



ROOM 1 11:30-12:30

**S02 SYMPOSIUM
FRONTIERS IN TRANSLATIONAL
ORTHOPEDIC AND MUSCULOSKELETAL
RESEARCH**

Chair: **Francesca Masieri** (Ipswich - United Kingdom)



Co-chair: **Vanessa Ward** (Ipswich - United Kingdom)



The proposed symposium aims to present and discuss novel and emerging frontiers in the areas of musculoskeletal (MSK) cell therapies, encompassing in vitro, quasi vivo, and pre-clinical promising models with a chance of being quickly translated into the clinics. Innovative clinical approaches will also be discussed. We have four invited speakers who will lead the audience through crucial aspects of orthoregeneration. The first speaker has extensive expertise into the complexities surrounding Advanced Therapy Medicinal Products (ATMPs) and will also provide an overview of key regulatory aspects in this area. The second speaker has worked extensively in the field of quality-control tools for the therapeutic use of minimally-manipulated, bone-derived MSC for bone repair applications, and joint resident MSCs for cartilage regeneration in osteoarthritis. Our third speaker is an expert in pioneering biomaterials for orthopedic regeneration. Our final speaker on the list will provide a perspective of current orthopedic regenerative medicine clinical approaches.

11:30 S02.1 Stem cells from the hair follicle outer root sheath - spare parts bag revisited
Vuk Savkovic (Leipzig - Germany)



11:40 S02.2 Native subchondral bone and synovial fluid MSC in osteoarthritis - current status and future directions
Elena Jones (Leeds - United Kingdom)



11:50 S02.3 Innovative therapeutic bionanomaterials with anticancer and regenerative properties
Maria Grazia Raucci (Naples - Italy)



12:00 S02.4 Stem cells for knee OA - clinical perspective
Elizaveta Kon (Milan - Italy)



12:10 Discussion

ROOM 2 11:30-12:30

**S03 SYMPOSIUM
FUTURE ADDITIVELY MANUFACTURED (AM)
POROUS (ABSORBABLE) METALLIC
IMPLANTS**

Chair: **Holger Jahr** (Maastricht - The Netherlands)



Co-chair: **Yageng Li** (Beijing - China)



Treating large bone defects is still a major clinical challenge without a perfect solution, mainly due to the unavailability of suitable bone implants. Additively manufactured (AM) porous metals provide unparalleled opportunities to realize the challenging requirements for bone-mimetic implants. Mechanical meta-biomaterials are architected materials that are designed to exhibit unusual properties and this principle can be applied to AM porous metals implants. Here, we will discuss state-of-the-art topological designs of future Orthopedic implants, the latest insights into their production, and associated technological challenges thereof. The symposium will focus on absorbable metal families and particularly on magnesium and zinc and their alloys. We will further elaborate on their general corrosion behaviour, alloying-dependent insights, the impact of the in vitro test environment on corrosion testing, as well as specific design- and post manufacturing aspects. Current knowledge gaps and the recent status quo of their biocompatibility and clinical application potential will be addressed as well.

11:30 S03.1 Additively manufactured functionally graded porous absorbable zinc implants
Yageng Li (Beijing - China)



11:43 Discussion

11:45 S03.2 Zn-Mg alloys for bioresorbable medical implants manufactured by laser powder bed fusion
Maximilian Voshage (Aachen - Germany)



11:58 Discussion

12:00 S03.3 Meta-biomaterials
Amir Zadpoor (Delft - The Netherlands)



12:12 Discussion

12:15 S03.4 Corrosion behaviour and clinical application potential of AM porous implants
Holger Jahr (Maastricht - The Netherlands)



12:28 Discussion

