



September 5 – 8, 2010
Bologna/Italy

ESBES

8th European Symposium on
Biochemical Engineering Science

ISPPP

30th International Symposium
on the Separation of Proteins,
Peptides and Polynucleotides

ISB

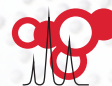
3rd International Symposium
on Biothermodynamics

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DECHEMA e.V.
Ms Claudia Martz
Theodor-Heuss-Allee 25
60486 Frankfurt am Main
Germany

Phone: +49 69-7564-129
Fax: +49 69-7564-176
E-Mail: martz@dechema.de

www.dechema.de/BEST2010



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INVITATION

Welcome to the ESBES & ISPPP & ISB Symposia 2010!

In 2010, the EFB Section on Biochemical Engineering Science (ESBES), the ISPPP Board and the DECHEMA Working Group on Biothermodynamics join forces – with the first summit of their three well-established symposia on bioengineering, separation and biothermodynamics:

ESBES – 8th European Symposium on Biochemical Engineering Science

ISPPP – 30th International Symposium on the Separation of Proteins, Peptides and Polynucleotides

ISB – 3rd International Symposium on Biothermodynamics

The idea of this threefold summit is to bring together the scientific communities in these fields at the same time and in one place, to foster communication, cooperation, and cross-disciplinary exchange of ideas. The excellent conference programme with interesting workshops, high-level lectures and poster contributions provides a unique platform for scientists from industry and academia to discover new science, technologies, processes and applications. Our intention of supporting young scientists is reflected by the Poster Awards and the Malcolm Lilly Award.

Welcome to Bologna!

Bologna is a lively city of today with a unique cultural and scientific heritage – and with many to the point nicknames. “La dotta – the learned one” refers to the oldest existing university in Europe, founded in 1088. “La rossa – the red one” describes the red roofs in the historic city centre; and “La grassa – the fat one” is a reference to Bologna’s excellent cuisine...

The organisers take pride in inviting you to the beautiful city of Bologna to attend the first summit of the ESBES, ISPPP and ISB symposia.

We look forward to meeting you in Bologna!

The Coordination Group

COMMITTEES

COORDINATION GROUP

Rainer Bischoff	University of Groningen/NL
Jochen Büchs	RWTH Aachen/D
Reinhard Ditz	Merck KGaA, Darmstadt/D
Sophia Hober	Royal Institute of Technology, Stockholm/S
Dirk Holtmann	DECHEMA e.V., Frankfurt am Main/D
Alois Jungbauer	University of Natural Resources and Applied Life Sciences, Vienna/A
Karin Tiemann	DECHEMA e.V., Frankfurt am Main/D
Thomas Track	DECHEMA e.V., Frankfurt am Main/D

ESBES COMMITTEE

Jochen Büchs	RWTH Aachen/D
Manuel Canovas	University of Murcia/ES
Guilherme Ferreira	University of Algarve, Faro/P
Klaus Graumann	Sandoz GmbH, Kundl/A
Sophia Hober	Royal Institute of Technology, Stockholm/S
Alois Jungbauer	University of Natural Resources and Applied Life Sciences, Vienna/A
William J. Kelly	Villanova University, PA/USA
Andreas Lübbert	University of Halle-Wittenberg/D
Carl-Fredrik Mandenius	Linköping University/S
Bernd Nidetzky	Graz University of Technology/A
Marcel Ottens	Delft University of Technology/NL
Ales Podgornik	BIA Separations d.o.o., Ljubljana/SLO
Clemens Posten	Karlsruhe Institute of Technology (KIT)/D
Andreas Schmid	Technische Universität Dortmund/D
Torsten Schulz	Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach/D
Arne Staby	Novo Nordisk A/S, Gentofte/DK
Owen Thomas	University of Birmingham/UK
Luuk A.M. van der Wielen	Delft University of Technology/NL
John Woodley	Technical University of Lyngby/DK

COMMITTEES

ISPPP COMMITTEE

Rudolf Aebersold	ETH Zürich/CH
Rainer Bischoff	University of Groningen/NL
Reinhard Ditz	Merck KGaA, Darmstadt/D
Milton T.W. Hearn	Monash University, Victoria/AUS
Sophia Hober	Royal Institute of Technology, Stockholm/S
Alois Jungbauer	University of Natural Resources and Applied Life Sciences, Vienna/A
Egbert Müller	Tosoh Bioscience GmbH, Stuttgart/D
Frantisek Svec	Lawrence Berkeley National Lab., CA/USA
Carsten Voß	University of Bielefeld/D

ISB COMMITTEE

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Peter Götz	Beuth University of Applied Sciences, Berlin/D
Herbert P. Jennissen	University of Duisburg-Essen/D
Jürgen U. Keller	University of Siegen/D
Thomas Maskow	Helmholtz-Zentrum für Umweltforschung, Leipzig/D
Urs von Stockar	EPF de Lausanne/CH

LOCAL ORGANISING COMMITTEE

Danilo Porro	University of Milano/I
Giulio C. Sarti	University of Bologna/I



PLENARY LECTURES**MONDAY, SEPTEMBER 6, 2010****Bioprocess monitoring and control for high cell density cultures**

Ian Marison, Dublin City University/IRL

Understanding driving forces of the biobased economy

Luuk A.M. van der Wielen, Delft University of Technology/NL

TUESDAY, SEPTEMBER 7, 2010**Modeling of mass transfer in reconstructed porous media**

Ulrich Tallarek, University of Marburg/D

Bioengineering strategies for stem cell expansion and controlled differentiation

Joaquim M.S. Cabral, Technical University of Lisbon/P

WEDNESDAY, SEPTEMBER 8, 2010**Detection and interpretation of low level variants of recombinant antibodies**

Reed J. Harris, Genentech Inc., South San Francisco, CA/USA

MALCOLM LILLY AWARD

In commemoration of Professor Malcolm Lilly, one of the pioneers of biochemical engineering, the ESBES Board in 2000 decided to introduce an award to be presented to a promising young scientist or engineer working in the field of biochemical engineering during the ESBES symposium: the Malcolm Lilly Award.

This is the 6th symposium at which the award will be offered and on this occasion PhD students and postdocs are invited to submit a one-page abstract for consideration to martz@dechema.de by **July 31, 2010** at the latest.

The abstracts will be reviewed by a jury and shortlisted candidates (up to 5) will be selected to present an oral lecture in a special session on Wednesday, September 8, 2010.

This prestigious award comes with a 2,000 US Dollar prize. The organisers thank Merck & Co. Inc., Westpoint, PA/USA for their generous sponsorship. The award ceremony will take place at the closing session of the conference.

WORKSHOPS

On Sunday, September 5, 2010 the following workshops will be held at the conference venue.

Cost per person: 50 EUR per workshop (only in combination with a regular conference ticket) including coffee/tea and soft drinks during the coffee break.

Registration is necessary, please fill in the registration form.

14:00-15:45 WORKSHOP 1:**M₃C Workshop: PAT applications for biopharmaceuticals**

C.-F. Mandenius, Linköping University/S

14:00-15:45 WORKSHOP 2:**Workshop on mass spectrometry of large biomolecules and nanoparticles**

G. Allmaier, Vienna University of Technology/A

16:15-18:00 WORKSHOP 3:**Methods used to identify characteristics of recombinant antibodies**

R.J. Harris, Genentech Inc., South San Francisco, CA/USA

16:15-18:00 WORKSHOP 4:**Biochemical engineering methods for biological waste treatment**

K.V. Gernaey, Technical University of Denmark, Lyngby/D

(Programme subject to change)

PROGRAMME AT A GLANCE

SUNDAY, 5 SEPTEMBER 2010	
14:00 - 18:00	Assembly of Exhibition
14:00 - 15:45	Workshops & Registration
15:45 - 16:15	Coffee Break
16:15 - 18:00	Workshops
18:00 - 20:00	Welcome Reception

PROGRAMME AT A GLANCE

MONDAY, 6 SEPTEMBER 2010						
08:00 - 09:30	Registration & Coffee				08:00 - 09:30	
09:30 - 09:45	Opening Ceremony				Room Europauditorium	09:30 - 09:45
<i>Chair:</i>	<i>T. Schulz</i>				<i>Chair:</i>	
09:45 - 10:40	PLENARY LECTURE: Ian Marison, Dublin City University/IRL Bioprocess monitoring and control for high cell density cultures				Room Europauditorium	09:45 - 10:40
10:40 - 11:10	Coffee Break				Coffee Break	10:40 - 11:10
<i>Room:</i>	Europauditorium	Sala Bianca	Sala Azzurra	Sala Italia	<i>Room:</i>	
	ESBES	ESBES	Biothermodynamics	ISPPP		
<i>Session:</i>	Preparative and Industrial High Resolution Bioseparation	Monitoring of Mammalian Cell Cultivation	Thermodynamics of Biomolecules	Materials for Separation	<i>Session:</i>	
<i>Chairs:</i>	<i>A. Podgornik</i>	<i>C. Schiraldi</i>	<i>J. Büchs</i>	<i>A. Jungbauer</i>	<i>Chairs:</i>	
11:10 - 11:30	O.R.T. Thomas	A. Lagoda	G. Sadowski	KEYNOTE W. Lindner	11:10 - 11:30	
11:30 - 11:50	S. Yamamoto	R. Foley	H.P. Jennissen	M. Hearn	11:30 - 11:50	
11:50 - 12:10	W.J. Kelly	A. Fernandez-Platzgummer		T.B. Tennikova	11:50 - 12:10	
12:10 - 12:30	B.K. Nfor	M. Aehle			12:10 - 12:30	
12:30 - 14:00	Lunchtime (ESBES General Assembly 12:35 - 13:30)				Lunchtime	12:30 - 14:00
<i>Chair:</i>	<i>R. Ditz</i>				<i>Chair:</i>	
14:00 - 14:55	PLENARY LECTURE: Luuk A.M. van der Wielen, Delft University of Technology/NL Understanding driving forces of the biobased economy				Room Europauditorium	14:00 - 14:55
14:55 - 15:00	Room Change				Room Change	14:55 - 15:00
	ESBES	ESBES	Biothermodynamics	ISPPP		
<i>Session:</i>	Preparative and Industrial High Resolution Bioseparation	Biofuels and Bioenergy	Thermodynamics of Biomolecules	Bioanalysis	<i>Session:</i>	
<i>Chairs:</i>	<i>G.N.M. Ferreira</i>	<i>L.A.M. van der Wielen</i>	<i>H.P. Jennissen</i>	<i>R. Bischoff</i>	<i>Chairs:</i>	
15:00 - 15:20	C. Brandenbusch	A. Kondo	V. Vagenende	KEYNOTE H. Irth	15:00 - 15:20	
15:20 - 15:40	J.P. Josch	F. Lehr	D. Matulis	V.P. Zubov	15:20 - 15:40	
15:40 - 16:00	M. Peterka	W. Fu	R. Hahn	D. Josic	15:40 - 16:00	
16:00 - 16:20	I. Garrard	N. Ikeda	J. Mamic		16:00 - 16:20	
16:20 - 16:50	Coffee Break				Coffee Break	16:20 - 16:50
<i>Session:</i>	Novel Chemicals and Enzymes	Biomaterials Engineering	Thermodynamics of Biomolecules	Biopharmaceutical – Downstream Processing	<i>Session:</i>	
<i>Chairs:</i>	<i>B. Nidetzky</i>	<i>A. Jungbauer</i>	<i>G. Sadowski</i>	<i>R. Harris</i>	<i>Chairs:</i>	
16:50 - 17:10	R. Kratzer	L.P. Fonseca	S. Chilamkurthi	F. Grote	16:50 - 17:10	
17:10 - 17:30	S. Zengin Cekic	C. Schiraldi	S.P. Pinho	S. Simon	17:10 - 17:30	
17:30 - 17:50	P. Engel	N. Krumov	M. Meißner	L. Mauko	17:30 - 17:50	
17:50 - 18:10	H. Vila-Real	V.A. Korzhikov	V.A. Sirotkin	E. Kopecky	17:50 - 18:10	
18:10 - 19:30	Poster Session 1 & Poster Party (M₃C Working Group Meeting)		Poster Session 1 & Poster Party (M₃C Working Group Meeting)		18:10 - 19:30	

PROGRAMME AT A GLANCE

PROGRAMME AT A GLANCE

TUESDAY, 7 SEPTEMBER 2010					
Chair:	R. Ditz				Chair:
09:00 - 09:55	PLENARY LECTURE: Ulrich Tallarek, University of Marburg/D Modeling of mass transfer in reconstructed porous media			Room Europauditorium	09:00 - 09:55
09:55 - 10:00	Room Change		Room Change		09:55 - 10:00
Room:	Europauditorium	Sala Bianca	Sala Azzurra	Sala Italia	Room:
Session:	ESBES Field-Enforced Separation Technologies	ESBES Process Integrator and Primary Recovery	Biothermodynamics Thermodynamics of Bioprocesses	ISPPP Materials for Separation	Session:
Chairs:	W.J. Kelly	M. Ottens	T. Maskow	M.T.W. Hearn	Chairs:
10:00 - 10:20	T.J. Hobley	F. Coutte	L. Regestein	KEYNOTE F. Svec	10:00 - 10:20
10:20 - 10:40	M. Cerff	R. Luttmann			10:20 - 10:40
10:40 - 11:10	Coffee Break		Coffee Break		10:40 - 11:10
Session:	Non-Chromatographic Separation Processes for Biomolecules	Process Integrator and Primary Recovery	Thermodynamics of Bioprocesses	Materials for Separation	Session:
Chairs:	K. Graumann	A. Staby	R. Ditz	M.T.W. Hearn	Chairs:
11:10 - 11:30	R.G. Carbonell	D. Dennewald	R. Biener	F. Sousa	11:10 - 11:30
11:30 - 11:50	H.S.C. Barbosa	M. Whelehan	T. Blaschke	M. Petzold	11:30 - 11:50
11:50 - 12:10	C.S.O. Silva	R. Walisko	E. Müller	L. Urbas	11:50 - 12:10
12:10 - 12:30	C. Müller	C.A. Roa Engel	T. Schroeder		12:10 - 12:30
12:30 - 14:00	Lunchtime		Lunchtime		12:30 - 14:00
Chair:	A. Jungbauer				Chair:
14:00 - 14:55	PLENARY LECTURE: Joaquim M.S. Cabral, Technical University of Lisbon/P Bioengineering strategies for stem cell expansion and controlled differentiation			Room Europauditorium	14:00 - 14:55
14:55 - 15:00	Room Change		Room Change		14:55 - 15:00
Session:	ESBES	ESBES	Biothermodynamics Thermodynamics of Bioprocesses	ISPPP Bioanalysis	Session:
Chairs:	Room Europauditorium Poster Award Presentations		J.U. Keller	F. Svec	Chairs:
15:00 - 15:20	Poster Award Presentations		A. Jungbauer	KEYNOTE G. Allmaier	15:00 - 15:20
15:20 - 15:40	6 á 5-7 min.		M.M. Schuler	N. Govorukhina	15:20 - 15:40
15:40 - 16:00			T. Maskow		15:40 - 16:00
16:00 - 17:30	Coffee Break and Poster Session 2		Coffee Break and Poster Session 2		16:00 - 17:30
Session:	Model-Aided Methods for Bioreactor Performance Optimization	Metabolic Engineering	Modeling and Simulation in Biothermodynamics	Bioanalysis	Session:
Chairs:	A. Lübbert	J. Woodley	P. Götz	F. Svec	Chairs:
17:30 - 17:50	D. Schäpper	M. Klimacek	S. Mack	A. Konrad	17:30 - 17:50
17:50 - 18:10	A. Kuprijanov	J. Wichter	P. Schrader	R. Fritz	17:50 - 18:10
18:10 - 18:30	V. Bernal		B. Freeland	Y. Kumada	18:10 - 18:30
20:00 - 24:00	Conference Dinner		Conference Dinner		20:00 - 24:00



PROGRAMME AT A GLANCE

PROGRAMME AT A GLANCE

WEDNESDAY, 8 SEPTEMBER 2010					
<i>Chair:</i> S. Hober				<i>Chair:</i>	
09:00 - 09:55	PLENARY LECTURE: Reed Harris, Genentech Inc., South San Francisco, CA/USA Detection and interpretation of low level variants of recombinant antibodies			Room Europauditorium	09:00 - 09:55
09:55 - 10:00	Room Change			Room Change	
Room:	Europauditorium	Sala Bianca		Sala Azzurra	Sala Italia
Session:	ESBES Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput	ESBES Photo-Biotechnology		ESBES Systems Biotechnology	ISPPP Fundamentals
<i>Chairs:</i>	J. Büchs	C. Posten		T. Schulz	E. Müller
10:00 - 10:20	G. Jäger	J. Fradinho		C. Riedele	KEYNOTE F. Suits
10:20 - 10:40	R. Froidevaux	N. Caicedo Ortega		L. Eggeling	
10:40 - 11:10	Coffee Break			Coffee Break	
Session:	Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput	Recombinant Protein Production		Systems Biotechnology	Fundamentals
<i>Chairs:</i>	A. Schmid	S. Hober		M. Canovas	E. Müller
11:10 - 11:30	R. Hortsch	T. Matsui		J. Schaub	M.R. Schure
11:30 - 11:50	M. Scheidle	C. Dietzsch		P. A. Santacoloma	F. Dismer
11:50 - 12:10	E. Franco-Lara	C. Korneli		J.M.L. Dias	G. Sarti
12:10 - 12:30	K.S. Deshpande	J. Fricke		B. Bühler	E. von Lieres
12:30 - 14:00	Lunchtime (DSP Working Group Meeting)			Lunchtime (DSP Working Group Meeting)	
Session:	ESBES	ESBES		ESBES	ISPPP Fundamentals
<i>Chairs:</i>	J. Woodley			C. Voß	
14:00 - 14:20	Malcolm Lilly Award Presentations			KEYNOTE K. Albert	14:00 - 14:20
14:20 - 14:40				A.C. Dias-Cabral	14:20 - 14:40
14:40 - 15:00				L.J. Cummings	14:40 - 15:00
15:00 - 15:20					15:00 - 15:20
15:20 - 15:50	Coffee Break			Coffee Break	
Session:	ESBES Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput	ESBES Recombinant Protein Production		ESBES Recent Progress on PAT in Biochemical Engineering	ISPPP Fundamentals
<i>Chairs:</i>	J.M.S. Cabral	O. Thomas		C.-F. Mandenius	S. Yamamoto
15:50 - 16:10	M.N.H. Zainal Alam	L.A. Passarinha		J. Glassey	C. Frech
16:10 - 16:30	B. Tomé	N. Wibowo		C. Herwig	G. Guélat
16:30 - 16:50	R. Karande	L.F.M. Rosa		T. Broger	R. Hahn
16:50 - 17:10	C.R. Vistas	T. Alm		D.A. Ullisch	A. Hussain
17:10 - 17:15	Room Change			Room Change	
17:15 - 17:45	Room Europauditorium AWARDS – ESBES Poster Awards & ISPPP Poster Awards & ISB Poster Award & Malcolm Lilly Award & Closing				
17:45 - 19:00	Farewell				



MONDAY, 6 SEPTEMBER 2010		MORNING	LECTURE PROGRAMME	
Room:	Europauditorium			
09:30	Opening Ceremony			
Chair:	<i>T. Schulz, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D</i>			
09:45	PLENARY LECTURE Bioprocess monitoring and control for high cell density cultures I. Marison, M. Dabros, S. Sivaprakasam, M.M. Schuler, Dublin City University/IRL			
10:45	Coffee Break			
Room:	Europauditorium		Room:	Sala Bianca
	ESBES			ESBES
	Preparative and Industrial High Resolution Bioseparation			Monitoring of Mammalian Cell Cultivation
Chair:	<i>A. Podgornik, BIA Separations d.o.o., Ljubljana/SLO</i>		Chair:	<i>C. Schiraldi, Second University of Naples/I</i>
11:10	Exploring expanded beds with positrons J. Souquet, X. Fan, D.J. Parker, University of Birmingham/UK; J. Liddell, Avecia Biologics Ltd., Billingham/UK; P. Levison, Pall Europe Ltd., Portsmouth/UK; E. Theodosiou, <u>O.R.T. Thomas</u> , University of Birmingham/UK		11:10	Gene-specific transcription & replication dynamics during human Influenza A virus production A. Lagoda, University of Magdeburg/D; Y. Genzel, MPI for Dynamics of Complex Technical Systems, Magdeburg/D; U. Reichl, MPI for Dynamics of Complex Technical Systems and University of Magdeburg/D
11:30	Mobile phase modulator for improving the separation of proteins in electrostatic interaction chromatography M. Abe, W. Saitoh, M. Seo, N. Yoshimoto, S. Yamamoto, Yamaguchi University, Ube/J		11:30	Potential applications of infrared spectroscopy for mammalian cell culture monitoring S. Hennessy, R. Foley, I.W. Marison, Dublin City University/IRL
11:50	Expanded bed adsorption for the direct capture of recombinant proteins from high cell density fermentation broth P.L. Garcia, GlaxoSmithKline, King of Prussia, PA/USA; S.A. McDermott, P. Mullen, G. Kamguia, Villanova University, PA/USA; A.R. Ubiera, GlaxoSmithKline, King of Prussia, PA/USA; W.J. Kelly, Villanova University, PA/USA; J.C. Erickson, K.E. Göklen, GlaxoSmithKline, King of Prussia, PA/USA		11:50	Scale-up of mouse embryonic stem cell expansion: from spinner-flask to a fully controlled bioreactor A. Fernandes-Platzgummer, M.M. Diogo, C. Lobato da Silva, J.M.S. Cabral, IBB – Institute for Biotechnology and Bioengineering, Lisboa/P
12:10	Model-based rational strategy for chromatographic resin selection B.K. Nfor, D.S. Zuluaga, M. Noverraz, S. Chilamkurthi, L.A.M. van der Wielen, P.D.E.M. Verhaert, M. Ottens, Delft University of Technology/NL; E.J.A.X. van de Sandt, DSM Biotech Centre, Delft/NL; B. Kokke, MSD, Oss/NL		12:10	Is it possible to run animal cell cultures as reproducible as microbial cultures? M. Aehle, S. Schaepe, A. Kuprijanov, Universität Halle-Wittenberg, Halle-Saale/D; Simutis, Kaunas Institute of Technology/LT; A. Lübbert, Universität Halle-Wittenberg, Halle-Saale/D
12:30	Lunchtime		12:35 – 13:30 ESBES General Assembly	
Room:	Europauditorium			
Chair:	<i>R. Ditz, Merck KGaA, Darmstadt/D</i>			
14:00	PLENARY LECTURE Understanding driving forces of the biobased economy L.A.M. van der Wielen, Delft University of Technology/NL			
14:55	Time for Room Change			



MONDAY, 6 SEPTEMBER 2010

MORNING

LECTURE PROGRAMME

Room:	Europauditorium		Room:	Sala Azzurra	
09:30	Opening Ceremony			BIOTHERMODYNAMICS	
Chair:	<i>T. Schulz, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D</i>			Thermodynamics of Biomolecules	
09:45	PLENARY LECTURE Bioprocess monitoring and control for high cell density cultures I. Marison, M. Dabros, S. Sivaprakasam, M.M. Schuler, Dublin City University/IRL			Chair: <i>J. Büchs, RWTH Aachen/D</i>	
10:45	Coffee Break			11:10 Thermodynamic properties of biorelevant systems G. Sadowski, C. Held, Technische Universität Dortmund/D	
Room:	Sala Azzurra		Room:	Sala Italia	
	Chair: <i>J. Büchs, RWTH Aachen/D</i>			ISPPP	
11:10	Thermodynamic properties of biorelevant systems G. Sadowski, C. Held, Technische Universität Dortmund/D			Materials: Affinity and Chiral Separations	
11:50	Affinity technology in chromatography and biomaterials research H.P. Jennissen, University of Duisburg-Essen, Essen/D			Chair: <i>A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A</i>	
	11:50 Affinity technology in chromatography and biomaterials research H.P. Jennissen, University of Duisburg-Essen, Essen/D			11:10 KEYNOTE LECTURE Chromatographic selectivity: a key parameter in combination with the support materials W. Lindner, University of Vienna/A	
	11:50 Affinity technology in chromatography and biomaterials research H.P. Jennissen, University of Duisburg-Essen, Essen/D			11:50 Application of stimulus-responsive adsorbents for the purification and characterisation of proteins M. Hearn, Monash University, Victoria/AUS	
12:30	Lunchtime			12:10 Novel 3-D microarray platforms based on macroporous polymer monoliths M.Yu. Rober, I.V. Kalashnikova, E.G. Vlakh, T.B. Tennikova, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS	
Room:	Europauditorium			12:35 – 13:30 ESBES General Assembly	
Chair:	<i>R. Ditz, Merck KGaA, Darmstadt/D</i>			14:00 PLENARY LECTURE Understanding driving forces of the biobased economy L.A.M. van der Wielen, Delft University of Technology/NL	
14:00	PLENARY LECTURE Understanding driving forces of the biobased economy L.A.M. van der Wielen, Delft University of Technology/NL			14:55 Time for Room Change	
14:55	Time for Room Change				


MONDAY, 6 SEPTEMBER 2010 AFTERNOON

Room:	Europauditorium
	ESBES
	Preparative and Industrial High Resolution Bioseparation
Chair:	G.N.M. Ferreira, University of Algarve, Faro/P
15:00	DSP in biphasic biotransformation reaction mixtures using scCO₂ – from emulsion stability to product purification C. Brandenbusch, B. Bühler, A. Schmid, G. Sadowski, Technische Universität Dortmund/D
15:20	Method for the efficient feedcharacterization for the conceptual process design of complex mixtures – using the example of fermentation broth J.P. Josch, J. Strube, Clausthal University of Technology, Clausthal-Zellerfeld/D; W. Bäcker, BTS GmbH, Leverkusen/D;
15:40	Virus purification by methacrylate monoliths: combining resolution and productivity M. Peterka, P. Kramberger, B. Lah, F. Smrekar, M. Jarc, M. Banjac, A. Strancar, A. Podgornik, BIA Separations d.o.o., Ljubljana/SLO
16:00	Taking advantage of the liquid stationary phase for the purification of proteins and other biomolecules I. Garrard, D. Fisher, I.A. Sutherland, Brunel University, London/UK
16:20	Coffee Break
	Novel Chemicals and Enzymes
Chair:	B. Nidetzky, Graz University of Technology/A
16:50	Whole cell reduction as key step in the production of chiral drugs: a comprehensive engineering approach and evaluation methodology R. Kratzer, K. Mädje, K. Schmölzer, B. Nidetzky, Graz University of Technology/A; J. Woodley, Technical University of Denmark, Lyngby/DK
17:10	Mediated electron transfer with P450cin S. Zengin Çekic, D. Holtmann, K.M. Mangold, J. Schrader, DECHEMA e.V., Frankfurt am Main/D
17:30	Characterizing the enzymatic hydrolysis of dissolved cellulose in ionic liquid P. Engel, B. Bonhage, X. Lin, M. Kunze, J. Büchs, A.C. Spiess, M. Girfoglio, F. Sibilla, U. Commandeur, RWTH Aachen University/D
17:50	Sol-gel matrices processing using ionic liquids: kinetic studies of beta-glucosidase and alpha-rhamnosidase from immobilized naringinase H. Vila-Real, P. Góis, A.J. Alfaia, A.T. Calado, M.H. Ribeiro, University of Lisbon/P
18:10	Poster Session 1 & Poster Party till 19:30 (M₃C Working Group Meeting)

LECTURE PROGRAMME

Room:	Sala Bianca
	ESBES
	Biofuels and Bioenergy, Replacement of Oil-Based Chemicals with Bio-Based
Chair:	L.A.M. van der Wielen, Delft University of Technology/NL
15:00	Bioethanol production using engineered yeast by cell surface display technology and synthetic bioengineering approach A. Kondo, C. Ogino, F. Matsuda, T. Hasunuma, T. Tanaka, Kobe University/J
15:20	Photobiotechnological hydrogen production with microalgae F. Lehr, M. Morweiser, C. Posten, Karlsruhe Institute of Technology (KIT)/D
15:40	Process design for chemo-enzymatic synthesis of 5-hydroxymethylfurfural W. Fu, J.S. Jensen, A. Riisager, R. Gani, J.M. Woodley, Technical University of Denmark, Kgs. Lyngby/DK; A. Boisen, S. Pedersen, Novozymes A/S, Bagsværd/DK
16:00	Thermodynamic consideration on the interfacial property in the reaction system of biodiesel production from sunflower oil and alkaline methanol N. Ikeda, M. Iwasa, S. Yamasaki, K. Kusakabe, Fukuoka Women's University/J
	Biomaterials Engineering
Chair:	A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A
16:50	New conducting biomaterial – Ion Jelly® L.P. Fonseca, C.M. Cordas, Requimte, Caparica/P; N.M.T. Lourenço, J.M.S. Cabral, C.A.M. Afonso, Instituto Superior Técnico, Lisboa/P; P. Vidinha, S. Barreiros, Requimte, Caparica/P
17:10	Development and application of a novel strategy for time lapse experiment on primary cells culture to assess biomolecules activity A. D'Agostino, M. De Rosa, M. Simeone, S. Guido, C. Schiraldi, Second University of Naples/I
17:30	Bionanoparticles - between organic and inorganic world N. Krumov, F. Kirschhöfer, G. Brenner-Weiss, U. Obst, C. Posten, Karlsruhe Institute of Technology (KIT)/D
17:50	Novel strategy for „smart“-surface biomaterial construction: scaffolds for bone tissue engineering V.A. Korzhikov, T.B. Tennikova, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS; C. Kasper, University of Hannover/D


MONDAY, 6 SEPTEMBER 2010 AFTERNOON

Room:	Sala Azzurra
	BIO THERMODYNAMICS
	Thermodynamics of Biomolecules
Chair:	H.P. Jennissen, University of Duisburg-Essen/D
15:00	A molecular-level methodology for elucidating solvent effects on protein thermodynamics V. Vagenende, Bioprocessing Technology Institute, Singapore/SGP; B.L. Trout, Massachusetts Institute of Technology, Cambridge, MA/USA
15:20	Thermodynamics of radical binding to human Hsp90 alpha and beta isoforms A. Zubriene, D. Matulis, Institute of Biotechnology, Vilnius/LT
15:40	Affinity interactions under chaotropic conditions: a kinetic and thermodynamic study R. Ueberbacher, E. Berger, A. Jungbauer, R. Hahn, University of Natural Resources and Applied Life Sciences Vienna/A
16:00	Controlling the loading process of polymeric particles J. Mamic, S. Enders, Technische Universität Berlin/D
16:20	Coffee Break
	Thermodynamics of Biomolecules
Chair:	G. Sadowski, Technische Universität Dortmund/D
16:50	Thermodynamics of oligosaccharide separation from crude mixtures S. Chilamkurthi, L.A.M. van der Wielen, M. Ottens, Delft University of Technology/NL
17:10	Solubility of nutraceuticals in pure and mixed solvents O. Ferreira, S.P. Pinho, Instituto Politécnico de Bragança/P
17:30	Real-time kinetics of the binding of recombinant human bone morphogenetic protein (rhBMP-2) on ultra-hydrophilic quartz glass M. Meißner, H.P. Jennissen, University of Duisburg-Essen/D
17:50	Effect of organic solvents on the binding of competitive inhibitor proflavin and storage stability of alpha-chymotrypsin V.A. Sirotkin, I.A. Komissarov, E.V. Dudkina, Kazan State University/RUS
18:10	Poster Session 1 & Poster Party till 19:30 (M3C Working Group Meeting)

LECTURE PROGRAMME

Room:	Sala Italia
	ISPPP
	Bioanalysis
Chair:	R. Bischoff, University of Groningen/NL
15:00	KEYNOTE Analytical concepts for the in-vitro detection of covalent protein and peptide adducts from reactive metabolites H. Irth, M. Giera, W. Niessen, Vrije Universiteit Amsterdam/NL
15:20	
15:40	Bioanalytical reagents based on polymer-encapsulated fluorescent semiconductor CdSe(ZnS) nanocrystals V.P. Zubov, A.N. Generalova, S.V. Sizova, S.M. Deev, V.A. Oleinikov, Institute of Bioorganic Chemistry of the RAS, Moscow/RUS
16:00	Use of particle-based and monolithic columns for sample preparation and high throughput screening of large number patient samples for proteomic and glycomic analyses D. Josic, M. Rucevic, D. Hixson, Brown University, Providence, RI/USA; M. Pucic, Genos Ltd., Zagreb/HR; G. Lauc, University of Zagreb/HR
	Biopharmaceutical – Downstream Processing
Chair:	R. Harris, Genentech Inc., South San Francisco, CA/USA
16:50	Integrated bioprocess development – bioproduction of the future? F. Grote, Clausthal University of Technology, Clausthal-Zellerfeld/D; R. Ditz, Merck KGaA, Darmstadt/D; J. Strube, Clausthal University of Technology, Clausthal-Zellerfeld/D
17:10	Role of shear and extensional stress on the degradation of proteins during downstream processing S. Simon, University of Erlangen-Nürnberg, Erlangen/D; C. Weber, Abbott GmbH & Co.KG, Ludwigshafen/D; W. Peukert, University of Erlangen-Nürnberg, Erlangen/D
17:30	Glycan profiling of monoclonal antibodies: comparison of CCAD, fluorescent and ESI-MS detection, coupled with hydrophilic interaction chromatography L. Mauko, A. Nordborg, University of Tasmania, Hobart/AUS; N. Lacher, Pfizer Global Research & Development, St. Louis, MO/USA; E. Hilder, P. Haddad, University of Tasmania, Hobart/AUS
17:50	Purification of Baculovirus by monolithic columns E. Kopecky, N. Lingg, P. Gerster, R. Grabherr, A. Jungbauer, University of Natural Resources and Applied Life Sciences Vienna/A

TUESDAY, 7 SEPTEMBER 2010		MORNING		LECTURE PROGRAMME	
Room:	Europauditorium				
Chair:	R. Ditz, Merck KGaA, Darmstadt/D				
09:00	PLENARY LECTURE Modeling of mass transfer in reconstructed porous media U. Tallarek, University of Marburg/D				
09:55	Time for Room Change				
Room:	Europauditorium		Room:	Sala Bianca	
	ESBES			ESBES	
	Field-Enforced Separation Technologies			Process Integration and Primary Recovery	
Chair:	W.J. Kelly, Villanova University, PA/USA		Chair:	M. Ottens, Delft University of Technology/NL	
10:00	Using magnetic adsorbents for protein modifications K.E. Ottow, T.J. Hobbly, Technical University Denmark, Lyngby/DK		10:00	New integrated bioprocess for continuous production, extraction and purification of biosurfactants produced by <i>Bacillus subtilis</i> in a membrane bioreactor F. Coutte, D. Lecouturier, V. Leclère, M. Béchet, P. Jacques, P. Dhulster, University of Lille 1, Villeneuve d'Ascq/F	
10:20	Repeated in-situ magnetic separation of subtilisin from <i>Bacillus licheniformis</i> fermentation: an integrated approach M. Cerff, A. Scholz, C. Posten, Karlsruhe Institute of Technology (KIT)/D		10:20	Development of a self optimizing production process of recombinant enzymes with <i>Pichia pastoris</i> in an integrated scale-down production plant K. Loegering, C. Mueller, J.-P. Voss, J. Fricke, R. Luttmann, Hamburg University of Applied Sciences/D	
10:40	Coffee Break				
	Non-Chromatographic Separation Processes for Biomolecules			Process Integration and Primary Recovery	
Chair:	K. Graumann, Sandoz GmbH, Kundl/A		Chair:	A. Staby, Novo Nordisk A/S, Gentofte/DK	
11:10	High-throughput, high-capacity nonwoven fiber membranes for bioseparations Y. Zheng, Prometic BioSciences Ltd., Cambridge/UK; P.V. Gurgel, Prometic BioSciences, Ltd., Cambridge/UK; H. Liu, R.G. Carbonell, NC State University, Raleigh, NC/USA		11:10	Recycling of the ionic liquid phase in process integrated whole-cell biocatalysis in biphasic ionic liquid/water systems D. Dennewald, Technische Universität München, Garching/D; W.R. Pitner, Merck KGaA, Darmstadt/D; D. Weuster-Botz, Technische Universität München, Garching/D	
11:30	Protein-based ligands for pDNA purification in aqueous two-phase systems H.S.C. Barbosa, University of Minho, Braga/P; S. Brocchini, University of London/UK; N.K.H. Slater, University of Cambridge/UK; J.C. Marcos, University of Minho, Braga/P		11:30	Successful application of capsular perstraction as a novel in-situ product recovery technique: removal of geldanamycin as a case study M. Whelehan, I.W. Marison, Dublin City University/IRL	
11:50	Bio-inspired affinity polymer systems for antibody molecular recognition and purification C.S.O. Silva, J. Garcia, Instituto Superior Tecnico, Lisboa/P; M. Lansalot, CNRS/CPE/UCB Lyon1/F; C.A.M. Afonso, J.M.G. Martinho, M.A. Taipa, Instituto Superior Tecnico, Lisboa/P		11:50	Oxidative cleavage of carotenoids with <i>Arabidopsis thaliana</i> dioxygenase AtCCD1 for highly selective production of natural aroma compounds R. Walisko, C. Nacke, M.A. Mirata, M. Etschmann, J. Schrader, DECHEMA e.V., Frankfurt am Main/D	
12:10	Purification of gonadotropin from horse serum applying magnetic beads (report on the ProGonado joint project) M. Franzreb, C. Müller, Karlsruhe Institute of Technology (KIT)/D; P. Brückner, K. Frankenfeld, P. Mieth, fzmb GmbH, Bad Langensalza/D; K. Wagner, R. Wyrwa, M. Schnabelrauch, INNOVENT e.V., Jena/D		12:10	Integration of fermentation and crystallization to minimize neutralizing agent use in the production of fumaric acid C.A. Roa Engel, W.M. van Gulik, L.A.M. van der Wielen, A.J.J. Straathof, Delft University of Technology/NL	
12:30	Lunchtime (12:30 – 14:00)				

TUESDAY, 7 SEPTEMBER 2010

MORNING

LECTURE PROGRAMME

Room:	Europauditorium	
Chair:	R. Ditz, Merck KGaA, Darmstadt/D	
09:00	PLENARY LECTURE Modeling of mass transfer in reconstructed porous media U. Tallarek, University of Marburg/D	
09:55	Time for Room Change	
Room:	Sala Azzurra	Room: Sala Italia
	BIOTHERMODYNAMICS	ISPPP
	Thermodynamics of Bioprocesses	Materials for Separation
Chair:	T. Maskow, Helmholtz-Zentrum für Umweltforschung, Leipzig/D	Chair: M.T.W. Hearn, Monash University, Victoria/AUS
10:00	Online detection of lysine formation by <i>Corynebacterium glutamicum</i> DM1730 using calorimetry L. Regestein, RWTH Aachen University/D; J. Lerchner, TU Bergakademie Freiberg/D; T. Maskow, Helmholtz Centre for Environmental Research, Leipzig/D; A. Wilming, H. Giese, I. Knabben, J. Büchs, RWTH Aachen University/D	10:00 KEYNOTE LECTURE New generation of porous polymer monoliths for separation of biomacromolecules F. Svec, E.O. Lawrence Berkeley National Laboratory, CA/USA
10:40	Coffee Break	
	Thermodynamics of Bioprocesses	Materials for Separation
Chair:	R. Ditz, Merck KGaA, Darmstadt/D	Chair: M.T.W. Hearn, Monash University, Victoria/AUS
11:10	High cell density cultivation of a recombinant <i>Escherichia coli</i> strain by calorimetric control R. Biener, A. Steinkämper, University of Applied Sciences Esslingen/D	11:10 Supercoiled plasmid quality assessment by arginine-affinity chromatography – an analytical approach F. Sousa, J.A. Queiroz, University of Beira Interior, Covilhã/P
11:30	Microcalorimetric studies of the chromatographic separation of lysozyme and its PEGylated isoforms T. Blaschke, H. Hasse, University of Kaiserslautern/D	11:30 Protein purification using a novel IMAC cassette system M. Petzold, C. Coghlan, M.T.W. Hearn, Monash University, Clayton/AUS
12:10	Solubility determination and adsorption studies on chromatographic resins for PEGylated proteins E. Müller, A. Sprauer, TOSOH Bioscience GmbH, Stuttgart/D	11:50 The development of monolithic columns for the quantification of Influenza A virus particle and the HA1 protein L. Urbas, B. Gabor, M. Peterka, M. Barut, BIA Separations d.o.o., Ljubljana/SLO; B. Pihlar, University of Ljubljana/SLO; A. Strancar, BIA Separations d.o.o., Ljubljana/SLO
12:30	Lunchtime (12:30 – 14:00)	
		12:10 Innovative automated small scale parallelized biochromatography T. Schroeder, J. Friedle, Atoll GmbH, Weingarten/D

TUESDAY, 7 SEPTEMBER 2010		AFTERNOON		LECTURE PROGRAMME	
Room:	Europauditorium				
Chair:	A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A				
14:00	PLENARY LECTURE Bioengineering strategies for stem cell expansion and controlled differentiation J.M.S. Cabral, Technical University of Lisbon/P				
14:55	Time for Room Change				
	ESBES			ESBES	
	Poster Award Presentations				
Chair:	T. Schulz, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D				
15:00	6 Poster Award Presentations á 5-7 min.				
16:00	Coffee Break and Poster Session 2				
Room:	Europauditorium		Room:	Sala Bianca	
	Model Aided Methods for Bioreactor Performance Optimization			Metabolic Engineering	
Chair:	A. Lübbert, University of Halle-Wittenberg/D		Chair:	J. Woodley, Technical University of Lyngby/DK	
17:30	Structurally optimized microbioreactors for immobilized yeast cultivations R. Lencastre Fernandes, D. Schäpper, F. Okkels, A. Eliasson Lantz, H. Bruus, K.V. Gernaey, Technical University of Denmark, Kgs. Lyngby/DK		17:30	Why do recombinant <i>Saccharomyces cerevisiae</i> strains ferment xylose to ethanol so poorly? Answers from comprehensive metabolite profiling studies S. Krahulec, K. Longus, B. Nidetzky, M. Klímacek, Graz University of Technology/A	
17:50 – 18:10	Professional control of recombinant protein production processes A. Kuprijanov, M. Aehle, S. Schaepe, Universität Halle-Wittenberg, Halle-Saale/D; B.M. Pfeiffer, Siemens AG, Karlsruhe/D; Simutis, Kaunas Institute of Technology/LT; A. Lübbert, Universität Halle-Wittenberg, Halle-Saale/D		17:50	Bioprocess development with metabolome analysis using the example of L-cysteine formation with <i>Escherichia coli</i> J. Wichter, S. Biemüller, W. Wiechert, Jülich Research Center/D; T. Schlösser, Wacker Chemie AG, Munich/D; M. Oldiges, Jülich Research Center/D	
			18:10 – 18:30	Metabolic engineering of acetate metabolism pathways in <i>Escherichia coli</i>: an insight from the analysis of knock-out strains S. Castaño-Cerezo, S. Renilla, J.M. Pastor, V. Bernal, J.L. Iborra, M. Cánovas, University of Murcia/E	
20:00	Conference Dinner				



TUESDAY, 7 SEPTEMBER 2010

AFTERNOON

LECTURE PROGRAMME

Room:	Europauditorium		Room:	Sala Italia	
Chair:	A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A		Chair:	F. Svec, E.O. Lawrence Berkeley National Laboratory, CA/USA	
14:00	PLENARY LECTURE Bioengineering strategies for stem cell expansion and controlled differentiation J.M.S. Cabral, Technical University of Lisbon/P		15:00	KEYNOTE LECTURE Exact molecular weight and heterogeneity determination of recombinant glycoproteins by MS, GEMMA and CGE-on-a-chip - first steps in product characterization G. Allmaier, Vienna University of Technology/A	
14:55	Time for Room Change		15:20	Laser microdissection and cervix carcinoma proteomics: spatial resolution of four heat shock protein biomarker candidates in tissue biopsies N. Govorukhina, University of Groningen/NL; C. Guzel, Erasmus University Medical Center, Rotterdam/NL; K.A. ten Hoor, H.G. Klip, A.G.J. van der Zee, University Medical Centre Groningen/NL; Th.M. Luider, Erasmus University Medical Center, Rotterdam/NL; R. Bischoff, University of Groningen/NL	
Room:	Sala Azzurra		Room:	Sala Italia	
	BIOTHERMODYNAMICS			ISPPP	
	Thermodynamics of Bioprocesses			Bioanalysis	
Chair:	J.U. Keller, University of Siegen/D		Chair:	F. Svec, E.O. Lawrence Berkeley National Laboratory, CA/USA	
15:00	Adsorption properties of proteins and plasmids on hydrophobic and charged surfaces A. Jungbauer, University of Natural Resources and Applied Life Sciences Vienna/A		15:40	Lasers microdissection and cervix carcinoma proteomics: spatial resolution of four heat shock protein biomarker candidates in tissue biopsies N. Govorukhina, University of Groningen/NL; C. Guzel, Erasmus University Medical Center, Rotterdam/NL; K.A. ten Hoor, H.G. Klip, A.G.J. van der Zee, University Medical Centre Groningen/NL; Th.M. Luider, Erasmus University Medical Center, Rotterdam/NL; R. Bischoff, University of Groningen/NL	
15:20	On-line data reconciliation based on energy balances enhances the potential of biocalorimetry as a PAT process analyser M.M. Schuler, S. Sivaprakasam, I.W. Marison, Dublin City University/IRL				
15:40	Reaction- and chip-calorimetry for bioprocess analysis T. Schubert, UFZ - Helmholtz Centre for Environmental Research, Leipzig/D; J. Lerchner, TU Bergakademie Freiberg/D; H. Harms, T. Maskow, UFZ - Helmholtz Centre for Environmental Research, Leipzig/D				
16:00	Coffee Break and Poster Session 2				
	Modeling and Simulation in Biothermodynamics			Bioanalysis	
Chair:	P. Götz, Beuth University of Applied Sciences, Berlin/D		Chair:	F. Svec, E.O. Lawrence Berkeley National Laboratory, CA/USA	
17:30	Innovative optimizations of the heat transfer rate in bread during the baking process from a micro-scale perspective using the Lattice Boltzmann method S. Mack, M.A. Hussein, T. Becker, Technische Universität München, Freising/D		17:30	A method for directed conjugation of affinity molecules A. Konrad, A. Karlström, S. Hober, Royal Institute of Technology, Stockholm/S	
17:50	Thermodynamics of drug solubilization P. Schrader, T. Zeiner, S. Enders, Technische Universität Berlin/D		17:50	Simultaneous detection of amyloid-beta peptides and oligomers by SEC-HPLC-MS R. Fritz, U. Kragl, M. Krohn, J. Pahnke, University of Rostock/D	
18:10	Application of Artificial Neural Networks (ANNs) for on-line biomass estimation of fed-batch yeast cultures B. Freeland, S. Sivaprakasam, M.M. Schuler, I.W. Marison, Dublin City University/IRL		18:10	Site-specific immobilization and solid-phase refolding of recombinant antibody fragments for biomarker analysis Y. Kumada, Kyoto Institute of Technology//; S. Katoh, Kobe University//; M. Kishimoto, Kyoto Institute of Technology//	
20:00	Conference Dinner				



WEDNESDAY, 8 SEPTEMBER 2010

MORNING

LECTURE PROGRAMME

Room:	Europauditorium		Room:	Sala Bianca	
Chair:	S. Hober, Royal Institute of Technology, Stockholm/S		Chair:	C. Posten, Karlsruhe Institute of Technology (KIT)/D	
09:00	PLENARY LECTURE Detection and interpretation of low level variants of recombinant antibodies R. Harris, Genentech Inc., South San Francisco, CA/USA		10:00	Polymer accumulation by a photofermentative mixed culture J. Fradinho, A. Oehmen, M.A.M. Reis, FCT – Universidade Nova Lisboa, Caparica/P	
09:55	Time for Room Change		10:20	Culture of a filamentous cyanobacterium with a horizontal flat-plate photobioreactor for the production of alkaloids with antimicrobial activity N. Caicedo Ortega, J. Thöming, J. Neumann, U. Fischer, University of Bremen/D	
Room:	Europauditorium		Room:	Sala Bianca	
	ESBES			ESBES	
	Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput			Photo-Biotechnology	
Chair:	J. Büchs, RWTH Aachen/D		Chair:	C. Posten, Karlsruhe Institute of Technology (KIT)/D	
10:00	Characterization and high-throughput-screening of cellulases using scattered light measurements G. Jäger, H. Wulforst, A.C. Spiess, J. Büchs, RWTH Aachen University/D		10:00	Polymer accumulation by a photofermentative mixed culture J. Fradinho, A. Oehmen, M.A.M. Reis, FCT – Universidade Nova Lisboa, Caparica/P	
10:20	Preliminary studies for a microbioreactor development coupled to ElectroMechanical System for enzyme reaction analysis in TeraHertz radiations A. Abdennour, A. Treizebre, P. Supiot, N.E. Bourzgui, R. Froidevaux, D. Guillochon, D. Vercaigne-Marko, B. Bocquet, University of Lille 1, Villeneuve d'Ascq/F		10:20	Culture of a filamentous cyanobacterium with a horizontal flat-plate photobioreactor for the production of alkaloids with antimicrobial activity N. Caicedo Ortega, J. Thöming, J. Neumann, U. Fischer, University of Bremen/D	
10:40	Coffee Break				
	Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput			Recombinant Protein Production	
Chair:	A. Schmid, Technische Universität Dortmund/D		Chair:	S. Hober, Royal Institute of Technology, Stockholm/S	
11:10	New milliliter-scale stirred tank bioreactors for the cultivation of mycelium forming microorganisms R. Hortsch, D. Weuster-Botz, Technische Universität München, Garching/D; A. Stratmann, W42 Industrial Biotechnology GmbH, Marl/D		11:10	High cell density cultivation of <i>E. coli</i> with synthetic medium T. Matsui, N. Shinzato, University of the Ryukyus, Nishihara-cho, Okinawa/J; S. Sato, University of Tsukuba, Ibaraki/J	
11:30	Controlled-release systems for fed-batch cultivation and pH-control in shaken bioreactors M. Scheidle, B. Dittrich, D. Klee, J. Büchs, RWTH Aachen University/D		11:30	Determination of protein production related parameters in a recombinant <i>Pichia pastoris</i> Mut⁹ expression strain C. Dietzsch, C. Herwig, Vienna University of Technology/A	
11:50	Surface engineering of a microfluidic device for reduction of cell adhesion in continuous yeast culture E. Franco-Lara, A. Edlich, F. Rieckenberg, H. Schmolke, H.P. Klages, S. Demming, S. Buettgenbach, R. Krull, Technische Universität Braunschweig/D		11:50	Productivity and cell heterogeneity of <i>Bacillus megaterium</i> is a function of the control strategy in fed-batch cultures C. Korneli, E. Franco-Lara, Technische Universität Braunschweig/D	
12:10	Microfluidics and high throughput experimentation techniques in protein crystallization K.S. Deshpande, R. Borst, J.H. ter Horst, L.A.M. van der Wielen, M. Ottens, Delft University of Technology/NL		12:10	Optimization of expression conditions for potential malaria vaccine candidates with a fully automated design of experiments in a multifermenter system J. Fricke, R. Lang, F. Tatge, R. Luttmann, Hamburg University of Applied Sciences (HAW)/D; B. Faber, A. Thomas, Biomedical Primate Research Center (BPRC), Rijswijk/NL	
12:30	Lunchtime till 14:00	(DSP Working Group Meeting)			

WEDNESDAY, 8 SEPTEMBER 2010

MORNING

LECTURE PROGRAMME

Room:	Europauditorium	
Chair:	S. Hober, Royal Institute of Technology, Stockholm/S	
09:00	PLENARY LECTURE Detection and interpretation of low level variants of recombinant antibodies R. Harris, Genentech Inc., South San Francisco, CA/USA	
09:55	Time for Room Change	
Room:	Sala Azzurra	Room: Sala Italia
	ESBES	ISPPP
	Systems Biotechnology	Fundamentals
Chair:	T. Schulz, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D	Chair: E. Müller, Tosoh Bioscience GmbH, Stuttgart/D
10:00	Growth dynamics of a 3-species mixed culture after an antibiotic pulse – analyzed on the single species level C. Riedele, U. Reichl, MPI for Dynamics of Complex Technical Systems, Magdeburg/D	KEYNOTE LECTURE Signals from the noise: extending the useful dynamic range of LC-MS analysis F. Suits, IBM Watson Research Center, New York, NY/USA
10:20	Omics-driven analysis and improvement of L-lysine production with <i>C. glutamicum</i> L. Eggeling, S. Noack, J. van Ooyen, M. Bott, Research Centre Juelich/D	
10:40	Coffee Break	
	Systems Biotechnology	Fundamentals
Chair:	M. Canovas University of Murcia/ES	Chair: E. Müller, Tosoh Bioscience GmbH, Stuttgart/D
11:10	Development of high titer CHO fed-batch processes: advanced bioprocess data analysis and integration of omics data J. Schaub, J. Bechmann, C. Clemens, P. Schorn, T.W. Schulz, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D	A molecular-level description of the retention mechanism in reversed-phase liquid chromatography: an interesting story with pictures, no equations and excellent agreement between simulation and experiment M.R. Schure, The Dow Chemical Company, Springhouse, PA/USA; J. Rafferty, J.I. Siepmann, University of Minnesota, Minneapolis, MN/USA
11:30	New concepts for multi-enzymatic synthetic processes P.A. Santacoloma, G. Sin, K.V. Gernaey, J.M. Woodley, Technical University of Denmark, Kgs. Lyngby/DK	Molecular dynamic simulations: a tool to understand and predict protein binding in ion-exchange chromatography F. Dismer, J. Hubbuch, Karlsruhe Institute of Technology (KIT)/D
11:50	On-line adaptive metabolic flux analysis of misspecified metabolic networks J.M.L. Dias, R. Oliveira, Universidade Nova de Lisboa, Caparica/P	Recent insights in the mathematical modelling of membrane affinity chromatography S. Dimartino, C. Boi, M.O. Herigstad, G.C. Sarti, University of Bologna/I
12:10	Coupling of central carbon metabolism to selective proline hydroxylation by alpha-ketoglutarate-dependent proline 4-hydroxylase B. Bühler, F. Falcioni, O. Frick, J. Fu, L.M. Blank, K. Bühler, A. Schmid, Technische Universität Dortmund/D	A Zonal Rate Model for stacked membrane chromatography E. von Lieres, Research Center Jülich/D; P. Francis, C. Haynes, University of British Columbia, Vancouver/CDN
12:30	Lunchtime till 14:00 (DSP Working Group Meeting)	



WEDNESDAY, 8 SEPTEMBER 2010		AFTERNOON		LECTURE PROGRAMME	
Room:	Europauditorium				
	ESBES			ESBES	
	Malcolm Lilly Award				
Chair:	<i>J. Woodley, Technical University of Denmark, Lyngby/DK</i>				
14:00	Malcolm Lilly Award Presentations				
15:20	Coffee Break				
Room:	Europauditorium		Room:	Sala Bianca	
	Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput			Recombinant Protein Production	
Chair:	<i>J.M.S. Cabral, IBB – Institute for Biotechnology and Bioengineering, Lisboa/P</i>		Chair:	<i>O. Thomas University of Birmingham/UK</i>	
15:50	Membrane microbioreactor prototype for enzyme-catalyzed degradation of pectin M.N.H. Zainal Alam, M. Pinelo, A. Meyer, G. Jonnson, K.V. Gernaey, Technical University of Denmark, Kgs. Lyngby/DK		15:50	Batch experimental design for optimal temperature, pH and agitation in hSCOMT recombinant production systems R.R. Silva, S. Ferreira, Universidade da Beira Interior, Covilhã/P; M.J. Bonifácio, Universidade da Beira Interior, São Mamede do Coronado/P; J. Dias, Universidade Nova de Lisboa/P; J.A. Queiroz, L.A. Passarinha, Universidade da Beira Interior, Covilhã/P	
16:10	Using the quartz crystal microbalance to investigate DNA conformation B. Tomé, G.N.M. Ferreira, University of Algarve, Faro/P		16:10	Engineering a rapid-response influenza vaccine bioprocess N. Wibowo, Y.Y. Fan, C. Chang, Y.P. Chuan, L.H.L. Lua, A.P.J. Middelberg, The University of Queensland, Brisbane/AUS	
16:30	Segment flow capillary microreactors as alternatives to two phase enzymatic batch reactors R. Karande, K. Buehler, A. Schmid, Technische Universität Dortmund/D		16:30	A membrane protein case study - the (un)stability of purified CYP_{3A4} L.F.M. Rosa, G.N.M. Ferreira, University of Algarve, Faro/P	
16:50	Amorphous silicon photodiode as a platform for single event detection C.R. Vistas, University of Algarve, Faro/P; J.P. Conde, INESC Microsystems and Nanotechnologies, Lisbon/P; G.N.M. Ferreira, University of Algarve, Faro/P		16:50	A small bispecific protein selected for orthogonal affinity purification T. Alm, J. Nilvebrant, L. Yderland, A. Halldin, S. Hober, Royal Institute of Technology, Stockholm/S	
17:10	Time for Room Change				
Room:	Europauditorium				
	AWARDS & CLOSING				
17:15	ESBES Poster Awards ISPPP Poster Awards ISB Poster Award Malcolm Lilly Award Closing				
17:45	Farewell				


WEDNESDAY, 8 SEPTEMBER 2010 AFTERNOON

Room:	Europauditorium
	ESBES
	Malcolm Lilly Award
Chair:	<i>J. Woodley, Technical University of Denmark, Lyngby/DK</i>
14:00	Malcolm Lilly Award Presentations
15:20	Coffee Break
Room:	Sala Azzurra
	Recent Progress on PAT in Biochemical Engineering
Chair:	<i>C.-F. Mandenius Linköping University/S</i>
15:50	PAT methodologies in early process development J. Glassey, Newcastle University, Newcastle upon Tyne/UK
16:10	Integrated bioprocess data management – an integrated QbD approach for scientifically based bioprocess development C. Herwig, Vienna University of Technology/A
16:30	Real-time on-line flowcytometry for bioprocess monitoring T. Broger, R.P. Odermatt, P. Huber, B. Sonnleitner, Zurich University of Applied Sciences (ZHAW), Wädenswil/CH
16:50	Investigation of the metabolism of <i>Nicotiana tabacum</i> cells using the Respiratory Monitoring System (RAMOS) D.A. Ullisch, D. Klee, J. Büchs, RWTH Aachen University/D; J.L. Roberts, W. Treffenfeldt, Dow AgroSciences, Indianapolis, IN/USA
17:10	Time for Room Change
Room:	Europauditorium
	AWARDS & CLOSING
17:15	ESBES Poster Awards ISPPP Poster Awards ISB Poster Award Malcolm Lilly Award Closing
17:45	Farewell

LECTURE PROGRAMME

Room:	Sala Italia
	ISPPP
	Fundamentals
Chair:	<i>C. Voß University of Bielefeld/D</i>
14:00	KEYNOTE LECTURE Improving the understanding of the properties and retention behavior of chemically bonded stationary phases employing modern NMR techniques K. Albert, University of Tübingen/D
14:40	Nonspecific effects on ion exchange and hydrophobic interaction adsorption processes J. Korfhagen, Miami University, Oxford, OH/USA; A.C. Dias-Cabral, University of Beira Interior, Covilhã/P; M.E. Thrash Jr, Miami University, Oxford, OH/USA
15:00	Hydroxyapatite packed bed stabilization M.A. Snyder, L.J. Cummings, Bio-Rad Laboratories, Inc., Hercules, CA/USA
Room:	Sala Italia
	Fundamentals
Chair:	<i>S. Yamamoto, Yamaguchi University, Ube/J</i>
15:50	Mechanistic evaluation of multi-modal stationary phases – interplay between ionic and hydrophobic interactions in protein chromatography C. Frech, K. Todorova, University of Applied Sciences, Mannheim/D; H. Graalfs, Merck KGaA, Darmstadt/D
16:10	Rational optimization of pH and salt gradients for protein separation in ion-exchange chromatography B. Guélat, G. Ströhlein, M. Morbidelli, ETH Zurich/CH
16:30	Comparison of protein A affinity chromatography media: an update A. Matschweiger, A. Jungbauer, R. Hahn, University of Natural Resources and Applied Life Sciences Vienna/A
16:50	Green biosensors A. Hussain, A.C.A. Roque, P. Vidinha, New University of Lisbon, Monte de Caparica/P

POSTER PROGRAMME

ESBES

Preparative and Industrial High Resolution Bioseparation

- A_01.01 **New strategies for plasmid DNA purification using aqueous two phase systems and multimodal chromatography**
T. Maños, H.O. Johansson, Lund University/S; A. Sousa, J. Queiroz, University of Beira Interior, Covilhã/P; L. Bulow, Lund University/S
- A_01.02 **Process innovations in preparative processes of biologically active substances purification**
O.A. Pisarev, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS
- A_01.03 **Effect of ionic liquids' properties on the enantioselective esterification of lactic acid**
G. Németh, Zs. Csnádi, K. Bélafi-Bakó, L. Gubicza, University of Pannonia, Veszprém/H
- A_01.04 **A new ultra-high capacity ion exchanger for bio-processing polishing and capture**
H. Chen, J. Liao, Y. Xu, L.J. Cummings, M.A. Snyder, R. Frost, Bio-Rad Laboratories, Hercules, CA/USA
- A_01.05 **Monoclonal antibody purification using robotic phase system selection coupled with counter current chromatography (CCC)**
S. Fernando, Brunel University, London/UK; L. Allen, Lonza Biologics, Slough/UK; D. Fisher, I. Garrard, Brunel University, London/UK
- A_01.06 **Screening of pseudo affinity supports as a new tool for hSCOMT purification**
S.R. Afonso Costa, Universidade da Beira Interior, Covilhã/P; M.J. Bonifácio, Bial, São Mamede do Coronado - Porto/P; J.A. Queiroz, L.A. Passarinha, Universidade da Beira Interior, Covilhã/P
- A_01.07 **Purification of fructooligosaccharides from a mixture of sugars in a zeolite fixed bed column**
R.C. Kuhn, F. Maugeri-Filho, University of Campinas/BR
- A_01.08 **Resolution and purification of a DL-amino acid by countercurrent chromatography used as a biocatalysis reactor-separator**
L. Grudzien, D. Fisher, I. Garrard, Brunel University, Uxbridge/UK; I. Archer, R. Carr, I. Fotheringham, Ingenza Ltd., Edinburgh/UK
- A_01.09 **Platform for computational studies of preparative chromatography systems**
N. Borg, N. Andersson, K. Westerberg, B. Nilsson, Lund University/S

POSTER PROGRAMME

- A_01.10 **Applications of the design space concept in reversed phase chromatography**
K. Westerberg, M. Degerman, N. Borg, B. Nilsson, Lund University/S
- A_01.11 **Novel salt tolerant cation exchangers for direct capture of monoclonal antibodies**
S. Andrecht, H. Graalfs, A. Schwaemmle, Merck KGaA, Darmstadt/D
- A_01.12 **Fundamental analysis of HIC membrane adsorbers for purification of plasmid DNA**
L. Raiado Pereira, D.M.F. Prazeres, M. Mateus, Universidade Técnica de Lisboa/P
- A_01.13 **Phenyl-boronate membrane affinity chromatography as an approach to purify plasmid DNA**
A.G. Gomes, L. Raiado Pereira, A.M. Azevedo, M.R. Aire-Barros, D.M.F. Prazeres, M. Mateus, Universidade Técnica de Lisboa/P
- A_01.14 **Small natural ligands for plasmid DNA purification by affinity chromatography**
C. Caramelo-Nunes, T. Tente, P.J. Almeida, University of Beira Interior, Covilhã/P; J.C. Marcos, University of Minho, Braga/P; C.T. Tomaz, University of Beira Interior, Covilhã/P
- A_01.15 **High pressure filling and operation of a new type of glass columns for biochromatography**
M. Fuchs, K. Schubert, Wissenschaftliche Gerätebau Dr.-Ing. H. Knauer GmbH, Berlin/D
- A_01.16 **Industrial soy protein production**
K. Keller, Solae Company, St. Louis, MO/USA

Field-Enforced Separation Technologies

- A_02.01 **Magnetic adsorbents displaying switchable ion exchange behaviour**
T.C. Willett, O.R.T. Thomas, University of Birmingham/UK
- A_02.02 **'One-pot' manufacturing process yielding low-cost magnetic supports for bioprocessing**
Y. Yao, E. Theodosiou, O.R.T. Thomas, University of Birmingham/UK
- A_02.03 **Purification of human antibodies using gum arabic coated magnetic particles**
L. Borlido, A.M. Azevedo, Instituto Superior Técnico, Lisboa/P; A. Hussain, A.C.A. Roque, Universidade Nova de Lisboa, Caparica/P; M.R. Aires-Barros, Instituto Superior Técnico, Lisboa/P

POSTER PROGRAMME

Non-Chromatographic Separation Processes for Biomolecules

- A_03.01 **Clavulanic acid adsorption in anionic clays**
M. Forte, F. Maugeri Filho, M.I. Rodrigues, University of Campinas/BR
- A_03.02 **Novel affinity magnetic support for antibody purification**
I.L. Batalha, A. Hussain, A.C.A. Roque, REQUIMTE - CQFB - UNL, Monte de Caparica/P
- A_03.03 **Potential application of PEG600-phosphate aqueous two-phase systems in the purification of Leguminosae family lectins**
K.S. Nascimento, Instituto Superior Técnico, Lisbon/P; B.S. Cavada, Universidade Federal do Ceará, Fortaleza/BR; A.M. Azevedo, M.R. Aires-Barros, Instituto Superior Técnico, Lisbon/P
- A_03.04 **Functionalization of magnetic nanoparticles for biomolecule separation**
I.-M. Grabs, G. Garnweitner, Technische Universität Braunschweig/D
- A_03.05 **Implementation of an ion-pair extraction process of haemorphin from bovine haemoglobin hydrolysate combined in a membrane contactor system**
M. Vanhoute, R. Froidevaux, D. Lecouturier, D. Guillochon, P. Dhulster, Université de Lille 1, Villeneuve d'Ascq/F

Process Integration and Primary Recovery

- A_04.01 **Reactive extraction of dicarboxylic acids produced by *Corynebacter* fermentations**
C. Lopez Garzon, L.A.M. van der Wielen, A.J.J. Straathof, Delft University of Technology/NL
- A_04.02 **Coupling process engineering and production scheduling – the innovative way to improved downstream processing**
T. Hellenkamp, P. Balling, INOSIM Consulting GmbH, Dortmund/D
- A_04.03 **Evaluation of process integration opportunities using process simulation and scheduling tools**
D. Petrides, Intelligen, Inc., Scotch Plains, NJ/USA; J. Jimenez, Intelligen, Inc., Amsterdam/NL; C. Siletti, Intelligen, Inc., Mt. Laurel, NJ/USA
- A_04.04 **Development of a two-liquid phase process for oxyfunctionalizations catalyzed by dehydrogenase-containing microbial cells**
F.Ö. Ütkür, T.T. Tran, A. Schmid, B. Bühler, Technische Universität Dortmund/D
- A_04.05 **High-throughput Circular Dichroism (ht-CD) as a tool for rapid identification of chemical reagents for periplasmic processing of recombinant *E. coli***
R. Jalalirad, University of Birmingham/UK; C.J. Hewitt, Loughborough University/UK; J. Liddell, Avecia Biologics Ltd., Billingham/UK; E. Theodosiou, T.R. Dafforn, O.R.T. Thomas, University of Birmingham/UK

POSTER PROGRAMME

- A_04.06 **Production and purification of capsular polysaccharide from *Escherichia coli* K4 for potential biotechnological applications**
C. Schiraldi, D. Cimini, O. Restaino, L. Carcarino, A. Alfano, M. De Rosa, Second University of Naples/I
- A_04.07 **Economical design rules for integrated bio-bulk chemical recovery systems from fermentation broths**
C. van den Berg, A. Oudshoorn, A. Straathof, L.A.M. van der Wielen, Delft University of Technology/NL

Molecular Simulation in Downstream Processing

- A_05.01 **Characterizing phase formation in aqueous two phase systems by molecular dynamics simulations**
S.A. Oelmeier, F. Dismer, J. Hubbuch, Karlsruhe Institute of Technology (KIT)/D

Microbioreactors, Microfluidics, Lab-on-a-Chip Microseparations, High Throughput

- A_06.01 **Evaluation of a LTTC-based enzymatic microreactor using immobilized beta-galactosidase**
M. Baeza, C. López, J. Alonso, J. López-Santín, G. Álvaro, Universitat Autònoma de Barcelona, Bellaterra/E
- A_06.02 **Continuous production of L-malic acid in a microreactor with permeabilized *Saccharomyces cerevisiae* cells**
G. Stojkovic, M. Krivec, I. Plazl, P. Znidarsic-Plazl, University of Ljubljana/SLO
- A_06.03 **Yeast cell immobilization into plastic microchannels**
M. Krivec, G. Stojkovic, P. Znidarsic-Plazl, University of Ljubljana/SLO
- A_06.04 **Design and operation of a packed bed microbioreactor for biocatalytic reactions in an ionic liquid medium**
A. Pohar, P. Znidarsic-Plazl, I. Plazl, University of Ljubljana/SLO
- A_06.05 **Miniature bioreactors for inulin hydrolysis**
M.P.C. Marques, P. Fernandes, IBB/CEBQ/IST, Lisboa/P
- A_06.06 **Micro-immobilized enzyme reactor based on human recombinant beta secretase (hrBACE-1-microIMER) for liquid chromatography fast screening of inhibitors**
A. De Simone, F. Mancini, V. Andrisano, University of Bologna/I
- A_06.07 **Monolithic flow-through bioreactors: dependence of alfa-chymotrypsin activity on its immobilization mode**
E.A. Ponomareva, E.G. Vlakh, T.B. Tennikova, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS

POSTER PROGRAMME

Novel Chemicals and Enzymes

- A_07.01 **Isolation, purification and kinetics properties of fish's (*Abramis ballerus*) blood serum cholinesterase**
V. Tonkopii, Institute of Limnology of the RAS, St. Petersburg/RUS
- A_07.02 **Batch and chemostat cultivation for production of thermostable hydrolases: protease and alpha-amylase**
L. Skelac, S. Wewetzer, Beuth Hochschule für Technik Berlin/D;
J. Bader, Technische Universität Berlin/D;
M.K. Popovic, Beuth Hochschule für Technik Berlin/D
- A_07.03 **Bioprocess for obtaining bacterial xylanase**
M. Marinescu, C. Ionescu, M. Moscovici, M. Soare, R. Mardale, National Institute for Chemical Pharmaceutical R&D, Bucharest/RO
- A_07.04 **Screening of ionic liquids for the synthesis of isoamyl acetate by immobilized *Candida antarctica* lipase B**
M. Cvjetko, J. Vorkapic-Furac, University of Zagreb/HR;
P. Znidarsic-Plazl, University of Ljubljana/SLO
- A_07.05 **Biosurfactant production in a batch bioreactor by *Bacillus subtilis* LAM1005 using glycerol as carbon source**
M. Sousa, I.T. Dantas, J.J.L. Martins, V.M.M. Melo, L.R.B. Gonçalves, Universidade Federal do Ceará, Fortaleza/BR
- A_07.06 **Lipase production by a new *Bacillus* sp. strain in multiphase fermentation**
S.V.S. Freitas, University of Aveiro/P; A.S. Lima, Tiradentes University, Aracaju-SE/BR; J.A.P. Coutinho, University of Aveiro/P
- A_07.07 **Characterization of invertase from baker's yeast and inulinase from *Aspergillus niger* immobilized in an inorganic solid-acid support**
E. Aguiar-Oliveira, University of Campinas (UNICAMP)/BR;
P. Fernandes, J.M.S Cabral, BERG-IBB / IST, Lisboa/P;
F. Maugeri, University of Campinas (UNICAMP)/BR
- A_07.08 **Siderophores: from strain screening to lab-scale production**
M.P.C. Marques, P. Fernandes, C.C.C.R. de Carvalho, Institute for Biotechnology and Bioengineering (IST), Lisboa/P
- A_07.09 **Characterization of a biosurfactant produced by *Bacillus subtilis* LAM1005 grown in clarified cashew apple juice**
D.W.F. Oliveira, I.W.L. Franca, V.M.M. Melo, L.R.B. Goncalves, Universidade Federal do Ceara, Fortaleza/BR
- A_07.10 **Screening of wild yeast cellulases from Brazil biomes**
R. Goldbeck, C.C.P. Andrade, F. Maugeri-Filho, University of Campinas/BR

POSTER PROGRAMME

- A_07.11 **Purification and characterization of trypsin from Pacific cod, and application to trypsin-catalyzed peptide synthesis**
H. Sekizaki, Health Sciences University of Hokkaido/J;
H. Kishimura, Hokkaido University/J; M. Kojoma, E. Toyota, T. Fuchise, Health Sciences University of Hokkaido/J
- A_07.12 **Enzyme strategy to release potent antimicrobial peptide from egg white lysozyme**
G. Le Flem, K. Elissidri, M. Penhoat, P. Dhulster, R. Froidevaux, Université des Sciences et Technologies de Lille (USTL), Villeneuve d'Ascq/F
- A_07.13 **Evaluation of the significant effects of ionic liquids towards the activity and stability of *Candida antarctica* lipase B**
F.A. Silva, A.F.M. Cláudio, S.P.M. Ventura, University of Aveiro/P; A.S. Lima, Tiradentes University, Aracaju-SE/BR; J.A.P. Coutinho, University of Aveiro/P
- A_07.14 **Extraction of vanillin using ionic-liquid-based aqueous biphasic systems**
A.F.M. Cláudio, University of Aveiro/P; M.G. Freire, Universidade Nova de Lisboa, Oeiras/P; J.A.P. Coutinho, University of Aveiro/P
- A_07.15 **The use of ionic liquids as co-adjuvants of extractions in aqueous biphasic systems**
J.F.B. Pereira, A.F.M. Cláudio, University of Aveiro/P; M.G. Freire, University of Nova Lisboa/P; A.S. Lima, University of Tiradentes, Aracaju-Sergipe/BR; J.A.P. Coutinho, University of Aveiro/P
- A_07.16 **Screening of immobilized lipases for the synthesis of ethyl butyrate**
C. Grosso, Universidade do Algarve, Faro/P; M. Guillén, Universitat Autònoma de Barcelona/E; I. Rivera, Centro de Investigación y Asistencia en Tecnología y Diseño, Jalisco/MEX; G. Sandoval, Centro de Investigación y Asistencia en Tecnología y Diseño, Jalisco/MS; F. Valero, Universitat Autònoma de Barcelona/E; S. Ferreira-Dias, University of Lisbon/P; P. Pires-Cabral, University of Algarve, Faro and Technical University of Lisbon/P
- A_07.17 **Bioconversion of fatty acids into green notes by yeast expressing lipoxygenase and hydroperoxide lyase**
D. Holtmann, M. Buchhaupt, M. Etschmann, J. Schrader, DECHEMA e.V., Frankfurt am Main/D
- A_07.18 **Immobilization of commercial laccase in green coconut fiber**
R.O. Cristóvão, University of Porto/P; A.I. Brígida, UFRJ, Rio de Janeiro/BR; A.P.M. Tavares, University of Porto/P; M.A.Z. Coelho, UFRJ, Rio de Janeiro/BR; J.M. Loureiro, R.A.R. Boaventura, E.A. Macedo, University of Porto/P

POSTER PROGRAMME

- A_07.19 **Stabilization of L-arabinose-isomerase using different methods of immobilization onto low cost supports**
G.C.B. Chinellate, Universidade Federal do Ceará, Fortaleza/BR; R. Manzo, Universidad Nacional del Litoral, Santa Fe/RA; J. Siro, Universidad Nacional de La Plata/RA; W.S. Adriano, Universidade Federal do Ceará, Fortaleza/BR; E.J. Mammarella, Universidad Nacional del Litoral, Santa Fe/RA; L.R.B. Gonçalves, Universidade Federal do Ceará, Fortaleza/BR
- A_07.20 **The role of dissolved oxygen on the production of biosurfactant by *Bacillus subtilis* LAM1005**
J.J.L. Martins, D.W.F. Oliveira, I.W.L. Franca, D.L. Montenegro, J.R. Souza, M.E.A. Giro, V.M.M. Melo, L.R.B. Gonçalves, Universidade Federal do Ceará, Fortaleza/BR
- A_07.21 **Effect of substrate and enzyme concentration on sesame cake protein hydrolysis and alcalase stability**
E. Demirhan, D.K. Apar, B. Özbek, Yildiz Technical University, Istanbul/TR
- A_07.22 **pH-stat calibration for sesame cake protein hydrolysis by alcalase**
E. Demirhan, D.K. Apar, B. Özbek, Yildiz Technical University, Istanbul/TR
- A_07.23 **Immobilization of cyanobacteria *Aphanothece microscopica* Nägeli on calcium alginate beads and polyurethane cubes**
R.G. Bastos, B.H. Ogata, L.B.S. Santos, C. Parazzi, J.J.C. Lopes, Federal University of São Carlos, Araras/BR
- A_07.24 **Oxygen demand by *Aspergillus niger* on solid state cultivation from sugarcane bagasse and vinasse**
R.G. Bastos, A. Furtado, V.C. Matos, Federal University of São Carlos, Araras/BR; M.A. Silva, State University of Campinas/BR; O.A. Valsechi, Federal University of São Carlos, Araras/BR

Molecular Modeling of Biocatalysts

- A_08.01 **Adaptation of bacteria to extreme conditions: can we create extremophiles?**
C.C.C.R. de Carvalho, Instituto Superior Técnico, Lisbon/P

Monitoring of Mammalian Cell Cultivation

- A_09.01 **Adherent growth versus growth in suspension for a MDCK cell line: a proteomic evaluation**
S. Kluge, MPI for Dynamics of Complex Technical Systems, Magdeburg/D; D. Vester, University of Magdeburg/D; E. Rapp, Y. Genzel, MPI for Dynamics of Complex Technical Systems, Magdeburg/D; K. Scharfenberg, University of Applied Sciences Fachhochschule Emden-Leer, Emden/D; U. Reichl, MPI for Dynamics of Complex Technical Systems, Magdeburg/D

POSTER PROGRAMME

- A_09.02 **Monitoring of adherent Vero cell growth and apoptosis in microcarrier cultures with in-line permittivity measurements**
E. Petiot, A. El Wajjali, LRGP-CNRS, Vandoeuvre-lès-Nancy/F; G. Esteban, Fogale Nanotech, Nîmes/F; C. Gény, H. Pinton, Sanofi Pasteur, Marcy L'étoile/F; A. Marc, LRGP-CNRS, Vandoeuvre-lès-Nancy/F
- A_09.03 **Evaluation of small scale cultivation systems for high-throughput bioprocess development in mammalian cell culture using advanced data analysis methods**
J. Bechmann, C. Clemens, M. Hildebrandt, P. Schorn, J. Schaub, T.W. Schulz, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D
- A_09.04 **Impact of downstream processing on transient transfection on Chinese Hamster Ovary cells**
J. de la Vega, G.A. Monteiro, D.M.F. Prazeres, Instituto Superior Técnico, Lisbon/P
- A_09.05 **Encapsulation of mammalian cells**
P. Muhonen, M. Whelehan, T. O'Regan, I.W. Marison, Dublin City University/IRL

Recent Progress on PAT in Biochemical Engineering

- A_10.01 **A comprehensive study of PAT applications in recombinant protein production processes with *Escherichia coli***
C. Kaiser, R. Luttmann, Hamburg University of Applied Sciences/D
- A_10.02 **Development of high titer CHO fed-batch processes: bioprocess design using multivariate data analysis and online process monitoring**
C. Clemens, P. Schorn, J. Schaub, T.W. Schulz, Boehringer-Ingelheim Pharma GmbH & Co.KG, Biberach an der Riss/D
- A_10.03 **Preventing overflow metabolism in Crabtree-positive microorganisms through feed-back control of the specific growth rate**
M. Dabros, M.M. Schuler, I.W. Marison, Dublin City University/IRL
- A_10.04 **Comparison of advanced online sensors for biomass measurements in filamentous fermentations**
N. Petersen, Technical University of Denmark, Kgs. Lyngby/DK; S. Stocks, Novozymes A/S, Bagsværd/DK; A. Eliasson Lantz, Technical University of Denmark, Kgs. Lyngby/DK; K.V. Gernaey, Technical University of Denmark, Kgs. Lyngby/DK
- A_10.05 **Process orientated quantification of metabolic and morphologic response behavior in *Penicillium chrysogenum***
A. Posch, C. Herwig, Vienna University of Technology/A
- A_10.06 **Preparative chromatography simulation platform**
N. Borg, N. Andersson, M. Max-Hansen, K. Westerberg, B. Nilsson, Lund University/S

POSTER PROGRAMME

- A_10.07 **Continuous microbioreactor for PAT applications**
G. Bergström, M. Carlsson, C.-F. Mandenius, Linköping University/S
- A_10.08 **Volumetric oxygen transfer coefficient and foaming in inverse fluidised bed recycle reactor for biosurfactants production**
I. Nikov, S. Fahim, K. Dimitrov, F. Gancel, P. Jacques, University of Lille 1, Villeneuve d'Ascq/F

Model Aided Methods for Bioreactor Performance Optimization

- A_11.01 **Process development for PUFA production using marine bacteria**
A. Abd El-Razak, J. Glassey, Newcastle University, Newcastle upon Tyne/UK
- A_11.02 **Robustness of model based process optimization in biotechnology**
F. Kuhnen, University of Applied Sciences Bremen/D; R. Pörtner, Hamburg University of Technology/D; V.C. Hass, University of Applied Sciences Bremen/D
- A_11.03 **Flow characterization and two-population CFD simulation in wave bioreactors**
A.A. Öncül, D. Thévenin, University of Magdeburg/D; Y. Genzel, U. Reichl, MPI für Dynamik komplexer technischer Systeme, Magdeburg/D
- A_11.04 **Real-time quantification of specific rates in bioprocesses**
P. Wechselberger, Ch. Herwig, Vienna University of Technology/A
- A_11.05 **Model-aided microaerobic process control with *Rhodospirillum rubrum***
L. Zeiger, MPI für Dynamik komplexer technischer System, Magdeburg/D; R. Findeisen, Universität Magdeburg/D; H. Grammel, MPI für Dynamik komplexer technischer System, Magdeburg/D
- A_11.06 **Influence of environmental factors on lipopeptide production of a spontaneous mutant strain of *Bacillus subtilis* ATCC 21332**
S. Fahim, F. Gancel, K. Dimitrov, I. Nikov, P. Jacques, University of Lille 1, Villeneuve d'Ascq/F

Photo-Biotechnology

- A_12.01 ***Rhodospseudomonas palustris* as microalgae cell factory**
G. Richter, S. Schiefelbein, G. Brinitzer, E. Franco-Lara, Technische Universität Braunschweig/D
- A_12.02 **Antimicrobial properties of TiO₂-SiO₂ thin films**
B. Korkmaz Erdural, U. Bakir, G. Karakas, Middle East Technical University, Ankara/TR; Z. Suludere, D. Cetin, Gazi University, Ankara/TR

POSTER PROGRAMME

Systems Biotechnology

- A_13.01 **Continuous cultivation of human AGE1.HN cells: kinetics of cell growth, metabolism and recombinant protein production**
A. Rath, Y. Genzel, MPI for Dynamics of Complex Technical Systems, Magdeburg/D; V. Sandig, T. Rose, Probiogen AG, Berlin/D; U. Reichl, MPI for Dynamics of Complex Technical Systems, Magdeburg/D
- A_13.02 **The effect of culture media on pigment production of *Monascus purpureus***
M. Ferdes, C. Ungureanu, University Politehnica of Bucharest/RO
- A_13.03 **Projection to latent pathways: application to the monitoring of a *Pichia pastoris* culture**
A.R. Ferreira, J.M.L. Dias, Universidade Nova de Lisboa, Caparica/P; A. Cunha, Instituto de Biologia Experimental e Tecnológica, Oeiras/P; R. Oliveira, Universidade Nova de Lisboa, Caparica/P
- A_13.04 **Systems biotechnological approach for intensification of a biocatalytic oxyfunctionalization process**
D. Kuhn, X. Zhang, F. Fritzsche, A. Schmid, B. Bühler, Technische Universität Dortmund/D
- A_13.05 **The use of multi-parameter flow cytometry to study the induction strategy impact in plasmid DNA production**
F. Silva, O. Lourenço, C. Maia, J.A. Queiroz, F.C. Domingues, University of Beira Interior, Covilhã/P

Metabolic Engineering

- A_14.01 **Changes in specific enzyme activities of MDCK cells during growth under different cultivation conditions**
R. Janke, Y. Genzel, MPI for Dynamics of Complex Technical Systems, Magdeburg/D; A. Wahl, Delft University of Technology/NL; U. Reichl, MPI for Dynamics of Complex Technical Systems, Magdeburg/D
- A_14.02 **Heterologous production of L-pipecolic acid in *Corynebacterium glutamicum***
N. Wagner, A. Steinkämper, R. Biener, D. Schwartz, University of Applied Sciences Esslingen/D
- A_14.03 **Characterization of the metabolism of a novel human cell line: comparison of processes in different cultivation systems under defined conditions**
S. Freund, MPI for Dynamics of Complex Technical Systems, Magdeburg/D; V. Sandig, T. Rose, ProBioGen AG, Berlin/D; U. Reichl, MPI for Dynamics of Complex Technical Systems and University of Magdeburg/D

POSTER PROGRAMME

- A_14.04 ***Corynebacterium glutamicum* as a host for the simultaneous production of D- and L-amino acids**
N. Stäbler, L. Eggeling, Forschungszentrum Jülich/D
- A_14.05 **Investigation of an industrially relevant process in complex media for protease production in *Bacillus licheniformis***
K. Hage, J. Feimann, W. Wiechert, Forschungszentrum Jülich/D; J. Bongaerts, Henkel KGaA, Düsseldorf/D; M. Oldiges, Forschungszentrum Jülich/D
- Recombinant Protein Production**
- A_15.01 **Protein engineering of pestiviral autoprotease N^{pro} for expression of recombinant proteins in *E. coli***
M. Koll, R. Schneider, B. Auer, University of Innsbruck/A
- A_15.02 **Novel serum-free culture medium and cryopreservative solution using fructan obtained from rakkyo**
S. Terada, A. Sakuma, K. Yanagihara, Y. Chida, S. Mizui, University of Fukui/J; A. Ogawa, Suzuka National College of Technology/J; K. Kobayashi, T. Ohura, Fukui Prefectural Food Processing Research Institute, Sakai/J; N. Moriyama, S. Yasukawa, ELLE ROSE CO., Ltd., Fukui/J
- A_15.03 **Purification and stability studies of scFv84-HTH, an antibody fragment with cytotoxic activity against human embryonic stem cells**
M. Mueller, J. Lee, V.V.T. Wong, A.B. Choo, Agency for Science, Technology and Research, Singapore/SGP; A. Jungbauer, University of Natural Resources and Applied Life Sciences Vienna/A
- A_15.04 **Measurement of IPTG in *E. coli* fed-batch cultures by HPLC-MS**
A. Fernández, J. Ruiz, C. de Mas, A. González, G. Caminal, J. López-Santin, Universitat Autònoma de Barcelona, Bellaterra/E
- A_15.05 **Process strategies and mathematical modelling of protein production in *E. coli* fed-batch cultures**
J. Ruiz, A. Fernández, G. Caminal, C. de Mas, G. González, J. López-Santin, Universitat Autònoma de Barcelona, Bellaterra/E
- A_15.06 **A quantitative model to determine intracellular flux of a secreted antibody fragment by using a novel 34S labelling in *Pichia pastoris***
M. Pfeffer, University of Natural Resources and Applied Life Sciences, Vienna/A; M. Maurer, University of Applied Sciences, Vienna/A; G. Köllensperger, S. Hann, A. Graf, D. Mattanovich, University of Natural Resources and Applied Life Sciences, Vienna/A
- A_15.07 **A high-throughput method for parallel production and verification of protein products**
T. Boström, L. Yderland, H. Tegel, Royal Institute of Technology (KTH), Stockholm/S; A. Vasala, BioSilta Oy, Oulu/FIN; J. Ottosson, S. Hober, Royal Institute of Technology (KTH), Stockholm/S

POSTER PROGRAMME

- Biofuels and Bioenergy, Replacement of Oil-Based Chemicals with Bio-Based**
- A_16.01 **Bioethanol production from sweet sorghum and sugar cane in southeast of Brazil**
J.J.C. Lopes, C. Parazzi, O.A. Valsechi, University of São Carlos, Araras/São Paulo/BR
- A_16.02 **Screening of ethanol-producing yeast in cashew apple bagasse hydrolyzate**
M.V.P. Rocha, Universidade Federal Rural do Semi-Árido, Mossoró/BR; T.H.S. Rodrigues, D.R.B. Rego, Universidade Federal do Ceara, Fortaleza/BR; G.R.M. Macedo, Universidade Federal do Rio Grande do Norte, Natal/BR; L.R.B. Goncalves, Universidade Federal do Ceara, Fortaleza/BR
- A_16.03 **Improvement of ethanol production from cashew apple juice by screening and selection of yeast strains**
A.D.T. Pinheiro, D.R. Gondim, Univerdidade Federal do Ceara, Fortaleza/BR; M.V.P. Rocha, Universidade Federal Rural do Semi-Árido, Mossoró/BR; G.R. Macedo, Universidade Federal do Rio Grande do Norte, Natal/BR; V.M.M. Melo, L.R.B. Goncalves, Univerdidade Federal do Ceara, Fortaleza/BR
- A_16.04 **Degradation of heavy oil fractions using microorganisms isolated from Brazilian oil**
J.F.B. Pereira, University of Aveiro/P; A.S. Lima, University of Tiradentes, Aracaju-Sergipe/BR; L.A.S. Serafim, J.A.P. Coutinho, University of Aveiro/P
- A_16.05 **Enzymatic continuous production of Biodiesel in a membrane bioreactor**
S.M. Badenes, V. Brissos, F. Lemos, J.M.S. Cabral, Instituto Superior Técnico – UTL, Lisboa/P
- A_16.06 **Homo D-lactic acid production from pentose by redirection of phosphoketolase pathway to pentose phosphate pathway in L-lactate dehydrogenase gene-deficient *Lactobacillus plantarum***
T. Tanaka, S. Yoshida, K. Okano, C. Ogino, A. Kondo, Kobe University/J
- A_16.07 **Microalgae cultivation yields in different geographic locations – estimation method based on growth kinetics**
A. Franz, F. Weindel, F. Lehr, G. Schaub, Karlsruhe Institute of Technology (KIT)/D
- A_16.08 **Effects of mixing on enzymatic hydrolysis of pretreated lignocellulosic materials**
B. Palmqvist, M. Wiman, G. Lidén, Lund University/S
- A_16.09 **Evaluation of bio-ethanol production from ligno-cellulosic biomass using process simulation tools**
D. Petrides, Intelligen, Inc., Scotch Plains, NJ/USA; J. Jimenez, Intelligen, Inc., Amsterdam/NL; D. Tsangaris, NCSR Demokritos, Athens/GR

POSTER PROGRAMME

- A_16.10 **Cocktail delta-integration: a novel method to construct cellulolytic enzyme expression ratio-optimized yeast strains**
R. Yamada, T. Tanaka, C. Ogino, A. Kondo, Kobe University/J
- A_16.11 **Production of energy with *Rhodococcus* cells**
C.C.C.R. de Carvalho, Instituto Superior Técnico, Lisbon/P
- A_16.12 **Conversion of waste glycerol into valuable biopolyesters**
J.M. Cavalheiro, Technical University of Lisbon/P; C.D. Almeida, Centro de Investigação Interdisciplinar Egas Moniz, Lisbon/P; T. Sesário, Technical University of Lisbon/P; S. Laenen, C. Grandfils, Université de Liège/B; M. Manuela Fonseca, Technical University of Lisbon/P
- A_16.13 **Hydrolyze and ethylic esterification of soybean oil catalyzed by lipase of *Geotrichum candidum* to Biodiesel production**
R.R. Maldonado, F.F. Massiero, G. Macedo, M.I. Rodrigues, University of Campinas/BR
- A_16.14 **Preparation of cotton stalks to value-added products development using biological pretreatments**
E. Uçkun, U. Bakir, Middle East Technical University, Ankara/TR
- A_16.15 **Pretreatment of cotton stalk with ionic liquids for enhanced enzymatic hydrolysis of cellulose**
I. Haykir, U. Bakir, Middle East Technical University, Ankara/TR
- A_16.16 **Bioethanol from the Portuguese forest residue *Pterospartum tridentatum***
S. Ferreira, N. Gil, J.A. Queiroz, A.P. Duarte, F.C. Domingues, University of Beira Interior, Covilhã/P
- A_16.17 **Desulfurization of crude oil compounds by *Rhodococcus erythropolis* cells in biphasic media**
I.F. Ferreira, C.C.R. de Carvalho, Instituto Superior Técnico, Lisbon/P; D.I.C. Wang, Massachusetts Institute of Technology, Cambridge, MA/USA; M.R. Aires-Barros, Instituto Superior Técnico, Lisbon/P
- A_16.18 **Continuous butanol production with free and immobilized *Clostridium acetobutylicum***
M. Setlhaku, E.M. del Amor Villa, R. Wichmann, Technische Universität Dortmund/D
- A_16.19 **Efficient separation of bio-butanol from fermentation broth by a hybrid extraction-distillation downstream process**
K. Kraemer, A. Harwardt, R. Bronneberg, W. Marquardt, RWTH Aachen University/D
- A_16.20 **Characterization and selection of improved thermophilic bacterial strains for ethanol production**
T. Chang, Technical University of Denmark, Roskilde/DK; T.J. Hobley, Technical University of Denmark, Lyngby/DK; K. Pilegaard, Technical University of Denmark, Roskilde/DK

POSTER PROGRAMME

Biomaterials Engineering

- A_17.01 **Purification of chitosan by means of electrofiltration**
G. Gozke, C. Posten, Karlsruhe Institute of Technology (KIT)/D
- A_17.02 **Engineered magnetic nanoparticles with biopolymers**
A.C.A. Roque, I.L. Batalha, IBET, Oeiras/P; A.S. Marcos, A.B. Espinosa Fernandez, A. Hussain, REQUIMTE - FCT-UNL, Caparica/P
- A_17.03 **lBl deposition of antimicrobial biopolymers on natural fibres**
A.P. Gomes, University of Beira Interior, Covilhã/P; J.F. Mano, IBB-3Bs, Guimarães/P; J.A. Queiroz, I.C. Gouveia, University of Beira Interior, Covilhã/P
- A_17.04 **A novel encapsulation method for naringinase in different-shaped particles of alginate, polyvinyl alcohol and polyvinyl alcohol-alginate hydrogels**
M.A.P. Nunes, A.I. Afonso, University of Lisbon/P; P. Fernandes, Technical University of Lisbon/P; M.H.L. Ribeiro, University of Lisbon/P
- A_17.05 **Biodegradable monoliths as scaffolds for bone tissue engineering**
T.M. Sukhanova, V.A. Korzhikov, T.B. Tennikova, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS
- A_17.06 **Development of universal strategy of preparation of „smart“ multifunctional drug-delivery polymer systems**
E.N. Litvinchuk, I.V. Kalashnikova, V.A. Korzhikov, T.B. Tennikova, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS

ISPPP

Materials: Affinity and Chiral Separations

- B_18.01 **Uric acid selective sorption by imprinted polymeric sorbent**
A.P. Leschinskaya, A.R. Groshikova, I.V. Polyakova, O.A. Pisarev, E.F. Panarin, Institute of Macromolecular Compounds RAS, Saint-Petersburg/RUS
- B_18.02 **Mutual influence and contribution of specific and non-specific binding into L-lysine sorption by molecularly imprinted sorbents**
I.V. Polyakova, N.M. Ezhova, O.A. Pisarev, Institute of Macromolecular Compounds RAS, Saint-Petersburg/RUS
- B_18.03 **A novel ligand affinity chromatography for the screening for quinone-binding histidine kinases**
A. Carius, I. Ivanov, H. Grammel, MPI for Dynamics of Complex Technical Systems, Magdeburg/D

POSTER PROGRAMME

- B_18.04 **Purification of IgG, IgM and IgA using small peptide ligand affinity chromatography**
A. Naik, S. Menegatti, R.G. Carbonell, NC State University, Raleigh, NC/USA; P.V. Gurgel, Prometic BioSciences, Ltd., Cambridge/UK
- B_18.05 **High capacity small-scale antibody purification using magnetic beads**
T. Granér, A. Bergh, S. Eriksson, G. Glad, H. Hedlund, U. Hellberg, GE Healthcare, Uppsala/S
- B_18.06 **Isolation of RNA from cell lysates using histidine affinity chromatography**
R. Martins, J.A. Queiroz, F. Sousa, University of Beira Interior, Covilhã/P
- B_18.07 **Affinity and selectivity in separation processes**
H. Rosenfeld, M. Kötke, GKSS Research Centre, Geesthacht/D; S. Peper, T. Täffner, B. Niemeyer, Helmut-Schmidt-University, Hamburg/D
- B_18.08 **Characterization of sialic acid specific ligands for affinity chromatography of glycoproteins**
M. Meininger, MPI for Dynamics of Complex Technical Systems and University of Magdeburg/D; F. Zwanziger, University of Tübingen/D; H. Roter, Merckle Biotec GmbH, Ulm/D; K.-H. Wiesmüller, EMC microcollections GmbH, Tübingen/D; S. Laufer, University of Tübingen/D; U. Reichl, M. Wolff, MPI for Dynamics of Complex Technical Systems and University of Magdeburg/D

Materials: Miniaturization and Monoliths

- B_19.01 **The development and use of polyaniline coated matrices in separation of biopolymers (nucleic acids, proteins) and bioanalysis**
D.V. Kapustin, A.I. Prostyakova, V.P. Zubov, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS, Moscow/RUS
- B_19.02 **Nondestructive characterization of the morphology of silica monoliths by confocal laser scanning microscopy**
S. Bruns, T. Müllner, M. Kollmann, J. Schachtner, U. Tallarek, University of Marburg/D
- B_19.03 **Hydrodynamic and chromatographic behaviour of grafted weak anion exchange methacrylate monoliths**
V. Smrekar, A. Podgornik, J. Vidic, BIA Separations d.o.o., Ljubljana/SLO
- B_19.04 **A new strategy for supercoiled plasmid DNA purification with a monolithic support**
Â. Sousa, D. Bicho, C.T. Tomaz, F. Sousa, J.A. Queiroz, University of Beira Interior, Covilhã/P

POSTER PROGRAMME

- B_19.05 **Methacrylate monolithic 96 microtiter plate**
J. Vidic, A. Podgornik, A. Strancar, BIA Separations d.o.o., Ljubljana/SLO
- B_19.06 **Cross-linked enzyme aggregates (CLEAs): an innovative and versatile method for naringinase immobilization**
M. Rabaça, H. Vila-Real, M.H.L. Ribeiro, University of Lisbon/P
- B_19.07 **Characterization of monolithic chromatographic supports for virus purification**
F. Smrekar, M. Ciringier, BIA Separations d.o.o., Ljubljana/SLO; P. Raspor, University of Ljubljana/SLO; A. Strancar, A. Podgornik, BIA Separations d.o.o., Ljubljana/SLO
- B_19.08 **Automated parallel chromatographic separations in process development**
T. Schroeder, J. Friedle, Atoll GmbH, Weingarten/D
- B_19.09 **Macroporous monolithic materials as platforms for three-dimensional DNA microarrays**
E.S. Sinitsyna, E.G. Vlach, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS; J. Walter, C. Kasper, University of Hannover/D; T.B. Tenukova, Institute of Macromolecular Compounds of the RAS, St. Petersburg/RUS

Bioanalysis: Chemical Analysis and Bioactivity

- B_20.01 **A new approach: combining immunoprecipitation with high sensitivity protein sizing on microchips for specific detection of proteins**
E. Herwig, M. Marchetti-Deschmann, C. Herwig, Vienna University of Technology/A; C. Wenz, A. Ruefer, Agilent Technologies, Waldbronn/D; G. Allmaier, Vienna University of Technology/A
- B_20.02 **Biological effects of chitosan oligomers dimers and hexamers**
C.F. Assis, M.G.B. Pagnoncelli, R.F. Melo-Silveira, R.M. Oliveira, L.S. Costa, H.A.O. Rocha, G.R. Macedo, E.S. Santos, Universidade Federal do Rio Grande do Norte, Natal/BR
- B_20.03 **Quantitative assays to evaluate the binding character between immobilised receptors and polypeptides**
A.S. Pina, A.M.G.C. Dias, Requitme - CQFB, Caparica/P; C.R. Lowe, University of Cambridge/UK; A.C.A. Roque, Requitme - CQFB, Caparica/P
- B_20.04 **Nano- and microparticles for molecular diagnostic applications**
B. Rittich, Masaryk University, Brno/CZ; S. Trachtova, Brno University of Technology/CZ; A. Spanova, Masaryk University, Brno/CZ; O. Kaman, E. Pollert, Institute of Physics, Prague/CZ; D. Horak, Institute of Macromolecular Chemistry, Prague/CZ

POSTER PROGRAMME

- B_20.05 **Selective isolation of DNA from food matrices**
A. Spanova, Masaryk University, Brno/CZ; J. Tvrđikova, Brno University of Technology, Brno/CZ; D. Horak, Institute of Macromolecular Chemistry, Prague/CZ; B. Rittich, Masaryk University, Brno/CZ
- Bioanalysis: Biomarkers**
- B_21.01 **Development and verification of viability tests for granulated microorganisms**
S. Weinholz, I. Schellenberg, C. Cordes, Anhalt University of Applied Sciences, Bernburg/D
- B_21.02 **A chemical proteomics approach towards profiling of metalloprotease activity**
L. Prely, T. Klein, K.A. Paal, University of Groningen/NL; P. Geurink, E. Tuin, Leiden University/NL; H.F. Kauffman, University Medical Center Groningen/NL; H.S. Overkleeft, Leiden University/NL; A.J.M. Oosterhout, University Medical Center Groningen/NL; R. Bischoff, University of Groningen/NL
- B_21.03 **Proteins in cerebrospinal fluid (CSF) as biomarker candidates for experimental autoimmune encephalomyelitis (EAE) in rats**
T. Rosenling, University of Groningen/NL; M. Stoop, Erasmus University Medical Center, Rotterdam/NL; A. Attali, Solvay Pharmaceuticals Research Laboratories, Weesp/NL; C. Christin, University of Groningen/NL; F. Suits, IBM TJ Watson Research Centre, Yorktown Heights, NY/USA; P. Horvatovich, University of Groningen/NL; T. Tuinstra, Solvay Pharmaceuticals Research Laboratories, Weesp/NL; T. Luiders, Erasmus University Medical Center, Rotterdam/NL; R. Bischoff, University of Groningen/NL
- Fundamentals: Simulation of Chromatographic Phenomena**
- B_22.01 **Transport and pore-scale dispersion in silica monoliths**
D. Hlushkou, S. Bruns, U. Tallarek, University of Marburg/D
- B_22.02 **Mixed mode chromatography – HTS experiments and isotherm modeling**
M. Noverraz, S. Chilamkurthi, B.K. Nfor, L.A.M. van der Wielen, M. Ottens, Delft University of Technology/NL
- B_22.03 **Integration of hydrophobic interaction and ion exchange chromatography**
C. Helling, C. Borrmann, J. Strube, University of Technology Clausthal, Clausthal-Zellerfeld/D; S. Sommerfeld, M. Lohrmann, Bayer Technology Services GmbH, Leverkusen/D

POSTER PROGRAMME

- Fundamentals: Experimental Assessment of Chromatographic Phenomena**
- B_23.01 **Effect of the pore size in the purification of peptides by reversed phase chromatography**
D. Getaz, N. Dogan, ETH Zurich/CH; N. Forrer, Zeochem AG, Utikon/CH; M. Morbidelli, ETH Zurich/CH
- B_23.02 **Characterization of ion exchange resins for biochromatography**
H. Thomas, G. Storti, ETH Zurich/CH; M. Joehnck, M. Schulte, Merck KGaA, Darmstadt/D; M. Morbidelli, ETH Zurich/CH
- B_23.03 **Gradient chromatofocusing: generation of linear pH-gradients in ion exchange chromatography**
F. Kröner, J. Hubbuch, Karlsruhe Institute of Technology (KIT)/D
- B_23.04 **Hydrophobic interaction chromatography for the separation of PEGylated proteins from its conjugated and unmodified partners**
P.P. Aguilar, University of Beira Interior, Covilhã/P; J.C. Marcos, University of Minho, Braga/P; A.C. Dias-Cabral, University of Beira Interior, Covilhã/P
- B_23.05 **Full characterization and modelling of the transport and affinity-adsorption of IgG in a protein A monolithic column**
M.O. Herigstad, S. Dimartino, C. Boi, G.C. Sarti, University of Bologna/I
- B_23.06 **A comparison between membrane adsorbers and packed bed columns**
C. Boi, University of Bologna/I; G. Gilleskie, North Carolina State University, Raleigh, NC/USA; A. Malavasi, University of Bologna/I; R. Carbonell, North Carolina State University, Raleigh, NC/USA
- B_23.07 **Behavior of large plasmids passing through the monolithic column**
N. Lendero Krajnc, F. Smrekar, A. Strancar, A. Podgornik, BIA Separations d.o.o., Ljubljana/SLO
- B_23.08 **Characterization of alkaline resistant new protein A adsorbent**
K. Muranaka, H. Moriyama, K. Nakamura, Tosoh Corporation, Yamaguchi/J
- Biopharmaceuticals**
- B_24.01 **Host cell DNA depletion by hydrophobic interaction chromatography of pseudo-affinity captured Vaccinia virus**
M. Wolff, C. Siewert, MPI für Dynamik komplexer technischer Systeme, Magdeburg/D; A. Neumann, University of Magdeburg/D; S. Lehmann, MPI für Dynamik komplexer technischer Systeme, Magdeburg/D; S. Post Hansen, Bavarian Nordic A/S, Kvistgard/DK; R. Faber, Sartorius Stedim Biotech GmbH, Göttingen/D

POSTER PROGRAMME

- B_24.02 **Characterization of candidate vaccines by nanoES GEMMA and AFM**
M. Havlik, M. Marchetti-Deschmann, W. Winkler, G. Friedbacher, Vienna University of Technology/A; G. Fuhrmann, L. Perez-Burgos, C. Dworak, C. Tauer, Baxter Healthcare, Orth/Donau/A; G. Allmaier, Vienna University of Technology/A
- B_24.03 **Why, when and how can technologies be transferred from „White & Food Biotechnology“ to the biopharmaceutical industry?**
F. Hanakam, M. Holzer, L. David, Novasep Process, Pompey/F
- B_24.04 **Polymeric monolithic ion-exchange stationary phases in combination with salt and pH gradients for the separation and purity profiling of biopharmaceuticals**
E.F. Hilder, A. Nordborg, M. Talebi, University of Tasmania, Hobart/AUS; B. Zhang, Pfizer Research and Development, St. Louis, MO/USA; J. Wang, Pfizer Research and Development, Groton, CT/USA; P.R. Haddad, University of Tasmania, Hobart/AUS
- B_24.05 **Is there really a downstream processing bottleneck for large scale monoclonal antibody (Mab) production?**
J. Jimenez, Intelligen, Inc., Amsterdam/NL; C. Siletti, Intelligen, Inc., Mt. Laurel, NJ/USA; D. Petrides, Intelligen, Inc., Scotch Plains. NJ/USA
- B_24.06 **A novel plasmid DNA purification process: from laboratory to production scale**
M. Peterka, F. Smrekar, N. Janez, M. Jarc, A. Podgornik, A. Strancar, BIA Separations d.o.o., Ljubljana/SLO
- B_24.07 **A novel integrated plasmid purification process based on phenyl-boronate adsorption**
A.G. Gomes, A.M. Azevedo, J.A.L. Santos, M.R. Aires-Barros, D.M.F. Prazeres, Technical University of Lisbon/P
- B_24.08 **Genome-wide analysis of DNA repeats in bacterial plasmids identifies genetically unstable hotspots and candidate regions for minimization**
P.H. Oliveira, Universidade Técnica de Lisboa/P; K.J. Prather, Massachusetts Institute of Technology, Cambridge, MA/USA; D.M.F. Prazeres, G.A. Monteiro, Universidade Técnica de Lisboa/P
- B_24.09 **Terminal specific PEGylation of rhEGF using intein technology**
J.H. Kang, H.K. Byun, Hanyang University, Ansan/ROK; E.K. Lee, Kyungwon University, Seungnam/ROK
- B_24.10 **Stabilization and crystallization of aggregation-prone biopharmaceutical proteins**
M. Eisenkolb, Y. Zang, H. Kiefer, Biberach University of Applied Sciences/D
- B_24.11 **Capture of human monoclonal antibodies from cell culture supernatants by phenyl boronate chromatography**
A.M. Azevedo, A.G. Gomes, L. Borlido, D.M.F. Prazeres, M.R. Aires-Barros, IBB – Institute for Biotechnology and Bioengineering, Lisbon/P

POSTER PROGRAMME

ISB

Thermodynamics of Biomolecules

- C_26.01 **Thermodynamic modeling of aqueous two-phase systems**
S. Naeem, G. Sadowski, Technische Universität Dortmund/D
- C_26.02 **ITC study on the binding phenomena in bovine alpha-lactalbumin**
K.H. Kim, Hanyang University, Ansan si/ROK; K.H. Mok, Trinity College Dublin/IRL; E.K. Lee, Kyungwon University, Seongnam si/ROK

Thermodynamics of Bioprocesses

- C_28.01 **Biocalorimetric studies on the metabolic activity of *Staphylococcus lentus* aerobically grown in a glucose-limited mineral salt medium**
S. Sekar, S. Mahadevan, Central Leather Research Institute, Chennai/IND
- C_28.02 **Measurement and modelling of the retention of lysozyme in HIC for water-alcohol-ammonium sulphate eluants**
C. Vogelpohl, G. Sadowski, Technische Universität Dortmund/D; J.M. Mollerup, Prepchrom, Klampenborg/DK
- C_28.03 **Biothermodynamic studies on selective adsorption of erythromycin onto new microstructured materials from growth media**
V. Martins, M.H.L. Ribeiro, University of Lisbon/P
- C_28.04 **Thermodynamic analysis of chymotrypsinogen and lysosyme adsorption in ion-exchange chromatography**
K.A. Nunes, University of Beira Interior, Covilhã/P; M.E. Thrash Jr., Miami University, Oxford, OH/USA; A.C. Dias-Cabral, University of Beira Interior, Covilhã/P
- C_28.05 **Unexpected influence of alternative oxidases (AOD) on the energy utilization by *Pichia pastoris***
T. Maskow, UFZ - Helmholtz Centre for Environmental Research, Leipzig/D; A. Kulkarni, RWTH Aachen University/D; F.S. Hartner, Graz University of Technology/A; H. Harms, UFZ – Helmholtz Centre for Environmental Research, Leipzig/D; G. Sadowski, Technische Universität Dortmund/D
- C_28.06 **Surface energetics to assess biomass attachment onto immobilized metal affinity adsorbents in expanded beds**
R. Vennapusa, S. Nowrozon Nahar, G. Helms, J. Fritz, M. Fernandez-Lahore, Jacobs University Bremen gGmbH/D

Modeling and Simulation in Biothermodynamics

- C_29.01 **Modeling the dynamics of energy metabolism in solvent producing *Clostridium acetobutylicum***
S. Curth, P. Götz, Beuth University of Applied Sciences, Berlin/D

POSTER INFORMATION

POSTER AWARD INFORMATION

To encourage young scientists, the best posters presented by students will be awarded. The jury members will evaluate the posters submitted to the ESBES, ISPPP and Biothermodynamics (ISB) topics. All Poster Awards will be handed over during the closing session on Wednesday evening.

ESBES POSTER AWARD

The ESBES Poster Prize needs a combination of poster and oral presentation.

During the first conference day, Monday, September 6, 2010, 6 posters will be nominated by the Scientific Committee. Authors of the nominated posters will be informed on Monday evening about the oral presentation in a special session on Tuesday, September 7, 2010 from 15:00 till 16:00. All nominees are requested to prepare a 5-minute presentation of 2-3 slides.

The organisers thank VOGELBUSCH GmbH, Vienna/A who have provided the € 500 per prize for the three best student poster presentations for their generous sponsorship.

ISPPP POSTER AWARD

The organisers provide the € 500 per prize for the three best student poster presentations.

ISB POSTER AWARD

The organisers thank Merck KGaA, Darmstadt/D who have provided the € 500 per prize for the best student poster presentation.

POSTER SESSIONS

Poster Session 1 will take place on Monday, September 6, 2010 from 18:10-19:30; authors of posters with **even numbers** should be present at their posters.

Poster Session 2 will take place on Tuesday, September 7, 2010 from 16:00-17:30; authors of posters with **uneven numbers** should be present at their posters.

LAST MINUTE POSTER

Last-minute posters can be submitted until **July 30, 2010** via file upload at the website www.dechema.de/best2010. Please find there the detailed information for submitting an abstract. Due to space limitations we cannot guarantee the acceptance of all last-minute contributions. The posters will be announced in the „Last-Minute Information“ of the symposia.

SPECIAL MEETINGS

ESBES GENERAL ASSEMBLY

The General Assembly of the EFB Section on Biochemical Engineering Science (ESBES) will take place on

Monday, September 6, 2010 **12:35 – 13:30**
(room to be announced)

M3C WORKING GROUP MEETING

The meeting of the Working Group on Modelling, Monitoring, Measurement & Control (M3C) will take place on

Monday, September 6, 2010 **18:10 – 19:30**
(room to be announced)

DSP WORKING GROUP MEETING

The meeting of the Working Group on Downstream Processing (DSP) will take place on

Wednesday, September 8, 2010 **12:35 – 14:00**
(room to be announced)

EXHIBITION

The exhibition organised in conjunction with this symposia offers above all a forum for the companies who are in the business of creatively transforming the latest research results into innovative products in all fields of biochemical engineering science and technology. The exhibitors have the chance to display their full spectrum of instruments, equipment and services to an international expert public.

Located in an area adjacent to the lecture rooms and poster sessions, the exhibition will be a showcase for all participants and a valuable communication tool.

The price for a basic exhibition space (circa 6 m²) will be € 1,600 including two free tickets for the conference. You can rent poster walls (minimum 2 walls, 1 m width x 2 m height) or bring your own stand system. A table, chairs and a power supply will also be available.

List of Exhibitors (as of April 30)

The following companies have already registered:



Sartorius Stedim Biotech GmbH,
Göttingen/D



Tosoh Bioscience GmbH,
Stuttgart/D



Wissenschaftliche Gerätebau Dr.-Ing.
Herbert Knauer GmbH, Berlin/D



YMC Europe GmbH,
Dinslaken/D

Exhibition Opening Hours:

Sunday, September 5, 2010	18:00 – 20:00
Monday, September 6, 2010	9:00 – 19:30
Tuesday, September 7, 2010	9:00 – 18:30
Wednesday, September 8, 2010	9:00 – 17:30

For further details and for registration please contact the conference office.

SUPPORTING PARTNERS

The organisers convey their sincere thanks for financial support to



Boehringer Ingelheim
Pharma GmbH & Co. KG,
Biberach/D



Merck & Co. Inc.,
Westpoint, PA/USA



Merck KGaA,
Darmstadt/D



Novo Nordisk A/S,
Bagsvard/DK



Tosoh Bioscience GmbH,
Stuttgart/D



Vogelbusch GmbH,
Vienna/A

SOCIAL PROGRAMME**WELCOME RECEPTION**

Sunday, September 5, 2010 **18:00 – 20:00**

To welcome the conference participants, an informal gathering will take place at the conference venue. Drinks and snacks will be served by invitation of the organiser. Please register via registration form (free of charge).

POSTER DISCUSSION AND POSTER PARTY

Monday, September 6, 2010 **18:10 - 19:30**

Visit the posters and talk to the exhibitors and to your colleagues with a glass of beer in your hand. All participants are invited to the poster party between the poster walls and exhibition stands allowing active discussion. The poster party will take place on Monday evening combined with poster session 1.

CONFERENCE DINNER

Tuesday, September 7, 2010 **20:00 – 24:00**

We would like to invite you to enjoy a special evening at Palazzo Isolani, Via S. Stefano 16. The palazzo, built in the XV century, has been reconstructed 1708-1778 and offers several rooms with gorgeous frescoes.

As seating capacity is limited, please register early to avoid any disappointments!

Cost per person: € 80 including aperitif, three-course menu, drinks, € 40 for students (VAT not included).

FAREWELL

Wednesday, September 8, 2010 **17:45 – 19:00**

An informal farewell will take place after the closing lecture to lead you on a safe trip back home.

GENERAL INFORMATION**CONFERENCE VENUE**

The conference center is located in the trade fair district near the railway station and the city centre.

Palazzo della Cultura e dei Congressi
P.zza della Costituzione 4/a
40128 Bologna – Italy

CONFERENCE OFFICE

DECHEMA e.V.
Ms Claudia Martz
Congress Office
Theodor-Heuss-Allee 25
60486 Frankfurt am Main
Germany

Phone: +49 69-7564-129
Fax: +49 69-7564-176
E-Mail: martz@dechema.de

Office Hours:

Sunday, September 5, 2010	10:00 – 20:00
Monday, September 6, 2010	8:00 – 19:30
Tuesday, September 7, 2010	8:30 – 18:30
Wednesday, September 8, 2010	8:30 – 17:30



GENERAL INFORMATION

REGISTRATION

Please complete the appropriate sections of the enclosed registration form and return it to DECHEMA e.V. Online registration is also possible on our conference website at www.dechema.de/BEST2010.

The registration deadline for appearance in the list of participants is **August 15, 2010**. However, later and on-site registrations are possible.

Confirmation of registration and the invoice will be sent after receipt of the registration form. Conference ticket, name tag, list of participants and book of abstracts will be available at the conference office in Bologna.

REGISTRATION FEES

Early – till June 30, 2010	€ 675
Late	€ 775
Students (copy of student identity card required)	€ 275

VAT not included

Included in the conference fee are the book of abstracts and the list of participants as well as welcome reception, lunches, coffee breaks and the poster session. The ticket is valid for the scientific programme of all three symposia.

REMITTANCE OF FEES

Fees should be remitted on receipt of the invoice in favour of DECHEMA e.V., stating the invoice number and the keyword BEST2010, to one of the DECHEMA accounts as stated on the invoice. Payment by credit card is also possible (see registration form).

CANCELLATION AND REFUNDS

€ 30 administrative costs will be charged for cancellations received by **August 15, 2010**. Thereafter 80% of the registration fee will be invoiced; however the book of abstracts will be mailed. Only written cancellations will be accepted.

Cancellations for the conference dinner will be accepted free of charge by **August 15, 2010**. After that date the full amount will be charged.

GENERAL INFORMATION

VISA FORMALITIES

Participants from a number of countries may need an entry visa to Italy. It is recommended to apply for a visa well in advance of the conference. If a formal invitation letter is needed please fill in the form available on the conference website at www.dechema.de/BEST2010.

INSURANCE

The organisers are not responsible for loss or damage to the private property of participants which may occur either during or arising from the conference. Participants should therefore take whatever steps they consider necessary for their insurance.

PROCEEDINGS

Proceedings of the symposia will be published in well-known journals. Details will be given later.

ACCOMMODATION

Reservation of accommodation in several hotels and price categories can be made by using the reservation form or online reservation available on the conference website at www.dechema.de/BEST2010 till **July 5** at the latest.

HOW TO REACH BOLOGNA AND THE CONFERENCE VENUE

Please find the detailed description on the conference website at www.dechema.de/BEST2010.

GENERAL INFORMATION

BOLOGNA

Bologna, capital of the Italian region Emilia Romagna, a city combining unique cultural and scientific heritage with a high quality of today's life, is home of the oldest existing university in Europe, founded in 1088. Among the students of the University of Bologna were Dante, Erasmus of Rotterdam, Thomas Becket, and Copernicus.

Besides for its famous university, Bologna is also renowned for its culinary tradition...



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