

ICBS

Brewing Matters

BREWING MATTERS

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International Centre for Brewing Science,
Division of Food Sciences, School of Biosciences,
University of Nottingham.

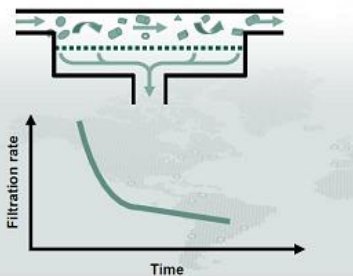
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Highlights this issue:

- Stephen Lawrence joins the team from AB INBEV
- Research highlights on Cross Flow Filtration, Flavour Stability, No Low Alcohols beers, Roasted Malts, Yeast Stress and Dispense Quality.
- Cuckoo Collaborative beers to be launched.

Brewing Science: Research Update

Cross Flow Filtration



Rod White presented work on Cross Flow Filtration at the recent EBC Filtration Symposium. The work is focussed on understanding the main blocking factors involved in commercial cross flow filtration.

For more information contact Rod White: rod.white@nottingham.ac.uk

No Low Alcohol Beers & Sensory

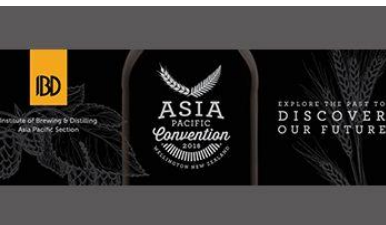


'2nd year Brewing and Sensory Science PhD Student Imogen Ramsey was lucky enough to be chosen to present her work as part of the student flash poster presentation competition at the IFST Sensory Science Conference 'Health is Wealth' in Birmingham last week. She discussed her work on low alcohol beer and the influence of ethanol on the drivers of liking in beer, and was awarded the prize for the best presentation.'

Marit Nijman presented her research at IBD Asia Pacific conference in March. The talk was titled 'Measuring Consumers' Emotional Response to Beer: Why Context Matters'. The PhD project is sponsored by Anheuser-Busch InBev and the University of Nottingham. The research investigates how context impacts consumers' emotional response to beer products, facilitating improved methodology for sensory consumer research. <https://www.ifst.org/news/35th-asia-pacific-institute-brewing-and-distilling-ibd-convention-0>

For more information contact Dr Rebecca Ford: r.ford@nottingham.ac.uk

Flavour Stability



The ICBS specialism in flavour stability continues with two important pieces of work.

JENKINS, D., JAMES, S., DEHRMANN, F., SMART, K. A. & COOK, D. J. (2018). The impact of metal ions in beer on the assessment of oxidative stability of beer. *Journal of the American Society of Brewing Chemists*, **76**, 50-57.

David Jenkins also gave a lecture on " *The influence of yeast on the oxidative stability of beer*". At the IBD Asia Pacific conference in Wellington.

We are also currently seeking applicants for a 4-year PhD studentship, sponsored by a major multinational brewing company, and focused around the application of ESR spectroscopy to improving the freshness and shelf-life of beers. For details, see: <https://www.nottingham.ac.uk/~sazitra/public/studentship/studentship-open55.html>

Raw Materials



The Raw Material group have been busy with a number of presentations at key events.

David Cook presented "*Flavours imparted through brewing with roasted malt products*". At the recent IBD Asia Pacific conference.

The ICBS team were heavily represented at the 13th Trends in Brewing Conference in Ghent

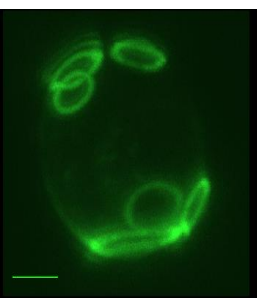
Hebe Parr: *The flavour properties of roasted malts: a gas chromatography-olfactometry study.*

Christina Dietz: *Sensory characterisation of hop oil fractions obtained by clean processing.*

Celina Dugulin: *Brewing with green malt: process development and technical requirements for an energy and water efficient process.*

For more information contact Professor David Cook: david.cook@nottingham.ac.uk

Yeast Research



Chris Powells yeast group was heavily involved at the recent Trends in Brewing conference with the following presentations.

Steph Brindley: Variation within brewing yeast populations

Chris Alexander: The impact of fermentation conditions on brewing yeast physiology

Eoin Moynihan: Understanding the impact of mitochondrial functionality and morphology on petite production

Chris will also be in action himself at the upcoming meeting of the British Yeast Group talking about Phenotypic heterogeneity and brewing yeast populations

For more information contact Dr Chris Powell: chris.powell@nottingham.ac.uk

Draught beer quality



David Quain and James Mallett had lots of fun at Trends in Brewing in Ghent. Fittingly, in the home of great beer we gave a presentation on 'draught beer quality'. A great outcome was the invitation from the Brewers Association for DQ to give a keynote lecture at the BA's Quality Summit in Denver in September.

Alex Jevons has recently joined us for his Ph.D on 'matters dispense' – amongst other stuff we plan to unravel the microbiome of draught beer and the impact of different accounts and brands. It will be fun!

For more information contact David.Quain@nottingham.ac.uk

Staff News: Stephen Lawrence joins the team



We are delighted to welcome back Dr Stephen Lawrence to the Nottingham brewing group, following his recent appointment as Assistant Professor in Brewing & Beverage Technology. Stephen has a wealth of experience to bring to the role, spanning brewing raw materials, yeast & fermentation, technical stewardship and food safety/ quality.

Stephen originally came to Nottingham in 2005, whilst studying for a PhD with Prof. Katherine Smart. His thesis topic was *Brewing yeast cell wall gene expression and function during CO₂ induced anaerobiosis*. He subsequently held several postdoctoral positions in the fields of brewing and bioenergy at the University of Nottingham. Research carried out during this time was the basis for him being awarded the *Institute of Brewing and Distilling Cambridge Prize* in 2015, which is awarded to a young scientist who is deemed to have made a significant contribution to brewing research. In 2013 Stephen joined the global technical team for SABMiller as a raw materials specialist, working notably on the evaluation of analytical methods, raw material specification and the use of alternative raw materials for the production of beverages, in particular what novel sensory characteristics could be provided by their use. Stephen then joined the Technical Stewardship team working primarily in food safety and quality. He worked closely with smallholder farmers in Africa developing a farm assurance and H&S programme, and introduced a rapid mycotoxin testing system. In 2016 SABMiller was acquired by Anheuser-Busch InBev and Stephen was invited to form part of the global integration team. He was part of a team working to develop a harmonised set of microbiological methods, redeveloping the global food safety testing programme and developing a set of global brewing principles for ABInBev.

This brings his CV up to date, with Stephen joining the brewing academic team at Nottingham earlier this year. He will be involved in teaching and research related to his specialisms. His key research themes fall under the following areas:

- Developing the next generation of beverage food safety tools.
- Understanding food safety risks in global raw material supply chains – developing supply chains and local sourcing from smallholder farmers.
- Future fermentables – the what, the how and the why.

Brewing MSc News: Class of 2018 launch Cuckoo Collaborative Beers



This is the second year of the Cuckoo Collaborative, a novel dissertation project involving four MSc Brewing Science and Practice students. The core idea is for the students to collaborate with local breweries to design a beer and to produce, market and sell it. This year, Sam and Thibaud are working with Navigation Brewery to produce 'Steam Spirit' a red ale whereas Seb and Nick are making 'Fly the Nest', a session pale ale with Neon Raptor. A new spin this year is to support local charities with Cuckoo@Navigation partnering with the Industrial Museum at Wollaton Hall and Cuckoo@NeonRaptor with the Padley Group in Derby. The beers will be launched with much pizzazz in July in Derby (5th, 'Fly the Nest') and Nottingham (12th, 'Steam Spirit').

Further info from david.quain@nottingham.ac.uk