

University for
Continuing
Education Krems



ESAO 2022

48th ESAO Congress
September 6 – 10, 2022
Krems, Austria

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Boards and Committees

Congress President

Viktoría Weber, Krems, Austria

Local Organizing Committee

Anita Brindlmayer (Krems, Austria)
Marie Ebeyer-Masotta (Krems, Austria)
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Norbert Exler (Krems, Austria)
Jens Hartmann (Krems, Austria)
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Marwa Mostageer (Krems, Austria)
Vladislav Semak (Krems, Austria)
Karin Strobl (Krems, Austria)
René Weiss (Krems, Austria)
Marcus Granegger (Vienna, Austria)

Congress Organization

Organizing Institution:
Department for Biomedical Research
University for Continuing Education Krems
Dr.-Karl-Dorrek-Straße 30
A-3500 Krems

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Scientific Committee

Pedro Baptista (Zaragoza, Spain)
Ulrich Baurmeister (Wuppertal, Germany)
Helga Bergmeister (Vienna, Austria)
Sunny Eloit (Ghent, Belgium)
Andreas Escher (Vienna, Austria)
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Ulrich Steinseifer (Aachen, Germany)
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Krzysztof Zielinski (Warsaw, Poland)
Daniel Zimpfer (Vienna, Austria)

Poster Committee

Marcus Granegger (Vienna, Austria)
Sebastian V. Jansen (Aachen, Germany)

Welcome

Dear Colleagues,

on behalf of the European Society for Artificial Organs, it is my great pleasure and honor to welcome you to the 48th ESAO Congress in Krems, Austria.

Located in the center of Europe, Krems with its rich history of more than thousand years is very well suited to host ESAO 2022. It is the main town of the Wachau valley, a stretch of the river Danube located between Melk and Krems, which was selected as UNESCO World Heritage Site in the year 2000.

The Wachau showcases many intact traces of its continuous evolution since prehistoric times, be it in terms of architecture, urban design, or agriculture, where it is famous for its white wines and apricot trees.

Krems is a capital of education and science in Lower Austria. The Campus Krems is shared by the University of Continuing Education Krems, where the ESAO office is located, the University of Applied Sciences Krems, as well as the Karl Landsteiner Private University for Health Sciences.

We are pleased to welcome you to ESAO 2022 – finally on-site again – and we are confident that the conference will stimulate the exchange of experience between researchers, engineers, industry, and clinicians on an international level and will thereby inspire innovation in the field.

More than ever, let us use ESAO 2022 to build bridges – bridges between basic research and application, between industry and academia, between scientific disciplines, between early stage and senior researchers, and, most important of all, bridges between people, as we are all united in science!

Enjoy the conference, the exchange with peers, as well as the beauty of the region. We will do our best to make this conference an unforgettable experience for all participants.

Once again, a very warm welcome to all our guests on behalf of the local organizing committee and the International Scientific Advisory Board!



Viktoria Weber
ESAO President
Congress President 2022

Program at a glance

Tuesday, September 6, 2022

young ESAO

from 11:00	Registration
12:00–13:00	Welcome Lunch
13:15–14:00	Opening Words
14:00–15:00	Interactive Keynote Lecture
15:00–15:30	Coffee Break & Late Registration
15:30–18:00	Workshop Session
19:30–21:00	Dinner and Get-together
21:00	yESAO Party sponsored by enmodes GmbH Aachen

Wednesday, September 7, 2022

10:00–15:00	ESAO Board Meeting
09:15–10:30	Keynote Lectures
10:30–11:00	Coffee Break
11:00–12:30	Pitch Session: “Your Research for Dummies”
12:30–13:30	Lunch
13:30–13:45	Total Artificial Heart Hackathon: Dr. Shaun Gregory (Monash University, Australia)
13:45–15:15	Networking Session
15:15–15:30	yESAO Closing Words

ESAO

16:30–18:30	Opening Ceremony Awards Ceremony (SAGE, PhD) Opening Lecture: P.N. Martins (Worcester, USA) Designer Organs: Graft Therapy During Machine Perfusion Preservation
18:30–21:30	Welcome Reception

Thursday, September 8, 2022

08:30–10:00	Track A Extracorporeal Life Support	Track B Symposium: Biomaterials	Track C Tissue Engineering
10:00–10:45	Plenary Lecture: C. Ronco (Vicenza, Italy) Sorbents in 2022: From Bench to Bedside		
10:45–11:15	Coffee Break		
11:15–12:45	Cardiovascular – Digital Medicine	Symposium: Coagulation & Anticoagulation in Extracorporeal Therapies	Fluid Dynamics
12:45–14:00	Lunch		
14:00–15:30	Symposium: Blood Damage in Ventricular Assist Devices	Symposium: Extracorporeal Therapies in COVID-19	Symposium: Bioartificial Organs
15:30–16:30	Poster Flash Talk Session 1		
16:30–17:30	Poster Session 1 & Coffee		
17:30–19:00	Mechanical Circulatory Support – Preclinical Assessment of Novel Devices	Symposium: Advanced Liver Therapies: Bioartificial Liver, Normothermic Ex Vivo Liver Preservation and Liver Tissue Engineering	
19:30	Congress Dinner		

Friday, September 9, 2022

08:30–10:00	Track A Symposium: Isolated Use of Right Ventricular Assist Devices	Track B Symposium: Albunet – Albumin Modifications and their Clinical Relevance	Track C Symposium: Joint TERMIS – ESAO Symposium
10:00–10:45	Plenary Lecture: H. Schima (Vienna, Austria) Sixty Years of Mechanical Circulatory Support: Solved Tasks, Personal Experiences, Current Challenges and Future Perspectives		
10:45–11:15	<i>Coffee Break</i>		
11:15–12:45	Symposium: Cardiac Assist – Pediatric Mechanical Circulatory Support	Symposium: EuTox – Molecular Mechanisms of Cardiovascular Diseases in Chronic Kidney Disease	Symposium: Joint ESOT – ESAO Symposium
12:45–14:00	<i>Lunch</i>		
13:15–13:45	Berlin Heart Lunch Symposium: D. Medart (Berlin, Germany) Experience with the EXCOR Pediatric VAD		
14:00–15:30	Mechanical Circulatory Support – Patient Device Interface	Dialysis – Apheresis	
15:30–16:00	<i>Coffee Break</i>		
16:00–16:30	General Assembly		
16:30–17:30	Poster Flash Talk Session 2		
17:30–18:30	Poster Session 2		
18:30	<i>Wine & Cheese</i>		

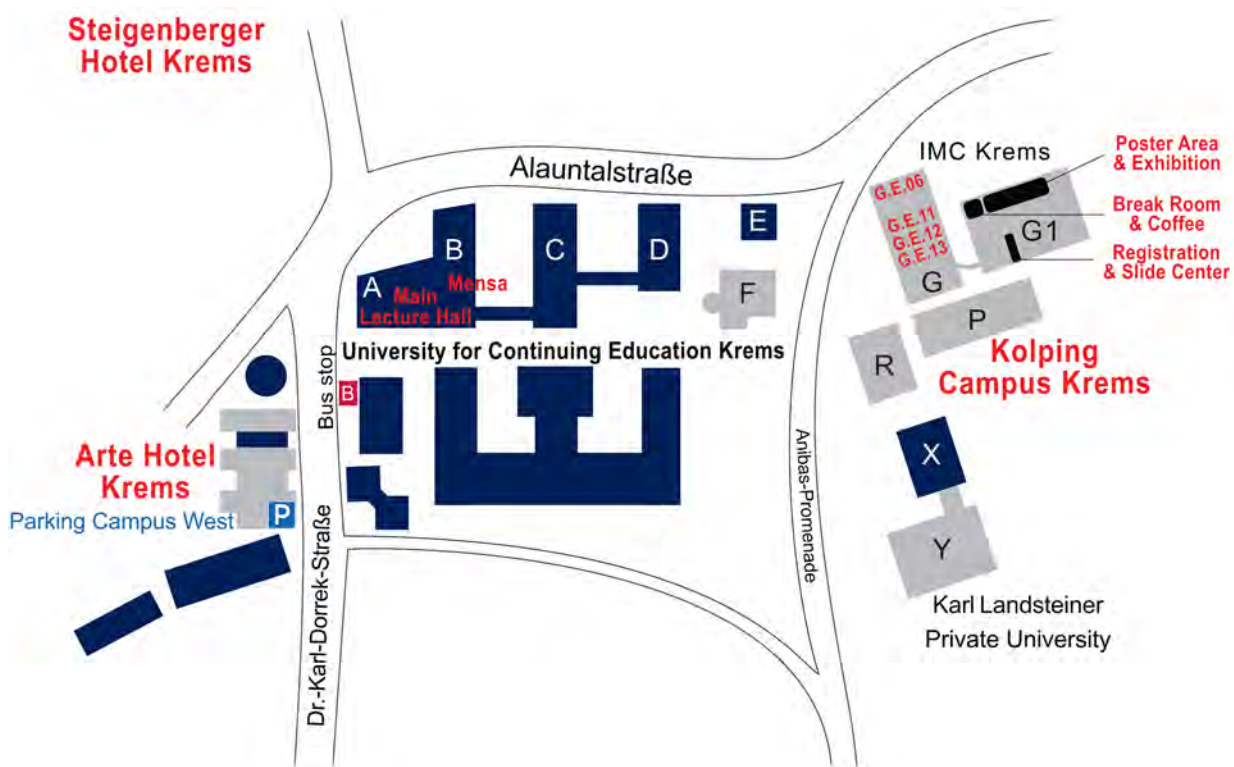
Saturday, September 10, 2022

08:30–10:00	Track A Symposium: Joint IFAO – ESAO Symposium	Track B Symposium: Blood Products	
10:00–10:30	<i>Coffee Break</i>		
10:30–11:15	Plenary Lecture: M. Osuchowski (Vienna, Austria) The COVID-19 Puzzle		
11:15–12:45	Awards Session		
12:45–13:30	<i>Closing Ceremony</i>		
13:30	Farewell Reception		

Congress Venue and Arrival

Campus Kream
University for Continuing Education Kream
University of Applied Sciences Kream (IMC Kream)

Dr.-Karl-Dorrek StraÙe 30
3500 Kream
Austria
www.donau-uni.ac.at



The 48th ESAO Congress will take place at the Campus Kream. The modern Campus offers an excellent infrastructure for the congress and for all social events. Located in the World Cultural Heritage Site Wachau and an hour's drive from Vienna, it invites to extend your stay to combine it with a visit to Vienna.



Useful Information

Registration

The registration and information desk is located in Building G1. The conference material, badges and certificates of attendance can be picked up there.

Registration desk opening hours:

Wednesday, September 7	14:00 – 20:00
Thursday, September 8	07:30 – 18:00
Friday, September 9	07:30 – 18:00
Saturday, September 10	07:30 – 09:00

Registration fees:

ESAO/TERMIS/ESOT Member	€ 350
Non Member	€ 400
Students and PhD students	€ 150
Single day registration	€ 150
Congress Dinner	€ 30

Registration fees include admission to all scientific symposia and sessions, poster sessions and exhibition, the congress badge, congress bag, abstract book, lunch packages on September 8 and 9, refreshments during the breaks, as well as participation in the Opening Ceremony, Welcome Reception, Wine & Cheese, and Farewell Reception. The Congress Dinner has to be booked separately.

Payments on site can be made via credit card (VISA/Master Card – via CompuTop) or PayPal.

Slide center

PowerPoint slides must be handed in to our staff at the Slide Center in Building G1 at least two hours before the start of the session. The use of private computers for presentations will not be possible.

Presentation guidelines

Guidelines for poster and oral presentations can be found at:
www.esao.org/esao2022/presentation-guidelines/.

ESAO desk

The ESAO desk will be located in the Poster & Exhibition area in Building G1. The ESAO office is pleased to provide interested participants with all information concerning the Society for Artificial Organs. Voting for new ESAO board members will be possible on September 8 (whole day) and September 9 (until noon) at the ESAO Desk.



ESAO general assembly

The ESAO General Assembly will be held on September 9, 2022, at 16:00 in Building G, room G.E.06.

DFP credits

If DFP credits are required, please sign in before the meeting at the ESAO desk.

Exhibition

The exhibition is located in the poster area in Building G1.

WLAN

We offer free WLAN to all participants during the entire congress via the following networks:

University for Continuing Education Krems

Building A

Network: eduroam

Username: wlan-ESAO@donau-uni.ac.at

Password: ESAO2022

IMC Krems

Buildings G and G1

Network: FHKrems_Guest

Voucher: 76131-37496

Lunches and coffee breaks

Refreshments will be provided during the coffee breaks and poster sessions. On Thursday and Friday, lunch packages will be offered in Building G. On Saturday, a farewell lunch will be offered in Building A.

Safety

As we welcome the scientific community back to ESAO 2022 with a long-awaited return to an in-person meeting, we continue to prioritize the safety of our participants and staff.

The organizers continuously monitor local and international guidelines and regulations relating to COVID-19. The changeable nature of the pandemic means that regular updates to this policy are necessary. We will inform all participants about necessary precautions and regulations via our website and during registration on-site.

We will have a comprehensive on-site COVID-19 safety plan that consists of a range of precautions to reduce the risk of COVID-19 transmission. Depending on the pandemic situation, the plan will be adapted, to ensure that it remains proportionate to the latest developments.

- A COVID-19 testing regime may be in place. Free access to the COVID-19 screening program of the University for Continuing Education Krems will be provided wherever possible. If you test positive for COVID-19, please act responsibly and withdraw immediately from the conference. The conference team will be pleased to provide information, advice, and help.
- A mask wearing policy, which will, as a minimum, comply with Austrian local and national regulations at the time of the event will be communicated and enforced for both staff and participants. FFP2 masks will be provided in all congress bags. On site PCR testing will be available on demand. Please contact registration desk.



Awards

The ESAO PhD Award and ESAO SAGE Research Award will be presented during the Opening Ceremony on Wednesday, September 7, 16:30 – 18:30. The winners will present their work during the Award Session on Saturday, September 10, 11:15 – 12:45.

ESAO Poster Award

Three Poster Prizes (€ 500, 300 and 200) will be awarded to the authors of the best posters, selected by a scientific committee.

ESAO PhD Award

To highlight the importance of doctoral work in the area of Artificial Organs, the ESAO Board of Governors has initiated the ESAO PhD Award to increase the visibility of excellent young researchers who recently obtained their PhD in the field of Artificial Organs.

ESAO SAGE Research Award

The ESAO SAGE Research Award 2022 of € 2,500 aims at encouraging young scientists working in the fields of medical sciences, biomedical engineering, biology, biochemistry, chemistry, physical chemistry, material and membrane sciences, as well as chemical engineering related to the general field of artificial organs.

yESAO Exchange Award

The yESAO Research Exchange program gives researchers the opportunity to experience training and research in different environments. The yESAO Research Exchange Award addresses ESAO junior members interested in improving their scientific knowledge and cooperation to produce innovation together. The two yESAO members may belong to any research institute interested in cooperating and in carrying on a common short project which has to be completed during the exchange program.

Social Events & Locations

Wednesday, September 7: Welcome Reception

After the Opening Ceremony on Wednesday, a Welcome Reception will take place in the Main Lecture Hall at the University for Continuing Education Krems.

Thursday, September 8: Congress Dinner

On Thursday, the Congress Dinner will take place at 19:30 at a traditional Wachauer 'Heurigen', which can be reached by a 15 minutes' walk from Campus Krems.

Location:

Heuriger Müllner

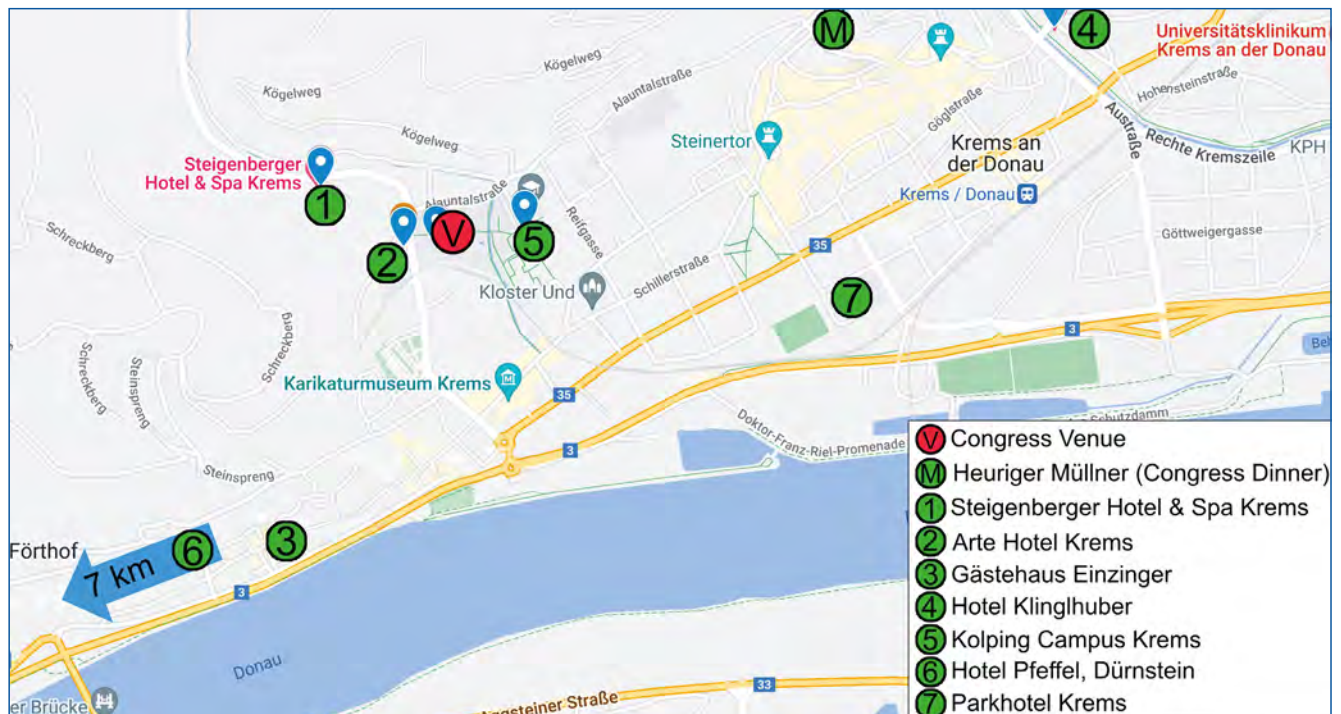
Stadtgraben 50, 3500 Krems

Friday, September 9: Wine & Cheese

To support networking in a relaxing atmosphere, a get-together with wine & cheese will be offered in Building G1 after the Poster Session.

Saturday, September 10: Farewell Reception

After the Closing Ceremony, Austrian 'Gulasch' – traditionally paired with beer – or vegetarian stew will be prepared for you in the Main Lecture Hall.





Two intense years of pandemic have passed. The past months did not only affect our daily life but also the way we engage with peers in our fields. This year, we will make the leap to the first physical meeting of the young European Society for Artificial Organs (yESAO) since 2019. We are glad to provide the platform for young students and early career researchers to get together in Krems, Austria. Thereby we are fostering mutual, in-person interaction during rich and diversified scientific and social programs. With your contributions, the (y)ESAO Congress will once again provide the unique opportunity to exchange experiences and build long-lasting bridges.

Tuesday, September 6, 2022

From 11:00	Registration
12:00 – 13:00	Welcome Lunch
13:15 – 14:00	yESAO Opening Words
14:00 – 15:00	Interactive Keynote Lecture: Teodora Konach (Austrian Agency for Research Integrity): Basics of Research Integrity. A Talk that Goes Along with an Interactive Case Study.
15:00 – 15:30	Coffee Break and Late Registration
15:30 – 18:00	Workshop Session: Core facility tour at Campus Krems and hands-on artificial skin stitching
19:30 – 21:00	Dinner and Get-together
21:00	yESAO Party sponsored by enmodes GmbH Aachen

Wednesday, September 7, 2022

09:15 – 10:30	Keynote Lectures: Dr. Michael J. Simmonds (Griffith University, Australia): Blood Trauma: Far from Standard, Dr. Katharine H. Fraser (University of Bath, UK): Haemodynamics in Medical Devices: A Complicated Interaction of Rheology and Flow Regime
10:30 – 11:00	Coffee Break
11:00 – 12:30	Pitch Session: Your Research for Dummies
12:30 – 13:30	Lunch
13:30 – 13:45	Total Artificial Heart Hackathon: Dr. Shaun Gregory (Monash University, Australia)
13:45 – 15:15	Networking Session
15:15 – 15:30	yESAO Closing Words

Content of the Sessions

- Workshop Session: In a core facility tour, participants will have the opportunity to receive high-quality training on state-of-the-art core facility devices. Analysis on their own samples will be possible upon registration. This core facility tour will furthermore be complemented by hands-on workshops where participants can practice stitching as well as puncturing and cannulating vessels on a skin model. The skin model consists of various silicone layers that are modeled after human skin and have similar puncturing behavior.
- Pitch Session “Your Research for Dummies”: Participants will be given 3 minutes and one static slide to present key aspects of their research, making it accessible to a general audience. The best presentation will be awarded at the end of the meeting.
- Networking Session: This session represents a unique chance to exchange ideas and experiences with other researchers. Participants will team-up and join their strengths to create a title for a research proposal. The best titles will be awarded and could lead to exciting new research collaborations.

Opening Ceremony

Wednesday, September 7, 2022

16:30 – 18:30

Main Lecture Hall
University for Continuing Education Krems
Dr.-Karl-Dorrek Straße 30
3500 Krems, Austria

Welcome

Viktoria Weber, ESAO President

Awards Ceremony

ESAO SAGE Research Award 2022
ESAO PhD Award 2022

Opening Lecture

Designer Organs: Graft Therapy During Machine Perfusion Preservation
Paulo N. Martins (Worcester, MA)

Welcome Reception

Music: String Quartett of the University of Technology, Vienna

Lectures and Symposia

Opening Lecture

P.N. Martins (Worcester, USA), Designer Organs: Graft Therapy During Machine Perfusion Preservation.

Plenary Lectures

C. Ronco (Vicenza, Italy), Sorbents in 2022: From Bench to Bedside.

H. Schima (Vienna, Austria), Sixty Years of Mechanical Circulatory Support: Solved Tasks, Personal Experiences, Current Challenges and Future Perspectives.

M. Osuchowski (Vienna, Austria), The COVID-19 Puzzle.

Symposia

- Biomaterials
- Coagulation and Anticoagulation in Extracorporeal Therapies
- Blood Damage in Ventricular Assist Devices
- Extracorporeal Therapies in COVID-19
- Bioartificial Organs
- Advanced Liver Therapies: Bioartificial Liver, Normothermic Ex Vivo Liver Preservation and Liver Tissue Engineering
- Isolated Use of Right Ventricular Assist Devices
- Albunet – Albumin Modifications and their Clinical Relevance
- Joint TERMIS – ESAO Symposium
- Cardiac Assist – Pediatric Mechanical Circulatory Support
- EuTox – Molecular Mechanisms of Cardiovascular Diseases in Chronic Kidney Disease
- Joint ESOT – ESAO Symposium
- Joint IFAO – ESAO Symposium
- Blood Products

Sessions

- Extracorporeal Life Support
- Tissue Engineering
- Cardiovascular - Digital Medicine
- Fluid Dynamics
- Mechanical Circulatory Support – Preclinical Assessment of Novel Devices
- Mechanical Circulatory Support – Patient Device Interface
- Dialysis – Apheresis

Poster Flash Talk Sessions

- Poster Flash Talk Session 1 (Cardiopulmonary and Hemo-/Biocompatibility)
- Poster Flash Talk Session 2 (Kidney, Liver, Apheresis and Tissue Engineering)

Poster Sessions

- Poster Session 1 (Cardiopulmonary and Hemo-/Biocompatibility)
- Poster Session 2 (Kidney, Liver, Apheresis and Tissue Engineering)

Scientific Program – Oral Presentations

Thursday, September 8, 2022

Room G.E.06		
08:30–10:00		Session: Extracorporeal Life Support Chair: T. Verbelen (Leuven, Belgium), D. Wanigasekara (Victoria, Australia)
08:30–08:45	O1	Clinician Perspectives on Extracorporeal Cardiopulmonary Resuscitation: A Mixed Methods Analysis <u>D. Wanigasekara</u> , V. Pellegrino, A. Burrell, N. Aung, S.D. Gregory (Victoria, Australia)
08:45–09:00	O2	Refurbishment of ECMO Oxygenators in the Context of In Vitro Testing <u>L.J. Strudthoff</u> , F. Hesselmann, J.C. Clauser, J. Arens (Aachen, Germany)
09:00–09:15	O3	The Effect of Arterial Cannula Tip Position on Differential Hypoxia During Venoarterial Extracorporeal Membrane Oxygenation: A Computational Analysis <u>A. Wickramarachchi</u> , A.J.C. Burrell, A.F. Stephens, M. Šeman, A. Vatani, M. Khamooshi, J. Raman, R. Bellomo, S.D. Gregory (Melbourne, Australia)
09:15–09:30	O4	Mimicking Nature to Reduce Transport Resistance in Hollow Fiber Membranes – Production and Evaluation of Microstructured Fibers for Artificial Respiration <u>M. Pekovits</u> , F. Imran, M. Harasek, M. Gfoehler (Vienna, Austria)
09:30–09:45	O5	Hemodynamic and Respiratory Support During Lung Transplantation as New Indication for Artificial Lung Technology: Results from a Large Animal Ischemia-Reperfusion Model <u>M. Orlitová</u> , A.E. Frick, D. Van Beersel, G.M. Verleden, B.M. Vanaudenaerde, D. Van Raemdonck, P. Claus, R. Vos, L.J. Ceulemans, A.P. Neyrinck, T. Verbelen (Leuven, Belgium)
09:45–10:00	O6	Evaluation of Hamecs and iPSC-ECs for Endothelialization of RDG-PDMS Membranes for Application in Biohybrid Oxygenator Systems <u>M. Cheremkhina</u> , A. Singh, J. Gonzalez Rubio, R. Olmer, C. Cornelissen, A.L. Thiebess, S. Jockenhoevel (Aachen, Germany)

Room G.E.11		
08:30–10:00		Symposium: Biomaterials Chair: M. Müller (Hannover, Germany), I. Reviakine (Valencia, Spain)
08:30–09:00	O7	Active Platelet-Monocyte Aggregates as a Potential Marker in Material Hemocompatibility Studies <u>I. Reviakine</u> , A. Donati (Seattle, USA)
09:00–09:15	O8	Silk Fibroin and Human Placenta Extracellular Matrix- Based Hydrogel for Soft Tissue Engineering <u>K.H. Schneider</u> , B. Goldberg, O. Hasturk, S. Theodossiou, S. Rohringer, H. Kiss, A.H. Teuschl, V. Fitzpatrick, B.K. Podesser, H. Bergmeister, D.L. Kaplan (Vienna, Austria)
09:15–09:30	O9	An Origami-Based Hydraulic Soft Artificial Detrusor <u>S. Onorati</u> , G. Casagrande, F. Semproni, V. Iacovacci, A. Menciassi (Pontedera, Italy)
09:30–09:45	O10	Hemocompatibility of Cross-Linked Patient Specific Cardiovascular Implants from Blood Proteins K. Hoeltje, B. Glasmacher, <u>M. Mueller</u> (Hannover, Germany)
09:45–10:00	O11	Woven Scaffold for a New Generation of Artificial Heart Valve Leaflets <u>T. Schmitz-Rode</u> , S. Jockenhövel, U. Steinseifer (Aachen, Germany)

Room G.E.12		
08:30–10:00		Session: Tissue Engineering Chair: N. Neves (Guimarães, Portugal), P. Baptista (Zaragoza, Spain)
08:30–08:45	O12	Light-Inducible Spatio-Temporal Control of TLR4 in a Human Endothelial Cell Line <u>A. Stierschneider</u> , K. Colleselli, H. Hundsberger, C. Wiesner (Krems, Austria)
08:45–09:00	O13	How Can Cells Pass Through the Micro-Gap Between Micro-Machined Parallel Walls? <u>S. Hashimoto</u> , S. Uehara, A. Kurihara (Tokyo, Japan)
09:00–09:15	O14	Enhancing the Tissue Integration of Soft Elastomeric Materials for Cardiovascular Implants <u>S. Armstrong</u> , J. Dyson, J. Forsythe, D. McGiffin, S.D. Gregory (Melbourne, Australia)
09:15–09:30	O15	Effect of the Contour Neurovascular Device on the Flow in 3D Printed Patient-Based Aneurysm Models <u>M.S. Pravdivtseva</u> , A.N. Pravdivtsev, J. Korte, F. Gaidzik, P. Berg, S. Peters, J. Hensler, N. Larsen, J.B. Hövener, O. Jansen, F. Wodarg (Kiel, Germany)
09:30–09:45	O16	Towards Artificial Blood: Disc-Shaped Hydrogel Beads as Long Term Available Artificial Erythrocytes for Multiphase Blood Substitute Fluids <u>G. Hentschel</u> , T. Rusiecki, C. Winkler, M. Müller, B. Glasmacher (Garbsen, Germany)
09:45–10:00	O17	Human Amniotic Membrane in Composite Scaffolds for Tissue Engineering S. L. Marin (Garbsen, Germany)
Room G.E.06		
10:00–10:45		Plenary Lecture Sorbents in 2022: From Bench to Bedside C. Ronco (Vicenza, Italy)
G1		
10:45–11:15		<i>Coffee Break</i>
Room G.E.06		
11:15–12:30		Session: Cardiovascular – Digital Medicine Chair: K. Zielinski (Warsaw, Poland), G. Zörnack (Munich, Germany)
11:15–11:30	O18	Multiscale Modelling of Cerebral Hemodynamics in a Human Artery Model <u>C.A. Luisi</u> , O. Nikoubashman, M. Wiesmann, U. Steinseifer, M. Neidlin (Aachen, Germany)
11:30–11:45	O19	V-Patients: Using AI and Simulations to Perform Virtual Clinical Trials in the Web-Browser S.J. Sonntag, B. Rochlitz, <u>G. Zörnack</u> , D.F. Almeida, W.Y. Chu (Munich, Germany)
11:45–12:00	O20	A Novel Machine Learning Model for Predicting Ventricular Stroke Volume in a Mock Circulatory Loop <u>F. Cappon</u> , A.W. Khir, P.L. Hsu, X. Du (Uxbridge, UK)
12:00–12:15	O21	Hemodynamic HFpEF Phenotyping Using Machine Learning <u>C. Gross</u> , R. Rettl, D. Zimpfer, D. Bonderman, M. Granegger (Vienna, Austria)
12:15–12:30	O23	Numerical Simulations of Blood Flows in a Large Portion of Patient-Specific Systemic Circuit – Comparative Analyses of Rigid-Wall and FSI Approaches <u>P. Reorowicz</u> , Z. Tyfa, D. Obidowski, K. Wisniewski (Lodz, Poland)

Thursday, September 8, 2022

Room G.E.11		
11:15–12:45		Symposium: Coagulation and Anticoagulation in Extracorporeal Therapies Chair: S. Eloot (Ghent, Belgium), B. Stegmayr (Umeå, Schweden)
11:15–11:35	O113-K	State of the Art in Coagulation and Anticoagulation in Extracorporeal Therapies <u>F. Vanommeslaeghe</u> (Ghent, Belgium)
11:35–11:45	O24	Optimised Anticoagulation Strategy in Prolonged Haemodialysis F. Vanommeslaeghe, R. Thielemans, I. Josipovic, F. De Somer, K. Devreese, M. Boone, W. Van Biesen, <u>S. Eloot</u> (Ghent, Belgium)
11:45–12:00	O25	Interactions Between Blood, Artificial Surfaces and Air Contamination is Still a Hurdle in Artificial Organs <u>B. Stegmayr</u> (Umeå, Sweden)
12:00–12:15	O26	Development of New Membranes Allowing for Lower Anticoagulation Dosing <u>O. ter Beek</u> (Enschede, The Netherlands)
12:15–12:30	O27	ECMO Anticoagulation via Factor XII Inhibition and Silencing S. Shin, N. Umei, N. Naito, K. Roberts, R. Ukita, C. Demarest, <u>K. Cook</u> (Pittsburgh, USA)
12:30–12:45	O28	Development of Selective FXIa Inhibitors Based on Cyclic Peptides and Their Application for Safe Anticoagulation <u>B. Stegmayr</u> (Umeå, Sweden)

Room G.E.12		
11:15–12:45		Session: Fluid Dynamics Chair: A. Remuzzi (Bergamo, Italy), K. Fraser (Bath, United Kingdom)
11:15–11:30	O29	μ -Particle Image Velocimetry and Computational Fluid Dynamics Analysis of Fluid Flow – Induced Wall Shear Stress in 3D Scaffolds <u>T. Baumgartner</u> , M. Bösenhofer, O. Guillaume, A. Ovsianikov, M. Harasek, M. Gföhler (Vienna, Austria)
11:30–11:45	O30	A Computational Model of Chemically and Mechanically Induced Platelet Plug Formation <u>G. Cardillo</u> , A.I. Barakat (Palaiseau, France)
11:45–12:00	O31	Early Detection of Centrifugal Flow Pump Thrombosis Using Intrinsic Left Ventricular Assist Device Data and a Validated Algorithm <u>C. Gross</u> , F. Moscato, H. Schima, D. Wiedemann, D. Zimpfer, T. Schlöglhofer (Vienna, Austria)
12:00–12:15	O32	Computational Fluid Dynamics and Benchtop Analyses of a Novel Hollow Fiber Membrane Based Artificial Placenta <u>K.S. Omecinski</u> , B.J. Frankowski, W.J. Federspiel (Pittsburgh, USA)
12:15–12:30	O33	Fluid-Structure Interaction Analysis of Mitral Annular Calcification and its Effect on Blood Flow Dynamics <u>M. Ghodrati</u> , M. Königshofer, M. Habermusch, P. Aigner, A. Kahrovic, M. Mach, M. Andreas, H. Schima, F. Moscato (Vienna, Austria)
12:30–12:45	O34	Hemodynamic Analysis of a Moving Left Ventricle in Patients with Heart Valve Insufficiency: The Effect of Exercise and Rest Onto Washout <u>J. Korte</u> , T. Rauwolf, P. Groschopp, J.N. Thiel, A. Schmeißer, R. Braun-Dullaues, P. Berg (Magdeburg, Germany)
G		
12:45–14:00		Lunch

Room G.E.06		
14:00–15:30		Symposium: Blood Damage in Ventricular Assist Devices Chair: U. Kertzscher (Berlin, Germany), M. Simmonds (Gold Coast, Australia)
14:00 –14:15	O35-K	Short-Term Mechanical Circulatory Support: Impact on the Physical Properties of Blood <u>M.J. Simmonds</u> , A.P. McNamee, J. Drew, L. Kuck, S. Provenzano, A. Smith, S. Pattullo (Gold Coast, Australia)
14:15–14:30	O36	Improved Highly Dynamic Couette Shear Device for the Study of Flow-Induced Hemolysis in Rotary Blood Pumps <u>M. Lommel</u> , V. Froese, U. Kertzscher (Berlin, Germany)
14:30–14:45	O37	Observation of Red Blood Cell's Rheological Behavior Under Fluctuating Shear Conditions Using a Specially Built Sinusoidal Shear Chamber <u>K. Masnok</u> , M.A. Inoue, N. Watanabe (Saitama, Japan)
14:45–15:00	O38	Thrombus Modelling with Computational Fluid Dynamics D. Gupta, J. Bornoff, <u>K.H. Fraser</u> (Bath, United Kingdom)
15:00–15:15	O39	Optical Visualization of Spatially Resolved Mechanical Hemolysis by Means of Ghost Cells <u>B.J. Schürmann</u> , E. Weber, C.A. Luisi, I. Mager, S.V. Jansen, T. Schmitz-Rode, U. Steinseifer, J.C. Clauser (Aachen, Germany)
15:15–15:30	O40	Linking Hydraulic Properties to Hemolytic Performance in Rotodynamic Blood Pumps <u>A. Escher</u> , E.J. Hubmann, B. Karner, B. Messner, G. Laufer, U. Kertzscher, D. Zimpfer, M. Granegger (Vienna, Austria)
Room G.E.11		
14:00- 15:30		Symposium: Extracorporeal Therapies in COVID-19 Chair: C. Ronco (Vicenza, Italy), V. Weber (Krems, Austria)
14:00–14:30	O41-K	Removal of Antithrombotic Agents in Acute Bleeding with Cytosorb <u>S. Mitzner</u> (Rostock, Germany)
14:30–14:45	O42	Extracorporeal Therapy of Sepsis by Purified Granulocyte Concentrates- Ex Vivo Circulation Model <u>G. Klinkmann</u> , D.A. Reuter, R. Blasczyk, S. Mitzner, J. Altrichter (Rostock, Germany)
14:45–15:00	O43	Mediators of Immunothrombosis in Sepsis and COVID-19 T. Eichhorn, R. Weiss, S. Huber, M. Ebeyer-Masotta, R. Emprechtinger, R. Würzner, V. Weber (Krems, Austria)
15:00–15:15	O44	Extracorporeal Mediator Elimination Under ECMO Therapy in Severe COVID-19 Patients- A Stepwise Approach <u>F. Wunderlich-Sperl</u> , B. Weber, H. Dier, C. Hörmann (St. Pölten, Austria)
15:15–15:30	O45	CRP Apheresis in Acute Myocardial Infarction and COVID-19 <u>A. Sheriff</u> , W. Ries (Berlin, Germany)

Thursday, September 8, 2022

Room G.E.12		
14:00–15:30		Symposium: Bioartificial Organs Chair: O. Ter Beek (Enschede, The Netherlands), J. Vienken (Usingen, Germany)
14:00–14:30	O46-K	Extracorporeal Blood Purification, Kidney Therapies and Exogenous Toxins <u>J. Vienken</u> (Usingen, Germany)
14:30–14:45	O47	Assessing the Functionality of Bioengineered Proximal Tubules for Bioartificial Kidney Applications J. Faria, S. Ahmed, D. Stamatialis, M.C. Verhaar, R. Masereeuw, K.G.F. Gerritsen, <u>S.M. Mihăilă</u> (Utrecht, The Netherlands)
14:45–15:00	O48	Development of Hemodialysis Membranes for Outside-In Filtration <u>D. Ramada</u> , I. Geremia, O. ter Beek, D. Stamatialis (Twente, The Netherlands)
15:00–15:15	O49	Light-Driven Urea Oxidation for a Wearable Artificial Kidney <u>J.C. Vollenbroek</u> , M.C. Verhaar, M. Odijk, K.G.F. Gerritsen (Utrecht, The Netherlands)
15:15–15:30	O50	First Optimization of a Co-Culture of Dural Fibroblasts and Stem Cells for Meningeal Tissue Engineering L. Tonini, C. Pelletier, <u>N. Oderich-Muniz</u> , T. Baudequin (Compiègne Cedex, France)
Room G.E.06		
15:30–16:30		Poster FlashTalk Session 1
G 1		
16:30–17:30		Poster Session 1 & Coffee
Room G.E.06		
17:30–18:45		Session: Mechanical Circulatory Support – Preclinical Assessment of Novel Devices Chair: M.J. Simmonds (Gold Coast, Australia), H. Schima (Vienna, Austria)
17:30–17:45	O51	Virtual Fitting of Cavopulmonary Assist Devices into the Fontan Circulation: Anatomical Boundary Conditions and Their Implications for Pump Development <u>B. Karner</u> , A. Escher, T. Schorn, K. Narayanaswamy, M. Hübler, D. Zimpfer, M. Granegger (Vienna, Austria)
17:45–18:00	O52	Accurate and Efficient Simulations of the Realheart Total Artificial Heart Using a Novel Fluid-Structure Interaction Approach: The Influence of Heart Rate Variation <u>J. Bornoff</u> , A. Najar, L. Fresiello, I.L. Perkins, A.N. Cookson, K.H. Fraser (Bath, UK)
18:00–18:15	O54	Pulsating Flow Generation Device Based on a Constant Flow of Rotary Blood Pumps <u>A.S. Buchnev</u> , A.A. Drobyshev, G.P. Itkin, A.P. Kuleshov (Ministry of Health of the Russian Federation, Russia)
18:15–18:30	O55	Numerical Evaluation of Hemocompatibility and Virtual Implantation of a Novel Total Artificial Heart-Shuttlepump <u>K. Narayanaswamy</u> , J. Petz, T. Bierewirtz, A. Escher, U. Kertzsch, D. Zimpfer, M. Granegger (Vienna, Austria)
18:30–18:45	O56	Haemocompatibility of the Bivacor Total Artificial Heart <u>M.J. Simmonds</u> , A.P. McNamee, G.D. Tansley, F. Nestler, N. Bartnikowski, D. Timms (Gold Coast, Australia)

Room G.E.11		
17:30–19:00		Symposium: Advanced Liver Therapies: Bioartificial Liver, Normothermic Ex Vivo Liver Preservation and Liver Tissue Engineering Chair: P. Baptista (Zaragoza, Spain), C. Legallais (Compiègne, France)
17:30–18:00	O57-K	Tissue Therapy for the Treatment of Liver Disorders: Present and Future <u>J.C. Duclos-Vallee</u> (Paris, France)
18:00–18:15	O58	Biomass Optimization in Extracorporeal Liver Support Therapy <u>C. Legallais</u> (Compiègne, France)
18:00–18:15	O59	Development of an Ex-Vivo Liver Perfusion System for Marginal Liver Grafts Optimization via an Oxygenated Dynamic Sequence <u>C. Goumard</u> (Paris, France)
18:30–18:45	O60	Whole-Organ Bioengineering: The Future of Transplantation Medicine <u>P. Baptista</u> (Zaragoza, Spain)
18:45–19:00	O61	3D Hydrogels of Tyramine-Modified Gelatin and Hyaluronic Acid for Liver Tissue Engineering: Physicochemical, In Vitro and In Vivo Experimentation <u>J. Rodríguez-Fernández</u> , E. Villanueva-Bádenas, E. García-Legler, M.T. Donato, M. Salmeron-Sanchez, G. Gallego-Ferrer, L. Tolosa (Valencia, Spain)
19:30		Congress Dinner (Heuriger)

Friday, September 9, 2022

Room G.E.06		
08:30–10:00		Symposium: Isolated Use of Right Ventricular Assist Devices Chair: T. Verbelen (Leuven, Belgium), U. Steinseifer (Aachen, Germany)
08:30–09:00	O62-K	The failing RV <u>O. Soliman</u> (Galway, Ireland)
09:00–09:15	O63	Temporary Circulatory Support in RV Failure with Protek Duo <u>R. Lorusso</u> (Maastricht, The Netherlands)
09:15–09:30	O64	Durable RVAD <u>K. Caliskan</u> (Rotterdam, The Netherlands)
09:30–09:45	O65	RVAD's for Pulmonary Arterial Hypertension <u>T. Verbelen</u> (Leuven, Belgium)
09:45–10:00	O66	Retrospective Multi Center European Study on RVAD Use <u>R. Lorusso</u> (Maastricht, The Netherlands)
Room G.E.11		
08:30–10:00		Symposium: Albunet – Albumin Modifications and their Clinical Relevance Chair: J. Vienken (Usingen, Germany), S. Mitzner (Rostock, Germany)
08:30–09:00	O67-K	Clinical Aspects of Albumin Modifications and Consequences of Removal of Albumin During Haemodialysis <u>J. Vienken</u> (Usingen, Germany)
09:00–09:15	O68	Characterization of the Efficacy of Furosemide Depending on Albumin Function <u>G. Klinkmann</u> , P. Alka, D.A. Reuter, S. Mitzner (Rostock, Germany)
09:15–09:30	O69	Effect of Albumin Infusion on Oxidative Albumin Modification and Albumin Binding Capacity in Chronic Liver Failure R.E. Stauber, M. Paar, F. Rainer, A. Posch, V. Stadlbauer, <u>K. Oettl</u> (Graz, Austria)
09:30–09:45	O70	Removal of Stabilizers from Human Serum Albumin by Adsorbents and Dialysis In Vitro <u>J. Hartmann</u> , K. Lohner, C. Schildböck, S. Harm (Krems, Austria)
09:45–10:00	O71	Effective Albumin: Binding Characteristics Determined by Different Methods M. Paar, V.H. Fengler, G. Reibnegger, K. Schnurr, K. Waterstradt, R.E. Stauber, <u>K. Oettl</u> (Graz, Austria)
Room G.E.12		
08:30–10:00		Symposium: Joint TERMIS – ESAO Symposium Chair: S. Wolbank (tbc) (Salzburg, Austria), N. Neves (tbc), (Guimarães, Portugal)
08:30–09:00	O72-K	Surface Functionalised Scaffolds and Nanodevices for Advanced Therapies <u>N. Neves</u> (Guimarães, Portugal)
09:00–09:15	O73	Growing Spheroids from Monolayer – A New Technology for Chondrogenic Spheroid Generation. M. Fürsatz, P. Gerges, S. Wolbank, <u>S. Nürnberger</u> (Vienna, Austria)
09:15–09:30	O74	Clinical Evaluation of Matrix Associated Autologous Chondrocyte Implantation using a Spheroid Technology. A Prospective Case Series. <u>C. Albrecht</u> , G. Kiss (Vienna, Austria)
09:30–09:45	O75	Melt Electrospun, Three-Dimensional Fiber Scaffolds for Musculoskeletal Tissue Engineering <u>G. Hentschel</u> , A. du Puits, B. Glasmacher (Garbsen, Germany)
09:45–10:00	O76	3D bioprinting: A novel method for evaluating the volume of cell-laden 3D structure <u>Marica Markovic</u> (Vienna, Austria)

Room G.E.06		
10:00–10:45		Plenary Lecture Sixty Years of Mechanical Circulatory Support: Solved Tasks, Personal Experiences, Current Challenges and Future Perspectives H. Schima (Vienna, Austria)
G1		
10:45–11:15		<i>Coffee Break</i>
Room G.E.06		
11:15–12:45		Symposium: Cardiac Assist – Pediatric Mechanical Circulatory Support Chair: M. Granegger (Vienna, Austria), K. Fraser (Bath, United Kingdom)
11:15–11:45	O77-K	Clinical Needs and Opportunities in Pediatric Mechanical Circulatory Support <u>D. Zimpfer</u> (Vienna, Austria)
11:45–12:00	O78	Maximising Efficiency of the Neovad using CFD Based Machine Learning <u>L. Nissim</u> , S. Karnik, P.A. Smith, Y. Wang, K.H. Fraser (Bath, United Kingdom)
12:00–12:15	O79	Continued Progress of the 5th Generation Pediaflow® Pediatric Vad <u>S.E. Ojia</u> , S. Stelick, S. Rajesh, G. Rowlands, V. Vasudevan, R. Thanneeru, S. Hemmi, N. Ishibashi, Y. d'Udekem, S. Snyder, J. Verkaik, C. Campbell, M. Tuell, J. Woodard, H. Borovetz, J. Antaki, PediaFlow® Consortium (Philadelphia, USA)
12:15–12:30	O80	Intracorporeal Durable LVAD Support in Children Using HVAD or HM 3 <u>M. Schweiger</u> (Zurich, Switzerland)
12:30–12:45	O81	Preclinical Evaluation of a Cavopulmonary Assist Device for Fontan Patients <u>M. Granegger</u> , A. Escher, B. Karner, M. Hübler, D. Zimpfer (Vienna, Austria)
Room G.E.11		
11:15–12:45		Symposium: EuTox – Molecular Mechanisms of Cardiovascular Diseases in Chronic Kidney Disease Chair: J. Jankowski (Aachen, Germany), N.N. (tbc)
11:15–11:30	O82-K	Organ Crosstalk Heart-Kidney <u>J. Jankowski</u> (Aachen, Germany)
11:30–11:45	O83	Interaction of Cardiovascular Diseases with CKD <u>B. Stegmayr</u> (Umeå, Sweden)
11:45–12:00	O84	Kidney and the Heart, Heart Failure and Dialysis <u>A. Argiles</u> (Montpellier, France)
12:00–12:15	O85	Fibrosis: What is Happening in the Patient? <u>M. Rodrigues</u> (Córdoba, Spain)
12:15–12:30	O86	PTMs in Context of CKD and CVD <u>V. Jankowski</u> (Aachen, Germany)
12:30–12:45	O87	Heart Failure in Hemodialysis <u>A. Wiecek</u> (Katowice, Poland)

Friday, September 9, 2022

Room G.E.12		
11:15–12:25		Joint ESOT – ESAO Symposium Chair: I. Bello (Barcelona, Spain), T. Verbelen (Leuven, Belgium)
11:15–11:45	O88-K	The Carmat Bio-Artificial Heart <u>C. Amarelli</u> (Naples, Italy)
11:45–12:05	O89	Lung support devices: Towards an Implantable Artificial Lung <u>T. Verbelen</u> (Leuven, Belgium)
12:05–12:25	O90	Bioartificial Tracheal Transplantation <u>I. Bello Rodríguez</u> (Barcelona, Spain)

G		
12:45–14:00		<i>Lunch</i>
Room G.E.06		
13:15–13:45		Berlin Heart Lunch Symposium: Experience with the EXCOR Pediatric VAD D. Medart (Berlin, Germany)
Room G.E.06		
14:00–15:30		Session: Mechanical Circulatory Support – Patient Device Interface Chair: T. Schlöglhofer (Vienna, Austria), K. Zielinski (Warsaw, Poland)
14:00–14:15	O92	In Vitro Analysis of Implantable Cardiac Monitor Performance for Cardiac Arrhythmia Detection During Heartmate 3 Left Ventricular Assist Device Support <u>T. Schlöglhofer</u> , M. Röhrich, T. Abart, C. Marko, D. Wiedemann, H. Schima, G. Laufer, C. Schukro, D. Zimpfer (Vienna, Austria)
14:15–14:30	O93	An Investigation into the Timing of the Artificial Pulse of the Heartmate 3 and its Effects on Left Ventricular Flow Dynamics A. Maurer, F. Wimmer, M. Ghodrati, T. Schlöglhofer, D. Zimpfer, M. Röhrich, F. Moscato, H. Schima, <u>P. Aigner</u> (Vienna, Austria)
14:30–14:45	O94	Clinical Utility of Routinely Available Heartmate 6 Total Artificial Heart Pump Parameters and Logfiles <u>T. Abart</u> , D. Wiedemann, G. Widhalm, H. Schima, G. Laufer, D. Zimpfer, T. Schlöglhofer (Vienna, Austria)
14:45–15:00	O95	A Compliant Model of the Ventricular Apex to Study Suction Events in Ventricular Assist Device Patients: Validation with Clinical Data <u>M. Rocchi</u> , C. Gross, F. Moscato, T. Schlöglhofer, J.P. Pauls, K. Zieliński, B. Meyns, L. Fresiello (Leuven, Belgium)
15:00–15:15	O96	Suction Reduction and Exercise Adaptation with Physiologic Control for Left Ventricular Assist Devices <u>M. Maw</u> , T. Schlöglhofer, C. Marko, P. Aigner, C. Gross, G. Widhalm, F. Wittmann, A.K. Schäfer, D. Wiedemann, D.A. Kudlik, R. Stadler, F. Moscato, D. Zimpfer, H. Schima (Vienna, Austria)
15:15–15:30	O97	Effects of RVAD Cannulation Strategies on Right Intracardiac Thrombosis Risk: An In Silico Investigation <u>K.Y. Thum</u> , S. Liao, D. McGiffin, S.D. Gregory (Melbourne, Australia)

Room G.E.11		
11:15–12:45		Session: Dialysis – Apheresis Chair: B. Stegmayr (Umeå, Schweden), S. Eloot (Ghent, Belgium)
14:00–14:15	O98	Hemodialysis Causes a Chronic Burden of Subclinical Microembolies and Recovery Processes U. Forsberg, B. Nilsson, K. Nilsson Ekdahl, <u>B. Stegmayr</u> (Umeå, Sweden)
14:15–14:30	O99	An In Silico and In Vitro Approach for Hemolysis Risk Assessment in Hemodialysis Catheters <u>I. Guidetti</u> , F. De Gaetano, D. Gallo, U. Morbiducci, M.L. Costantino (Milan, Italy)
14:30–14:45	O100	An Update in the Post-Hemodialysis Factors to Correct Hemoconcentration <u>M. Gomez</u> and F. Maduell (Barcelona, Spain)
14:45–15:00	O101	Contamination of Microbubbles of Air May Appear at All Measured Investigated Sites. In Vivo Studies during Hemodialysis <u>P. Jonsson</u> , V. Drybcek, B. Stegmayr (Umeå and Sundsvall, Sweden)
15:00–15:15	O102	Patient-Specific Prediction of the Calcium Mass Transfer in Hemodialysis Patients M. Martínez Mas, <u>C. Balsamello</u> , M.L. Costantino, G. Casagrande (Milan, Italy)
15:15–15:30	O103	Influence of Iron Supplementation on Some Inflammatory Markers in Patients with Chronic Kidney Failure on APD I. Trendafilov, I. Georgieva, V. Papazov, K. Tzatchev, V. Dimitrova, D. Arabadjieva, N. Velkova, <u>D. Yonova</u> (Sofia, Bulgaria)
G1		
15:30–16:00		<i>Coffee Break</i>
Room G.E.06		
16:00–16:30		General Assembly
16:30–17:30		Poster Flash Talk Session 2
G1		
17:30–18:30		Poster Session 2
18:30		<i>Wine & Cheese</i>

Saturday, September 10, 2022

Room G.E.06		
08:30–10:00		Joint IFAO – ESAO Symposium Chair: H. Schima (Vienna, Austria), T. Masuzawa (Ibaraki, Japan)
08:30–09:00	O104-K	Magnetically Levitated Mechanical Circulatory Support Systems T. Masuzawa (Ibaraki, Japan)
09:00–09:20	O105	A Globally-Collaborative Approach to Improve Pre-Clinical Evaluation of Cardiovascular Devices S. Gregory (Melbourne, Australia)
09:20–09:40	O106	Recent Developments in Cardiac Valve Replacement U. Steinseifer (Aachen, Germany)
09:40–10:00	O107	The Effects of the European Medical Device Regulation (MDR) on Implant Development and Clinical Evaluation B. Akra (Landsberg, Germany)
Room G.E.11		
08:30–10:00		Blood Products Chair: S. Nehrer (Krems, Austria), A. De Luna (Krems, Austria)
08:30–09:00	O108-K	Application of Blood Derived Products in Clinics S. Nehrer (Krems, Austria)
09:00–09:15	O109	Anti-Inflammatory Properties of Extracellular Vesicles from Blood Derived Products for Cartilage Regeneration A. de Luna (Krems, Austria)
09:15–09:30	O110	Functional Repertoire of EV Associated miRNA Profiles from Blood Derived Products A. Otahal (Krems, Austria)
09:30–09:45	O111	Effects of Blood Derived Products on the Differentiation Potential of Adipose Derived Mesenchymal Stem Cells M. Neubauer (Krems, Austria)
09:45–10:00	O112	Hyperacute Serum for Cartilage Regeneration Z. Lacza (Budapest, Hungary)
Mensa		
10:00–10:30		<i>Coffee Break</i>
Main Lecture Hall		
10:30–11:15		Plenary Lecture The COVID-19 Puzzle M. Osuchowski (Vienna, Austria)
11:15–12:45		Awards Session
12:45–13:30		Closing Ceremony
Mensa		
13:30		<i>Farewell Reception</i>

Thursday, September 8, 2022 | 16:30–17:30

Poster Session 1 – Cardiopulmonary

Chair: C. Gross (Vienna, Austria), F. Moscato (Vienna, Austria), H. Schima (Vienna, Austria), U. Steinseifer (Aachen, Germany)

- P2-F In Silico Investigation of Flow and Gas Transfer Characteristics of Three-Dimensional Membrane Shapes for Novel Artificial Lung Designs Based on 3D Printing
[K.P. Barbian](#), C. Certa, J. Linkhorst, M. Neidlin, U. Steinseifer, M. Wessling, B. Wiegmann, S.V. Jansen (Aachen, Germany)
- P3 Design, Realization and Preliminary Validation of a High-Fidelity Bioinspired Lungs Simulator
[S. Maglio](#), S. Tognarelli, A. Menciassi (Pisa, Italy)
- P4 Investigation of Flow Direction Dependent Gas Transfer in Artificial Lungs
[J.M. Focke](#), K.P. Barbian, N. Gendron, U. Steinseifer, J. Arens, M. Neidlin (Aachen, Germany)
- P5 Stent-Based Central Access for Thoracic Organ Support
[C. Hensen](#), F. Hima, N. Gendron, L. Strudthoff, R. Zayat, S. Kalverkamp, J. Spillner, N. Pütz (Aachen, Germany)
- P6 Fundamental Study of Rate of Water Loss and Gas Inlet Pressure in Artificial Lungs During Pediatric ECMO
[T. Ebine](#), S. Kohira, R. Komiyama, K. Fujii, K. Kokubo (Sagamihara, Japan)
- P7 Permeability and Mass Transfer for a Bundle of Triangular Membranes
[J. Bornoff](#), K.H. Fraser (Bath, UK)
- P8 A Rat V-V ECMO Model to Investigate Bioincompatible Reactions During Extracorporeal Circulation
[T. Furihata](#), K. Kobayashi, K. Kokubo, B. Tsuchiya, M. Ogata, H. Nakajima, M. Kubota (Japan)
- P9 Device for Dynamic Filtration of Microbubbles
A.P. Kuleshov, G.P. Itkin, A.S. Buchnev, [A.A. Drobyshev](#) (Moscow, Russia)
- P10 A Comparison of Independent Lung Ventilation and Extracorporeal Membrane Oxygenation in a Respiratory Failure- An „In Silico” Study
[K. Zieliński](#), P. Okrzeja, A. Stecka, R. Pasledni, M. Kozarski, M. Darowski (Warsaw, Poland)
- P11 A Hybrid (Physical-Computational) Cardiopulmonary Simulator for Independent Lungs Ventilation
K. Zieliński, [A. Stecka](#), M. Kozarski, P. Okrzeja, R. Pasledni, M. Darowski (Warsaw, Poland)
- P12 Hemodynamic Assessment of Six Commercially Available Oxygenators as Paracorporeal Artificial Lung by a Hybrid Simulator
M. Bézy, T. Vyd, L. Fresiello, M. Rocchi, K. Zieliński, B. Meyns, M. Vanierschot, [T. Verbelen](#) (Leuven, Belgium)
- P13 Limits and Challenges of Additive Manufacturing Techniques in the Production of Implantable Metal Prostheses
[M. Sanguedolce](#), E.M. Zanetti, G. Fragomeni, G. Pascoletti, L. De Napoli, G. Catapano, L. Filice (Rende, Italy)
- P14 Method of Reducing Edema of Organs by Reducing Pressure in the Thoracic Lymphatic Duct
[A.P. Kuleshov](#), G.P. Itkin, A.S. Buchnev, A.A. Drobyshev (Moscow, Russia)
- P15 Left Ventricular Assist Device- Single Center Experience
[M. Gjerakaroska-Radovikj](#), G. Severova, S. Jovev (Skopje, Republic of North Macedonia)
- P16 In Vitro Study of Newly Designed Bicuspid Pediatric Pulmonary Heart Valve
[K. Suzuki](#), H. Sumikura, S.I. Sakamoto (Japan)
- P18 A Modified Hybrid Mock Circulation for the Experimental Evaluation of a Right Ventricular Assist Device
[F. De Gaetano](#), S. Vandenberghe, S. Demertzis, M.L. Costantino (Milan, Italy)
- P19_F Engineering of Bacterial Nano Cellulose-Based Small Diameter (CSD) Vascular Graft for Coronary Artery Bypass Grafting
[D. Fusco](#), F.G. Meissner, A. Pisanu, N. Christiaens, B. Podesser, B. Winkler, A. Marsano, F. Eckstein (Basel, Switzerland)
- P20 Eye Tracking Supported Human Factors Evaluation of Left Ventricular Assist Device Peripherals in Simulated Everyday and Emergency Situations
[G. Widhalm](#), T. Abart, M. Noeske, L. Rössler, S. Ecker, S. Kitzweger, A. Berger, G. Laufer, D. Wiedemann, D. Zimpfer, H. Schima, M. Wagner, T. Schlöglhofer (Vienna, Austria)

- P21 Design of Force Test Rig for the Realheart Tah Left Pump
S. Andreou (Västerås, Sweden)
- P22 Computational Blood Flow Analysis of a Sutureless Inflow Cannula for Ventricular Assist Devices
M. Azimi, S. Liao, D. McGiffin, S.D. Gregory (Melbourne, Australia)
- P23 Design Enhancement of a Bi-Ventricular Blood Pump for ECMO/ECLS
S. Deininger, C. Franzen, E. Cuenca-Navalon, O. Marseille L. Robers, D. Eggert, R. Malcher, F. Eggert, J. Hutzenlaub (Aachen, Germany)
- P24 Determination of the Hematocrit in the Microgap of a Blood Pump Model
S. Krakowski, T. Bierewirtz, U. Kertzsch (Berlin, Germany)
- P25 Automated Test Loop to Assess Pump-Induced Hemolysis Under Pulsatile Operating Conditions
P. Borchers, S. Leonhardt, M. Walter (Aachen, Germany)
- P26-F High-Conductivity Coatings on Metal Components in a Transcutaneous Energy Transfer System (TETS)
J. F. Hansen (California, USA)

Poster Session 1 – Hemo-/Biocompatibility

Chair: S. Eloit (Ghent, Belgium), U. Kertzsch (Berlin, Germany), V. Semak (Krems, Austria)

- P27_F Mechanical and Usability Test of a Low-Cost Device (BAMBI) Designed to Manage Postpartum Hemorrhage in Low-Resource Settings
K. Osouli, S. Candidori, P. Russo, S. Graziosi, A. Zanini, M.L. Costantino, F. De Gaetano (Milan, Italy)
- P28 Fabrication of Medical Devices with Nanoprinting: Hazards Identification for Risk Analysis
G. D'Avenio, C. Daniele, M. Grigioni (Rome, Italy)
- P29 Design and Realization of a High-Fidelity Umbilical Cord Simulator for Emergency Procedures Training
M. Polizzotto, S. Maglio, S. Tognarelli, A. Menciassi (Pisa, Italy)
- P30 Influence of the Fluid Rheology on the Blood Flow Hemodynamics within Numerous Patient-Specific Arterial Networks of Varied Complexity
Z. Tyfa, P. Reorowicz, K. Jóźwik (Lodz, Poland)
- P31 Influence of Patient-Specific Arterial Model Reconstruction Technique on Geometry Topology and Flow Hemodynamics CFD Investigations
Z. Tyfa, P. Reorowicz, K. Jóźwik (Lodz, Poland)
- P32 Investigation of Impedance Based Aortic Flow Measurements
D. Voss, S. Leonhardt, M. Walter (Aachen, Germany)
- P33 Morphological Characterisation of Novel Layered Hydrogel-Liposome Beads for Hemodynamic Flow Studies
T. Bode, G. Hentschel, T. Rittinghaus, T. Hildebrand, M. Müller, B. Glasmacher (Garbsen, Germany)
- P34-F Efficiency in Intracellular Delivery into RBCs from Animals and Human with a Microfluidic Approach
C. Bernardelli, M. Piergiorganni, E. Bianchi, C. Carlo-Stella, M.L. Costantino, G. Casagrande (Milan, Italy)
- P35 Microfluidic Study on a Transparent Two-Phase Blood Model Fluid
V. Froese, G. Gabel, M. Lommel, U. Kertzsch (Berlin, Germany)
- P36 Characterization of Tissue Factor-Bearing Extracellular Vesicles in COVID-19
R. Weiss, T. Eichhorn, S. Huber, M. Mostageer, R. Würzner, V. Weber (Krems, Austria)
- P37-F Blood Quality Influences Hemolytic Characterization of Blood Pumps
A.P. McNamee, L. Kuck, M.J. Simmonds (Gold Coast, Australia)
- P38 Controlling and Evaluating Thrombus Formation within Cardiovascular Medical Devices
A.P. McNamee, L. Kuck, M.J. Simmonds (Gold Coast, Australia)
- P39 Modification of the Vacuum Suction Cannula to Reduce Blood Trauma During Aspiration with Using the HLM
A.P. Kuleshov, G.P. Itkin, A.S. Buchnev, A.A. Drobyshev, O.Y. Esipova (Moscow, Russia)
- P40-F Endothelium-Protective Effect of Heparin-Functionalized Adsorbents that Deplete Products of Platelet and Neutrophil Activation
M. Ebeyer-Masotta, T. Eichhorn, V. Weber (Krems, Austria)

- P41 Altering the Fibrin Adsorption Topology on Titanium by Applying a High Frequency Alternating Current
T. Bierewirtz, A. Hujeirat, U. Kertzsch (Berlin, Germany)
- P42-F Visualization of Shear-Induced Platelet Deposition in a Flow Chamber
I. Esslinger, I. Schulz, T. Bierewirtz, U. Kertzsch (Berlin, Germany)
- P43 Optimization of Covalent Heparin Immobilization on Titanium
J. Kuchinka, T. Groth (Halle (Saale), Germany)

Friday, September 9, 2022 | 17:30–18:30

Poster Session 2 – Kidney, Liver, Apheresis

Chair: M.B. Fischer (Krems, Austria), J. Hartmann (Krems, Austria), B. Stegmayr (Umeå, Schweden), J. Vienken (Usingen, Germany)

- P44-F Bioderived Therapeutics in Chronic Liver Diseases
A. Ganguin, C. Zivko, P. Luciani (Bern, Switzerland)
- P45-F An In Vitro Study on Improving the Endotoxin Recovery Rate in Blood Samples Using the Kinetic Chromogenic Limulus Amoebocyte Lysate Assay
S. Harm, C. Schildböck, J. Hartmann (Krems, Austria)
- P46 Bioartificial Liver Support Technologies for the Treatment of Chronic Liver Failure- Morphofunctional Characteristics
M. Shagidulin, A. Grechina, N. Onishchenko, M. Krashennikov, A. Nikolskaya, E. Volkova, G. Pivachenko, I. Kozlov, I. Agapov, L. Davydova, V. Bogush, S. Gautier (Moscow, Russia)
- P47 Mathematical Simulation of the Acid-Base Status in Patients During a Week-Long Hemodialysis Cycle
M. Pietribiasi, J.K. Leypoldt, M. Debowska, J. Waniewski (Warsaw, Poland)
- P48-F Does Medicines Intake Influence the Accuracy of the Optical Monitoring of Dialysis? The Case of Uremic Toxin Uric Acid and Paracetamol
J. Holmar, J. Paats, A. Adoberg, L. Leis, M. Luman, J. Arund, K. Pilt, R. Tanner, F. Uhlir, I. Fridolin (Tallinn, Estonia)
- P49-F Brachial Basilic Arteriovenous Fistula (BBAVF) With Superficialization and Transposition of the Brachial Vein in One Surgical Act
N. Gjorgjievski, L. Trajceski, P. Dzekova-Vidimslki, V. Gerasimovska, V. Pushevski, Z. Janesovski, I.G. Nikolov, G.J. Selim, A. Canevska-Tanevska, G. Spasovski, I. Rambabova-Bushljetikj, P. Dejanov (Skopje, North Macedonia)
- P51 Effects of Extracorporeal Perfusion Involving Contact Between Blood and a Hemodialysis Membrane on Kidney Injury in a Rat Model
Y. Kikugawa, K. Kobayashi, B. Tsuchiya, M. Ogata, K. Kokubo, M. Kubota (Kanagawa, Japan)
- P52 Estimating Parameters of Bicarbonate Kinetics During Hemodialysis Using the Hydrogen Ion Mobilization Model
J.K. Leypoldt, M. Pietribiasi, M. Debowska, J. Waniewski (Warsaw, Poland)
- P53 Platelet Function During Platelet-Rich Plasma Sequestration in Complex Cardiac Surgical Procedures
R. Hajek, O. Zuscich, I. Fluger, P. Caletka, V. Lonsky, P. Santavy, L. Slavík, J. Ulehlova (Olomouc, Czech Republic)
- P54 Changes in Responsiveness of Leukocytes in Contact with a Hemofilter During Continuous Blood Purification Therapy
M. Sekiguchi, A. Yamamoto, Y. Kurihara, K. Kokubo, K. Kobayashi, K. Masaru (Kanagawa, Japan)
- P55 Removal of Protein-Bound Toxins by Hemoperfusion: An In Vitro Study
C. Schildböck, S. Harm, J. Hartmann (Krems, Austria)

Poster Session 2 – Tissue Engineering

Chair: P. Baptista (Zaragoza, Spain), A. De Luna (Krems, Austria), P. Ladyzynski (Warsaw, Poland), C. Legallais (Compiègne, France)

- P56 Fabrication of Microstructured Surfaces and its Influence on Bacterial Adhesion and Growth
S. Nilsson Zagiczek, [C. Grasl](#), M. Kussmann, M. Weiss-Tessbach, D. Moser, F. Moscato, H. Schima (Vienna, Austria)
- P57 Yap/Taz Facilitates Extracellular Vesicle Release upon Mechanical Stimulation
[R. Weiss](#), F. Nägele, T. Eichhorn, V. Weber, J. Holfeld (Krems, Austria)
- P58 Identification and Characterization of Adrenal Gland Derived Calcification Paradox Mediators
[S. Bhargava](#), N. Gayraud, V. Jankowski, À. Argilés, J. Jankowski (Aachen, Germany)
- P60 What is Historical Effect of Tangential Mechanical Force Field by Centrifuge on Cells In Vitro?
[S. Hashimoto](#), H. Yonezawa, K. Kishimoto, S. Saito (Tokyo, Japan)
- P61 In Situ Gelling Hydrogels Based on Oxidized Polysaccharides for Tissue Regeneration
[C. Willems](#), T. Groth (Halle (Saale), Germany)
- P62-F An Optogenetic Approach to Characterise Human TLR2 Homo- and Heterodimers in THP-1 and THP-1 Derived Macrophages
[K. Colleselli](#), C. Pollhammer, A. Stierschneider, H. Hundsberger, C. Wiesner (Krems, Austria)
- P64-F Creating an Ideal Diaphragmatic Bioscaffold: Development and Optimization of Decellularization Protocols for Diaphragmatic Tissue Engineering in Murine Model
M.N. Andreas, [A.K. Boehm](#), P. Tang, S. Moosburner, J.M. Gaßner, D. Wulsten, J. Neudecker, S. Spuler, J. Pratschke, I.M. Sauer, K.H. Hillebrandt (Berlin, Germany)
- P65 Improvement of the Simpler and Shorter Decellularization Procedure of In Vivo Tissue Engineered Vascular Graft Used for Allogeneic Transplantation
[T. Gondaj](#), M. Yamanami, K. Kanda, T. Inoue, H. Kawajiri, T. Watanabe, D. Kami, S. Gojo, H. Yaku (Kyoto, Japan)
- P66 Influence of Different Approaches for Coating of Bone Substitute Material with Heparin on Tissue Reaction In Vivo
[S. Stojanović](#), H. Alkhoury, M. Radenković, S. Najman, T. Groth (Niš, Serbia)
- P67 Pancreas Morphological Features as a Determining Factor of the Effective Decellularization Protocol
A. Ponomareva, N. Baranova, L. Kirsanova, G. Bubentsova, E. Nemets, I. Miloserdov, V. Sevastianov (Moscow, Russia)
- P69 The Effect of Smooth Muscle Cells on the Viability of Endothelial Cells Cultured in the Medium With High and Variable Glucose
A. Ciechanowska, I.M. Gora, S. Sabalinska, [P. Ladyzynski](#) (Warsaw, Poland)
- P70 Development of a Dynamic Bioreactor to Culture Ovarian Cortical Tissue Under Suitable Oxygen Concentrations and Mechanical Challenges
G. Fragomeni, L. De Napoli, M. Di Nardo, V. Barbato, V. Genovese, V. De Gregorio, A. Travaglione, R. Gualtieri, R. Talevi, [G. Catapano](#) (Rende, Italy)
- P71 New Hydrogels for Liver Organoids
[S. Leal Marin](#), M. Fernandez, O. Gryshkov, B. Glasmacher, P. Baptista (Garbsen, Germany)
- P72 Quick and Reliable Method for Estimation of the Quality of the Liver Isolate Intended for Culturing in the Hollow Fiber Flow Bioreactor
[M.J. Wiśniewska](#), M. Jakubowska, A. Wencel, D.G. Pijanowska, K.D. Pluta (Warsaw, Poland)
- P73 Genetically Modified C3a Cells Performed Better in Dynamic Culture than Their Unmodified Counterparts
[M. Jakubowska](#), M. Wiśniewska, A. Wencel, D.G. Pijanowska, K.D. Pluta (Warsaw, Poland)
- P74-F In Vitro Investigation of 3D Electrospun and Printed Scaffolds for Biomimetic Programming of Bone Replacing Artificial Tissues
[D.V. Portan](#), D. Polyzos, D.D. Deligianni (Patras, Greece)
- P77 Microfluidic Device Using Rapid Drug Gradient Formation for Bacterial Resistance Prediction
S. Becke, [G. Gabel](#), M. Lommel, A. Hujeirat, D. Roizman, U. Kertzschner, J. Rolff (Berlin, Germany)
- P78 Modeling NAFLD Using Human-Induced Pluripotent Stem Cell and Organ-On-Chip Technology
[L. Morisseau](#), R. Jellali, A. Abderrahmani, V. Pawlowski, C. Legallais, Y. Sakai, E. Leclerc (Compiègne, France)
- P79-F Electrospun Beads-On-String in Thick Honeycomb Scaffold for Bone Tissue Engineering
[N. Rivoallan](#), T. Baudequin, M. Müller, P. Vigneron, A. Hébraud, R. Jellali, G. Schlatter, C. Legallais, B. Glasmacher (Compiègne, France)



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