



ESAO

European Society for Artificial Organs
XXXII Congress

&



IFAO

International Federation for Artificial Organs



Bologna (Italy), October 5-8, 2005

Congress President: S. Stefoni



FINAL PROGRAM



Cover: the Seal of the University of Bologna (A.D. 1088)



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Dear Colleagues,

We are pleased and honored to welcome you to the XXXII Congress of the European Society for Artificial Organs (ESAO), which is held in Bologna from 5 to 8 October, 2005. The Congress is combined with the First Congress of the International Federation for Artificial Organs (IFAO), which is a newly formed ISAO – derived umbrella structure, embracing ESAO, the American Society for Artificial Internal Organs (ASAIO) and the Japanese Society for Artificial Organs (JSAO).

Bologna has already hosted ESAO Congresses in 1983, 1990 and 1998. We would like to thank the ESAO and IFAO Boards of Governors and Officers for having chosen us as hosts yet again, thus reinforcing a cultural tradition which links Bologna, and its 9 hundred-year-old University, to artificial organ research and clinical application. We would also like to thank the Congress Scientific Committee and the ESAO Working Group Leaders. A particular appreciation for the cooperation we received from G. Rakhorst, H. Klinkmann and J. Vienken, on behalf of ESAO, and G. von Sengbusch from the IFAO part. We do hope that the Congress days will be stimulating and productive in cultural, scientific and human terms. We wish you a nice stay in Bologna.

Dr. A. Buscaroli, M.D.
Congress General Secretary



Prof. S. Stefoni, M.D.
Congress President



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c/o Fresenius Medical Care

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● **IFAO Secretary Treasurer:** G. von SENGBUSCH

c/o GKSS Research Center

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Tel. +49 4133 210025 • Fax +49 4133 210026

E-mail: sengbusch@gkss.de

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ESAO WORKING GROUP LEADERS

Liver I. SAUER, Berlin

Heart J. CANIZO, Madrid

Apheresis B. STEGMAYR, Umeå

Education D. FALKENHAGEN, Krems

Uremic Toxins R. VANHOLDER, Ghent

ESAO SOCIETY

- An ESAO Desk will be located in the Registration area and will be pleased to provide interested participants with all information concerning the Society. Membership fees for 2005 and 2006 can be paid at the ESAO Desk. Please refer to the Desk for any other problem concerning your membership or journal delivery.
- Voting procedures. A ballot station will be opened on October 6 from 10:00 to 18:00 and October 7 from 10:00 to 15:00. Only paid up ESAO members will be entitled to vote.
- The ESAO General Assembly will be held on Friday October 7 from 18:15 to 19:00 p.m. (Palazzo dei Congressi, Room Italia).

2006 ESAO CONGRESS

The XXXIII Congress of the European Society for Artificial Organs (ESAO) will be held in Umeå, Sweden from 21 to 24 June, 2006.

The Congress will be combined with a meeting of the European Society for Haemapheresis (ESFH, June 20 and 21). Further information:

Prof. Bernd Stegmayr, Congress President

Medicinkliniken, Norrlands Universitetssjukhus

Umeå, Sweden

Fax: +46 90 134550

web site: www.esao.org - www.esfh.org

ESAO PRESIDENTS

1974	E. Bucherl (Germany)
1975-1978	D. Melrose (UK)
1978	A. Senning (Switzerland)
1978-1980	Ch. Hahn (Switzerland)
1980-1982	I. Rygg (Denmark)
1982-1984	D. Laurent (France)
1984-1986	V. Bonomini (Italy)
1986-1988	V. Bonomini (Italy)
1988-1990	H. Klinkmann (Germany)
1990-1992	S. Raptis (Greece)
1992-1994	D. Loisançe (France)
1994-1996	H.J. Gurland (Germany)
1996-1998	S. Stefoni (Italy)
1998-2000	K. Affeld (Germany)
2000-2002	D. Falkenhagen (Austria)
2002-2004	R. Vanholder (Belgium)
2004-2006	G. Rakhorst (The Netherlands)

ESAO CONGRESSES

1974	West Berlin	1985	Athens	1996	Warsaw
1975	West Berlin	1986	Avignon	1997	Budapest
1976	London	1987	Munich	1998	Bologna
1977	London	1988	Prague	1999	Edinburgh
1978	Zurich	1989	Brussels	2000	Lausanne
1979	Geneva	1990	Bologna	2001	Ghent
1980	Geneva	1991	Vienna	2002	Vienna
1981	Copenhagen	1992	Rhodes	2003	Aachen
1982	Brussels	1993	Amsterdam	2004	Warsaw
1983	Bologna	1994	Barcelona	2005	Bologna
1984	Alpbach	1995	Berlin	2006	Umeå

Blood Purification

- Apheresis
- Dialysis
- Detoxification

Mechanical Circulatory Support

- Total artificial heart
- Cardiac assist
- Heart valves
- Modelling and fluid dynamics

Regenerative Medicine

- Stem cells
- Tissue engineering
- Bioreactors
- Cell therapy

Biomaterials and Biocompatibility

- Polymers and scaffolds
- Surface modification
- Drug delivery systems

Organ Transplantation

- Bridging
- Intensive care
- Immunosuppression
- Immunomodulation

Metabolic and Respiratory Support

- Artificial liver
- Artificial lung
- Artificial pancreas

Artificial Sensory Organs

- Neuroprosthesis
- Eye, Ear

Date and Venue

October 5-8, 2005
Palazzo della Cultura e dei Congressi
Piazza della Costituzione, 4/a
I 40128 Bologna

Scientific Secretariat

Nephrology, Dialysis and Renal Transplant Unit
S. Orsola University Hospital
Via Massarenti, 9 - I 40138 Bologna
E-mail: sergio.stefoni@unibo.it
Fax +39 051 340871

Organizing Secretariat

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E-mail: info@omniameeting.com
Web Site: www.omniameeting.com

Congress Website

www.omniameeting.com/esao2005

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ESAO 2005

GENERAL

October 5, Wednesday		October 6, Thursday
Morning	Educational Courses ESAO Working Group	Free Communications
		Plenary Lecture
Lunch	Educational Courses ESAO Working Group	Symposia
		ESAO Corporate Members' Symposium
Afternoon	Opening Ceremony	Poster Sessions
	Award Presentation	Symposia
	Plenary Lectures	Free Communications
	IFAO Symposium	Symposia Free Communications
Evening	Get together Buffet Dinner	

SCHEDULE

October 7, Friday	October 8, Saturday
Free Communications	Free Communications
Plenary Lecture	Plenary Lecture
Symposia Free Communications	Symposia Free Communications
Lunchtime Symposia	Closing Ceremony
Poster Sessions	
Symposia Free Communications	
Symposia Free Communications	
ESAO General Assembly	
Festive Dinner	

Wednesday, October 5

08:30 - 19:00	REGISTRATION
11:00 - 13:30	EDUCATIONAL COURSE # 1
11:00 - 13:30	EDUCATIONAL COURSE # 2
11:00 - 13:30	ESAO WORKING GROUP
15:00 - 16:00	OPENING CEREMONY
	AWARD PRESENTATION
16:00 - 17:00	PLENARY LECTURES
	<i>Piano interval</i>
17:30 - 19:00	IFAO SYMPOSIUM
19:30 - 21:30	GET TOGETHER BUFFET DINNER

Thursday, October 6

08:30 - 10:15	FREE COMMUNICATIONS
10:15 - 10:45	PLENARY LECTURE
10:45 - 11:15	<i>Break</i>
11:15 - 12:45	SYMPOSIA
13:00 - 14:30	ESAO CORPORATE MEMBERS' SYMPOSIUM
14:30 - 15:30	POSTER SESSIONS
15:30 - 16:30	SYMPOSIA AND FREE COMMUNICATIONS
16:30 - 16:45	<i>Break</i>
16:45 - 18:15	SYMPOSIA AND FREE COMMUNICATIONS

Friday, October 7

08:30 - 10:15	FREE COMMUNICATIONS
10:15 - 10:45	PLENARY LECTURE
10:45 - 11:15	<i>Break</i>
11:15 - 12:45	SYMPOSIUM AND FREE COMMUNICATIONS
13:00 - 14:30	LUNCH TIME SYMPOSIA
14:30 - 15:30	POSTER SESSIONS
15:30 - 16:30	FREE COMMUNICATIONS
16:30 - 16:45	<i>Break</i>
16:45 - 18:15	SYMPOSIA AND FREE COMMUNICATIONS
18:15 - 19:00	ESAO GENERAL ASSEMBLY
19:30 - 22:30	FESTIVE DINNER

Saturday, October 8

08:30 - 10:15	FREE COMMUNICATIONS
10:15 - 10:45	PLENARY LECTURE
10:45 - 11:15	<i>Break</i>
11:15 - 12:45	SYMPOSIA AND FREE COMMUNICATIONS
12:45 - 13:00	CLOSING CEREMONY

The XXXII ESAO/IFAO Congress Scientific Program will include several types of Sessions, all related to the Congress topics.

- Plenary Lectures
- Symposia
- Lunchtime Symposia
- ESAO Working Group Meeting
- Pre-Congress Educational Courses
- Free Communications
- Poster Presentation

Plenary Lectures

- What new developments in biotechnology will replace organ replacement?
- System biology and regenerative medicine: a dream to become all centenarians?
- Are ventricular assist devices (VADs) fit for a destination therapy?
- Nanotechnology in medical applications: dreams and promises
- Current concepts in biomaterial research: have dreams come true?

Symposia

- The health and wealth of nations - coping with limited resources (*IFAO sponsored*)
- Towards destination therapy with VADs: achievements, aims and obstacles
- Artificial liver
- Blood purification in the Intensive Care Unit
- Technology for tomorrow (*ESAO Corporate Members*)
- Citrate anticoagulation: an update
- Practical issues and clinical results of hemodiafiltration
- Pulsatile vs. non-pulsatile mechanical cardiac support
- Apheresis
- Artificial vision by electrical stimulation of the visual system
- New frontiers in organ substitution
- Tissue engineering
- Uremic toxins
- Tissue engineering: regulatory affairs and successful practical applications

Lunchtime Symposia

On October 7, from 13:00 to 14:30, there will be 3 lunchtime Symposia sponsored and organized by qualified Companies of the biomedical field. A light lunch will be available.

- The clinical use of sorbents and sensors in medicine (Sponsored by Bellco)
- Treatment of acute/chronic liver failure: medicine or technology? (Sponsored by Hospal)
- Peritoneal ultrafiltration: a viable therapy for refractory heart failure (Sponsored by Baxter)

ESAO Working Group Meeting

- Heart Support

Pre-Congress Educational Courses

- Multidisciplinary approach to blood purification
- New trends in transplant immunosuppression

Free Communications

The allotted time for Free Communication presentations is 10 minutes, followed by a 5 minute discussion. Speakers are kindly requested to strictly adhere to their allotted time. Please note that it is essential, for the smooth running of the Sessions, that all Speakers hand in their presentations in due time.

Poster Presentation

The Poster area will be located in the “Padiglione Polivalente”, which is part of the Palazzo dei Congressi. Dimensions of Posters are as follows: height cm 100, width cm 80. Authors are kindly requested to mount their Poster on the assigned board from Wednesday October 5 until 13:00 on Thursday October 6. Discussion will take place in two separate sessions on Thursday October 6 and on Friday October 7 from 14:30 to 15:30. Posters may be removed in the evening of Friday 7.

Slide Center

Only PC data projection will be available during the Congress. Slide projection will not be provided. Each room will be equipped with a laptop. Therefore, the use of personal laptop will not be allowed. Files must be prepared in Power Point 2000/2003 format on a Floppy Disk 1.44, or CD-Rom, or Pen Drive. It is essential, for the smooth running of the Sessions, that all Speakers hand in their presentations in due time.

Publication Policy

Abstracts (accepted or not) have been published in the October issue of the International Journal of Artificial Organs, the ESAO official Journal and in the September issue of Artificial Organs, official journal of IFAO. Authors (Lectures, Symposia, Free communications and Posters) are encouraged to submit the complete manuscript of their presentation to the journals.

Awards

During the Opening Ceremony the following Awards will be presented:

- The Osborne Award
- The E.S. Bücherl Award
- The ESAO Wichtig Award
- The G. Maurizzi Award

During the Festive Dinner the following Awards will be presented:

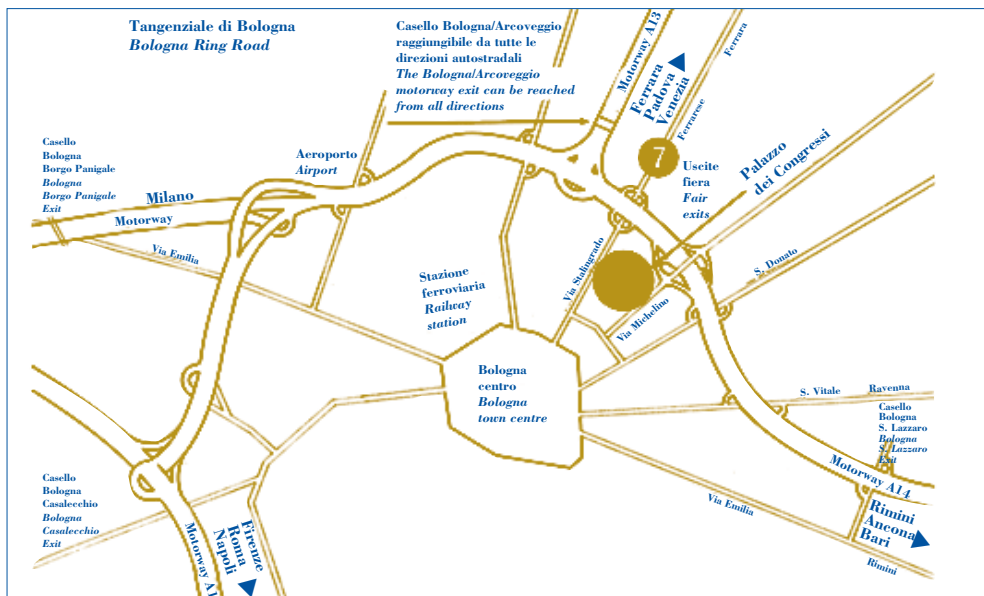
- Poster Awards
- ESAO Innovative Awards

Date

The Congress will be held on October 5-8, 2005.

Venue

The XXXII Congress of the European Society for Artificial Organs and the I Congress of the International Federation for Artificial Organs, and the associated Trade Exhibition, will be held at the Palazzo dei Congressi in Bologna, Piazza della Costituzione 4, at the Fiera District, about 15 minutes from the city-center. From the airport, Congress Venue can be easily reached in ten/fifteen minutes by taxi (10-15 Euro). From the Railway Station, participants can take buses 10, 38 or 39 to reach the Congress Venue. Participants arriving by car can use exit n. 7 of the Tangenziale “Fiera-Bologna Centro”. A number of toll car parks are available near the Palazzo dei Congressi.



Conference Center Facilities and Services

During the meeting hours the following facilities will be available in the Congress Area:

- Registration Desk
- Hotel Reservation Desk
- Information Desk
- Trade Exhibition
- ESAO and IFAO Desk
- Publication Desk
- Slide Center

Secretariat hours

Wednesday	Oct. 5	• 8:30 - 19:00
Thursday	Oct. 6	• 8:00 - 19:30
Friday	Oct. 7	• 8:00 - 19:00
Saturday	Oct. 8	• 8:00 - 15:00

Language

The official language of the Congress is English.

E.C.M.

For the Italian participants:

The Minister of Health has assigned 10 E.C.M. credits (Educazione Continua in Medicina).

Registration Procedure

Registration at the Congress is preferable in advance. For those who will pay before August 31, a reduced fee will be applied.

Registration forms can be sent by e-mail or fax along with the Registration Fee. Confirmation of Registration will be sent in the form of an invoice, stating the amount paid.

Registration Fees (20% VAT included) are as follows:

ESAO Members	€ 360,00
Non Members	€ 410,00
Trainees/Nurses	€ 200,00
Accompanying Person	€ 100,00

The Registration Fee for members, non-members and trainees includes all the following items:

- Opening Ceremony
- Badge, Congress bag and Program
- Access to the Lecture Halls
- Abstract Volume
- Get together Buffet Dinner (Palazzo dei Congressi)
- Festive Dinner (Palazzo dei Congressi)
- Certificate of attendance

The Registration Fee for an accompanying person includes:

- Opening Ceremony
- Get together Buffet Dinner (Palazzo dei Congressi)
- Festive Dinner (Palazzo dei Congressi)

Refunds

Refunds (70%) will be made for cancellations received before September 20, 2005. The date of the postmark will be used as the basis for considering refunds and any refunds due will be made after the Congress. No refunds for cancellation received after that date.

Certificate of Attendance

At the end of the Congress, a certificate of attendance will be given to participants on request, at the Registration Desk.

Badges

The official name badge must be worn for admission to all sessions.

Payment procedures

Payment of the Registration Fee must be made in Euro to the Organizing Secretariat, Omnia Meeting & Congressi Srl, in the following forms:

- Cash
- Credit Card

American Express, VISA/Mastercard and Diners International are accepted. Please complete the bottom of the Registration Form. The organization will charge your card and send regular invoice.

Trade Exhibition

A Trade Exhibition devoted to Artificial Organs and Pharmaceuticals will be held during the Congress, located in the Exhibition area of the Palazzo dei Congressi. It will be open every day of the Congress.

Exhibitors will greatly appreciate the visit of participants to the Congress for a mutual exchange of information, in a relaxing atmosphere, in front of a cup of coffee or other soft drinks.

Weather and dress

The weather in October in Bologna is usually pleasant; however, the evenings might be sometimes quite cold.

There is the possibility of rain, so an umbrella, light raincoat and comfortable shoes are advisable.

Shop opening hours

Shops in Bologna are open from 9.00 to 13.00 and from 15.30 to 19.30, from Monday to Saturday; some shops are closed on Thursday afternoon.

HOTEL ACCOMMODATION

In order to ensure a pleasant stay in Bologna, a number of hotels, all centrally located and easily reachable, have been made available for delegates and guests.

HOTEL CATEGORY	HOTEL	DOUBLE	DOUBLE ROOM SINGLE USE
<i>4 stars located in the historical center</i>	<i>INTERNAZIONALE</i>	€ 185,00	€ 165,00
	<i>JOLLY HOTEL DE LA GARE</i>	€ 200,00	€ 173,00
	<i>ROYAL CARLTON</i>	€ 230,00	€ 190,00
	<i>SOFITEL</i>	€ 196,00	€ 180,00
	<i>STAR HOTEL</i>	€ 219,00	€ 169,00
	<i>UNA HOTELS</i>	€ 220,00	€ 187,00
<i>4 stars located near the Congress Palace</i>	<i>AEMILIA</i>	€ 160,00	€ 125,00
	<i>HOLIDAY INN CITY</i>	€ 185,00	€ 160,00
	<i>SAVOIA</i>	€ 180,00	€ 150,00
<i>3 stars historical centre</i>	<i>HOLIDAY</i>	€ 145,00	€ 115,00
	<i>UNIVERSITY</i>	€ 145,00	€ 115,00
<i>3 stars near the Congress Palace</i>	<i>FIERA</i>	€ 150,00	€ 120,00
	<i>MAXIM</i>	€ 150,00	€ 120,00
	<i>EXPRESS BY HOLIDAY INN</i>	€ 110,00	€ 90,00
	<i>IMPERIAL</i>	€ 90,00	€ 75,00

The number of rooms in each hotel is limited.

Please indicate the first and second choice in the Booking Form; requests will be processed in order of arrival. Bologna Convention and Travel reserves the right to make reservations in hotels available when booking forms are received.

A deposit is required for each hotel booking. The deposit is the cost of the first night. The sum will be subtracted from the total amount at the final settlement of account. In the event of non-arrival, the hotel will automatically release the reservation and the payment will be non-refundable.

Convention and Travel will apply € 15,00 for each booked room as Agency fee.

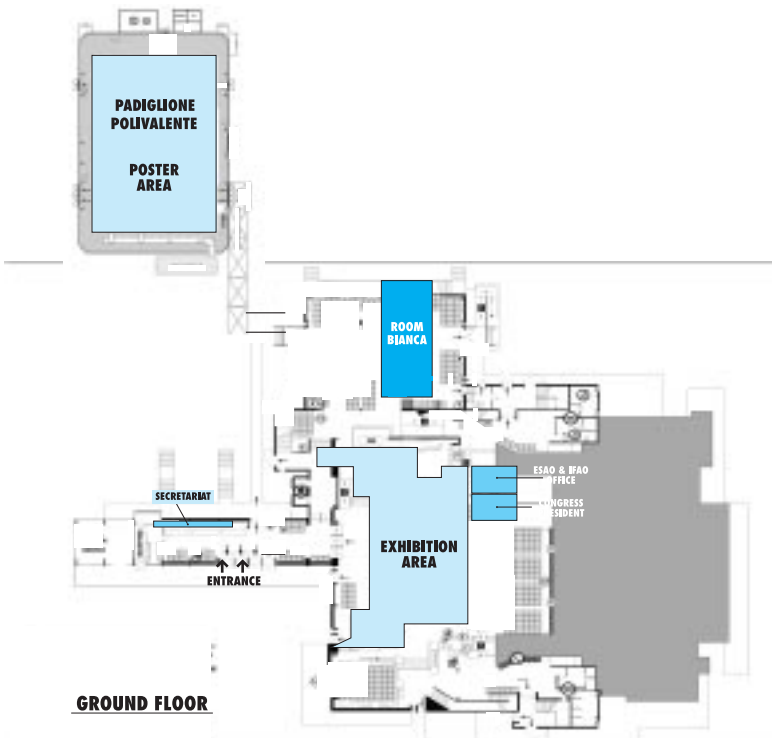
Make sure and reserve your room on time. Fill out the hotel booking and send it by fax or email not later than September, 5 along with the deposit based on the price for one night and the amount of the Agency fee.

Convention and Travel, upon receipt of the Accommodation Hotel Reservation Form will issue a **Booking Confirmation with the name and address of your hotel.**

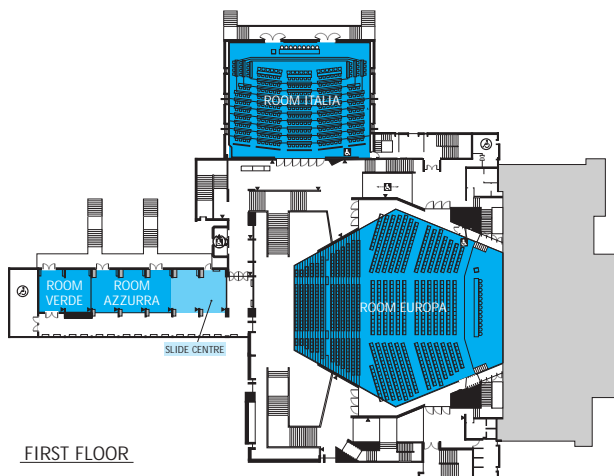
Accommodation deadline and hotel deposit payment: September 5, 2005 (please note that all unsold rooms will be released and reservations required after this date will be accepted upon availability).

Official check-in time for the hotels is 14:00 hours and check-out is noon.





GROUND FLOOR



FIRST FLOOR

The Organizing Committee acknowledges the kind support received towards the organization of the Congress from the following Institutions

- ABBOTT
- AMGEN
- ARROW INTERNATIONAL
- ASAHI KASEI MEDICAL
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- JANSSEN CILAG
- MEDTRONIC
- MILTENYI BIOTEC
- NOVARTIS
- ROCHE
- TERUMO
- VENTRACOR
- WYETH

SCIENTIFIC PROGRAM

Room Europa		Room Italia	Room Bianca	Room Azzurra	Pad. Polivalente
11:00 13:30		Educational Course # 1 Multidisciplinary approach to blood purification	Educational Course # 2 New trends in transplant immunosuppression	ESAO Working Group Heart support	Poster mounting
15:00 15:30	Opening Ceremony				
15:30 16:00	Award Presentation				
16:00 16:30	Plenary Lecture What new developments in biotechnology will replace organ replacement?				
16:30 17:00	Plenary Lecture System biology and regenerative medicine: a dream to become all centenarians?				
	Music interval				
17:30 19:00	IFAO Symposium The health and wealth of nations - coping with limited resources				
19:30 21:30					

11:00 - 13:30

EDUCATIONAL COURSE # 1

MULTIDISCIPLINARY APPROACH TO BLOOD PURIFICATION

Chairmen *H. Klinkmann (Rostock, Germany)*
V. Cambi (Parma, Italy)

Biofluid mechanics: fluid dynamics of catheters and shunts
D. Liesch, G. Pallotti (Munich, Germany; Bologna, Italy)

Electrophysiological response to dialysis: role of potassium dialysate concentration
A. Santoro (Bologna, Italy)

Complementary and alternative medicine (CAM) as a disciplinary approach to long-term maintenance hemodialysis therapy
T. Agishi, M. Akamatsu, Y. Okuno (Tokyo, Japan)

The Prometheus system for liver failure therapy: concepts, in vitro and in vivo results
J. Vienken (Bad Homburg, Germany)

MARS: emerging indications and clinical outcome
L. Bolondi (Bologna, Italy)

Clinical application of MARS
L. Coli (Bologna, Italy)

Room Bianca

11:00 - 13:30

EDUCATIONAL COURSE # 2

NEW TRENDS IN TRANSPLANT IMMUNOSUPPRESSION

*Chairmen R.J. Ploeg (Groningen, The Netherlands)
C. Ponticelli (Milan, Italy)*

Tacrolimus and cardiovascular risk
F. Citterio (Rome, Italy)

The evolving role of mTOR inhibitors in renal transplantation
F.P. Schena, G. Grandaliano (Bari, Italy)

Immunosuppression in living donors
R.J. Ploeg (Groningen, The Netherlands)

Everolimus: something more than an immunosuppressive agent
C. Ponticelli (Milan, Italy)

The use of enteric-coated mycophenolate sodium in renal transplantation
M.P. Scolari (Bologna, Italy)

11:00 - 13:30

ESAO WORKING GROUP

HEART SUPPORT

*Chairmen J.F. Del Cañizo (Madrid, Spain)
K. Affeld (Berlin, Germany)*

Electromechanical pulsatile pumps ACCOR TAH and VERSUS VAD
status update October 2005

P. Kwant (Aachen, Germany)

Development of bridging devices for organ transplantation

H. Maathuis (Groningen, The Netherlands)

Current developments in Madrid

J.F. Del Cañizo (Madrid, Spain)

Clinical and engineering VAD projects in Vienna

H. Schima (Vienna, Austria)

Less invasive mechanical support

B. Meyns (Leuven, Belgium)

Third generation MCS devices: preliminary experience

A. El-Banayosy (Bad Oeynhausen, Germany)

Future trends in the design of rotary blood pumps.

The options of technicians to solve the clinical problems with
current rotary blood pumps

J. Mueller (Berlin, Germany)

Internationally Co-tutored PhD course in Bio-Technology
and Bio-Engineering with specialisation in heart replacement therapy
and circulatory support

B.H. Walpoth (Geneva, Switzerland)

How to model left ventricular elastance during cardiac support?

P. Verdonck (Ghent, Belgium)

Room Europa

OPENING CEREMONY

- 15:00 - 16:00 **WELCOME ADDRESSES**
OSBORNE AWARD
E.S. BÜCHERL AWARD
ESAO-WICHTIG AWARD
G. MAURIZZI AWARD
- 16:00 - 16:30 **Plenary Lecture**
Chairman S. Takatani (Tokyo, Japan)
**WHAT NEW DEVELOPMENTS IN BIOTECHNOLOGY
WILL REPLACE ORGAN REPLACEMENT?**
M. Lysaght (Providence, USA)
- 16:30 - 17:00 **Plenary Lecture**
Chairman B. Walpoth (Geneva, Switzerland)
**SYSTEM BIOLOGY AND REGENERATIVE MEDICINE:
A DREAM TO BECOME ALL CENTENARIANS?**
C. Franceschi (Bologna, Italy)
- 17:00 - 17:30 **MUSIC INTERVAL**
- 17:30 - 19:00 **IFAO Simposium**

17:30 - 19:00

IFAO SYMPOSIUM

THE HEALTH AND WEALTH OF NATIONS - COPING WITH LIMITED RESOURCES

Chairman A.A. Leirner (São Paulo, Brazil)

Co-chairmen G. von Sengbusch (Geesthacht, Germany)

S. Nitta (Sendai, Japan)

Healthcare questions in emerging economy countries

A.A. Leirner (São Paulo, Brazil)

Strategies for establishing organ transplant programs in developing countries - the Brazilian experience

J. Medina Pestana (São Paulo, Brazil)

Prevention of renal disease progression and renal replacement therapy in emerging countries

H.M. Hafez (Cairo, Egypt)

Mechanical circulatory support in Shanghai Second Medical University and the current available support parts made in China

C. Chang-Zhi (Shanghai, China)

The Brazilian strategy to develop biotechnology

F. de Castro Reinach (São Paulo, Brazil)

Padiglione Polivalente

19:30 - 21:30

GET TOGETHER BUFFET DINNER

Room Europa		Room Italia	Room Bianca	Room Azzurra	Pad. Polivalente
8:30 10:15		Free Communications Heart valves	Free Communications Artificial and bioartificial liver	Free Communications Dialysis and detoxification	Poster mounting
10:15 10:45	Plenary Lecture Are ventricular assist devices (VADs) fit for a destination therapy?				
10:45 11:15	<i>Break</i>				
11:15 12:45		Symposium Towards destination therapy with VADs: achievements, aims and obstacles	Symposium Artificial liver	Symposium Blood purification in the Intensive Care Unit	
13:00 14:30		ESAO Corporate Members' Symposium Technology for tomorrow			
14:30 15:30					Poster sessions
15:30 16:30		Free Communications Modelling and simulation	Symposium Citrate anticoagulation: an update	Symposium Practical issues and clinical results of hemodiafiltration	
16:30 16:45	<i>Break</i>				
16:45 18:15		Symposium Pulsatile vs. non pulsatile mechanical cardiac support	Symposium Apheresis	Free Communications Promising concepts	

MECHANICAL CIRCULATORY SUPPORT - HEART VALVES

Chairmen *K. Affeld (Berlin, Germany)*
J. Long (Salt Lake City, USA)

Comparative study of modified polyurethane valves for cardiac assist devices

A. Jarosz, W. Bujok, A. Kapis, R. Kustosz (Zabrze, Poland)

Durability testing of a polymeric bileaflet mechanical heart valve prosthesis

D. Medart, T. Schmitz-Rode, U. Steinseifer (Aachen, Germany)

In vitro calcification of stentless bioprostheses: comparison of 5 glutaraldehyde fixated vs. 5 medtronic prototypes called Idefix

M. Krings, F. Everaerts, M. Torrianni, M. Hendriks, B. Glasmacher (Aachen, Germany)

In vitro thrombogenicity investigation for mechanical heart valves

C. Kim, K. Hamilton, H. Reul, U. Steinseifer, T. Schmitz-Rode (Aachen, Germany; Santa Ana, USA; Maastricht, The Netherlands)

Artificial heart valves, oscillation and shear stresses

A.A. Sakhaeimanesh (Isfahan, Iran)

3D PIV measurements of prosthetic heart valve fluid dynamics

R. Kaminsky, M. Rossi, U. Morbiducci, L. Scalise, P. Castellini, S. Kallweit, P. Verdonck, M. Grigioni (Ghent, Belgium; Ancona, Rome, Italy; Jülich, Germany)

CFD simulation of a novel bileaflet mechanical heart valve prosthesis

Y. Yokoyama, D. Medart, C. Schmitz, P.B. Kwant, U. Steinseifer, T. Schmitz-Bode, S. Takatani (Tokyo, Japan; Aachen, Germany)

METABOLIC AND RESPIRATORY SUPPORT - ARTIFICIAL AND BIOARTIFICIAL LIVER

*Chairmen R. Chamuleau (Amsterdam, The Netherlands)
J. Wojcicki (Warsaw, Poland)*

Effect of extracorporeal liver support systems on serum cytokine levels
*V. Stadlbauer, P. Krisper, B. Haditsch, R. Aigner, R.E. Stauber
(Graz, Austria)*

Hydrodynamic behaviour of several types of fluidised bed bioreactor used in a bioartificial liver
R. Baudoin, A. Gautier, S.M. Coward, B. David, H.J.F. Hodgson, C. Selde, C. Legallais (Compiègne, France; London, UK)

Assessment of oxygen availability in the AMC bioartificial liver using computational fluid dynamics (CFD)
*G. Mareels, P.P. Poyck, S. Eloot, R. Chamuleau, P. Verdonck
(Ghent, Belgium; Amsterdam, The Netherlands)*

Bioartificial human liver cell systems: data-based identification of performance predictors
*M. Pfaff, K. Zeilinger, W. Schmidt-Heck, R. Guthke, S. Toepfer, D. Driesch, G. Pless, P. Neuhaus, J.C. Gerlach
(Jena, Berlin, Germany; Pittsburgh, USA)*

First in vitro comparison of two bioartificial liver support systems: MELS cellmodule and AMC-BAL
*P.P. Poyck, G. Pless, R. Hoekstra, S. Roth, A.C.W.A. van Wijk, R. Schwartlander, T.M. van Gulik, I.M. Sauer, R.A. Chamuleau
(Amsterdam, The Netherlands; Berlin, Germany)*

Standardized bioreactor for hepatocytes with 3D capillary membrane structure

L. Guido, K. Affeld, J. Hengstler, A. Bauer, U. Kertzscher, L. Goubergrits, P. Scharfschwerdt, T. Timmel (Berlin, Germany)

Early experiences with a porcine and cryopreserved human hepatocyte-based bioartificial liver in acute hepatic failure patients

G. Azzena, L. Valieri, G. Resta, A. Cariani, M. Brogli, P. Scoletta, D. De Tullio, R. Ragazzi, A. Cavallari, S. Faenza, A. Santoro, G. Gerunda, A.D. Pinna (Ferrara, Bologna, Modena, Italy)

Thursday, October 6

BLOOD PURIFICATION - DIALYSIS AND DETOXIFICATION

*Chairmen D. Falkenhagen (Krems, Austria)
A. Albertazzi (Modena, Italy)*

Effects on blood rheology caused by macromolecules and their apheretic elimination: rheospecificity of red blood cell (RBC) aggregates depending on the strength of aggregating forces

*T. Kirschkamp, W. Goebel, T. Perkkio, H. Schmid-Schönbein
(Aachen, Germany)*

The usage of biospecific hemosorbent for selective removal of activated serine proteinases in case of abdominal sepsis of different origin

V. Kirkovsky (Minsk, Belarus)

Continuous hemodiafiltration with polymethyl methacrylate membrane hemofilter (PMMA-CHDF) for treatment of patients with hypercytokinemia-related pathophysiology

*H. Hirasawa, S. Oda, H. Shiga, K. Matsuda, M. Nakamura
(Chiba, Japan)*

Prevalence of hepatitis and human immunodeficiency virus infection in patients on maintenance hemodialysis

*M.H. Polenakovic, A. Sikole, M. Kalajdziska, L. Simjanovska,
P. Dzekova, G.D. Efremov (Skopje, Macedonia)*

Intractable pruritus in patients with HCV. Personal experience

*G. Novelli, L. Poli, R. Pretagostini, S. Martelli, Q. Lai, L. Novelli,
G. Mennini, S. Ginanni Corradini, P.B. Berloco (Rome, Italy)*

Atherosclerotic markers in hemodialysis patients

P. Dejanov, B. Dejanova, G. Spasovski (Skopje, Macedonia)

**Monitoring of the metabolic changes during ketoacidosis using
microdialysis technique. A preliminary investigation**

***A. Ciechanowska, J. Krzymien, S. Sabalinska, J.M. Wojcicki,
P. Ladyzynski, A. Ehrmann, G. Rosinski, B. Ziolkowski, E. Pulawska,
W. Karnafel, J. Kawiak (Warsaw, Poland)***

Chairman P.M. Portner (Palo Alto, USA)

**ARE VENTRICULAR ASSIST DEVICES (VADs) FIT FOR A
DESTINATION THERAPY?**

R. Hetzer (Berlin, Germany)

11:15 - 12:45

SYMPOSIUM # 1

TOWARDS DESTINATION THERAPY WITH VADs: ACHIEVEMENTS, AIMS AND OBSTACLES

*Chairmen G. Wieselthaler (Vienna, Austria)
P.M. Portner (Palo Alto, USA)*

Clinical study for destination therapy with a magnetically levitated LVAD: achievements and challenges
J. Woodard (Sydney, Australia)

Long term support with an LVAD system with active magnetic control: clinical experience and aims
A. Medvedev (Ann Arbor, USA)

Experiences and remaining challenges in long term support with an axial LVAD
J. Müller (Berlin, Germany)

Antiaggregation and anticoagulation of VAD recipients: joint efforts to meet these challenges
G. Wieselthaler (Vienna, Austria)

Challenges and desires for destination therapy equipment from the physician's viewpoint
A. El-Banayosy (Bad Oeynhausen, Germany)

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ARTIFICIAL LIVER

*Chairmen I. Sauer (Berlin, Germany)
G.F. Azzena (Ferrara, Italy)*

Artificial liver support systems in the Peoples' Republic of China
L.J. Li (Hangzhou, China)

Allogenic hepatocyte transplantation with a minimally invasive technique. Effect on Crigler-Najjar syndrome type I
G. Ambrosino, S. Varotto, S.C. Strom, G. Guariso, E. Franchin, D. Miotto, L. Caenazzo, P. Carraro, D. D'Amico, L. Zancan, L. D'Antiga (Vicenza, Padova, Italy; Pittsburgh, USA)

First results in continuous albumin veno-venous haemodiafiltration in acute liver failure (ALF)
H. Ringe, M. Zimmering, W. Luck, I. Sauer (Berlin, Germany)

Comparison of powdered and granular carbons for regeneration of dialysate and filtrates in hepatic failure
S.R. Ash, T.A. Sullivan, D.J. Carr (Lafayette, USA)

The microspheres-based detoxification system for extracorporeal liver support
V. Weber, I. Linsberger, J. Hartmann, C. Schildböck, A. Leistner, D. Falkenhagen (Krems, Austria; Berlin, Germany)

Using MARS in different hepatic etiologies in acute liver failure
G. Novelli, M. Rossi, M. Pretagostini, F. Pugliese, F. Ruberto, L. Novelli, F. Nudo, V. Morabito, A. Bussotti, S. Corradini, S. Martelli, P.B. Berloco (Rome, Italy)

Artificial liver support systems – a medical and health economic HTA-report

*F. Hessel, K. Grabein, U. Siebert, P. Schnell-Inderst, J. Wasem
(Essen, Germany, Boston, USA)*

Cryopreservation of primary human hepatocytes – protective effect of trehalose?

*F. Vondran, E. Katenz, X.B. Gong, X.D. Cheng, R. Schwartlander,
P. Neuhaus, I. Sauer (Berlin, Germany)*

11:15 - 12:45

SYMPOSIUM # 3

BLOOD PURIFICATION IN THE INTENSIVE CARE UNIT

Chairmen I. Ledebo (Lund, Sweden)

S. Chiaramonte (Vicenza, Italy)

CRRT dose: determinants and effect on outcome

W. Clark (Indianapolis, USA)

Removal of inflammatory mediators with highly permeable membranes

S. Morgera (Berlin, Germany)

High-volume hemofiltration: therapeutic rationale, clinical experience, technical requirements

V. Mallet (Paris, France)

Extracorporeal liver support

S. Mitzner (Rostock, Germany)

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TECHNOLOGY FOR TOMORROW

Chairmen I. Ledebo (Lund, Sweden)

G. Rakhorst (Groningen, The Netherlands)

Access technologies meeting clinical practice

R. Deppisch (Hechingen, Germany)

Speculation on the future of peritoneal dialysis

L. Ballerini (Milan, Italy)

Sorbent therapies

M. Wratten (Modena, Italy)

DNA damage in cells of kidney patients

J. Vienken (Bad Homburg, Germany)

SESSION # 1

BIOMATERIALS AND BIOCOMPATIBILITY: POLYMERS AND SCAFFOLDS

Chairman M.L. Costantino (Milan, Italy)

- P1. Evaluation of hydrostatic pressure on chondrocytes metabolism on a biodegradable polyurethane scaffold
S. Karbasi, H. Mirzadeh, F. Orang, J.P.G. Urban (Tehran, Isfahan, Iran; Oxford, UK)
- P2. Diffusively transparent albumin coating of mass-fractal carbonic hemosorbents
V. Maslenny, V.V. Sarnatskaya, V.G. Nikolaev, S.V. Mikhalovsky (Kiev, Ukraine; Brighton, UK)
- P3. Titanium phosphates for osteointegration
E.A. Krylova, A.A. Ivanov, S.E. Krylov, I.G. Plahchina (Moscow, Russia)
- P4. DEHP increases fluidity of membrane gel-phase microdomains and enhances store-operated calcium entry in human granulocytes
S. Palleschi, B. Rossi, G. Severini, L. Diana, L. Silvestroni, G. Splendiani (Rome, Italy)
- P5. Novel titanium coating of ePTFE grafts: friend or foe?
B.H. Walpoth, M. Cikirikcioglu, N. Sedelnikov, E. Khabiri, A. Antal, T. Tatar, S. Da Cruz, J.C. Tille O.M. Hess, A. Kalangos (Geneva, Switzerland; Moscow, Russia)
- P6. In vitro bioactivity of poly(epsilon-caprolactone)-apatite (PCL-AP) scaffolds for bone tissue engineering: the influence of the PCL/AP ratio
P. Taddei, M. Di Foggia, C. Fagnano (Bologna, Italy)

- P7. Induction of granulation tissue inside lactic acid-caprolactone copolymer cubes in the thoracic cavity of rabbits after pneumonectomy
S. Chang, Y. Yamamoto, H. Igai, N. Misaki, M. Gotoh, T. Okamoto, T. Kushibiki, Y. Tabata, H. Yokomise (Kagawa, Fukui, Kyoto, Japan)
- P8. Uromaix collagen scaffolds for urinary tract reconstruction
C. Becker, I. Heschel, T. Läufer, G. Jakse (Aachen, Herzogenrath, Germany)
- P9. Multislice spiral computed tomography (MSCT) for coronary artery calcifications in hemodialysis patients
G. Cianciolo, L. Coli, G. Donati, M.L. Soverini, E. Persici, O. Baraldi, R. Fattori, V. Russo, E. Tampieri, A. Chiarini, S. Stefoni (Bologna, Italy)
- P10. Confocal laser scan microscopy (CLSM) for potential microcapsule membrane characterization
W. Ouyang, F. Afkhami, H. Chen, S. Prakash (Montreal, Canada)

SESSION # 2

BIOMATERIALS AND BIOCOMPATIBILITY: POLYMERS AND SCAFFOLDS

Chairman R. Tarchini (Mantova, Italy)

- P11. Electrospun nanofibrous polyurethane membrane as hemofiltration membrane
H.G. Yoon, K.S. Lee, H. Choi, J.H. Kim, E.B. Shim, B.G. Min (Seoul, Korea)
- P12. Development of novel drug-eluting microporous covered stents: coating of statin
Y. Nakayama, S. Nishi, H. Ishibashi-Ueda, M. Shiomi, Y. Okamoto (Suita Osaka, Yokohama, Japan)
- P13. Development of drug-eluting, self-expandable covered stents
Y. Nakayama, Y. Miura, Y. Zhou, K. Hayashida, Y. Okamoto, H. Ueda-Ishibashi, T. Ishibashi (Suita Osaka, Sendai, Japan)

- P14. Tissue response to natural and synthetic biomaterials: analysis of the early phase tissue reaction using the HET-CAM assay
C. Eder, E. Falkner, H. Schöffl, S. Nehrer, U.M. Losert
(Vienna, Austria)
- P15. Extracardiac conduits in children: superior durability of decellularized synergrafts to standard cryopreserved allografts
J.W. Brown, M. Ruzmetov, M.D. Rodefeld, M.W. Turrentine
(Indianapolis, USA)
- P16. Changes in the porcine pericardium structure after stabilization with tannic acid
A. Turek, B. Cwalina, Z. Nawrat, J. Nozynski
(Zabrze, Sosnowiec, Poland)
- P17. Development of a novel pass-through anti-infective catheter system
G. Gabel, K. Affeld, U. Kertzscher (Berlin, Germany)
- P18. Anastomosis of ePTFE grafts with running or interrupted sutures: angiographic and morphometric results
E. Khabiri, M. Cikirikcioglu, J.C. Tille, S. Da Cruz, A. Kalangos, B.H. Walpoth (Geneva, Switzerland)
- P19. Improved endothelialization in well matched ePTFE grafts
M. Cikirikcioglu, Y.B. Cikirikcioglu, J.C. Tille, A. Kalangos, B.H. Walpoth (Geneva, Switzerland)
- P20. Sutureless vascular anastomoses using a biodegradable stent
Y. Nakano, Y. Hori, A. Sato, T. Watanabe, S. Takada, H. Goto, A. Inagaki, S. Satomi (Sendai, Japan)

SESSION # 3

BLOOD PURIFICATION: DIALYSIS

Chairman *P.P. Borgatti* (Reggio Emilia, Italy)

- P21. Effect of the HFR on-line technique on homocysteine plasma levels: correlation with nutritional-inflammatory status
S. De Angelis, M. Dessì, M. Ferrannini, A. Naticchia, G. Splendiani (Rome, Italy)

- P22. Removal of low molecular weight toxins with intermediary on-line hemodiafiltration (mid-dilution HDF)
L. Bibiano, P. Freddi, G. Gaffi, A.M. Ricciatti, G.M. Frascà
(Ancona, Italy)
- P23. Uremic toxin removal and albumin loss in predilution online hemofiltration: comparison of membrane selectivity
V. Giancaspro, V.A. Lozupone, M. Bozzi, F. Petrarulo
(Bari, Italy)
- P24. Use of oxygenated dialyzing fluid with pulsatile pump system
K.H. Lee, B.G. Min (Seoul, Korea)
- P25. Oxidative stress in haemodialysis patients: a comparison of three depurative techniques
S. Palleschi, S. De Angelis, G. Severini, L. Diana, B. Rossi,
V. Papa, G. Splendiani (Rome, Italy)
- P26. Smartcat a new double lumen high flow central venous catheter. The future in hemofiltration
I. Mallabiarrena, G. Mucciolo, A. Mucciolo, S. Taub,
L.K. von Segesser (Lausanne, Switzerland)
- P27. Activated charcoal and probiotic bacteria in microcapsules for creatinine reduction - Adjunct therapy for kidney failure
T. Halim, W. Ouyang, H.M. Chen, C. Martoni, F. Afkhami,
S. Prakash (Montreal, Canada)
- P28. Ascites-apheresis: a new automatized device for ultrafiltration and reinfusion of refractory ascites in cirrhosis
S. Landini, F. Bortoluzzi, D. Tempesta, A. Vitalba, A. Saggioro
(Mestre, Italy)
- P29. “Writing technique” and compliance to treatment in regular dialysis treatment (RDT) patients
F. Selloni, L. Solano, P. Freddi, A.M. Ricciatti, L. Bibiano,
G. Gaffi, G.M. Frascà (Ancona, Rome, Italy)
- P30. Development of an immunoadsorption wall for the prevention of dialysis-related amyloidosis
T.H. Yang (Kaohsiung, Taiwan)

- P31. The impact of the hemodialysis needle design on the flow division and hemolysis index
I. Van Tricht (Ghent, Belgium)
- P32. Mass-fractal carbonic pyropolymers for removal of tightly protein-bound toxins
V. Maslenny, V.G. Nikolaev, V.V. Sarnatskaya, L.A. Yushko, A.S. Sidorenko, K.I. Bardakhivskaya, A.V. Nikolaev (Kiev, Ukraine)

SESSION # 4

MECHANICAL CIRCULATORY SUPPORT: HEART

Chairman C. Legallais (Compiègne, France)

- P33. Development of an inexpensive vacuum formed ventricular assist device; spiral vortex pump
M. Umezū, Y. Onishi, T. Sudo, T. Shima, K. Iwasaki, T. Tanaka, K. Ito (Tokyo, Japan)
- P34. Development of a newly-designed artificial myocardial assist device using biometal
Y. Shiraishi, T. Yambe, K. Sekine, N. Masumoto, J. Nagatoshi, S. Itoh, E. Okamoto, Y. Saijo, Q. Wang, H. Liu, S. Nitta, S. Konno, D. Ogawa, P. Olegario, M. Yoshizawa, M. Higa, A. Tanaka, H. Miura, F. Sato, M. Uematsu, T. Tanaka, Y. Park, T. Fujimoto, K. Tabayashi, H. Sasada, M. Umezū, D. Homma (Sendai, Saitama, Tokyo, Japan)
- P35. A new myostimulator avoiding muscle failure for muscular cardiac assist?
P. Klapproth, J. Otten, T. Büter, R. Schirmer, P. Maczinowski, M. Großherr, H.H. Sievers, N.W. Guldner (Lübeck, Germany)
- P36. A novel development of a newly percutaneous system for implantable VAD system in the destination therapy
T. Mizuno, E. Tatsumi, Y. Nemoto, Y. Nakayama, S. Saito, Y. Okamoto, T. Tsukiya, Y. Takewa, A. Homma, S. Kitamura, Y. Taenaka (Suita Osaka, Japan)

- P37. Design of BLDC motor controller with instantaneous torque control for twin-pulse life support
K.H. Yoon, S.W. Choi, S.M. Lee, B.G. Min (Seoul, Korea)
- P38. Remote optical heart beat monitor from mechanical vibrations
L. Scalise, U. Morbiducci, M. De Melis, M. Grigioni (Rome, Ancona, Italy)
- P39. Synchronization of the undulation pump ventricular assist device with natural heartbeat
I. Saito, T. Chinzei, Y. Abe, T. Isoyama, S. Mochizuki, T. Ono, A. Kouno, N. Mitsumune, N. Taniguchi, A. Sugino, W. Shi, H. Nakagawa, K. Imachi (Tokyo, Japan)
- P40. Application of traditional axial pump design theory on ventricular assist device design
Y. Wang, X. Song, C. Ying (Beijing, China)
- P41. Design and implementation of actuator head of cardiopulmonary bypass pump, T-PLSTM
H. Choi, H.G. Yoon, D.W. Lee, K.H. Lee, B.G. Min (Seoul, Korea)
- P42. Evaluation of haemodynamic effect of pressotherapy using impedance cardiography
T. Palko, M. Szwasz, G. Cybulski, M. Darowski, M. Kozarski, K.J. Palko, K. Gorczyńska (Warsaw, Poland)

SESSION # 5

BLOOD PURIFICATION: DIALYSIS

Chairman L. Cristinelli (Piacenza, Italy)

- P43. Does a reduction of adhesion molecules by LDL-apheresis have a role in the treatment of sudden hearing loss?
A. Ramunni, N. Quaranta, M.T. Saliani, R.A. Fallacara, R. Ria, G. Ranieri (Bari, Italy)

- P44. Brain natriuretic peptide and dialysis efficiency in automated peritoneal dialysis patients
F. Fabbian, F. Malacarne, M. Russo, A. Storari, V. Orlandi, L. Catizone (Ferrara, Italy)
- P45. Hemodialysis patients: fetuin-A and inflammation-nutrition state.
M. Manni, G. Splendiani, A. Balducci, M. Morosetti, D. Mantella, S. De Angelis, A. Naticchia, A. Vega, M.R. Dessì, G. Coen (Rome, Italy)
- P46. Prevalence of hepatitis C and hepatitis B virus infection in dialysis patients
P. Dzekova, A. Sikole, A. Slavkovska, L. Simjanovska, G. Efremov, I. Nikolov, M. Polenakovic (Skopje, Macedonia)
- P47. Intimal-media thickness is related to coronary artery damage in haemodialysis patients
F. Fabbian, G. Cacici, L. Franceschini, M.M. Conte, C. Vassanelli, L. Catizone, A. Lupo (Ferrara, Verona, Italy)
- P48. Cardiovascular state in a patient with primary amyloidosis, role of brain natriuretic peptide
F. Fabbian, V. Orlandi, S. Sartori, N. Stabellini, C. Molino, M. Russo, L. Catizone (Ferrara, Italy)
- P49. Diagnosis and treatment of renal osteodystrophy in the Republic of Macedonia
J. Masin-Spasovska, G. Spasovski, S. Gelev, V. Zdravkovska, V. Tomanovski, L. Trpenovski, K. Ivanovski, T. Bajraktarova, P. Janakievska, M. Damjanovski, J. Neskovski, E. Karceva-Sarajlia, T. Petrovska, K. Filkovska, S. Matovic, V. Luseva, D. Jordanovski, M. Zafirovska (Skopje, Macedonia)
- P50. Antioxidant therapy by oral vitamin E and vitamin E-coated dialyzer in CAPD and haemodialyzed patients
M. Mydlík, K. Derzsiová, O. Rácz, A. Šipulová, E. Lovásová (Kosice, Slovak Republic)

- P51. The effect of chronic inflammation on the nutritive status of patients treated by chronic hemodialysis
A. Sikole, P. Dzekova, G. Severova, N. Stojcev, V. Amitov, R. Grozdanovski (Skopje, Macedonia)
- P52. The role of an International Apheresis Registry for the establishment of apheresis therapy
B.G. Stegmayr, L. Guillevin, J.M. Korach, G. Rock, R. Norda, W. Ramlow (Registry Committee)
- P53. World Apheresis Registry - Report of 2004 data
B.G. Stegmayr, J. Ptak, B. Wikström, G. Berlin, C.G. Axelsson, A. Griskevicius, P. Centoni, G. Liunbruno, J. Audzijoniene, K. Mokvist, B. Nilsson Sojka (Registry Committee)

SESSION # 6

BLOOD PURIFICATION: DIALYSIS

Chairman *L. Cagnoli (Rimini, Italy)*

- P55. Detoxifying action of ceruloplasmin in acute renal failure
M.V. Osikov, L.V. Krivohizhina, E.V. Makarov (Chelyabinsk, Russia)
- P56. Significant reduction of “post-pump syndrome” with continuous intra-operative veno-venous hemofiltration (CVVH) with high volumes of exchange 35 mL h⁻¹ Kg⁻¹ versus 20 mL h⁻¹ Kg⁻¹ during cardiopulmonary-bypass (CPB)
R. Luciani, C. Simon, G. Punzo, P. Menè (Rome, Italy)
- P57. Distribution of the transmembrane pressure along the membrane system as a crucial factor for efficiency of the membrane blood or plasma treatment
A. Ciechanowska, J.M. Wojcicki, J. Hartmann, S. Sabalinska, D. Falkenhagen (Warsaw, Poland; Krems, Austria)
- P58. Inflammation and vascular access: FAV vs CVC vs PTFE
L. Coli, G. Cianciolo, G. Donati, C. Raimondi, D. Mezzopane, E. Persici, E. Tampieri, M.L. Cappuccilli, M. Flachi, S. Stefoni (Bologna, Italy)

- P59. Enhanced membrane cleaning process applied hemodialysis dialyzer reuse system using ultrasonic waves
S.M. Lee, S.W. Choi, K.H. Yoon, B.G. Min (Seoul, Korea)
- P60. Efficacy and safety of low molecular heparin (enoxaparin) compared with unfractionated heparin in hemodialysis
S. Gelev, K. Zafirovska, G.J. Selim, G. Spasovski, R. Grozdanovski (Skopje, Macedonia)
- P61. Blood rheological characterisation by creep tests to optimise extracorporeal blood treatment devices: preliminary investigation
D. Gabriele, P. Fata, G. Catapano, B. De Cindio, R. Bonofiglio (Rende, Cosenza, Italy)
- P62. The experimental study of dialyzer reprocessing with pulsatile flow
J.H. Jeong, K.S. Lee, C.H. Mun, J.H. Kim, B.G. Min (Seoul, Korea)
- P63. How to prevent hypotension in hemodialysis
G. Casagrande, U. Teatini, G. Romei, F. Miglietta, R. Fumero, M.L. Costantino (Milan, Italy)

SESSION # 7

MECHANICAL CIRCULATORY SUPPORT: HEART

Chairman B. Meyns (Leuven, Belgium)

- P64. Tachyarrhythmia control machine
T. Yambe, S. Maruyama, E. Asano (Sendai, Japan; Detroit, USA)
- P65. Effect of weaning process of mechanical circulatory support on circulatory autonomic nervous system evaluated by power spectral analysis of arterial pressure waves
T. Tsutsui, T. Kuwabara, O. Shigeta, Y. Sakakibara, Y. Sankai (Tsukuba – Ibaraki, Japan)
- P66. Laser based measurement techniques applied to the study of prosthetic mechanical heart valves fluid dynamics
M. Rossi, U. Morbiducci, L. Scalise (Rome, Ancona, Italy)

- P67. Problems implanting cardiovascular prostheses
A. Tedesco, G. Pallotti, M.C. Pallotti, M.G. Pallotti (Bologna, Italy)
- P68. Stereo-PIV measurements on prosthetic heart valve: comparison between pulse duplicators
M. Grigioni, G. D'Avenio, U. Morbiducci, K. Hamilton, C. Del Gaudio (Rome, Italy; Aachen, Germany)
- P69. A novel method for measuring the torque acting on cardiovascular implants in NMR scanners
 G. D'Avenio, R. Canese, F. Podo, M. Grigioni (Rome, Italy)
- P70. Mechanical approach for programming optimal pacing in pacemakers with laser Doppler vibrometry technique: preliminary clinical results
 L. Scalise, U. Morbiducci, M. De Melis, M. Grigioni, G. Corbucci, P. Bocconcelli, A. Pierantozzi
 (Rome, Ancona, Bologna, Pesaro, Italy)
- P71. Linear bloodpump - A new concept for fluid propagation in cardiac assist devices or total artificial heart
M. Grossmann, W. Juettner, J. Landrath, F.A. Schoendube (Goettingen, Wolfsburg, Hannover, Germany)
- P72. Self-management protocol for a moving-actuator type artificial heart
K.W. Nam, J. Chung, S.W. Choi, K. Sun, B.G. Min (Seoul, Korea)
- P73. Effect of cardiovascular devices on heart failure in a mock circulation loop
D.L. Timms, K. McNeil, M.J. Percy (Brisbane, Australia)

SESSION # 8

MECHANICAL CIRCULATORY SUPPORT: HEART

Chairman T. Yambe (Sendai, Japan)

- P74. Numerical analysis and experimental validation of an innovative fluid film bearing for rotary blood pumps
M. Akdis, M. Hormes, M. Martin, H. Reul (Aachen, Germany)

- P75. Numerical analysis for designing a new aortic cannula
T. Fujimoto, M. Aruga, S. Nakano, N. Kabei, M. Yoshida,
M. Umezumi (Tokyo, Saitama, Japan)
- P76. Method to determine intraventricular pressure and shear stress
by Doppler Color Echocardiography and its applicability to
ventricular assist devices
J.C. Antoranz, M.M. Desco, R. Yotti, J.L. Rojo, J. Bermejo
(Madrid, Spain)
- P77. Flow evaluation of stents and filters in carotid artery models
D. Liepsch, G. Berger (Munich, Germany)
- P78. Model of arterial and peripheral circulation with local regulation
and filtration through capillary membrane for the study of
vasomotion and assisted circulation
E. Lanzarone, G. Baselli, R. Fumero, M.L. Costantino
(Milan, Italy)
- P79. 2D PIV study of the flow downstream two prototypes of a new
monoleaflet artificial aortic heart valve prosthesis
R. Kaminsky, K. Kramm, H.J. Weber, A.P. Simons, S. Kallweit,
P.R. Verdonck (Ghent, Belgium; Aachen, Jülich, Germany)
- P80. Stereo particle image velocimetry on mechanical heart valve
prosthesis
F.K. Hamilton, G. D'Avenio, U. Morbiducci, U. Steinseifer,
M. Grigioni (Aachen, Germany; Rome, Italy)
- P81. Assessment of hydrodynamic properties of heart valves for
artificial heart
K.H. Kim, G.S. Jeong, M.W. Jung, C.B. Ahn, J.J. Lee,
C.M. Hwang, Y.T. Kawk, H.S. Son, Y.F. Fang, K. Sun (Seoul, Korea)
- P82. Traditional pump design theory in heart pump design and CFD
analysis
Y. Wang, C.T. Ying (Beijing, China)
- P83. History of blood pump development at the Helmholtz Institute
Aachen
M. Akdis, H. Reul (Aachen, Germany)

ORGAN TRANSPLANTATION

Chairman *G. Mosconi (Bologna, Italy)*

- P84. Effects of FTY720 on lymphocyte subsets expressing different homing receptors in kidney transplantation

M.L. Cappuccilli, D. Conte, M. Ortolani, P. Todeschini, M. Piccari, G. Mosconi, M.P. Scolari, S. Stefoni (Bologna, Italy)

- P85. Surgical aspects on double kidney transplantation in our experience

B. Nardo, V. Pacilè, R. Bertelli, P. Beltempo, R. Montalti, L. Puviani, G. Cavallari, M. Licursi, G. Fuga, S. Stefoni, A. Faenza (Bologna, Italy)

- P86. Variations over time in quality of life in kidney transplant patients

K. Mattarozzi, P. Todeschini, G. Cangini, C. Campi, G. Mosconi, C. Cipolli, S. Stefoni (Bologna, Italy)

- P87. Protocol biopsies in kidney transplant recipients: histological findings and allograft function at 1-year

G. Spasovski, J. Masin-Spasovska, S. Dzikova, G. Petrussevska, B. Dimova, L.J. Lekovski, Z. Popov, N. Ivanovski, M. Polenakovic (Skopje, Macedonia)

- P88. Nephrological indications in combined liver kidney transplantation

G. Mosconi, M.P. Scolari, G. Feliciangeli, M. Piccari, G. Comai, D. Conte, L.C. Borgnino, A. Falaschini, S. Stefoni (Bologna, Italy)

- P89. Genetic factors and risk of acute rejection in kidney transplant

M.L. Cappuccilli, D. Conte, G. La Manna, G. Comai, G.D. Mina, L.C. Borgnino, M.P. Scolari, S. Stefoni (Bologna, Italy)

- P90. Preliminary results of a clinical randomized study comparing Celsior and HTK solutions in kidney preservation for transplantation

B. Nardo, R. Bertelli, E. Capocasale, M.P. Mazzoni, R. Montalti, R. Dalla Valle, N. Busi, P. Beltempo, L. Puviani, V. Pacilè, G. Fuga, A. Faenza (Bologna, Parma, Italy)

- P91. Combined liver kidney transplantation: a case report with preformed anti-HLA antibodies
G. Mosconi, G. Feliciangeli, F. D'Addio, A. Zanetti, M. Piccari, S. Faenza, G. Ercolani, A. Faenza, A.D. Pinna, S. Stefoni (Bologna, Italy)
- P92. A comparative study of renal preservation for the prevention of ischemia/reperfusion injury: machine perfusion versus cold storage in a porcine autotransplant model
D. Conte, M.L. Cappuccilli, G. La Manna, B. Nardo, L. Puviani, P. Beltempo, M. Piccari, R. Bertelli, V. Pacilè, G. Mosconi, M.P. Scolari, A. Faenza, S. Stefoni (Bologna, Italy)
- P93. The first case of ureteral duplication in a combined liver-kidney transplantation
B. Nardo, R. Montalti, V. Pacilè, R. Bertelli, P. Beltempo, G. Cavallari, L. Puviani, M. Licursi, S. Stefoni, A. Cavallari, A. Faenza (Bologna, Italy)
- P94. Determination of the more frequent intensive nursing collaborative problems in patients undergoing liver transplant
M.G. Bernardi, F. Burrai, D. Cenerelli, M.P. Sarli, S. Scalorbi, A.A. Nettis (Bologna, Italy)

MECHANICAL CIRCULATORY SUPPORT - MODELLING AND SIMULATION

*Chairmen P. Verdonck (Ghent, Belgium)
J. Wojcicki (Warsaw, Poland)*

CFD analysis of different bearing geometry variations of the arrow CorAide LVAD

*M. Hormes, A. Arvand, U. Horst, A. Brandt, U. Steinseifer,
T. Schmitz-Rode (Aachen, Germany)*

Time resolved PIV flow field study of the bi-leaflet and mono-leaflet mitral valves

T. Akutsu, T. Fukuda, J. Saito (Yokohama, Japan)

Development and verification of ventricle-shaped chambers for the DIR assist device

*T. Schmid, M. Stock, S. Donisi, W. Schiller, D. Liepsch, B. Laschka,
G. Hirzinger, A. Welz, H. Oertel (Wessling, Bonn, Munich, Germany)*

Comparison study on elastic properties of lungs: the added compliance and the end-inspiratory methods

*K.J. Palko, M. Kozarski, M. Darowski, A. Rogalski, A. Tokarz
(Warsaw, Poland)*

CITRATE ANTICOAGULATION: AN UPDATE

Chairmen D. Falkenhagen (Krems, Austria)

W. Druml (Vienna, Austria)

Technologies of citrate anticoagulation

M. Krämer (Bad Homburg, Germany)

Citrate anticoagulation and complement activation

D. Falkenhagen (Krems, Austria)

Citrate anticoagulation for special extracorporeal procedures

J. Buturovic-Ponikvar (Ljubljana, Slovenia)

Metabolic aspects of citrate anticoagulation

W. Druml (Vienna, Austria)

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15:30 - 16:30

SYMPOSIUM # 5

**PRACTICAL ISSUES AND CLINICAL RESULTS
OF HEMODIAFILTRATION (HDF)**

*Chairmen J. Vienken (Bad Homburg, Germany)
P. Ivanovich (Chicago, USA)*

On-line HDF technology

C. Weber (Krems, Austria)

The safety issue and the impact of on-line HDF on patient survival

L. Vaslaki (Sopron, Hungary)

**On-line mixed hemodiafiltration - its efficacy compared
to pre- and post dilution HDF**

L. Pedrini (Seriata, Italy)

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PULSATILE VS. NON-PULSATILE MECHANICAL CARDIAC SUPPORT

*Chairmen G. Rakhorst (Groningen, The Netherlands)
H. Schima (Vienna, Austria)*

Precise quantification of pressure-flow waveforms during pulsatile and non-pulsatile cardiopulmonary bypass procedures
A. Undar (Austin, USA)

Pulsatile cardiopulmonary bypass: from hemodynamic energy to organ function
Y.J. Gu (Groningen, The Netherlands)

Beat-to-beat interaction between a non-pulsatile support device and the left ventricle from the P-V plane in sheep
J. Schreuder (Milan, Italy)

Continuous blood flow in long term rotary blood pump recipients: are there effects on physiology?
H. Schima (Vienna, Austria)

Chronic pulsatile support, the physiologic solution
P.M. Portner (Palo Alto, USA)

16:45 - 18:15

SYMPOSIUM # 7

APHERESIS

Chairmen B. Stegmayr (Umeå, Sweden)

G. Splendiani (Rome, Italy)

International Registry

B. Stegmayr (Umeå, Sweden)

Rheopheresis on microcirculation diseases

G. Splendiani (Rome, Italy)

ABO-Apheresis for transplantation

B. Nilsson (Malmoe, Sweden)

Further developments in sepsis devices

D. Falkenhagen (Krems, Austria)

ARTIFICIAL ORGANS - PROMISING CONCEPTS

*Chairmen H. Klinkmann (Rostock, Germany)
A. Vangelista (Bologna, Italy)*

Artificial electronic nose is able to detect and discriminate bacterial species by their smell

R. Pregla, F. Loke, E. Damm, W.R. Heizmann, Z. Boger, R. Hetzer (Berlin, Germany; Palo Alto, Rockville, USA)

Intervertebral disk tissue engineering: influence of donor pathology on cell culture results

C. Eder, R. Bartl, J. Meissner, M. Mickel, H. Schöffl, E. Falkner, M. Ogon (Vienna, Linz, Austria)

Regeneration of canine tracheal cartilage by slow release of growth factor from gelatin sponge

Y. Yamamoto, H. Igai, M. Gotoh, Y. Tabata, H. Yokomise (Kagawa, Kyoto, Japan)

Experimental study on in situ tissue engineering of the bile duct in a canine model

S. Nakashima, T. Nakamura, T. Yoshikawa, S. Kin, Y. Kuriu, Y. Nakase, C. Sakakura, E. Otsuji, A. Hagiwara, H. Yamagishi (Kyoto, Japan)

In vitro analysis of APPPA microcapsules for oral delivery: impact of microcapsules on GI model flora

F. Afkhami, W. Ouyang, H. Chen, J. Bhathena, T. Halim, S. Prakash (Montreal, Canada)

Blocked “star vector” for in vivo gene delivery

Y. Zhou, Y. Nakayama (Suita Osaka, Japan)

LPS-induced gene expression in human monocytes and endothelial cells
in an experimental model for Gram-negative sepsis

*K. Hellevuo, E. Rossmannith, E. Knapp, D. Klein, D. Falkenhagen
(Krems, Vienna, Austria)*

Thursday, October 6

Room Europa		Room Italia	Room Bianca	Room Azzurra	Pad. Polivalente
8:30 10:15		Free Communications Heart pumps	Free Communications Cell therapy	Free Communications Dialysis	
10:15 10:45	Plenary Lecture Nanotechnology in medical applications: dreams and promises				
10:45 11:15	<i>Break</i>				
11:15 12:45		Free Communications Heart assist devices	Free Communications Bioreactors	Symposium Artificial vision	
13:00 14:30		Lunchtime Symposium Belco	Lunchtime Symposium Hospal	Lunchtime Symposium Baxter	
14:30 15:30					Poster sessions
15:30 16:30		Free Communications Organ transplantation	Free Communications Polymers and scaffolds	Free Communications Dialysis	
16:30 16:45	<i>Break</i>				
16:45 18:15		Symposium New frontiers in organ substitution	Symposium Tissue engineering	Free Communications Dialysis	
18:15 19:00		ESAO General Assembly			
19:30 22:30					FESTIVE DINNER

MECHANICAL CIRCULATORY SUPPORT - HEART PUMPS

*Chairmen P.M. Portner (Palo Alto, USA)
Y. Mitamura (Sapporo, Japan)*

A mechanically non-contact axial flow blood pump
*Y. Mitamura, K. Kido, T. Yano, D. Sakota, N. Takahashi,
M. Kitamura (Sapporo, Tokyo, Akita, Japan)*

Advancement of an implantable ventricular assist system using undulation pump under multi-institutional cooperative project
*K. Imachi, Y. Abe, Y. Mitamura, T. Yambe, T. Matsuda, E. Okamoto, M. Umezu, I. Nemoto, A. Mimaki, I. Saito
(Sendai, Hokkaido, Tokyo, Kyushu, Waseda, Japan)*

Development of a disposable and implantable, magnetically levitated, centrifugal blood pump for bridge-to-bridge support of acute to chronic heart failure patients
*S. Takatani, H. Hoshi, J. Asama, T. Shinshi, A Shimokohbe
(Tokyo, Yokohama, Japan)*

Development of an ultra-compact wearable pneumatic drive unit for ventricular assist device
A. Homma, Y. Taenaka, E. Tatsumi, Y. Takewa, T. Mizuno, N. Katagiri, H.S. Lee, E. Akagawa, T. Tsukiya, K. Ota, R. Kansaku, Y. Kakuta, S. Kitamura, S. Hamada, H. Mukaibayashi, W. Iwaoka, I. Shimosaki (Suita Osaka, Japan)

Implantation of the new miniaturized MEDOS® diagonal pump as LVAD in sheep
J.D. Schmitto, H. Dorge, A. Tylla, C. Siebert, P. Ortmann, C. Ballat, M. Martin, M. Akdis, F.A. Schondube (Gottingen, Stolberg, Germany)

Alternative use of two different VADs with a BCM console in pigs
D. Rodríguez-Martínez, I. Berenguer, S. Salom, A. Del Cañizo,
J.F. Del Cañizo (Madrid, Spain)

A tiny centrifugal rotary Ventricular Assist Device (Tinypump) for
children and infants

S. Takatani, H. Hoshi, K. Tajima, J. Asama, T. Shinshi, K. Ohuchi,
M. Nakamura, M. Yoshikawa (Tokyo, Nagoya, Japan)

REGENERATIVE MEDICINE - CELL THERAPY

Chairmen U. Losert (Vienna, Austria)

A. Kawamura (Sapporo, Japan)

The role of cell donor age for the cardiovascular tissue engineering concept

S. Neuenschwander, S. Holdener, D. Schmidt, I. Cummings, M. Genoni, G. Zünd, S.P. Hoerstrup (Zurich, Switzerland)

Umbilical cord blood derived progenitor cells - a new cell source for pediatric cardiovascular tissue engineering

D. Schmidt, A. Mol, S. Neuenschwander, C. Breymann, M. Gössi, A. Weber, G. Zund, M. Turina, S.P. Hoerstrup (Zurich, Switzerland)

New prospectives in muscle cell therapy: from single fiber isolation to polymer seeding

L. Boldrin, A. Malerba, M. Flaibani, E. Cimetta, M. Piccoli, M. Pozzobon, C. Messina, L. Zanesco, P.G. Gamba, L. Vitiello, N. Elvassore, P. De Coppi (Padova, Italy)

The influence of different freezing media on a pancreatic islet cell line encapsulated with sodium cellulose sulfate (NaCS)

V. Stadlbauer, P. Stiegler, S. Schaffellner, G. Halwachs, C. Lackner, O. Hauser, F. Iberer, K.H. Tscheliessnigg (Graz, Vienna, Austria)

Stem cell enhanced laser myocardial revascularisation

S. Yang, M. Cikirikcioglu, J.C. Tille, J.C. Pache, A. Kalangos, B.H. Walpoth (Geneva, Switzerland)

Mesenchymal stem cell transplantation improves cardiac function of failing heart supported with LVAD

Y. Takewa, Y. Taenaka, E. Tatsumi, N. Nagaya, R. Kansaku, K. Ota, A. Homma, T. Mizuno, S. Kitamura, H. Takano, R. Hajjar (Osaka, Japan; Boston, USA)

Human mesenchymal stem cells from bone marrow and alternative sources for the rescue of damaged hearts

C. Ventura, G.P. Bagnara, S. Cantoni, C. Cavallini, F. Bianchi, F. Alviano, L. Pierdomenico, V. Fossati, A. Perbellini (Bologna, Italy)

BLOOD PURIFICATION - DIALYSIS

*Chairmen F. Dumler (Royal Oak, USA)
M. Sasdelli (Arezzo, Italy)*

A low phase angle indicates a decreased nutritional status in chronic dialysis patients

F. Dumler (Royal Oak, USA)

Glucose and methylglyoxal effect on icodextrin peritoneal transport: in vitro comparative studies

B. Szary, K. Czyzewska (Poznan, Poland)

Can we improve bone turnover throughout treatment with different dialysate calcium concentration

G. Spasovski, S. Gelev, A. Sikole, J. Masin-Spasovska, M. Bogdanova, V. Amitov, N. Stojcev, R. Grozdanovski, M. Polenakovic (Skopje, Macedonia)

Prevention of hypercalcemia in dialysis patients

A. Sikole, G. Spasovski, S. Gelev, R. Grozdanovski, P. Dzekova, V. Amitov, N. Stojcev (Skopje, Macedonia)

Should we dialyze more frequently or prolonged to remove uremic toxins, other than urea?

S. Eloot, R. De Smet, P. Verdonck, R. Vanholder (Ghent, Belgium)

Blood lines conduct leakage current during haemodialysis. A potential safety risk during first failure, especially for the patients with central dialysis catheter as access

P. Jonsson, G. Eliasson, B.G. Stegmayr (Umeå, Sweden)

Dialysis delivery process control

M. Alquist, J. Hegbrant, J.P. Bosch (Lund, Sweden)

Chairman J. Vienken (Bad Homburg, Germany)

NANOTECHNOLOGY IN MEDICAL APPLICATIONS: DREAMS AND PROMISES

J.H. Wendorff (Marburg, Germany)

MECHANICAL CIRCULATORY SUPPORT - HEART ASSIST DEVICES

Chairmen K. Imachi (Sendai, Japan)
J.F. Del Cañizo (Madrid, Spain)

Wearable pneumatic biventricular assist device with bellows mechanism
C.M. Hwang, G.S. Jeong, M.W. Jung, J.S. Kang, J.J. Lee,
Y.D. Park, K.B. Lee, K. Sun (Seoul, Korea)

Hybrid driving unit for heart assist devices
M. Darlak, M. Gawlikowski, R. Kustosz, A. Korczak, G. Peczkis
(Zabrze, Poland)

Adaptive transcutaneous energy transfer system (TET)
for implantable devices
B. Vodermayer, R. Gruber, T. Schmid, W. Schiller, G. Hirzinger,
D. Liepsch, A. Welz (Wessling, Bonn, Munich, Germany)

The new criterion of pulsatile blood flow estimation based on
extracorporeal heart assist device POLVAD
M. Gawlikowski, R. Kustosz, T. Pustelny, M. Darlak
(Zabrze, Gliwice, Poland)

Semi-automatic detection of characteristic points of cardiovascular
system elements prostheses test control signals
P. Kostka, Z. Nawrat (Zabrze, Gliwice, Poland)

Multi-type sensor test procedures of Polish cardiac surgery
telemanipulator – Robin Heart family
P. Kostka, Z. Nawrat, S. Pietraszek, Z. Malota
(Zabrze, Gliwice, Poland)

Tribological analysis of blood immersed mechanical bearings in rotary
blood pumps
M. Akdis, M. Martin, H. Reul (Aachen, Germany)

REGENERATIVE MEDICINE – BIOREACTORS

*Chairmen A. Bader (Leipzig, Germany)
A. Bontadini (Bologna, Italy)*

Microwave treatment combined with pulsatile circulation can completely remove cells and α 1-3 galactose antigen

K. Iwasaki, S. Ozaki, T. Kawai, Y. Moriyama, Y. Ohzeki, M. Umezu (Tokyo, Japan)

Development of small-caliber “biotube” vascular grafts: preliminary animal implantation study

T. Watanabe, H. Huang, K. Hayashida, Y. Okamoto, Y. Nemoto, K. Kanda, H. Yaku, Y. Nakayama (Osaka, Kyoto, Tokyo, Japan)

Development of “in body tissue-architectural” autologous heart valve (biovalve): scaffold design, preparation method and performance

K. Hayashida, H. Huang, K. Kanda, H. Yaku, Y. Nakayama (Suita Osaka, Kyoto, Japan)

Non equilibrium O₂-dissociation curves (ne-ODC): effect of pCO₂, shear rate and haematocrit

S. Salimi, A. Henseler, K. Mottaghy (Aachen, Germany)

The slidereactor – evaluation of a hollow fiber based bioreactor suitable for light microscopy

R. Schwartlander, J. Schmid, E. Katenz, X. Cheng, G. Pless, X. Gong, F. Vondran, P. Neuhaus, I. Sauer (Berlin, Germany)

Evaluation of biaxial cell stretching device for cardiovascular tissue engineering

A. Szentivanyi, A. Ghodsizad, M. Klein, G. Rau, B. Glasmacher (Aachen, Duesseldorf, Germany)

Bone tissue engineering: combination of mesenchymal stem cells (MSCS) and novel 3D alinate/gelatin/â-TCP hybrid scaffolds

Y. Mohammadi, H. Mirzadeh, F. Moztarzadeh (Tehran, Iran)

11:15 - 12:45

SYMPOSIUM # 8

**ARTIFICIAL VISION BY ELECTRICAL STIMULATION
OF THE VISUAL SYSTEM**

*Chairmen K. Mottaghy (Aachen, Germany)
P. Walter (Aachen, Germany)*

Introduction to functional stimulation of the visual system
P. Walter (Aachen, Germany)

Microsystems to restore neural functions
T. Stieglitz (Freiburg, Germany)

Subretinal stimulation to restore vision
A. Stett (Reutlingen, Germany)

Epiretinal stimulation to restore vision
G. Rössler (Aachen, Germany)

Electrical stimulation of the retina - cortical responses
T. Schanze (Aachen, Germany)

Electrical stimulation of the optic nerve to restore vision
J. Delbeke (Brussels, Belgium)

THE CLINICAL USE OF SORBENTS AND SENSORS: A NEW TECHNOLOGICAL SYNERGY

*Chairmen G.M. Frascà (Ancona, Italy)
V. Panichi (Pisa, Italy)*

Hemodiafiltration with endogenous reinfusion (HFR) and biofeedback
L. Coli (Bologna, Italy)

**Hemodiafiltration with endogenous reinfusion (HFR):
clinical applications**
V. Panichi (Pisa, Italy)

**Coupled Plasma Filtration Adsorption (CPFA):
a sorbent therapy for sepsis**
M.L. Wratten (Mirandola, Italy)

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13:00 - 14:30

LUNCHTIME SYMPOSIUM B

TREATMENT OF ACUTE/CHRONIC LIVER FAILURE: MEDICINE OR TECHNOLOGY?

*Chairmen S. Stefoni (Bologna, Italy)
G. Novelli (Rome, Italy)*

Medical approach to liver failure treatment
G. Gasbarrini (Rome, Italy)

Liver failure treatment: how effective is it today?
L. Bolondi (Bologna, Italy)

The clinical role of artificial support: medium-long term MARS experience
L. Coli (Bologna, Italy)

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**PERITONEAL ULTRAFILTRATION: A VIABLE THERAPY FOR
REFRACTORY HEART FAILURE**

Chairman L. Ballerini (Milan, Italy)

**Peritoneal ultrafiltration in the treatment of heart failure:
why should we prefer it?**

G. Brunori (Brescia, Italy)

From anedoctical experiences to clinical practice

U. Teatini (Bollate, Italy)

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SESSION # 10

METABOLIC AND RESPIRATORY SUPPORT: ARTIFICIAL LIVER

Chairman I. Sauer (Berlin, Germany)

- P95. **MARS as replacement therapy of the liver detoxifying function in acute on chronic liver failure**
R. Marangoni (Milan, Italy)
- P96. **Modification of TNF- α and IL-6 in patients treated with Molecular Adsorbent Recycling System (MARS)**
G. Ambrosino, A. Naso, U. Cillo, S. Basso, P. Feltracco, P. Carraro, G. Zanus, A. Brolese, M. Plebani, G.P. Giron, D. D'Amico (Vicenza, Padova, Italy)
- P97. **A new mathematical model for bilirubin kinetics during MARS sessions**
E. Magosso, M. Ursino, L. Coli, L. Bolondi, S. Stefoni (Bologna, Italy)
- P98. **Albumin liver dialysis (MARS) - Treatment in acute acetaminophen poisonings**
P. Hydzik, T. Gawlikowski, K. Ciszowski, J. Pach (Krakow, Poland)
- P99. **Economic evaluation and survival analysis of the liver dialysis system MARS in patients with alcoholic liver disease**
F. Hessel, S. Mitzner, J. Wasem (Essen, Rostock, Germany)
- P100. **Acute liver failure: fractionated plasma separation/adsorption (FPSA) and high-flux hemodialysis (HD) - Bridging therapy to LTX**
G. Junge, S. Kohler, L. Schewior, I. Sauer, A. Pascher, P. Neuhaus (Berlin, Germany)

- P101. Biological characteristics of immortalized human hepatocyte (HepLL) after transplantation in the spleen of BALB/c naked mice
L. Li, Y.M. Zhang, J. Li, G.P. Sheng, H.Y. Yu (Hangzhou, China)
- P102. Three dimensional cell culture improves synthetic activity of HEPG2 cells in vitro
A. Kinasiewicz, E. Banasiuk, J. Kawiak, A. Weryński (Warsaw, Poland)
- P103. Evaluation of a hybrid artificial liver module with a hepatocytes organoid
H. Mizumoto, K. Aoki, K. Ishihara, K. Noda, K. Nakazawa, T. Kajiwara, K. Funatsu (Fukuoka, Kitakyushu, Japan)
- P104. Development of a novel hybrid artificial liver with organoid-sheet
T. Kusumi, K. Ishihara, H. Mizumoto, K. Nakazawa, T. Kajiwara, K. Funatsu (Fukuoka, Japan)
- P105. Evaluation of a bioartificial liver based on nonwoven fabric bioreactor with porcine hepatocytes in fulminant hepatic failure pigs
L. Li, W. Du, Y. Zhang, J. Li, X. Pan, J. Chen, H. Cao, Y. Chen, Y. Chen (Hangzhou, China)

SESSION # 11

ORGAN TRANSPLANTATION

Chairman P. Todeschini (Bologna, Italy)

- P106. Peripheral nerve regeneration using a polyglycoic acid-collagen tube, comparison with an autograft
S. Itoi, K. Endo, Y. Inada, S. Fukuda, A. Nakada, S. Ichihara, T. Nakamura (Sakyo-ku Kyoto, Japan)
- P107. Epilepsy stop machine
T. Yambe, S. Maruyama, E. Asano (Sendai, Japan; Detroit, USA)

- P108. Development of moving esophageal stent using artificial peristaltic motion
K. Sekine, T. Yambe, Y. Saijo, Y. Shiraishi, Y. Hori, M. Watanabe, Q. Wang, H.J. Liu, H. Matsuki, F. Satoh, T. Maeda, D. Honma, S. Nitta (Sendai, Tokyo, Japan)
- P109. A model of the sweat secretion from a sweat gland
P. Foltynski, P. Ladyzynski, K. Migalska-Musia, J.M. Wojcicki (Warsaw, Poland)
- P110. A TNF polymorphism may be involved in the progression of HCV-related chronic liver disease and in hepatocellular carcinoma development
V. Cerreta, L. Gramantieri, R. Giannini, S. Bondini, R. Righini, P. Chieco, L. Bolondi (Bologna, Italy)
- P111. Impact of cytokines and apoptosis molecules polymorphisms on chronic allograft nephropathy
N. Lanci, M.L. Cappuccilli, G. La Manna, G. Comai, M. Ortolani, F. Bianchi, L.C. Borgnino, M.P. Scolari, S. Stefoni (Bologna, Italy)
- P112. Angiotensin II has genotoxic impact on human (HK-2) and animal (LLC-PK1) kidney cells but not on human (HL60) or mouse (L5178Y) lymphoma cells
P. Rutkowski, N. Schupp, U. Lakner, J. Vienken, A. Heidland, H. Stopper (Bad Homburg, Germany)
- P113. Genotoxicity of homocysteine and its derivatives
K. Kobras, J. Vienken, A. Heidland, H. Stopper (Bad Homburg, Germany)
- P114. Plasma total homocysteine and cardiovascular risk in patients submitted to liver transplantation
G. Bianchi, F. Nicolino, G. Passerini, G.L. Grazi, P. Zappoli, R. Graziani, A. Berzigotti, R. Chianese, V. Mantovani, A.D. Pinna, M. Zoli (Bologna, Italy)
- P115. Homocysteine and cardiovascular risk in patients with intestinal transplantation
G. Bianchi, E. Pompignoli, A. Lauro, G. Passerini, R. Chianese, V. Mantovani, A.D. Pinna, M. Zoli (Bologna, Italy)

METABOLIC AND RESPIRATORY SUPPORT: ARTIFICIAL LIVER

Chairman C. Feletti (Cesena, Italy)

- P116. Alpha-1-acid glycoprotein as detoxifying agent in acute hepatic failure

*E.V. Makarov, M.V. Osikov, L.V. Krivohizhina
(Chelyabinsk, Russia)*

- P117. Influence of human fetal liver extract on hepatocyte nuclearity in CCl₄-induced liver cirrhosis

*A.M. Malysheva, E.L. Kurenkov, V.E. Ryabinin, S.I. Grobovoy
(Chelyabinsk, Russia)*

- P118. Isolated hepatocytes vs cluster hepatocytes. In vitro proliferation of rat hepatocytes after 30 days culture

*G. Ambrosino, S. Basso, S. Varotto, E. Zardi, A. Picardi,
D.F. D'Amico (Vicenza, Padova, Rome, Italy)*

- P119. Effect of matrine on the expression of cytochrome P-450, 2A6, and 2B6 of primary human hepatocytes

*X. Gong, E.A. Effimova, F.W.R. Vondran, X. Cheng,
R. Schwartlander, A.K. Nüssler, D. Yang, P. Neuhaus,
I.M. Sauer (Berlin, Germany; Guangzhou, Hangzhou, China)*

- P120. Hepatocyte transplantation in Gunn rats: improvement in bilirubin metabolism

*S. Tomat, E. Gringeri, F. Calabrese, C. Giacometti,
P.P. Parnigotto, U. Cillo, P. Burra (Padova, Italy)*

- P121. Time-course maintenance of specific functional activity in cultured human hepatocyte

*E.A. Katzenz, F.W.R. Vondran, X.B. Gong, X.D. Cheng,
R. Schwartlander, A.K. Nussler, P. Neuhaus, I.M. Sauer
(Berlin, Bad Homburg, Germany)*

- P122. Large-scale isolation and cryopreservation of human hepatocytes from all whole livers unsuitable for transplant; hepatocyte bank is a reality

*A. Cariani, G. Resta, L. Valieri, G. Anania, S. Occhionorelli,
S. Ascanelli, G. Cavallesco, G. Azzena (Ferrara, Italy)*

- P123. Portal vein arterialization increases liver regeneration in acute liver failure induced by extended hepatectomy or toxin administration in the rat
B. Nardo, P. Caraceni, L. Puviani, R. Montalti, R. Bertelli, P. Beltempo, V. Pacilè, M. Licursi, A.M. Pertosa, M. Domenicali, M. Pariali, M. Bernardi, A. Cavallari (Bologna, Italy)
- P124. Perspectives of artificial liver and xenotransplantation
K. Naruse (Tokyo, Japan)
- P125. Contribution of high flux dialysis for bilirubin removal in extracorporeal liver support therapy
A. Jung, P. Krisper, B. Haditsch, R. Stauber, H. Holzer, D. Schneditz (Graz, Austria; Krakow, Poland)
- P126. Liver extracorporeal oxygenator (L.E.O.NARDO) device to treat swine with post-resection acute liver failure
B. Nardo, R. Montalti, L. Puviani, V. Pacilè, P. Beltempo, R. Bertelli, G. Cavallari, M. Licursi, M. Pariali, D. Cianciavichia (Bologna, Italy)

SESSION # 13

REGENERATIVE MEDICINE: TISSUE ENGINEERING

Chairman V. Mantovani (Bologna, Italy)

- P127. HET-CAM biomaterial evaluation gives comparable results to in vivo models regarding biocompatibility patterns
C. Eder, E. Falkner, C. Chiari-Grisar, H. Schöffl, U.M. Losert, S. Nehrer (Vienna, Austria)
- P128. In vitro and in vivo analysis of protein interactions with different starch-based biomaterials
C.M. Alves, A. Marques, R.L. Reis, J.A. Hunt (Braga, Portugal; Liverpool, UK)

- P129. Chitosan/polyester scaffolds seeded with bovine articular chondrocytes for cartilage tissue engineering
J.T. Oliveira, V.M. Correlo, A. Crawford, J.L. Mundy, M. Bhattacharya, N.M. Neves, P.V. Hatton, R.L. Reis (Braga, Guimarães, Portugal; Sheffield, UK)
- P130. Human hemangioblast from bone marrow generates in vitro hematopoietic, endothelial and mesenchymal lineages
M. Pozzobon, M.V. Gazzola, R. Destro, M. Piccoli, A. Ditadi, L. Boldrin, L. Masiero, E. Slanzi, I. Andrè-Schmutz, L. Zanesco, M. Cavazzana, C. Messina, P. De Coppi (Padova, Italy; Paris, France)
- P131. Experimental assessment of Surgisis gold as graft for neointestine regeneration in a rat model
F. Gazzotti, L. Ansaloni, P. Bonasoni, F. Catena, S. Gagliardi, D. Santini, M. Taffurelli (Bologna, Italy)
- P132. Influence of G-CSF on the state of visceral organs in acute toxic affection
V.N. Zaporozhan, E.L. Kholodkova, D.M. Pikhtyeyev, N.N. Perepelyuk (Odessa, Ukraine)
- P133. Red cell loading by application of shear stress on the stroma
G. Casagrande, F. Arienti, A. Mazzocchi, M.L. Costantino, R. Fumero (Milan, Italy)
- P134. The Robin Heart choreography and tools for aerobas operation
Z. Nawrat, P. Kostka (Zabrze, Poland)
- P135. CT scan analysis of the pulmonary distribution of perfluorocarbon during total liquid ventilation
P. Bagnoli, G.B. Fiore, O. Travetti, C.M. Mocchi, A. Monaco, T. Anzani, F. Acocella, M. Di Giancamillo, R. Fumero, M.L. Costantino (Turin, Milan, Italy)
- P136. Reimbursement of high-priced new emerging medical technologies in a DRG-based hospital care system
F. Hessel, S. Greß, J. Wasem (Essen, Germany)

MECHANICAL CIRCULATORY SUPPORT: MODELLING

Chairman B. Verkerke (Groningen, The Netherlands)

- P137. A new mathematical approach modelling thrombin generation
S. Orfao, G. Jank, K. Mottaghy (Aachen, Germany)
- P138. Alternatives to animal serum for cell culture - 2005
E. Falkner, H. Appl, C. Eder, H. Schöffl, U.M. Losert (Vienna, Austria)
- P139. Helical flow as fluid dynamic index for the identification of sites prone to atherogenesis in aortocoronary bypass
U. Morbiducci, A. Redaelli, R. Ponzini, M. Nobili, M. Grigioni (Rome, Milan, Italy)
- P140. Influence of blood flow waveform created by UPVAD on endocardial viability ratio and myocardial tissue perfusion
S. Konno, Y. Shiraishi, K. Sekine, Y. Saijo, T. Yambe, S. Nitta, K. Imachi, K. Takiura, K. Tabayashi, A. Iguchi, M. Yoshizawa, D. Ogawa, P. Olegario, A. Tanaka, I. Saito, S. Mochizuki, T. Chinzei, Y. Abe (Sendai, Tokyo, Japan)
- P141. The system of diagnosis and therapy of respiratory disturbances in stuttering
B. Stankiewicz, B. Adamczyk, M. Darowski, K. Zieliński, M. Guce (Warsaw, Lublin, Poland)
- P142. Mathematical modelling of the CRF patients cardiovascular responses during profiled hemodialysis
K.M. Lim, H.J. Ko, J.Y. Park, C. Kim, J.S. Park, B.G. Min, E.B. Shim (Seoul, Kangwan, Korea)
- P143. Critical issues about blood trauma: evaluation of mathematical models
M. Grigioni, U. Morbiducci, G. D'Avenio, C. Del Gaudio, G. Di Benedetto (Rome, Italy)

- P144. Pulse wave propagation in semi-infinite blood vessel with insertion
I. Selezov, G. Pallotti, P. Pettazoni, O. Zvonareva
(Bologna, Italy; Kiev, Ukraine)
- P145. About a non linear mathematical model for alveolar diffusion
P. Pettazoni, F. Albanesi, E. Caroli, G. Belmonte, M. Fabbri,
L. Fasano, A.M.G. Pacilli, G. Pallotti (Bologna, Italy)
- P146. Blood glucose prediction in type I diabetics through a mathematical model
V. Canonico, D. Fruttini, M. Morettini, M. Massi Benedetti,
E. Sarti, P.G. Fabiatti (Perugia, Italy)

SESSION # 15

REGENERATIVE MEDICINE: TISSUE ENGINEERING

Chairman R. Reis (Braga, Portugal)

- P147. Cell and tissue preparations in regenerative medicine: treatment of burn disease
Y.V. Gladkikh, G.S. Lobyntseva, A.V. Yelskaya, L.L. Lukash,
G.P. Kozinets, Y.P. Rubizov, O.N. Kovalenko, A.V. Voronin,
D.V. Lobyntsev (Kiev, Ukraine)
- P148. On-line monitoring of human epithelial cells behaviour exposed to Cytotoxic Necrotizing Factor type 1 (CNF1)
P. Filippini, L. Falzano, V. Contruciare, C. Del Gaudio,
C. Fiorentini, M. Grigioni (Rome, Italy)
- P149. In vitro pulsatile flow loading can differentiate embryonic stem (ES) cells to vascular wall cells
H. Huang, Y. Nakayama, K. Qin, K. Yamamoto, J. Ando,
J. Yamashita, H. Itoh, K. Kanda, H. Yaku, Y. Okamoto,
Y. Nemoto (Tokyo, Kyoto, Japan)
- P150. Bone grafts with platelet gel and autologous stem cells in tibial osteotomies: randomized study
D. Dallari, C. Stagni, A. Cenacchi, P.M. Fornasari, A. Giunti
(Bologna, Italy)

- P151. Expression of markers for metanephric differentiation induced by butyric and hyaluronic esters
F. Bianchi, G. La Manna, S. Cantoni, C. Cavallini, I. Scarlata, M.L. Cappuccilli, E. Persici, M.P. Scolari, A. Perbellini, C. Ventura, S. Stefoni (Bologna, Italy)
- P152. Using smooth muscle cell-seeded collagen scaffolds in tissue engineering of small intestine
Y. Nakase, A. Hagiwara, T. Nakamura, S. Kin, S. Nakashima, Y. Ikada, H. Yamagishi (Kyoto, Japan)
- P153. Morphological and cellular viability characterization of electrospun PCL scaffolds
C. Del Gaudio, P. Filippini, V. Contruscieri, S. Lora, A. Bianco, M. Grigioni (Rome, Legnaro, Italy)
- P154. Tissue organization acceleration technology in vivo in regenerative medicine: promotion of angiogenesis by control-released nicotine
O. Sakai, K. Kanda, H. Yaku, T. Sato, Y. Nakayama (Suita Osaka, Kochi, Japan)
- P155. In vivo valve regeneration after rasping procedure
K. Hayashida, K. Kanda, T. Inoue, A. Fukumoto, K. Doi, H. Yaku, H. Nakayama (Kyoto, Osaka, Japan)

SESSION # 16

REGENERATIVE MEDICINE: TISSUE ENGINEERING

Chairman M.L. Cappuccilli (Bologna, Italy)

- P156. Behaviour of skeletal muscle cells and cardiomyocytes on extracellular matrix components – An essential compromise for cardiac tissue engineering purposes
K. Macfelda, B. Kapeller, U.M. Losert (Vienna, Austria)
- P157. In situ tissue engineering for the skeletal muscle regeneration using a collagen scaffold in a rabbit model
S. Kin, A. Hagiwara, Y. Nakase, Y. Kuriu, S. Nakashima, T. Yoshikawa, C. Sakakura, E. Otsuji, T. Nakamura, H. Yamagishi (Kyoto, Japan)

- P158. Impedenzimetric analysis of fibroblast culture for tissue engineering: preliminary results
C. Del Gaudio, P. Filippini, V. Contrusciere, S. Lora, M. Grigioni (Rome, Legnaro, Italy)
- P159. Head-mounted operating microscopy system for angiogenesis research
E. Falkner, C. Eder, H. Appl, U.M. Losert, H. Schöffl (Vienna, Austria)
- P160. The DIDECO “pluricell system”: a medical device for the ex-vivo expansion of hematopoietic stem cells
G. Astori, V. Adami, G. Mambrini, L. Bigi, M. Cilli, A. Facchini, E. Falasca, W. Malangone, I. Panzani, A. Degrassi (Mirandola, Udine, Genova, Bologna, Italy)
- P161. PVA devices composed of pancreatic rat islets seeded on homologous acellular pancreatic matrix
E. De Carlo, S. Vigolo, M.T. Conconi, S. Lora, N. Sicolo, C. Martini, P. Maffei, G. Tamagno, R. Vettor, P.P. Parnigotto (Padova, Italy)
- P162. Dynamic in vitro assays of a hollow fibre bio-artificial pancreas with rat islets and beta-TC-3 cell line
A.I. Silva, M. Mateus (Lisbon, Portugal)
- P163. Establishing ECMO in a university clinic - Our experience
J.M. Kahn, W. Marte, A. Wasler, K.H. Tscheliessnigg, H.M. Müller (Graz, Austria)
- P164. Preliminary study of dialysate regeneration through polyurethane nanofibrous membrane in vitro test
J.H. Kim, H.G. Yoon, K.S. Lee, B.G. Min (Seoul, Korea)

METABOLIC AND RESPIRATORY SUPPORT: ARTIFICIAL LUNG

Chairman K. Mottaghy (Aachen, Germany)

- P165. Over two months of continuous cardiopulmonary support in goats using a novel pediatric extracorporeal membrane oxygenation system without systemic heparinization
K. Ota, E. Tatsumi, Y. Taenaka, N. Katagiri, T. Mizuno, R. Kansaku, Y. Kakuta, H. Lee, T. Tsukiya, A. Homma, E. Akagawa, M. Sato, H. Tanaka, K. Sakai, T. Matsuda (Suita Osaka, Tokyo, Japan)
- P166. Modelling of two-phase flow during pulsatile pulmonary airways reopening
B. Kuraszkievicz (Warsaw, Poland)
- P167. The NCVS ultra-durable heparinless ECMO system: current status of development
E. Tatsumi, Y. Taenaka, N. Katagiri, T. Mizuno, K. Ota, T. Tsukiya, A. Homma, Y. Takewa, M. Sato, H. Tanaka, K. Sakai, T. Matsuda (Suita Osaka, Tokyo, Japan)
- P168. Analysis of blood flow in artificial lung by X-ray computed tomography
F. Kohori, K. Sakai (Tokyo, Japan)
- P169. Artificial trachea development using omentum
J.H. Kim (Seoul, Korea)
- P170. Assessment of three pediatric endotracheal tubes of different design based on flow resistance and work of breathing measurements
B. Stankiewicz, M. Darowski, M. Rawicz, J. Glapiński, M. Michnikowski, A. Rogalski (Warsaw, Poland)
- P171. Function course of the retention time in hollow fiber bundles
A. Kashefi, B. Oedekoven, K. Mottaghy (Aachen, Germany)

- P172. Development of a highly integrated extracorporeal membrane oxygenator – Design and performance
A. Strauß, D. Henzler, H. Reul, U. Steinseifer, T. Schmitz-Rode (Aachen, Germany)
- P173. Conventional versus differential ventilation of older patients with healthy lungs in the lateral position - Comparison with the use of virtual lungs
T. Golczewski, M. Darowski (Warsaw, Poland)
- P174. Lung ventilation hybrid support (LVHS) concept aimed at easing the nocturnal motoric deficiency
M. Pokora, M. Darowski, J. Glapinski (Warsaw, Poland)

SESSION # 18

MECHANICAL CIRCULATORY SUPPORT: MODELLING HEART

Chairman J. Wojcicki (Warsaw, Poland)

- P175. Time resolved PIV technique for high temporal resolution measurements of the blood flow across heart valves
R. Kaminsky, M. Rossi, U. Morbiducci, L. Scalise, P. Castellini, S. Kallweit, P. Verdonck, M. Grigioni (Ghent, Belgium; Ancona, Rome, Italy; Jülich, Germany)
- P176. The importance of correct geometry of venous anastomosis at vascular access grafts – proven by CFD
U. Krueger, H. Scholz (Berlin, Germany)
- P177. Hydrodynamics of aortic cannulae during extracorporeal circulation: an evaluation of flow pattern and shear stress in an in-vitro model
M. Minakawa, I. Fukuda, J. Yamazaki, T. Igarashi, N. Funakoshi, K. Fukui, H. Yanaoka, T. Inamura (Hirosaki, Japan)
- P178. Time dependent CFD study in a three-dimensional realistic model of aortic arch
C. Del Gaudio, U. Morbiducci, G. D'Avenio, M. Grigioni (Rome, Italy)

- P179. **Optimalisation of surgical left ventricular reconstruction in patients with ischeamic heart failure using modelling method**
Z. Malota, Z. Nawrat, P. Kostka, T. Kukulski (Zabrze, Poland)
- P180. **The hemolysis test of pulsatile blood pump, T-PLS™**
H. Choi, J.Y. Hong, D.W. Lee, K.H. Lee, H.G. Yoon, B.G. Min (Seoul, Korea)
- P181. **System design for CPB & HF concurrent treatment with T-PLS**
J.H. Mun, K.M. Lim, J.C. Lee, B.G. Min (Seoul, Korea)
- P182. **Blood flow estimation of pulsatile extracorporeal life support system with minimal measurement and mathematical modelling**
S.W. Choi, K.W. Nam, K.H. Yoon, S.M. Lee, B.G. Min (Seoul, Korea)
- P183. **Experimental validation of computational fluid dynamics by the use of oil film method**
M. Stoiber, S. Pirker, C. Reindl, L. Huber, P. Gittler, H. Schima (Vienna, Linz, Austria)
- P184. **Novel and unified solution for hybrid models of cardiovascular and respiratory systems**
M. Kozarski, G. Ferrari, M. Darowski, K. Górczyńska, C. De Lazzari, K.J. Palko, A. Tokarz, G. Tosti (Warsaw, Poland; Rome, Italy)

ORGAN TRANSPLANTATION

*Chairmen P. Ivanovich (Chicago, USA)
A. Faenza (Bologna, Italy)*

Comparative study of the hypothermic preservation and pulsatile perfusion effects in autotransplanted ischemic kidneys
I. Berenguer, G. Pedemonte, D. Rodríguez-Martínez, A. Alvarado, C. Martínez, J.F. Del Cañizo, E. Lledó-García (Madrid, Spain)

Combined liver kidney transplantation: St. Orsola experience
G. Mosconi, M.P. Scolari, G. Feliciangeli, G. Liviano D'Arcangelo, A. Buscaroli, F. D'Addio, A. Faenza, A.D. Pinna, S. Stefoni (Bologna, Italy)

The evolution of untreated subclinical and borderline rejections at first month kidney allograft biopsy in comparison with histological changes at 6 months protocol biopsies

J. Masin-Spasovska, G. Spasovski, S. Dzikova, G. Petrusevska, B. Dimova, L. Lekovski, Z. Popov, N. Ivanovski, M. Polenakovic (Skopje, Macedonia)

The improvement of immunologic function in diabetic mice after Langerhans islets xenotransplantation

E. Godlewska, M. Antosiak, T. Orowski (Warsaw, Poland)

BIOMATERIALS AND BIOCOMPATIBILITY - POLYMERS AND SCAFFOLDS

*Chairmen V. Weber (Vienna, Austria)
R. Giardino (Bologna, Italy)*

HET-CAM testing combined with histology: a rapid and simple method for biomaterial selection

*C. Eder, E. Falkner, H. Schöffl, S. Nehrer, U.M. Losert
(Vienna, Linz, Austria)*

Biodegradable hybrid scaffolds with interconnected networks for bone tissue engineering

*Y. Mohammadi, H. Mirzadeh, F. Moztarzadeh, E. Jabbari
(Tehran, Iran; Charleston, USA)*

Characterisation of the biodegradation of mammalian silicone-prostheses

*A. Janke, N. Unbehaun, L. Kovacs, B. Glasmacher
(Aachen, Munich, Germany)*

Replacement of the rat aorta with fully degradable synthetic vascular prosthesis

M. Cikirikcioglu, G. Bowlin, Y.B. Cikirikcioglu, J.C. Tille, J.C. Pache, A. Kalangos, B.H. Walpoth (Geneva, Switzerland; Richmond, USA)

BLOOD PURIFICATION – DIALYSIS

*Chairmen M. Polenakovic (Skopje, Macedonia)
L. Catizone (Ferrara, Italy)*

Thixotropic catheter locking solution does not spill during injection and remains in the catheter

H.D. Polaschegg (Koestenberg, Austria)

Effect of super-flux cellulose triacetate dialyzers with large pores on removal and clearance of uremic solutes

R. De Smet, A. Dhondt, F. Galli, S. Eloot, M.A. Waterloos, N. Lameire, R. Vanholder (Ghent, Belgium; Perugia, Italy)

Hemodiafiltration with self-dilution

K. Lee, J.H. Jeong, C.H. Mun, J.H. Kim, B.G. Min (Seoul, Korea)

Hemofiltration system with non occlusive pulsatile pump

D. Rodríguez-Martínez, I. Berenguer, S. Salom, J.F. Del Cañizo (Madrid, Spain)

16:45 - 18:15

SYMPOSIUM # 9

NEW FRONTIERS IN ORGAN SUBSTITUTION

Chairmen S. Stefoni (Bologna, Italy)

H. Klinkmann (Rostock, Germany)

Artificial liver support: present and future

J. Rozga (Los Angeles, USA)

Small bowel transplantation

A.D. Pinna (Bologna, Italy)

Liver cell response to the scaffold properties and its effect on the bioartificial liver performance

G. Catapano, G. Speranza, C. Della Volpe (Rende, Povo, Trento, Italy)

18:15 - 19:00

ESAO GENERAL ASSEMBLY

TISSUE ENGINEERING

Chairmen R. Reis (Braga, Portugal)

G. Catapano (Rende, Italy)

A keynote on tissue engineering

R. Reis (Braga, Portugal)

In vitro cardiomyocyte differentiation of amniotic fluid stem cells

S. Bollini, A. Chiavegato, M. Pozzobon, M. Piccoli, E. Slanzi,

F. Castello, G.M. Zanon, M. Carli, S. Sartore, P. De Coppi

(Padova, Italy)

Production of biologically active recombinant human BMP-2 for tissue engineering applications

P.C. Bessa, A.J. Pedro, M. Casal, R. Reis (Braga, Portugal)

In vivo stem cell seeding of synthetic vascular grafts

M. Cikirikcioglu, S. Yang, J.C. Tille, A. Kalangos, B.H. Walpoth

(Geneva, Switzerland)

Tissue organization acceleration technology in vivo in regenerative medicine: a wing-attached rod as a novel scaffold for “biotube” grafts fabrication

O. Sakai, Y. Zhou, A. Ametani, K. Kanda, H. Yaku, Y. Nakayama

(Suita Osaka, Kyoto, Japan)

Tissue engineering in vitro: differentiation of stem cells to cardiomyocytes

L.L. Lukash, D.A. Bazika, N.V. Belyaeva, O.A. Kovalenko,

O.V. Pidpala, A.P. Yatsishi (Kiev, Ukraine)

BLOOD PURIFICATION - DIALYSIS

*Chairmen H. Mann (Aachen, Germany)
C. Campieri (Bologna, Italy)*

The procedure of proximal arterial feeding: an effective treatment for access related ischemia

J. Zanow, H. Scholz (Berlin, Germany)

Bidialysis on line: a new solution for hypercatabolic or high body weight haemodialysis patients

G. Splendiani, S. Condò, R. Colombo, A. Fierro, L. Nannini, C. Cucchi (Rome, Italy)

Impact of temperature and solute concentration differences on dialysate partitioning in the Genius dialysis system

S. Eloot, A. Dhondt, R. Vanholder, P. Verdonck (Ghent, Belgium)

Clinical use of artificial heart technology to pulsatile pumps for life-support system and home-dialysis/filtration

B.G. Min, Y.S. Won, K.K. Lee, H.S. Son, J.S. Shin, K. Sun (Seoul, Korea)

Consecutive pathogenetic heparin treatment of predialysis nephrotic syndrome (NS) patients – The dynamics of hyperlipoproteinemia

Y.B. Kovaliv (Lviv, Ukraine)

Influence of peritoneal dialysis modality on the prevalence of peritonitis and exit site infections

E. Dumler, N. Khazai (Royal Oak, USA)

Padiglione Polivalente

19:30 - 22:30

FESTIVE DINNER

Friday, October 7

Room Europa		Room Italia	Room Bianca	Room Azzurra	Pad. Polivalente
8:30 10:15		Free Communications Cardiac assist	Free Communications Nanotechnology & miscellaneous	Free Communications Extracorporeal circulation modelling	
10:15 10:45	Plenary Lecture Current concepts in biomaterials research: have dreams come true?				
10:45 11:15	<i>Break</i>				
11:15 12:45		Symposium Uremic toxins	Symposium Tissue engineering: regulatory affairs and successful practical applications	Free Communications Mechanical circulatory support	
12:45 13:00	Closing Ceremony				

MECHANICAL CIRCULATORY SUPPORT - CARDIAC ASSIST

Chairmen **B.H. Walpoth** (Geneva, Switzerland)
G. Arpesella (Bologna, Italy)

Chronic heart failure induced by multiple sequential coronary microembolizations in sheep

J.D. Schmitto, **H. Dorge**, **R. Wachter**, **P. Ortmann**, **C. Siebert**,
C. Ballat, **R. Waldmann-Beushausen**, **H. Post**, **B. Pieske**,
F.A. Schonhuber (Gottingen, Switzerland)

Recovery-Directed Left Ventricular Assist Device (RDLVAD): influence of its main components on left ventricular unloading

F. Miyawaki, **Y. Takano**, **D. Satoh**, **S. Takahashi**, **M. Hamasaki**
(Saitama, Japan)

In vitro anti-thrombogenic screening of biomaterials under practical pulsatile circulation

K. Iwasaki, **Y. Takeuchi**, **M. Eguchi**, **K. Ishihara**, **M. Umezu**
(Tokyo, Japan)

Viable bioengineered vascular smooth muscle grafts – A promising tool for use in surgical left ventricle restoration

P. Wilczek, **A. Baranska**, **Z. Religa**, **R. Przybylski**, **J. Nożyński**,
M. Zembala (Zabrze, Poland)

Changes in the extracellular matrix of cardiomyocytes by electrical microcurrent application. A possible novel approach for the treatment of heart failure

J. Mueller, **B. Kapeller**, **K. Macfelda** (Berlin, Germany; Vienna, Austria)

A novel technique using echocardiography to evaluate venous cannula performance in CPB cardiac surgery

D. Jegger, P.G. Chassot, M.A. Bernath, J. Horisberger, M. Jachertz, I. Seigneul, M. Nordien, P.G. Tozzi, D. Delay, L.K. von Segesser (Lausanne, Switzerland)

First experience with a new myostimulator for muscular cardiac assist

P. Klapproth, M. Großherr, B. Keding, C. Hansen, D. Thalmann, H.H. Sievers, N.W. Guldner (Lübeck, Germany)

**BIOMATERIALS AND BIOCOMPATIBILITY - NANOTECHNOLOGY
& MISCELLANEOUS**

Chairmen **B. Glasmacher** (Aachen, Germany)
G. Catapano (Rende, Italy)

Nanostructured biomaterials with electrospinning
C. Reindl, **M. Stoiber**, **H. Schmallegger**, **L. Huber**, **A. Nigisch**,
H. Bergmeister, **G. Weigel**, **H. Schima** (Vienna, Austria)

Development of pH-responsive polymeric carriers for site-selective
delivery of therapeutics
V. Bulmus, **Y. Chan**, **T. Davis**, **L. Barner**, **P. Stayton**, **A.S. Hoffman**
(Sydney, Australia; Seattle, USA)

Multifunctional surfaces by collagen coupling to nanotextured titanium
implants
M. Morra, **C. Cassinelli**, **M. Fini**, **N. Nicoli Aldini**, **G. Giavaresi**,
R. Giardino (Villafranca d’Asti, Bologna, Italy)

Biomaterial surface modification by the thin TiN layer deposition
R. Kustos, **R. Major**, **B. Major**, **W. Waldhauser**, **J.M. Lackner**,
E. Czarnowska (Krakow, Zabrze, Warsaw, Poland)

Transdermal delivery of insulin from synthetical matrix: experimental
investigation and clinical studies
E.G. Kuznetsova, **O.M. Kuryleva**, **L.A. Salomatina**, **V.I. Sevastianov**
(Moscow, Russia)

Platelet adhesion on nanostructured surfaces (NSS) formed
by ion-plasma methods
E.A. Remeeva, **I.B. Rozanova**, **V.M. Elinson**, **V.I. Sevastianov**
(Moscow, Russia)

Investigation of dye washout in three standard mechanical heart valves
by numerical modelling
L. Goubergrits (Berlin, Germany)

BIOMATERIALS AND BIOCOMPATIBILITY - EXTRACORPOREAL CIRCULATION MODELLING

Chairmen A. Werynski (Warsaw, Poland)
G. Pallotti (Bologna, Italy)

On-line evaluation of vascular access flow in hemodialysis patients
A. Ciandrini, C.A. Lodi, R. Galato, M.C. Miscia, S. Cavalcanti
(Bologna, Medolla, Paderno Dugnano, Italy)

Computer simulation of platelet deposition in experimental blood flow between parallel plates
N. Filipovic, M. Kojic, A. Tsuda (Kragujevac, Serbia and Montenegro; Boston, USA)

Algorhythm of control of membrane blood pump for automatic mode
N. Kulikov, D. Sukhov, O. Khrupachev, V. Tolpekin, E. Gasanov
(Moscow, Russia)

Compartmental description of fluids and solutes transport during peritoneal dialysis
M. Galach, A. Werynski, B. Lindholm (Warsaw, Poland; Stockholm, Sweden)

A new mathematical model for profiled-HFR
L. Coli, M. Ursino, O. Baraldi, G. Cianciolo, M.L. Soverini, G. Donati,
D. Mezzopane, A. Chiarini, C. Raimondi, S. Stefoni (Bologna, Italy)

Comparison of different methods for calculation of Kt/V as parameter of dialysis dose
S. Abbas, S. Stiller, H. Mann (Aachen, Germany)

Urea kinetic modelling of adequacy indices for bimodal dialysis
M. Debowska, J. Waniewski, A. Werynski, B. Lindholm
(Warsaw, Poland; Stockholm, Sweden)

10:15 - 10:45

PLENARY LECTURE

Chairman G. von Sengbusch (Geesthacht, Germany)

**CURRENT CONCEPTS IN BIOMATERIAL RESEARCH:
HAVE DREAMS COME TRUE?**

T. Matsuda (Fukuoka, Japan)

UREMIC TOXINS

*Chairmen R. Vanholder (Ghent, Belgium)
M. Fusaroli (Ravenna, Italy)*

The European Uremic Toxin Group (EUTox) - Results of 5 years activity

R. Vanholder (Ghent, Belgium)

A steep separation profile of the new dialysis membrane PUREMA H leads to strongly improved removal of molecules up to 18 kD and low albumin loss

H.D. Lemke (Obernburg, Germany)

Bone and mineral metabolism in uremia: pathophysiology and clinical consequences

G. Spasovski (Skopje, Macedonia)

Importance of newly detected nucleotides and peptides in uremia and hypertension

J. Jankowski (Berlin, Germany)

11:15 - 12:45

SYMPOSIUM # 12

**TISSUE ENGINEERING: REGULATORY AFFAIRS AND
SUCCESSFUL PRACTICAL APPLICATIONS**

*Chairmen J. Vienken (Bad Homburg, Germany)
R. Giardino (Bologna, Italy)*

Tissue engineered products in the market place 2005
J. Vienken (Bad Homburg, Germany)

Regulatory approval process for tissue engineered products
M.E. Donawa (Rome, Italy)

Stem cells for myocardial repair
C. Ventura (Bologna, Italy)

**Regenerative therapy for ischemic limbs by implantation
of CD34(+) cells**
*A. Kawamura, T. Horie, I. Tsuda, K. Kukita, J. Meguro, M. Yonekawa
(Sapporo, Japan)*

Room Azzurra

11:15 - 12:45

FREE COMMUNICATIONS – SESSION # 18

MECHANICAL CIRCULATORY SUPPORT

Chairmen **B. Meyns (Leuven, Belgium)**
R. Zannoli (Bologna, Italy)

A novel condensed cardiopulmonary bypass circuit for small children
Y. Tsuruhara, Y. Shiokawa, N. Hayashi (Kumamoto, Japan)

Autopsy findings in patients on postcardiotomy extracorporeal membrane oxygenation
A.J. Rastan, N. Lachmann, N. Doll, T. Walther, C. Wittekind, F.W. Mohr (Leipzig, Germany)

More than 2 years on mechanical circulatory support
T. Drews, M. Jurmann, R. zu Dohna, M. Pasic, Y. Weng, R. Hetzer (Berlin, Germany)

Initial clinical experience with the CorAide™ cardiac assist system
A. El-Banayosy, L. Arusoglu, M. Rinaldi, M. Morshuis, L. Golding, D. Cough, L. Kizner, R. Koerfer (Bad Oeynhausen, Bochum, Germany; Pavia, Italy; Cleveland, USA)

Mechanical stress activates platelets at a subhemolysis level
I. Bakir, P. Luyten, H. Bollen, V. Leunens, B. Meyns (Leuven, Belgium)

Left ventricle load impedance control by apical VAD can help heart recovery and patient perfusion
M. Arabia, F. Colacino, F. Moscato, F. Piedimonte (Arcavacata di Rende, Rome, Italy)

Room Europa

12:45 - 13:00

CLOSING CEREMONY

The Alitalia logo features the word "Alitalia" in a bold, green, sans-serif font. The letter "A" is stylized with a red triangle pointing upwards from its base.

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All visitors coming from the U.S. will also have the chance to receive their tickets by mail calling the Alitalia Toll-free Number 1-800-2235730 and communicating the Identity Code “KQ” together with their Credit Card.

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UNA DIVISIONE JANSSEN-CILAG S.p.A.



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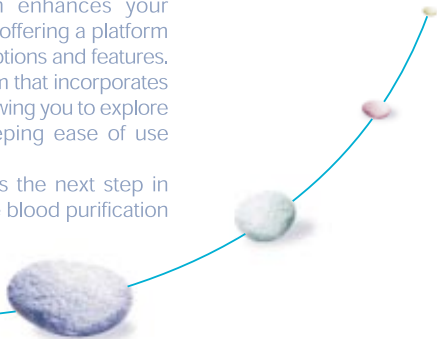
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