributo dell'innovazione alla sanità del futuro

Bridging the gap between innovation and clinical practice in the treatment of traumatic injuries to the osteochondral tissues: the LUMINATE project

Funded by the European Union

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them."

Florinda Coro[1], Alice Ravizza[1], Sebastian Hausner[2], Oliver Pullig[2], Veerle Bloemen[3], Gerjo van Osch[4], Amedeo Franco Bonatti[5], Harrie Weinans[6], Marcy Zenobi-Wong[7], Inga Ulrich[8], Raphael de Vivans[9] and Giovanni Vozzi[5]

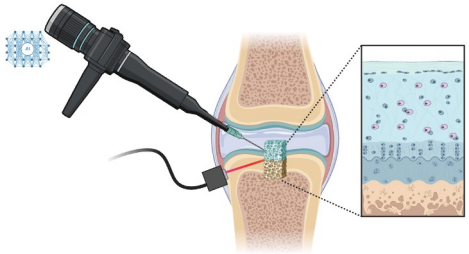
[1] InsideAI srl, Italy; [2]University Hospital Würzburg, Germany; [3]KU Leuven, Belgium; [4]Erasmus MC, University Medical Center Rotterdam, Netherlands; [5]University of Pisa, Italy; [6]University Medical Centre Utrecht, Netherlands; [7]ETH Zurich, Switzerland; [8]University of Zagreb, Croatia; [9]EFMC, Estonia

2M OC tissues of diarthrodial joints/every year with increasing incidence

50% develops post traumatic osteoartritis in 10 years

due to sports activity, high percentage of the **younger population** exposed to sports-related injuries

LUMINATE will target major lesions in the knee's OC tissue using a customized, one-stage regenerating method. The goal of LUMINATE is to avoid the development of post-traumatic osteoarthritis and the need for expensive and intrusive surgical procedures for arthroplasty.



INNOVATIVE BIOPRINTING UNIT

CARTILAGE BIORESIN

AI SOFTWARE FOR PRINTING PLANNING

BONE BIORESIN

Regulatory Strategy

Bioprinting Unit: Depositing of material and crosslinking

Medical Device, MDR 745/2017

Bone Resin: Promoting bone regeneration

Medical Device, MDR 745/2017

AI Model: Predicitng the amount of material to be printed

Medical Device, MDR and AI Act

Cartilage Resin and cells: promoting cartilage regeneration

ATMP, Reg. 1394/2007

The LUMINATE project aims to set a new standard in **personalized**, **minimally invasive** cartilage repair, bridging the gap between cutting-edge innovation and clinical feasibility while addressing the growing medical and socioeconomic burden of post-traumatic osteoarthritis.

NAPOLI
14-17 GIUGNO 2025
MOSTRA D'OLTREMARE

Florinda Coro, PhD
florinda.coro@insideai.it

Ing. Alice Ravizza
alice.ravizza@insideai.it