

Publications

Joint Publications

Peer-reviewed publications / already published or accepted

- Baumgart F, Arnold AM, Leskovar K, Staszek K, Fölser M, Weghuber J, ... & Schütz G J. 2016. Varying label density allows artifact-free analysis of membrane-protein nanoclusters. *Nature methods* 13: 661-664.
- Murtezi E, Ciftci M, Yagci Y. Synthesis of clickable hydrogels and linear polymers by type II photoinitiation. *Polymer International*, 2015, 64(5), 588-594.
- Sachelaru I, Winter L, Knyazev DG, Zimmermann M, Vogt A, Kuttner R, Ollinger N, Siligan C, Pohl P, Koch H-G. YidC and SecYEG form a heterotetrameric protein translocation channel. *Scientific Reports* 2017: 1-15.
- Weichselbaum E, Österbauer M, Knyazev D, Batishchev O, Akimov A, Nguyen T, Zhang C, Knör G, Agmon N, Carloni P, Pohl P. Origin of proton affinity to membrane/water interfaces. *Scientific Reports*, 2017 (accepted).
- S. Auer, L. Azizi, F. Faschinger, V. Blazevic, T. Vesikari, H. J. Gruber, V. P. Hytönen, „Stable immobilisation of His-tagged proteins on BLI biosensor surface using cobalt“, *Sens Actuators B Chem*, 243 (2017), 104-113, DOI: 10.1016/j.snb.2016.11.090
- W. Schöfberger , F. Faschinger, S. Chattopadhyay, S. Bhakta, B. Mondal, J. A. A. W. Elemans, S. Müllegger, S. Tebi, R. Koch, F. Klappenberger, M. Paszkiewicz, J. V. Barth, E. Rauls, H. Aldahhak, W. G. Schmidt, A. Dey, „A Bifunctional Electrocatalyst for Oxygen Evolution and Oxygen Reduction Reactions in Water“, *Angew. Chem. Int. Ed.*, 55 (2016), 2350-2355, DOI: 10.1002/anie.201508404
- M. König, F. Faschinger, L. M. Reith, W. Schöfberger, „The evolution of corrole synthesis - from simple one-pot strategies to sophisticated ABC-corroles“, *J. Porphyrins Phthalocyanines*, 20 (2016), 96-107, DOI: 10.1142/S1088424616300056
- Kasper M, Traxler L, Salopek J, Grabmayr H, Ebner A, Kienberger F. Broadband 120 MHz Impedance Quartz Crystal Microbalance (QCM) with Calibrated Resistance and Quantitative Dissipation for Biosensing Measurements at Higher Harmonic Frequencies. *Biosensors*, 2016, 6 (2), 23.
- Zauner D, Taskinen B, Eichinger D, Flattinger C, Ruttman B, Knoglinger C, Traxler L, Ebner A, Gruber HJ, Hytonen VP. Regenerative biosensor chips based on switchable mutants of avidin-A systematic study. *Sensor Actuat B-Chem*, 2016, 229, 646-654.
- Leitner M, Stock LG, Traxler L, Leclercq L, Bonazza K, Friedbacher G, Cottet H, Stutz H, Ebner A. Mapping molecular adhesion sites inside SMIL coated capillaries using atomic force microscopy recognition imaging. *Anal Chim Acta* 2016, 930, 39-48.

- Stock LG, Leitner M, Traxler L, Bonazza K, Leclercq L, Cottet H, Friedbacher G, Ebner A, Stutz H. Advanced portrayal of SMIL coating by allying CZE performance with in-capillary topographic and charge-related surface characterization. *Anal Chim Acta* 2017, *951*, 1-15.
- Oh YJ, Hubauer-Brenner M, Gruber HJ, Cui Y, Traxler L, Siligan C, Park S, Hinterdorfer P. Curli mediate bacterial adhesion to fibronectin via tensile multiple bonds. *Sci Rep* 2016, *6*, 33909.
- Rathner P, Rathner A, Horničáková M, Wohlschlager C, Chandra K, Kohoutová J, Ettrich R, Wimmer R, Muller N. Solution NMR and molecular dynamics reveal a persistent alpha helix within the dynamic region of PsbQ from photosystem II of higher plants. *Proteins*, 2015 Sep;83(9):1677-86.
- Rathner A, Chandra K, Rathner P, Horničáková M, Schlagnitweit J, Kohoutová J, Ettrich R, Muller N. Resonance assignment of PsbP; an extrinsic protein from photosystem II of *Spinacia oleracea*. *Biomol NMR Assign.*, 2015 Oct;9(2):341-6.

Manuscripts submitted or in preparation:

- Kopf A, Kiermaier E, Hauschild R, Girkontaite I, Tedford K, Häcker H, Fischer K, Sixt M. 2017. Local microtubule dynamics mediate uropod retraction via RhoGEF Lfc.
- Winkler K, Horner A, Karner A, Knyazev D, Zimmermann M, Kuttner R, Lents A, Siligan C, Bondar N, Preiner J, Pohl P. Visualisation of the first steps in post-translational protein translocation.
- Fis A, Zimmermann M, Kuttner R, Winkler K, Gruber HJ, Pohl P, Hinterdorfer P. Combined recognition imaging and Force spectroscopy reveals a lipid induced binding mechanism of SecA to SecYEG.
- Fis A, Zimmermann M, Gruber HJ, Pohl P, Hinterdorfer P. Forces and dynamics in protein translocation through the bacterial translocon.
- Oberbichler E, Wiesauer M, Faschinger F, Krenn E, Stangl J, Knör G, Gruber HJ. Competitive binding assay for biotin and biotin derivatives, based on avidin and biotin-4-fluorescein.
- Wiesauer M, Oberbichler E, Krenn E, Stangl J, Faschinger F, Böhm C, Knör G, Gruber HJ. Quantitation of biotin residues in proteins using various fluorescence-based assays.
- E. Sobakinskaya, M. Schmidt am Busch, T. Renger. New approach to calculation of the FRET efficiency.
- E.Sobakinskaya, T.Renger, M.Zimmerman, P.Pohl, et all, Dynamics and function of the H-bond network in translocation of a peptide by the SecY.
- E.Sobakinskaya, T.Renger, S.Nakov, J.Kraus. Fast solvers for Poisson and Poisson-Boltzmann equations with application to electrostatic calculations in biomolecules.

- M. Fahrner, M. Stadlbauer, M. Muik, P. Rathner, PB. Stathopoulos, M. Ikura, N. Müller, C. Romanin. A novel mechanism promotes switching of the Stormorken STIM1 R304W mutant into the activated state.
- F. Faschinger, M. Ertl, W. Schöfberger, M. Himmelsbach, G. Knör and H. J. Gruber. New highly stable Eu(III)-complex with short linker for site-specific labeling of biomolecules, designed for accurate distance measurements by LRET.
- Knoglinger C, Zich A, Traxler L, Posledni K, Friedl G, Ruttmann B, Schorpp A, Müller K, Gruber HJ. Regenerative biosensor for use with biotinylated bait molecules.
- Traxler L, Faschinger F, Rathner P, Stadlbauer M, Charnavets T, Romanin C, Müller N, Hinterdorfer P, Gruber HJ. Characterization of the Orai-Calmodulin Interaction as Potential Mediator of Calcium-Dependent Orai-Channel Inactivation.

Non peer-reviewed publications / already published

DK 1 / Aglaja Kopf

- Kopf A. et al. Probing receptor recycling in migrating leukocytes. Conference proceeding: XIX. Annual Linz Winter Workshop 2017, Linz Feb 3-6 2017.

DK 2 / Martin Fölser

- Fölser M, Motsch V, Brameshuber M, Schütz G. Investigation of early T cell dynamics. Conference proceeding: XIX. Annual Linz Winter Workshop, Linz Feb 3-6 2017.
- Fölser M, Motsch V, Schütz G. Multi-modal analysis of early T-cell signaling. Conference proceeding: XVIII. Annual Linz Winter Workshop, Linz Jan 29 – Feb 1 2016.
- Fölser M, Lindner M, Sevcsik E, Bergmayr I, Schütz G. Pushing micropatterning to the nanoscale. Conference proceeding: Biophysical Society 59th Annual Meeting, Baltimore, USA, Feb 7-11 2015.

DK 3 / Sujitha Puthukodan

- Puthukodan S, Wollhofen R, Jacak J, Klar TA. Stimulated Emission Depletion Microscopy. Conference proceeding: XVIII. Annual Linz Winter Workshop- Advances in Single-Molecule Research for Biology & Nanoscience, February 3 - February 6, 2016, Linz, Austria.
- Puthukodan S, Wollhofen R, Jacak J, Klar TA. Stimulated Emission Depletion Microscopy. Conference proceeding: XIX. Annual Linz Winter Workshop- Advances in Single-Molecule Research for Biology & Nanoscience, February 3 - February 6, 2017, Linz, Austria.
- Puthukodan S, Wollhofen R, Jacak J, Klar TA. Stimulated Emission Depletion Microscopy. Conference proceeding: Biology for Physics Conference: Is there new Physics in Living Matter? January 15-18, 2017, Barcelona.

DK 3 / Eljesa Murtezi

- Doran S, Murtezi E, Dadashi-Silab S, Ciftci M, Yilmaz G, Tasdelen MA, Yagci Y. Photoinduced ATRP and CuAAC click reactions and their combinations for macromolecular syntheses. Conference proceeding: 249th ACS National Meeting, Denver, USA, 2015.

DK 4 / Silvia Caballero

- Caballero S, Heisenberg CP. Nanomechanical Analysis of the Ferredoxin-NADP+ Reductase Complex with NADP+”. Conference proceeding: XVII. Annual Linz Winter Workshop 2015.
- Caballero S, Heisenberg CP. Ooplasmic segregation in ascidian embryos”. Conference proceeding. XVIII. Annual Linz Winter Workshop 2016.

DK 5 / Mirjam Zimmermann

- Zimmermann M, Janoschke M, Spiess M. Protein insertion into the membrane via the SecYEG complex. Conference proceeding: Basel PhD Retreat, Lake of Constance, 2-4 June 2016.
- Zimmermann M, Knyazev D, Kuttner R, Pohl P. Insertion of hydrophobic membrane spanning stretches via the bacterial translocon. Conference proceeding: XIX Annual Linz Winter Workshop and Winterschool, Linz, Austria 3-6 February 2017.
- Zimmermann M, Janoschke M, Spiess M. BiP binding affects integration of transmembrane domains. Conference proceeding. Biophysical Society Meeting, New Orleans, Louisiana, USA. 11-15 February 2017.

DK 6 / Anny Fis

- Fis A, Karner A, Kuttner R, Preiner J, Zimmermann M, Gruber HJ, Pohl P, Hinterdorfer P. Forces and Dynamics in Protein Translocation through the Bacterial Translocon. BSP Conference proceeding. Biophys J 2017, Volume 112 (3), 167a.

DK 7 / Maria Österbauer (Wiesauer)

- Weichselbaum E, Österbauer M, Knör G, Pohl P. Regulation of Proton Migration along the Membrane Surface. Conference proceeding: BSP Meeting 2017, Biophys J, 112:277a. 2017.
- Österbauer M, Weichselbaum E, Pohl P, Knör G. Caged Protons as Tools for Studying Transport of Protons along Lipid Bilayers. Conference proceeding: BSP Meeting 2017. Biophys J, Vol112:277a. 2017.

DK 8 / Ekaterina Sobakinskaya

- Sobakinskaya E, Schmidt am Busch M, T. Renger T. Electrostatic models for the interpretation of FRET experiments on fluorescent-labelled proteins. Book of abstracts, Protein Electrostatics Berlin, July 19- 21, 2016.

DK 9 / Svetoslav Nakov

- Nakov S, Kraus J, Repin S. Functional a Posteriori Error Estimate for the Nonlinear Poisson-Boltzmann Equation. Conference proceeding: 11-th International Conference on Large-Scale Scientific Computations, Sozopol, Bulgaria, 5 - 9 June 2017.

- Nakov S et al. The Nonlinear Poisson Boltzmann Equation: well-posedness analysis and functional a posteriori error estimate. Conference proceeding: XVIII Annual Linz Winter Workshop 2016.

DK 10 / Michael Stadlbauer

- Derler I, Fahrner M, Plenk P, Muik M, Butorac C, Stadlbauer M, Frischauf I, Pammer T, Romanin C. Isoform specific fine-tuning of Orai protein function. Conference proceeding: Alpbach (Tyrol-Austria) 2nd European calcium channel conference 13-16 may 2015.
- Fahrner M, Stadlbauer M, Muik M, Romanin M. Impact of STIM1 R304W mutant on intra- and intermolecular cytosolic coiled-coil interactions. Conferences proceeding: Biophysical society meeting 2016 in Los Angeles, USA. 27.02-2.3.2016

DK 11 / Felix Faschinger

- F. Faschinger, M. Zimmermann G. Knör, H. J. Gruber, “New Thiol-reactive Eu-Complex for Distance Measurements by LRET”, *Biophysical Society 61st Annual Meeting*, 11-15th February, New Orleans (USA), DOI: 10.1016/j.bpj.2016.11.2425
- S. Auer, L. Azizi, F. Faschinger, V. Blazevic, T. Vesikari, H. J. Gruber, V. P. Hytönen. Stable immobilisation of His-tagged proteins on BLI biosensor surface using cobalt. *Sens Actuators B Chem*, 243 (2017), 104-113, DOI: 10.1016/j.snb.2016.11.090
- F. Faschinger, M. Zimmermann, G. Knör, H. J. Gruber. New thiol-reactive Eu complex for distance measurements by LRET. Conference proceeding: XIX. Annual Linz Winter Workshop 2017, 3-6th February, Linz, Austria
- F. Faschinger, E. Krenn, J. Stangl, H. J. Gruber, “Forces and dimensions of STIM – Orai interaction. Conference proceeding: XVIII. Annual Linz Winter Workshop 2016, 29th January – 1st February, Linz, Austria.
- F. Faschinger, H. J. Gruber, “ Forces and dimensions of STIM – Orai interaction. Conference proceeding: XVII. Annual Linz Winter Workshop 2015, 30th January – 2st February, Linz, Austria.

DK 11 / Lukas Traxler

- Traxler L, Knoglinger C, Posledni K, Zich A, Ruttman B, Friedl G, Hinterdorfer P, Gruber HJ, Convenient Biological Interaction Analysis with a Regenerative Streptavidin Chip. BSP Meeting. *Biophys J* 2017, 112 (3), 493a.
- Traxler L, Faschinger F, Rathner P, Stadlbauer M, Charnavets T, Romanin C, Müller N, Hinterdorfer P, Gruber HJ. Characterization of the Orai-Calmodulin Interaction as Potential Mediator of Calcium-Dependent Orai-Channel Inactivation. BSP Meeting. *Biophys J* 2017, 112 (3), 183a-184a.
- Oh YJ, Hubauer-Brenner M, Gruber H, Cui Y, Traxler L, Siligan C, Park S, Hinterdorfer P. Curli Mediate Bacterial Adhesion to Fibronectin via a Tensile Collective Binding Network. BSP Meeting. *Biophys J* 2017, 112 (3), 588a.

DK12 / Petr Rathner

- Kamenicky M, Rathner A, Rathner P, Kopecky V, Hofbauerova K, Kohoutova J, Ettrich R, Müller N. Recombinant Expression, Refolding and Initial NMR Studies of the Extrinsic Photochemical Protein PSBO, in: Vladimír Sklenář (Eds.): EUROMAR 2015 Programme and Abstract Book, Page(s) P032, p.575, Masaryk University Press, 2015.
- Rathner P, Hornicakova M, Chandra K, Kohoutova J, Ettrich R, Wimmer R, Müller N. Solution NMR Reveals a Short Helix within the Disordered N- Terminal Region of PSBQ from Higher Plant Photosystem II, in: Vladimír Sklenář (Eds.): EUROMAR 2015 Programme and Abstract Book, p.776, Masaryk University Press, 2015.
- Rathner P, Traxler L, Romanin C, Müller N. Investigation of Stim1 and Orai1 protein-protein interactions using solution state NMR. Chianti Workshop Magnetic Resonance for Cellular Structural Biology, Principina Terra (Grosseto), Italy 05-10.06.2016.
- Rathner P, Derler I, Romanin C, Müller N. Preparation and NMR investigation of isotopically labeled human STIM1OASF and Orai1 protein fragments. XVIII Linz Winter Workshop, Linz, Austria 29.01-01.02.2016.
- Rathner P, Romanin C, Stadlbauer M, Müller N. Investigation of STIM1OASF and Orai1 protein-protein interactions using paramagnetic NMR. DK Nanocell Summer School, Strobl, Austria 01-03.07.2016.
- Traxler L, Faschinger F, Rathner P, Stadlbauer M, Charnavets T, Romanin C, Müller N, Hinterdorfer P, Gruber HJ. Characterization of the Orai-Calmodulin Interaction as Potential Mediator of Calcium-Dependent Orai-Channel Inactivation. BSP Meeting. Biophys J 2017, 112 (3), 183a-184a.