List of peer-reviewed Publications (accepted 17)

a) 1st authorship,
b) Co-author contributions and
c) Corresponding authorship.
Shared 1st authorship are indicated. Three most important publications in red.

1. **Richard Börner[a,c]**, Danny Kowerko, Christian von Borczyskowski and Christian G. Hübner[c], Time resolved 3D orientation spectroscopy: experimental realization and simulation, Proceedings of the SPIE Photonics West 2011: Single Molecule Spectroscopy and Imaging IV, 2011, 7905(1):79050D.
2. Stefan Krause, Danny Kowerko, **Börner Richard[b]**, Christian G. Hübner and Christian von Borczyskowski, Spectral Diffusion of Single Molecules in a Hierarchical Energy Landscape, ChemPhysChem, 2011, 12:303-312.
3. **Richard Börner[a,c]**, Danny Kowerko, Stefan Krause, Christian von Borczyskowski and Christian G. Hübner[c], Efficient simultaneous fluorescence orientation, spectrum and lifetime detection for single molecule dynamics, Journal of Chemical Physics, 2012, 137(6):164202 – 11.
4. Sebastian L. B. König, Mélodie C.A.S. Hadzic, Erica Fiorini, **Richard Börner[b]**, Danny Kowerko, Wolf U. Blanckenhorn, Roland K.O. Sigel, BOBA FRET: bootstrap-based analysis of single-molecule FRET data, PLoS ONE, 2013, 8:e84157.
5. **Richard Börner[a]**, Erica Fiorini[a], Roland K.O. Sigel, RNA studies in crowding agents, Chimia, 2015, 69, 207-212.
6. **Richard Börner[a,c]**, Nicky Ehrlich, Johannes Hohlbein, Christian G. Hübner[c], 3D Orientation in Time and Space: A 6D dynamic study on fluorescently labeled GUVs, Journal of Fluorescence, 2016, 26(3):963-75.
7. Mélodie C.A.S. Hadzic, Danny Kowerko, **Richard Börner[b]**, Susann Zelger-Paulus, Roland K.O. Sigel, Detailed analysis of complex single molecule FRET data with the software MASH, Proceedings of the SPIE, 2016, 9711(1:)971119.
8. **Richard Börner[a,c],** Danny Kowerko[a], Helena Guiset Miserachs, Michelle F. Schaffer, Roland K.O. Sigel[c], Metal ion induced heterogeneity in RNA folding studied by smFRET, Coordination Chemistry Review, 2016, 327-328:123-142.
9. Fabio D. Steffen, Roland K.O. Sigel, **Richard Börner[c]**, An atomistic view on carbocyanine photophysics in the realm of RNA, Physical Chemistry and Chemical Physics, 2016, 18:29045-29055 (inclusive frontside cover artwork).
10. Helena Guiset Miserach, Daniela Donghi, **Richard Börner[c]**, Silke Johannson[c], Roland K.O. Sigel[c], Distinct differences in metal ion specificity of RNA and DNA G-quadruplexes, Journal of Biological Inorganic Chemistry, 2016, 21:975**.**
11. Meng Zhao, Fabio D. Steffen, **Richard Börner[b]**, Michelle F. Schaffer, Roland K.O. Sigel, Eva Freisinger, Double, site-specific labeling of large RNAs for single-molecule FRET, Nucleic Acids Research, 2018, 46(3): e13.
12. **Richard Börner[a,c]**, Danny Kowerko[a], Mélodie C.A.S. Hadzic[a], Sebastian L.B. König, Marc Ritter and Roland K.O. Sigel[c], Simulations of camera-based single-molecule fluorescence experiments, PLoS ONE, 2018, 13(4): e0195277.
13. Mélodie C.A.S. Hadzic, **Richard Börner[c]**, Danny Kowerko, Sebastian L.B. König, and Roland K.O. Sigel[c], Reliable State Identification and State Transition Detection in Fluorescence Intensity-Based Single-Molecule Förster Resonance Energy-Transfer Data, Journal of Physical Chemistry B, 2018, 122 (23): 6134–6147.
14. **Richard Börner[a]**, Bishnu Paudel[a], Erica Fiorini[a], Roland K.O. Sigel, and David Rueda, Optimal Molecular Crowding Accelerates Group II Intron Folding and Maximizes Catalysis, Proceedings of the National Academy of Science U.S.A., 2018, 115 (47): 11917-11922.

15. Fabio D. Steffen[a], Mokrane Khier[a], Danny Kowerko, **Richard Börner[c]** and Roland K.O. Sigel[c], Working title: Sugar puckering resolves kinetic heterogeneity of exon recognition by a group II intron, 2019, **to be submitted.**
16. Susann Zelger-Paulus[a], Mélodie C.A.S. Hadzic[a], Roland K.O. Sigel[c], and **Richard Börner[c],** Encapsulation of fluorescently labelled RNAs into surface-tethered vesicles for single molecule FRET studies in TIRF microscopy, Methods in Molecular Biology, 2019, invited book chapter, **accepted.**
17. Meng Zhao, **Richard Börner[b]**, Roland K.O. Sigel, Eva Freisinger, Site-specific dual-color labeling of long RNAs, Methods in Molecular Biology, 2019, invited book chapter, **accepted**.
18. Fabio D. Steffen[c], **Richard Börner[b]**, Eva Freisinger, Roland K.O. Sigel[c], Stick, flick, click - DNA-guided fluorescent labeling of long RNA for single-molecule FRET, Chimia, 2019, **accepted**.
19. Stefan Gerhardy[a], Michaela Oplova[a], **Richard Börner**, Ludovic Gillet, Rob van Nues, Ahmed Moursy, Alain Scaiola, Alexander Leitner, Daniel Böhringer, Martin Altvater, Janusz Petkowski, Roland K.O. Sigel, Nenad Ban, Frederic Allain, Sander Grannemann, Ruedi Aebersold, Vikram Govind Panse[c], Working title: Puf6 guides correct ribosomal RNA folding during 60S assembly, 2019, **in preparation.**
20. Mélodie C.A.S. Hadzic[a], Fabio D. Steffen, Danny Kowerko, Susann Zelger-Paulus, Roland K.O. Sigel and Richard Börner, Working title: MASH-FRET – A multifunctional Analysing Software for heterteogenous single-molecule FRET data, JOVE, 2019, invited video tutorial, **in preparation.**
21. Susann Zelger-Paulus[a], Mélodie C.A.S. Hadzic[a], Besim Fazliji, Fabio D. Steffen, **Richard Börner[c],** and Roland K.O. Sigel[c], Working title: Flanking exons stabilizing the folding of group II introns: combining single molecule experiments encapsulated in lipid vesicles and ensemble activity assays, 2019**, in preparation.**
22. **Richard Börner**, Erica Fiorini, Birgit Köhn, Michael Kovermann and Roland K.O. Sigel, Working title: The mash size determines optimal macromolecular crowding conditions to maximize ribozyme catalytic activity, 2019, **in preparation.**
23. Zenghui Wang, Fabio D. Steffen, Alicia Dominguez-Martin, Y. Zhong, Q. Cao, Zong-Wan Mao, **Richard Börner**[c], and Roland K. O. Sigel[c], Working title: Photophysical investigation on the interaction between Pt(II) complexes and an RNA G-quadruplex, 2019, **in preparation.**

List of Invited Talks (13)

1. "Time resolved 3D orientation of single molecules"
   Invited by Christian von Borczyskowski, TU Chemnitz, Chemnitz, Germany, June, **2009.**
2. "Time resolved 3D orientation spectroscopy - experimental realisation and simulation"
   Invited by Christian von Borczyskowski, TU Chemnitz, Chemnitz, Germany, June, **2010.**
3. "Advanced Methods in Confocal Fluorescence Microscopy"
   Invited by Dorethee Kern, Brandeis University, Waltham, MA, USA, January, **2012.**
4. "RNA studies with smFRET - A FRET-pair (Cy3/5s) under control"
   Richard Börner, invited by Christian G. Hübner, University of Lübeck, Lübeck, Germany, June, **2013.**
5. "Gene regulation on the RNA level. Ribozymes and Riboswitches studied with single molecule FRET"
   Invited by Magnus Wolf-Watz, University of Umeå, Umeå, Sweden, April, **2015.**
6. "Gene regulation on the RNA level"
   Invited by Christian G. Hübner, University of Lübeck, Lübeck, Germany, September, **2015.**
7. "Group II intron ribozyme folding and activity in a crowded environment – polymer pore size matters"
   Invited by the National Center of Competence in Research (NCCR) RNA & Disease Research Seminar Series represented by Frederic Allain and Jonathan Hall, ETHZ, Zurich, Switzerland, May, **2017**.
8. "Fluorophore photophysics in the realm of RNA: experiment meets simulation"
   Invited by Magdalena Rafecas, IMT, Lübeck, Germany, October, **2017**.

9. "Single molecule video and data processing: RNA-RNA/DNA docking as an example"
   Invited by Karten Kottig, Evotec, Hamburg, Germany, November 27, **2018.**
10. "Kinetic heterogeneity in RNA-RNA and RNA-DNA contacts investigated by means of smFRET and MD simulation – understanding tertiary contact formation in RNA folding and retrohoming."
    Invited by Christian G Hübner, University of Lübeck, Lübeck, Germany, November 30, **2018.**
11. "Understanding RNA-RNA and RNA-DNA contact formation with the help of single-molecule FRET and MD simulation."
    Invited by Thomas Gutsmann,12th North German Biophysics Meeting, Research Center Borstel, Borstel, Germany, January 18, **2019.**
12. "Understanding RNA-RNA and RNA-DNA contact formation with the help of single-molecule FRET and MD simulation."
    Invited by Alexander Horn, University of Applied Sciences Mittweida, Mittweida, Germany, February 11, **2019**.
13. "tba"
    Invited by Victoria Birkedal, Aarhus University, Aarhus, Denmark, April 14, **2019**.

List of Conference Contributions (101)

Author (16 talks, 23 poster) and co-author (64) contributions to scientific conferences (partly published in Journals), after the name of the presenting author the kind of presentation is indicated too.

1. "Verifikation zweidimensionaler Dosisverteilungen mithilfe des Beam Image Systems von Wellhöfer"
   Richard Börner (*Poster*), Martin Janich, Rüdiger Scharf and Reinhard Gerlach, Abstracts of the *Dreiländertagung Medizinische Physik 2007*, September 25, Bern, Schweiz, September, **2007.**
2. "TIRFM - Beleuchtung von Oberflächen"
   Richard Börner (*Poster*) and Christian G. Hübner, *Doktorandentag - Uni im Dialog*, Universität zu Lübeck, Lübeck, Germany, June, **2008.**
3. "Time-dependent 3D orientation of eGFP in different surroundings"
   Richard Börner (*Poster*), Johannes Hohlbein and Christian G. Hübner, Abstracts of the *14th Single Molecule Workshop*, Picoquant, Berlin, September, **2008.**
4. "Time resolved three-dimensional orientation of eGFP"
   Richard Börner (*Talk*) and Christian G. Hübner, Abstracts of the *DPG spring meeting (DPG e.V.)*, Dresden, Germany, March, **2009.**
5. "Orientierung in drei Dimensionen - Einzelnen Molekülen auf der Spur"
   Richard Börner (*Poster*) and Christian G. Hübner, *Doktorandentag - Uni im Dialog*, Universität zu Lübeck, Lübeck, Germany, June, **2009.**
6. "Single molecule 3D orientation: A multiparameter measurement on PBI"
   Richard Börner (*Poster*), Danny Kowerko, Christian v. Borczyskowski and Christian G. Hübner, *15th Single Molecule Workshop*, Picoquant, Berlin, Germany, September, **2009.**
7. "Time resolved 3D orientation spectroscopy - experimental realisation and simulation"
   Richard Börner (*Talk*), Danny Kowerko, Christian v. Borczyskowski and Christian G. Hübner, Abstracts of the *DPG spring meeting (DPG e.V.)*, Regensburg, Germany, March, **2010.**
8. "Single molecule 3D orientation: A multiparameter measurement on PBI"
   Richard Börner (*Poster*), Danny Kowerko, Christian von Borczyskowski and Christian G. Hübner, Abstracts of the *DPG spring meeting (DPG e.V.)*, Regensburg, Germany, March, **2010.**
9. "Group-specific Motion of Single Perylene Bisimide Molecules at Interfaces"
   Danny Kowerko (*Poster*), **Richard Börner**, Stefan Krause, ChristianG. Hübner and Christian von Borczyskowski, Abstracts of the *DPG spring meeting (DPG e.V.)*, Dresden, Germany, March, **2010.**

10. "Time resolved 3D orientation spectroscopy - experimental realization and simulation"
Richard Börner (*Talk*), Danny Kowerko, Stefan Krause, Christian von Borczyskowski and Christian G. Hübner, Abstracts of the *BIOS SPIE Photonics West 2011*, Moscone Center, San Francisco, USA, January, **2011.**

11. "A theoretical description of the 3D orientation determination of dipoles near interfaces"
Richard Börner (*Poster*) and Christian G. Hübner, Abstracts of the *DPG spring meeting (DPG e.V.)*, Dresden, Germany, March, **2011.**

12. "Group-specific Motion of Single Perylene Bisimide Molecules at Interfaces"
Danny Kowerko (*Talk*), **Richard Börner**, Stefan Krause, Christian G. Hübner and Christian von Borczyskowski, Abstracts of the *DPG spring meeting (DPG e.V.)*, Dresden, Germany, March, **2011.**

13. "Three-Focus-Fluorescence-Correlation-Spectroscopy"
Lars Kreutzburg (*Poster*), **Richard Börner** and Christian G. Hübner, Abstracts of the *DPG spring meeting (DPG e.V.)*, Dresden, Germany, March, **2011.**

14. "Giant unilamellar vesicle (GUV) as model system in advanced 3d orientation determination"
Richard Börner (*Poster*), Nicky Ehrlich and Christian G. Hübner, Abstracts of the *488. WE Heraeus Seminar, Single Molecule Spectroscopy: Current Status and Perspectives*, Chemnitz, Germany, July, **2011.**

15. "Giant unilamellar vesicle (GUV) as model system in advanced 3d orientation determination"
Richard Börner (*Poster*), Nicky Ehrlich and Christian G. Hübner, Abstracts of the *Meeting of the European Biophysical Society Association (EBSA)*, Budapest, Hungary, August 23-27, 2011. Published in *European Biophysics Journal with Biophysics Letters*, 2011, 40, Supplement 1, **2011**.

16. "Giant unilamellar vesicle (GUV) as model system in advanced 3d orientation determination"
Richard Börner (*Poster*), Nicky Ehrlich, Dominico Klawitter and Christian G. Hübner, *17th Single Molecule Workshop*, Picoquant, Berlin, Germany, September, **2011.**

17. "Giant unilamellar vesicle (GUV) as model system in advanced 3D orientation determination"
Richard Börner (*Talk*), Nicky Ehrlich and Christian G. Hübner, Abstracts of the *Single Molecule Spectroscopy and Imaging IV*, 2012, 228,1, *BIOS SPIE Photonics WEST*, San Francisco, CA, USA, January 8, **2012.**

18. "Giant unilamellar vesicle (GUV) as model system in advanced 3D orientation determination"
Richard Börner (*Talk*), Nicky Ehrlich and Christian G. Hübner, *Membranes in Health and Disease*, Gomadingen, Germany, March, **2012.**

19. "Multifocus fluorescence correlation spectroscopy"
Vit Dolezal (*Poster*), Lars Kreutzburg, **Richard Börner**, and Christian G. Hübner, *Doktorandentag - Uni im Dialog*, Universität zu Lübeck, Lübeck, Germany, June, **2013**

20. "Multifocus fluorescence correlation spectroscopy"
Vit Dolezal (*Talk*), Lars Kreutzburg, **Richard Börner**, and Christian G.Hübner, Workshop "Kleine Volumenstr□ome in der Medizintechnik", Lübeck, Germany, June, **2012**.

21. "Multifocus fluorescence correlation spectroscopy"
Vit Dolezal (*Poster*), Lars Kreutzburg, **Richard Börner**, and Christian G. Hübner, *Doktorandentag - Uni im Dialog*, Universität zu Lübeck, Lübeck, Germany, June, **2013.**

22. "Characterising the reversibility of of splicing in pre-mRNAs confined in phospholipid vesicles by three colour smFRET spectroscopy"
Mélodie C.A.S. Hadzic *(Poster)*, Erica Fiorini, Sebastian König, Danny Kowerko, **Richard Börner** and Roland K.O. Sigel, *13th Conference on Methods and Applications of Fluorescence*, Genoa, Italy, September 8-11, **2013**.

23. "RNA-Metal Ion Interaction by smFRET"
Mokrane Khier *(Poster)*, Sebastian L.B. König, Danny Kowerko, Mélodie C.A.S. Hadzic, **Richard Börner** and Roland K.O. Sigel, *13th Conference on Methods and Applications of Fluorescence*, Genua, Italy, September 8-11, **2013**.

24. "Multifocus fluorescence correlation spectroscopy"
    Vit Dolezal (*Poster*), Lars Kreutzburg, Renate Holzhause, **Richard Börner**, Christian G. Hübner, 19th Single Molecule Workshop, Picoquant, Berlin, Germany, September 4-6, **2013**.
25. "Close to near physiological conditions – A study under crowded conditions of group II intron ribozyme folding"
    Erica Fiorini *(Poster)*, **Richard Börner** and Roland K.O. Sigel, *Swiss RNA Workshop*, Bern, Switzerland, January 24, **2014.**
26. "Multifocus fluorescence correlation spectroscopy"
    Vit Dolezal (*Poster*), Renate Holzhause, Lars Kreutzburg, **Richard Börner**, and Christian G. Hübner, *16th annual linz winter workshop*, Universität zu Lübeck, Linz, Austria, February, **2014**
27. "Close to near physiological conditions – A study under crowded conditions of group II intron ribozyme folding"
    Erica Fiorini *(Talk)*, Bishnu Paudel, **Richard Börner**, David Rueda and Roland K.O. Sigel, *Doktorandentag Chemistry 2014*, Au SG, Switzerland, June 3,.**2014.**
28. "Gene regulation on the RNA level. The B_{12} dependent *btuB* riboswitch studied with single molecule FRET"
    Richard Börner *(Poster)*, Michelle F. Schaffer, Sofia Gallo and Roland K.O. Sigel, *Gordon Research Conference (GRC) on Single Molecule Approaches to Biology*, Lucca, Italy, July 14 – 18, **2014.**
29. "Close to near physiological conditions – A crowding agent study on group II intron ribozyme folding"
    Erica Fiorini *(Poster)*, Bishnu Paudel, **Richard Börner**, David Rueda and Roland K.O. Sigel, *Gordon Research Conference (GRC) on Single Molecule Approaches to Biology*, Lucca, Italy, July 14 – 18, **2014.**
30. "MASH: Multifunctional analysis software for heterogeneous smFRET data analysis"
    Mélodie C.A.S. Hadzic *(Poster)*, **Richard Börner**, Danny Kowerko, Sebastian L.B. König and Roland K.O. Sigel, *Gordon Research Conference (GRC) on Single Molecule Approaches to Biology*, Lucca, Italy, July 14 – 18, **2014.**
31. "Metal complexes in gene regulatio.n. The B_{12} dependent *btuB* riboswitch studied with single molecule FRET"
    Richard Börner *(Poster)*, Michelle F. Schaffer, Sofia Gallo and Roland K.O. Sigel, Abstracts of the *2nd Symposium on Functional Metal Complexes that Bind to Biomolecules, COST Action CM1105*, Zurich, Switzerland, August 22- 23, **2014.**
32. "From bulk to single molecule RNA studies: Point mutations reveal specific intra domain interactions essential for group II intron ribozymes folding pathway"
    Erica Fiorini *(Poster)*, Danny Kowerko, **Richard Börner** and Roland K.O. Sigel, Abstracts of the *12th European Biological Inorganic Chemistry Conference*, Zurich, Switzerland, August 24-28, 2014. Published in *J. Bio. Inorg. Chem.*, 19, 2, **2014**.
33. "Gene regulation on the RNA level. The B_{12} dependent *btuB* riboswitch studied with single molecule FRET"
    Richard Börner *(Poster)*, Michelle F. Schaffer, Sofia Gallo and Roland K.O. Sigel, Abstracts of the *12th European Biological Inorganic Chemistry Conference*, Zurich, Switzerland, August 24-28, 2014. Published in *J. Bio. Inorg. Chem.*, 19, 2, **2014**.
34. "Multifocus fluorescence correlation spectroscopy"
    Vit Dolezal, Renate Holzhause, Lennart Lohmann, Kim C.Reiter, Lars Kreutzburg, **Richard Börner**, and Christian G Hübner, *Biennual meeting of the German Biophysical Society DGfB e.V.*, Lübeck, Germany, September, **2014**.
35. "Close to near physiological conditions – A study under crowded conditions of group II intron ribozyme folding"
    Erica Fiorini *(Talk),* **Richard Börner** and Roland K.O. Sigel, Abstracts of the *Swiss Summer School in Chemical Biology*, Villars sur Ollon, Switzerland, September 1, **2014.**
36. „Close to near physiological conditions – A study under crowded conditions of group II intron ribozyme folding“

Erica Fiorini (*Poster*), Richard Börner and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society* (SCS), Zurich, Switzerland, September 11, 2014. Published in *Chimia*, 68, 7-8, **2014**.

37. "Gene regulation on the RNA level. The B_{12} dependent *btuB* riboswitsch studied with single molecule FRET"
Richard Börner *(Poster)*, Michelle Schaffer, Fabio D. Steffen, Sofia Gallo and Roland K.O. Sigel, *Swiss RNA Workshop*, Bern, Switzerland, January 23, **2015.**

38. "Global Conformational Changes on the *btuB* riboswitch as revealed by Small Angle X-ray Scattering (SAXS)"
Michelle Schaffer *(Poster)*, **Richard Börner**, Kaisa Kisko and Roland K.O. Sigel, *Swiss RNA Workshop*, Bern, Switzerland, January 23, **2015.**

39. "Close to physiological conditions - A study under crowded conditions of group II intron ribozyme folding"
Erica Fiorini *(Talk)*, Bishnu Paudel, **Richard Börner**, David Rueda and Roland K.O. Sigel, *Swiss RNA Workshop*, Bern, Switzerland, January 23, **2015.**

40. "Post-transcrioptional modification of the *btuB* riboswitch with fluorophores for single molecule FRET Studies."
Meng Zhao *(Poster)*, David Egloff, Igor Oleinich, **Richard Börner**, Roland K.O. Sigel and Eva Freisinger, *Swiss RNA Workshop*, Bern, Switzerland, January 23, **2015.**

41. "Multifocus fluorescence correlation spectroscopy"
Vit Dolezal (*Talk*), Lars Kreutzburg, Renate Holzhause, Lennart Lohmann, **Richard Börner** and Christian G. Hübner, Abstracts of the *BIOS SPIE Photonics WEST*, San Francisco, CA, US, Februar 7-8, Published in *Proc. SPIE, Single Molecule Spectroscopy and Superresolution Imaging VIII*, 9331, 1, **2016.**

42. "Gene regulation on the RNA level. The B_{12} dependent *btuB* riboswitch studied with single molecule FRET"
Richard Börner *(Talk)*, Michelle Schaffer, Sofia Gallo and Roland K.O. Sigel, *79th Annual Meeting of the DPG – Spring Meeting of the Condensed Matter Section (Biophysics)*, Berlin, Germany, March 15-20, **2015.**

43. "Unravelling biologically relevant RNA G-quadruplexes: single molecule studies and metal ion dependency"
Helena Guiset Miserachs *(Poster)*, Daniela Donghi, **Richard Börner**, Silke Johannsen and Roland K.O. Sigel; *5th International Meeting on G-quaduplex Nucleic Acids*, Bordeaux, France, May 4.-28., **2015.**

44. "Study on the folding of a group II intron ribozyme – The effects of crowding agents and mutations"
Erica Fiorini *(Poster)*, **Richard Börner** and Roland K.O. Sigel, *Seol Summer School*, South Korea, June 21 – July 5, **2015.**

45. "A macromolecular crowding study of RNA folding and actvity – polymer pore size matters"
Richard Börner *(Talk)*, Erica Fiorini, Bishnu Paudel, David Rueda and Roland K.O. Sigel, *21st Single Molecule PicoQuant Workshop*, Berlin, September 2-4, **2015.**

46. "Carbocyanines revisited – experiment meets simulation"
Fabio D. Steffen *(Poster)*, Roland K.O. Sigel, **Richard Börner**, *21st Single Molecule PicoQuant Workshop*, Berlin, September 2-4, **2015.**

47. "From bulk to single molecule – Point mutations reveal specific intra domain interactions essential for group II intron folding"
Erica Fiorini *(Talk)*, Lucia Cardo, **Richard Börner**, Danny Kowerko and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Lausanne, Switzerland, September 4, 2015. Published in *Chimia*, 69, 7-8, **2015**.

48. „Pore size matters - A crowding study of ribozyme folding and activity“
Richard Börner (*Poster*), Erica Fiorini and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Lausanne, Switzerland, September 4, 2015. Published in *Chimia*, 69, 7-8, **2015**.

49. "Metal ion dependency and multimerization behavior of biologically relevant human RNA G-quadruplexes"
Helena Guiset Miserachs *(Poster)*, **Richard Börner**, Daniela Donghi, Silke Johannsen and Roland K.O. Sigel,

Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Lausanne, Switzerland, September 4, 2015. Published in *Chimia*, 69, 7-8, **2015**.

50. "Covalently labeling of the *btuB* riboswitch with fluorophores for the studies at the single molecule level" Meng Zhao *(Poster)*, **Richard Börner**, Roland K.O. Sigel and Eva Freisinger, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Lausanne, Switzerland, September 4, 2014. Published in *Chimia*, 69, 7-8, **2015**.

51. "A macromolecular crowding study of RNA folding and activity: polymer pore size matters!" **Richard Börner** (*Poster*), Erica Fiorini, and Roland K.O. Sigel, *Live Sciences PostDoc Day 2015 - ETHZ*, Zurich, Switzerland, October 5, **2015**.

52. "Carbocyanines and RNA – experiment meets simulation" **Richard Börner** (*Talk*), Fabio D. Steffen and Roland K.O. Sigel, Abstracts of the *BIOS SPIE Photonics WEST*, San Francisco, CA, US, Februar 13-14, 2016, Published in *Proc. SPIE, Single Molecule Spectroscopy and Superresolution Imaging IX*, 9714, 8, **2016.**

53. "A macromolecular crowding study of RNA folding and activity: polymer pore size matters!" **Richard Börner** (*Talk*), Erica Fiorini and Roland K.O. Sigel, Abstracts of the *BIOS SPIE Photonics WEST*, San Francisco, CA, US, Februar 13-14, Published in *Proc. SPIE, Biophysics, Biology and Biophotonics: the Crossroads*, 9719, 9, **2016.**

54. "Comprehensive guide to modern methods for processing and analyzing single molecule fluorescence data" Melodie Hadzic (*Talk*), Danny Kowerko, **Richard Börner**, Sebastian König and Roland K.O. Sigel, Abstracts of the *BIOS SPIE Photonics WEST*, San Francisco, CA, US, Februar 13-18, 2016, Published in *Proc. SPIE*, *Imaging, Manipulation and Analysis of Biomolecules, Cells and Tissues IX,* 9711, 19, **2016.**

55. "Dissecting carbocyanine photophysics in the context of RNA" Fabio D. Steffen (*Poster*), Roland K.O. Sigel and **Richard Börner**, *Förster Resonance Energy Transfer in Life Sciences: FRET 2 meeting*, Göttingen, Germany, April 3-6, **2016**.

56. "Point mutations reveal specific intradomain interactions essential for group II intron ribozyme folding" Erica Fiorini (*Poster*), **Richard Börner**, Lucia Cardo, Danny Kowerko and Roland K.O. Sigel, *Förster Resonance Energy Transfer in Life Sciences: FRET 2 meeting*, Göttingen, Germany, April 3-6, **2016**.

57. "Site-specific labeling of large RNA with fluorophores for the application in single molecule FRET studies" Meng Zhao *(Poster)*, Fabio D. Steffen, **Richard Börner**, Roland K.O. Sigel and Eva Freisinger, *Förster Resonance Energy Transfer in Life Sciences: FRET 2 meeting*, Göttingen, Germany April 3-6, **2016**.

58. "A DNA-templated approach for the sequence-specific labeling of adenine bases in single-stranded regions of DNA or RNA" Meng Zhao (*Poster*), David Egloff, Igor Oleinich, **Richard Börner**, Roland K. O. Sigel, E. Freisinger, *3rd International Symposium on Functional Metal Complexes that Bind to Biomolecules*, *4th Whole Action and WG2 Meeting of the COST Action CM1105*, Palma de Mallorca, Mallorca, Spain, Apr. 28-29, **2016**.

59. "Single-molecule FRET studies about an encapsulated group II intron" Susan Zelger Paulus (*Talk*), Melodie C.A.S. Hadzic, **Richard Börner** and Roland K.O. Sigel, *EMBO workshop: RNA structure meets function*, Stockholm, Sweden, June 14, **2016**.

60. "Site-specific labeling of large RNA with fluorophores for the application in single molecule FRET studies" Meng Zhou (*Poster*), Fabio D. Steffen, **Richard Börner**, Roland K.O. Sigel and Eva Freisinger, *Gordon Research Conference (GRC) on Single Molecule Approaches to Biology,* Hongkong, China, July 3-8, **2016**.

61. "Investigation of the interaction between platinum metal complexes and RNA G-quadruplex" Zenghui Wang (*Poster*), Alicia Domigues-Martin, Silke Johannsen, **Richard Börner**, Y. Zhong, Q. Cao, Z. Mao and Roland K.O. Sigel, *13th European Biological Inorganic Chemistry Conference (EuroBIC 13)*, Budapest, Hungary, August 28-September 1, **2016**.

62. "Metal ion interactions in ncRNAs revealed by smFRET"
Richard Börner (*Poster*) and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Zurich, Switzerland, September 15, 2016. Published in *Chimia*, 70, 7-8, **2016**.

63. "Extending carbocyanine photophysics to the realm of RNA"
Fabio F. Steffen (Poster), Roland K.O. Sigel and **Richard Börner**, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Zurich, Switzerland, September 15, 2016. Published in *Chimia*, 70, 7-8, **2016**.

64. "The MOCO riboswitch from E. coli"
Fabio Amadei (*Poster*), Sofia Gallo, **Richard Börner** and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Zurich, Switzerland, September 15, 2016. Published in *Chimia*, 70, 7-8, **2016**.

65. "Following the splicing process of an encapsulated group II intron by single-molecule FRET"
Besim Fazliji (*Poster*), Susan Zelger-Paulus, Melodie C.A.S Hadzic, **Richard Börner** and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Zurich, Switzerland, September 15, 2016. Published in *Chimia*, 70, 7-8, **2016**.

66. "Investigation of the interaction between platinum metal complexes and RNA G-quadruplex"
Zenghui Wang (*Poster*), Alicia Domigues-Martin, Silke Johannsen, **Richard Börner**, Y. Zhong, Q. Cao, Z. Mao and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Zurich, Switzerland, September 15, 2016. Published in *Chimia*, 70, 7-8, **2016**.

67. "Site-specific labeling of large RNA with fluorophores for the application in single molecule FRET studies"
Meng Zhou (*Poster*), Fabio D. Steffen, **Richard Börner**, Eva Freisinger and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Zurich, Switzerland, September 15, 2016. Published in *Chimia*, 70, 7-8, **2016**.

68. "Carbocyanines in the realm of RNA – single molecule experiment meets simulation"
Richard Börner (*Talk*), Fabio D. Steffen and Roland K. O. Sigel, *German Biophysical Society meeting (DGfB e.V.)*, Erlangen, Germnay, September 25-28, **2016.**

69. "Investigation of the interaction between platinum metal complexes and RNA G-quadruplex"
Zenghui Wang (*Poster*), Alicia Domigues-Martin, Silke Johannsen, **Richard Börner**, Y. Zhong, Q. Cao, Z. Mao and Roland K.O. Sigel, *11th Dorothy Crowfoot Hodgkin Symposium*, Zurich, Switzerland, October 3, **2016**.

70. "Extending carbocyanine photophysics to the realm of RNA"
Fabio F. Steffen (*Poster*), Roland K.O. Sigel and **Richard Börner,** *11th Dorothy Crowfoot Hodgkin Symposium*, Zurich, Switzerland, October 3, **2016**.

71. "Site-specific fluorescence labeling of large RNA for the application of single molecule FRET"
Meng Zhao (*Poster*), Fabio D. Steffen, Richard Börner, Michelle F. Schaffer, Eva Freisinger and Roland K.O. Sigel, *11th Dorothy Crowfoot Hodgkin Symposium*, Zurich, Switzerland, October 3, **2016.**

72. "Following the splicing process of an encapsulated group II intron by single-molecule FRET"
Besim Fazliji (*Poster*), Susan Zelger-Paulus, Melodie C.A.S Hadzic, **Richard Börner** and Roland K.O. Sigel, *11th Dorothy Crowfoot Hodgkin Symposium*, Zurich, Switzerland, October 3, **2016.**

73. "Combining single-molecule and ensemble experiments to disentangle the interplay between RNA folding and splicing
Susann Zelger Paulus (*Talk*), Melodie C.A.S Hadzic, **Richard Börner** and Roland K.O. Sigel, *Zing conference: Nucleic acids*, Tampa, Florida USA, Dec. 4, **2016**.

74. "Following the splicing process of an encapsulated group II intron by single-molecule FRET"
Besim Fazliji (*Poster*), Susan Zelger-Paulus, Melodie C.A.S Hadzic, **Richard Börner** and Roland K.O. Sigel, *Swiss RNA Workshop*, Bern, Switzerland, Jan. 27, **2017**.

75. "RNA-induced fluorescence enhancement – from experiment to simulation"
Fabio D. Steffen (*Poster*), Roland K.O. Sigel and **Richard Börner**, *Swiss RNA Workshop*, Bern, Switzerland, Jan. 27, **2017**.

76. "A macromolecular crowding study of RNA folding and activity: polymer pore size matters!" **Richard Börner** (*Talk and Poster*), Erica Fiorini, Birgit Köhn, Michael Kovermann and Roland K.O. Sigel, *81st Annual Meeting of the DPG – Spring Meeting of the Condensed Matter Section (Biophysics)*, Dresden, Germany, March 24, **2017**.

77. "A macromolecular crowding study of RNA folding and activity: polymer pore size matters!" **Richard Börner** (*Poster*), Erica Fiorini, Bishnu Paudel, Birgit Köhn, Michael Kovermann, David Rueda and Roland K.O. Sigel, *22nd Annual Meeting of the RNA Society*, Prague, Czech Republic, May 30 - June 4, **2017**.

78. "Following RNA splicing in vitro by single-molecule FRET " Susann Zelger-Paulus (*Talk and Poster*), Melodie C.A.S Hadzic, Besim Fazliji, **Richard Börner** and Roland K.O. Sigel, *22nd Annual Meeting of the RNA Society*, Prague, Czech Republic, May 30 - June 4, **2017**.

79. "A photophysical study on the interaction between fluorescent platinum(II) complexes and a BCL-2 RNA G-quadruplex" Zenghui Wang (*Flash Talk and Poster*), Fabio D. Steffen, Alicia Dominguez-Martin, Zong-Wan Mao, **Richard Börner**, and Roland K. O. Sigel, *G4thering,* Prague, Czech Republic, May 31 – June 3, **2017**.

80. "Dynamic insight into the interaction between two fluorescent platinum(II) complexes and a BCL-2 RNA G-quadruplex" Zenghui Wang (*Talk*), Fabio D. Steffen, Alicia Dominguez-Martin, Zong-Wan Mao, **Richard Börner**, and Roland K. O. Sigel, *18th International Conference on Biological Inorganic Chemistry (ICBIC-18)*, Florianópolis, Brazil, July 31 – Aug. 4, 2017. Published in J. Bio. Inorg. Chem. 22, 1, **2017**.

81. "Understanding the crowd: how specific is the influence of crowding particles on the activity of RNAs?" **Richard Börner** (*Poster*), Erica Fiorini, Birgit Köhn, Michael Kovermann and Roland K.O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Bern, Switzerland, Aug. 21-22, 2017. Published in *Chimia*, **2017**.

82. "Fluorophore guided RNA modeling" Fabio D. Steffen (*Talk*), Roland K.O. Sigel and **Richard Börner**, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS)*, Bern, Switzerland, Aug. 21-22, 2017. Published in *Chimia*, **2017**.

83. "Photophysical insight on the interaction between an RNA G-quadruplex and fluorescent platinum(II) complexes" Zenghui Wang (*Poster*), Fabio D. Steffen, Alicia Dominguez-Martin, Y. Zhong, Q. Cao, Zong-Wan Mao, **Richard Börner**, and Roland K. O. Sigel, Abstracts of the *Fall Meeting of the Swiss Chemical Society (SCS),* Bern, Switzerland, Aug. 21-22, 2017. Published in *Chimia*, **2017**.

84. "A photophysical study on the interaction between fluorescent platinum(II) complexes and RNA G-quadruplexes" **Richard Börner** (*Poster*), Zenghui Wang, Fabio D. Steffen, Alicia Domigues-Martin, Z. Mao and Roland K.O. Sigel, *15th Methods and Applications in Fluorescence Conference (MAF 2017)*, Bruges, Belgium, Sept. 10 - 13, **2017**.

85. "A refined dye description for FRET-restrained RNA modeling" Fabio D. Steffen (*Talk*), Roland K.O. Sigel and **Richard Börner**, *15th Methods and Applications in Fluorescence Conference (MAF 2017)*, Bruges, Belgium, Sept. 10 - 13, **2017**.

86. "Disentangle the interplay of group II intron ribozyme folding and splicing by vesicle encapsulation" **Richard Börner** (*Talk*), Susann Zelger-Paulus, Melodie C.A.S Hadzic, Besim Fazliji, and Roland K.O. Sigel, *Swiss RNA Workshop*, Bern, Switzerland, Feb. 2, **2018**.

87. "Site-specific two-color labeling of long RNAs for single-molecule FRET" Fabio D. Steffen (*Poster*), Meng Zhao, **Richard Börner**, Michelle F. Schaffer, Roland K.O. Sigel, and Eva Freisinger, *Swiss RNA Workshop*, Bern, Switzerland, Feb. 2, **2018**.

88. "Site-specific two-color labeling of long RNAs for single-molecule FRET" Fabio D. Steffen (*Talk*), Meng Zhao, **Richard Börner**, Michelle F. Schaffer, Roland, K.O. Sigel, Eva Freisinger; Abstracts of the NCCR RNA & Desease ETHZ, Zurich, Switzerland, April 12, **2018**.

89. "Site-specific two-color labeling of long RNAs for single-molecule FRET"
Fabio D. Steffen (*Talk*), Meng Zhao, **Richard Börner**, Michelle F. Schaffer, Roland, K.O. Sigel, Eva Freisinger; 3rd RNA Society meeting, Berkeley, US, June 3, **2018**.

90. "Site-specific two-color labeling of long RNAs for single-molecule FRET"
Fabio D. Steffen (*Talk*), Meng Zhao, **Richard Börner**, Michelle F. Schaffer, Roland, K.O. Sigel, Eva Freisinger; 4th Fluorescent Biomolecules and Their Building Blocks - Design and Applications (FB3), Glasgow, UK, June 30, **2018**.

91. "Studying the splicing of the wild type group II intron Sc. ai5γ at non-physiological and near-physiological conditions"
Maya Gulotti-Georgieva (*Poster*), Susann Zelger-Paulus, **Richard Börner** and Roland K.O. Sigel, EMBO workshop RNA: Structure meets function, Stocholm, Sweden, July 1-4, **2018**.

92. "Studying the splicing and folding of the wild type group II intron Sc. ai5γ at non-physiological and near-physiological conditions"
Maya Gulotti-Georgieva (*Poster*), Susann Zelger-Paulus, **Richard Börner** and Roland K.O. Sigel Maya, Gordon Research Conference - Single Molecule Approaches to Biology, Mount Snow, VT, US, July 15 – 20, **2018**.

93. "Photophysical investigation on the interaction between Pt(II) complexes and an RNA G-quadruplex"
Zenghui Wang (*Talk*), Fabio D. Steffen, Alicia Dominguez-Martin, Y. Zhong, Q. Cao, Zong-Wan Mao, **Richard Börner**, and Roland K. O. Sigel, 14th European Biological Inorganic Chemistry Conference (EuroBIC 13), Birmingham, UK, August 26 – 30, **2018**.

94. "Photophysical investigation on the interaction between Pt(II) complexes and an RNA G-quadruplex"
Richard Börner (*Poster*), Zenghui Wang, Fabio D. Steffen, Alicia Dominguez-Martin, Y. Zhong, Q. Cao, Zong-Wan Mao, and Roland K. O. Sigel, XIV International Symposium on Inorganic Biochemistry, Wroclaw, Poland, September 5 – 8, **2018.**

95. "Molecular strain links to Mg2+ dependent kinetic heterogeneity in a group II intron tertiary contact."
Fabio D. Steffen, Mokrane Khier, Simon Gartmann, Danny Kowerko, **Richard Börner** (*Talk*), and Roland K. O. Sigel, Biennal Meeting of the German Biophysical Society (DGfB e.V.), Düsseldorf, Germany, September 16-19, **2018**.

96. "Reliable State Identification and State Transition Detection of Fluorescence Intensity-Based smFRET Data."
Richard Börner (*Poster*), Melodie C.A.S Hadzic, Danny Kowerko, Sebastian L.B. König, Marc Ritter, Roland K.O. Sigel, Biennal Meeting of the German Biophysical Society (DGfB e.V.), Düsseldorf, Germany, September 16-19, 2018.

97. "Reliable State Identification and State Transition Detection of Fluorescence Intensity-Based smFRET Data."
Richard Börner (*Talk*), Satellite Workshop "Advanced Fluorescence Spectroscopy and Imaging" within the Biennal Meeting of the German Biophysical Society (DGfB e.V.), Düsseldorf, Germany, September 19-20, **2018**.

98. "MASH-FRET - A MATLAB-based Multifunctional Analysis Software for Handling sm-FRET data."
Richard Börner (*Talk*), Satellite Workshop "Advanced Fluorescence Spectroscopy and Imaging" within the Biennal Meeting of the German Biophysical Society (DGfB e.V.), Düsseldorf, Germany, September 19-20, **2018**.

99. "Site-specific two-color labeling of long RNAs for single-molecule FRET"
Fabio D. Steffen (*Talk*), Meng Zhao, **Richard Börner**, Michelle F. Schaffer, Roland, K.O. Sigel, Eva Freisinger; Abstracts of the Fall Meeting of the Swiss Chemical Society (SCS), Lausanne, Switzerland, September 7, **2018**. To be published in Chimia, 2018.

100. "Photophysical investigation on the interaction between Pt(II) complexes and an RNA G-quadruplex"
Zenghui Wang (*Poster*), Fabio D. Steffen, Alicia Dominguez-Martin, Y. Zhong, Q. Cao, Zong-Wan Mao,

Richard Börner, and Roland K. O. Sigel, Abstracts of the Fall Meeting of the Swiss Chemical Society (SCS), Lausanne, Switzerland, September 7, **2018**. To be published in Chimia, 2018.

101. "Characterization of fluorophores (in the realm of RNA)"
Richard Börner (*Talk*), Workshop "Science in your lab: Fluorescence Spectroscopy - Fluorophores under control", University of Zurich, Zurich, Switzerland, October 17, **2018**.