

FEMS EUROMAT23

03 - 07 Sep 2023 (Frankfurt am Main)

euromat2023.com

FEMS EUROMAT is the most important international congress in materials science and technology in Europe. It continues a successful congress series promoting the transfer of knowledge and the exchange of experience between academia and industry. **Extended submission deadline: 15 March 2023**

Area F: Materials for Healthcare

F04: Antibacterial Materials

Infection of biomaterials and subsequent biofilm formation can be catastrophic and significantly reduce patients' quality of life, representing an increasing concern in healthcare. Eliminating bacterial infection and simultaneously providing a bioactive environment for tissue regeneration is one of the most significant challenges in the clinic. Tissue engineering strategies might provide some hope. In this area, the development of multifunctional biomaterial scaffolds may have the potential to address this complex clinical goal. The most common approach consists of the local delivery of antibiotics from biomaterials. Still, the increasing problem of antimicrobial resistance to antibiotics (AMR) requires the exploration of non-antibiotic strategies that either prevent the attachment of bacteria (anti-fouling) or directly kill the pathogen (bactericidal). This could be achieved by either modifying inherent physicochemical features of biomaterial scaffold or by incorporating and local delivery of non-antibiotic agents (e.g., metal ions, peptides).

In this symposium, we aim to cover a wide range of advanced strategies to design novel antibacterial materials capable of inhibiting bacterial colonization and overcoming the limitations of the current strategy. The symposium will discuss the development of antibiotic and alternative, non-antibiotic approaches applied to existing materials. Non-antibiotic-based materials will encompass bactericidal topographies, antimicrobial peptides, smart stimuli-responsive materials, and biomaterial-based delivery platforms for antimicrobial enzymes, lysins or quorum-sensing drugs. Moreover, particular focus will be put on antibacterial and cell instructive strategies, thus providing multifunctional approaches that do not compromise eukaryotic cell functions.

The symposium thus focuses on a major topic of research for the biomaterials community, which will attract interest from young and experienced researchers alike. Given the relevance and timeliness of the topic, we expect to attract a large number of researchers working with antibacterial biomaterials and tissue regeneration from different disciplines and perspectives.

Symposium Organizer



Dr. Carles Mas-Moruno
Technical University of Catalonia (UPC)



Dr. Joanna Sadowska
RCSI Royal College of Surgeons

