September 2010 Issue 8

Formulation Science and Technology Group Newsletter

CALENDER OF FORTHCOMING EVENTS 2010

November 10th 2010. Green and Black Part 2 Conference, University of York, York

CALENDER OF FORTHCOMING EVENTS 2011

26th June—1st July 2011. NanoFormulation2011, Suntec City, Singapore.

Secrets of Formulation 3, planned for September 2011

Powder flow conference 2011, planned for December 2011

CALENDER OF PIPELINE EVENTS

Food formulation conference

Powder conference

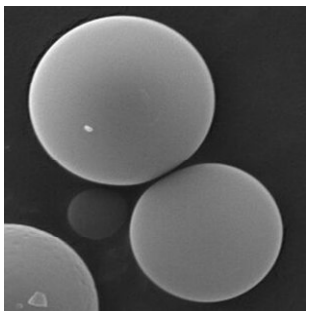
Formula VII

For further information visit: www.formulation.org.uk

The FSTG Black and Green Part 1 conference was held in the Department of Chemical Engineering, Birmingham University , on 14th April 2010, began a series of conferences about formulation developments sensitive to the key issue of sustainability.

This article on the conference was written by Sam Tatman, a student at Solihull School studying for his AS levels. Sam who was sponsored by the FSTG really enjoyed the conference as it gave him the opportunity to meet formulation scientists and provide an insight into careers within formulation science.

Philip Cox, University of Birmingham, introduced air-filled emulsions as a way of reducing the level of fat in foods, by, replacing lipids with almost pure air in liquid foods such as mayonnaise. The current method is to replace the fat with starch but with the difference in size of the two particles in the emulsion, the taste and texture is very different. Air bubbles are enclosed in a shell of hydrophobin HFBII, a fungal protein, and mimic lipid droplets, enabling the taste/texture to be similar, while reducing up to 60% of the fat of the mayonnaise. Stephen Minter of Eminate presented a new type of salt, addressing the problem of dietary sodium. Instead of trying to formulate a new substitute for table salt, e.g. Potassium Chloride, Eminate have found a new crystalline structure of sodium chloride which is smaller than normal salt yet has more flavour impact. Therefore, products using this new salt, called 'Soda-Lo', use less of it while retaining the same flavour and other desirable properties of table salt, and do not have to change their label due to the ingredients being the same. Janet Scott of JLS ChemConsult described sustainable materials in fast moving consumer goods and the unnecessary waste produced in consumer products, such as shampoos, due to the excess amount of surfactants put in. Even the so-called 'renewable' products can have a detrimental effect on the environment, if there is too much demand and the source is too small. Cellulose can be combined with surfactants to form a thixotropic gel which may provide a possible answer.



Mike Carroll of Dow Agrosciences UK spoke on the impact of regulatory changes on sustainability of products in crop protection, describing the changes in legislation (1107/2009) controlling fertilizers and other products used on crops, due on the 14th June 2011. This will further restrict the substances used in formulated products, increasing R&D costs. New formulations based on existing substances will be needed. Siobhan Casey of Innospec raised practical challenges in the use of biodiesel, concerning the types of biodiesels used and the additives needed. The fuels need to be reliable, meaning that they still flow in cold weather conditions and that they do not oxidise readily. Fatty Acid Methyl Ester (FAME) is the leading fuel because it satisfies both conditions without needing additives and can be made from a variety of raw materials, although waste remains a problem.

Thought for the Month:

To accomplish great things, we must not only act, but also dream; not only plan, but also believe. *Anatole France*

Become a Member:

http://www.formulation.org.uk

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Member Focus

We want YOU to tell us about yourselves in this section– if you'd like to take part and you have anything particularly exciting to tell us contact me, Lyn Daintree on our website

www.formulation.org.uk/contacts.html

Organization:

Job title:

FSTG member for:

Research interests:

FSTG Student Bursary Scheme

The **Gordon J. Tiddy bursary** is an award made for the purpose of assisting in travel to conferences in the UK and overseas. Bursaries are provided solely to offset the costs of travel and accommodation and are normally limited to a maximum of £500. The bursary scheme does not cover meetings organized wholly by the FSTG within the UK, for which alternative grant or discount schemes may be organized by the meeting committee as it sees appropriate.

Applicant Eligibility: Applications may be made by any FSTG member, and will be considered on the basis of merit and need. Applicants must be members of at least six months standing and must not have already received an FSTG travel bursary in the previous 2 years.

Application Process: Applications must be made online using the form on the FSTG website (www.formulation.org.uk) and will be considered by the review panel (the officers of the FSTG) on an *ad hoc* basis; there are no fixed application deadlines. Applicants' attention is drawn to the requirements detailed in the notes on the website by which applications are bound.

Some conditions may be waived at the discretion of the review panel, and applicants are always encouraged to contact the current secretary or chairman of the FSTG for advice. All awards are made at the discretion of the review panel whose decisions are final and binding.

Black and Green Part 1 cont.

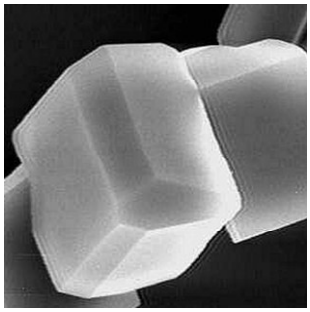
Stefan Stadtmueller of Evonik spoke about silicone based solutions for sustainable building. Silicone has many applications and he highlighted its role in construction. As moisture is one of the leading causes of building damage, there is a great demand for water repelling agents such as silicone. Silicone also has the advantage of retaining the material's breathability, which reduces the cooling costs of buildings. Neil Rowson of the University of Birmingham spoke about the use of waste minerals and how functional fillers can alter and improve the physical, chemical, and electrical properties of materials. Geoffrey Short of Rocktron presented a range of functional fillers manufactured from fly ash, a waste product from coal-fired power stations. Centron consists of hollow glass spheres, Magtron of magnetic spheres, and Mintron consisting of alumino-silicate solid glass spheres. Andrew Riley of Imerys discussed mineral uses for a sustainable future. He showed the many applications of minerals in the world, ranging from toothpaste to turbine blades. He discussed the balance needed to achieve sustainability where the income must be slightly compromised to still maintain the social and environmental factors.

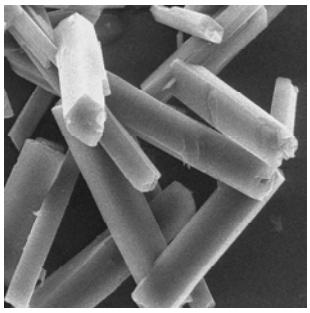
Thomas Brinz of Bosch presented the High Throughput Formulation Technology used by Bosch in production and the steps towards automatic production and testing of formulations, where all processes are done robotically and different formulations can be tested in parallel. This reduces carbon footprint by increasing the efficiency, speed and reproducibility of testing.

As an added bonus, attendants were offered a tour in a Hydrogen Fuel Cell-powered car. Although the car was a hybrid, being powered by stored electricity as well, the car still went at a swift pace, while emitting pure water.

Black and Green conferences will continue to explore sustainability concerns and possible solutions to climate change and fossil fuel depletion. Due to the breadth of topics in formulation technology, they will appeal to a wide audience.

Author: *Sam Tatman*





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