Welcome Address

It is our great pleasure to invite you to participate in the 6th European Symposium on Biochemical Engineering Science (ESBES) which will be held in Salzburg from 27 – 30 August 2006.

This symposia series has been the leader in driving the scientific aspects of biochemical engineering science. ESBES is the prime meeting for scientists and engineers active in the field to see and show the state-of-the-art of the profession.

The mission of the European Federation of Biotechnology and its Section on Biochemical Engineering Science is to bring together scientists, engineers and other specialists working in the field of biochemical engineering. The Federation promotes interaction between European and International researchers, but also between industrial, academic and political decision-makers.

We look forward to meeting you in Salzburg!

Prof. Karl Bayer
Chair of the conference

Supporting Partners of the Conference

The organisers convey their sincere thanks for financial support to

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

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Vogelbusch GmbH, Vienna/A
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// Scientific Committee

K. Bayer (Chair)  University of Natural Resources and Applied Life Sciences, Vienna/A
M. Berovič  University of Ljubljana/SLO
J. Büchs  RWTH Aachen/D
J.M.S. Cabral  Instituto Superior Técnico, Lisboa/P
G.N.M. Ferreira  University of Algarve, Faro/P
K. Graumann  Sandoz GmbH, Kundl/A
B. Hauer  BASF Aktiengesellschaft, Ludwigshafen/D
A. Jungbauer  University of Natural Resources and Applied Life Sciences, Vienna/A
A. Lübbert  University of Halle-Wittenberg, Halle/D
C.-F. Mandenius  Linköping University/S
W. Meier  DECHHEMA e.V., Frankfurt am Main/D
B. Nidetzky  Graz University of Technology/A
M. Polakovič  Slovak University of Technology, Bratislava/SK
C. Posten  University of Karlsruhe/D
T. Schulz  Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach/D
R. Schlegl  Boehringer Ingelheim Austria GmbH, Vienna/A
O. Thomas  University of Birmingham/UK

// Plenary Lectures

Sunday, 27 August 2006  18:10 – 19:00

Qualitative and quantitative comparison of protein expression systems for the manufacturing of biopharmaceuticals

Monday, 28 August 2006  9:30 – 10:15

Development of novel bio-nanocapsules for pinpoint delivery of genes and drugs
A. Kondo, Kobe University/J

Tuesday, 29 August 2006  9:00 – 9:45

Discovery of novel therapeutic antibodies and enzymes
G. Georgiou, The University of Texas at Austin, TX/USA

Wednesday, 30 August 2006  9:00 – 9:45

Impact of gene targeted CHO cells on recombinant glycoprotein yield and quality
M. Yap, Bioprocessing Technology Institute, Singapore/SGP

// 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 4th symposium at which the award will be made and on this occasion PhD students and postdocs are invited to submit a one-page abstract for consideration to esbes2006@dechema.de by 31 July 2006 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 at ESBES 6.

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.

// Malcolm Lilly Award
**Workshops**

On Sunday, 27 August 2006 the following workshops will be held at the Salzburg Congress. In the morning and in the afternoon there are coffee breaks. There will be one hour lunchtime where you will have the possibility to have a lunch or snack in the Sheraton Salzburg, which is located directly beside the conference centre.

Cost per person: € 50.00 per workshop including coffee/tea and soft drinks during the coffee breaks.

Registration is necessary, please fill in the registration form.

**Location:**
Salzburg Congress
Auerspergstrasse 6
5020 Salzburg/Austria
http://www.salzburgcongress.at

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10:00-13:00  **Workshop 1: Bioinformatics**

**Analysis of genomic data with R and Bioconductor**

Powerful statistical and graphical methods are essential for the analysis of gene expression data. We will give an introduction to the functionality provided by the open source statistical computing environment R (www.r-project.org) and Bioconductor (www.bioconductor.org), the open source software project for the analysis and comprehension of genomic data. This tutorial will include quality control and pre-processing of microarray data as well as identifying differentially expressed genes, cluster analysis and graphical models.

_F. Leisch, University of Munich/D; T. Scharl, Vienna University of Technology/A_

10:00-13:00  **Workshop 2: Bioprocess Control**

**Control of recombinant protein production processes with microbes and animal cells**

Recombinant proteins are most interesting products to bioprocess industries. As they are very complex, the manufacturing processes are approved only with tight constraints on the process operational procedure. This makes demands on applying control procedures in order to improve the batch-to-batch reproducibility. However, although bioprocess control has been investigated since more than 20 years, practically no manufacturing process for recombinant proteins currently in operation is controlled in a sophisticated way. The workshop will summarise the reasons for this fact and discuss possibilities to improve the current situation.

_A. Lübbert, University of Halle-Wittenberg, Halle/D_

14:00 – 17:00  **Workshop 3: Chemometrics**

**Introduction to multivariate date analysis**

In applied sciences and in technology one is often interested in properties of objects that cannot be measured directly or can be obtained only very costly. In such cases empirical, mathematical models can be created that represent relationships between available data and desired data. A fundamental approach for problems of this type is multivariate data analysis which today is the most important part of chemometrics. The basic principles of some standard methods in this area will be explained without a burden of mathematics, for example principal component analysis (PCA), partial-least-squares regression (PLS), and multivariate classification methods (LDA, KNN). Examples from chemistry and related fields will demonstrate the potentials but also the limits of such models.

_K. Varmuza, Vienna University of Technology/A_

14:00 – 17:00  **Workshop 4: Magnetics in Biotechnology**

**Product recovery by high-gradient magnetic fishing**

Today’s biochemical engineers are, for the most part, wholly unfamiliar with the topics of magnetism and magnetic separations, and are thus unable to recognise areas within bioprocessing where magnetically driven separations could be applied beneficially. The primary objectives of this tutorial are to make up for this educational deficit, and to open the eyes of future bioprocess scientists/engineers to the very real potential offered by one of the oldest and most powerful separation forces known. Starting from basic first principles we shall describe the development of arguably the most powerful magnetic technique for bioprocessing, i.e. High-Gradient Magnetic Fishing (HGMF). Using case examples we shall illustrate the properties required of magnetic adsorbents and magnetic separator equipment for HGMF, the ways in which HGMF processes can be operated, modelled and optimised, and finally identify the technique’s future prospects within the bioprocess industries.

_M. Franzreb, Forschungszentrum Karlsruhe/D; O. Thomas, University of Birmingham/UK_

(Programme subject to change)
Tuesday, 29 August 2006

9:00 - 9:45
**INVITED PLenary LECTURE**
Discovery of novel therapeutic antibodies and enzymes
G. Georgiou, The University of Texas at Austin, TX/USA

9:45 - 9:50
Break for Changing Lecture Hall

9:50 - 10:15
Bioseparation
G. Stoller, H.F. Zimmermann, J.D. Stenson

10:15 - 10:40
Biocatalysis and Biotransformations
M. Fernandez-Lahore, L. Meyer, R. Rawat

10:40 - 11:00
Coffee Break

11:00 - 11:25
O.A. Thomas, T.J. Johnson, J. Schenk

11:25 - 11:50
A.M. Azmio, A. Hermstad-Nielsen, J. Deverick

11:50 - 12:15
M.C. Cueliar, J.M. Encarnacio, A.P. Ferreira

12:15 - 14:15
Lunch / M3C-Meeting

14:15 - 15:15
Poster Presentations of Nominated Posters

15:15 - 15:20
Break for Changing Lecture Hall

15:20 - 15:45
Biocatalysis (Biotransformations)
C.J. Hewitt, D. Holtmann, S. Niemiec

15:45 - 16:10
Bioreaction Engineering
S. Furusaki, I. Dib, P.P. Wangikar

16:10 - 16:25
Coffee Break

16:25 - 16:50
E.M. del Amor Villa, J. Schrader, E. Heinzle

16:50 - 17:15
D.G.R. Hatierna, R. Kraler, K. Ahner

19:00 - 24:00
Conference Dinner (Poster Award)

Wednesday, 30 August 2006

9:00 - 9:45
**INVITED PLenary LECTURE**
Impact of gene targeted CHO cells on recombinant glycoprotein yield and quality
M. Yao, Bioprocessing Technology Institute, Singapore/SGP

9:45 - 9:50
Break for Changing Lecture Hall

9:50 - 10:15
Bioreaction Engineering
M. Petschacher, M. Janisch, K. Lee

10:15 - 10:40
Biocatalysis and Biotransformations
D.G.R. Halsema, M. Fernandez-Lahore, G. Stoller

10:40 - 11:00
Coffee Break

11:00 - 11:25
Metabolic Engineering
Y.Y. Lee, M. Luhrich, T.C. Santos

11:25 - 11:50
Process Analytical Technology
M.S. Tatsarka, K. Kofo

11:50 - 12:15
Biomedical and Tissue Engineering
M. Scharfe, A. Want, M. Nilsson

12:15 - 13:15
Lunch

13:15 - 14:30
Presentations of the Malcolm Lilly Award Nominees

14:30 - 15:00
Coffee Break

15:00 - 15:25
Bioreaction Engineering
V. Bernal, A. Lucumi, C. Junge

15:25 - 15:50
Biocatalysis and Biotransformations
M. Oldiges, M. Janssen, J.M. Muller

15:50 - 16:15
Bioprocess Control
R. Wohlgemuth, W. Lues

16:15 - 16:40
Bioseparation
R. Fleck, E. Haerne

16:40 - 16:45
Break for Changing Lecture Hall

16:45 - 17:10
Malcolm Lilly Award / Closing Remarks

(Programme subject to change)
10:15 - 10:45 Coffee Break

Bioreactor Engineering
Chair: A. Lübbert, University of Halle-Wittenberg, Halle/D
10:45 - 11:10 Submerged and solid state cultivation biosynthesis of immuno-stimulatory compounds from Ganoderma sp. from European habitats
M. Berovíč, M. Boh, B. Waber, University of Ljubljana/SLO
Development of a production process of a lispase from Trichosporon species
T.M-D. Phan, E.M. del Amar Vera, R. Wichmann, University of Dortmund/D
11:10 - 11:35 Proteomic analysis of antibody producing NS0 cells cultivated in high density perfusion culture
B. Kramp, M. Mohamed Al-Rubeai, University College Dublin/IRL
11:35 - 12:00 Fed-batch co-culture of lactic acid bacteria with yeast for fermentation of polyethyleneimine in aqueous two-phase systems
S. Shioya, K. Kawakami, Kyushu University, Fukuoka/J
Use of lipases for the separation of byproducts of the vegetable oil refinement
S. Piezo, M. Di Lorenzo, G. Greco Jr., Università Federico II, Napoli/I
12:00 - 14:00 Lunch

Bioreactor Engineering
Chair: M. Berovíč, University of Ljubljana/SLO
14:00 - 14:25 Influence of oxygen-transfer on extracellular human growth hormone production in Bacillus subtilis
S. Singh, G. Caki, T.H. Ozdamar, Ankara University/TR P. Cakir, Middle East Technical University, Ankara/TR
14:25 - 14:50 Development and characterisation of a lispase-immobilised silica monolith micro-capillary reactor prepared by using a two-step in situ sol-gel method
K. Kawakami, Kyushu University, Fukuoka/J
14:50 - 15:15 Fad-batch co-culture of lactic acid bacteria with yeast for effective production of kefiran
S. Shioya, S. Tsuda, K. Ninomiya, Y. Katakura, Osaka University/J
15:15 - 15:40 Coffee Break

Biocatalysis and Biotransformations: Biocatalyst and Process Design
Chair: R. Wohlgemuth, Sigma-Aldrich Chemie GmbH, Buchs/CH
Biocatalysis and Biotransformations: Biocatalyst and Process Design
R. Wohlgemuth, Sigma-Aldrich Chemie GmbH, Buchs/CH
14:00 - 14:25 Biocatalytic process evaluation using microscale processing techniques and process modelling
14:25 - 14:50 Integrated processing by magnetic separation technology for the multiple reuse of Candida antarctica lipase enzymes immobilised on magnetic micro particles
N. Schultz, University of Karlsruhe/D and Technical University of Denmark, Lyngby/DK; T.J. Koblag, Technical University of Denmark, Lyngby/DK; M. Franzreb, Forschungszentrum Karlsruhe/D; C. Sydalla, University of Karlsruhe/D
14:50 - 15:15 Use of lipases for the separation of byproducts of the vegetable oil refinement
R. Piezo, M. Di Lorenzo, G. Greco Jr., Università Federico II, Napoli/I
15:15 - 15:40 R. Wohlgemuth, Sigma-Aldrich Chemie GmbH, Buchs/CH
Production and modification of biosurfactants
G. Palme, O. Lange, S. Lang, Technical University of Delft/NL
16:05 - 16:30 Enzyme stabilisation: different strategies for different enzymes
A.J.J. Straathof, Delft University of Technology/NL
16:30 - 16:55 High cell density cultivation of recombinant yeasts and bacteria in a pressurised stirred tank bioreactor
R. Knoll, K. Schroer, S. Bartsch, P. Engel, J. Bruehl, RWTH Aachen University/D
16:55 - 19:00 Poster Discussion – Poster Party with Beer and Pretzel

Bioseparation: Nanoparticle Bioprocessing
Chair: O. Thomas, University of Birmingham/UK
10:15 - 10:45 Coffee Break
10:45 - 11:10 From capture to polish – exploiting structural behaviour of nucleic acids – integrated capture process for purification of plasmid DNA based on aqueous two phase separation
A. Tscheliessnig, B. Kanatschnig, R. Hahn, Applied Life Sciences, Vienna/A
11:10 - 11:35 Comparative analysis of plasmid purification processes
D.M.F. Przeszewski, J.L. Santos, S.S. Freitas, Instituto Superior Técnico, Lisbon/PT
11:35 - 12:00 Maximising productivity in size-exclusion chromatography of influenza virus: a modelling approach
12:00 - 14:00 Lunch

Bioseparation: Nanoparticle Bioprocessing / Impact of Protein Expression and Structure on Bioseparation
Chair: R. Schlegl, Boehinger Ingelheim Austria GmbH, Vienna/A
14:00 - 14:25 PEGylation of GST-TF protein: a DNA affinity ligand for plasmid DNA purification in aqueous two-phase systems
H. Barbosa, University of Minho, Braga/P; S. Brocchini, University of London/UK; N. Slater, University of Cambridge/UK; J.C. Marcos, University of Minho, Braga/P
14:25 - 14:50 Simultaneous purification and condensation of plasmid DNA with PEGylated polyethyleneimine in aqueous two-phase systems
S.P. Dutra, A.G. Fortes, University of Minho, Braga/P; D.M.F Przeszewski, Instituto Superior Técnico, Lisbon/PT; J.C. Marcos, University of Minho, Braga/P
14:50 - 15:15 Analytical methods for high throughput refolding analysis of an antibody fragment
M. Eibers, D. Furst-Novosevit, A. Eichinger, R. Schlegl, Boehinger Ingelheim Austria GmbH, Vienna/A
15:15 - 15:40 R. Schlegl, Boehinger Ingelheim Austria GmbH, Vienna/A
Effects of protein conformational changes on separation performance in electrostatic interaction chromatography: PEGylated proteins and unfolded proteins
S. Yamamoto, S. Fujii, N. Yoshimoto, P. Abarzadasnchez, Yamaguchi University/J
16:05 - 16:30 Influence of buffer composition on equilibrium and uptake kinetics of native and unfolded proteins
R. Schlegl, Boehinger Ingelheim Austria GmbH, Vienna/A
16:30 - 16:55 Refolding kinetics of a recombinant fusion protein without chaotropic agents
F. Jarajoub Freytag, Technical University of Delft/NL; M.J.F van der Cammen, A. Tscheliessnig, B. Kanatschnig, R. Hahn, Applied Life Sciences, Vienna/A
16:55 - 19:00 Poster Discussion – Poster Party with Beer and Pretzel
Bioseparation: Impact of Protein Expression and Structure on Bioseparation / Primary Recovery and Bioprocess Integration

R. Schlegl, Boehringer Ingelheim Austria GmbH, Vienna/A; A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A

Industrial application of a new production system for therapeutic proteins


Fast-track bioprocess development by direct capture from electro-extracted feedstock: application to yeast-based biotech productive systems

V. Oenslager, P. Cabrera, V. Ganeva, M. Fernandez-Lehore, International University Bremen/DE

Coffee Break

Bioseparation: Primary Recovery and Bioprocess Integration

Chair: A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A

11:00 - 11:25

More tales from the river bank ...

D.R.T. Thomas, University of Birmingham/UK

Optimisation of aqueous two-phase extraction of human antibodies


Towards the integration of fermentation and crystallisation

M.C. Gómez Guiraut, A.J.J. Straathof, J.H. Heipken, L.A.M. van der Wiel, Delft University of Technology/NL

Lunch

12:15 - 14:15

Break for Changing Lecture Hall

Bioreaction Engineering

Chair: H. Noorman, DSM-Anti Infectives BV, Delft/NL

15:20 - 15:45

A comparison of high cell density fed-batch fermentations involving recombinant Escherichia coli and parent strains under well-mixed small-scale and simulated poorly-mixed large-scale conditions

C.J. Heest, A.W. Nienow, University of Birmingham/UK

Enhanced production of pacitaxel by callus culture in a new bioreactor equipped with a unit of foam separation

S. Yamamoto, K. Nohara, S. Hayashi, R. Furukawa, Saga University, Kumamoto/J

Coffee Break

16:10 - 16:25

16:25 - 16:50

Development of an integrated process for the enzymatic synthesis and isolation of biosides

E.M. del Amor Vila, R. Wohrmann, University of Dortmund/D

Selective oligosaccharide production through integration of new enzymatic synthesis and in-situ product removal

D.G.R. Hitajena, A.E.M. Janssen, R.M. Boom, Wageningen University/NL

Biocatalysis: Oxidative Biotransformations

J.M. Wooldry, University College London/UK

Bioelectrocatalysis with P450 monooxygenases

D. Holtmann, K.-M. Mangold, J. Schrader, DECHEMA e.V., Frankfurt am Main/D

Oxidative biotransformations: stabilising effects of immobilisation in D-amino acid oxidase

L. Dib, B. Nieditzky, Research Centre Applied Biotransformation, Graz/A

17:00 - 17:15

Selective in vitro carotenoid cleavage using a recombinant dioxygenase from Arabidopsis thaliana – AICCD1

F. Patelli, M. Schling, DECHEMA e.V., Frankfurt am Main/D; W. Schwab, Technical University Munich, Freising/D; J. Schrader, DECHEMA e.V., Frankfurt am Main/D

Development of a whole cell bioreduction system with coenzyme specificity-engineered NAD(P)H-dependent yeast carboxyl reductase

R. Kostzer, Research Centre Applied Biotransformation, Graz/A; B. Petschacher, Graz University of Technology/A; B. Nieditzky, Research Centre Applied Biotransformation, Graz/A

Conference Dinner – Poster Award

Membrane mass spectrometer reactor for respirometric analysis of metabolic fluxes

T.H. Yang, C. Wittingmann, E. Herinze, Saarland University, Saarbrücken/D

Optimising production conditions of human immunoglobulin G by means of light scattering and differential scanning calorimetry

K. Abe, University of Natural Resources and Applied Life Sciences, Vienna/A; A. Bioflacher, G. Greer, Octapharma Pharmaeuropa Produktionen, m.b.H, Vienna/A; J. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A
### SCIENTIFIC LECTURE PROGRAMME

**WEDNESDAY, 30 AUGUST 2006**

**Chair:**

- **9:00 - 9:45**
  - Break for Changing Lecture Hall

**Metabolic Engineering and Regulation**

- **9:45 - 10:15**
  - Improving enzymes of a functional D-xylose metabolising pathway in metabolically engineered S. cerevisiae
  - B. Peterschacher, Graz University of Technology/A; E. D. Luccio, J. Veldhuis, D. K. Wilson, University of California, Davis, CA/USA

**Process Analytical Technology**

- **10:15 - 10:40**
  - Batch-to-batch-reproducibility of fermentation processes by robust process operational design and control
  - M. Janssen, University of Halle-Wittenberg, Halle/D; R. Simutis, Kaunas University of Technology/LT; S. Gnoth, A. Lübbert, University of Halle-Wittenberg, Halle/D

**Biomedical and Tissue Engineering**

- **10:40 - 11:00**
  - Coffee Break

**Metabolic Cell Culture Engineering**

- **11:00 - 11:25**
  - Enhancing recombinant glycoprotein production through overexpression of molecular chaperones in CHO cells
  - Y.Y. Lee, Biomedical Sciences Institutes and National University of Singapore/SGP; K.T.K. Wong, M.M. Lee, Biomedical Sciences Institutes, Singapore/SGP; M.O.S. Yap, Biomedical Sciences Institutes and National University of Singapore/SGP

**Process Analytical Technology**

- **11:25 - 11:50**
  - Exploitation of chemometric modelling to monitor cultivation of microbial recombinant systems
  - M. Luchner, F. Clementschitsch, K. Bayer, University of Natural Resources and Applied Life Sciences, Vienna/A

**Biomedical and Tissue Engineering**

- **11:50 - 12:15**
  - How effective are traditional culture-based methods in the microbiological assessment of pathogenic bacteria within the process engineering environment?
  - M.S. Talens, C.J. Hewitt, University of Birmingham/UK

**Biomedical and Tissue Engineering**

- **12:15 - 13:15**
  - Lunch

**Metabolic Flux Analysis**

- **13:15 - 14:30**
  - Expressing of glycosylated recombinant proteins in tubular photobioreactors by means of 4S-ionic surfactant Span80, against the human colon tumor transplanted to a nude mouse

**Biomedical and Tissue Engineering**

- **14:30 - 15:00**
  - Biofluid substitutes: expression of recombinant human haemoglobin oTyr42 mutants
  - M. Nilsson, L. Bååk, Lund University/S

**Presentations of the Malcolm Lilly Award Nominees**

- **15:00 - 15:25**
  - Hydrophobic interaction chromatography of proteins: unfolding of proteins upon adsorption
  - F. Hainzer, R. Ueberacker, R. Hahn, A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A

**Biomedical and Tissue Engineering**

- **15:25 - 15:50**
  - Rapid and rational strain characterisation with transient continuous cultures monitored by calorimetry

**Biomedical and Tissue Engineering**

- **15:50 - 16:15**
  - Isotopically instationary metabolic flux analysis based on 13C-metabolome labeling dynamics of Escherichia coli
  - M. Oldiges, C. Jungo, M. Schacht, J. Voegtli, D.K. Wilson, University of California, Davis, CA/USA

**Biomedical and Tissue Engineering**

- **16:15 - 16:40**
  - Metabolic engineering of Corynebacterium glutamicum for lysine production

**Biomedical and Tissue Engineering**

- **16:40 - 16:45**
  - Break for Changing Lecture Hall

**Biomedical and Tissue Engineering**

- **16:45 - 17:10**
  - Hydrophobic interaction chromatography of proteins: unfolding of proteins upon adsorption
  - F. Hainzer, R. Ueberacker, R. Hahn, A. Jungbauer, University of Natural Resources and Applied Life Sciences, Vienna/A
The poster session will offer an excellent opportunity to discuss scientific and technical results, exchange recent information, facilitate interactions and future collaborations between all participating scientists. The poster topic categories and the topic of the lecture parts are counterparts and an integral part of the conference.

| A 1 | Temperature and pH effect on corn gluten hydrolysis and alcalase stability |
| D.K. Apar, B. Ozbek, Yildiz Technical University, Istanbul/TR |
| A 2 | Effect of substrate and enzyme concentration on corn gluten hydrolysis and alcalase stability |
| D.K. Apar, B. Ozbek, Yildiz Technical University, Istanbul/TR |
| A 3 | Product inhibition kinetics for corn gluten hydrolysis |
| D.K. Apar, B. Ozbek, Yildiz Technical University, Istanbul/TR |
| A 4 | Effect of process variables on whey lactose hydrolysis and enzyme stability |
| E. Demirhan, D.K. Apar, B. Ozbek, Yildiz Technical University, Istanbul/TR |
| A 5 | Effect of hydrolysis products of whey lactose on hydrolysis and enzyme stability |
| E. Demirhan, D.K. Apar, B. Ozbek, Yildiz Technical University, Istanbul/TR |
| A 6 | Influence of Mg\(^{2+}\), Mn\(^{2+}\) and Ca\(^{2+}\) ions on whey lactose hydrolysis and enzyme stability |
| E. Demirhan, D.K. Apar, B. Ozbek, Yildiz Technical University, Istanbul/TR |
| A 7 | Effect of freely available nitrogen substrate on rifampycin B production in complex media: a cybernetic approach |
| P. Bapat, P. Wangikar, Indian Institute of Technology, Mumbai/IND |
| A 8 | Integrated bioprocesses for recombinant protein production – a new challenge in bioprocess engineering |
| R. Luttmann, B. Hahn, A. Ellert, M. Eicke, G. Eckl, S. Treder, Hamburg University of Applied Sciences/D |
| A 9 | Dual feeding strategy for the production of α-amylase by *Bacillus caldolyticus* |
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(Programme subject to change)
Poster Award Information
At all ESBES conferences, the poster presentation of latest results was and is one of the most important parts of the scientific programme. The organisers thank VOGELBUSCH GmbH, Vienna/A who have provided € 330 per prize for the three best student poster presentations for their generous sponsorship.

During the poster session on Monday, 28 August 2006, 10 posters will be nominated by the scientific committee. The nominees will present their posters in a special session on Tuesday, 29 August 2006.

Last-Minute Poster Submission
Last-minute posters can be submitted until 21 July 2006 via file upload at the website www.esbes2006.org. Please find there the detailed information for submitting your abstract. The last-minute posters will be reviewed by the scientific committee. Due to space limitations we can not guarantee the acceptance of all last-minute contributions.

Publication in the Journal of Biotechnology
A special issue of the Journal of Biotechnology with accepted full-length papers will be published by Elsevier Science BV after the conference.

The scientific committee will select outstanding presentations during the conference and invite the authors to submit a full-length contribution.

Exhibition
The exhibition organised in conjunction with this conference offers above all a forum for the companies who are in business of creatively transforming the latest research results into innovative products in all fields of biochemical engineering science and technology.

They have the chance to display the full spectrum of instruments, equipment and services to an international expert public.

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

The registration fee1) for the standard netto exhibition space with approx. 6m² will be 1,290.00 €. The standard netto exhibition space includes one table, two chairs and a standard power supply. Included in the fee is one free ticket, valid also for the scientific programme.

1) plus 7% VAT, price for the duration of the exhibition per unit

Exhibition Opening Hours
Sunday, 27 August 2006 18.00 – 21:00
Monday, 28 August 2006 9:00 – 19:00
Tuesday, 29 August 2006 9:00 – 17:15
Wednesday, 30 August 2006 9:00 – 17:00

for further details and for registration please contact:
DECHHEMA e.V.
Andrea Köhl
Theodor-Heuss-Allee 25
60486 Frankfurt am Main/Germany
Phone: +49 / (0)69 / 7564 - 235
Fax: +49 / (0)69 / 7564 - 441
E-Mail: esbes2006@dechema.de
Internet: www.esbes2006.org

List of Exhibitors (as of May 30, 2006)
European Federation of Biotechnology (EFB), Barcelona/E
IGV Institut für Getreideverarbeitung GmbH, Nuthetal/D
m2p-labs GmbH, Aachen/D
Merck KGaA, Darmstadt/D
PreSens Precision Sensing GmbH, Regensburg/D
Welcome Reception

Sunday, 27 August 2006 19:00 – 21:00

To welcome the conference participants an informal gathering will take place at Salzburg Congress after the evening lecture. Drinks and snacks will be served by invitation of the organisers. Please register on the registration form (free of charge).

Poster Discussion and Poster Party

Monday, 28 August 2006 16:55 – 19:00

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 which will take place in the foyer of the lecture halls between the poster walls and exhibition stands allowing active discussion. Please register on the registration form (free of charge).

Conference Dinner

Tuesday, 29 August 2006 19:30 – 24:00

Departure: 19:30 by bus to Stiftskeller Salzburg.
Meeting Point: in front of the main entrance of Salzburg Congress.

Mozart Dinner Concert

We would like to invite you to enjoy a special evening: the Mozart Dinner Concert is unique in Salzburg and all over the world. Imagine the experience of living in Mozart’s Salzburg with all its colourful costumes and its culinary joys.

Enjoy the most popular compositions by W.A. Mozart by candle-light in the stylish ambiance of the Stiftskeller St. Peter restaurant. Music is played by Salzburg artists in historic costumes and a three-course dinner is served, prepared as it was in Mozart’s times.

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

Location:
Stiftskeller St. Peter, Baroque Hall
St. Peter-Bezirk I/IV
5010 Salzburg/Austria

Cost per person: € 60.00 (inclusive a three-course meal and two drinks).

Registration is necessary, please fill in the registration form.
Cancellation and Refunds
30 € administrative costs will be charged for cancellations of registrations received before 4 August 2006. Thereafter, 80% of the registration fee will be invoiced, however, the book of abstracts will be sent. Only written cancellations will be accepted (letter, fax or email).

Cancellations for the conference dinner will be accepted free of charge by 4 August 2006. After that date the full amount will be charged.

// Visa Formalities
Participants from a number of countries may need an entry visa for Austria. It is recommended that the visa should be applied as soon as possible in advance of the meeting. If a formal invitation letter is needed please contact the conference office at DECHEMA e.V. (www.esbes2006.org) in good time.

// 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.

// Accommodation
Reservation of accommodation will be made by the Tourismus Salzburg GmbH. Please contact directly, by using the keyword “ESBES”:

Tourismus Salzburg GmbH
Salzburg Congress
Auerspergstraße 6
5020 Salzburg/Austria
Phone: +43 / (0)662 / 88987-603 / -604
Fax: +43 / (0)662 / 88987-66
E-Mail: meeting@salzburgcongress.at
Internet: www2.salzburg.info

Hotel rooms are available in different rates and categories. Due to the fact that Salzburg attracts many visitors we highly recommend booking hotel rooms at your earliest convenience. Moreover the Salzburg Festival will take place at the same time.

The reservations are binding. Charges for rooms which are not used, or cancelled too late, must be paid by the participant.
// Salzburg

Salzburg is located in western Austria and is the capital of the federal state of Salzburg. The town is not only world famous for its ingenious son, Wolfgang Amadeus Mozart, who’s 250th birthday will be celebrated in this year.

At the beginning of the 17th century, Salzburg evolved from a mediaeval town to one of the most beautiful Baroque cities in the world. Magnificent archiepiscopal buildings such as Mirabell Palace, the Residenz or Hellbrunn Palace invite you to experience the flair of the 17th century.

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// How to reach Salzburg

By air
Salzburg Airport – W.A. Mozart
Located only 4 km from the city centre, 15 minutes transfer by taxi or 30 minutes by public transport.
Information: www.salzburg-airport.com

By train
Salzburg Central Railway Station
Only 10 minutes’ walk from Salzburg Congress. Integrated into the international railway network, Salzburg has Eurocity, Intercity and Interregio connections (ICE connection to Munich).
Information: www.bahn.de, www.oebb.at

By car

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// How to reach Salzburg Congress

Public transport
From Salzburg Airport
Please take bus 2 and change the bus at the central railway station. Then take bus 1, 3, 5, 6 stop Mirabellplatz. It takes approx. 30 min.

From Salzburg central railway station
Take bus 1, 3, 5, 6 stop Mirabellplatz. It takes approx. 5 min.
Information: www.stadtbus.at

Tickets for the public transport can be bought at the ticket machine or at the busdriver. You can choose between two different tickets:
- Single ticket 1,80 €
- Day ticket 4,20 € (for unlimited number of rides on one day)

Taxi
Taxis can be picked up at Salzburg Airport. From Salzburg Airport to Salzburg Congress you need approx. 15 min and 10 €. Please be aware that during the rush-hour the travel time can be twice as long.
Car Parking
The nearest parking place to Salzburg Congress is the Sheraton Garage which is open 24 hours a day. Parking fee: 15 € per 24 hours.

The next parking place is the Mirabell Congress Garage which is in a 5 minutes’ walking distance from the Salzburg Congress. Open 24 hours a day. Parking fee: 13 € per 24 hours.

Further Sightseeing Information
Further sightseeing information can be obtained from the
Tourismus Salzburg GmbH
Salzburg Congress
Auerspergstraße 6
5020 Salzburg/Austria
Phone: +43 / (0)662 / 88987-0
Fax: +43 / (0)662 / 88987-32
E-Mail: tourist@salzburgcongress.at
Internet: www2.salzburg.info/offers.html
Opening hours:
Monday – Saturday 9:00 – 19:00, closed Sunday!

For detailed information about the SalzburgCard (includes free travel on all buses and trams in the city) please contact
Phone: +43 / (0)662 / 88987-454
E-Mail: cards@salzburg.info

ESBES General Assembly
The General Assembly of the EFB Section on Biochemical Engineering Science (ESBES) will take place on Monday, 28 August 2006, 12:00 – 13:30 at the Salzburg Congress.

M3C-Meeting
The M3C meeting of the Working Group on Modelling, Monitoring, Measurement & Control (M3C-WG) will take place on Tuesday, 29 August 2006, from 12:00 – 13:30 at the Salzburg Congress.