

1.0 Peer-reviewed original articles from 2010 with T. Fornstedt (accepted/published)

- A55)** *Characterization of adsorption processes in analytical liquid–solid chromatography.* T. Fornstedt. *Journal of Chromatography A* (2010) 1217, 792-812.
- A56)** *Investigation of the adsorption behaviour of glycine peptides on 12% cross-linked agarose gel media.* Xiaou Zhang, J. Samuelsson, J.-C. Janson, Changhai Wang, Zhiguo Su, Ming Gu, T. Fornstedt. *Journal of Chromatography A* (2010) 1217, 1916-1925.
- A57)** *Injection profiles in liquid chromatography. I. A fundamental investigation* Samuelsson, J., Edström, L., Forssén, P., and Fornstedt, T. *Journal of Chromatography A* (2010) 1217(26), 4306-4312.
- A58)** *Improvement in the generation of adsorption isotherm data in the elution by characteristic point's method-the ECP-slope approach.* Samuelsson, J., Undin, T., Törnrona, A., and Fornstedt, T. *Journal of Chromatography A*, (2010) 1217(46), 7215-7221.
- A59)** *Deformations of overloaded bands under pH-stable conditions in reversed phase chromatography.* Edström, L., Samuelsson, J., and Fornstedt, T. *Journal of Chromatography A*, (2011) 1218(15), 1966-1973.
- A60)** *A systematic investigation of algorithm impact in preparative chromatography with experimental verifications* Enmark, M., Arnell, R., Forssén, P., Samuelsson, J., Kaczmarek, K., and Fornstedt, T. *Journal of Chromatography A*, (2011) 1218(5), 662-672.
- A61)** *Three different approaches for the clarification of the interactions between lipoproteins and chondroitin-6-sulfate.* Lipponen K, Stege PW, Cilpa G, Samuelsson J, Fornstedt T, Riekkola M-L. *Analytical Chemistry* (2011) 83(15):6040 – 6046.
- A62)** *Injection profiles in liquid chromatography II: Predicting accurate injection-profiles for computer-assisted preparative optimizations.* Forssén P, Edström L, Samuelsson J, Fornstedt T. *Journal of Chromatography A* (2011);1218(34):5794 – 5800.
- A63)** *Expanding the elution by characteristic point method for determination of various types of adsorption isotherms.* Samuelsson J, Undin T, Fornstedt T. *Journal of Chromatography A* (2011);1218(24):3737 - 3742.
- A64)** *Characterization of an unusual adsorption behavior of racemic methyl-mandelate on a tris-(3,5-dimethylphenyl) carbamoyl cellulose chiral stationary phase* Martin Enmark, J. Samuelsson, T. Undin, T. Fornstedt *Journal of Chromatography A* (2011) 1218(38), 6688-6696.
- A65)** *Why ultra-high performance liquid chromatography produces more tailing peaks than high performance liquid chromatography, why it does not matter and how it can be addressed* P. Petersson, P. Forssen, Lena Edström, Farzad Samie, Stephen Tatterton, Adrian Clarke, T. Fornstedt, *Journal of Chromatography A* (2011) 1218(39) 6914-6921.
- A66)** *Highlighting Important Parameters Often Neglected in Numerical Optimization of Preparative Chromatography* J. Samuelsson, Martin Enmark, P. Forssén, T. Fornstedt, *Chemical Engineering & Technology* (2012) 35 (Issue 1) 149 – 156.
- A67)** *Enantioseparation of Omeprazole - Effect of Different Packing Particle Size on Productivity* Martin Enmark, J. Samuelsson, P. Forssén, T. Fornstedt, *Journal of Chromatography A* (2012) 1240, 123-131.
- A68)** *Optimization Strategies accounting for the Additive in Preparative Chiral Liquid Chromatography* P. Forssén, Lena Edström, Michael Lämmerhofer, J. Samuelsson, Anders Karlsson, Wolfgang Lindner, T. Fornstedt. *Journal of Chromatography A* (2012) 1269, 279-286.
- A69)** *Evaluation of a Combined Linear-Nonlinear Approach for Column Characterization using Modern Alkaline-Stable Columns as Model.* T. Undin, J. Samuelsson, A. Törnrona, T. Fornstedt. *Journal of Separation Science* (2013) 36 (Issue 11) 1753-1761.

- A70)** Fast Estimation of Adsorption Isotherm Parameters in Gradient Elution Preparative LC I: The Single Component Case. D. Åsberg, M. Leško, M. Enmark, J. Samuelsson, K. Kaczmariski, T. Fornstedt. *Journal of Chromatography A* (2013) 1299, 64-70.
- A71)** Relative Importance of Column and Adsorption Parameters on the Productivity in Preparative Liquid Chromatography. I: Investigation of a chiral separation system. P. Forssén, J. Samuelsson, T. Fornstedt. *Journal of Chromatography A* (2013) 1299, 58-63.
- A72)** Determination of adsorption isotherms in supercritical fluid chromatography. M. Enmark, P. Forssén, J. Samuelsson, T. Fornstedt. *Journal of Chromatography A* (2013) 1312, 124-133.
- A73)** Fast Estimation of Adsorption Isotherm Parameters in Gradient Elution Preparative LC II: The Competitive Case. D. Åsberg, M. Leško, M. Enmark, J. Samuelsson, K. Kaczmariski, T. Fornstedt. *Journal of Chromatography A* (2013) 1314, 70-76.
- A74)** Enhanced interpretation of adsorption data generated by liquid chromatography and by modern biosensors. V Agmo Hernández, J Samuelsson, P Forssén, T Fornstedt. *Journal of Chromatography A* (2013) 1317, 22-31.
- A75)** Sample conditions to avoid pH distortion in RP-LC. J Samuelsson, P Forssén, T Fornstedt. *Journal of separation science* (2013) 36 (Issue 23), 3769-3775.
- A76)** Three complementary techniques for the clarification of temperature effect on low-density lipoprotein–chondroitin-6-sulfate interaction. G. Cilpa-Karhu, K. Lipponen, J. Samuelsson, K. Öörni, T. Fornstedt, M-L. Riekkola. *Analytical biochemistry* (2013) 443 (2), 139-147.
- A77)** Analytical Method Development in the Quality by Design Framework. D. Åsberg, A. Karlsson, J. Samuelsson, K. Kaczmariski, T. Fornstedt. *American Pharmaceutical Review*. Vol 18 utgåva 2 (2015) 12–15.
- A78)** Method transfer from high-pressure liquid chromatography to ultra-high-pressure liquid chromatography. I. A thermodynamic perspective. D. Åsberg, M. Leško, J. Samuelsson, K. Kaczmariski, T. Fornstedt. *J. Chromatogr. A*. 1362 (2014) 206–217.
- A79)** Investigation of plateau methods for adsorption isotherm determination in supercritical fluid chromatography. M. Enmark, J. Samuelsson, E. Forss, P. Forssén, T. Fornstedt. *J. Chromatogr. A*. 1354 (2014) 129–138.
- A80)** Evaluation of co-solvent fraction, pressure and temperature effects in analytical and preparative supercritical fluid chromatography. D. Åsberg, M. Enmark, J. Samuelsson, T. Fornstedt, *Journal of Chromatography A* 1374 (2014) 254-260.
- A81)** The Effect of Temperature, Pressure and Co-Solvent on a Chiral Supercritical Fluid Chromatography Separation M. Enmark, D. Åsberg, J. Samuelsson. T. Fornstedt, *Chromatogr. Today*. 7 (2014) 14–17.
- A82)** Relative importance of column and adsorption parameters on the productivity in preparative liquid chromatography II: Investigation of separation systems with competitive Langmuir adsorption isotherms. P. Forssén, J. Samuelsson, T. Fornstedt. *J. Chromatogr. A*. 1347 (2014) 72–79.
- A83)** Regeneration of a silica monolithic rod column using harsh methods followed by firm thermodynamic and kinetic validation. J. Samuelsson, A. Cavazzini, R.A. Shalliker, T. Fornstedt. *J. Sep. Sci.* 37 (2014) 906–911.
- A84)** Partial-filling affinity capillary electrophoresis and quartz crystal microbalance with adsorption energy distribution calculations in the study of biomolecular interactions with apolipoprotein E as interaction partner. Katriina Lipponen, Sari Tähkä, Jörgen Samuelsson, Matti Jauhiainen, Jari Metso, Geraldine Cilpa-Karhu, Torgny Fornstedt, Mauri Kostianen, Marja-Liisa Riekkola. In *Analytical and Bioanalytical Chemistry* 406 (2014) 4137-4146.
<https://doi.org/10.1007/s00216-014-7821-9>
- A85)** Contrasting selectivity between HPLC and SFC using phenyl-type stationary phases: A study on linear polynuclear aromatic hydrocarbons, C.M. Vera, D. Shock, G.R. Dennis, J. Samuelsson, M. Enmark, T. Fornstedt, et al., *Microchem. J.* 119 (2015) 40–43.
<https://doi.org/10.1016/j.microc.2014.10.008>

- A86)** Modern Supercritical Fluid Chromatography — Possibilities and Pitfalls. T. Fornstedt, R.E. Majors, LC-GC Europe vol 28 Issue 8, 1 August 2015, pgs 445-450 (This article is also published in LC-GC North America (vol 33 Issue 3, pgs 166-174 march 2015 + IN LC-GC Asia <http://www.chromatographyonline.com/modern-supercritical-fluid-chromatography-possibilities-and-pitfalls-0/>)
- A87)** A preliminary study on the selectivity of linear polynuclear aromatic hydrocarbons in SFC using phenyl-type stationary phases. C.M. Vera, D Shock, G.R. Dennis, J. Samuelsson, M. Enmark, T. Fornstedt, R. A. Shalliker, *Microchem. J.* 121 (2015) 136-140. <https://doi.org/10.1016/j.microc.2015.02.011>
- A88)** A closer study of peak distortions in supercritical fluid chromatography as generated by the injection. M. Enmark, D. Åsberg, A. Shalliker, J. Samuelsson, T. Fornstedt. *J. Chromatogr. A* 1400 (*Juni* 2015) 131-139. <https://doi.org/10.1016/j.chroma.2015.04.059>
- A89)** Method transfer from high-pressure liquid chromatography to ultra-high-pressure liquid chromatography: II: Temperature and pressure effects. D. Åsberg, J. Samuelsson, M. Leško, A. Cavazzini, K. Kaczmarek, T. Fornstedt. *J. Chromatogr. A* 1401(2015) 52-59. <https://doi.org/10.1016/j.chroma.2015.05.002>
- A90)** Exogenous factors contributing to column bed heterogeneity Part 1: Consequences of 'air' injections in liquid chromatography. J. Samuelsson, T. Fornstedt, A. Shalliker. *J. Chromatogr. A* 1406 (2015) 186-191. <https://doi.org/10.1016/j.chroma.2015.06.016>
- A91)** A model free method for estimation of complicated adsorption isotherms in liquid chromatography. P. Forssén, T. Fornstedt. *J. Chromatogr. A* 1409 (2015) 108-115. <https://doi.org/10.1016/j.chroma.2015.07.030>
- A92)** Choice of Model for Estimation of Adsorption Isotherm Parameters in Gradient Elution Preparative Liquid Chromatography. Marek Leško, Dennis Åsberg, Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt, Krzysztof Kaczmarek. *Chromatographia* 78 (2015) 1293-1297. <https://doi.org/10.1007/s10337-015-2949-0>
- A93)** Introduction to “Fundamental challenges and opportunities for preparative supercritical fluid chromatography by G. Guiochon, A. Tarafder [*J. Chromatogr. A* 1218 (2011) 1037–1114]” Torgny Fornstedt. *J. Chromatogr.* (2015). <https://doi.org/10.1016/j.chroma.2015.11.009>
- A94)** Evaluation of scale-up from analytical to preparative supercritical fluid chromatography. Martin Enmark, Dennis Åsberg, Hanna Leek, Kristina Öhlén, Magnus Klarqvist, Jörgen Samuelsson, Torgny Fornstedt. *J. Chromatogr. A* 1425 (2015) 280-286. <https://doi.org/10.1016/j.chroma.2015.11.001>
- A95)** Sample introduction for high performance separations. R Andrew Shalliker, Jörgen Samuelsson, Torgny Fornstedt. *TrAC Trends in Analytical Chemistry* 81 (2016) 34-41. <https://doi.org/10.1016/j.trac.2016.01.004>
- A96)** System peaks and their impact in liquid chromatography. Torgny Fornstedt, Patrik Forssén, Douglas Westerlund. T. Fornstedt, P. Forssén, D. Westerlund. *TrAC Trends in Analytical Chemistry* 81 (2016) 42-50. <https://doi.org/10.1016/j.trac.2016.01.008>
- A97)** Evaluation and analysis of environmentally sustainable methodologies for extraction of betulin from birch bark with a focus on industrial feasibility, Mikael E. Fridén, Firas Jumaah, Christer Gustavsson, Martin Enmark, Torgny Fornstedt, Charlotta Turner, Per J. R. Sjöberg, Jörgen Samuelsson. *Green Chem* 18 (2016) 516-523. <https://doi.org/10.1039/c5gc00519a>
- A98)** A closer study of methanol adsorption and its impact on solute retentions in supercritical fluid chromatography, Emelie Glenne, Kristina Öhlén, Hanna Leek, Magnus Klarqvist, Jörgen Samuelsson, Torgny Fornstedt, *Journal of Chromatogr. A* 1442 (2016) 129-139. <https://doi.org/10.1016/j.chroma.2016.03.006>
- A99)** A fundamental study of the impact of pressure on the adsorption mechanism in reversed-phase liquid chromatography, Dennis Åsberg, Jörgen Samuelsson, Torgny Fornstedt. *Journal of Chromatography A*, 1457 (2016) 97-106. <https://doi.org/10.1016/j.chroma.2016.06.036>
- A100)** Combining Chemometric Models with Adsorption Isotherm Measurements to Study Omeprazole in RP-LC. Dennis Åsberg, Marek Leško, Jörgen Samuelsson, Anders Karlsson,

Krzysztof Kaczmarski, Torgny Fornstedt. *Chromatographia* (2016) 79:1283-1291.
<https://doi.org/10.1007/s10337-016-3151-8>

- A101)** Peak deformations in preparative supercritical fluid chromatography due to co-solvent adsorption, Emelie Glenne, Hanna Leek, Magnus Klarqvist, Jörgen Samuelsson, Torgny Fornstedt, in *Journal of Chromatography A*, 1468 (2016) 200-208.
<https://doi.org/10.1016/j.chroma.2016.09.019>
- A102)** A regularization method for the reconstruction of adsorption isotherms in liquid chromatography, by Ye Zhang, Guang-Liang Lin, Patrik Forssén, Mårten Gulliksson, Torgny Fornstedt, Xiao-Liang Cheng in *Inverse Problems* volume 32 (2016) number 10 (article id/(pgs: 105005/(24pp) <https://doi.org/10.1088/0266-5611/32/10/105005>
- A103)** A Quality Control Method Enhancement Concept - Continual improvement of regulatory approved QC methods. By Dennis Åsberg, Mikael Nilsson, Susanne Olsson, Jörgen Samuelsson, Olof Svensson, Silke Klick, Julie Ennis, Paul Butterworth, Denise Watt, Stavroula Iliadou, Angelica Karlsson, Joanne T Walker, Kate Arnot, Norb Ealer, Kerstin Hernqvist, Karin Svensson, Ali Grinell, Per-Ola Quist, Anders Karlsson, Torgny Fornstedt. *Journal of Pharmaceutical and Biomedical Analysis* 129 (2016) 273-281. <https://doi.org/10.1016/j.jpba.2016.06.018>
- A104)** Peak Distortions in Preparative Supercritical Fluid Chromatography - a More Complete Overview. By Torgny Fornstedt in *Chromatography Today* vol 9 Issue 3 September 2016, Pages 10-14.
- A105)** Viscosity contrast effects in analytical scale chromatography - Evidence and impact. By Jörgen Samuelsson, R. Andrew Shalliker, Torgny Fornstedt. *Microchemical Journal* 130 (2017) 102-107. <https://doi.org/10.1016/j.chroma.2016.11.050>
- A106)** A practical approach for predicting retention time shifts due to pressure and temperature gradients in ultra-high-pressure liquid chromatography. By Dennis Åsberg, Marcin Chutkowski, Marek Lésko, Jörgen Samuelsson, Krzysztof Kaczmarski, Torgny Fornstedt. *Journal of Chromatography A*, 1479 (2017) 107-120. <https://doi.org/10.1016/j.chroma.2016.11.050>
- A107)** Thermodynamic and kinetic approaches for evaluation of monoclonal antibody - Lipoprotein interactions. By Evgen Multia, Heli Sirén, Karl Andersson, Jörgen Samuelsson, Patrik Forssén, Torgny Fornstedt, Katariina Öörni, Matti Jauhiainen, Marja-Liisa Riekkola in *Analytical Biochemistry* 518 (2017) 25-34. <http://dx.doi.org/10.1016/j.ab.2016.10.024>
- A108)** An adjoint method in inverse problems of chromatography. Y. Zhang, G. Lin, M. Gulliksson, P. Forssén, T. Fornstedt & X. Cheng (2017). In *Inverse Problems in Science and Engineering*, (2017) 25:8, 1112-1137. <https://doi.org/10.1080/17415977.2016.1222528>
- A109)** The importance of ion-pairing in peptide purification by reversed-phase liquid chromatography. Dennis Åsberg, Annika Langborg Weinmann, Tomas Leek, Richard Lewis, Magnus Klarqvist, Marek Leško, Krzysztof Kaczmarski, Jörgen Samuelsson, Torgny Fornstedt *Journal of Chromatography A* Volume 1496, 5 May 2017, Pages 80-91.
<https://doi.org/10.1016/j.chroma.2017.03.041>
- A110)** Estimation of Adsorption Isotherm Parameters in Gradient Elution Preparative RP-LC of Peptides in the Presence of an Adsorbing Additive, Dennis Åsberg, Marek Lesko, Tomas Leek, Jörgen Samuelsson, Krzysztof Kaczmarski, Torgny Fornstedt. *Chromatographia* (2017) 80:961–966. <https://doi.org/10.1007/s10337-017-3298-y>
- A111)** Chemometric evaluation of the combined effect of temperature, pressure, and co-solvent fractions on the chiral separation of basic pharmaceuticals using actual vs set operational conditions. By Erik Forss, Dan Haupt, Olle Stålberg, Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt. *Journal of Chromatography A*, 1499 (2017) 165–173.
<https://doi.org/10.1016/j.chroma.2017.03.077>
- A112)** Systematic investigations of peak deformations due to co-solvent adsorption in preparative supercritical fluid chromatography. By Emelie Glenne, Hanna Leek, Magnus Klarqvist, Jörgen Samuelsson, Torgny Fornstedt. In *Journal of Chromatography A*, 1496 (2017) 141–149.
<https://doi.org/10.1016/j.chroma.2017.03.053>

- A113)** Impact of assay temperature on antibody binding characteristics in living cells: A case study. João Crispim Encarnação, Pavel Barta, Torgny Fornstedt, Karl Andersson. *BIOMEDICAL REPORTS* 7: 400-406, 2017. <http://doi.org/10.3892/br.2017.982>
- A114)** Y. Zhang, P. Forssén, T. Fornstedt, M. Gulliksson & X. Dai: An adaptive regularization algorithm for recovering the rate constant distribution from biosensor data, *Inverse Problems in Science and Engineering* 26 (2018) 1464-1489. <https://doi.org/10.1080/17415977.2017.1411912>
- A115)** G. Lin, Y. Zhang, X. Cheng, M. Gulliksson, P. Forssén and T. Fornstedt. A regularizing Kohn–Vogelius formulation for the model-free adsorption isotherm estimation problem in chromatography. *Applicable Analysis* (2018) 97:1, 13-40. <https://doi.org/10.1080/00036811.2017.1284311>
- A116)** Impact of column and stationary phase properties on the productivity in chiral preparative LC. By Patrik Forssén, Torgny Fornstedt. In *Journal of separation science* Vol 41 (2018) 1346-1354. <https://doi.org/10.1002/jssc.201701435>
- A117)** Protocol for the visualisation of axial temperature gradients in ultra-high performance liquid chromatography using infrared cameras. By C.M. Vera, J. Samuelsson, T. Fornstedt, G.R. Dennis, R.A. Shalliker. *Microchemical Journal* 141 (2018) 141–147. <https://doi.org/10.1016/j.microc.2018.05.004>
- A118)** Reliable Strategy for Analysis of Complex Biosensor Data. By P. Forssén, E. Multia, J. Samuelsson, M. Andersson, T. Aastrup, S. Altun, D. Wallinder, L. Wallbing, Th. Liangsupree, M.L. Riekkola, T. Fornstedt. In *Anal. Chem.* 2018, 90, 5366–5374. <https://doi.org/10.1021/acs.analchem.8b00504>
- A119)** Investigation of robustness for supercritical fluid chromatography separation of peptides: Isocratic vs gradient mode. By Martin Enmark, Emelie Glenne, Marek Leško, Annika Langborg Weinmann, Tomas Leek, Krzysztof Kaczmarski, Magnus Klarqvist, Jörgen Samuelsson, Torgny Fornstedt. In *Journal of Chromatography A*, 1568 (2018) 177–187. <https://doi.org/10.1016/j.chroma.2018.07.029>
- A120)** Visualisation of axial temperature gradients and heat transfer process of different solvent compositions in ultra-high performance liquid chromatography using thermography. By C.M. Vera, J. Samuelsson, T. Fornstedt, G. R. Dennis, R. A. Shalliker. In *Microchemical Journal* 145 (2019) 927-935. <https://doi.org/10.1016/j.microc.2018.11.037>
- A121)** Determining gradient conditions for peptide purification in RPLC with machine-learning-based retention time predictions. By Jörgen Samuelsson, Finnur Freyr Eiriksson, Dennis Åsberg, Margrét Thorsteinsdóttir, Torgny Fornstedt. In *Journal of Chromatography A*. In Press (available online 29 March). <https://doi.org/10.1016/j.chroma.2019.03.043>
- A122)** Investigation of factors influencing the separation of diastereomers of phosphorothioated oligonucleotides. By Martin Enmark, Maria Rova, Jörgen Samuelsson, Eivor Örnskov, Fritz Schweikart, Torgny Fornstedt. In *Analytical and Bioanalytical Chemistry*. Accepted for publishing [27-Mar-2019]. <https://doi.org/10.1007/s00216-019-01813-2>
- A123)** Rapid affinity chromatographic isolation method for LDL in human plasma by immobilized chondroitin-6-sulfate and anti-apoB-100 antibody monolithic disks in tandem" by Thanaporn Liangsupree, Evgen Multia, Jari Metso, Matti Jauhiainen, Patrik Forssén, Torgny Fornstedt, Katariina Öörni, Ales Podgornik, and Marja-Liisa Riekkola [Scientific Reports, Paper #SREP-19-15836A] Accepted 23 July 2019.

1.1 Peer-reviewed original articles with T. Fornstedt (submitted/under revision)

- A124)** Estimating the rate constant from biosensor data via an adaptive variational Bayesian approach. By Ye Zhang, Zhigang Yao, Patrik Forssén, Torgny Fornstedt. Submitted 11 February 2019 to the *Annals of Applied Statistics*. arXiv:1902.03795 [math.ST]. Under revision (Decision "Minor revision required" on paper AOAS1809-035).

1.2 Peer-reviewed original articles without T. Fornstedt (accepted/published)

- A125)** *Polyethylene glycol-stabilized lipid disks as model membranes in interaction studies based on electrokinetic capillary chromatography and quartz crystal microbalance* Vainikka, K., Reijmar, K., Yohannes, G., Samuelsson, J., Edwards, K., Jussila, M., Riekkola, M.-L. *Analytical Biochemistry* (2011) 414 (1), 117-124.
- A126)** Optimizing the extraction, separation and quantification of tricyclic antidepressant drugs in human plasma with CE-ESI-TOF-MS using cationic coated capillaries. Elhamili, A., Samuelsson, J., Bergquist, J. & Wetterhall, M. (2011). *Electrophoresis*, 32(6-7), 647-658.
- A126)** Solvent strategies for loading and release in mesoporous silica. A. Hillerström, M. Andersson, J. Samuelsson, J. Van Stam. *Colloids and Interface Science Communications* 3 (2014) 5-8.
- A127)** Partial filling affinity capillary electrophoresis including adsorption energy distribution calculations-towards reliable and feasible biomolecular interaction studies. J. Witos, J. Samuelsson, G. Cilpa-Karhu, J. Metso, M. Jauhiainen, M.-L. Riekkola, *Analyst* 140(2015) 3175-3182. <https://doi.org/10.1039/c5an00210a>
- A128)** Optimizing Column Length and Particle Size in Preparative Batch Chromatography Using Enantiomeric Separations of Omeprazole and Etiracetam as Models: Feasibility of Taguchi Empirical Optimization. By Jörgen Samuelsson, Marek Leško, Martin Enmark, Joakim Höglblom, Anders Karlsson, Krzysztof Kaczmarski. In *Chromatographia* (2018) 81:851–860. <https://doi.org/10.1007/s10337-018-3519-z>
- A129)** A modified coupled complex boundary method for an inverse chromatography problem. By Xiaoliang Cheng, Guangliang Lin, Ye Zhang, Rongfang Gong, Mårten Gulliksson. In *Journal of Inverse and Ill-Posed Problems*, 26(1), pp. 33-49. doi:10.1515/jiip-2016-0057
- A130)** A coupled complex boundary expanding compact method for inverse source problems. By Ye. Zhang, Rongfang Gong, Mårten Gulliksson, Xiaoliang Cheng. In *Journal of Inverse and Ill-Posed Problems* (2019) 27(1), pp. 67-86. <https://doi.org/10.1515/jiip-2017-0002>
- A131)** A dynamical regularization algorithm for solving inverse source problems of elliptic partial differential equations. By Ye Zhang, Rongfang Gong, Xiaoliang Cheng, Mårten Gulliksson. In *Inverse Problems*, Volume 34 (2018) No 6. <https://iopscience.iop.org/article/10.1088/1361-6420/aaba85/meta>

1.3 Peer-reviewed books and book chapters

- B1)** T. Fornstedt, P. Forssén and J. Samuelsson, authors of Chapter 24 “Modeling of Preparative Liquid Chromatography” in the book “Liquid Chromatography (Second Edition): Fundamentals and Instrumentation” (2017) Edited by: S. Fanali, P. R. Haddad, C. Pole and M.L. Riekkola ISBN: 978-0-12-805393-5. <https://doi.org/10.1016/B978-0-12-805393-5.00024-5>
- B2)** Basic HPLC Theory and Definitions: Retention, Thermodynamics, Selectivity, Zone Spreading, Kinetics, and Resolution (2015). T. Fornstedt, P. Forssén, D. Westerlund. In J.L. Andersson, A. Berthod, V. P. Estévez, (eds.) *Analytical Separation Science*. Wiley-VCH Verlag. DOI: <https://doi.org/10.1002/9783527678129.assep001>
- B3)** T. Fornstedt, P. Forssén and J. Samuelsson, authors of Chapter 18 “Modeling of Preparative Liquid Chromatography of Small Molecules” in the book “Liquid Chromatography: Fundamentals and Instrumentation” (Handbooks in Separation Science series 2013), editors: S. Fanali, P. R. Haddad, C. Poole, P. Schoenmakers, D. K. Lloyd.

1.4 Peer-reviewed books and book chapters (submitted/under revision)

- B4)** M. Z. Szymanski and B. Luszczynska, “Organic Photovoltaics Based on Solution-Processable Nanostructured Materials: Device Physics and Modeling,” in *Solution-Processable Components for Organic Electronic Devices*, 1st ed., Wiley-VCH, 2019 (Accepted).

2.0 Peer-reviewed international conference contributions from 2005 - Lectures

- L9) HPLC 2005 in Stockholm** (29th International symposium on High Performance Liquid Phase Separations and related Techniques): A new rapid method for accurate determination of competitive adsorption isotherms: the inverse method on a plateau (IMP) Robert Arnell, Patrik Forssén and Torgny Fornstedt. A Young scientist lecture given by Robert Arnell.
- L10) HPLC 2006 in San Francisco** (30th International symposium on High Performance Liquid Phase Separations and related Techniques) (L-0103) Thermodynamic Characterization of New Generation Alkaline-Stable C18 Columns: Why Do Basic Solutes Show Better Performance At Alkaline pH? Torgny Fornstedt and Jörgen Samuelsson, Brett Stanley, André Franz, Uppsala University.
- L11) HPLC 2006 in San Francisco** (30th International symposium on High Performance Liquid Phase Separations and related Techniques): (L-1702) Modelling of Extreme Band Deformations in Chiral Preparative LC. Robert Arnell, Patrik Forssén, Torgny Fornstedt, Uppsala University.
- L12) PREP 2006 in Baltimore** (19th International Symposium on Preparative & Process Chromatography) (L-217) Tunable band deformations in chiral preparative LC: A methodology to increase productivity. Robert Arnell, Patrik Forssén and Torgny Fornstedt, Uppsala University.
- L13) PREP 2006 in Baltimore** (19th International Symposium on Preparative & Process Chromatography) (L-217) (L-222) Why do basic organic solutes have better capacity and peak performance at alkaline pH? Jörgen Samuelsson and Torgny Fornstedt, Uppsala University.
- L14) Analysdagarna in Gothenburg 2006.** Thermodynamic Characterization of New Generation Alkaline-Stable C18 Columns: Why do basic solutes show better performance at alkaline pH? Jörgen Samuelsson and Torgny Fornstedt
- L15) SPICA: in Innsbruck 2006** (11th International Symposium on Preparative and Industrial Chromatography and Allied Techniques) Adjustable Band deformations using modern preparative chiral stationary phases by T. Fornstedt, R. Arnell, P. Forssén, Uppsala University/S.
- L16) Enantioseparation 2007 in Ferrara, Italy** (Symposium-Workshop on Analytical and Preparative Enantioseparation). Plateau Methods in LC – Retrospective and Future Aspects by Torgny Fornstedt.
- L17) HPLC 2007 in Ghent** (31th International symposium on High Performance Liquid Phase Separations and related Techniques) (Keynote L-06.02) Chromatographic surprises – the Tracer-Pulse Experience. Torgny Fornstedt, Jörgen Samuelsson, Robert Arnell.
- L18) PREP 2007 in Baltimore** (20th International Symposium on Preparative & Process Chromatography) Effects of sample-eluent pH mismatch in preparative liquid chromatography by Jörgen Samuelsson and Torgny Fornstedt, Uppsala University.
- L19) HPLC 2008 in Baltimore** (32th International symposium on High Performance Liquid Phase Separations and related Techniques) (Keynote L-104) Measurement of Reliable Equilibrium Data: Guidelines to Avoid the Common Pitfalls. Torgny Fornstedt, Jörgen Samuelsson, Robert Arnell, Patrik Forssén.
- L20) SPICA 2008 in Zurich** (12th International Symposium on Preparative and Industrial Chromatography and Allied Techniques) (1071) Utilisation of Peak Shape Tuning to Optimize Preparative Batch Chromatography. T. Fornstedt, P. Forssén, R. Arnell, M. Kaspereit and A. Seidel-Morgenstern
- L21) SPICA 2008 in Zurich** (12th International Symposium on Preparative and Industrial Chromatography and Allied Techniques) (1054) Theoretical Analysis of Continuous Chromatography with Adsorbing Additives. M. Kaspereit, R. Arnell, P. Forssén, A. Seidel-Morgenstern, T. Fornstedt and A. Kienle.
- L22) CHIRALITY 2008 in Geneva** (ISCD-20, 20th International Symposium on Chirality) (O10-1) Adsorption Behavior of a Quinidine Carbamate Based Chiral Stationary Phase: the Role of the Additive. Robert Arnell , Patrik Forssén, Torgny Fornstedt, Michael Lämmerhofer , Wolfgang Lindner.
- L23) PREP 2008 in San Jose** (21th International Symposium on Preparative & Process Chromatography) Impact of an Error in the Column Hold-up Time in Adsorption Isotherm

Determinations – How to Obtain Excellent Predictions of Elution Profiles with an Arbitrary Chosen Porosity. Torgny Fornstedt, Jörgen Samuelsson, Peter Sajonz.

- L24) Analysdagarna 16-18 June 2008**, Göteborg, Sweden. Combining theory and practice for a deeper understanding of the separation process – The explanation of bizarre band profiles and their usefulness as an example (L16) Torgny Fornstedt, Jörgen Samuelsson (L16).
- L25) HPLC 2009 in Dresden** (34th International symposium on High Performance Liquid Phase Separations and related Techniques). Fundamental aspects of separation. A new method for rapid and accurate in-depth characterization of modern analytical and preparative phase systems. Torgny Fornstedt and Jörgen Samuelsson.
- L26) SPICA 2010** 13th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2010 in Stockholm Computer Assisted Optimization of Pharmaceutical Purification - The Impact of Algorithms and Experimental Approach 2010. Martin Enmark, Robert Arnell, Patrik Forssén, Jörgen Samuelsson, Krzysztof Kaczmarski, Torgny Fornstedt.
- L27) Analysdagarna 2010** in Uppsala A systematic investigation on the accuracy of computer simulations for optical isomers in industrial settings 2010. Martin Enmark, Patrik Forssén, Jörgen Samuelsson, Krzysztof Kaczmarski, Torgny Fornstedt.
- L28) Analysdagarna 2010** in Uppsala, Sweden. Determination of adsorption processes in modern chromatographic systems - Characterization, illustrations and guidelines how to avoid common pitfalls 2010. Torgny Fornstedt, Jörgen Samuelsson.
- L29) Analysdagarna 2010** in Uppsala, Sweden. Deeper characterization of new hybrid silica phases - A combined experimental and theoretical approach. Torgny Undin, Jörgen Samuelsson, Anders Törnrona.
- L30) HPLC 2010 in Philadelphia** 35th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2010 in Boston. A New Approach for Characterization of Adsorption Processes in Analytical Chromatographic Systems by Combining Linear and Nonlinear Methods. Torgny Undin, Jörgen Samuelsson, Patrik Pettersson, Anders Törnrona, Johan Ekeröth, Torgny Fornstedt (L01-18)
- L31) PREP 2010 in Philadelphia** 23th International Symposium on Preparative and Process Chromatography 2010 in Philadelphia. A Novel Optimization Strategy for Incorporating of Additives in the Modeling Aimed at Improved Process Optimization 2010. Torgny Fornstedt, Lena Edström, Michael Lämmerhofer, Wolfgang Lindner, Patrik Forssén (L-301).
- L32) HPLC 2011 in Budapest** 36th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2011 in Budapest Congress and World Trade Center. Session: Fundamental aspects of separations: Honouring Georges Guiochon, *Visualization of Chromatographic Surprises - The Helfferich Paradox Revisited* Jörgen Samuelsson, Torgny Fornstedt (L-64).
- L33) HPLC 2011 in Budapest** 36th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2011 in Budapest Congress and World Trade Center. Csaba Horváth Young Scientist Award Nominee *A Deeper Understanding of a Complex Adsorption Behavior in a Common Chiral, Separation System* Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt (L83)
- L34) PREP 2011 in Boston** 24th International Symposium on Preparative and Process Chromatography 2010 in Philadelphia. *Preparative Separation of Chiral Pharmaceutical Compounds - The Effects of Packing Particle Size, Pressure Limit and Column Geometry on Productivity and Solvent Consumption*. Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Patrik Forssén.
- L35) PREP 2012 in Boston** 25th International Symposium, Exhibit & Workshops on Preparative & Process, Boston, USA. *A Holistic View on Optimization of Preparative Liquid Chromatography – Importance of Column Properties and Design*. Jörgen Samuelsson, Patrik Forssén, Martin Enmark, Joakim Höglom.
- L36) Analysdagarna 2012** in Uppsala Sweden. *Modeling of Overloaded Gradient Elution in Reversed-Phase Liquid Chromatography*. Dennis Åsberg, Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt.

- L37) **HPLC 2012 in Anaheim 38th International Symposium on High Performance Liquid Phase Separations and Related Techniques.** *Deeper Insights in Retention Mechanisms and Molecular Interactions through Improved Methods for Generating and Evaluation Adsorption Data.* Torgny Fornstedt; Jörgen Samuelsson; Patrik Forssén.
- L38) **SPICA 2012** 14th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2012 in Brussels, Belgium. , *Characterization of adsorption in SFC: An evaluation of methods used in LC.* Martin Enmark, Jörgen Samuelsson, Joakim Höglom, Patrik Forssén, Torgny Fornstedt.
- L39) **SFC 2012** 6th International Conference on Packed Column SFC, Brussels, Belgium, , *Adsorption Isotherm Determination for Reliable Phase System Characterization in SFC – Challenges and Pitfalls.* M. Enmark, J. Samuelsson, J. Höglom, P. Forssén, T. Fornstedt.
- L40) **HPLC 2013 39th International Symposium on High Performance Liquid Phase Separations and Related Techniques. Amsterdam, the Netherlands.** A New Procedure for Predictions of Overloaded Profiles in Gradient Elution Torgny Fornstedt Dennis Åsberg Marek Lesko Martin Enmark Patrik Forssén Jörgen Samuelsson Krzysztof Kaczmarski (Keynote)
- L41) **PREP 2013 in Boston** 26th International Symposium, Exhibit & Workshops on Preparative & Process Chromatography, Boston, USA. L-316 Using Modern SFC Instruments for Adsorption Characterization Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson
- L42) **Balaton 9th International Symposium on High-Performance Separations 2013** Reliable determination of adsorption isotherms in supercritical fluid chromatography, Fornstedt* T., Enmark M., Forssén P., Samuelsson J.
- L43) **HPLC 2013 Hobart 40th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2013 in Hobart, Tasmania, Australia.** Adsorption Isotherm Determination in Supercritical Fluid Chromatography – Pitfalls and Possibilities. Torgny Fornstedt Martin Enmark Jörgen Samuelsson (Keynote)
- L44) **HPLC 2013 Hobart 40th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2013 in Hobart, Tasmania, Australia.** *A new approach for the elucidation of biological interactions by capillary electrophoresis.* Marja-Liisa Riekkola, Katriina Lipponen, Sari Tähkä, Eetu Kari, Geraldine Cilpa, Jörgen Samuelsson, Torgny Fornstedt, Katariina Öörni (Keynote).
- L45) **Analysdagarna 22nd 2014 in Stockholm: NOSS 7th Symposium** – Advances in Separation Science.
Towards More Reliable and Predictable Analytical & Preparative Supercritical Fluid Chromatography. Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Erik Forss, Dennis Åsberg, Patrik Forssén.
- L46) **Analysdagarna 22nd 2014 in Stockholm:** Analytical Quality by Design on a Firmer Theoretical Basis. Jörgen Samuelsson, Dennis Åsberg, Susanne Olsson, Mikael Nilsson, Anders Karlsson, Torgny Fornstedt.
- L47) **HPLC 2014** 41th International Symposium on High Performance Liquid Phase Separations and Related Techniques. Amsterdam, the Netherlands. Towards Reliable Supercritical Fluid Chromatography. Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Erik Forss, Patrik Forssén (**Keynote**)
- L48) **HPLC 2014** 41th International Symposium on High Performance Liquid Phase Separations and Related Techniques. Amsterdam, the Netherlands. Analytical Method Transfer Using the Quality by Design Framework: HPLC to UHPLC. Dennis Åsberg, Jörgen Samuelsson, Susanne Olsson, Mikael Nilsson, Anders Karlsson and Torgny Fornstedt.
- L49) **PREP 2014 in Boston** 27th International Symposium, Exhibit & Workshops on Preparative & Process Chromatography, Boston, USA. Scalability and Adsorption Behavior in Chiral Supercritical Fluid Chromatography. Martin Enmark, Dennis Åsberg, Jörgen Samuelsson, Magnus Klarqvist, Hanna Nelander, Torgny Fornstedt.
- L50) **SPICA 2014** 15th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2014 in Switzerland, Basel. Reliable scale-up from analytical to large-scale

instrumentation in chiral supercritical fluid chromatography. Martin Enmark, Dennis Åsberg, Jörgen Samuelsson, Hanna Nelander, Kristina Öhlén, Magnus Klarqvist, Torgny Fornstedt.

- L51) **SFC 2014** International Conference on Packed Column SFC, in Switzerland, Basel. Predictable Supercritical Fluid Chromatography– Impact of Variations in Operational Parameters with Focus on Chiral Separations. Martin Enmark, Dennis Åsberg, Jörgen Samuelsson and Torgny Fornstedt
- L52) **NATIONELLA LIFE SCIENCE DAGEN 2014** Astra Zeneca och andra Case: Exempel på lyckade Life science samarbeten mellan akademi och industri av Torgny Fornstedt <http://www.trippus.se/eventus/userfiles/53738.pdf>
- L53) **HPLC 2015 42th International Symposium on High Performance Liquid Phase Separations and Related Techniques**. Geneva, Switzerland. Visualization and explaining serious deformations in Supercritical Fluid Chromatography due to the very injection principle. Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Dennis Åsberg, Patrik Forssén, Andrew Shalliker.(Keynote).
- L54) **HPLC 2015 42th International Symposium on High Performance Liquid Phase Separations and Related Techniques**. Geneva, Switzerland Deeper Scientific Understanding and Continuous Improvement of Regulatory Approved Analytical Methods. Jörgen Samuelsson, Dennis Åsberg, Anders Karlsson, Torgny Fornstedt.
- L55) **PREP 2015, 28th International Symposium on Preparative and Process Chromatography**. Combining Theory and Practice for a deeper understanding of the Separation Process. Torgny Fornstedt and Patrik Forssén.
- L56) **PREP 2015, 28th International Symposium on Preparative and Process Chromatography**. Guidelines for reliable scale-up in preparative supercritical fluid chromatography. Martin Enmark, Dennis Åsberg, Jörgen Samuelsson, Andrew Shalliker, Torgny Fornstedt
- L57) **ITP2015/NoSSS2015, August 30th - September 3rd, Helsinki, Finland. KN-6:** Deeper scientific understanding of regulatory approved analytical methods with the quality by design approach. Dennis Åsberg, Jörgen Samuelsson, Anders Karlsson, Patrik Forssén, Torgny Fornstedt
- L58) **VSASS 2015 Virtual Symposium on Applied Separation Science**, Session Tribute to Georges Guiochon: Dr. Torgny Fornstedt - "Deeper insights into Adsorption Behavior with more rigorous processing of Data from HPLC or Modern Biosensors".
- L59) **Läkemedelsakademin 14th April 2016 in Stockholm: Beyond QBD - scientific based submissions:** Academic perspective, QbD and predictive science. Lecture by Dennis Åsberg: Coauthors: Jörgen Samuelsson and Torgny Fornstedt.
- L60) **Analysdagarna 23rd 2016 in Umeå 14-17 June: (Seminar 5):** Peak deformations in supercritical fluid chromatography due to co-solvent adsorption, Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Kristina Öhlén, Magnus Klarqvist and Torgny Fornstedt.
- L61) **Analysdagarna 23rd 2016 in Umeå 14-17 June: (Seminar 12):** Impact of elevated pressure on the adsorption mechanism in ultra-high pressure liquid chromatography, Dennis Åsberg, Jörgen Samuelsson, Torgny Fornstedt.
- L62) **HPLC 2016 44th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques**. June 19-24, 2016, San Francisco, CA, USA. (Wednesday Free Tutorials): Introduction to Fundamental Separation Theory for Better Understanding the Recent High Pressure Trend and for Improved Quality Control Methods. Torgny Fornstedt Krzysztof Kaczmarski, Dennis Åsberg, Marek Lésko, Marcin Chutkowski, Jörgen Samuelsson, Anders Karlsson.
- L63) **PREP 2016, 29th International Symposium on Preparative and Process Chromatography**. July 17-20, Philadelphia, PA, USA. (L-305) Peak Distortions in Supercritical Fluid Chromatography due to Adsorption of the Co-solvent. Torgny Fornstedt, Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Kristina Öhlen, Magnus Klarqvist.
- L64) **SPICA 2016 16th International Symposium on Preparative and Industrial Chromatography and Allied Techniques** Vienna, Austria - October 9-12, 2016: (OC32) Tuning of Peak Deformations, Due to Co-Solvent Adsorption, in Preparative Supercritical Fluid Chromatography. By Jörgen Samuelsson, Emelie Glenne, Hanna Leek, Kristina Öhlén, Magnus Klarqvist, Patrik Forssén, Torgny Fornstedt.

- L65) **Symposium on Preparative & Process Scale HPLC, MCC and SFC, September 12-13, 2017**, Särö, Sweden, Explanation of Peak Distortions in Preparative SFC Separations of Basic Pharmaceuticals. By Torgny Fornstedt, Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Patrik Forssén, Magnus Klarqvist.
- L66) **ITP 2017, Sopot, Poland (KN19)** Can we replace biosensors with capillary electrophoresis in biointeraction studies? Marja-Liisa Riekkola, E. Multia, Joanna Witos, Katriina Lipponen, Jörgen Samuelsson, Torgny Fornstedt, Patrik Forssén, Katariina Öörni, Matti Jauhiainen.
- L67) **EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September:** (Session 21: Supercritical fluids in separation science) The importance of measuring accurate operational conditions in SFC. By Martin Enmark, Dan Haupt, Olle Ståhlberg, Jörgen Samuelsson, Torgny Fornstedt.
- L68) **EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September:** (Session 21: Supercritical fluids in separation science): Peak distortions in SFC separation of basic pharmaceuticals - A fundamental investigation. Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Magnus Klarqvist, Patrik Forssén, Torgny Fornstedt.
- L69) **EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September:** (Session 25: Sensors and biosensors) A New Strategy for Reliable Estimation of Molecular-Surface Interaction Parameters from Biosensor Data. Patrik Forssén, Jörgen Samuelsson, Teodor Aastrup, Evgen Multia, Marja-Liisa Riekkola and Torgny Fornstedt.
- L70) **EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September:** (Keynote, Session 22: Pharmaceutical and biopharmaceutical analysis) Scientific-based Pharmaceutical Quality Control: An Example of a Successful Academically - Industrial Cooperation. Anders Karlsson, Dennis Åsberg, Jörgen Samuelsson and Torgny Fornstedt.
- L71) **EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September:** (Session 22: Pharmaceutical and biopharmaceutical analysis) Novel Biopharmaceutical Analysis - Cell- and tissue based interaction analysis. Teodor Aastrup, Samuel Altun, and Torgny Fornstedt.
- L72) **EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September:** (Session 1: Separation Science) Importance of pressure on adsorption and retention mechanisms in UHPLC. Jörgen Samuelsson, Dennis Åsberg, Marek Leško, Marcin Chutkowski, Krzysztof Kaczmarek and Torgny Fornstedt.
- L73) **The 40th Symposium Chromatographic Methods of Investigating Organic Compounds**, 24 - 26 May 2017 r., Katowice - Szczyrk, Marcin Chutkowski, Jörgen Samuelsson, Marek Leško, Martin Enmark, Krzysztof Kaczmarek, Erik Forss, Joakim Höglblom, Torgny Fornstedt, Illustration of the new hybrid optimization method for preparative chromatography column separation using enantiomeric mixtures as a model (lecture).
- L74) **HPLC 2017 45th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques**. Prague 18-22: (Keynote Session FUN 7 Electromigration techniques) Capillary electrophoresis - alternative technique for biosensors? By M.L. Riekkola, E. Multia, J. Witos, K. Lipponen, J. Samuelsson, T. Fornstedt, P. Forssén, K. Öörni, M. Jauhiainen.
- L75) **HPLC 2017 45th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques**. Prague 18-22. (Session FUN 11, Fun11O1-We) A deeper look at how pressure affects the retention mechanism in reversed-phase liquid chromatography T. Fornstedt, D. Åsberg, J. Jörgen, M. Leško, M. Chutkowski, K. Krzysztof.
- L76) **PREP 2017, 30th International Symposium on Preparative and Process Chromatography. July 16-19, Philadelphia, PA, USA. (keynote L-235)** Fundamental Investigations of Peak Distortions in Preparative SFC Separation of basic Components Accounting for Both Additive and Co-Solvent. Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Magnus Klarqvist, Torgny Fornstedt.
- L77) **SFC 2017 – Rockville, Maryland October 15-17, 2017, the 11th International Conference on Packed Column SFC**, in Washington. "Understanding and Avoiding Peak Distortions in SFC Separations of Basic Compounds/Pharmaceuticals". Torgny Fornstedt, Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Patrik Forssén, Magnus Klarqvist. Sd

- L78) **Agilent Nordic Scientific Forum Gothenburg 2018**, 15 – 16 March. Robust Supercritical Fluid Separation of Peptides. By Torgny Fornstedt, Martin Enmark, Emelie Glenne, Marek Lésko, Krzysztof, Kaczmarski.
- L79) **HPLC 2018 47th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques**. July 29-August 2, Washington DC. Session: Oligomers, L-145) (Session FUN 11, Fun11O1-We) On the Issue of Separating Diastereomers of Phosphorothioated Oligonucleotides. Martin Enmark, Jörgen Samuelsson, Maria Rova, Eivor Örnskov, Anders Karlsson, Torgny Fornstedt.
- L80) **PREP 2018, 31st International Symposium on Preparative and Process Chromatography. July 8-11, Baltimore, MD USA**. (L-204) Increasing the Robustness of SFC: Examples from Chiral and Peptide Separations. Torgny Fornstedt, Martin Enmark, Emelie Glenne, Marek Lésko, Annika Weinmann, Tomas Leek, Krzysztof Kaczmarski, Magnus Klarqvist3, Jorgen Samuelsson.
- L81) **SFC 2018 – Strasbourg, France October 17-19, 2018, the 12th International Conference on Packed Column SFC**. Investigation of robustness for supercritical fluid chromatography separation of peptides: Isocratic vs gradient mode. Martin Enmark, Jörgen Samuelsson, Emelie Glenne, Marek Leško, Annika Weinmann, Tomas Leek, Krzysztof Kaczmarski, Magnus Klarqvist, Torgny Fornstedt.
- L82) **SPICA 2018 17th International Symposium on Preparative and Industrial Chromatography and Allied Techniques** Darmstadt, Germany October 7-10. (OC25) Studies on Robustness of SFC: Examples from Chiral and Peptide Separations. By Torgny Fornstedt, Jörgen Samuelsson, Emelie Glenne, Hanna Leek, Kristina Öhlén, Magnus Klarqvist, Patrik Forssén, Torgny Fornstedt.
- L83) **Therapeutic proteins – focus on analysis and formulations, February 5-6, 2019, Stockholm, Sweden**. Deeper numerical characterization of cell-based biosensor data. By Torgny Fornstedt, Patrik Forssén, Evgen Multia, Jörgen Samuelsson, Thanaporn Liangsupree, Marja-Liisa-Riekkola, Teodor Aastrup.
- L84) **PREP 2019, 32nd International Symposium on Preparative and Process Chromatography. July 7-10, Baltimore, MD, USA**. (5. Tuesday **Keynote** session, Preparative Chromatography in Drug Discovery, Development, and Manufacture, L-204). Preparative Separation of Phosphorothioated Antisense Oligonucleotides. Martin Enmark, Joakim Bagge, Jörgen Samuelsson, Linda Thunberg, Hanna Leek, Fredrik Lime, Per Jageland, Torgny Fornstedt.
- L85) **PREP 2019, 32nd International Symposium on Preparative and Process Chromatography. July 7-10, Baltimore, MD, USA**. (9. Wednesday **Keynote** session, Peptides and Oligonucleotides, L-235). Preparative Supercritical Fluid Chromatography Separation of Peptides: On the Issue of Solubility and Robustness. Joakim Bagge, Martin Enmark, Marek Lesko, Emelie Glenne, Linda Thunberg, Annika Langborg Weinmann, Tomas Leek, Hanna Leek, Fredrik Limé, Jörgen Samuelsson, Torgny Fornstedt.
- L86) **HPLC 2019 48th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques**. Milano 16 – 20 June (Session SFC - 2 & DATA ANALYSIS – 2, OC272 Invited lecture) Modern Supercritical Fluid Chromatography – Impact of Mobile Phase Composition T. Fornstedt, E. Glenne, M. Enmark, M. Lésko, F. Limé, J. Samuelsson.
- L87) **HPLC 2019 48th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques**. Milano 16 – 20 June (Session Preparative Chromatography – 1, OC261) Purification of Phosphorothioated Antisense Oligonucleotides. M. Enmark, J. Bagge, J. Samuelsson, L. Thunberg, H. Leek, F. Limé, T. Fornstedt.
- L88) **TIDES Europe: Oligonucleotide & Peptide Therapeutics**. Amsterdam 12 – 15 November 2019 (Session Analytical Control Strategies of Oligonucleotides) Deeper Understanding of Separation of Native and Phosphorothioated Oligonucleotides and Their Impurities Using Ion-pair Reversed Phase Chromatography. M. Enmark, J. Bagge, J. Samuelsson, L. Thunberg, H. Leek, F. Limé, T. Fornstedt.

2.1 Peer-reviewed international conference contributions from 2010 - Posters

- P30)HPLC 2010 in Philadelphia** 35th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2010 in Boston. Peak Deformations of Basic Compounds in Reversed Phase Chromatography Under pH-stable conditions. Lena Edström, Jörgen Samuelsson, Torgny Fornstedt (P-2426-T).
- P31)SFC 2010 in Stockholm** 4th International Conference on Packed Column SFC (SFC) 2010 in Stockholm. Computer assisted optimization in preparative SFC, Challenges, Pitfalls and Solutions. Martin Enmark, Patrik Forssén, Torgny Fornstedt, Olle Gyllenhaal.
- P32)HPLC 2011 in Budapest** 36th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2011 in Budapest Congress and World Trade Center. Characterization of the Adsorption of Racemic Methyl Mandelate on Tris-(3,5-dimethylphenyl)carbamoyl Cellulose Chiral Stationary Phase Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt (P2-S-818-TH)
- P33)HPLC 2011 in Budapest** 36th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2011 in Budapest Congress and World Trade Center. Recent Developments on the Elution by Characteristic Points Method for Rapid and Accurate Determination of Adsorption Isotherms. Jörgen Samuelsson and Torgny Fornstedt (P2-S-833-WE).
- P34)HPLC 2011 in Budapest** 36th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2011 in Budapest Congress and World Trade Center. The Tracer – Pulse Experience – “reviling the Invisible Iceberg” Torgny Fornstedt, Jörgen Samuelsson (P2-S-837-WE).
- P35)PREP 2011 in Boston** 24th International Symposium on Preparative and Process Chromatography. Preparative Separation of Omeprazole: Predictions of the Optimal Experimental Conditions by Computer Simulations. Martin Enmark, Jörgen Samuelsson, Patrik Forssen, Torgny Fornstedt. The Poster received the Award “Best Poster Honorary Mentions” (see <http://www.prepsymposium.org/poster-compete.html>)
- P36)PREP 2011 in Boston** 24th International Symposium on Preparative and Process Chromatography. A Deeper Investigation of Strange Preparative Band Shapes of a Simple Racemic Solute on tris-(3,5-dimethylphenyl)carbamoyl Cellulose as Chiral Stationary Phase. Martin Enmark, Jörgen Samuelsson, Torgny Undin, Torgny Fornstedt.
- P37)PREP 2011 in Boston** 24th International Symposium on Preparative and Process Chromatography. Some Operational Conditions Often Neglected in Numerical Optimization of Preparative Chromatography. Jörgen Samuelsson, Martin Enmark, Patrik Forssen, Torgny Fornstedt.
- P38)PREP 2011 in Boston** 24th International Symposium on Preparative and Process Chromatography. Recent Experimental and Methodological Improvements on the Elution by Characteristic Points Method for Rapid Characterization of Preparative Phases. Jörgen Samuelsson, Torgny Undin Torgny Fornstedt.
- P39)Analysdagarna 2012** in Uppsala Sweden. “A Thermodynamic and Kinetic Study of an Unusual Adsorption behavior-Methyl Mandelate on Commercially Available Tris-(3,5-Dimethylphenyl)carbamoyl Cellulose Chiral Stationary Phase.” Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt.
- P40)HPLC 2012 in Anaheim USA** 38th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2012: *Why UHPLC Produces More Tailing Peaks Than HPLC, Why It Does Not Matter and How It Can Be Addressed*. Patrik Petersson, Patrik Forssén, Lena Edström, Farzad Samie, Stephen Tatterton, Adrian Clarke, Torgny Fornstedt.
- P41)HPLC 2012 in Anaheim USA** 38th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2012: *Transposing Advanced LC Theory to Modern Biosensors - Estimation of Bio-Molecular Interactions and Drug-Protein Interactions by Transposing LC-Theory to Biosensors*. Jörgen Samuelsson; Torgny Fornstedt Karlstad University, Karlstad, Sweden

- P42) Analysdagarna 2012** in Uppsala Sweden. *HPLC Vs UHPLC - a Comparison of Peak Asymmetry and Plan to Step Forward Using Quality by Design (QbD) Related to Analytical Methods*. Fornstedt, Torgny, Patrik Peterson, Patrik Forssén, and Anders Karlsson
- P43) Analysdagarna 2012** in Uppsala Sweden. , Modeling of Overloaded Gradient Elution in Reversed-Phase Liquid Chromatography. Dennis Åsberg, Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt.
- P44) SPICA 2012** 14th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2012 in Brussels, Belgium.. "A Holistic View on Optimization of Preparative Liquid Chromatography: The importance of Column Properties and Design" Torgny Fornstedt and Patrik Forssén.
- P45) SPICA 2012** 14th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2012 in Brussels, Belgium. "Technical and Economical Optimization of Chiral Batch Chromatography Processes" Jörgen Samuelsson, Marek Lesko, Martin Enmark, Joakim Höglblom, Krzysztof Kaczmarski, Torgny Fornstedt.
- P46) SPICA 2012** 14th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2012 in Brussels, Belgium. "Which Column Length and Particle Size should I select from an Economical and Technical Perspective? A Chiral Case Study" Jörgen Samuelsson, Marek Lesko, Martin Enmark, Joakim Höglblom, Krzysztof Kaczmarski, Torgny Fornstedt.
- P47) SPICA 2012** 14th Symposium on Preparative and Industrial Chromatography and Allied Techniques 2012 in Brussels, Belgium. The Importance of Overloading Studies in Method Development – A Case Study." Fredriksson, Robert, Jörgen Samuelsson, and Kristina Hallman.
- P48) PREP 2012 in Boston** 25th International Symposium, Exhibit & Workshops on Preparative & Process, Boston, USA *Modeling Competitive Adsorption Isotherms in Gradient Elution Nonlinear Reversed Phase Liquid Chromatography*. Dennis Åsberg, Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt, Karlstad University, Karlstad, SWEDEN.
- P49) XXI Ogólnopolska Konferencja Inżynierii Chemicznej i Procesowej**, 2 – 6 września 2013, Szczecin/Kołobrzeg, Marek Leško, Jörgen Samuelsson, Martin Enmark, Torgny Fornstedt, Krzysztof Kaczmarski, Optymalizacja chromatograficznego procesu rozdziału izomerów Omeprazolu (poster).
- P50) HPLC 2013 39th International Symposium on High Performance Liquid Phase Separations and Related Techniques. Amsterdam, the Netherlands.** On the Reproducibility between Different Modern Supercritical Fluid Chromatographic Systems Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt
- P51) HPLC 2013 Hobart 40th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2013 in Hobart, Tasmania, Australia.** System Verification in Supercritical Fluid Chromatography Aimed at Adsorption Studies Torgny Fornstedt Martin Enmark Patrik Forssen Jörgen Samuelsson
- P52) HPLC 2014 41st International Symposium on High Performance Liquid Phase Separations and Related Techniques.** Amsterdam, the Netherlands. Approaches for Predictable Method Transfer in Analytical Quality by Design: from HPLC to UHPLC: Dennis Åsberg, Jörgen Samuelsson, Susanne Olsson, Mikael Nilsson, Anders Karlsson and Torgny Fornstedt
- P53) PREP 2014 in Boston** 26th International Symposium, Exhibit & Workshops on Preparative & Process Chromatography, Boston, USA. Impact of Parameter Variation in Supercritical Fluid Chromatography. Dennis Åsberg, Martin Enmark, Jörgen Samuelsson, Torgny Fornstedt.
- P54) SFC 2014 International Conference on Packed Column SFC** in Switzerland, Basel. Effects of variation in temperature, pressure and co-solvent in chiral Supercritical Fluid Chromatography, Martin Enmark, Dennis Åsberg, Jörgen Samuelsson and Torgny Fornstedt.
- P55) Analysdagarna 23rd 2016 in Umeå** 14-17 June: Practical Consequences of Elevated Pressure in Liquid Chromatography. Dennis Åsberg, Jörgen Samuelsson and Torgny Fornstedt.
- P56) Analysdagarna 23rd 2016 in Umeå** 14-17 June: Effects of Co-Solvent Adsorption in Supercritical Fluid Chromatography. Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Kristina Öhlén, Magnus Klarqvist and Torgny Fornstedt.
- P57) HPLC 2016 44th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** June 19-24, 2016, San Francisco, CA, USA. A Scientific

Approach to the Quality Control Enhancement Concept. By Torgny Fornstedt, Dennis Åsberg, Jörgen Samuelsson, Anders Karlsson.

- P58) PREP 2016, 29th International Symposium on Preparative and Process Chromatography.** July 17-20, Philadelphia, PA, USA. (P-T-235) Mechanistic Modeling for Enhanced Quality Control Flexibility. Torgny Fornstedt, Dennis Åsberg, Jörgen Samuelsson, Anders Karlsson.
- P59) EUROANALYSIS 2017 in Stockholm Sweden 28th August – 1st September.** (015 Tue-SEP) Peak distortions in SFC separation of basic pharmaceuticals – practical implications. Magnus Klarqvist, Emelie Glenne, Jörgen Samuelsson, Hanna Leek, Torgny Fornstedt.
- P60) HPLC 2017 45th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** Prague 18-22. (FUN6-P07-Tu) Evaluating the advantage of higher heat conductivity of a recent core-shell diamond stationary phase particle in UHPLC. M. Leško D. Åsberg, J. Samuelsson, K. Kaczmarek, T. Fornstedt.
- P61) SFC 2017 – Rockville, Maryland October 15-17, 2017, the 11th International Conference on Packed Column SFC,** in Washington Supercritical Fluid Chromatography SFC 2017 in Washington. Investigation of the Need of Using Actual Operational Conditions in Analytical SFC Separations as Compared to the Set Operational Conditions”. By Martin Enmark, Erik Forss, Dan Haupt, Olle Ståhlberg, Jörgen Samuelsson, Torgny Fornstedt.
- P62) HPLC 2018 47th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** July 29-August 2, Washington DC. (P-T-1302) Why Gradient Elution Lead to Increased Robustness of SFC Separations. Martin Enmark, Emelie Glenne, Marek Lesko, Annika Langborg Weinmann, Tomas Leek, Krzysztof Kaczmarek, Magnus Klarqvist, Torgny Fornstedt, Jörgen Samuelsson.
- P63) HPLC 2018 47th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** July 29-August 2, Washington DC. (P-T-1303) Highlighting often Neglected Experimental Parameters in Analytical Supercritical Fluid Chromatography. Martin Enmark, Jörgen Samuelsson, Anders Karlsson, Torgny Fornstedt.
- P64) HPLC 2018 47th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** July 29-August 2, Washington DC. (P-W-1717) Diastereomer Separation of Phosphorothioated Oligonucleotides. Martin Enmark, Jörgen Samuelsson, Maria Rova, Eivor Örnkvist, Anders Karlsson, Torgny Fornstedt.
- P65) The 41st Symposium Chromatographic Methods of Investigating Organic Compounds, 19 – 24 May 2018 r.,** Katowice – Szczyrk, Marek Leško, Jörgen Samuelsson, Martin Enmark, Krzysztof Kaczmarek, Torgny Fornstedt, Evaluating the advantage of higher heat conductivity of core-shell diamond stationary phase particles in gradient mode chromatography at very high pressure (poster)
- P66) PREP 2018, 31st International Symposium on Preparative and Process Chromatography. July 8-11, Baltimore, MD USA.** (P-M-138) Proper Operational Conditions in Supercritical Fluid Chromatography of Complex Molecules, Set vs. Real Conditions. Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Anders Karlsson.
- P67) PREP 2018, 31st International Symposium on Preparative and Process Chromatography. July 8-11, Baltimore, MD USA.** (P-T-239) Robust Operation of SFC using Peptide and Chiral Model Systems. Torgny Fornstedt, Martin Enmark, Emelie Glenne, Marek Lesko, Annika Langborg Weinmann, Tomas Leek, Krzysztof Kaczmarek, Magnus Klarqvist, Jörgen Samuelsson.
- P68) PREP 2018, 31st International Symposium on Preparative and Process Chromatography. July 8-11, Baltimore, MD USA.** (P-T-240) Separation of Phosphorothioated Oligonucleotides and their Diastereomers. Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Maria Rova, Eivor Örnkvist, Anders Karlsson, Torgny Fornstedt.
- P69) SPICA 2018 17th International Symposium on Preparative and Industrial Chromatography and Allied Techniques** Darmstadt, Germany October 7-10. Investigations of robustness in SFC. By Torgny Fornstedt, Martin Enmark, Emelie Glenne, Marek Leško, Annika Langborg Weinmann, Tomas Leek, Krzysztof Kaczmarek, Magnus Klarqvist, Hanna Leek, Jörgen Samuelsson.
- P70) SPICA 2018 17th International Symposium on Preparative and Industrial Chromatography and Allied Techniques** Darmstadt, Germany October 7-10. Evaluation of using Instrumental-Set

Conditions vs Real Operation Conditions in Supercritical Fluid Chromatography. By Torgny Fornstedt, Martin Enmark, Jörgen Samuelsson, Anders Karlsson.

- P71) SFC 2018 - Strasbourg, France October 17-19, 2018, the 12th International Conference on Packed Column SFC.** Investigation of robustness for supercritical fluid chromatography separation of peptides: Isocratic vs gradient mode. Martin Enmark, Emelie Glenne, Marek Lesko, Annika Weinmann, Tomas Leek, Krzysztof Kaczmarek, Patrik Forssén, Magnus Klarqvist, Torgny Fornstedt and Jörgen Samuelsson.
- P72) PREP 2019, 32nd International Symposium on Preparative and Process Chromatography. July 7-10, Baltimore, MD, USA.** (Poster Session 1 Monday 2:00 – 3:20 pm, P-M-122). Preparative Separation of Phosphorothioated Antisense Oligonucleotides Martin Enmark, Joakim Bagge, Jorgen Samuelsson, Linda Thunberg, Hanna Leek, Fredrik Lime, Per Jageland, Torgny Fornstedt.
- P73) PREP 2019, 32nd International Symposium on Preparative and Process Chromatography. July 7-10, Baltimore, MD, USA.** (Poster Session 2 Tuesday 1:50 – 3:10 pm, P-T-228). Preparative Supercritical Fluid Chromatography Separation of Peptides: On the Issue of Solubility and Robustness. Joakim Bagge, Martin Enmark. Marek Lesko, Emelie Glenne, Linda Thunberg, Annika Langborg Weinmann, Tomas Leek, Fredrik Limé, Jörgen Samuelsson, Torgny Fornstedt.
- P74) HPLC 2019 48th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** Milano 16 – 20 June (Session Second Group of Poster, P 277) Rapid Affinity Chromatographic Isolation of Low-Density Lipoproteins from Human Plasma. T. Liangsupree, E. Multia, J. Metso, M. Jauhiainen, P. Forssén, T. Fornstedt, K. Öörni, A. Podgornik, M.L. Riekkola.
- P75) HPLC 2019 48th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** Milano 16 – 20 June (Session Second Group of Poster, P 279) Purification of Phosphorothioated Antisense Oligonucleotides. M. Enmark, J. Bagge, J. Samuelsson, L. Thunberg, H. Leek, F. Limé, T. Fornstedt.
- P76) HPLC 2019 48th International Symposium & Exhibit on High Performance Liquid Phase Separations and Related Techniques.** Milano 16 – 20 June (P 493) Purification of Phosphorothioated Antisense Oligonucleotides. M. Enmark, J. Bagge, J. Samuelsson, L. Thunberg, H. Leek, F. Limé, T. Fornstedt.

2.2 Academically Workshops/Short –Courses at international conferences from 2005

- W1) HPLC 2005 in Stockholm** (29th International symposium on High Performance Liquid Phase Separations and related Techniques) Workshop in “Basic theory and practice of retention and peak shapes in LC”. Instructors: Torgny Fornstedt, Robert Arnell and Jörgen Samuelsson, Uppsala University
- W2) HPLC 2005 in Stockholm** (29th International symposium on High Performance Liquid Phase Separations and related Techniques) Workshop in “Preparative Separations”. Instructors: Robert Arnell and Attila Felinger.
- W3) Prep 2006 in Baltimore** (19th International Symposium on Preparative & Process Chromatography) Workshop 4: Protein Purification and Downstream Processing. Instructors: Jörgen Samuelsson and Torgny Fornstedt, Uppsala University.
- W4) Prep 2007 in Baltimore** (20th International Symposium on Preparative & Process Chromatography) Workshop 3: Protein Purification and Downstream Processing. Jörgen Samuelsson and Torgny Fornstedt, Uppsala University.
- W5) HPLC 2007 in Ghent, Belgium** (31th International symposium on High Performance Liquid Phase Separations and related Techniques). Workshop in “LC Theory for Practical Use”. Instructors: Torgny Fornstedt and Jörgen Samuelsson, University of Uppsala, Sweden
- W6) HPLC 2008 in Baltimore** (32th International symposium on High Performance Liquid Phase Separations and related Techniques) Workshop 5 Full day “High Resolution and Throughput: Recent trends in Liquid Chromatography. Instructors: Torgny Fornstedt (Uppsala University), Mel Eurby (HICROM) and Patrik Pettersson (AstraZeneca AB)

W7)HPLC 2009 in Dresden (34th International symposium on High Performance Liquid Phase Separations and related Techniques) Short Course 4. Current trends in liquid chromatography: Understanding the theory behind the practice. Instructors Torgny Fornstedt and Patrik Pettersson, Uppsala University and AstraZeneca AB

W8)HPLC 2011 in Budapest: 36th International Symposium on High Performance Liquid Phase Separations and Related Techniques 2011 in Budapest Congress and World Trade Center. Short Course #4 Current Trends in Liquid Chromatography: Understanding the Theory behind the Practice. Instructors: Torgny Fornstedt (Karlstad University), Alberto Cavazzini (Ferrara University), Jörgen Samuelsson (Karlstad University).

W9) Annual Workshop Network in Pure and Applied Analysis (NPAA), Orebro, 15 April 2019 T135, Teknikhuset. 13:00-13:30 Marek Szymanski (Örebro University) - Inverse problems in pharmaceutical research: protein purification and protein-biosensor interactions. <https://www.oru.se/kalendarium/ovriga-evenemang/npaa-workshop/>

2.3 Industrially Presentations & Technical notes as a result of the KKS Synergy BIO-QC project

- 1) **Forskning - en god affär för Sverige?** Forskningen spelar en nyckelroll för Sveriges framtida konkurrenskraft. Hur kan kunskapsöverföringen och samarbetsformerna mellan akademi och näringsliv förbättras? På seminariet diskuterades hur universiteten och högskolorna som ligger i framkant arbetar med kunskapsöverföring & vilka samarbetsformer som fungerar bäst. Medverkande: bl. a Teodor Aastrup, CEO på Attana AB, Ulf Hall, tillförordnad vd, KK-stiftelsen och Johan Sterte, Rektor, Karlstads universitet. <https://www.iva.se/event/forskning-en-god-affar-for-sverige/>
- 2) **Tydliga mål viktiga för framgång i samarbetsprojekt.** Kontakter öga mot öga och en gemensam vision om målet. Det är förutsättningar för att samarbeten mellan forskare och företag ska bli en bra affär. (Publicerat på www.IVA.se 15 november 2018; skribent Pär Rönnerberg) <https://www.iva.se/publicerat/tydliga-mal-viktiga-for-framgang-i-samarbetsprojekt/>
- 3) **Oligonucleotide separations with Kromasil RP phases**, Chromatography Today, December 12 2018 <https://www.chromatographytoday.com/news/hplc-uhplc/31/kromasil/oligonucleotide-separations-with-kromasil-rp-phases/47856> (Accessed March 12 2019)
- 4) **Emerging Separations Technologies (2019)** 28th March 2019 at RCS Burlington House, London, UK. Novel separation methods of polynucleotides, presented by Eivor Örnkvist. <https://chromsoc.com/wp-content/uploads/2018/05/chromsoc-est-2019-1.pdf>

3.0 Popular science articles/Other articles

- 1) On the Road to Greener Purification. The Public Service Review: European Union, issue 23, p. 522, <http://edition.pagesuite-professional.co.uk/launch.aspx?EID=364cc048-29d3-4b45-8e7c-b4c8f7c9cab0>
- 2) Datorn hjälper dig separera - Forskare på Karlstads universitet arbetar intensivt med att skapa datorprogram för att minska tidsåtgången i läkemedelsutveckling, när testpreparat ska renas fram i liten skala. Kemivärlden Biotech med Kemisk Tidskrift, nr. 10, 2011.
- 3) Kromatografi: ju mindre desto bättre. Kemivärlden Biotech med Kemisk Tidskrift, nr. 6 JUNI 2014. http://ebook.mentorcommunications.se/KVB_nr_6_2014/#/1/
- 4) Inbjuden ge presentation på NATIONELLA LIFE SCIENCE DAGEN 2014 Astra Zeneca och andra Case: Exempel på lyckade life sciencesamarbeten mellan akademi och industri av **T. Fornstedt** <http://www.trippus.se/eventus/userfiles/53738.pdf>
- 5) Kromatografi: ju mindre desto bättre. Kemivärlden Biotech med Kemisk Tidskrift, nr. 6 JUNI Bättre kvalitetsanalyser med regulatorisk flexibilitet. Kemivärlden Biotech med Kemisk Tidskrift, nr. 3, Maj 2017 (av B. Jönsson).
- 6) Kvalitetskontroll: Start för projekt om nästa generations läkemedel. Kemivärlden Biotech med Kemisk Tidskrift, nr. 8, December 2017 (av B. Jönsson). <http://www.fssg.se/wp-content/uploads/2018/01/KK-kickoff-Kemiv%C3%A4rlden-2017.pdf>

3.1 Web-based news on the Universities/Company related to FSSG research

- 5) **Stort anslag till kvalitetskontroll av nästa generations läkemedel.** Projektet "BIO-QC: Kvalitetskontroll och rening av nya biologiska läkemedel", har beviljats anslag av KK-stiftelsen. Med en budget på över 20 miljoner kronor samlar projektet ledande kompetens från både akademi och industri. Under ledning av professor Torgny Fornstedt vid Karlstads universitet kommer dessa samarbeta för att säkerställa Sveriges ledande position inom läkemedelsforskning och utveckling (publicerat 2017-06-20). <https://www.kau.se/index.php/nyheter/stort-anslag-till-kvalitetskontroll-av-nasta-generations-lakemedel>
- 6) **20 miljoner till forskning om kvalitetskontroll av läkemedel.** Ett nytt forskningsprojekt, som fått medel från KK-stiftelsen, ska utveckla kvalitetskontrollen av läkemedel. Örebro universitet deltar i projektet tillsammans med Karlstads universitet, Linnéuniversitetet och flera företag (publicerat 27 juni 2017) <https://www.oru.se/nyheter/nyhetsarkiv/nyhetsarkiv-2017/20-miljoner-till-forskning-om-kvalitetskontroll-av-lakemedel/>.
- 7) **Årets bästa doktorsavhandling inom läkemedelsanalys.** Årets bästa doktorsavhandling inom läkemedelsanalys går till Dennis Åsberg, doktorand vid Karlstads universitet. Priset delas ut av Apotekarsocieteten den 21 november på Lunds universitet. <https://www.kau.se/nyheter/arets-basta-doktorsavhandling-inom-lakemedelsanalys> (Publicerat 2017-11-22).
- 8) **Kvalitetskontroll av nästa generations läkemedel.** Den 30 november var det kick-off för projekt BIO-QC, Kvalitetskontroll och rening av nya biologiska läkemedel, vars syfte är att utveckla förbättrade metoder för kvalitetskontroll av nästa generations läkemedel. Projektet involverar tre akademiska grupper och fyra företag (Publicerat 2017-12-04). <https://www.kau.se/nyheter/kvalitetskontroll-av-nasta-generations-lakemedel>
- 9) **Bättre metoder för kvalitetskontroll av nästa generations läkemedel.** Nästa generations läkemedel baseras på stora biologiska molekyler och kommer att kräva nya typer av kvalitetskontroller. Ett projekt som involverar tre universitet och fyra företag har just dragit igång för att utveckla nya tekniker för dessa kontroller. (Publicerat 2018-01-25). <https://lnu.se/mot-linneuniversitetet/aktuellt/nyheter/2018/battre-metoder-for-kvalitetskontroll-av-nasta-generations-lakemedel/>
- 10) **AstraZeneca tränar studenter på realistiska frågeställningar.** I höstas sjuöppades en C- och D-kurs, Produkters kemi, vid Karlstads universitet. Kursens syfte är att förmedla yrkesförberedande kunskaper om moderna produktionsprocesser såsom produkters livscykel från ett hållbart perspektiv. Bland annat genomfördes en temadag där Anders Karlsson från AstraZeneca medverkade. (Publicerat 2018-01-24). <https://www.kau.se/nyheter/astrazeneca-tranar-studenter-pa-realistiska-fragestallningar>
- 11) **Projekt: Quality Control and Purification for New Biological Drugs (BIO-QC).** Projektet BIO-QC ska utveckla nya material och processer för kvalitetskontroll av läkemedel som baseras på så kallade biomolekyler. <https://lnu.se/forskning/sok-forskning/forskningsprojekt/projekt-quality-control-and-purification-for-new-biological-drugs-bio-qc/>
- 12) **A new scientific publication suggests improved predictions of drug efficacy based on a new analytical method of cell-based experiments.** *The paper describes how the analysis of experimental results can be improved and visualized using new mathematical algorithms; the project aims at within five years provide new analytical tools that more accurately and in a simplified manner describe the complexity of the interactions between drug molecules and their receptors in the body.* <https://news.cision.com/attana/r/a-new-scientific-publication-suggests-improved-predictions-of-drug-efficacy-based-on-a-new-analytica.c2486086> (Published TUE, APR, 2018 09:16 CET)