CURRICULUM VITAE

Dr. Alexandra Ros

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School of Molecular Sciences, Arizona State University
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Scientific Interests

Micro- and Nanofluidics, Bioanalytical Chemistry, Microscale Migration Mechanisms, Single Cell Analysis, Functional Surface Design, Microfluidic Tools for Nanocrystallography.

Education

10/1989 - 09/1991	**Diploma program in Chemistry** at the **Technical University Munich**, Germany
10/1991 - 12/1994	**Diploma program in Chemistry** at the **Ruprecht-Karls-University Heidelberg**, Germany
01/1995 - 10/1995	**Diploma Thesis** at the **Ruprecht-Karls-University Heidelberg**, Institute of Applied Physical Chemistry, Prof. M. Grunze, *Immobilization of Proteins and Antibodies for the Application with Acoustic Wave Sensors*
12/1996 – 08/2000	**PhD Thesis** at the **Federal Institute of Technology Lausanne** (**EPFL**), Switzerland, Laboratory of Electrochemistry, Prof. H. Girault, *New Protein Separation and Analysis Methods*
04/07/2007	**Habilitation** and **Venia Legendi** in Experimental Physics, **Bielefeld University**, Physics Faculty, Germany, *Migration Phenomena and Single Cell Analysis in Microfluidic Systems*

Appointments

09/2000-12/2001	**Postdoc** in the Experimental Biophysics & Applied Nanoscience Group of Prof. D. Anselmetti, **Bielefeld University**, Germany
01/2002-12/2007	**Project leader** in the Experimental Biophysics Group, **Bielefeld University**, Germany
01/2008-08/2014	**Assistant Professor**, Department of Chemistry & Biochemistry, **Arizona State University**, Tempe, AZ, USA
08/2014-07/2020	**Associate Professor**, Department of Chemistry & Biochemistry / School of Molecular Sciences, **Arizona State University**, Tempe, AZ, USA
10/2014-present	**Faculty Member**, Center for Applied Structural Discovery, The Biodesign Institute, **Arizona State University**, Tempe, AZ, USA
08/2015-07/2016 & 06/2017-08/2017	**Visiting Scientist**, Third Physical Institute, **Georg August University Göttingen,** Göttingen, Germany
08/2020-present	**Professor**, School of Molecular Sciences, **Arizona State University**, Tempe, AZ, USA

Awards

- AES (The Electrophoresis Society) Mid Career Award (2020)
- Appointed NIH Instrumentation and Systems Development Study Section Member (2019)
- Innovation Award - Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) (2018)
- Humboldt-Fellowship for Experienced Researchers (2015)
- NSF CAREER Award (2012)
- Best Oral Presentation Award at Nanotech, Montreux, Switzerland (1997)

List of Publications

Summary:
128 Published overall including 67 peer-reviewed publications (+1 submitted manuscript), 28 reviewed conference proceedings, 3 full patents, 7 provisional patents (among those 2 full patents submitted), 6 book chapters, 1 editorial, 3 book reviews

Google Scholar H-Index = 38 (>4000 citations)
(http://scholar.google.com/citations?user=qF1eRmwAAAAJ&hl=en)
Note: Google Scholar H-index is more comprehensive than Scopus thus also counting citations in engineering fields, which are often published in conference proceedings and counted as full publications as well as book chapters and editorials to name a few.

Scopus H-Index = 32

Based on ORCID ID: **0000-0001-7709-8331**

* indicates Ros as corresponding author	Single underlined indicates supervised graduate student	Double underlined indicates supervised undergraduate student	*Italic & underlined* indicates supervised post-doc or researcher	IF = Impact factor

**My role as corresponding author: I designed the scientific study, mentored students and postdocs, sought and coordinated collaborations (where applicable) and was the leading writer of the manuscript.*

Published Peer Reviewed Publications

1. J. Cruz Villarreal, R. Kruithoff, *A. Egatz-Gomez*, P. D. Coleman, R. Ros, T. R. Sandrin, **A. Ros***, *MIMAS: Microfluidic Platform in Tandem with MALDI Mass Spectrometry for Protein Quantification from Small Cell Ensembles*, under review
2. D. Doppler, M. T. Rabbani, R. Letrun, J. Cruz Villarreal, D. Kim, *S. Gandhi*, *A. Egatz-Gomez*, *M. Sonker*, J. Chen, F. H. M. Koua, J. Yang, M. H. Youssef, V. Mazalova, S. Bajt, M. L. Shelby, M. A. Coleman, M. O. Wiedorn, J. Knoska, S. Schön, T. Sato, M. S. Hunter, A. Hosseinizadeh, C. Kupitz, R. Nazari, R. C. Alvarez, K. Karpos, S. Zaare, Z. Dobson, E. Discianno, S. Zhang, J. D. Zook, J. Bielecki, R. de Wijn, A. R. Round, P. Vagovic, M. Kloos, M. Vakili, G. K. Ketawala, N. E .Stander, T. L. Olson, K. Morin, J. Mondal, J. Nguyen, J. Domingo Meza-Aguilar, G. Kodis, S. M. Vaiana, J. M. Martin-Garcia, V. Mariani, P. Schwander, M. Schmidt, M. Messerschmidt, A. Ourmazd, N. Zatsepin, U. Weierstall, B. D. Bruce, A. P. Mancuso, T. Grant, A. Barty, H. N. Chapman, M. Frank, R. Fromme, J. C. H. Spence,S. Botha, P. Fromme, R. A. Kirian, **A. Ros*** *Co-flow Injection for Serial Crystallography at X-Ray Free Electron Lasers* **J. Applied Crystallography** (2022) 55, 1-13, DOI:10.1107/S1600576721011079
3. R. Ortiz, *D. Koh*, M. T. Rabbani, C. Anguaya Velasquez, *M. Sonker*, E. Arriaga, **A. Ros***, Continuous organelle separation in an Insulator-based dielectrophoretic device **Electrophoresis** Published online Dec 29 (2021) 10.1002/elps.202100326
4. M. Yang, J. Cruz Villarreal, N. Ariyasinghe, R. Kruithoff, R. Ros, **A. Ros***, *Quantitative approach for protein analysis in small cell ensembles by an integrated microfluidic chip with MALDI mass spectrometry*, **Analytical Chemistry** (2021) 93, 6053–6061
5. M. T. Rabbani, C. F. Schmidt, **A. Ros***, *Length-Selective Dielectrophoretic Manipulation of Single-Walled Carbon Nanotubes*, **Analytical Chemistry** (2020) 92, 8901–8908
6. M. T. Rabbani, *M. Sonker*, **A. Ros***, *Carbon Nanotube Dielectrophoresis: Theory and Applications*, **Electrophoresis** (2020) 41, 1893-1914 **invited review**
7. A. Echelmeier, J. Cruz Villarreal, D. Kim, S. Gandhi, S. Botha, A. Egatz-Gomez, D. Thifault, J. Coe, G. Brehm, M. Messerschmidt, C. Madsen, S. Bajt, J. Domingo Meza-Aguilar, D. Oberthür, M. O. Wiedorn, H. Fleckenstein, D. Mendez, J.j Knoška, J. Martin Garcia, H. Hu, S. Lisova, A. Allahgholi, Y. Gevorkov, K. Ayyer, S. Aplin, H. Mary Ginn, H. Graafsma, A. J. Morgan, D. Greiffenberg, A. Klujev, T. Laurus, J. Pöhlsen, U. Trunk, F. R. N. C. Maia, D. Mezza, R. Fromme, B. Weinhaussen, G. Mills, P. Vagovic, Y. Kim, J. Schultz, K. Döner, J. Sztuk-Dambietz, M. Kuhn, T. D. Grant, T. A. White, V. Mariani, A. Barty, A. P. Mancuso, U. Weierstall, J. C.H. Spence, H. N. Chapman, N. Zatsepin, P. Fromme, R. Kirian, **A. Ros***, *Segmented Flow Generator for Serial Crystallography at X-Ray Free Electron Lasers*, **Nature Communications** (2020) 11, 4511 DOI:10.1038/s41467-020-18156-7
8. S. Pandey, R. Bean, T. Sato, I. Poudyal, J. Bielecki, J. Cruz Villarreal, O. Yefanov, V. Mariani, T. A. White, C. Kupitz, M. Hunter, M. H. Abdellatif, S. Bajt, V. Bondar, A. Echelmeier, D. Doppler, M. Emons, M. Frank, R. Fromme, Y. Gevorkov, G. Giovanetti, M. Jiang, D. Kim, Y. Kim, H. Kirkwood, A. Klimovskaia, J. Knoska, F.

H. M. Koua, R. Letrun, S. Lisova, L. Maia, V. Mazalova, D. Meza, T. Michelat, A. Ourmazd, G. Palmer, M. Ramilli, R. Schubert, P. Schwander, A. Silenzi, J. Sztuk-Dambietz, A. Tolstikova, H. Chapman, **A. Ros**, A. Barty, P. Fromme, A. Mancus, M. Schmidt, *Time-Resolved Serial Femtosecond Crystallography at the European XFEL*, 2019 **Nature Methods** (2020) 17, 73-78 DOI:10.1038/s41592-019-0628-z

9. C. Gisriel, J. Coe, R. Letrun, C. Luna-Chavez, N. E. Stander, S. Lisova, O. N. Yefanov, V. Mariani, M. Kuhn, T. D. Grant, K. Dörner, T. Sato, A. Echelmeier, J. Cruz Villarreal, M. S. Hunter, M. O. Wiedorn, J. Knoska, V. Mazalova, S. Roy-Chowdhury, J.-H. Yang, A. Jones, R. Bean, J. Bielecki, Y. Kim, G. Mills, B. Weinhausen, J. Domingo Meza, N. Al-Qudami, S. Bajt, G. Brehm, S. Botha, D. Boukelef, S. Brockhauser, B. D. Bruce, M. A. Coleman, C. Danilevski, E. Discianno, Z. Dobson, H. Fangohr, J. M. Martin-Garcia, Y. Gevorkov, S. Hauf, K. Giewekemeyer, A. Hosseinizadeh, F. Januschek, G. K. Ketawala, C. Kupitz, L. Maia, M. Manetti, M. Messerschmidt, T. Michelat, J. Mondal, D. Oberthür, A. Ourmazd, G. Previtali, I. Sarrou, S. Schön, P. Schwander, M. L. Shelby, M. Sikorski, A. Silenzi, J. Sztuk-Dambietz, J. Szuba, M. Turcato, T. A. White, K. Wrona, C. Xu, M. H. Abdellatif, J. D. Zook, J. C. H. Spence, H. N. Chapman, A. Barty, R. A. Kirian, M. Frank, **A. Ros**, M. Schmidt, R. Fromme, A. P. Mancuso, P. Fromme and N. A. Zatsepin, *Membrane Protein Megahertz Crystallography at the European XFEL,* **Nature Communications** (2019) 10, 5021 DOI:10.1038/s41467-019-12955-3
10. D. Kim, *S. Gandhi*, A. Echelmeier, J. Cruz Villarreal, S. Quintana, *A. Egatz-Gomez*, **A. Ros***, *Electric Triggering for Enhanced Control of Droplet Generatio*n, **Analytical Chemistry** (2019) 91,792-9799 DOI: 10.1021/acs.analchem.9b01449
11. A. Echelmeier, D. Kim, J. Cruz Villarreal, J. Coe, S. Quintana, G. Brehm, *A. Egatz-Gomez*, R. G. Sierra, J. E. Koglin, A. Batyuk, M. S. Hunter, S. Boutet, N. Zatsepin, R. A. Kirian, T. D. Grant, P. Fromme, **A. Ros***, 3D printed droplet generation devices for serial femtosecond crystallography enabled by surface coating, **Journal of Applied Crystallography** (2019) 52, 997-1008 DOI:10.1107/S1600576719010343
12. A. Echelmeier, *M. Sonker,* **A. Ros*** *Microfluidic sample delivery for serial crystallography using X-ray free electron lasers,* **Analytical and Bioanalytical Chemistry** (2019) **411**, pages 6535–6547https://doi.org/10.1007/s00216-019-01977-x, Invited Review Article
13. *M. Sonker*, D. Kim, *A. Egatz-Gomez*, **A. Ros***, *Separation Phenomena in Tailored Micro- and Nanofluidic Environments,* **Annual Review of Analytical Chemistry** (2019) 12, 475–500 DOI:10.1146/annurev-anchem-061417-125758
14. I. Ishigami, A. Lewis-Ballester, A. Echelmeier, G. F. Brehm, N. Zatsepin, T. D. Grant, J. Coe, S. Lisova, G. Nelson, S. Zhang, Z. Dobson, S. Boutet, R. G. Sierra, A. Batyuk, P. Fromme, R. Fromme, J. C. H. Spence, **A. Ros**, S.-R. Yeh, D. L. Rousseau, *Snapshot of an Oxygen Intermediate in the Catalytic Reaction of Cytochrome c Oxidase*, **Proceedings of the National Academy of Sciences** (2019) 116, 3572-3577 DOI: 10.1073/pnas.1814526116
15. D. Kim, *M. Sonker*, **A. Ros***, *Dielectrophoresis: From Molecular to Micrometer-Scale Analytes*, **Analytical Chemistry**, 2019, 91, 277–295 DOI: 10.1021/acs.analchem.8b05454 **invited review article**
16. D. Kim, J. Luo, E. Arriaga, **A. Ros***, *Deterministic Ratchet for Sub-micrometer (Bio)particle Separation*, **Analytical Chemistry** (2018) 90, 4370-4379 DOI: 10.1021/acs.analchem.7b03774
17. M. T. Rabbani, C. F. Schmidt, **A. Ros***, *Single-Walled Carbon Nanotubes Probed with Insulator-Based Dielectrophoresis*, **Analytical Chemistry** (2017) 89, 13235–13244, DOI: 10.1021/acs.analchem.7b03105
18. *P. V. Jones*, G. L. Salmon, **A. Ros***, *Continuous Separation of DNA Molecules by Size Using Insulator- Based Dielectrophoresis*, **Analytical Chemistry** (2017), 89, 1531–1539, DOI: 10.1021/acs.analchem.6b03369
19. B. G. Abdallah, S. Roy-Chowdhury, R. Fromme, P. Fromme, **A. Ros***, *Protein Crystallization in an Actuated Microfluidic Nanowell Device*, **Crystal Growth & Design** (2016) 16, 2074-2082 DOI: 10.1021/acs.cgd.5b01748
20. J. Luo, K. Muratore, E. Arriaga, **A. Ros***, *Deterministic Absolute Negative Mobility for Micro- and Sub-micrometer Particles Induced in a Microfluidic Device*, **Analytical Chemistry** (2016) 88, 5920–5927 DOI: 10.1021/acs.analchem.6b00837
21. M. Yang, R. Nelson, **A. Ros***, *Toward Analysis of Proteins in Single Cells: A Quantitative Approach Employing Isobaric Tags with MALDI Mass Spectrometry Realized with a Microfluidic Platform*, **Analytical Chemistry** (2016) 88, 6672−6679, DOI: 10.1021/acs.analchem.5b03419

22. L. Gan, *Fernanda Camacho-Alanis*, **A. Ros***, *Polarizability of six-helix bundle and triangle DNA origami and their escape characteristics from a dielectrophoretic trap*, **Analytical Chemistry** (2015) 87, 12059−12064 DOI: 10.1021/acs.analchem.5b02524
23. B. G. Abdallah, N. A. Zatsepin, S. Roy-Chowdhury, J. Coe, C. E. Conrad, K. Dorner, R. G. Sierra, H. Paige Stevenson, F. Camacho Alanis, T. D. Grant, G. Nelson, D. R. James, G. Calero, J. C. H. Spence, U. Weierstall, P. Fromme, **A. Ros***, *Microfluidic sorting of protein nanocrystals by size for X-ray free-electron laser diffraction*, **Structural Dynamics** (2015) 2, 041719 DOI: 10.1063/1.4928688
24. B. G. Abdallah, J. Coe, S. Roy-Chadhury, P. Fromme, **A. Ros***, *High Throughput Protein Nanocrystal Fractionation in a Microfluidic Sorter,* **Analytical Chemistry** (2015) 87, 4159- 4167 DOI:10.1021/acs.analchem.5b00589
25. *F. Camacho-Alanis*, **A. Ros***, *Protein Dielectrophoresis and the Link to Dielectric Properties*, **Bioanalysis** (2015) 7, 353–371 DOI: 10.4155/BIO.14.306
26. A. Nakano, *F. Camacho-Alanis*, **A. Ros***, *Insulator-based dielectrophoresis with β-galactosidase in nanostructured devices*, Analyst (2015) 140, 860–868 DOI: 10.1039/C4AN01503G
27. C. Kupitz, S. Basu, I. Grotjohann, R. Fromme, N. A. Zatsepin, K. N. Rendek, M. S. Hunter, R. L. Shoeman, T. A. White, D. Wang, D. James, J.-H. Yang, D. E. Cobb, B. Reeder, R. G. Sierra, H. Liu, A. Barty, A. L. Aquila, D. Deponte, R. A. Kirian, S. Bari, J. J. Bergkamp, K. R. Beyerlein, M. J. Bogan, C. Caleman, *T.-C. Chao*, C. E. Conrad, K.M. Davis, H. Fleckenstein, L. Galli, S. P. Hau-Riege, S. Kassemeyer, H. Laksmono, M. Liang, L. Lomb, S. Marchesini, A. V. Martin, M. Messerschmidt, D. Milathianaki, K. Nass, **A. Ros**, S. Roy-Chowdhury, K. Schmidt, M. Seibert, J. Steinbrener, F. Stellato, L. Yan, C. Yoon, T. A. Moore, A. L. Moore, Y. Pushkar, G. J. Williams, S. Boutet, R. B. Doak, U. Weierstall, M. Frank, H. N. Chapman, J. C. H. Spence, P. Fromme, Serial time-resolved crystallography of photosystem II using a femtosecond X-ray laser **Nature** (2014) 513, 261-265, DOI: 10.1038/nature13453
28. A. Nakano, J. Luo, **A. Ros***, *Temporal and Spatial Temperature Measurement in Insulator-based Dielectrophoretic Devices*, **Analytical Chemistry** (2014) 86, 6516−6524 DOI: 10.1021/ac501083h
29. J. Luo, B. G. Abdallah, G. G. Wolken, E. A. Arriaga, **A. Ros***, *Insulator-based dielectrophoresis of mitochondria*, **Biomicrofluidics** (2014) 8, 021801 DOI: 10.1063/1.486685
30. S. Bhattacharya, *T.-C. Chao*, N. Ariyasinghe, Y. Ruiz, D. Lake, R. Ros, **A. Ros***, *Selective trapping of single mammalian breast cancer cells by insulator-based dielectrophoresis*, **Analytical and Bioanalytical Chemistry** (2014) 406, 1855-1865 DOI: 10.1007/s00216-013-7
31. W. B. Christenson, I. S. Yermolenko, B. Pochberger, *F. Camacho-Alanis*, **A. Ros***, T. P. Ugarova, R. Ros, *Combined single cell AFM manipulation and TIRFM for probing the molecular stability of multi-layer fibrinogen matrices*, **Ultramicroscopy** (2014) 136, 211-215 DOI: 10.1016/j.ultramic.2013.10.009
32. B. G. Abdallah, *T.-C. Chao*, C. Kupitz, P. Fromme, **A. Ros***, *Dielectrophoretic sorting of membrane protein nanocrystals,* **ACS Nano** (2013) 7, 9129–9137, DOI: 10.1021/nn403760q
33. B. G. Abdallah**,** C. Kupitz, P. Fromme, **A. Ros***, *Crystallization of the Large Membrane Protein Complex Photosystem I in a Microfluidic Channel***, ACS Nano** (2013) 7, 10534–10543, DOI: 10.1021/nn402515q
34. J.-U. Kreft, C. Plugge, V. Grimm, C. Prats, J. Leveau, T. Banitz, S. Baines, J. Clark, **A. Ros**, I. Klapper, C. Topping, T. Field, A. Schuler, E. Litchman, N. Mabrouk, F. Hellweger, *Mighty small: Observing and modeling individual microbes becomes big science***, Proceedings of the National Academy of Sciences** (2013) 110, 18027–18028 DOI: 10.1073/pnas.1317472110
35. L. Gan, *T.-C. Chao*, *F. Camacho-Alanis*, **A. Ros***, *Six Helix Bundle and Triangle DNA Origami Insulator-Based Dielectrophoresis*, **Analytical Chemistry** (2013) 85, 11427–11434, DOI: 10.1021/ac402493u
36. A. Nakano, **A. Ros***, *Protein Dielectrophoresis: Advances, Challenges and Applications*, **Electrophoresis,** (2013) 34, 1085–1096 DOI: 10.1002/elps.201200482 **invited contribution**
37. R. Martinez-Duarte, *F. Camacho-Alanis*, P. Renaud, **A. Ros***, *Dielectrophoresis of DNA using 3D Carbon Electrodes*, **Electrophoresis** (2013) 34, 1113-1122 DOI: 10.1002/elps.201200447
38. A. Nakano, *F. Camacho-Alanis*, *T.-C. Chao***, A. Ros***, *Tuning Streaming Dielectrophoresis of Proteins***, Biomicrofluidics** (2012) 6, 034108 DOI: 10.1063/1.4742695

39. M. Yang, *T.-C. Chao*, **A. Ros***, *Direct Detection of Peptides and proteins on a Microfluidic Platform with MALDI Mass Spectrometry*, **Analytical and Bioanalytical Chemistry** (2012) 404, 1681–1689 DOI: 10.1007/s00216-012-6257-3

40. *F. Camacho-Alanis*, L. Gan, **A. Ros***, *Transitioning Streaming to Trapping in DC Insulator-based Dielectrophoresis for Biomolecules*, **Sensors and Actuators B** (2012) 173, 668– 675 DOI: 10.1016/j.snb.2012.07.080

41. *T.-C. Chao*, S. Bhattacharya, **A. Ros***, *Microfluidic Gel Electrophoresis in the Undergraduate Laboratory Applied to Food Analysis*, **Journal of Chemical Education** (2012) 89, 125–129 DOI: 10.1021/ed101064p

42. A. Nakano, *F. Camacho-Alanis*, *T.-C. Chao*, **A. Ros***, *Immunoglobulin G and Bovine Serum Albumin Streaming Dielectrophoresis in a Microfluidic Device*, **Electrophoresis** (2011) 32, 2314-2322 DOI: 10.1002/elps.201100037 **invited contribution**

43. S. Bhattacharya, *T.-C. Chao*, **A. Ros***, *Insulator-Based Dielectrophoretic Single Particle and Single Cancer Cell Trapping*, **Electrophoresis** (2011) 32, 2550-2558 DOI: 10.1002/elps.201100066 **invited contribution**

44. A. Gencoglu, *F. Camacho Alanis*, V. T. Nguyen, A. Nakano, **A. Ros**, A. Minerick, *Quantification of pH Gradients and Implications in Insulator-Based Dielectrophoresis of Biomolecules*, **Electrophoresis** (2011) 32, 2436–2447 DOI: 10.1002/elps.201100090

45. M. Viefhues, S. Manchanda, *T.-C. Chao*, D. Anselmetti, J. Regtmeier, and **A. Ros***, *Physisorbed Surface Coatings in Poly(dimethylsiloxane) and Quartz Microfluidic Devices*, **Analytical and Bioanalytical Chemistry** (2011) 401, 2113-2122 DOI: 10.1007/s00216-011-5301-z

46. J. Regtmeier, L. Bugonovic, R. Eichhorn, **A. Ros**, D. Anselmetti, *Dielectrophoretic Trapping and Polarizability of DNA: The Role of Spatial Conformation*, **Analytical Chemistry** (2010) 82, 7141-7149 DOI: 10.1021/ac1005475

47. *T.-C. Chao*, **A. Ros***, Microfluidic Single Cell Analysis of Intracellular Compounds*, **J. Royal Society Interface** (2008) 5, S139-S150 DOI: 10.1098/rsif.2008.0233.focus

48. D. Greif, L. Galla, **A. Ros***, D. Anselmetti, *Single cell analysis in full body quartz glass chips with native UV laser-induced fluorescence detection*, **Journal of Chromatography A** (2008) 1206, 83-88 DOI: 10.1016/j.chroma.2008.07.013

49. J. Regtmeier, R. Eichhorn, S. Grauwin, D. Anselmetti, P. Reimann, **A. Ros***, *Acceleration of Absolute Negative Mobility*, **Journal of Separation Science** (2007) 30, 1461-1467

50. J. Regtmeier, T. T. Duong, R. Eichhorn, D. Anselmetti, **A. Ros***, *Dielectrophoretic manipulation of DNA: Separation and polarizability,* **Analytical Chemistry** (2007), 79, 3925-3932

51. J. Regtmeier, R. Eichhorn, T. Duong, P. Reimann, D. Anselmetti, **A. Ros***, *Pulsed-field Separation of Particles in a Microfluidic Device*, **European Physical Journal E** (2007) 22, 335-340

52. J. Regtmeier, R. Eichhorn, T. Duong, P. Reimann, D. Anselmetti, **A. Ros***, *Paradoxical Brownian Motion in a Microfluidic Device: Absolute Negative Mobility,* **European Physical Journal Special Topics** (2007) 143, 159–164 (

53. W. Hellmich, D. Greif, C. Pelargus, D. Anselmetti, **A. Ros***, *Improved native UV laser induced fluorescence detection for single cell analysis in poly(dimethylsiloxane) microfluidic devices,* **Journal of Chromatography A** (2006) 1130, 195-200

54. **A. Ros***, W. Hellmich, J. Regtmeier, T. T. Duong, D. Anselmetti, *Bioanalysis in Structured Microfluidic Systems,* **Electrophoresis** (2006) 27, 2651-2658

55. D. Anselmetti, N. Griemla, W. Hellmich, K. Leffhalm, **A. Ros**, R. Ros, and K. Tönsing, *Single Cell Analytics for NanoBiology*, **Nanobiotechnology** (2005) 1, 267-270

56. **A. Ros***, R. Eichhorn, J. Regtmeier, T. Duong, P. Reimann, D. Anselmetti, *Brownian Motion: Absolute Negative Particle Mobility*, **Nature** (2005) 436, 928

57. W. Hellmich, C. Pelargus, K. Leffhalm, **A. Ros***, D. Anselmetti*, Single Cell Manipulation, Analytics and Label-free Protein Detection in Microfluidic Devices for NanoSystems Biology*, **Electrophoresis** (2005) 26, 3689-3696

58. W. Hellmich, J. Regtmeier, T. Duong, R. Ros, D. Anselmetti, **A. Ros***, *Poly(oxyethylene) Based Surface Coatings for Poly(dimethylsiloxane) Microchannels*, **Langmuir** (2005) 21, 7551-7557 (
59. M. Streek, F. Schmid, T. Duong, D. Anselmetti, **A. Ros***, *Two-state migration of DNA in a structured microchannel*, **Phys. Rev. E** (2005) 71, 011905
60. M. Streek, F. Schmid, T. Duong, **A. Ros***, *Mechanisms of DNA separation in entropic trap arrays: A Brownian dynamics simulation*, **J. Biotechnology** (2004) 112, 79-89
61. **A. Ros***, W. Hellmich, T. Duong, D. Anselmetti, *Towards Single Molecule Analysis in PDMS microdevices: From the Detection of Ultra Low Dye Concentrations to Single DNA Molecule Studies*, **J. Biotechnology** (2004) 112, 65-72
62. R. Eckel, R. Ros, **A. Ros**, S.-D. Wilking, N. Sewald, D. Anselmetti, *Identification of Binding Mechanisms in Single Molecule - DNA Complexes,* **Biophysical Journal** (2003) 85, 1968-1973
63. T. Duong, G. Kim, R. Ros, M. Streek, F. Schmid, J. Brugger, D. Anselmetti, **A. Ros***, *Size Dependent Free Solution DNA Electrophoresis in Structured Microfluidic Systems*, **Microelectronic Engineering** (2003) 67-68C, 905-912
64. **A. Ros**, M. Faupel, H. Mees, J. van Ostrum, R. Ferrigno, F. Reymond, P. Michel, J. S. Rossier, H. H. Girault, *Protein Purification by Off-Gel Electrophoresis*, **Proteomics** (2002) 2, 151-156
65. **A. Schwarz**, O. Bagel, H. H. Girault, *A Sensitive Electrochemical Protein Quantification Method*, **Electroanalysis** (2000) 12, 811-815
66. J. S. Rossier, P. Bercier, **A. Schwarz**, S. Loridant, H. H. Girault, *Topography, Crystallinity and Wettability of Photoablated PET Surfaces*, **Langmuir** (1999) 15, 5173-5178
67. J. S. Rossier, **A. Schwarz**, F. Reymond, R. Ferrigno, F. Bianchi, H.H Girault, *Microchannel Networks for Electrophoretic Separations*, **Electrophoresis** (1999) 20, 727-731
68. **A. Schwarz**, J. S. Rossier, E. Roulet, N. Mermod, M. A. Roberts, H. H. Girault, *Micropatterning of Biomolecules on Polymer Substrates*, **Langmuir** (1998) 14, 5526-5531

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69. *D. Koh*, R. Ortiz, M. T. Rabbani, *M. Sonker*, C. Velasquez, E. A. Arriaga, Continuous Flow Deterministic iDEP Ratchet Devices for High-throughput Organelle Separation, **µTAS Proceedings** (2021) in press
70. A. Manna, *M. Sonker*, A. Ros* *Microfluidic devices for membrane protein crystallization and structure determination* **µTAS Proceedings** (2021) in press
71. J. Cruz Villarreal, R. Kruithoff, R. Ros, **A. Ros*** *Protein Analysis from Small Cell Ensembles by An Integrated Microfluidic Mass Spectrometry Assay*, **µTAS Proceedings** (2021) in press
72. D. Doppler, *M. Sonker*, *A. Egatz-Gomez*, G. Nelson, M. T. Rabbani, J. Cruz Villarreal, R. Nazari, S. Zaare, D. Thiefault, S. Botha, T. Grant, P. Fromme. R. Kirian, **A. Ros*** *Electronically Stimulated Segmented Flow for Reduced Sample Consumption During Serial Femtosecond Crystallography*, **µTAS Proceedings** (2021) in press
73. J. Cruz Villarreal, *A. Egatz-Gomez*, J. Liu, R. Ros, P. D. Coleman, **A. Ros***, *Amyloid β Analysis from Microdissected Brain Cells Using Microfluidics and MALDI Mass Spectrometry*, **µTAS Proceedings** (2020) 711-712
74. M. T. Rabbani, C. F. Schmidt, **A. Ros***, *Manipulation of Biomolecules using a 3D-Printed Insulator-based Dielectrophoresis Device*, **µTAS Proceedings** (2020) 651-652
75. D. Kim, *S. Gandhi*, A. Echelmeier, J. Cruz Villarreal, S. Quintana, *A. Egatz-Gomez*, **A. Ros***, Electric Triggering for Serial Femtosecond Crystallography using 3D-printed Microfluidics, **µTAS Proceedings** (2019) 1470-1471
76. A. Echelmeier, J. Cruz Villarreal, D. Kim, *S. Gandhi*, *A. Egatz-Gomez*, D. Thifault, J. D. Coe, G. Brehm, C. Madsen, S. Quintana, S Bajit, M. Messerschmidt, J. Domingo Meza-Aguilar, D. Oberthür, M. O. Wiedorn, H. Fleckenstein, S. Botha, D. Mendez, J. Knoska, J. Martin Garcia, H. Hu, S. Lisova, A. Allah Gholi, Y. Geverkov, K. Ayyer, S. Aplin, H. M. Ginn, H. Graafsma, A. J. Morgan, D. Greiffenberg, A. Klujev, T. Laurus, J. Pöhlsen, U. Trunk, R. R. N. C. Maia, D. Mezza, R. Fromme, B. Weinhausen, G. Mills, P. Vagovic, Y. Kim, J. Schulz, K. Dörner, J. Sztuk-Dambietz, M. Kuhn, T. D. Grant, T. A. White, V. Mariani, A. Barty, A. P. Mancuso, U. Weierstall, J. C. H. Spence, H. N. Chapman, N. A. Zatsepin, P. Fromme, R. A. Kirian, **A. Ros***,

Sample Consumption Reduction for Serial Crystallography using Water-in-Oil Droplets, **µTAS Proceedings** (2019) 1476-1477

77. J. Cruz Villarreal, S. Williams, *A. Egatz-Gomez*, P. D. Coleman, D. Nedelkov, M. R. Sierks, **A. Ros***, *Alzheimer Disease Specific Markers Detected with Microfluidic MALDI Mass Spectrometry (MIMAS)*, **µTAS Proceedings** (2017), 1287-1288
78. M. T. Rabbani, C. F. Schmidt, **A. Ros***, *Towards Separation of Single Walled Carbon Nanotubes With Insulator-Based Dielectrophoresis*, **µTAS Proceedings** (2017), 1342-1343
79. G. Brehm, A. Echelmeier, J. Coe, C. Smith, G. Nelson, J. Cruz Villarreal, U. Weierstall, J. C. H. Spence, S. Köster, P. Fromme, **A. Ros***, *Combined Hydrodynamic Mixer and Gas Dynamic Virtual Nozzle Devices for Serial Fermtosecond Crystallography*, **µTAS Proceedings** (2017), 1495-1496
80. A. Echelmeier, G. Nelson, B. G. Abdallah, D. James, S. Roy-Chowdhury, A. Tolstikova, V. Mariani, R. A. Kirian, D. Oberthüer, K. Dörner, P. Fromme, H. N. Chapman, U. Weierstall, J. C. H. Spence, **A. Ros***, *Biphasic Droplet-Based Sample Delivery of Protein Crystals for Serial Femtosecond Crystallography with an X-Ray Free Electron Laser*, **µTAS Proceedings** (2015) 1374-1376
81. B. G. Abdallah, M. Sawtelle, **A. Ros***, *High Throughput Nanoparticle Sorting for Serial Femtosecond Crystallography,* **µTAS Proceedings** (2014) 1305-1307
82. A. Nakano, *F. Camacho Alanis*, **A. Ros***, *Insulator-based Dielectrophoretic Behavior of β-Galactosidase under DC and Low Frequency AC Conditions,* **µTAS Proceedings** (2014) 2468-2470
83. M. Yang, *T.-C. Chao*, R. Nelson, **A. Ros***, *Protein identification and quantification for single cell analysis by coupling a microfluidic platform with MALDI-TOF,* **µTAS Proceedings** (2013) 1039-1041
84. B. Abdallah, *T.-C. Chao*, P. Fromme, **A. Ros***, *Size Based Nanoparticle Separation using Dielectrophoretic Focusing for Femtosecond Nanocrystallography of Membrane Proteins,* **µTAS Proceedings** (2012) 458-460
85. R. B. Doak, D. P. De Ponte, G. Nelson, *F. Camacho-Alanis*, **A. Ros***, J .C. H. Spence, U. Weierstall, Microscopic Linear Liquid Streams in Vacuum: Injection of Solvated Biological Samples into X-Ray Free Electron Lasers, Rarefied Gas Dynamics Symposium, **AIP Conf. Proc. 1501** (2012) 1314-1323
86. A. Nakano, *F. Camacho-Alanis*, T.-C. Chao, **A. Ros***, *Systematic Investigation of Insulator-Based Protein Dielectrophoresis Under DC Condition,* **µTAS Proceedings** (2011), 644-646
87. J. Regtmeier, R. Eichhorn, P. Reimann, **A. Ros***and D. Anselmetti, *DNA Diffusion Control*, **µTAS Proceedings** (2008) 2, 1480-1482
88. J. Regtmeier, H. Höfemann, R. Eichhorn, D. Anselmetti, **A. Ros***, *Separation and Polarizability of DNA by Dielectrophoresis*, **µTAS Proceedings** (2007), 242-246
89. D. Greif, D. Anselmetti, **A. Ros***, *Single Cell Analysis by Native UV Laser Induced Fluorescence Detection in a PDMS Microfluidic Chip*, **µTAS Proceedings** (2007), 176-178
90. J. Regtmeier, T.T. Duong, **A. Ros***, D. Anselmetti, *Fast Separation of λ- and T2-DNA with Electrodeless Dielectrophoresis*, **µTAS Proceedings** (2006), 383-385
91. J. Regtmeier, R. Eichhorn, P. Reimann, **A. Ros***, D. Anselmetti, *Acceleration of Absolute Negative Mobility for Particle Sorting in a Microfluidic Device*, **µTAS Proceedings** (2006), 648-650
92. W. Hellmich, K. Leffhalm, A. Sischka, T. Duong, N. Jensen, K. Niehaus, K. Tönsing, **A. Ros***, and D. Anselmetti, *Towards Single Cell Fingerprinting in Microfluidic Device Format: Single Cell Manipulation, Protein Separation and Detection*, **µTAS Proceedings** (2005) 1, 406-408
93. J. Regtmeier, T. Duong, R. Eichhorn, D. Anselmetti, P. Reimann, and **A. Ros***, *Novel Migration Phenomena in Structured Microfluidic Devices*, **µTAS Proceedings** (2005) 1, 340-342
94. T. Duong, M. Streek, R. Ros, F. Schmid, **A. Ros***, D. Anselmetti, *Gel-free Electrophoresis of λ- and T2-DNA in Structured Microfluidic Devices*, **Proceedings of µTAS** (2003) 1, 749-752
95. J. S. Rossier, **A. Schwarz**, F. Bianchi, F. Reymond, R. Ferrigno, H. H. Girault, *Polymer Micro-Structures: Prototyping, Low-Cost Mass Production and Analytical Applications*, **Proceedings of µTAS** (2000), 159-162
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Non-Reviewed Conference Proceedings:

97. B. G. Abdallah, **A. Ros***, *Integrating microfluidic concepts in the undergraduate analytical curriculum and for high school student outreach projects*, Abstracts of papers of the American Chemical Society (2014) 248, ANYL 380
98. **A. Ros***, *Dielectrophoretic separation of DNA*, Abstracts of papers of the American Chemical Society (2009) 238, ANYL 332
99. N. Sewald, S.D. Wilking, R. Eckel, **A. Ros**, R. Ros, D. Anselmetti, *Probing DNA-Peptide Interaction Forces on the Single Molecule Level*, **Journal of Peptide Science** (2004) 10, 261
100. S. D. Wilking, R. Eckel, R. Ros, **A. Ros**, D. Anselmetti, N. Sewald, *Sequence-Dependent Interaction between Aliphatic Helical Peptides and DNA*, **Journal of Peptide Science** (2004) 10, 266

Patents:

101. A. Echelmeier, A. Egatz-Gomez, D. Kim, S. Quintana, J. Cruz Villarreal, **A. Ros**, *Metal Electrode Based 3D Printed Device for Tuning Droplet Generation Frequency and Synchronizing Phase for Serial Femtosecond Crystallography*, **U.S. patent** 10,969,350 (2021)
102. D. Kim, J. Luo, **A. Ros**, *A Deterministic Ratchet for Sub-micrometer (Bio)particle Separation,* **U.S. patent 11,173,487** (2021)
103. A. Ros, A. Egatz-Gomez, Continuous Synthesis of Upconverting Nanoparticles**, full patent** filed (2021), case No M20-122P
104. A. Ros, M. T. Rabbani, C. Schmidt, Length Selective Dielectrophoretic Manipulation of Single-Walled Carbon Nanotubes, **provisional patent** filed (2021) case No M21-142P
105. A. Ros, J. Spence, D. Doppler, R. Kirian, R. Nazari, M. Sonker, M. Rabbani, A. Egatz-Gomez, *Modular 3-D Printed Devices For Sample Delivery,* **full patent** filed (2021), case No M21-085P
106. G. Brehm, G. Nelson, A. Echelmeier, J. Spence, U. Weierstall, **A. Ros**, *3D Printed Microfluidic Mixers and Nozzles for Crystallography*, **U.S. patent** 10,557,807 (2020)
107. D. Kim, A. Echelmeier, D. Doppler, J. Cruz Villarreal, R. A. Kirian, R. Nazari, **A. Ros**, *Co-Flow Injection for Serial Crystallography Using a 3D-Printed Hybrid Nozzle/T-Junction Device*, **full patent** filed (2020) case No M19-280P
108. D. Kim, D. Doppler, J. Cruz Villarreal, S. Gandhi, R. A. Kirian, A. Ros, *Droplet Generation and Injection for Serial Crystallography Using a 3D-Printed Hybrid Nozzle/T-Junction/Electrodes Device*, provisional patent filed (2020) case No M19-281P
109. B. Abdallah, **A. Ros**, *Methods, Systems and Apparatus for Microfluidic Crystallization Based on Gradient Mixing,* **U.S. patent** 10,166,542 (2018)
110. J. Luo, M. Yang, D. Kim, **A. Ros**, *Tunable Insulator-Based Dielectrophoresis (iDEP) with Membrane Valves* **provisional patent** application filed (2016) case No. M16-249P (**full patent submitted**)
111. B. Abdallah, T.-C. Chao, **A. Ros**, *Methods, Systems and Apparatus for Size-Based Particle Separation*, **U.S. patent** 14041712 (2015)
112. **A. Ros**, J. Rossier, M. D. Faupel, H. H. Girault, *New Electrophoresis Method and Apparatus Thereof*, **U.K. patent** 0010957.9 (2000) also WO 0186279, US 2003104449, EP 1281073, DE 60112276T

Book chapters:

113. M. Sonker, B. Abdallah, **A. Ros***, *Surface coating of microfluidic-based medical devices*, in "Microfluidic devices for biomedical applications", XiuJun James Li and Yu Zhou (Editors), 2nd edition, **invited chapter**, Woodhead Publishing, August 5 (2021)
114. J. Coe and **A. Ros***, *Small is Beautiful: Growth and Detection of Nanocrystals*, in "X-ray Free Electron Lasers - A Revolution in Structural Biology", Petra Fromme, Mark Hunter and Sebastien Boutet (Editors), **invited chapter** Springer (2018) ISBN 978-3-030-00550-4
115. B. Abdallah, **A. Ros***, *Surface coating of microfluidic-based medical devices*, in "Microfluidic devices for biomedical applications", XiuJun James Li and Yu Zhou (Editors), **invited chapter**, Woodhead Publishing (2013) ISBN-13: 978 0 85709 697 5

116. D. Greif, **A. Ros***, *Protein Analysis of Single Cells in Microfluidic Format*, in "Single Cell Analysis", Dario Anselmetti (Editor), Wiley VCH (2009) ISBN: 978-3-527-31864-3
117. W. Hellmich, C. Pelargus, K. Leffhalm, **A. Ros**, D. Anselmetti*, Single Cell Manipulation, Analytics and Label-free Protein Detection in Microfluidic Devices for NanoSystems Biology* in Microfluidic Applications in "Biology: From Technologies to Systems Biology", N. Lion, J. S. Rossier, H. H. Girault (Editors), Wiley VCH (2007) ISBN 3-527-31761-9
118. J. Martini, W. Hellmich, D. Greif, A. Becker, Th. Merkle, R. Ros, **A. Ros**, K. Toensing, and D. Anselmetti, *Systems Nanobiology: From Quantitative Single Molecule Biophysics to Microfluidic-Based Single Cell Analysis*, in "Subcellular Proteomics", Michel Faupel and Eric Bertrand (Editors), Springer, Heidelberg, (2007) ISBN: 978-1-4020-5942-1

Theses:

119. **A. Ros**, *Migration Phenomena and Single Cell Analysis in Microfluidic Systems (translated title)*, Habilitation, Bielefeld University (2007)
120. **A. Ros**, *New Protein Separation and Analysis Techniques*, Dissertation, École Polytechnique Fédéral de Lausanne (2000)
121. **A. Schwarz**, *Immobilization of Antibodies and Proteins for the Application in Acoustic Sensors (translated title)*, Diploma Thesis, Universität Heidelberg (1995)

Other invited scholarly publications:

122. **A. Ros**, *Applications of microfluidic systems in biology and medicine* by Manabu Tokeshi, Book Review, **Analytical and Bioanalytical Chemistry**, (2020) in press **DOI:** 10.1007/s00216-020-02437-7
123. **A. Ros**, M. K. Donais, *Great SciX-pectations*, **The Analytical Scientist** (2016) 42, 4
124. **A. Ros**, E. Goluch, *AES sessions at SciX conference – What is coming up?* Article for the **American Electrophoresis Society** January **Newsletter** (2013)
125. **A. Ros**, *Biomolecular Dielectrophoresis*, **Focus Article for the American Electrophoresis Society**, published online: http://www.aesociety.org/areas/nanoscale_biomolecule_dep.php (2011)
126. **A. Ros**, *Microchip Methods in Diagnostics* by Ursula Bilitewski, Book Review, **Analytical and Bioanalytical Chemistry**, (2010) 397, 899 **DOI:** 10.1007/s00216-010-3598-7
127. **A. Ros**, *Microfluidics in cell analysis*, **Editorial**, Special Issue in **Analytical and Bioanalytical Chemistry**, (2008) 390, 799-800 **DOI:** 10.1007/s00216-007-1758-1
128. **A. Ros**, *Microfluidic Technologies for Miniaturized Analysis Systems* by Steffen Hardt and Friedhelm Schoenfeld, Book Review, **Analytical and Bioanalytical Chemistry**, (2008) 392, 777-778 **DOI:** 10.1007/s00216-008-2284-5
129. R. Ros, **A. Ros**, K. Tönsing, D. Anselmetti, *Biomoleküle im Visier*, **Forschung an der Universität Bielefeld** (2002) 24, 3-7

Presentations

98 overall (conference presentations & seminar talks)
69 Invited Talks including 4 keynote lectures, 3 plenary lectures, 1 tutorial lecture, 34 department seminars, 16 invited conference talks, 5 workshop lectures

* indicates international conference	† indicates keynote/plenary lecture

1. *†A. Ros, 14th International Conference on Synchrotron Radiation Instrumentation, (03.2022) Hamburg, Germany, **Invited Keynote Talk** (postponed from 2021 due to Covid-19)
2. A. Ros, *How to exploit the micronenvironment for bioanalysis,* (02.2022) Chalk Talk, Biodesign Institute, ASU**, Invited Talk**

3. D. Koh, R. Ortiz, M. Sonker, *****A. Ros, *Deterministic iDEP Ratchet Devices for High-throughput Organelle Separation***,** (09/2021) SciX Conference Contributed Talk
4. *A. Ros, *Microfluidic Tools Reducing Sample Amount in Serial Crystallography with XFELs*, IUCr Meeting, (08.2021) Prague, Czech Republic, **Invited Conference Talk**
5. *A. Ros, IUPAC/CCCE Conference (08.2021), *How to exploit the micronenvironment for bioanalysis*, **Invited Conference Talk** – remote conference
6. *A. Ros, *Potentials of Dielectrophoresis for an Analytical Chemist*, DEP Conference (07.2021), Flagstaff, Arizona, hybrid conference, **Invited Keynote Talk**
7. A. Ros, *Injection techniques for serial femtosecond crystallography with XFELs*, BioXFEL Summer Internship Program (06.2021) **Invited Presentation**
8. A. Ros, *How to exploit the micronenvironment for bioanalysis*, Department of Chemistry and Biochemistry, University of Arkansas (02.2021) **Invited Department Seminar**
9. *A. Ros, *Microfluidic tools for crystallography*, Towards a liquid standardization at EuXFEL Workshop (10.2020), **Invited Workshop Talk**
10. *†A. Ros, *Separations and Serial Crystallography in Microenvironments*, SciX (10.2020) **Invited Plenary Talk**
11. *A. Ros, *Microfluidic Tools Facilitating Time-Resolved Crystallography*, SSRL/LCLS User Conference (10.2020) **Invited Workshop Talk**
12. *A. Ros, *Sample delivery for serial femtosecond crystallography with XFELs*, BioXFEL Summer Internship Program, **Invited Presentation**
13. A. Ros, Biodesign Fusion, (2020) **Invited Talk** – cancelled due to Covid-19
14. *****A. Ros, *Microfluidic Tools for Serial Crystallography*, Centre of Excellence in Advance Molecular Imaging (ARC CoE AMI) 'XFEL Serial Crystallography workshop', Melbourne, Australia, (05.2019) **Invited Workshop Talk**
15. A. Ros, *Separations and Serial Crystallography in Microenvironments*, School of Molecular Sciences, Arizona State University, AZ (08/2019) Department Seminar
16. A. Ros, *Microenvironments for Effective Particle Separation and Tools for Crystallography*, University of Kansas, Kansas City, KS (04.2019) **Invited Department Seminar**
17. *****A. Ros, *Electrically Triggered Water-in-Oil Droplets for Serial Femtosecond Crystallography*, 6th Ringberg Workshop on Structural Biology with FELs (02.2019), Tegernsee, Germany, **Invited Conference Talk – conference is by invitation only**
18. *†A. Ros, *Electrically Triggered Water-in-Oil Droplets for Serial Femtosecond Crystallography*, SciX Conference, Atlanta, GA (10.2018) **Invited Talk – Innovation Award Finalist**
19. *†A. Ros, *Non-intuitive Separation Schemes for Nanometer-sized Particles and Subcellular Organelles, HPLC Conference*, Washington DC (08.2018), **Invited Keynote Lecture**
20. A. Ros, *Microfluidic* Tools for Crystallography, University of Buffalo, Buffalo, NY (05.2018), **Invited Department Seminar**
21. A. Ros, *Microfluidic Tools for Serial Femtosecond Crystallography with XFELs*, BioXFEL Annual Review Meeting, Buffalo, NY (05.2018), **Invited Talk**
22. A. Ros, *Droplet microfluidics for serial femtosecond crystallography with XFELs*, Workshop: New Opportunities at the European XFEL Workshop, New Orleans, LO (02.2018), **Invited Talk**
23. *****A. Ros, *Droplet microfluidics for serial femtosecond crystallography with XFELs*, 5th International BioXFEL Conference, New Orleans, LO (02.2018), **Invited Talk**
24. A. Ros, *Ratchets and other approaches for sub-micrometer bioparticle separation*, Pittcon Conference, Orlando, FL (02.2018) **Invited Talk**
25. A. Ros, *Dielectrophoresis Based Separation Applications*, Pittcon Conference, Orlando, FL (02.2018) **Invited Talk**
26. A. Ros, *Tailored microenvironments for bioparticle separation, novel approaches in crystallography and single cell analysis*, North Carolina State University, Raleigh, NC (11.2017) **Invited Seminar Talk**

27. A. Ros, *Organelle Separation with a Microfluidic Ratchet*, AIChE / AES annual meeting, Minneapolis, MN (10.2017) **Invited Conference Talk**
28. *A. Ros, *Tunable Insulator-Based Dielectrophoresis for Biomolecule and Bioparticle Pre-concentration and Separation*, SciX, Reno, NV (10.2017), **Invited Conference Talk**
29. *A. Ros, *Microfluidic Droplet Generators and Mixers for Serial Crystallography*, Opportunities for microfluidic devices at Free-Electron Lasers, European XFEL, Hamburg, Germany (06.2017) **Invited Workshop Presentation**
30. *A. Ros, *Microfluidic Tools for Serial Crystallography*, 4th International BioXFEL Conference, Las Vegas, NV (01.2017) **Invited Conference Talk**
31. A. Ros, Dielectrophoretic Sorting of Plasmid and Genomic DNA, AIChE /AES Annual Meeting, San Francisco, CA (11.2016) **Invited Conference Talk**
32. *A. Ros, Dielectrophoretic Sorting of Plasmid and Genomic DNA, SciX, Minneapolis, MN (08.2016), Conference Talk
33. *A. Ros, Microfluidics for Serial Femtosecond Crystallography, Physics Department, Georg-August University Göttingen, Göttingen, Germany (02.2016) **Invited Seminar Talk**
34. A. Ros, *Deterministic Absolute Negative Mobility for sub-micrometer Bioparticle Separation*, AES (Electrophoresis Society) Annual Meeting, Salt Lake City, Utah (11.2015) Conference Talk
35. *A. Ros, Deterministic Absolute Negative Mobility for Sub-Micrometer Particle and Organelle Separation, FSM 2015 - International Biophysics Conference on Fluorescence Microscopy, Spectroscopy and Molecular Cell Mechanics, Mallorca, Spain (09.2015), **Invited Talk**
36. *A. Ros, *How we exploit dielectrophoresis for biomolecule and particle separation*, SALSA Summer School, Humboldt University Berlin (10-2015), **Invited Talk and Challenge Session**
37. *A. Ros, *Novel Routes for Biomolecular and Bioparticle Separation on Microfluidic Platforms*, FFF 2014, International Symposium on Field- and Flow-Based Separations, Salt Lake City, Utah (10.2014) **Invited Plenary Talk**
38. *A. Ros, *Dielectrophoresis Induced Paradoxical Migration for Particle Separation*, SciX 2014, (10.2014) Conference Talk
39. *A. Ros, *Microfluidic Tools for Structure Determination of Membrane Proteins*, 15th International Conference on the Crystallization of Biological Macromolecules, (09.2014) **Invited Conference Talk**
40. B. G. Abdallah, A. Ros, *Integrating Microfluidic Concepts in the Undergraduate Analytical Curriculum and for High School Student Outreach Projects*, ACS Fall Meeting (08.2014), San Francisco, **Invited Conference Talk**
41. B. G. Abdallah, C. Kupitz, P. Fromme, A. Ros, *Microfluidic Tools for Structure Determination of Proteins*, Gordon conference – Bioanalytical Sensors, Newport, Rhode Island (06.2014) Poster (selected among top 25 posters)
42. L. Gan, F. Camacho-Alanis, A. Ros, *Insulator-based Dielectrophoresis of DNA Origami*, FNANO14 (04.2014**) Invited Conference Talk**
43. *A. Ros, Microfluidics in the Undergraduate Analytical Lab and in Outreach Projects,* Southwestern Analytical Chemistry Professor Meeting, Arizona State University (01.2014) Conference Talk
44. B. Abdallah, C. Kupitz, P. Fromme, A. Ros, *Fractionation of Nanocrystals for Femtosecond Nanocrystallography of Membrane Proteins*, AIChE and AES Annual Meeting, San Francisco (11.2013) Conference Talk
45. L. Gan, T.-C. Chao, F. Camacho Alanis, H. Yan and A. Ros, *Insulator Based Dielectrophoresis for the Manipulation of DNA Origami*, AIChE and AES Annual Meeting, San Francisco (11.2013) Conference Talk
46. A. Ros, *Beyond Miniaturization: Tailored Microfluidic Platforms for Biomolecular Dielectrophoresis and Mass Spectrometry*, Purdue University, Department of Chemistry, West Lafayette (09.2013) **Invited Department Colloquium**
47. A. Ros, Beyond Miniaturization: Tailored Microenvironments for Bioanalysis, Arizona State University, Tempe (08.2013) **Department Colloquium**

48. *A. Ros, *A Hyphenated Microfluidics and Mass Spectrometric Approach for Single Cell Analysis*, Single Cell Genomics and Transcriptomics Asia Congress, Singapore (06.2013) **Invited Conference Lecture**
49. *A. Ros, *Dielectrophoresis Applied to Biomolecule Manipulation and Nanocrystal Sorting,* ISCC Conference, Palm Springs (05.2013) **Invited Conference Lecture**
50. A. Ros, *Exploiting Microfluidic Environments for Dielectrophoresis of Biomolecules and Nanocrystals*, University of Arizona, Department of Chemistry, Tucson (05.2013) **Invited Department Colloquium**
51. A. Ros, *Exploiting Microfluidic Environments for Dielectrophoresis of Biomolecules and Nanocrystals*, Indiana University, Department of Chemistry, Bloomington (02.2013) **Invited Department Seminar**
52. A. Ros, *Nanocrystal Sorting in a Microfluidic Device*, Southwestern Analytical Chemistry Professor Meeting, Fort Collins, CO (01.2013) Conference Talk
53. A. Ros, *Microfluidic Tools for Bioanalysis*, Nanoscience Seminar, Department of Physics, ASU (11.2012) **Invited Seminar Talk**
54. A. Nakano, K. Bush, A. Ros, *Temperature Measurement in a Microfluidic Device for Insulator-Based Dielectrophoretic Applications*, AIChE meeting and AES annual meeting (10.2012) Conference Talk
55. A. Nakano, F. Camacho-Alanis, T.-C. Chao, A. Ros, *Protein Streaming via Insulator-Based Dielectrophoresis in a Microfluidic Platform* AIChE meeting and AES annual meeting (10.2012) Conference Talk
56. A. Ros, *Two Examples Showing the Potential of Microfluidics for Biomolecule Analysis: Dielectrophoresis and Single Cell Mass Spectrometry*, University of California San Diego, (04.2012) **Invited Department Colloquium**
57. A. Ros, *Beyond Miniaturization: Tailored Microenvironments for Bioanalytical Applications*, IBM Research Laboratories, Rueschlikon, Switzerland (02.2012) **Invited Seminar**
58. *†A. Ros, *Biomolecule Dielectrophoresis*, Microscale Bioseparations (MSB) Conference, Geneva, Switzerland (02.2012) **Invited Tutorial Talk**
59. M. Yang, T.-C. Chiao, R. Nelson, A. Ros, *Direct coupling of microfluidics and MALDI mass spectrometry for the detection of peptides and proteins with single cell sensitivity*, Microscale Bioseparations (MSB) Conference, Geneva, Switzerland (02.2012) Poster
60. A. Ros, *Direct coupling of microfluidics and MALDI mass spectrometry for single cell analysis* Southwestern Analytical Chemistry Professor Meeting 2012, Tuscon, AZ (01.2012) Conference Talk
61. A. Ros, F. Camacho-Alanis, A. Nakano, T.-C. Chao, *Insulator-Based Dielectrophoresis Applied to Immunoglobuline G and Bovine Serum Albumin Concentration*, AIChE meeting and AES annual meeting (10.2011) Conference Talk
62. *†A. Ros, *Dielectrophoretic Manipulation of Biomolecules in Micro- and Nanofluidic Devices*, FACSS (Federation of Analytical Chemistry and Spectroscopy) Conference, Reno (10.2011) **Invited Keynote Lecture**
63. L. Gan, H. Yan, A. Ros, *Dielectrophoretic Manipulation of Naturally Occurring and Origami DNA*, FACSS (Federation of Analytical Chemistry and Spectroscopy) Conference, Reno (10.2011) Conference Talk
64. A. Ros, *Dielectrophoretic Manipulation of Biomolecules in Micro- and Nanofluidic Devices*, Arizona State University, Tempe (09.2011) **Invited Nanoscale Science Seminar**
65. A. Ros, *Single Cell Analysis on Microfluidic Platforms*, NIMBIOS Investigative Workshop - Individual-based Ecology of Microbes, Knoxville (06.2011), **Invited Workshop Presentation**
66. *A. Ros, *Beyond Miniaturization: Microstructure induced bioanalytics in lab-on-a-chip platforms*, Ecole Polytechnique Federal de Lausanne, Switzerland (04.2011), **Invited Seminar**
67. *A. Ros, *Beyond Miniaturization: Tailored Microenvironments for Bioanalytical Applications*, Universitaet Wien, Austria (04.2011), **Invited Department Colloquium**
68. A. Ros, *Microstructure induced bioanalytics in lab-on-a-chip platforms*, Arizona State University, Tempe (03.2011) **Invited Department Colloquium**
69. A. Ros, *Manipulating Biomolecules by Dielectrophoresis* FACSS (Federation of Analytical Chemistry and Spectroscopy Society) Meeting, Raleigh, NC (10.2010) Conference Talk
70. A. Ros, *Dielectrophoresis of Proteins for Rapid, Gel-Free Separation and Concentration,* Nanotech Conference, Montreux, Switzerland (11.2010) Conference Talk

71. A. Ros, *Microstructure induced biomolecular separation and single cell analysis in a lab-on-a-chip*, Biophysics Seminar Series, University of California, Davis (05.2010) **Invited Department Colloquium**
72. A. Ros, *Microstructure induced biomolecular separation and single cell analysis in a lab-on-a-chip*, Young Investigator Symposium, PMSE, ACS Meeting (03.2010) **Invited Conference Lecture**
73. *†A. Ros, *Towards a single cell laboratory on a chip*, HTC-11 Brugge, Belgium (01.2010) **Invited Keynote Lecture**
74. A. Ros, *Dielectrophoretic Fractionation of Biomolecules in a Microfluidic Device*, FACSS Conference, Louisville KY (10.2009) **Invited Conference Lecture**
75. A. Ros, *Dielectrophoretic Separation of DNA*, ACS Meeting, Washington DC (08.2009) **Invited Conference Lecture**
76. A. Ros, *Towards a Single Cell Laboratory on a chip, California State University Los Angeles*, Department of Chemistry and Biochemistry Seminar (11.2009) **Invited Department Colloquium**
77. *A. Ros, *Microfluidics towards single cell analytics and non-intuitive separation routes*, Chemical Nanotechnology Talks IX, Frankfurt (a.M.), Germany (11.2008) **Invited Conference Lecture**
78. A. Ros, *Towards a single cell laboratory on a chip*, Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada (10.2008) **Invited Department Seminar**
79. A. Ros, *DNA Dielectrophoresis in Microfluidic Obstacle Courses*, Nanotech Conference, Montreux, Switzerland (11.2007) Conference Talk
80. A. Ros, *Insight Microfluidics*, 13. Internationaler Kongress Frauen im Ingenieurberuf, Bielefeld, Germany (9.2007) **Invited Conference Lecture**
81. A. Ros, *Inside Microfluidic Systems: Migration Phenomena and Single Cell Analysis*, Department of Chemistry, Geneva University, Switzerland (06.2007) **Invited Department Colloquium**
82. A. Ros, *Inside Microfluidic Systems: Migration Phenomena and Single Cell Analysis*, Department of Physics, Arizona State University, Tempe, USA (05.2007) **Invited Department Colloquium**
83. A. Ros, *Inside Microfluidics: Migration Phenomena and Single Cell Analysis*, Sony Stuttgart, Germany (02.2007) **Invited Talk**
84. A. Ros, *Inside Microfluidics: Migration Phenomena and Single Cell Analysis*, Karlsruhe University, Karlsruhe, Germany (02.2007) **Invited Department Colloquium**
85. A. Ros, *Microfluidic Single Cell Analysis*, University of Rouen, France (02.2007) **Invited Department Seminar**
86. *†A. Ros, *Inside Microfluidics: Migration Phenomena and Single Cell Analysis*, Nanotech Conference, Montreux, Switzerland (11.2006), **Invited Plenary Lecture**
87. A. Ros, *Poly(dimethylsiloxane: Beloved and Detested Substrate in Microfluidics*, Physics of Complex Fluids Group, Twente University, Netherlands (10.2006) **Invited Department Colloquium**
88. A. Ros, *Inside Microfluidics: Migration Phenomena and Single Cell Analysis*, Leiden/Amsterdam Center for Drug Research, Leiden University, Netherlands (08.2006) **Invited Department Colloquium**
89. A. Ros, *Inside Microfluidics: Migration Phenomena and Single Cell Analysis*, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, Institute of Chemical Sciences and Engineering (05.2006) **Invited Department Colloquium**
90. *†A. Ros, *Single Cell Analysis and Particle Sorting in Microfluidic Format*, Symposium on "Microfluidic Single Cell Analysis" of the Danish Society for Flow Cytometry, Copenhagen, Denmark (04.2006), **Invited Plenary Lecture**
91. J. Regtmeier, T.T. Duong, D. Anselmetti, A. Ros, *Sorting in Structured Microfluidic Devices,* Deutsche Physikalische Gesellschaft (DPG) - Spring Meeting of the Division Condensed Matter, Dresden, Germany (03.2006), **Invited Keynote Lecture**
92. A. Ros, *Migrationsphänomene und Einzelzellanalytik in Mikrofluidiksystemen*, Physics Faculty, Leipzig University, Germany (02.2006) **Invited Department Colloquium**
93. *A. Ros, *New Perspectives in Microfluidics: Single Cell Analytics and Paradoxical Migration Mechanisms*, Summer School on Biosensing in Channels, International University Bremen, Germany (08.2005) **Invited Summer School Lecture**

94. A. Ros, *The Challenge of DNA Separation*, Condensed Matter Theory, Bielefeld University, Germany (05.2001) **Invited Department Seminar**
95. A. Ros, *Protein Electrophoresis*, Applied Laser Physics, Bielefeld University, Germany (11.2000) **Invited Seminar**
96. A. Schwarz, H.H. Girault, *Polymer µDevices for Bioanalytical Applications*, BioRad, Hercules, USA (12.1998) **Invited Seminar**
97. A. Schwarz, H.H. Girault, *Polymer µTAS*, Golden Gate Polymer Forum, San Francisco, USA (12.1998) **Invited Seminar**
98. A. Schwarz, H.H. Girault, *Polymer Microdevices for Analytical Applications*, Laboratory of Micro- und Nanotechnology, Paul Scherrer Institut, Switzerland (05.1998) **Invited Seminar**
99. A. Schwarz, H.H. Girault, *Prototyping µTAS in Polymers,* IBM Research Laboratories, Rüschlikon, Switzerland (08.1998) **Invited Department Seminar**

Additional *1996-2007:* 15 poster presentations at scientific conferences in the field of Analytical Chemistry and Biophysics

Conference Contributions of Supervised Students

(All listed refer to contributions since 2008, presenting students underlined)

A. Poster Presentations (students):

2021:

MicroTAS (10/2021, Palm Springs, CA)

- J. Cruz Villarreal, R. Kruithoff, R. Ros, A. Ros, *Protein Analysis from Small Cell Ensembles by An Integrated Microfluidic Mass Spectrometry Assay*

- D. Koh, R. Ortiz, M. T. Rabbani, M. Sonker, C. A. Velasquez, E. A. Arriaga, A. Ros, *Continuous Flow Deterministic iDEP Ratchet Devices for High-Throughput Organelle Separation*

- D. Doppler, M. Sonker, A. Egatz-Gomez, G. Nelson, M. T. Rabbani, J. Cruz Villarreal, R. Nazari, S. Zaare, D. Thifault, S. Botha, T. Grant, P. Fromme, R. Kirian, A. Ros, *Electronically Stimulated Segmented Flow for Reduced Sample Consumption During Serial Femtosecond Crystallography*

A. Manna, M. Sonker, A. Ros, *Microfluidic devices for membrane protein crystallization and structure determination*

SSRLS/LCLS User meeting (09/2021, Virtual)

- D. Doppler, M. Sonker, A. Egatz-Gomez, G. Nelson, M. T. Rabbani, A. Manna, C. Erico, J. Cruz Villarreal, J. M. Martin Garcia, R. Jernigan, S. Zaare, K. Karpos, R. Alvarez, S. Botha, G. Ketwala, T. Grant, A. L. Pey, A. Grieco, M. A. Ruiz-Fresneda, A. Tolstikova, R. Nazari, R. Fromme, u. Weierstall, V. Mariani, P. Fromme, R. Kirian, A. Ros, *Electronically Stimulated Segmented Flow for Reduced Sample Consumption During Serial Femtosecond Crystallography*

Alzheimer's Association International Conference (07/2021 – Virtual)

- J. Cruz Villarreal, A. Egatz-Gomez, G. T. Noutsios, T. R. Sandrin, P. D. Coleman, A. Ros, *Amyloid-beta Analysis from Brain Cells using Microfluidics and Mass Spectrometry* **(best poster award)**

Arizona Alzheimer's Consortium Scientific Conference (09/2021 – Tucson, AZ)

- J. Cruz Villarreal, A. Egatz-Gomez, G. T. Noutsios, T. R. Sandrin, P. D. Coleman, A. Ros, *Amyloid-beta Analysis from Brain Cells using Microfluidics and Mass Spectrometry*

DEP (07/2021 – Flagstaff, AZ) – postponed from 2021

-R. Ortiz, M. Sonker, A. Ros, *A Tunable Insulator-Based Dielectrophoresis System for the separation of Biomolecules*

- M. Sonker, M. T. Rabbani, J. Cruz Villarreal, A. Ros, *High-Resolution 3D-Printed Insulator-Based Dielectrophoresis Devices towards Manipulation of Bioanalytes*

- S. Bu, A. Ros, *Towards Separating Microplastic Particles with Insulator-Based Dielectrophresis*

- M. Sonker, R. Ortiz, D. Kim, A. Ros, *Deterministic iDEP Ratchet Devices for High-throughput Organelle Separation*

Biodesign Fusion (04/2021, ASU)

- A. Egatz-Gomez, D. Doppler, M. Sonker, S. Zaare, M. T. Rabbani, D. Kim, J. Cruz Villarreal, D. Thifault, R. Nazari, J. Chen, J. Yang, R. C. Alvarez, K. Karpos, G. K. Ketawala, N. Stander, G. Codis, S. Vaiana, M. Messerschmidt, R. Fromme, N. Zatsepin, J.C.H. Spence, S. Botha, P. Fromme, R. Kirian and A. Ros *Delivering protein crystals synchronized to XFEL pulses*

- J. Cruz Villarreal, A. Egatz-Gomez, G. T. Noutsios, T. R. Sandrin, P. D. Coleman, A. Ros, *Amyloid-beta Analysis from Brain Cells using Microfluidics and Mass Spectrometry*

- M. T. Rabbani, M. Sonker, J. Cruz Villarreal, A. Ros, *Manipulation of Biomolecules Using a 3D-Printed Insulator-Based Dielectrophoresis Device*

- D. Doppler, M. T. Rabbani, D. Kim, J. Cruz Villarreal, A. Egatz-Gomez, M. Sonker, J. Chen, F. H. M. Koua, J. Yang, R. Nazari, R. C. Alvarez, K. Karpos, S. Zaare, G. K. Ketawala, N. E .Stander, T. L. Olson, K. Morin, J. Mondal, J. Nguyen, J. Domingo Meza-Aguilar, G. Kodis, S. M. Vaiana, J. M. Martin-Garcia, M. R. Holl, M. Messerschmidt, N. Zatsepin, R. Fromme, J. C. H. Spence, S. Botha, P. Fromme, R. A. Kirian, A. Ros, *3D Printed Hybrid Co-Flow Injectors for Time Resolved SFX Studies at XFELs*

- A. Manna, M. Sonker S. Kessans, A. Ros, *Vacuum actuated integrated nanowell microfluidic devices for membrane protein crystallization and structure determination*

Microscale Bioseparations Conference (03/2021, virtual)

- M. Sonker, M. T. Rabbani, J. Cruz Villarreal, A. Ros, *High-Resolution 3D-Printed Insulator-Based Dielectrophoresis Devices towards Manipulation of Bioanalytes*

- J. Cruz Villarreal, A. Egatz-Gomez, G. T. Noutsios, T. R. Sandrin, P. D. Coleman, A. Ros, *Microfluidic Assay for In Situ Mass Spectrometry Analysis of Immunocaptured Amyloid-beta from Microdissected Human Brain cells* **(best poster award)**

- D. Koh, R. Ortiz, M. Sonker, A. Ros, *Deterministic iDEP Ratchet Devices for High-throughput Organelle Separation*

BioXFEL International Conference (02/2021):

- D. Doppler, M. T. Rabbani, D. Kim, J. Cruz Villarreal, R. Nazari, R. A. Kirian, A. Ros, *3D Printed Hybrid Co-Flow Injectors for Time Resolved SFX Studies at XFELs*

- D. Doppler, M. Sonker, A. Egatz-Gomez, G. Nelson, D. Kim, J. Cruz Villarreal, R. Nazari, S. Zaare, D. Thifault, R. Fromme, S. Botha, T. Grant, P. Fromme, R. Kirian, A. Ros, *Electronically Stimulated Hybridized Segmented Flow Microfluidics for Reduced Sample Consumption During Serial Femtosecond Crystallography*

- A. Manna, M. Sonker S. Kessans, A. Ros, *Microfluidic devices for membrane protein structure determination and space travel application*

EuXFEL User Meeting (01/2021, Virtual)

- D. Doppler, M. Sonker, A. Egatz-Gomez, G. Nelson, M. T. Rabbani, A. Manna, C. Erico, J. Cruz Villarreal, R. Nazari, D. Thiefault, R. Fromme, S. Botha, T. Grant, P. Fromme, R. Kirian, A. Ros, *Decreased Sample Consumption for Serial Femtosecond Crystallography with Electronically Induced Segmented Flow Injection*

2020:

MicroTAS (10/2020)

- J. Cruz Villarreal, A. Egatz-Gomez, J. Liu, R. Ros, P. D. Coleman, A. Ros, *Amyloid β Analysis from Microdissected Brain Celss Using Microfluidics and MALDI Mass Spectrometry*

- M. T. Rabbani, M.Sonker, J. Cruz Villarreal, A. Ros, *Manipulation of Biomolecules using a 3D-Printed Insulator-based Dielectrophoresis Device* ***(Biodesign travel/online conference grant)***

SciX (10/2020)

- A. Manna, M. Sonker, A. Ros, *Vacuum-actuated Integrated Nanowell Microfluidic Devices for Membrane Protein Crystallization and Structure Determination*

- R.Ortiz, M. Sonker, A. Ros, *A Tunable Insulator-Based Dielectrophoresis System for the separation of Biomolecules*

BioXFEL International Conference (02/2020):

- D. Doppler, A. Echelmeier, D. Kim, J. Cruz Villarreal, S. Gandhi, S. Zaare, F. H. M. Koua, S. Botha, J-H Yang, J. Nguyen, T. Olson, D. Meza, P. Fromme, R. A. Kirian, A. Ros, *Time-resolved mix and inject serial crystallography facilitated by 3D-printed microfluidics*

- D. Kim, D. Doppler, A. Echelmeier, S. Gandhi, A. Ros, *Revolution in Sample Delivery: Droplet-based Sample Delivery and Triggering* **(BioXFEL conference poster award)**

Arizona Alzheimer's Disease Consortium's Scientific Conference 2020 @ University of Arizona, AZ (04/2020) - Cancelled: Abstract submitted and accepted

- J. Cruz Villarreal, A. Egatz-Gomez, P. D. Coleman, A. Ros, *Amyloid β Analysis from Microdissected Brain Cells Using Microfluidics and MALDI Mass Spectrometry*

2019:

Nature Conference Functional Dynamics (11/2019)

- D. Kim, A. Echelmeier, J. Cruz Villarreal, S. Gandhi, A. Egatz-Gomez, A. Ros *Droplet Triggering in 3D-Printed Microfluidic Devices for Serial Femtosecond Crystallography*

- D. Doppler, A. Echelmeier, J. Cruz Villarreal, S. Gandhi, A. Egatz-Gomez, A. *3D Printed Co-Flow Devices for Reduced Sample Consumption at the European XFEL*

- M. Sonker, A. G. Aceves, A. Manna, Z. Al-Sahouri, W. Liu, A. Ros, *A Microfluidic Device for Rapid Screening of Protein Crystallization Conditions and Fixed-target Applications*

MicroTAS (10/2019)

- D. Kim, A. Echelmeier, J. Cruz Villarreal, S. Gandhi, S. Quintana, A. Egatz-Gomez, A. Ros, *Droplet triggering for serial femtosecond crystallography using a 3D printed microfluidics* ***(won BioXFEL travel grant and Biodesign travel award)***

- A. Echelmeier, D. Kim, A. Ros, *et al. Sample consumption reduction for serial crystallography using water-in-oil droplets*

SciX (10/2019)

- M. T. Rabbani, A. Ros, *High-Resolution 3D-Printed Microfluidic Devices for Dielectrophoretic Applications* **(won AES and FACSS poster award, also supported by Biodesign travel grant)**

- D. Kim, A. Ros, *Electrically triggered water-in-oil droplets for sample reduction in serial femtosecond crystallography*

- A. Egatz-Gomez, A. Ros, *The role of gold nanoparticle size in the quenching-to-enhancement transition of plasmon assisted upconversion luminescence*

- A. Egatz-Gomez, A. Ros, *In line optical detector for aqueous-in-oil droplets in fused silica capillaries*

- M. Sonker, A. Ros, *High-throughput Deterministic Ratchet Devices for Organelle Separation*

AZ Bio (02/2019)

- J. Cruz Villarreal, A. Ros, *Alzheimer's Disease Protein Analysis from Microdissected Brain Cells using Microfluidics and MALDI Mass Spectrometry*

Microscale Bioseparations Conference (03/2019)

- D. Kim, E. Arriaga, A. Ros, *A microfluidic ratchet for sub-micrometer (bio)particle separation* **(Daihyun Kim won a poster award)**

Biophest (03/2019)

- D. Kim, E. A. Arriaga, A. Ros, *A Microfluidic Ratchet for Sub-micrometer (bio)Particle Separation*, BioPhest, Tempe, AZ

- A. Echelmeier, R. Nazari, I. Ishigami, G. Brehm, N. A. Zatsepin, T. D. Grant, S. Lisova, S. Boutet, R. G. Sierra, A. Batyuk, J. C. H. Spence, Syun-Ru Yeh, D. L. Rousseau, R. A. Kirian, A. Ros, *Mix-and-Inject Serial Femtosecond Crystallography Facilitated by 3D-Printed Microfluidics,* Tempe, AZ

- M. T. Rabbani, C. F. Schmidt, A. Ros, *Continuous Separation of Single-Walled Carbon Nanotubes by Length Probed with Insulator-Based Dielectrophoresis*, Tempe, AZ

- J. Cruz Villarreal, A. Egatz-Gomez, P. Coleman, A. Ros, *Alzheimer's Disease Protein Analysis from Microdissected Brain Cells with Microfluidics MALDI Mass Spectrometry*, Tempe, AZ

BioXFEL International Conference (02/2018):

- A. Echelmeier, R. Nazari, I. Ishigami, G. Brehm, N. A. Zatsepin, T. D. Grant, S. Lisova, S. Boutet, R. G. Sierra, A. Batyuk, J. C. H. Spence, S.-R. Yeh, D. L. Rousseau, R. A. Kirian, A. Ros, *Time-resolved mix and inject serial crystallography facilitated by 3D-printed microfluidics* **(Austin Echelmeier won a poster award)**

- D. Kim, A. Echelmeier, A. Ros, *Revolution in Sample Reduction for SFX: Droplet-based Sample Delivery and Triggering*

2018:

BioXFEL International Conference (02/2018):

- S. Quintana, A. Echelmeier, J. Cruz Villarreal, A. Egatz-Gomez, J. Coe, G. Brehm, M. Messerschmidt, J. Domingo Meza-Aguilar, B. Weinhausen, G. Mills, P. Vagovic, Y. Kim, J. Schulz, K. Dörner, A. Mancuso, U. Weierstall, J. C. H. Spence, H. N. Chapman, N. Zatsepin, P. Fromme, R. Kirian, A. Ros, *Reducing sample amount for serial femtosecond crystallography using water-in-oil droplets*

SciX (formerly FACSS) conference (10/2018)

- D. Kim, E. A. Arriaga, A. Ros, *A Deterministic Ratchet For Submicrometer Particle Separation* **(awarded NSF travel grant)**

- D. Kim, S. Quintana, A. Echelmeier, J. Cruz Villarreal, S.Gandhi, A. Egatz-Gomez, A. Ros, *Electrically Triggered Water-in-Oil Droplets for Serial Femtosecond Crystallography*

- M. T. Rabbani, C. F. Schmidt, A. Ros, *Continuous fractionation of single-walled carbon nanotube with insulator based dielectrophoresis* **(awarded NSF travel grant)**

LCLS/SSRL User Meeting/Conference (10/2018),

- A. Echelmeier, R. Nazari, G. Brehm, I. Ishigami, N. A. Zatsepin, S.-R. Yeh, D. L. Rousseau, R. A. Kirian, J. C. H. Spence, A. Ros, *Microfluidic Mixing for Time-Resolved Serial Crystallography*

Biophest (05/2018)

- D. Kim, S. Quintana, A. Echelmeier, J. Cruz Villarreal, S. Ghandi, A. Egatz-Gomez, A. Ros, *Actively reducing protein crystal consumption by electrically triggering droplets for Serial Femtosecond Crystallography*, BioPhest, Tuscon, AZ

- M. Sonker, Z. Al-Sahouri, W. Liu, A. Ros, *Cyclic Olefin Copolymer (COC)-PDMS hybrid Microfluidic Devices for in-Lipidic Cubic Phase (LCP) Protein Crystallization* BioPhest, Tucson, AZ

2017:

MicroTAS 2017 (10/2017):

- J. Cruz Villarreal, S. Williams, A, Egatz-Gomez, P. D. Coleman, D. Nedelkov, M. R. Sierks, A. Ros, *Alzheimer Disease Specific Markers Detected with Microfluidic MALDI Mass Spectrometry (MIMAS)*

- M. T. Rabbani, C. F. Schmidt, A. Ros, *Towards Separation of Single Walled Carbon Nanotubes With Insulator-Based Dielectrophoresis*

- G. Brehm, A. Echelmeier, J. Coe, C. Smith, G. Nelson, J. Cruz Villarreal, U. Weierstall, J. C. H. Spence, S. Köster, P. Fromme, A. Ros, *Combined Hydrodynamic Mixer and Gas Dynamic Virtual Nozzle Devices for Serial Fermtosecond Crystallography*

BioXFEL International Conference (02/2017):

- A. Echelmeier, Gerrit Brehm, Chelsie Conrad, Jesse Coe, Garrett Nelson, Petra Fromme, Uwe Weierstall, Alexandra Ros, *Microfluidic Mixing Methods for Time-Resolved Serial Crystallography*

Biophest, Tempe, AZ (04/2017):

- S. Lee, A. Ros, *Tilted post array for sorting λ-DNA using insulator-based dielectrophoresis*

- D. Kim, A. Ros, *Dynamic Constriction Insulator-Based Dielectrophoresis for Particle Manipulation*

Biodesign Fusion, Carefree, AZ (04/2017):

- M. T. Rabbani, C. F. Schmidt, A. Ros, *Single-walled carbon nanotubes probed with insulator-based dielectrophoresis*

- D. Kim, M. Yang, A. Ros, *Dynamic Constriction Insulator-Based Dielectrophoresis for Particle Manipulation*

- A. Echelmeier, J. Coe, I. Ishigami, G. Brehm, U. Weierstall, P. Fromme, R. Kirian, J. C. H. Spence, S.-R. Yeh, D. Rousseau, A. Ros, *Microfluidic Mixing Methods for Serial Crystallography* ***selected for rapid fire presentation***

Microscale Bioseparation Separations Conference (03/2017):

- D. Kim, M. Yang, A. Ros, *Dynamic Constriction Insulator-Based Dielectrophoresis for Particle Manipulation*

SciX (formerly FACSS) conference (10/2017):

- D. Kim, M. Yang, A. Ros, *A deterministic ratchet for sub-micrometer particle separation*

- D. Kim, A. Ros, *Tunable Insulator-Based Dielectrophoresis for Biomolecule and Bioparticle Pre-concentration and Separation,* ***awarded a FACSS and an AES poster price***

2016:

BioXFEL International Conference (01/2016):

- A. Echelmeier, A. Ros, *Microfluidic Droplets as a Method of Sample Conservation for Serial Femtosecond X-ray Crystallography*
- B. G. Abdallah, A. Ros, *Protein Crystallization Screening using an Actuated Microfluidic Gradient Generator*

2015:

MicroTAS 2015 (10/2015):

- A. Echelmeier, G. Nelson, B. G. Abdallah, D. James, S. Roy-Chowdhury, V. Mariani, R. Kirian, D. Oberthuer, K. Doerner, P. Fromme, H. Chapman, U. Weierstall, J.C.H. Spence, A. Ros, *Biphasic Droplet-Based Sample Delivery of Protein Crystals for Serial Femtosecond Crystallography with an X-Ray Free Electron Laser*

BioXFEL International Conference (01/2015):

- B. G. Abdallah, N. A. Zatsepin, S. Roy-Chowdhury, J. Coe, C. E. Conrad, K. Dorner, R. G. Sierra, H. Paige Stevenson, F. Camacho Alanis, T. D. Grant, G. Nelson, D. R. James, G. Calero, J. C. H. Spence, U. Weierstall, P. Fromme, A. Ros, *XFEL diffraction from protein nanocrystals isolated using a microfluidic sorter*
- A. Echelmeier, G. Nelson, F. Camacho-Alanis, B. G. Abdallah, U. Weierstall, J. C. H. Spence, A. Ros *Biphasic Droplet-Based Sample Introduction for Protein Crystallography with an X-Ray Free Electron Laser*

2014:

AIChE (11/2014):

- J. Luo, F. Camacho-Alanis, A. Ros, *Exploiting Absolute Negative Mobility with Dielectrophoresis for Micron Particle Separation*

SciX (formerly FACSS) conference (10/2014):

- B.G. Abdallah, M. Sawtelle, A. Ros, *Microfluidic methods to grow and fractionate membrane protein crystals* **(awarded an AES and a FACSS poster price)**
- J. Luo, A. Ros, *iDEP Based Numerical Simulation of Absolute Negative Mobility for the Separation of Micron and Sub-micron Bioparticles*

SLAC User Meeting/Conference (10/2014):

- B. Abdallah, C. Kupitz, P. Fromme, A. Ros, *Microfluidic Tools to Study Membrane Proteins*

MicroTAS 2014 (10/2014):

- B. Abdallah, M. Sawtelle, A. Ros, *High throughput nanoparticle sorting for serial femtosecond crystallography*

Pittcon (03/2014):

- A. Nakano, F. Camacho-Alanis, A. Ros. *Protein dielectrophoresis using insulator-based devices: Implications at Nanoconstrictions*

2013:

X-ray Lasers in Biology, The Royal Society, London, England, 10/14 - 10/15/2013

B. G. Abdallah, C. Kupitz, P. Fromme, A. Ros. *Microfluidic Tools to Study Membrane Proteins*

X-ray Lasers in Biology – Techniques, The Royal Society at Chicheley Hall, Buckinghamshire, England, 10/16 - 10/17/2013.

B. G. Abdallah, C. Kupitz, P. Fromme, A. Ros. *Microfluidic Tools to Study Membrane Proteins* (Poster)

SciX (formerly FACSS) conference:

J. Luo, B.G. Abdallah, G. Woken, E. Arriaga, A. Ros, *Manipulation of Mitochondria by Insulator-based Dielectrophoresis* **(awarded an AES and FACSS poster price)**

F. Camacho Alanis, A. Nakano, A. Ros, *Protein Dielectrophoresis: A Promising Purification Method*

17th µTAS (Micro-Total-Analysis Systems) meeting:

M. Yang, T.-C. Chao, R. Nelson, A. Ros, *Protein identification and quantification for single cell analysis by coupling a microfluidic platform with MALDI-TOF*

Microscale Bioseparation (MSB) Conference:

F. Camacho-Alanis, A. Nakano, A. Ros, *Protein Dielectrophoresis under AC and DC Conditions*

2012:

SciX (formerly FACSS) conference:

S. Bhattacharya, T.-C. Chao, A. Ros, *Selective Trapping of Single Human Breast Cancer Cells by Insulator Based Dielectrophoresis in a Microfluidic Device* **(awarded a poster price)**

M. Yang, T.-C. Chao, R. Nelson, A. Ros, *Protein affinity capture, digestion and MALDI-TOF detection from a microfluidic platform for single cell analysis*

16th µTAS (Micro-Total-Analysis Systems) meeting:

B. Abdallah, T.-C. Chao, P. Fromme, A. Ros, *Size Based Nanoparticle Separation using Dielectrophoretic Focusing for Femtosecond Nanocrystallography of Membrane Proteins*

AIChE meeting and AES annual meeting:

F. Camacho-Alanis, A. Nakano, T.-C. Chao and A. Ros, *Frequency Dependence of Protein Dielectrophoresis Probed with Insulator Based Devices*

A. Nakano, F. Camacho-Alanis, T.-C. Chao and A. Ros, *AC and DC Protein Streaming and Trapping with Insulator-Based Dielectrophoretic Devices*

Physics, Chemistry, and Biology of Membrane Proteins Workshop, Arizona State University:

B. Abdallah, C. Kupitz, P. Fromme, A. Ros, *Salting-out Crystallization of Photosystem I in a Microfluidic Device*

2011:

15th µTAS (Micro-Total-Analysis Systems) meeting:

A. Nakano, F. Camacho-Alanis, T.-C. Chao, A. Ros, *Systematic Investigation of Insulator-Based Protein Dielectrophoresis Under DC Condition*

Nanotech Conference, Montreux, Switzerland:

A. Nakano, F. Camacho-Alanis, T.-C. Chao, A. Ros, *Micro- and Nanoenvironments for Dielectrophoretic Manipulation of Proteins*

9th Annual Student Research Conference (organized by More Graduate Education at Mountain States Alliance)

B. Abdallah, A. Nakano, A. Ros, *A Hydrophobic Valve to Control Protein Crystallization in a Microfluidic Device*, (**awarded a poster price**)

2010:

FACSS (Federation of Analytical Chemistry and Spectroscopy):

A. Nakano, S. Bhattacharya, T.-C. Chao, A. Ros, *Trapping of proteins by insulator-based dielectrophoresis*

S. Bhattacharya, T.-C. Chao, A. Ros, *Dielectrophoretic Single Cell Trapping in a Microfluidic Lab-on-Chip Device* (**awarded a poster price**)

2008:

MSB (Microscale Bioseparations) Conference:

D. Greif, A. Ros, D. Anselmetti, *Single Cell Analysis In Whole Body Quartz Glass Chips With Native UV Laser Induced Fluorescence Detection*

DPG - Tagung (German Physical Society Meeting):

D. Greif, A. Ros, and D. Anselmetti, *Native UV laser induced fluorescence detection for single cell analysis in a hybrid PDMS-Quartz microfluidic chip*

J. Regtmeier, R. Eichhorn, A. Ros, and D. Anselmetti, *Conformational DNA separation by dielectrophoresis*

Nanotech, Montreux, Switzerland:

M. Everwand, J. Regtmeier, A. Ros, D. Anselmetti, *Surface Coatings in Poly(dimethylsiloxane) and Quartz Microfluidic Systems to Control Electroosmotic Flow and Protein Adsorption*

12th µTAS (Micro-Total-Analysis Systems) meeting:

J. Regtmeier, R. Eichhorn, P. Reimann, A. Ros and D. Anselmetti, *DNA Diffusion Control*

B. Oral Presentations (students):

2021

SciX Conference (09/2021 – Providence, RI)

- J. Cruz Villarreal, *A. Egatz-Gomez*, G. T. Noutsios, T. R. Sandrin, P. D. Coleman, A. Ros, *Microfluidic Immunoassay for In Situ Amyloid-beta Mass Spectrometry Analysis from Microdissected Brain Cells*

Pittcon (03/2021, virtual)

- J. Cruz Villarreal, A. Egatz-Gomez, G. T. Noutsios, T. R. Sandrin, P. D. Coleman, and A. Ros Amyloid-*beta Analysis using microfluidics and MALDI-TOF Mass Spectrometry*

BioXFEL International Conference (02/2021):

- D. Doppler, M. Sonker, A. Egatz-Gomez, G. Nelson, D. Kim, J. Cruz Villarreal, R. Nazari, S. Zaare, D. Thifault, R. Fromme, S. Botha, T. Grant, P. Fromme, R. Kirian, A. Ros, *Electronically Stimulated Hybridized Segmented Flow Microfluidics for Reduced Sample Consumption During Serial Femtosecond Crystallography*

2019

SciX (10/2019)

- M. Sonker, A. Ros, *High-throughput Deterministic Ratchet Devices for Organelle Separation (invited presentation)*

2017:

Microscale Bioseparation Separations Conference (03/2017):

- D. Kim, J. Luo, E. Arriaga, A. Ros, Organelle Fractionation for Subpopulation Analysis **awarded a travel grant from conference sponsor Kanisto**

2016:

SciX (formerly FACSS) conference (10/2016):

- P. V. Jones, G. L. Salmon, A. Ros, *Dielectrophoretic Response of Condensed DNA Clusters in AC fields*

2015:

SciX (formerly FACSS) conference (09/2015):

- B.G. Abdallah, N. Zatsepin, S. Roy-Chowdhury, J. Coe, K. Dorner, R. Sierra, H. Stevenson, G. Calero, P. Fromme, A. Ros, *XFEL diffraction from protein nanocrystals isolated using a microfluidic sorter*

- A. Echelmeier, G. Nelson, B. Abdallah, U. Weierstall, J. C. H. Spence, P. Fromme, A. Ros, *Sample Delivery of Biphasic Droplets Containing Protein Crystals For Serial Femtosecond Crystallography With An X-Ray Free Electron Laser*

SALSA Summer School, Humboldt University Berlin (09/2015):

- B.G. Abdallah, *Cryo-scanning transmission electron tomography of vitrified cells*, invited summer school contribution

- A. Echelmeier, *SERS for Bioanalytical* Applications, invited summer school contribution

2014:

AIChE (11/2014):

J. Luo, A. Ros, *Exploiting Absolute Negative Mobility with Dielectrophoresis for Mitochondrial Sample Preparation* (**Awarded an AES Travel Grant**)

SciX (formerly FACSS) conference (10/2014):

B. Abdallah, A. Ros, *High Throughput Nanoparticle Fractionation Using Insulator-Based Dielectrophoresis*

HPLC (05/2014)

J. Luo, B. G. Abdallah, G. G. Wolken, E. A. Arriaga, A. Ros, *Insulator-based Dielectrophoresis Applied to Mitochondria Sorting* (**Awarded a CASSS Travel Grant**)

Biophest (04/2014):

B. Abdallah, A. Ros, *Improving Protein Crystallography with Microfluidic Devices*

J. Luo, B. G. Abdallah, G. G. Wolken, E. A. Arriaga, A. Ros, *Insulator-based Dielectrophoresis Study for the Separation of Mitochondria by Absolute Negative Mobility*

SWAP (01/2014):

F. Camacho-Alanis, A. Ros, *Dielectrophoresis of proteins: challenges and recent advances* (Talk).

B. Abdallah, A. Ros, *Improving Protein Crystallography with Microfluidic Devices*

2013:

Biophest 2013, Arizona State University, Tempe, AZ

F. Camacho Alanis, L. Gan, A. Ros, *Combining Focused Ion Beam Milling and Optical Lithography to Fabricate Microfluidic Devices for DNA and Protein Dielectrophoresis*

A. Nakano**,** F. Camacho Alanis, T.-C. Chao, A. Ros, *Streaming Dielectrophoresis of Proteins in a Microfluidic Platform*

SciX (formerly FACSS) conference:

F. Camacho Alanis, A. Nakano, A. Ros, *Protein Dielectrophoresis: A Promising Purification Method*

J. Luo, B.G. Abdallah, G. Woken, E. Arriaga, A. Ros, *Manipulation of Mitochondria by Insulator-based Dielectrophoresis*

2012:

ITP conference:

A. Nakano, F. Camacho-Alanis, T.-C. Chao, A. Ros *Dielectrophoretic Protein Manipulation in a Microfluidic Device* **(awarded a CASSS travel grant)**

L. Gan, B. Ding, H. Yan, A. Ros, *Experimental and Theoretical Study of DNA Origami Dielectrophoresis in a Microfluidic System*

AIChE meeting and AES annual meeting:

F. Camacho-Alanis, L. Gan, A. Ros, *Combining Focused Ion Beam Milling and Optical Lithography to Fabricate Microfluidic Devices for DNA Dielectrophoresis*

R. Martinez-Duarte, F. Camacho-Alanis, A. Elkholy, P. Renaud, A. Ros, *Lambda-DNA Dielectrophoresis in a 3D Carbon-Electrode Micro-Post Device: Theoretical and Experimental Studies*

SciX (formerly FACSS) conference:

B. Abdallah, T.-C. Chao, P. Fromme, A. Ros, *A Dielectrophoretic Sorter for Nanoparticle and Nanocrystal Separation*

B. Abdallah, C. Kupitz, P. Fromme, A. Ros, *Microfluidic Tools Coupled to Numerical Simulations to Study Membrane Protein Crystallization*

M. Yang, T.-C. Chao, R. Nelson, A. Ros, *Hyphenation of a Microfluidic Platform with MALDI-TOF Mass Spectrometry for Single Cell Analysis*

Southwestern Analytical Chemistry Professor Meeting 2012, Tuscon, AZ:

B. Abdallah, A. Ros, *Membrane protein crystallization on microfluidic platforms for femtosecond nanocrystallography*

F. Camacho Alanis, A. Ros, *Insulator-Based Dielectrophoresis Applied to Bovine Serum Albumin and lambda DNA Concentration*

Biophest 2012, Arizona State University, Tempe, AZ

F. Camacho Alanis, L. Gan, A. Ros, *Combining Focused Ion Beam Milling and Optical Lithography to Fabricate Microfluidic Devices for DNA and Protein Dielectrophoresis*

A. Nakano**,** F. Camacho Alanis, T.-C. Chao, A. Ros, *Streaming Dielectrophoresis of Proteins in a Microfluidic Platform*

2011:

AIChE, American Electrophoresis Society meeting 2011:

L. Gan, B. Ding, H. Yan, A. Ros*, Dielectrophoretic (iDEP) Manipulation of DNA Origami in a Microfluidic System*

R. Martinez-Duarte, Philippe Renaud, A. Ros, *Concentration of DNA Using 3D Carbon-Electrode Dielectrophoresis*

A. Gencoglu, F. Camacho-Alanis, V.T. Nguyen, A. Nakano, A. Ros and A. Minerick, *pH Gradient Formation In An Insulator-Based Dielectrophoresis Device Used In Protein Trapping Applications*

FACSS (Federation of Analytical Chemistry and Spectroscopy Society):

A. Nakano, F. Camacho-Alanis, T.-C. Chao, A. Ros, *Manipulation of Proteins via Insulator-Based Dielectrophoresis in a Microfluidic Device*

Service

Professional Service

Journal Editorial Appointments:
- *Biophysical Reports*, Founding Associate Editor (appointed 2021-2023)
- *PLOS One* Academic Editor (2013-2015)

Journal Advisory Board:
- Analytical and Bioanalytical Chemistry (ABC) 2019-present: International Advisory Board

Journal Guest Editor:
- Analytical and Bioanalytical Chemistry (ABC): Special Issue on *Microfluidics in cell analysis*, Vol. 390, 2008
- Biomicrofluidics: Special Issue on *SciX 2013 Proceedings* (publication date 2014)

Referee Activities (Journals):
Nature Nanotechnology, Langmuir, Europhysics Letters, Macromolecules, Electrophoresis, Sensors and Actuators B, Lab on a Chip, IET Nanobiotechnology, Journal of Microfluidics and Nanofluidics, Analytical and Bioanalytical Chemistry, Journal of Nanotechnology, American Institute of Chemical Engineers Journal, Trends in Food Science and Technology, PloS ONE, Analytical Chemistry, Biomicrofluidics, NANO

Referee Activities (Funding Agencies):
National Institute of Health (USA) –Appointed standing member in the *Instrumentation and Systems Development (ISD)* Study Section (since 07-2019)
National Science Foundation (USA): ad hoc CHE, CBET panel (12.2011), CMI panel (4.2012)
National Institute of Health (USA) – Panel participations: Enabling Bioanalytical and Imaging Technologies (EBIT) panel (02.2014 & 02.2015), Instrumentation and Systems Development Study Section panel (06.2018)

Other Agencies/Organizations: Natural Sciences and Engineering Research Council (Canada), Research Council for Natural Sciences and Engineering (Finland), Alzheimer's Association, Federal Ministry of Education and Research (Germany), German Research Foundation (Germany), Swedish Research Council (Sweden)

Board Memberships:
- Board Member, AES – The Electrophoresis Society (fall 2010-2018)
- ACS – Analytical Division Long Range Planning Committee Member (fall 2015-2017)
- Member of the Scientific Committee of Nanotech Conference (2007-2016)
- Chairperson of the Equal Opportunity Board, Physics Department, Bielefeld University, Germany (2002-2007)

External PhD Referee:
- University of Potsdam, Germany (December 2009)
- University of Edmonton, Alberta, Canada (October 2008)

Conference Organization
- 2021 Dielectrophoresis (Flagstaff, Arizona), scientific committee member
- 2018 AES (Electrophoresis Society) Annual Meeting Co-Organizer
- 2016 SciX Conference Technical Program Chair (Program Chair for conference of ~1200 attendees)
- 2016 Pittcon Session Organizer

- 2015 SciX Conference Award Chair
- 2015 FACSS Innovation Award Chair at SciX 2015
- 2015 FACSS and SciX Student Award Chair
- 2014 AES Program Organizer at SciX (formerly FACSS) conference (elected by AES members, 2013)
- 2014 Innovation Award Committee Member at SciX conference
- 2014 Society of Western Analytical Professors (SWAP) 46th Annual Meeting Organizer (held at Arizona State University)
- 2013 AES-SciX (formerly FACSS) Meeting Organizer (elected by AES members, 2012)
- Session Organization: *Advances in Electrokinetics and Electrophoresis: Bioanalytical, Biosensing, and Biomedical Applications* at the 2012 AES Meeting (in conjunction with AIChE meeting)
- Event Organizer of 'Lunch with Leaders' at the 2012 AES Meeting (held with AIChE meeting)
- Symposium Organization on *Electrophoresis with Focus on Dielectrophoresis* at SciX 2012 (formerly FACSS)
- Session Organization: *DNA Analysis in Microfluidic and Nanofluidic Devices* at the 2011 American Electrophoresis Society (AES) Meeting
- Symposium Organization on *Dielectrophoresis and Related Techniques* at FACSS 2010
- Scientific Committee Member: Nanotech Conference Montreux (2007-2017)

Conference Poster Award Committee

- Poster judge at BioXFEL International Conference 2020
- Poster judging committee at Biodesign Fusion Event 2018
- Poster judging committee chair at SciX 2015
- Poster judge at the Micro- and Nanoengineering conference 2002, Lugano, Switzerland
- Poster judge at the μTAS conference, 2007, Paris, France
- Poster judge at the Nanotech conference 2010, Montreux Switzerland
- Poster judge at the Nanotech conference 2011, Montreux Switzerland
- Poster judge at the Microscale Bioseparations conference 2012, Geneva, Switzerland
- Poster judge at the SciX conference 2014, Reno, Nevada

Service at ASU

- University Promotion and Tenure Committee (2020-present)
- Barrett Honors College Program Liaisons – Faculty Advisor (2014-present)
- Faculty Mentor for Assistant Professor in SMS (2019-present)
- SMS Graduate Program Committee Member (2020-2021)
- University Promotion and Tenure Committee (2020-present)
- SMS Director Search Committee (fall 2018-fall 2020)
- SMS Search Committee Materials Chemistry/Thermochemistry (fall 2019-spring 2020)
- Mass Spectrometry Core Facility Advisory Board (2019-2020)
- Department Personnel and Budget Committee (fall 2017-spring 2019)
- CASD Senior Grant Support Specialist Search (spring 2018)
- Biodesign Fusion Event Poster Judge (2018)
- CASD Senior Grant Support Specialist Search Committee Member (2018)
- CLAS Grievance Committee (Fall 2017-Spring 2018)
- OKED Core Facility Oversight Committee Inaugural Member (2017-2018)
- Department Committee on Assessment and Accreditation (2015-2017)
- Undergraduate Curriculum Program Committee (fall 2010-spring 2015)
- CASD Faculty Search Committee (fall 2014)
- BioXFEL/STC Faculty Search Committee (fall 2013-2014)
- Analytical Chemistry Faculty Search Committee (fall 2012)
- Department Chair Search Committee (spring 2012)
- Department Seminar Committee (fall 2008-summer 2011)
- Medicinal Chemistry Faculty Search (2009-10)
- Department Instrument Facilities Committee (fall 2010-summer 2014)
- Department Strategic Planning Committee (2011-2015)
- Student Committees *see Mentoring Activities*