BOLOGNA
ITALY
Royal Carlton Hotel

OCTOBER
21-23
2019

27th ANNUAL MEETING
of International Society
for Mechanical Circulatory Support

Under the patronage of

www.ismcs.org
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University of Bologna
Italy

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Center for Medical Physics
and Biomedical Engineering
Medical University of Vienna
Austria

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ISMCS 2019 ENDORSED BY
07.45-10.00  Young Investigators Pre-Symposium  
Chair: T. Kaufmann, T. Schlöglhofer

- PS-1 From silk road to blood pumps: developing MCS in China
  P.L. Hsu
- PS-2 MCS in the Indian Scenario: Challenges & its Future
  D. SoDHani
- PS-3 Sensor and sensor-less systems for physiological control of VADs: Where to next?
  A. StepHEns
- PS-4 The YIN and YANG of LVAD optimization: when quality of life matches flow watts and waves
  S. Boschi
- PS-5 Small patients, huge demand? Pediatric MCS programs
  S. BHavsar
- PS-6 Pre-operative imaging to address operational challenges in small Japanese patients
  S. Sonntag
- PS-7 “Tools” in the Tool Box: What MCS Clinicians Have (and Don’t Have) to be Successful in Today’s World
  S. Schroeder
- PS-8 Evaluation of peripheral circulation and its pulsatility under circulatory assist with continuous-flow left ventricular assist device
  J. Shimamura
10.00-10.30 ISMCS Opening Ceremony
Chairs: C. Sivathanan, D. Pacini
Welcome by ISMCS 2019 Conference President
A. LoforTE
ISMCS Presidential Address
F. Moscato
10.30-11.30 H. REUL Session
Chairs: U. Steinseifer, M. SlepiAn, M. Maccherini
  • Thermal safety of a transcutaneous energy transfer system for ventricular assist devices
    S.L.C. Au (NeW ZeALAnD)
  • Aortic regurgitation in heart failure patients after Abiomed Impella-device implantation
    A. Nemeth (GERMANY)
  • LVAD speed increase at exercise: insights from a computational cardio-respiratory simulator
    C. Gross (Austria)
  • Hemolysis evaluation of a rotary blood pump at low-flow conditions for ECMO/ECCO2R
    applications
    M. SchöPs (GERMANY)
  • Visualizing red blood cell exclusion in a spiral groove bearing gap using erythrocyte ghosts
    and particle image velocimetry
    S. Bieritz (USA)
11.30-12.30 Keynote Lecture I
Chairs: M. Loebe, A. LoforTE
Pioneering Mechanical Circulatory Support (Europe) • R. Hetzer
Pioneering Mechanical Circulatory Support (USA) • O.H. Frazier
12.30-13.00 Round Table I
Why and how to develop a VAD program, get conscience, and improve the running by time
Chair: W. Dembitsky
Lecture: S. Maltais
Comments: M. Ono, L. Potena, P. Mohacsi, D. Christensen
13.00-13.30 ISMCS Welcome by Authorities
Chairs: A. LoforTE, R. Di BartolomEo, M. GarGiulo
  • Emilia Romagna Region Health Counsellor
  • Bologna University Dean
  • S. Orsola Hospital General Head
13.30-14.30 Lunch MCS Symposium I
Chairs: A. Simon, M. Massetti
  • Pulsatility: ‘Argument for’ and ‘Biologic Consequences Without’
    M. SlepiAn
  • Haemodynamics of pulsatile and continuous flow pumps
    H. Schima
  • The return to the pulse with current centrifugal pumps: clinical implications
    W. Dembitsky
  • Do we think we can improve outcomes with adding pulsatility to our pulseless pumps?
    G. Wieselthaler
14.30-15.00 Invited Lectures
Device Development
Chairs: V. Tchantchaleishvili, M. Slaughter, T. Tsukiya
  • MCS development: from design to commercial availability
    U. Steinseifer
  • Pushing towards a ‘mechanical’ rotary Total Artificial Heart concept
    D. Timms
  • Pushing towards a ‘biological’ Total Artificial Heart concept
    G. Gerosa
15.00-16.30 Selected Abstracts 1
Device Development
Chairs: V. Tchantchaleishvili, K. Fukamachi, V. Tarzia
  • A total artificial heart as a physiological sensor
    M. Diedrich (GERMANY)
  • Experimental validation of the fluid-structure interaction simulation of an implantable total artificial heart (CARMAT-TAH)
    F. De Gaetano (ITALy)
  • A ventricular decompressing apparatus with percutaneous catheters & paracorporeal pumping; using robotic materials to create intracorporeal & extracorporeal loops enabling simultaneous ventricular assist & ECMO
    K. V. Singru (INDIA)
  • Reproducible model for chronic stable heart failure in ovine species
    C. Torregroza (GERMANY)
OCTOBER 21 - Imperiale Hall

- Population based engineering to treat the maximum number of patients  
  S. Sonntag (Germany)
- Compact linear peristalsis: non-pneumatic peristaltic occlusion as a mechanism for blood propulsion  
  M. Slepian (USA)
- Universal ventricular assist device for right and left circulatory support  
  J. Karimov (USA)
- Evaluation of intraventricular flow dynamics with a short-term intraventricular balloon pump  
  A. Boone (Australia)
- A new point-of-care microfluidic device for the assessment of residual platelet reactivity in patients on antiplatelet therapy  
  S. Bozzi (Italy)

16.30-16.50 Coffee & Poster Exhibition 1

16.50-17.20 Keynote Lecture II  
CHAIRS: L. Potena, M. Loeb
Heart Replacement Therapy: Mechanical, Biological or Regenerative?  
D. Taylor / Comment by M. Loeb

17.20-18.00 Invited Lectures  
PARTIAL SUPPORT  
CHAIRS: L. Hunziker, C. Russo, L. Careddu
- Surgical or percutaneous interventional treatment?  
  B. Meyns
- Percutaneous VADs: options  
  G. Lebreton
- Novel solutions and applications  
  A. Fiane
- Miniature LA Assist Device (VADovations)  
  K. Dasse

18.00-19.00 Selected Abstracts 2  
PARTIAL SUPPORT AND FULL VAD SUPPORT  
CHAIRS: T. Siess, L. Hunziker, M. Attisani
- Long term support by a partial support device  
  A. Barbone (Italy)
- Impella supported cardiac surgery  
  P. Masiello (Italy)
- Revivent less invasive left ventricular enhancement (live): single center mid-term results  
  P. Klein (Netherlands)
- Different profiles, in patients implanted with last generation centrifugal pump, identified according to a new hemodynamic index  
  A. Montalto (Italy)
- First acute in vivo experience with EverHeart LVAD  
  G. Aber (USA)
- Minimally invasive implantation of left ventricular assist devices: a tool to increase survival in women  
  S. Mariani (Germany)

19.00-20.00 Poster Exhibition 2

19.00-20.00 ISMCS General Assembly  
(all ISMCS members are invited to participate)
**08.00-09.00 Invited Lectures**

**Short-term MCS and ECLS**

*Chairs: F. Musumeci, A. El Banayosy, A. Ouattara*

- ELSO registry report: perspectives  
  R. Lorusso
- Cardiogenic shock: ECLS treatment strategies  
  F. Pappalardo
- Recovery from cardio-pulmonary shock with short-term circulatory support: driving the needle forward  
  E. Rame
- Beyond ECLS - Transition to implantable long-term LVAD  
  D. Saeed
- Donor hearts preservation and assessment with Organ Care System  
  S. Tsui
- Extracorporeal Circulation Circuits in Surgery: look at History to get the Present  
  L. Di Marco

**10.00-10.30 Selected Abstracts 4**

**Patient care**

*Chairs: T. Tsukiyama, S. Sciacca, E. Pilato*

- Rehabilitation-related outcomes in patients with LVADs: functional capacity, disability, and quality of life  
  M. Polastri (Italy)
- Echocardiographic assessment of right ventricular failure in continuous flow LVAD patients: a systematic review and meta-analysis of observational studies  
  M. Benedetto (Italy)
- Awake extracorporeal membrane oxygenation (ECMO) in patients with refractory cardiogenic shock  
  K. Umap Kumar (UK)
12.00-12.30 Keynote lecture III  
**Chairs:** C. Sivathasan, G. Faggian  
**Heart Transplantation vs. Mechanical Circulatory Support: current perspectives**  
M. Slaughter / Comment by M. Frigerio

12.30-13.00 Round table II  
**MCS registries in the world**  
**Chair:** B. Meyns  
INTERMACS/STS, EUROMACS, MCS Asia/Pacific, MCS in Japan  
R. Kormos, T. de By, C. Sivathasan, K. Dasse, M. Ono, F. Grigioni

13.00-13.30 Poster exhibition 4

13.30-14.30 Lunch MCS Symposium II  
**Medtronic**  
*Sponsored by Medtronic through an Unrestricted Educational Grant*  
**Chairs:** C. Mahr, L. Klein, M. Pilato  
- LVAD adverse events: still a debate  
  A. Simon  
- Tips and tricks for VAD placement and removal  
  E. Potapov  
- Adult LVAD systems reliability for pediatric population  
  A. Lorts  
- LVAD concept as monitoring system  
  F. Moscato  
- Telemonitoring and smart systems  
  L. Klein

14.30-15.20 Invited lectures  
**Hemocompatibility**  
**Chairs:** G. Wieselthaler, M. Slepian, U. Livi  
- “It’s Hemocompatibility”,  
  “Not Thrombosis and/or Bleeding”  
  M. Slepian  
- AVWS and beyond  
  C. Bartoli  
- Biocompatibility of current continuous and pulsatile pumps  
  I. Netuka  
- Human Interface and Usability associated with MCS  
  T. Schröglhofer

15.20-16.30 Selected abstracts 5  
**Hemocompatibility**  
**Chairs:** J. Karimov, U. Kertzscher, A. Iacovoni

- Investigation of blood flow and thrombosis within oxygenators using x-ray particle image velocimetry  
  I. Pinar (Australia)
- Von Willebrand factor size and function predict the risk of LVAD-associated bleeding  
  S. Hennessy-Strahs (USA)
- Platelet transcriptome in advanced heart failure patients following mechanical unloading  
  A. Koliopoulos (USA)
- Standardizing MCS testing loop design: effect of constituent components on overall system thrombogenicity  
  M. Slepian (USA)
- Inflow cannula design impacts to hemocompatibility related adverse events  
  T. Motomura (USA)
- Influence of different antithrombotic regimens on prothrombotic platelet function in patients on mechanical circulatory support with left ventricular assist device  
  F. Consolo (Italy)
- The effect of shear rate and exposure time on the formation size of human platelet aggregations  
  M. Inoue (Japan)

16.30-16.50 Coffee & Poster exhibition 5

16.50-17.20 Keynote lecture IV  
**Chairs:** P. Leprince, G. Gerosa  
**Regenerative medicine and 3D bioprinting for human space exploration and planet colonisation**  
T. Ghidini
17.20-18.10 Invited lectures

**Total Artificial Heart**

**Chairs:** P. Leprince, G. Gerosa

- Total Artificial Heart: temporary bridge or definitive solution?  
  J. Copeland
- New Total Artificial Heart Systems  
  P. Leprince
- The ‘Cleveland’ TAH concept  
  K. Fukamachi
- The Zurich experience with two different BVAD strategies  
  M. Wilhelm

18.10-19.30 Selected abstracts 6

**Long-term LVAD & BiVAD**

**Chairs:** D. Timms, M. Masetti, G. Di Giarmarco

- Minimally invasive off pump left ventricular assist device implantation in redo patients with extrapericardical approach  
  M. Attisani (Italy)
- Right atrial vs right ventricular HeartWare HVAD placement in patients with left-sided HeartWare HVAD: a systematic review  
  T. J. O’Malley (USA)
- Nine-year single-center experience with the HeartWare left ventricular assist device system  
  A. Dell’Aquila (Germany)
- Outflow graft twist occlusion in the HeartMate 3 left ventricular assist system in 7 cases: analysis of potential mechanisms using computed tomography  
  N. Slowiowski (Germany)
- Continuous-flow left ventricular assist device outflow graft stenting: indications and outcomes  
  C. T. Wood (USA)
- Two year follow-up after left ventricular assist device exchange to HeartMate 3  
  G. Dogan (Germany)
- Concomitant cardiac procedures during implantation of long-term continuous-flow LVADs: a EUROMACS analysis  
  G. Gioozzi (Italy)
- Results of primary biventricular support: an analysis of data from the EUROMACS-registry  
  J. Vierecke (USA)

20.30 Conference Dinner (Awards)
OCTOBER 23 - Imperiale Hall

08.00-09.00 Invited lectures
**PEDIATRICS**
Chairs: G. Gargiulo, C. Pace Napoleone, A. Lorts, P. Wearden
- PEDIMACS Registry: outcomes
  A. Lorts
- Total Artificial Heart therapy in pediatrics
  M. Schweiger
- An open window towards permanent support with infant pumps
  A. Amodeo
- Pediatric VAD outpatients management
  J. Conway
- Heart Transplantation or MCS in congenital heart disease?
  A. Hasan

09.00-10.00 Selected abstracts 7
**PEDIATRICS**
Chairs: M. Schweiger, L. Galletti, E. Angeli
- Does axial flow confer an advantage to adult congenital heart disease transplant candidates?
  A. Lorts (USA)
- Outcomes of continuous-flow ventricular assist devices in children: a single-centre experience
  J. Abdullah (UK)
- Twenty years of paediatric venoarterial ECMO
  M.T. Cascarano (Italy)
- Age-based differences in Bivalirudin dose requirements for pediatric extracorporeal circulatory support devices
  J. Teruya (USA)
- Novel paediatric rotary blood pump sputnik
  M. Denisov (Russian Federation)
- Hemolysis testing and acute animal experiment of next generation ultra-compact centrifugal pediatric VAD with full magnetic levitation
  M. Osa (Japan)

10.00-10.20 Coffee & Poster exhibition 6

10.20-10.50 Keynote lecture V
**SIMULATION**
Chairs: A. Lorts, M. Padalino, J. Karimov
History and innovations in pump development for congenital heart disease
K. Dasse

10.50-11.30 Invited lectures
**SIMULATION**
Chairs: M. Slepian, M. Feccia, G. Tansley
- CFD blood flow simulation: strengths and limitations
  A. Redaelli
- Impact of LVAD cannulation on blood flow and stagnation
  A. Aliseda
- Challenging solutions in congenital heart disease
  M. Granegger

11.30-13.00 Selected abstracts 8
**SIMULATION**
Chairs: M. Granegger, G. Tansley, M. Feccia
- Asynchronous ventricular volume change during continuous-flow left ventricular assist device support
  J. Shimamura (Japan)
- Implications of LVAD supported intraventricular flows
  S. Liao (Australia)
- Numerical analysis of hemodynamic-related thrombogenic potential of the HeartMate 3 and HeartWare HVAD: mechanistic insights into observed clinical outcomes
  F. Consolo (Italy)
- Towards an implantable lung - Using multiscale simulations to evaluate possible connection options
  K. Hugenroth (Germany)
- CFD blood flow simulation: strengths and limitations
  A. Redaelli (Italy)
- Investigation of pump speed modulation and its timing on the risk of ventricular thrombosis
  T. Khienwad (Austria)
- Investigation of the apical flow field under left ventricular assist device support
  M. Ghodrati (Austria)
Intraoperative use of 3D printed exoskeleton in LVAD inflow cannula positioning-first in human cases
I. Hartyánszky (Hungary)

Spiral-Flow-Generated Circulatory Mechanical Assistance
J.Y. Kresh (USA)

13.00-14.00 Lunch MCS Symposium III
Abbott

LVAD therapy: long-term outcomes and challenges
R. Kormos

Technical solutions in congenital heart disease
A. Hasan

LVAD therapy for all?
W. Dembitsky

Myocardial Recovery: What Have We Learned and Future Directions
S. Drakos

Telemonitoring and smart systems II
K. Bourque

14.00-14.30 Keynote lecture VI
Chairs: F. Moscato, T. Masuzawa

Neuroprosthetics and Bionics, from fiction to science
S. Micera

14.30-16.15 Invited lectures

Devices Update
Chairs: K. Dasse, M. Onodera, M. Baiocchi
Abbott - K. Bourque
Abiomed - T. Siess
Berlin Heart - J.C. Woodard
BioVentrix - T. Pillay
CorWave - C. Botterbusch
Eurosets - M. Belliato
Evaheart - T. Motomura
Jarvik Heart-Leviticus Cardio - P.W.J. Hincliffe
Medtronic - N. Voskoboynikov
Torvad - J. Gohean, E. Larson
CH Biomedical - J. Teal

16.15-16.35 Coffee & Poster exhibition 7

16.35-17.25 Invited lectures

Smart Pumping, Monitoring, Control
Chairs: H. Schima, F. Consolo, G. Tansley
Exercise limitations in LVAD patients: insights from hemodynamic simulations
L. Fresiello

In-vitro modelling for pump control evaluation: strengths and limitations
S. Gregory

Elimination of driveline: transcutaneous energy transmission projects
S. Schueler

New Technologies and wearables for MCS
M. Slepian

17.25-18.55 Selected abstracts 9
Smart Pumping, Monitoring, Control
Chairs: J. Karimov, F. Consolo, L. Botta

Development of a percutaneous access device for preventing driveline infection
T. Motomura (USA)

Evaluation of the pulse wave from the face of the patients with rotary blood pump in the outpatient clinic
T. Yambe (Japan)

Quantification of circadian loss in HVAD patients using controller log file data
V. Ramos (USA)

HVAD log files: pump power signature
N. Vasudevan (USA)

Time-frequency analysis of the LVAD log files enhances early diagnosis of pump thrombosis
F. Consolo (Italy)

Changes in waveforms during six minutes walking test in patients with H-VAD: a new marker of functional capacity
S. Boschi (Italy)

Pressure estimation with the TORVAD using a model-based Kalman filter
J. Gohean (USA)

The role of time in therapeutic range (TTR) of anticoagulation in reducing thrombosis’ risk in LVAD patients
M. Masetti (Italy)

Evolution and clinical adoption of the autologs system, an automated analysis for enhanced patient management
M. Brown (USA)

19.00-19.15 Closing ceremony
A. Loforte, A. El Banayosy
HIGHLIGHTS
Small group problem based scenarios covering management and trouble shooting of common issues surrounding MCS devices
Small group exercises led by experienced VAD Coordinators, HeartFailure Cardiologists, and Cardiac Surgeons who specialize in MCS support

Devices covered in the scenarios include:
- Medtronic HVAD
- Abbott HeartMate 3
- Abiomed Impella

All group exercises will be conducted in a manner that encourages participation by the attendees. Group interaction is the basis for success of this educational experience.

OBJECTIVES
The objectives of this course are designed to meet the Joint Commission’s “Goals of Annual Competency” for MCS personnel.
- Review basic concepts surrounding MCS technology
- Review critical thinking skills necessary in assessment and management of patients supported by MCS technology
- Assessment of the participant’s knowledge regarding the technical information and procedures required operating specific MCS devices
- Confirmation of proficiency of operation of specific MCS devices

Target Participants
This course is intended for any healthcare professional who:
- has assumed a role on a multi-disciplinary MCS team
- cares for patients supported by MCS technology
- want to boost their functional knowledge on MCS problem solving

Registration fees

<table>
<thead>
<tr>
<th>PHYSICIAN/ENGINEER</th>
<th>€ 120.00 + VAT (€ 146.40 VAT included)</th>
</tr>
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<tbody>
<tr>
<td>NURSE</td>
<td>€ 80.00 + VAT (€ 97.60 VAT included)</td>
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OCTOBER 23 - PARALLEL SESSION

Urano-Nettuno-Marte Rooms
Welcome Remarks
R. Hetzer
08.00-08.10

Heart transplantation: does the heart last?
R. Hetzer
08.10-08.40

VAD in heart failure in adults: Is myocardial recovery a realistic goal?
M. Dandel
08.40-09.10

The mitral valve in heart failure: fix it or forget it?
M. Loebe
09.10-09.40

Coffee break
09.40-10.00

VAD in heart failure in children: bridge to heart transplantation or myocardial recovery?
E.M. Javier Delmo
10.00-10.20

Heart failure: challenging cases and solutions
A. Loforte
10.20-10.40

Stem Cell application in heart failure: alternative to surgery?
G. Steinhoff
10.40-11.00

Interventional transcatheter treatment procedures (Mitraclip, Cardioband, TAVI) in heart failure
F. Saia
11.00-11.20

Hybrid transcatheter left ventricular reconstruction for the treatment of ischaemic cardiomyopathy
M. Biffi
11.20-11.40

The anesthesiologist: role and view in treatment of heart failure
M. Baiocchi
11.40-12.00

Conventional cardiac surgery in patients with endstage coronary artery disease: yesterday and today
H. Hausmann
12.00-12.20

Experts’ Discussion
12.20
INTERNATIONAL FACULTY

A. Aliseda (Washington DC, USA)
C. Amarelli (Naples, Italy)
A. Amodeo (Rome, Italy)
E. Angeli (Bologna, Italy)
M. Attisani (Turin, Italy)
M. Baiocchi (Bologna, Italy)
C. Bartoli (Philadelphia, PA, USA)
T. Berg (Aachen, Germany)
S. Bhavsar (Danvers, MA, USA)
M. Biffi (Bologna, Italy)
S. Boschi (Bologna, Italy)
L. Botta (Bologna, Italy)
K. Bourque (Charleston, SC, USA)
L. Careddu (Bologna, Italy)
D. Christensen (Philadelphia, PA, USA)
F. Consolo (Milan, Italy)
J. Conway (Alberta, Canada)
J. Copeland (San Diego, CA, USA)
M. Dandel (Berlin, Germany)
K. Dasse (Louisville, KY, USA)
T. De By (Windsor, UK)
W. Dembitsky (San Diego, CA, USA)
R. Di Bartolomeo (Bologna, Italy)
G. Di Giammarco (Chieti, Italy)
L. Di Marco (Bologna, Italy)
G. Dogan (Hannover, Germany)
S. Drakos (Salt Lake City, UT, USA)
A. El Banayosy (Oklahoma City, OK, USA)
G. Faggian (Verona, Italy)
M. Feccia (Rome, Italy)
A. Fiane (Oslo, Norway)
O.H. Frazier (Houston, TX, USA)
L. Fresiello (Leuven, Belgium)
M. Frigerio (Milan, Italy)
K. Fukamachi (Cleveland, OH, USA)
L. Galletti (Bergamo, Italy)
G. Gargiulo (Bologna, Italy)
M. Gargiulo (Bologna, Italy)
G. Gerosa (Padua, Italy)
T. Ghidini (The Hague, Netherlands)
M. Granegger (Zurich, Switzerland)
S. Gregory (Melbourne, Australia)
F. Grigioni (Rome, Italy)
A. Hasan (Newcastle, UK)
H. Hausmann (Coswig, Germany)
R. Hetzer (Berlin, Germany)
P.L. Hsu (Suzhou, China)
L. Hunziker (Bern, Switzerland)
A. Iacovoni (Bergamo, Italy)
E.M. Javier Delmo (Berlin, Germany)
J. Karimov (Cleveland, OH, USA)
F. Kaufmann (Berlin, Germany)
T. Kaufmann (Aachen, Germany)
U. Kertzscher (Berlin, Germany)
L. Klein (San Francisco, CA, USA)
R. Kormos (Pittsburgh, PA, USA)
E. Larson (Austin, TX, USA)
G. Lebreton (Paris, France)
P. Leprince (Paris, France)
U. Livi (Udine, Italy)
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C. Russo (Milan, Italy)
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F. Saia (Bologna, Italy)
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T. Schlöglhofer (Wien, Austria)
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S. Schueler (Newcastle, UK)
M. Schweiger (Zurich, Switzerland)
S. Sciacca (Palermo, Italy)
J. Shimamura (Osaka, Japan)
T. Siess (Danvers, MA, USA)
A. Simon (Harefield, UK)
C. Sivathasan (Singapore)
M. Slaughter (Louisville, KY, USA)
M. Slepian (Tucson, AZ, USA)
D. Sodhani (Aachen, Germany)
S. Sonntag (Munich, Germany)
G. Steinhoff (Rostock, Germany)
U. Steinseifer (Aachen, Germany)
A. Stephens (Melbourne, Australia)
G. Tansley (Goald Coast, Australia)
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Royal Carlton Hotel
Via Montebello, 8 - 40121 Bologna (Italy)
The Hotel is in the centre of Bologna, just a short walk from Piazza Maggiore and the Two Towers.

How to get to Bologna
By Plane
Several airlines connect Bologna with many Italian and foreign cities. The international airport “G. Marconi” is located just 5 km from the Congress Venue and the city centre, about 15 minutes by taxi.
Taxi: +39 051.372727 - +39 051 4950

By Train
The Bologna Central Station is one of the largest railway interconnections in both Italy and Europe. It is a 5 minutes walking from Royal Carlton Hotel.

By Car
The Royal Carlton Hotel is in the centre of Bologna, outside the restricted traffic zone. From motorway A1, A13, A14: from the ring road exit n. 7 (Via Stalingrado) or exit Bologna Fiera direction city centre of Bologna.
To reach the Hotel using satellite navigation, it should be set for Via Milazzo 6 to avoid the restricted traffic zone. A toll parking is available inside the hotel.

OFFICIAL LANGUAGE
The official language of the Congress is English.

REGISTRATION
Online registration at www.noemacongressi.it

Registration fees

**CONGRESS**

Physician/Engineer ISMCS Member
€ 450,00 + VAT (€ 549,00 VAT included)

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SOCIAL PROGRAM

Conference Dinner will take place on October 22, h. 20.30, at Palazzo Gnudi (Via Riva di Reno, 77).
Fee: € 45,00 + VAT (€ 54,90 VAT incl.)
**HOTEL RESERVATION**

It is possible to make an online reservation at www.noemacongressi.it together with the registration to the Congress.

A number of rooms have been booked for Congress participants at the hotels listed below.

**Royal Hotel Carlton 4***
Via Montebello, 8 - 40121 Bologna
Ph.: +39 051 249361
DUS: € 139,00
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Rooms will be assigned on a first-come first-served basis depending on availability. Confirmation will be sent to each applicant.

Please note that tourist tax have to be paid directly at check-out.

Booking fee: € 25,00 + VAT (€ 30,50 VAT incl.).

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**AWARDS**

Following tradition a number of awards are to be presented at the 27th Annual Meeting of the ISMCS in Bologna.

**Helmut Reul Young Investigator Encouraging Award**

This award is open to young investigators below 35 years old, who have submitted at least one successful abstract.

The top 5 scorers of the abstracts will make their presentations on Day 1, after the Opening Ceremony. The judges appointed by the Board will select the award winner. The winner will receive US $1,000.

**Sezai Award for innovation**

The award is granted to the individual who contributes to the most innovative paper.

There is no age restriction for this award. The winner will receive US $500

**Asia Pacific ISMCS Young Investigator Award**

This award is open to young investigators below 35 years old from Asia Pacific to promote rotary blood technology in Asia Pacific. The award will be based on scores given by the Organizing Committee.

**ISMCS Poster Award**

The best poster will be decided upon the judges selected from the Board members.

**ICMT Award**

This prestigious award is bestowed to the Company that has given the most significant contribution to the advancement of the field.
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