Q&T NEWS

ISSUE 33 (OCTOBER-DECEMBER 2012)

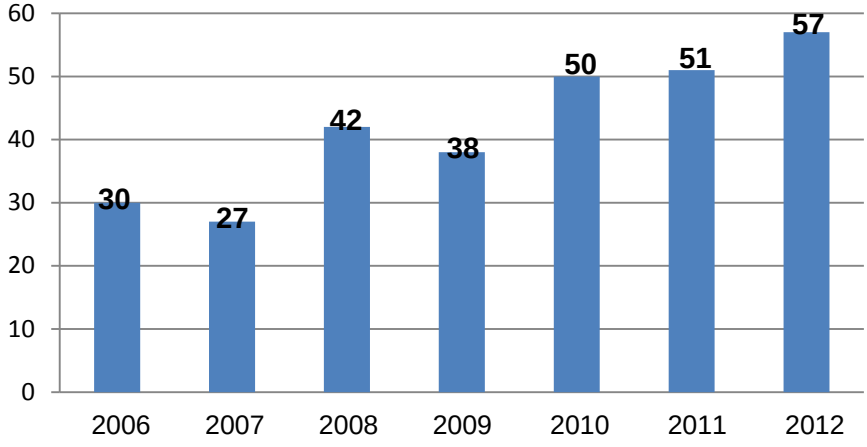
LIGHT AND FOOD

New Advanced Technology Foundation project to Q&T (Søren Balling Engelsen) in collaboration with Århus University, DTU, FOSS and NKT. The aim is to develop a platform of analytical solutions based on new bright and broad infrared **LIGHT** sources and apply it to optimization of sustainable **FOOD** production, both in the field and in the factory.

KU 2016 CALM

Together with colleagues from Food Microbiology (Dennis S. Nielsen) and Sensory Science (Mikael Bom Frøst) Q&T are to participate in an interdisciplinary project with the aim of Counteracting Age-related Loss of skeletal Muscle mass. The Q&T workpackage is related to NMR metabolomics. Three KU faculties are involved in the project which is headed by Tine Damsholt from the SAXO Institute.

Q&T PUBLICATIONS



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Peer reviewed publications Oct-Dec 2012:

JM Amigo, A Gredilla, S Fdez-Ortiz de Vallejuelo, A de Diego, JM Madariaga. Study of parameters affecting the behaviour of trace elements in a polluted estuary. Canonical correlation analysis as a tool in environmental impact assessment. *Chemometrics and Intelligent Laboratory Systems*. 119, 1–10, 2012.

M Vidal, JM Amigo. Pre-processing of hyperspectral images. Essential steps before image analysis. *Chemometrics and Intelligent Laboratory Systems.* 117, 138–148, 2012.

ACS Hastrup, C Howell, FH Larsen, N Sathitsuksanoh, B Goodell, J Jellison. Differences in crystalline cellulose modification due to degradation by brown and white rot fungi. *Fungal biology*. 116 (10), 1052-1063, 2012.

K Hanhineva, A-M Aura, I Rogachev, S Matero, T Skov, A Aharoni, K Poutanen, H Mykkänen. In Vitro Microbiotic Fermentation Causes an Extensive Metabolite Turnover of Rye Bran Phytochemicals. *PLOS ONE*. 7 (6), 1-10, 2012.

KR Murphy, P Wenig, G Parcsi, T Skov, RM Stuetz. Characterizing odorous emissions using new software for identifying peaks in chemometric models of gas chromatography–mass spectrometry datasets. *Chemometrics and Intelligent Laboratory Systems.* 118, 41–50, 2012.

JM Augustin, S Drok, T Shinoda, K Sanmiya, JK Nielsen, B Khakimov, CE Olsen, EHH Hansen, V Kuzina, CT Ekstrøm, T Hauser, S Baka. UDP-glycosyltransferases from the UGT73C Subfamily in Barbarea vulgaris catalyse Sapogenin 3-O-glucosylation in Saponin-mediated Insect resistance. *Plant Physiology Preview*. 160 (4), 1-48, 2012.

M Owusu, MA Petersen, H Heimdal. Effect of fermentation method, roasting and conching conditions on the aroma volatiles of dark chocolate. *Journal of Food Processing and Preservation.* 36 (5), 446–456, 2012.

B Khakimov, JM Amigo, S Bak, SB Engelsen. Plant metabolomics: Resolution and quantification of elusive peaks in liquid chromatography–mass spectrometry profiles of complex plant extracts using multi-way decomposition methods. *Journal of Chromatography A.* 1266, 84–94, 2012.

MA Rasmussen, R Bro. A tutorial on the Lasso approach to sparse modeling. *Chemometrics and Intelligent Laboratory Systems.* 119, 21–31, 2012.

SB Sarac, CH Rasmussen, MA Rasmussen, CE Hallgreen, T Søeborg, M Colding-Jørgensen, PK Christensen, S Thirstrup, E Mosekilde. A Comprehensive Approach to Benefit–Risk Assessment in Drug Development. *Basic & Clinical Pharmacology & Toxicology.* 111(1), 65–72, 2012.

CG Carson, MA Rasmussen, JP Thyssen, T Menne, H Bisgaard. Clinical Presentation of Atopic Dermatitis by Filaggrin Gene Mutation Status during the First 7 Years of Life in a Prospective Cohort Study. *PLOS ONE*. 7 (11), 1-7, 2012.

MN Lund, S Hoff, TS Berner, R Lametsch, ML Andersen. Effect of Pasteurization on the Protein Composition and Oxidative Stability of Beer during Storage. *Journal of Agricultural and Food Chemistry.* 60 (50), 12362−12370, 2012.

J Thygesen, F van den Berg. Subspace methods for dynamic model estimation in PAT applications. *Journal of Chemometrics*. 26, 435-441, 2012.

M Khoshkam, F van den Berg, M Kompany-Zareh. Achieving bilinearity in non-bilinear augmented first order kinetic data applying calibration transfer. *Chemometrics and Intelligent Laboratory Systems*. 115, 1–8, 2012.

Other publications:

R Bro, SB Engelsen, L Nørgaard. Overlappende toppe i kromatografi. Dansk Kemi. Det Kemometriske Rum. 93 (10), 32-33, 2012.

R Bro, SB Engelsen, L Nørgaard. PARAFAC2: Et nyt kromatografisk redskab. Dansk Kemi. Det Kemometriske Rum. 93 (11), 48-49, 2012.

B Khakimov, SB Engelsen, R Bro, L Nørgaard. Plante-metabolomics: Opdagelse af nye bioaktive stoffer med PARAFAC 2. Dansk Kemi. Det Kemometriske Rum. 93 (12), 29-31, 2012.

J Thygesen, F van den Berg. Produktions-overvågning med dynamiske process-midler. *Plus Proces*. 5 (26), 12-13, 2012.

Late arrival publications 2012:

R Bro, EE Papalexakis, AA Evrim, ND Sidiropoulos. Coclustering - a useful tool for chemometrics. *Journal of Chemometrics*. 26 (6), 256-263, 2012.

V Abrahamsson, S Hoff, NJ Nielsen, ML Lametsch, ML Andersen. Determination of sulfite in beer based on fluorescent derivatives and liquid chromatographic separation. *American Society of Brewing Chemists Journal*. 70 (4), 296-302, 2012.

K Gori, LM Sørensen, MA Petersen, L Jespersen, N Arneborg. Debaryomyces hansenii strains differ in their production of flavor compounds in a cheese-surface model. *The Open Microbiology Journal*.1 (2), 161-168, 2012.

C Varming, MA Petersen, T Skov, Y Ardö. Challenges in quantitative analysis of aroma compounds in cheeses with different fat content and maturity level. *International Dairy Journal*. 29, 15-20, 2012.

N Christensen, FWJ van der Berg, J Risbo, S Knøchel, Influence of osmoprotectants on survival of Salmonella Typhimurium strains during desiccation. Poster. 2012.

ÅS Hansen. Sourdough bread. *In*: YH Hui (ed.), Handbook of plant-based fermented food and beverage technology 2 ed. *C R C Press LLC*. 493-515, 2012.

Media:

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Staff:

- Hamid Babamoradi, Post doc, until 9/10 – 2013
- Lina Nuobariene, Post doc, until 31/3 – 2015
- Thea Høgh, PhD student, until 30/9 – 2015 (SB Engelsen, FH Larsen & DuPont)

Guest Researchers:

- Silvia De Luca (host JM Amigo, 2/10-31/1 – 2013)
- Bárbara Santos Silva (host JM Amigo, 1/10-30/4 – 2013)
- Sara Ebrahimi (host Å Rinnan, 1/10-14/9 – 2013)
- Carolina Santos (host JM Amigo 5/12-12/12 – 2013)
- Federico Marini (host JM Amigo, R Bro 3/12-7/12 – 2013

PhD defences:

- Lina Nuobariene (supervisor ÅS Hansen): Phytases in Yeast and Lactic Acid Bacteria Isolated, October 5th, 2012
- Hamid Babamoradi (supervisor Å Rinnan): Bootstrap-based Confidence Estimation in PCA and Multivariate Statistical Process Control, November 19th, 2012

BSc & MSc defences:

- MSc: Carina Svendsen (supervisor R Bro): Advanced mathematical models for exploring and understanding complex GC-MS measurements of fermentations. October 12th, 2012
- MSc: Helene Drejer Grejsen (supervisor R Bro): Process optimization of a continuous butter and spreads production by inline near infrared spectroscopy, November 23rd, 2012
- MSc: Laura Weenink (supervisor R Bro): , Process optimization of a continuous butter and spreads production by inline near infrared spectroscopy. November 23rd, 2012
- MSc: Elizabeth Rasmussen (supervisor MA Petersen): A case study in flavour pairling. December 20th, 2012

Courses:

- Basic Food Science (BM Jespersen, MA Petersen, SB Engelsen, 104 students, block 1)
- Exploratory Data Analysis (Å Rinnan, T Skov, 55 students, block 1)
- Food and Society (ÅS Hansen, G Lerche, 38 students, September - December)
- Fundamentals of beer brewing and winemaking (FH Larsen, SB Engelsen, 17 students, block 1)
- Design of Experiments and Optimization (F van den Berg, 18 Students, block 1)
- Beverage technology (BM Jespersen, 11 students, block 1)
- Lectures in: Fruit and Berry Crop Physiology and Quality (MA Petersen, block 1)
- Advanced Chemometrics (R Bro, 12 students, block 2)
- Quantitative Bio-spectroscopy (+PhD, N Viereck, FH Larsen, SB Engelsen , 13+3 students, block 2)
- Plant Polysaccharides: Biology, Structure and Applications (FH Larsen, SB Engelsen , 15 students, block 2)
- Brewing 1 (BM Jespersen, F van den Berg, 28 students, block 2)
- Food Texture and Functionality (ÅS Hansen, 19 students, block 2)
- Lectures in: Cheese Technology (C Varming, block 2)
- Lectures in: Seed Science and Technology (BM Jespersen, block 2)
- PhD: Aroma Components in Food (MA Petersen, 14 students, block 1)
- ODIN: Chromatographic separation coupled with mass spectrometry (GC-MS) (MA Petersen, T Skov, 4 students, November)

New granted projects:

- LIQFUN – Development of a liquid matrix with beta-glucan fibre functionality, Mette Skau Mikkelsen, Advanced Technology Foundation (1 year post doc)
- Food & Light, Søren Balling Engelsen, Advanced Technology Foundation (for PhD project; see front page)
- Counteracting age-related loss of skeletal muscle mass (CALM), Søren Balling Engelsen, KU-2016 (for post doc project; see front page)