

PROGRAMME

SUNDAY 14 JUNE 2009

2.00 – 6.00 pm	Registration and putting up posters (Newton Room)
6.00 – 7.00 pm	Welcome reception (Newton Room and Balcony, Hamilton Centre)
7.00 – 10.30 pm	Welcome reception (Balcony and Newton Room, Hamilton Centre)

MONDAY 15th JUNE 2009

8.45 am *Ian Sutherland and Derek Fisher (UK)*
Welcome and opening comments

8.55 am K-0 *James M. Van Alstine (Sweden)*
Opening Address: Partition Meetings in Perspective

Session 1 – Molecular aspects of protein-media interactions

Chair: Peter Massey and Ian Garrard

9.15 am *Chair*
Introduction to session

9.20 am K-1 *Steven Cramer (USA)*
Keynote: Molecular Aspects of Protein-Media Interactions

10.00 am O-1 *Florian Dismer (Germany)*
Molecular Dynamic Simulations: a Tool to Understand and Predict
Protein Binding in Ion-Exchange Chromatography

10.20 am O-2 *Pedro Palma Madeira (Portugal)*
Biomolecule Descriptors by Partitioning in Aqueous Polymer/Polymer
Two-Phase Systems

10.40 – 11.40 am **COFFEE AND POSTERS**

11.40 am K-2 *Charles Haynes (Canada)*
Keynote: Can the Custom Chromatography Concept be Realised?

12.20 – 12.35 pm **Poster Presentations for Session 1 (3 minutes each)**

P-1 *S C Silvério Portugal*
Phase Diagrams and Relative Hydrophobicity for UCON-Phosphates
ATPS

P-2 *Luis de Matos Borlido (Portugal)*
Studies of IgG Stability in Aqueous Two-Phase Extraction Processes

P-3 *Ana Cristina Dias-Cabral (Portugal)*
Dynamics of Angiotensin I Adsorption onto Different Hydrophobic
Interaction Supports

P-4 *Todd Przybycien (USA)*
Helix-Sheet Inter-conversion on Protein Adsorption to Reverse Phase
Chromatography Media

12.35 *Chair:*
Closing summary

12.40 – 1.45 pm **LUNCH**

Session 2 – Protein purifications

Chair: Todd Przybicien and Derek Fisher

1.45 pm		Chair Introduction to session
1.50 pm	K-3	Guido Ströhlein (Switzerland) Keynote: Application of Continuous Chromatography for Protein Purification – a General Platform.
2.30 pm	O-3	Juan A Asenjo (Chile) Mathematical Modelling of a Protein Mixture in Chromatography Applied to High Protein Concentrations and Optimal Selection of Operating Conditions
2.50 pm	O-4	Elena Lienqueo (Chile) Experimental Validation of Mathematical Model Predictions for the Selection of Optimal Polypeptide Tags to Assist the Purification of Recombinant Proteins
3.10 pm	O-5	Marcel Ottens (The Netherlands) Accelerated Purification Process Development Using Multi-Dimensional Fractionation & Characterization of Crude Protein Mixtures
3.30 – 4.00 pm		TEA AND POSTERS
4.00 pm	O-6	Esteban J Freydel (The Netherlands) Protein refolding by gradient ion-exchange chromatography
4.20 pm	O-7	Mark Brower (UK) Expanded Bed Adsorption for the Isolation of Human Immunoglobulins Expressed in Yeast
4.40 – 5.40 pm		Poster Presentations for Session 2 & 3 (3 minutes each)
	P-5	Andres Veide (Sweden) SCE on CO ₂ for the Defatting of Krill in a Recovery Process of Krillase
	P-6	Luis Passarinha (Portugal) Improvement of COMT isolation by hydrophobic interaction chromatography with a dual salt system using low temperature
	P-7	Kevin Kuo (UK) Optimisation of the Processing of Histidine-rich Tagged Proteins
	P-8	Izabela Hartman (USA) Single-Step Protein Purification Using a Self-Cleaving Affinity-Tag
	P-9	Barbara Andrews (Chile) Theoretical and Experimental Evaluation of Hydrophobicity of Proteins to Predict their Partitioning Behaviour in Aqueous Two Phase Systems
	P-10	Stefan A Oelmeier (Germany) Screening and Optimization of Aqueous Two Phase Systems for the Purification of Proteins Using a Robotic platform

- P-11 **Samantha Fernando (UK)**
Rapid ATPS Selection Method Based on a Liquid Handling Robot
- P-12 **Kelany Santiago do Nascimento (Portugal)**
Optimization of Aqueous Two-Phase Extraction of Canavalia Brasilienses Lectin by Response Surface Methodology
- P-13 **Elias Basile Tambourgi (Brazil)**
A RSM Optimization of lipase Partition from *Pseudomonas cepacia* by PEG/Phosphate ATPS
- P-14 **Elias Basile Tambourgi (Brazil)**
Effect of pH on Bromelain Partition from *Ananas comosus* by PEG4000/Phosphate ATPS
- P-15 **Luis Minim (Brazil)**
Partitioning of Whey Proteins, α -Lactoalbumin, β -Lactoglobulin and Glycomacropetide in Aqueous Two Phases Systems
- P16 **Isabella Amaral (Brazil)**
Partitioning of β -Lactoglobulin and α -Lactoalbumin in Aqueous Two Phases Systems
- P-17 **Tatiana Souza Porto (Brazil)**
Purification of Phytase from *Aspergillus phoenicis* URM 4924 by Aqueous Two-Phase Systems using PEG/citrate
- P-18 **Inês Conceição Roberto (Brazil)**
(Presented by Adelberto Pessao)
Improvement of Bioconversion Process: Purification of Intracellular Enzymes Using Simple Methods of Primary Recovery
- P-19 **Carlota de O Rangel Yagui (Brazil)**
(Presented by Adelberto Pessao)
Effect of Temperature and Surfactant Concentration on the Partitioning of Green Fluorescent Protein in a Triton X-114/Buffer System
- P-20 **Kelany Santiago do Nascimento (Portugal)**
Liquid-Liquid Equilibrium Data for Aqueous Two-Phase Systems Composed by Ethylene Oxide Propylene Oxide Copolymers
- P-21 **Rick Siebers (UK)**
Protein Separation using Detergent-based Aqueous Two-Phase Systems on Counter-Current Chromatography
- P-22 **Derek Fisher (UK)**
Application Led Column Design for Protein Separations in ATPS by Countercurrent Chromatography
- P-23 **Y Hugh Guan (UK)**
Protein Separation Using Toroidal Columns by Type-J Synchronous Counter-Current Chromatography: Scaling Up by Increasing the Bore Size
- S3 Poster P-24 **Ana Azevedo (Portugal)**
Purification of Antibodies by Phenyl Boronate Affinity Chromatography
- 5.40 pm Chairman's closing summary
- 5.45 pm Comments from the organisers for the evening and next day
- 5.50 – 7.00 pm **Poster Session with drinks at the bar**
- 7.00 pm Open – Dinner in local pubs and Uxbridge led by BIB BPP2009 team

TUESDAY 16th JUNE 2009

Session 3 – Affinity Separations of Biomolecules

Chair: Juan Asenjo and Remco van den Heuvel

- 8.45 am *Chair*
Introduction to session
- 8.50 am K-4 *Maria Raquel Aires de Barros (Portugal)*
Keynote: Affinity Partition and Purification of Therapeutic Proteins,
Namely Antibodies
- 9.30 am O-8 *Ana Sofia Pina (Portugal)*
Comparison of HTS Techniques for the Selection of Affinity Ligands
from Solid-Phase Combinatorial Libraries
- 9.50 am O-9 *Ana Gabriela Gomes (Portugal)*
Exploring the Interaction of Nucleic Acids with Phenylboronate
Ligands as an Alternative for the Purification of Pharmaceutical Grade
pDNA
- 10.10 am O-10 *Fani Sousa (Portugal)*
Arginine-affinity Chromatography: Selectivity for Oligonucleotides
Biorecognition
- 10.30 am *Chair*
Closing Summary
- 10.35 – 11.00 am **COFFEE AND POSTERS**

Session 4 – Bio-industrial, medical and analytical applications and process validation

Chair: Phil Lester and Jim Davies

- 11.00 am *Chair*
Introduction to session
- 11.15 am O-11 *Ana Azevedo (Portugal)*
Continuous Aqueous Two-Phase Extraction Process for the
Purification of Antibodies: Performance and Economical Feasibility
- 11.35 am O-12 *Josefine Persson (USA)*
Monoclonal Antibody Recovery Using E. coli as Production Host
- 11.55 am K-5 *Jonathon Coffman (USA)*
Keynote: Monoclonal antibodies: technology development for
purification of 10g/L titre antibody process
- 12.35 – 1.30 pm **LUNCH**

- 1.30 pm **Chair**
Introduction to next part of session 4
- 1.35 pm O-13 **Ales Strancar (Slovenia)**
New Approach to Influenza Vaccine Purification
- 1.55 pm O-14 **Astrid Dürauer (Austria)**
N^{pro} Fusion Technology – Refolding and Cleavage Kinetics of EDDIE Fusion Proteins
- 2.15 pm O-15 **Marco Rito-Palomares (Mexico)**
Characterization of Green-Tissue Protein Extract from Alfalfa (*Medicago sativa*) Exploiting a 3D Technique
- 2.35 pm O-16 **Fisseha Welderufael (UK)**
Development of an Integrative Process for the Production of Bioactive Peptides from Whey by Proteolytic Commercial Mixtures
- 2.55 pm O-17 **Eli Keshavarz-Moore (UK)**
Step Change in the Efficiency of Centrifugation through Cell Engineering
- 3.15 pm O-18 **Yuhong Zhou (UK)**
Prediction of Large Scale Flux and Transmission of Crossflow Filtration with Ultra Scale-Down Method
- 3.35 – 4.05 pm **TEA AND POSTERS**
- 4.05 pm O-19 **Boris Zaslavsky (USA)**
Development of New Assay for Improved Prostate Cancer Diagnosis with Aqueous Two-Phase Partitioning
- 4.25 pm **Chair**
Closing Summary
- 4.30 – 5.00 pm **Poster Presentations for Session 4 (3 minutes each)**
- P-25 **Marco Rito-Palomares (Mexico)**
Recovery of Laccase from the Residual Compost of *Agaricus bisporus* in Aqueous Two-Phase Systems
- P-26 **Marco Rito-Palomares (Mexico)**
Recovery of Mono-PEGylated α -Lactalbumin in Aqueous Two-Phase Systems
- P-27 **Jorge Benevades (Mexico)**
(Presented by Marco Rito-Palomares)
Aqueous Two-Phase Systems to the Limit: Effect of Biomass/Cell Debris Loading on System Formation and Phase Separation Kinetics
- P-28 **Sreekanth Chilamkurthi (The Netherlands)**
Continuous Chromatographic Purification of Monoclonal Antibodies

- P-29 **Adalberto Pessoa Jr (Brazil)**
High Level Removal of Endotoxin in the Purification Process of HBcAg using Aqueous Micellar TwoPhase Systems
- P-30 **Thayse Silva (Brazil)**
Biosurfactant Production by *Pseudomonas fluorescens* Using Low Cost Medium
- P-31 **Marco Rito-Palomares (Mexico)**
Potential Application of Aqueous Two-Phase Systems for Extractive Fermentation of Cyanobacterial Products
- P-32 **Nuria Rubio (Spain)**
Multiple Dual-Mode Counter-Current Chromatography Applied to Chiral Separations
- P-33 **Adriane Milagres (Brazil)**
Purification of Low Molecular Fe³⁺-Reducing Compounds from Wood Decay Fungi on Amberlite XAD and Identification Using ¹³C-TMAH GC-MS
- P-34 **Paula Jauregi (UK)**
Can Colloidal Gas Aphrons (CGA) be a Feasible Separation Process for Natural Products at Industrial Scale

5.00 – 6.00 pm **Session 4 Round Table** – Phil Lester and Jim Van Alstine

6.00 pm CLOSE – Group Photo

6.00 – 7.00 pm BAR open for discussions

7.00 pm Open – Dinner in local pubs and Uxbridge

WEDNESDAY 17th JUNE 2009

Session 5 – Bioparticle and complex biostructures purification

Chair: Marcel Ottens and Janet Arrand

- 8.45 am *Chair*
Introduction to session
- 8.50 am K-6 *Nigel Slater (UK)*
Keynote: Virus Separations: Using Affinity to Fish out Specific Populations of Viruses (nanoplexes)
- 9.30 am O-20 *Marília Mateus (Portugal)*
Effect of Ligand Type on Membrane Hydrophobic Interaction Chromatography for the Purification of Plasmid DNA Vaccines
- 9.50 am O-21 *Chad Zhang (UK)*
A Novel Super-Porous Chromatography Medium for the Purification of Nano-Sized Molecular Structures
- 10:10 am O-22 *Owen R T Thomas (UK)*
Bi-layered SEC-IEC Chromatography Matrices for the Separation of Nanoplexes
- 10.30 – 11.00 am **COFFEE AND POSTERS**
- 11.00 am K-7 *Bo Mattiasson (Sweden)*
Keynote: Cryogels – Superporous Materials Suitable for Separation of Cells and Other Small Particles
- 11.40 am O-23 *Ales Strancar (Slovenia)*
A Novel Plasmid DNA Purification Process: From Laboratory to Production Scale
- 12.00 noon O-24 *Hans-Olof Johansson (Sweden)*
Partitioning of Thylakoid Vesicles and Large Proteins as Model Nanoparticles in Poly(ethylene glycol)/Na-Polyacrylate Aqueous Two-Phase Systems
- 12.20 – 12.25 pm **Poster Presentations for Session 5 (3 minutes each)**
- P-35 *Hans-Olof Johansson (Sweden)*
Bioparticle Partitioning in PEG-Polyacrylate Aqueous Two-Phase Systems
- 12.25 *Chair:*
Closing summary
- 12.30 – 1.45 pm **LUNCH** (Afternoon Free for Visits to Oxford, London and Windsor)

THURSDAY 18th JUNE 2009

Session 6 – New and unconventional partitioning material

Chair: Alois Jungbauer and Paula Jauregi

- 8.45 am *Chair*
Introduction to session
- 8.50 am K-8 **Robin D. Rogers (UK)**
Keynote: Ionic Liquids for Separation
- 9.30 am O-25 **Udo Kragl (Germany)**
Ionic Liquids for Downstream Processing of Proteins and Low Molecular Weight Compounds
- 9.50 am O-26 **Edgar Silveira Campos (Brazil)**
Experimental Design for Decolourization of Textile Dye by *Pseudomonas oleovorans*
- 10.10 – 10.40 am **COFFEE AND POSTERS**
- 10.40 am O-27 **RamiReddy Vennapusa (Germany)**
Surface Energetics to Assess Microbial Adhesion onto Fluidized Chromatography Adsorbents
- 11.00 am O-28 **Paula Jauregi (UK)**
Separations of Value Added Products from Food Waste Streams Using Colloidal Gas Aphrons (CGA)
- 11.20 – 11.45 pm **Poster Presentations for Session 6 (3 minutes each)**
- P-36 **Edgar Silveira Campos (Brazil)**
Improvement on Decolourization of Industrial Dye by *Pseudomonas oleovorans* Immobilized on Polyurethane Foam
- P-37 **Adalberto Pessoa Jr (Brazil)**
Scale-Up of Enzyme Purification Using Reverse Micelles: A Study of Case
- P-38 **Valeria C. Santos (Brazil)**
(Presented by Adalberto Pessoa)
Clavulanic Acid Partitioning in Two-Phase Aqueous Mixed (Nonionic/Anionic) Micellar Systems
- P-39 **Carlota de O Rangel Yagui (Brazil)**
(Presented by Adalberto Pessoa)
Clavulanic Acid Partitioning in a pH Sensitive Micellar System
- P-40 **Elias Basile Tambourgi (Brazil)**
Biochemistry and Surface Characterization by Thresholding Technique of α -Amylases Crystals from *Aspergillus niger* Purified by Ion-Exchange Expanded Bed Chromatography
- P-41 **Elias Basile Tambourgi (Brazil)**
Study of Effect Ion-Exchange Resin on the Amylases from Maize Malt Purification by Expanded Bed Chromatography

- P-42 ***Elias Basile Tambourgi (Brazil)***
Comparison between Plain and Hollow Fibre Membranes in the Purification of a Medicinal Product from Pineapple
- P-43 ***Ana Cecilia Afonso Roque (Portugal)***
Green Affinity Membranes for IgG Purification
- P-44 ***Kumar Babu Kautharapu (India)***
Novel Aqueous Two Phase Systems for Down Stream Processing of Proteins
- 11.45 – 11.55 am **Poster Presentations for Session 7 (3 minutes each)**
- P-45 ***Daniela Viana-Marques (Brazil)***
Clavulanic Acid Purification by Extractive Fermentation Using Aqueous Two-Phase Systems
- P-46 ***Marco Rito-Palomares (Mexico)***
Optimization of Dielectrophoretic Trapping of *Saccharomyces cerevisiae*
- P-47 ***Ian Garrard (UK)***
Use of Countercurrent Chromatography and Colloidal Gas Aphrons for the Separation of Two Dye Compounds
- 11.55 am ***Chair:***
Closing summary

Session 7 – Emerging technology

Chair: Owen Thomas and Svetlana Ignatova

- 12.00 pm ***Chair***
Introduction to session
- 12.05 am K-9 ***David Wood (USA)***
Keynote: Novel ELP-Intein Based Purifications (Affinity Methods)
- 12.45 am O-29 ***Chad Zhang (UK)***
Negative Chromatography Antibody Purification (NCAP) Technology
- 1.05 – 2.00 pm **LUNCH**
- 2.00 pm K-10 ***Charles Glatz (USA)***
Proteomics-Based Strategies for Downstream Recovery
- 2.40 pm O-30 ***Kedar Deshpande (The Netherlands)***
A Novel, Fast Method for Protein Self-Interaction Chromatography on a Microchip
- 3.00 pm O-31 ***Ian A. Sutherland (UK)***
Non-Synchronous Preparative CCC – the Next Generation
Countercurrent Centrifuge where Phase Separation and Mixing can be Independently Controlled

- 3.20 pm O-32 **Lukasz Grudzien**
Resolution and Purification of a DL-amino acid by Biocatalysis in
ATPS in a Reactor-Separator
- 3.40 pm O-33 **Daniel G Bracewell (UK)**
Measurement of Product and Contaminant Relationships for
Bioprocess Design and Development by SELDI-MS
- 4.00 pm **Chair:**
Closing summary
- 4.05 – 4.25 pm **TEA**

Session 8 – Future challenges

Chair: Jim van Alstine and Ian Sutherland

- 4.25 pm **Chair**
Introduction to session
- 4.30 pm K-11 **Andy Lyddiatt (UK)**
The New Triple Helix: Early Engagement of Science, Process
Engineering and Business Thinking to Foreshorten the Development
Cycle for New Biopharmaceuticals
- 5.10 pm K-12 **Tony Bradshaw (UK)**
Future Perspectives from BioProcess UK
- 5.50 pm Final discussions and closing remarks
- 6.15 – 6.30 pm Close of BPP2009 and introduction to BPP2011
- 6.30 – 7.00 pm **BREAK**
- 7.00 pm Pre-dinner reception in the Newton Room and Balcony
- 8.00 pm **CONFERENCE DINNER (NEWTON ROOM)**

FRIDAY 19 JUNE 2009

Departures

Informal visits to the Advanced Bioprocessing Centre (contact the
Registration Desk or one of the local conference organisers to arrange
visit)

Informal discussion