

PERSONAL DATA RÉSUMÉ

name: dr. ing. F.W.J. van den Berg (Frans), Associate Professor
date of birth: March 20th, 1968
nationality: Dutch
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Employment record

▣ 2004-present:

Associate Professor Advanced Chemometrics in Food Technology

University of Copenhagen, Faculty of Science, Frederiksberg, Denmark

Department of Food Science, Chemometrics and Analytical Technology section

▣ 2007 June/July:

EU/Marie Curie exchange in 'Food Informatics' program, Unilever Measurement Science, Colworth Science Park, Sharnbrook, Bedford, UK

▣ 2001-2004:

Assistant Research Professor

The Royal Veterinary and Agricultural University, Frederiksberg, Denmark

Department of Dairy and Food Science, Food Technology, Chemometrics Group

Internal consultant for Levnedsmiddelcentret (LMC), Supervision of students and PhD-candidates, Consultancy for LMC-participants, Co-promoter PhD-candidates

▣ 2000-2001:

Assistant Research Professor

The Royal Veterinary and Agricultural University, Frederiksberg, Denmark

Department of Dairy and Food Science, Food Technology, Chemometrics Group

Projects: *Advanced Quality Monitoring in the food production chain*

Supervision of students and PhD-candidates

▣ 1996-2000:

Assistant General Chemistry, Separation Methods, Process Analytical Chemistry and 'Summer Course HPLC', Supervision of students and trainees

▣ 1993-1996:

Internship TNO Nutrition and Food Research Institute, Zeist, The Netherlands

Internship DSM Research, Geleen, The Netherlands

Temporary employment through agencies

▣ 1989-1993:

Internship Shell Research/KSLA, Amsterdam, The Netherlands

Temporary employment through agencies

▣ 1985-1989:

Internship Shell Chemicals, Moerdijk, The Netherlands

Internship IRS, Bergen op Zoom, The Netherlands

Educational background

▣ 1996-2000:

Ph.D. position at the University of Amsterdam, The Netherlands,

dissertation successfully defended October 11, 2001

Major: Process Analysis and Chemometrics

Subject: *Optimal Process Analyzer Selection and Positioning for Plant-Wide Monitoring*

Supervisors: prof. dr. A.K. Smilde and dr. H.C.J. Hoefsloot, UHD

Majors: Advanced process control (TU Delft), Chemical reactor engineering (UvA),

Experimental design, Electrokinetic separation methods (ANAC), System identification,

Mathematical modeling of systems, Design methods for control systems, Adaptive control (DISC)

▫ 1993-1996:

Graduate program Chemistry at the University of Amsterdam, The Netherlands,
Graduation date February 28, 1996

Major: Analytical Chemistry

Subject: *Process Analytical Chemistry in the Distillation Industry using Near-Infrared-Spectroscopy*, TNO Nutrition and Food Research Institute, Zeist, The Netherlands

Supervisors: W.A. van Osenbruggen and prof. dr. A.K. Smilde, duration: 6 months

Doctoral thesis: (confidential) DSM Research PAC-AN, Geleen, The Netherlands

Supervisors: dr. B.J. Kip, ir. K.A. Pikaart and prof. dr. A.K. Smilde, duration: 3 months

Majors: Calculus I, Mathematics for technology, Neural networks (WIN UvA), Numerical techniques, Process analytical chemistry, Process dynamics, Modern separation sciences, Statistics

▫ 1989-1993:

Degree in Civil Engineering at the 'Hoge School West Brabant', Etten-Leur, The Netherlands, Graduation date June 30, 1993

Major: Laboratory Information and Automation

Engineering thesis: *Piecewise Direct Standardization*, Shell Research/Koninklijke Shell Laboratorium Amsterdam, The Netherlands

Supervisors: drs. O.E. de Noord and drs. J.P.M. Andries, duration: 9 months

Majors: Chemometrics, Mathematics and statistics, Analytical chemistry and instrumental analysis, Physical chemistry, Instrumental analysis and lab-automation, Analog and digital signal processing, Technical computer engineering, Information technology, Software engineering

▫ 2000-pres.:

ECAS Data Mining-2003, Summer School, San Marco di Castellabate, Italy

ERCIM Numerical Linear Algebra XXI-2003, Summer School, Monopoli, Italy

Neural Networks-2002, Summer school, Porto, Portugal

Sparse Matrices Computations-2001, Summer school, Lungby, Denmark

Supervision / Co-supervision

▫ Present Ph.D. and Post. Doc. researchers, present (university and industrial):
1x and 1x

▫ Past Ph.D. (successfully defended) and Post doc. researchers (univ. and ind.):
18x and 9x

▫ Supervisor/co-supervisor in numerous MSc projects

Teaching

▫ 2001-pres.:

Design of Experiments and Optimization, Food Process Equipment, Thematic Course Process Analytical Chemistry and Technology, plus an extensive range of MATLAB-, (process) data analysis- and spectroscopy-related academic and industrial short courses and curriculum contributions

▫ 1996-2000:

Assistant General Chemistry, Separation Methods, Process Analytical Chemistry and 'Summer Course HPLC'

Publications

■ F.W.J. van den Berg, W.A. van Osenbruggen and A.K. Smilde 'Process Analytical Chemistry in the Distillation Industry using Near-Infrared Spectroscopy' *Process Control and Quality* 9(1997)51-57

■ F.W.J. van den Berg, H.C.J. Hoefsloot, H.F.M. Boelens and A.K. Smilde 'Selection of Optimal Sensor Position in a Tubular Reactor using Robust Degree of Observability Criteria' *Chemical Engineering Science* 55(2000)827-837

- F.W.J. van den Berg, H.F.M. Boelens, H.C.J. Hoefsloot and A.K. Smilde 'Process Analyzer Location and Performance Assessment for Optimal Process Monitoring in a Tubular Reactor' *AIChE Journal* 47/11(2001)2503-2514
- ◆ F.W.J. van den Berg, V.T. Povlsen and A.K. Thybo 'Multi-blok metoder til eksplorativ Data Mining' *Dansk Kemi* 6/7(2001)35-37
- F.W.J. van den Berg 'Multi-block PLSR models in Food Technology', *PLS and related methods, proceedings* (2001)385-394
- ◆ A.K. Thybo, F.W.J. van den Berg, R. Bro and C.M. Andersen 'Avanceret kvalitetsovervågning i fødevarer-produktionskæden' *Plus Proces* 5(2001)6-9
- F.W.J. van den Berg, H.C.J. Hoefsloot and A.K. Smilde 'Selection of Optimal Process Analyzers for Plant-Wide Monitoring' *Analytical Chemistry* 74/13(2002)3105-3111
- A.K. Smilde, F.W.J. van den Berg and H.C.J. Hoefsloot 'How to choose the right process analyzer' *Analytical Chemistry* 74/13(2002)368A-373A
- A.K. Thybo and F.W.J. van den Berg 'Full uniaxial compression curves for predicting sensory texture quality of cooked potatoes' *J. Texture Studies* 33(2)(2002)119-134
- E. Micklander, L.G. Thygesen, H.T. Pedersen, F.W.J. van den Berg, R. Bro, D.N. Rutledge and S.B. Engelsen 'Multivariate Analysis of Time Domain NMR Signals in Relation to Food Quality' book chapter (2002)
- ◆ R. Bro, F.W.J. van den Berg, A.K. Thybo, C.M. Andersen, B.M. Jørgensen and H.J. Andersen 'Multivariate data analysis as a tool in advanced quality monitoring in the food production chain' *Trends in Food Science & Technology* 13(2002)235-244
- ◆ D.K. Pedersen, F.W.J. van den Berg and S.B. Engelsen 'Procesovervågning med spektroskopi of kemometri' *Plus Proces* 5(2002)1-5
- V.T. Povlsen, Å. Rinnan, F.W.J. van den Berg, H.J. Andersen and A.K. Thybo 'Direct Decomposition of NMR re-laxation profiles and Prediction of Sensory Attributes of Potato samples' *Lebensm.-Wiss. U.-Technol.* 36(2003)423-432
- L. Nannerup, M. Jakobsen M, F. van den Berg, J.K.S. Møller, J.S. Jensen and G. Bertelsen 'Colour preservation of MA-packed sliced meat products by control of critical packaging parameters' *Meat Science* 68/4(2004)577-585
- G. Tomasi, F. van den Berg and C. Andersson 'Correlation optimized warping and dynamic time warping as preprocessing methods for chromatographic data' *Journal of Chemometrics* 18(2004)231-241
- F. Corzana, M.S. Motawia, C. Hervé du Penhoat, F. van den Berg, A. Blennow, S. Perez and S.B. Engelsen 'The hydration of the amylopectin branch point. Evidence of restricted conformational diversity of the α -(1 \rightarrow 6) linkage' *Journal of the American Chemical Society* 126/40(2004)13144-13155
- I. Ovejero-López, A.M. Haahr, F. van den Berg and W.L.P. Bredie 'Flavor Release Measurement from Gum Model System' *Journal of Agricultural and Food Chemistry* 52(2004)8119-8126
- P.N. Jensen, G. Bertelsen and F. van den Berg 'Monitoring oxidative quality of pork scratchings, peanuts, oatmeal and muesli by sensor array' *Journal of the Science of Food and Agriculture* 85(2005)206-212
- K. Boholt, K. Andreasen, F.W.J. van den Berg and Th. Hansen 'A new method for measuring emission of odour from a rendering plant using the Danish Odour Sensor System (DOSS) artificial nose' *Sensors and Actuators B* 106(2005)170-176
- C.B. Zachariassen, J. Larsen, F. van den Berg and S. B. Engelsen 'Use of NIR spectroscopy and chemometrics for on-line process monitoring of ammonia in Low Methoxylated Amidated pectin production' *Chemometrics and Intelligent Laboratory Systems* 76(2005)149-161
- F.W.J. van den Berg, G. Tomasi and N. Viereck 'Warping: investigation of NMR pre-processing and correction' In *Magnetic Resonance in Food Science*, RSC, ed. S.B. Engelsen, P.S. Belton, H.J. Jakobsen (2005)131-138
- ◆ F.W.J. van den Berg 'Process Analytical Technology for the food industry' *New Food* 2(2005)71-73
- C.B. Zachariassen, J. Larsen, F.W.J. van den Berg, R. Bro, A. de Juan and R. Tauler 'Comparison of PARAFAC2 and MCR-ALS for resolution of an analytical liquid dilution system' *Chemometrics and Intelligent Laboratory Systems* 83(2006)13-25
- A.C. Peinado, F.W.J. van den Berg, M. Blanco and R. Bro 'Temperature-induced variation for NIR tensor-based calibration' *Chemometrics and Intelligent Laboratory Systems* 83(2006)75-82
- H. C. Bertram, Z. Wu, F.W.J. van den Berg and H.J. Andersen 'NMR relaxometry and differential scanning calorimetry during meat cooking' *Meat Science* 74(2006)684-689
- C.B. Zachariassen, J. Larsen, F.W.J. van den Berg, R. Bro, A. de Juan and R. Tauler 'Multi-way analysis for investigation of industrial pectin using an analytical liquid dilution system' *Chemometrics and Intelligent Laboratory Systems* 84(2006)9-20
- F.H. Larsen, F.W.J. van den Berg and S.B. Engelsen 'An exploratory chemometric study of ^1H NMR spectra of table wines' *Journal of Chemometrics* 20(2006)198-208

- Th. Skov, F.W.J. van den Berg, G. Tomasi, R. Bro 'Automated alignment of chromatographic data' *Journal of Chemometrics* 20(2006)484-497
- H. Fast Seefeldt, F.W.J. van den Berg, W. Köckenberger, S. Balling Engelsen, B. Wollenweber 'Water mobility in the endosperm of high beta-glucan barley mutants as studied by nuclear magnetic resonance imaging' *Magnetic Resonance Imaging* 25/3(2007)425-432
- E. Mosleth Færgestad, M. Rye, B. Walczak, L. Gidskehaug, J.P. Wold, H. Grove, X. Jia, K. Hollung, U.G. Indahl, F. Westad, F.W.J. van den Berg and H. Martens 'Pixel-based analysis of multiple images for the identification of changes: A novel approach applied to unravel proteome patterns of 2-D electrophoresis gel images' *Proteomics* 7(2007)3450-3461
- J.J. Jansen, R. Bro, H.C.J. Hoefsloot, F.W.J. van den Berg, J.A. Westerhuis, A.K. Smilde 'PARAFASCA: ASCA combined with PARAFAC for the analysis of metabolic fingerprinting data' *Journal of Chemometrics* 22(2008)114-121
- E. Micklander, A.K. Thybo, F.W.J. van den Berg 'Changes occurring in potatoes during cooking and reheating as affected by salting and cool or frozen storage - a LF-NMR study' *LWT - Food Science and Technology* 41(2008)1710-1719
- ◆ Ch. Lyndgaard Hansen, F.W.J. van den Berg, Ch. Bomholt Zachariassen, S. Balling Engelsen 'Proces Analytisk Teknologi i mejeriindustrien' *Mælkeritidende* 6(2008)128-130
- M. Allesø, F.W.J. van den Berg, C. Cornett, F. Steen Jørgensen, B. Halling-Sørensen, H. Lopez de Diego, L. Hovgaard, J. Aaltonen, J. Rantanen 'Solvent Diversity in Polymorph Screening' *Journal of Pharmaceutical Sciences* 97(2008)2145-2159
- M. Allesø, J. Rantanen, J. Aaltonen, C. Cornett, F.W.J. van den Berg 'Solvent Subset Selection for Polymorph Screening' *Journal of Chemometrics* 22(2008)621-631
- D.S. Nielsen, P.S. Nielsen, F.W.J. van den Berg 'Investigating the fermentation of cocoa by correlating Denaturing Gradient Gel Electrophoresis profiles and Near Infrared spectra' *International Journal of Food Microbiology* 125(2008)133-140
- Ch. Lyndgaard Hansen, F.W.J. van den Berg, S. Ringgaard, H. Stødkilde-Jørgensen, A.H. Karlsson 'Diffusion of NaCl in meat studied by ¹H and ²³Na magnetic resonance imaging' *Meat Science* 80(2008)851-856
- H.S. Son, K.M. Kim, F.W.J. van den Berg, G.S. Hwang, W.M. Park, C.H. Lee, Y.S. Hong '¹H Nuclear Magnetic Resonance-Based Metabolomic Characterization of Wines by Grape Varieties and Production Areas' *Journal of Agricultural and Food Chemistry* 56(2008)8007-8016
- M. Allesø, S. Velaga, A. Alhalaweh, C. Cornett, M.A. Rasmussen, F.W.J. van den Berg, H. Lopez de Diego and Jukka Rantanen 'Near-Infrared Spectroscopy for Cocrystal Screening. A Comparative Study with Raman Spectroscopy' *Anal. Chem.* 80(2008)7755-7764
- H.S. Son, G.S. Hwang, K. Myong Kim, E.Y. Kim, F.W.J. van den Berg W.M. Park C.H. Lee and Y.S. Hong '¹H NMR-Based Metabolomic Approach for Understanding the Fermentation Behaviors of Wine Yeast Strains' *Analytical Chemistry* 81(2009)1137-1145
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- F.W.J. van den Berg and Å. Rinnan 'Calibration Transfer Methods', in 'Infrared Spectroscopy for Food Quality Analysis and Control' Chapter 5(2009)105-118
- H.S. Son, G.S. Hwang, K. Myong Kim, H.J. Ahn, W.M. Park, F.W.J. van den Berg, Y.S. Hong and C.H. Lee 'Metabolomic Studies on Geographical Grapes and Their Wines Using ¹H NMR Analysis Coupled with Multivariate Statistics' *Journal of Agricultural and Food Chemistry* 57(2009)1481-1490
- N. Viereck, T. Salomonsen, F.W.J. van den Berg and S.B. Engelsen 'Raman applications in food analysis', in 'Raman Spectroscopy for Soft Matter Applications' Chapter 8(2009)199-223
- J.E. Lee, G.S. Hwang, F.W.J. van den Berg, C.H. Lee, Y.S. Hong 'Evidence of vintage effects on grape wines using ¹H NMR-based metabolomic study' *Analytica Chimica Acta* 648(2009)71-76
- B.K. Ko, H.J. Ahn, F.W.J. van den Berg, C.H. Lee and Y.S. Hong 'Metabolomic Insight into Soy Sauce through ¹H NMR Spectroscopy' *J. Agric. Food Chem.* 57(2009)6862-6870
- Å. Rinnan, F.W.J. van den Berg, S.B. Engelsen 'Review of the most common pre-processing techniques for near-infrared spectra' *TrAC Trends in Analytical Chemistry* 28-10(2009)1201-1222
- Ch. Lyndgaard Hansen, Å. Rinnan, S.B. Engelsen, Th. Janhoj, E. Micklander, U. Andersen, F.W.J. van den Berg 'Effect of Gel Firmness at Cutting Time, pH, and Temperature on Rennet Coagulation and Syneresis: An in situ H-1 NMR Relaxation Study' *Journal of Agricultural and Food Chemistry* 58(2010)513-519
- N. Larsen, F.K. Vogensen, F.W. J. van den Berg, D. Sandris Nielsen, A.S. Andreasen, B.K. Pedersen, W. Abu Al-Soud, S.J. Sørensen, L.H. Hansen, M. Jakobsen 'Gut Microbiota in Human Adults with Type 2 Diabetes Differs from Non-Diabetic Adults' *PLoS ONE* 5(2010)e9085
- E. Zamora-Rojas, A. Garrido-Varo, F.W.J. van den Berg, J.E. Guerrero-Ginel, D.C. Pérez-Marín 'Evaluation of a new local modelling approach for large and heterogeneous NIRS data sets' *Chemometrics and Intelligent Laboratory Systems* 101(2010)87-94

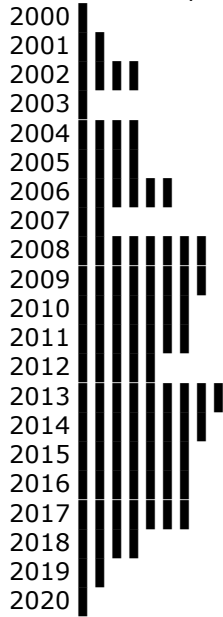
- M. Kompany-Zareh and F.W.J. van den Berg 'Determination of an acceptable level of spectral data compression by Discrete Wavelet Transforms' *Analytica Chimica Acta* 668(2010)137-142
- M. Kompany-Zareh and F.W.J. van den Berg 'Multi-way based Calibration Transfer between two Raman Spectrometers' *Analyst* 135(2010)1382-1388
- Ch.L. Hansen, A.K. Thybo, H.C. Bertram, N. Viereck, F.W.J van den Berg, S.B. Engelsen 'Determination of Dry Matter Content in Potato Tubers by Low-Field Nuclear Magnetic Resonance (LF-NMR)' *Journal of Agricultural and Food Chemistry* 58(2010)10300-10304
- Ch.L. Hansen, F.W.J. van den Berg, M.A. Rasmussen, S.B. Engelsen and S. Holroyd 'Detecting variation in ultrafiltrated milk permeates – Infrared spectroscopy signatures and external factor orthogonalization' *Chemometrics and Intelligent Laboratory Systems* 104(2010)243-248
- ◆ C.L. Hansen, F.W.J. van den Berg and S.B. Engelsen 'Using PARAFAC Core-Consistency to Estimate the Number of Components in LF-NMR Data – Application to In-Situ Studies of Mechanically Induced Gel Syneresis in Cheese Production' in 'Magnetic Resonance in Food Science: An Exciting Future' Ed: J-P Renou, G A Webb, P S Belton (2011)18-29
- V. Sileoni, F.W.J. van den Berg, O. Marconi, G. Perretti and P. Fantozzi 'Internal and external validation strategies for the evaluation of long-term effects in NIR calibration models' *Journal of Agricultural and Food Chemistry* 59(2011)1541-1547
- X. Lu Geng, F.W.J. van den Berg, A. Nielsen Bager and R. Ipsen 'Dynamic visualization and microstructure of syneresis of cheese curd during mechanical treatment' *International Dairy Journal* 21(2011)711-717
- J. Thygesen, F.W.J. van den Berg 'Calibration transfer for excitation-emission fluorescence measurements' *Analytica Chimica Acta* 705(2011)81-87
- Y.Y. Lee, J.X. Wu, M. Yang, P.M. Young, F.W.J. van den Berg, J. Rantanen 'Particle size dependence of polymorphism in spray-dried mannitol' *European Journal of Pharmaceutical Sciences* 44(2011)41-48
- M. Vidal, J.M. Amigo, R. Bro, F.W.J. van den Berg, M. Ostra, C. Ubide 'Image analysis for maintenance of coating quality in nickel electroplating baths – Real time control' *Analytica Chimica Acta* 706(2011)1-7
- Ch. B. Lyndgaard, S.B. Engelsen, F.W.J. van den Berg 'Real-time modeling of milk coagulation using in-line near infrared spectroscopy' *Journal of Food Engineering* 108(2012)345-352
- J. Szlavik, D.S. Paiva, N. Mørk, F.W.J. van den Berg, K. Whitehead, S. Knøchel, D.S. Nielsen 'Initial adhesion of *Listeria monocytogenes* to solid surfaces under liquid flow' *Int. Journal of Food Microbiology* 152(2012)181-188
- J.X. Wu, M. Yang, F.W.J. van den Berg, J. Pajander, Th. Rades, J. Rantanen 'Influence of evaporation rate and formulation factors on solid dispersion physical stability' *European Journal of Pharmaceutical Sciences* 44(2011)610-620
- L.B. Lyndgaard, K.M. Sørensen F.W.J. van den Berg, S.B. Engelsen 'Depth profiling of porcine adipose tissue by Raman spectroscopy' *Journal of Raman Spectroscopy* 43(2011)482-489
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- J.X. Wu, D. Xia, F.W.J. van den Berg, J.M. Amigo, Th. Rades, M. Yang, J. Rantanen 'A novel image analysis methodology for online monitoring of nucleation and crystal growth during solid state phase transformations' *International Journal of Pharmaceutics* 433(2012)60-70
- F.W.J. van den Berg, Ch.B. Lyndgaard, K.M. Sørensen, Søren B. Engelsen 'Process Analytical Technology in the Food Industry' *Trends in Food Science and Technology* 31(2013)27-35
- ◆ J. Thygesen, F.W.J. van den Berg 'Produktions-overvågning med dynamiske proces-modeller' *Plus Proces* 5(2012)12-13
- J. Thygesen, F.W.J. van den Berg 'Subspace methods for dynamic model estimation in PAT applications' *Journal of Chemometrics* 26(2012)435-441
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- J.X. Wu, F.W.J. van den Berg, S.V. Søgaard, J. Rantanen 'Fast-track to a solid dispersion formulation using multiway analysis of complex interactions' *Journal of Pharmaceutical Sciences* 102/3(2013)904-914
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- L.B. Lyndgaard, F.W.J. van den Berg, A. de Juan 'Quantification of paracetamol through tablet blister packages by Raman spectroscopy and multivariate curve resolution-alternating least squares' *Chemometrics and Intelligent Laboratory Systems* 125(2013)58-66
- A.N. Birch, F.W.J. van den Berg, Å.S. Hansen 'Expansion profiles of wheat doughs fermented by seven commercial baker's yeasts' *Journal of Cereal Science* 58(2013)318-323
- H. Babamoradi, F.W.J. van den Berg, Å. Rinnan 'Comparison of bootstrap and asymptotic confidence limits for control charts in batch MSPC strategies' *Chemometrics and Intelligent Laboratory Systems* 127(2013)102-111
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- Ch.B. Lyndgaard, M.A. Rasmussen, S.B. Engelsen, D. Thaysen, F.W.J. van den Berg 'Moving from recipe-driven to measurement-based cleaning procedures: monitoring the Cleaning-In-Place process of whey filtration units by ultraviolet spectroscopy and chemometrics' *Journal of Food Engineering* 126(2014)82-88
- A. Klimkiewicz, P. Paasch Mortensen, Ch.B. Zachariassen, F.W.J. van den Berg 'Monitoring an enzyme purification process using on-line and in-line NIR measurements' *Chemometrics and Intelligent Laboratory Systems* 132(2014)30-38
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- ◆ F.W.J. van den Berg, H.H. Holst, S.B. Engelsen 'Water reuse and saving in the food industry: A new frontier in food manufacturing' *New Food* 17/6(2014)49-53
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Legend: ■ = peer reviewed publication, ● = book chapter, ◆ = other (e.g. editors decision), xxx = accepted/electronically available without correct indexing.

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Additional skills

Languages: English, Dutch, German, Danish
Computer programs: Matlab, JMP
Internet: Programming and contents management

Special interests

General: General science, computer and information technology, (hobby) electronics
Sports: Condition training, walking
Traveling: With a special interest for larger cities

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