

Stanford



Claudia Zielke

Postdoctoral Scholar, Bioengineering

Bio

BIO

After a BS and MS in Chemistry from the Freie Universität Berlin, Germany, I used my expertise in physical and analytical Chemistry to received a PhD from the Department of Food Technology, Engineering and Nutrition at Lund's University in Sweden. I specialized within the Field-Flow Fractionation family, a very versatile and gentle separation technique able to separate large size ranges, from nanometer up to several micrometer. My thesis was titled "On the Aggregation of Cereal β -Glucan and its Association with other Biomolecules: A Study using Asymmetric Flow Field-Flow Fractionation (AF4)". After a postdoctoral position at Santa Clara University, CA, USA, I am now setting up an Asymmetric Flow Field-Flow Fractionation system with several detectors in the Barron Lab, BioE, here at Stanford.

PROFESSIONAL EDUCATION

- Postdoctoral Scholar, Santa Clara University, Santa Clara, CA, USA , Chemistry & Biochemistry (Physical and Analytical Chemistry, Microfluidics) (2021)
- Doctor of Philosophy, Lund's University, Lund, Sweden , Food Technology, Engineering & Nutrition (Analytical Chemistry) (2018)
- Master of Science, Freie Universität Berlin, Berlin, Germany , Chemistry (Physical and Analytical Chemistry) (2012)
- Bachelor of Science, Freie Universität Berlin, Berlin, Germany , Chemistry (2009)

STANFORD ADVISORS

- Annelise Barron, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Method for Passive Droplet Sorting after Photo-Tagging** *MICROMACHINES*
Dobson, C., Zielke, C., Pan, C. W., Feit, C., Abbyad, P.
2020; 11 (11)
- **Microfluidic Platform for the Isolation of Cancer-Cell Subpopulations Based on Single-Cell Glycolysis** *ANALYTICAL CHEMISTRY*
Zielke, C., Pan, C. W., Ramirez, A., Feit, C., Dobson, C., Davidson, C., Sandel, B., Abbyad, P.
2020; 92 (10): 6949-6957
- **Comparison between conventional and frit-inlet channels in separation of biopolymers by asymmetric flow field-flow fractionation** *ANALYST*
Fuentes, C., Choi, J., Zielke, C., Penarrieta, J., Lee, S., Nilsson, L.
2019; 144 (15): 4559-4568
- **Aggregation and microstructure of cereal beta-glucan and its association with other biomolecules** *COLLOIDS AND SURFACES A-PHYSICO-CHEMICAL AND ENGINEERING ASPECTS*
Zielke, C., Lu, Y., Nilsson, L.
2019; 560: 402-409

- **Characterization of cereal beta-glucan extracts: Conformation and structural aspects** *FOOD HYDROCOLLOIDS*
Zielke, C., Stradner, A., Nilsson, L.
2018; 79: 218-227
- **The effect of in vitro gastrointestinal conditions on the structure and conformation of oat beta-glucan** *FOOD HYDROCOLLOIDS*
Korompokis, K., Nilsson, L., Zielke, C.
2018; 77: 659-668
- **Interaction between cereal beta-glucan and proteins in solution and at interfaces** *COLLOIDS AND SURFACES B-BIOINTERFACES*
Zielke, C., Lu, Y., Poinso, R., Nilsson, L.
2018; 162: 256-264
- **Co-elution phenomena in polymer mixtures studied by asymmetric flow field-flow fractionation** *JOURNAL OF CHROMATOGRAPHY A*
Zielke, C., Fuentes, C., Piculell, L., Nilsson, L.
2018; 1532: 251-256
- **Co-elution effects can influence molar mass determination of large macromolecules with asymmetric flow field-flow fractionation coupled to multiangle light scattering** *JOURNAL OF CHROMATOGRAPHY A*
Perez-Rea, D., Zielke, C., Nilsson, L.
2017; 1506: 138-141
- **Characterization of the molar mass distribution of macromolecules in beer for different mashing processes using asymmetric flow field-flow fractionation (AF4) coupled with multiple detectors** *ANALYTICAL AND BIOANALYTICAL CHEMISTRY*
Choi, J., Zielke, C., Nilsson, L., Lee, S.
2017; 409 (19): 4551-4558
- **Characterization of cereal beta-glucan extracts from oat and barley and quantification of proteinaceous matter** *PLOS ONE*
Zielke, C., Kosik, O., Ainalem, M., Lovegrove, A., Stradner, A., Nilsson, L.
2017; 12 (2): e0172034
- **Analysis of beta-glucan molar mass from barley malt and brewer's spent grain with asymmetric flow field-flow fractionation (AF4) and their association to proteins** *CARBOHYDRATE POLYMERS*
Zielke, C., Teixeira, C., Ding, H., Cui, S., Nyman, M., Nilsson, L.
2017; 157: 541-549
- **Role of polysaccharides in food, digestion, and health** *CRITICAL REVIEWS IN FOOD SCIENCE AND NUTRITION*
Lovegrove, A., Edwards, C. H., De Noni, I., Patel, H., El, S. N., Grassby, T., Zielke, C., Ulmius, M., Nilsson, L., Butterworth, P. J., Ellis, P. R., Shewry, P. R.
2017; 57 (2): 237-253
- **The effect of baking and enzymatic treatment on the structural properties of wheat starch** *FOOD CHEMISTRY*
Fuentes, C., Zielke, C., Prakash, M., Kumar, P., Penarrieta, J., Eliasson, A., Nilsson, L.
2016; 213: 768-774
- **Supported Mesoporous and Hierarchical Porous Pd/TiO₂ Catalytic Coatings with Controlled Particle Size and Pore Structure** *CHEMISTRY OF MATERIALS*
Ortel, E., Sokolov, S., Zielke, C., Lauer, I., Selve, S., Weh, K., Paul, B., Polte, J., Kraehnert, R.
2012; 24 (20): 3828-3838
- **Infrared spectroscopic ellipsometry (IRSE) and X-ray photoelectron spectroscopy (XPS) monitoring the preparation of maleimide-functionalized surfaces: from Au towards Si (111)** *SURFACE AND INTERFACE ANALYSIS*
Sun, G., Hovestaedt, M., Zhang, X., Hinrichs, K., Rosu, D., Lauer, I., Zielke, C., Vollmer, A., Loechel, H., Ay, B., Holzhuetter, H., Schade, U., Esser, et al
2011; 43 (9): 1203-1210