

BUSINESS OPPORTUNITIES

Biocompatible and bioinspired polymers for multifunctional coatings

A family of polymers that can be applied on different surfaces and functionalised for a variety of applications.



ICN2^R

Institut Català
de Nanociència
i Nanotecnologia

APPLICATION LANDSCAPE AND NEED

The development of versatile and multifunctional coating materials that can be applied to various surfaces is becoming increasingly necessary and in demand. These coatings should be easily functionalised to modify their properties and to adapt to different applications. Furthermore, biocompatibility and sustainability are important factors to consider when developing new materials.



INNOVATION

The Catalan Institute of Nanoscience and Nanotechnology (ICN2) has developed a versatile and biocompatible family of bioinspired polymers that can be used as universal coatings, which are functionalized to meet the requirements of different applications.

These coatings exhibit strong adherence to various types of substrates (wood, fabric, metals, paper, polypropylene-based materials, etc.), as well as durability and long stability even in water environments.

Coatings functionalized with different (bio)molecules of interest have been produced to modulate the final properties of the coated surface, such as its wettability, charge, antibacterial capacity, fluorescence, etc. Their biocompatibility has been proved by testing in vitro. The fabrication and functionalization procedures are easy to scale-up.

APPLICATIONS

Health, anti-bacterial/virus surfaces, anti-corrosive coatings, particle entrapment, wettability modulation, etc.

KEY ADVANTAGES

- ▶ Adhesion in humid and underwater conditions
- ▶ Easy to scale-up
- ▶ Intrinsic antibacterial properties
- ▶ Functionalization with (bio)molecules, such as fluorescent dyes, hydrophobic agents, etc.
- ▶ Thickness control by modulating reaction conditions
- ▶ Biocompatible and biodegradable
- ▶ Universal to different types of substrate (wood, paper, metals, fabric, etc.)
- ▶ Long durability and stability

STAGE OF DEVELOPMENT

The technology has been successfully tested in laboratory on various substrates and with different (bio)molecules. Currently, the technology is being validated in collaborative projects with companies.

BUSINESS OPPORTUNITY

The ICN2 is looking for companies from the health, agriculture and paper industries, among others, to lead proof-of-concept studies and validation tests of this technology for specific applications.

INTELLECTUAL PROPERTY: Research group know-how and patentability by application.



**Catalan Institute of Nanoscience
and Nanotechnology (ICN2)**

Campus de la UAB
08193 Bellaterra
Barcelona, Spain

Board of Trustees:



Business and Innovation Unit

+34 937 372 637

business.innovation@icn2.cat

**Nanostructured Functional
Materials Group**

www.icn2.cat

Center of:



Member of:



Barcelona Institute of
Science and Technology

