

II Jornada IBEROS+ **(Porto, 14 junho 2024)**

Comunicaciones divulgativas

Bioimpresión 3D

Patricia Díaz Rodríguez (USC)

La bioimpresión 3D es una nueva tecnología capaz de crear estructuras complejas que mimetizan diferentes tejidos y órganos, prometiendo revolucionar el desarrollo de nuevos biomateriales para medicina regenerativa y el cribado de nuevos fármacos de forma más eficiente. Sin embargo, garantizar el éxito de la bioimpresión implica asegurar la viabilidad y funcionalidad celular, al igual que seleccionar materiales biocompatibles que imiten la matriz extracelular de tejidos naturales. Además, se debe alcanzar una precisión y resolución capaz de dar lugar estructuras complejas con una vascularización funcional esencial para el aporte de nutrientes. Además, aumentar la velocidad y escalabilidad de los procesos de bioimpresión es necesaria para su aplicación clínica.

Advanced biomaterials and scCO₂ technology

Ana Leite Oliveira (UCP)

Supercritical carbon dioxide (scCO₂) recently emerged as a tool to create faster and more effective methodologies to process biomaterials and biological tissue. At a relatively low temperature and pressure conditions, CO₂ reaches supercritical state, with exceptional properties like high mass transfer rate and diffusivity, as well as non-toxicity and low reactivity., making it an ideal solvent to process sensitive biomaterials. This presentation will explore its potential in a diversity of biomedical applications such as the sterilization of sensitive materials or its use for processing biological tissue into decellularized extracellular matrices to produce high-quality biological products heretofore not possible.

La revolución microfluídica en el laboratorio: del cultivo celular 2D al 3D dinámico.

Laura Vázquez (Bflow)

La microfluídica es el estudio del comportamiento de los fluidos a través de microcanales fabricados con técnicas de microfabricación. Se trata de una tecnología prometedora para mejorar los procesos de laboratorio debido al elevado control de las condiciones de flujo y microambiente. Una aplicación relevante es la combinación con el cultivo celular que permite construir sistemas organ-on-a-chip, añadiendo condiciones fisiológicas a los experimentos in vitro. Los sistemas organ-on-a-chip son el futuro en el campo del descubrimiento de fármacos, ya que reducen los tiempos de desarrollo, los costes y el uso de modelos animales.

Unlocking the Potential of Organoids: Revolutionizing Research and Medicine

Immacolata Maietta (UVigo)

Organoids are three-dimensional versions of organs or tumor, derived from stem cells or tumor biopsies. These 3d culture replicate key structural and functional characteristics of a specific tissue. This presentation will explain the development process, from cell cultivation to organoid formation. It will highlight their uses in disease modelling and personalized medicine, emphasizing their potential to revolutionize research and treatment strategies.

Comunicaciones flash**Elaboración de biotintas basadas en gelatinas y apatitas marinas para regeneración de tejidos**

Sara Pérez-Dávila, José Antonio Vázquez, Jesús Valcárcel (IIM-CSIC); Patricia Díaz-Rodríguez, Mariana Landín (USC); Miriam López-Álvarez, Julia Serra, Pío González (UVIGO).

Sistemas iridananografeno para terapia fototérmica

María Talavera, Miriam López-Álvarez, Sandra Bolaño (UVIGO)

Applications of Small Angle X-ray Scattering for biomaterials using synchrotron light

Daniel Hermida Merino (UVIGO)

Understanding inflammation in Intervertebral Disc Herniation

Ana Luísa Castro, Raquel Gonçalves (i3S)

Desarrollo de sistemas nanoparticulados cargados con antibiótico mediante herramientas de Inteligencia Artificial

Helena Rouco, Patricia Díaz-Rodríguez, Mariana Landín (USC)

Integração biossensores e microfluídica

Felismina Moreira (ISEP)

Comunicación en formato poster**Physicochemical composition and features of several skeleton fractions obtained from fish hydrolysate production: Exploring sustainable Ca/P sources.**

Sara Pérez-Dávila, José Antonio Vázquez, Jesús Valcárcel (IIM-CSIC), Miriam López-Álvarez, Julia Serra y Pío González (UVIGO).

Superparamagnetic solid lipid nanoparticles (mSLNs) as nanocarriers for immunotherapy in breast cancer.

Lara Diego-González, Andreia Magalhães, Ana Cristina Ribeiro, Daniela Ribeiro, Manuel Bañobre-López, Juan Gallo (INL).

España – Portugal

Integrating decellularized small intestine matrices and silk-based textiles for advanced hybrid medical devices development.

Inês Vale, Inês V. Silva, Marta Rosadas, Ana L. Oliveira, Viviana Ribeiro (CBQF-UCP).

Revolutionizing knee implant fixation: bioactive PLA screw with supercritical CO₂ foaming and PCL bio-filler with electrospinning.

Rui Moreira, Mafalda Rodrigues (CBQF-UCP).

Integration of microfluids and nanoenzyme like peroxidase for the colorimetric detection of a neurotransmitter.

Cristina Sousa (ISEP)

Integration of the microfluidic and Plastic Antibody for the detection of a biomarker associated with Alzheimer disease.

Inês Vinaagre (ISEP)

Plastic Antibody for the diagnosis of acute myocardial infarction.

Jacinta Ricardo (ISEP)

Enhanced Detection with Prussian Blue-based Nanocubes: A Novel Electrochemical Biosensor for Bovine Serum Albumin Analysis: microfluidic integration.

Daniela Oliveira (ISEP)

Fetal-inspired scaffolds for Intervertebral Disc Regeneration

Joana Caldeira, Morena Fiordalisi, Catarina Milheiro, Inês Sousa, Joana R Ferreira, Marta Pinto, Cláudia Ribeiro-Machado, Marta T Pinto, Maria J Oliveira, Mário A. Barbosa, Raquel M. Gonçalves (i3S).

Revolutionizing Spine Health: *in vivo* validation of a fetal-inspired biomaterial

Maria Leonor Sousa, Carla Cunha; Joana Paes de Faria, Rui V. Simões, Morena F. Fiordalisi, Raquel M. Gonçalves, Joana Caldeira.

AmTheNa Lab - Advanced (magnetic) Theranostics Nanostructures: A Plethora of Opportunities for Nanomedicine

Andreia Patrícia, Maqalhães; Ana Cristina, Ribeiro¹, Raquel O, Rodrigues; Lara, Diego-González; Ana C, Hortelão, Núria, Genicio; Prajakta, Tambe; Sanna, Sillankorva; Juan, Gallo and Manuel, Bañobre-López