Abstracts from the 44th ESAO and 7th IFAO Congress
6-9 September 2017, Vienna, Austria
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Aims and scope
The International Journal of Artificial Organs (IJAO) is the official Journal of the European Society for Artificial Organs (ESAO). The International Journal of Artificial Organs publishes monthly peer-reviewed research and clinical, experimental and theoretical contributions to the field of artificial and bioartificial organs and medical devices. The mission of the Journal is to foster the development and clinical application of artificial and bioartificial organs, medical devices or procedures, to treat organ and tissue functional deficits.

The topics of interest range from the initial concept and interdisciplinary research to clinical application, and are grouped in the following independent sections managed by highly qualified Section Editors:

Apheresis, dialysis and liver support
This section focuses on devices and procedures for blood detoxification processes using membranes or sorbents, such as hemodialysis, hemofiltration, hemodialysis, plasmapheresis, immune adsorption, leukopheresis, and processes for plasma procurement and the preparation of plasma derivatives. The section includes systems for blood detoxification and support of liver metabolic failure.

Cardiac assist devices and artificial heart
This section deals with left ventricular assist devices, trans-apical bypass, extracorporeal heart assist devices, total artificial heart, valve implants, vascular prostheses, and organ perfusion equipment and techniques.

Artificial lung, ECMO and respiratory support
This section focuses on prostheses and procedures for the treatment of acute and chronic respiratory failure, development and clinical use of ECMO systems.

Sensory organs and neural stimulation
This section covers artificial and bioartificial tissues and organs to replace/correct sensory deficits (e.g., ear, eye etc.), as well as nerve and central nervous system stimulation.

Tissue engineering, bioartificial organs and regenerative medicine
This section focuses on the development, characterization and use of bioengineered tissues and organs, and on techniques to investigate and promote tissue or organ self-regeneration including cell therapies.

Biomaterials and nanotechnology
This section deals with the development, manufacturing, modification, and characterization of synthetic and natural materials with controlled properties, down to the nanometer scale, that make them capable of contacting body fluids and cells for prosthetic and therapeutic applications.

Personalized medicine and individualized care
This section covers genomic, proteomic, metabolomic and computational characterization of pathological conditions, and on how this information may be used to custom tailored treatments based on artificial, bioartificial and tissue engineered organs.

Mechanical prostheses, robotics and medical technology
This section deals with the development and clinical use of mechanical prostheses and robotic systems, as well as new and emerging medical technologies for assistance of patients with organ or tissue failure, in need of rehabilitation and disease prevention.

Author information and manuscripts submission
Full author information and tutorials are available online at www.artificial-organs.com. Submissions accepted online at www.editorialmanager.com/ijao

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ESAO and IFAO 2017

44th Annual Congress of the European Society for Artificial Organs
7th Congress of the International Federation for Artificial Organs

"Artificial Organs in the orchestra of life"

Final Program
PL2  Plenary Session 2
Chair  K. Dasse; Louisville, US

09:30  PL3  The Bionic Hand: Coupling the Brain to Prostheses  
O. Aszmann; Vienna, AT

10:00  PL4  Mechanical Cardiac Support and Cardiac Rhythm Management: A Marriage of two Technologies  
M. Hess; Minneapolis, US

Friday, September 8 / 11:00-12:30 / Hall 2

A22  Symposium: Numerical Modelling: Design, Optimization and Functional Characterization of VAD's
Chair 1  F. Consolo; Milan, IT  
Chair 2  L. Wiegmann; Zürich, CH

11:00  O84  Past and Future of Blood Damage Modelling in Biofluid Mechanics Laboratory  
L. Goubergrits; Berlin, DE

11:12  O85  Strain-Based Blood Damage Modeling – Current Status and Future Perspectives  
L. Pauli; Aachen, DE

11:24  O86  Computational fluid dynamic analyses and in vitro assessment of a novel microfluidic flow-based assay  
A. Dimasi; Milano, IT

11:36  O87  Numerical modeling of the thrombogenic potential of altered hemodynamics at the left ventricular apex-LVAD interface based on non-invasive patient-specific imaging techniques  
F. Consolo; Milano, IT

11:48  O88  Numerical design improvement and experimental testing of a small VAD  
K. Fraser; Bath, GB

12:00  O89  Influence of pump design variations on hydraulic performance and blood damage: a computational fluid dynamics analysis  
L. Wiegmann; Zurich, CH

12:12  O90  Robust computational tools to improve the development process of mechanical circulatory support  
T. Kaufmann; Aachen, DE

12:24  Summary

Friday, September 8 / 11:00-12:30 / Hall 3

C22  Symposium: Nanomedicine
Chair 1  T. Groth; Halle, GE  
Chair 2  G. Gallego-Ferrer; Valencia, ES

11:00  IL  Two Decades of Commercializing Nanomedicine for Artificial Organs  
T. Webster; Boston, US

11:25  IL  3D Printing of Advanced Photopolymers in Tissue Engineering  
S. Boudis; Vienna, AT

11:45  O91  Immobilization strategies with glycosaminoglycans-polymeric drug conjugate on biomaterials for anti-inflammatory purposes  
H. Al-Khoury; Halle (Saale), DE

12:00  O92  Electrospinning of fibres for nanomedical applications  
A. Repanas; Halle (Saale), DE

12:15  O93  Vascular grafts with defined fiber orientations  
C. Grasli; Vienna, AT