

"Membrane filtration in the food and drinks industry: problems and solutions"

Thursday 7th September 2006 Venue: Room 8 West 3.22, University of Bath, Bath, UK

This One-Day technical meeting is being organised by the Food and Drink Subject Group of the Institution of Chemical Engineers. A selection of academic and industrial experts from the UK and overseas will discuss synthetic membrane filtration issues across a range of food and beverage sectors.

<u>Programme</u>		
9.30-10.00 10.00-10.10	:	Registration and coffee Introduction and welcome from Mr Colin Bailey; Chairman.
10.10 -10.40	:	Microfiltration of Milk; Jeanette Lindau (TetraPak, Sweden)
		Microfiltration of milk can be done for a numerous of reasons, such as removal of micro-organisms and fractionation of the milk proteins. Milk is a complex fluid and not always easy to microfilter and the pre-treatment can be very important. Examples of some problems and solutions will be presented.
10.40 -11.10	:	Membrane fouling: analysis and In situ 3D characterization using multi-photon microscopy; Robert Field (University of Oxford).
		In situ 3D characterization of protein fouling both on the surface and within the pores of the membrane was achieved using multi- photon microscopy. Time lapsed images of the fouled membrane were obtained for single suspensions and mixtures of fluorescently labelled bovine serum albumin and ovalbumin. An extention of Hermia's analysis of modes of fouling will also be given
11.10 – 11.40	:	Morning tea / coffee
11.40 – 12.10	:	Membrane optimisation in the fruit juice and brewing industries; Frank Lipnizki, (Alfa Laval, Denmark).
		Potential applications and case studies of membrane technology for the beverage industry will be presented with focus on the fruit juice and brewing industry.
12.10 – 12.40	:	Ultrafiltration of tea and lignosulphonate liquors; Mike Bird (University of Bath)
		The UF of tea and lignosulphonate liquors are examples of industrially relevant separations. The importance of membrane parameters such as roughness, charge and hydrophobicity upon performance over multiple operational cycles will be discussed.
12.40 – 2.00	:	Lunch
2.00 – 2.30	:	Membrane technology in the tea industry; Francois-Xavier Pierre , (Unilever R+D Colworth)
		Tea manufacturers face a number of challenges, some specific, others shared with the wine, cider or fruit juice industry. Through specific examples, it will be shown how membrane technology can respond to a variety of these challenges, with benefits for the organoleptic properties, composition or stability of the tea product.
2.30 - 3.00	:	Novel membrane surface science; Chris Wright (University of Wales, Swansea)
		Membrane separation performance within a specific process can be optimised through manipulation of the polymer membrane. Novel polymer fabrication techniques will be presented including the production of highly ordered microfiltration systems and the production of positively charged nanofiltration membranes using self assembly techniques. The current application of atomic force microscopy to optimisation or membrane systems will also be discussed.
3.00 – 3.30	:	Afternoon tea / coffee
0.00 4.00		

Polishing filtration of wine and cider; **Simon Avery** (Pall Filtration)

Oenoflow Crossflow systems. One of the main objectives of the OenoFlow system is the separation of undesired particles and micro-organisms and the highest possible protection of the wine / cider quality and characteristics. The OenoFlow system can be used in all steps of winemaking or cidermaking: directly after fermentation, after cold-stabilization and prior to bottling. There

4.00 - 4.15Final discussion and Close

will also be a case study of Oenoflow used on cider.

3.30 - 4.00

MEMBRANE FILTRATION IN THE FOOD AND DRINKS INDUSTRIES PROBLEMS AND SOLUTIONS

For specify technical or organisation queries, please contact Dr Mike Bird: email m.r.bird@bath.ac.uk.

Registration Form

Please return this form with your remittance to: Gemma Jones, Member Networks Department IChemE Davis Building, 165-189 Railway Terrace, Rugby CV21 3HQ Tel: 01788 578214 Fax: 01788 560833
Last Name: First Name Title Gender M / F
Country House No / Company Name Postcode
Job TitleDept
Address
TownCounty
IChemE (or Subject Group) Membership Number
Fax: Email:
Special Dietary Requirements
Please tick relevant box for payment: VAT is included (VAT no. GB 661 5413 48). A VAT invoice will be issued upon receipt of payment.
□ £ 100.00 (£85.00 +VAT) □ £ 35.00 - Academics □ £ 29.00 - Retired □ £ 24.00 - Students
Please make your cheque payable to the "Institution of Chemical Engineers". Payment in full must be received in advance of the event.
If you wish to pay by credit or debit card please quote your card number in the box below together with the name and initials on the card and its commencement and expiry date (please note that the Institution accepts only MasterCard, Visa, UK issued Maestro or Solo, Visa Delta, Visa Debit.
Name & initials as on card:
Billing address including Postcode:
Please indicate card type MasterCard Visa Maestro Solo Visa Debit Visa Delta
Valid from date: D D Expiry date: D D Issue NoCardholder Signature:
Please give a telephone number for the cardholder so we may contact you for the card security code.
Telephone
Cancellation Policy

We reserve the right to cancel or alter the programme.

DATA PROTECTION

In accordance with the Data Protection Act IChemE (and companies processing data on its behalf) will hold and use the data contained on this form for administration purposes, to keep you informed of its activities, and offer goods and services provided by the Institution

If you would prefer not to receive IChemE product and service literature please mark the box \square

If you would prefer not to receive emails on IChemE product and service literature please mark the box $\ \square$

Cancellations made less than 48 hours before the event date will not receive a refund. Substitutions welcome.

The Institution is fully registered under the Data Protection Act as both a data user and a computer bureau.

A map will be sent to you following registration