

JUN.-PROF. DR. PETER R. WICH

(SENIOR LECTURER AND JUNIOR PROFESSOR -
BIOORGANIC AND MACROMOLECULAR CHEMISTRY)

AUSTRALIAN CENTRE FOR NANOMEDICINE (ACN)
CENTRE FOR ADVANCED MACROMOLECULAR DESIGN (CAMD)

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PERSONAL INFORMATION

(CV AS OF JULY 2022)

FIELD OF RESEARCH: (bio)polymers, nanomaterials, bioorganic chemistry, drug delivery, nanomedicine, (bio)catalysis, artificial enzymes, protein modification, supramolecular recognition, polysaccharides, 3D bioprinting

NATIONALITY: German (languages: German (*native*), English (*fluent*), Spanish (*basic*))

EDUCATION

POSTDOCTORAL RESEARCH, UNIVERSITY OF CALIFORNIA, BERKELEY (USA) **2009 - 2012**
Advisor: Prof. Jean M. J. Fréchet
Feodor Lynen Research Fellow (Alexander von Humboldt Foundation, Germany)

DOCTORAL RESEARCH, JULIUS-MAXIMILIANS-UNIVERSITÄT WÜRZBURG (GERMANY) **2005 - 2009**
Advisor: Prof. Dr. Carsten Schmuck
Grade: summa cum laude "mit Auszeichnung / with highest honor"

DIPLOMA IN CHEMISTRY, JULIUS-MAXIMILIANS-UNIVERSITÄT WÜRZBURG (GERMANY) **1999 - 2005**
Final exams in Physical, Inorganic and Organic Chemistry
Grade: 1.08 "sehr gut / very good" (on a scale of 1 to 5, with 1 highest and 5 failed)

RESEARCH/WORK EXPERIENCE

SENIOR LECTURER, CHEMICAL ENGINEERING, UNIVERSITY OF NEW SOUTH WALES (AUSTRALIA) **JUN 18 - PRESENT**
Member of the Australian Centre for NanoMedicine, Centre for Advanced Macromolecular Design
- Development of biopolymer-based materials for applications in drug delivery, immunotherapy, catalysis, tissue engineering and 3D bioprinting. The main focus are biomaterial systems, based on modified polysaccharides and proteins. For this we apply various methods in the areas of bioorganic and macromolecular chemistry, biochemistry and nanotechnology.

JUNIOR PROFESSOR, INSTITUTE OF PHARMACY AND BIOCHEMISTRY, UNIVERSITY OF MAINZ (GERMANY) **APR 12 - MAY 18**
(W1, ASSISTANT PROFESSOR - POSITIVE MID-EVALUATION MAR 2015)
- Synthesis of bioinspired nanomaterials, designed to probe and manipulate the complex and fundamental interactions in cellular environments. For this, we apply various bioorganic methods for the chemical modification of biopolymers such as proteins, peptides and polysaccharides
- Development and evaluation of supramolecular and dynamic biomacromolecules for therapeutic applications. This includes nano- and microparticles for the delivery of siRNA, proteins, small molecule drugs, as well as the control of catalytic processes. Combining chemistry with biology and medicine we are working on novel approaches to solve therapeutic obstacles for future strategies and innovative applications in biomedical research

POSTDOCTORAL RESEARCH, DEPT. OF CHEMISTRY, UNIVERSITY OF CALIFORNIA, BERKELEY (USA) **OCT 09 - FEB 12**
Advisor: Prof. Jean M. J. Fréchet (co-advisor: Prof. Peter C. Vollhardt)
- Development of novel nanoparticle delivery vehicles based on biocompatible polymers as multifunctional platform for the complexation and delivery of gene material for RNA interference related applications
- Successfully evaluated a new type of macromolecular carriers for siRNA delivery that present higher efficiency and lower toxicity than the ones currently commercially available
- Synthesis of peptide modified star polymers with "clickable" cores as a modular approach for enantioselective catalysis in water

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| DOCTORAL RESEARCH , DEPT. OF ORGANIC CHEMISTRY, UNIVERSITY OF WÜRZBURG (GERMANY) Advisor: Prof. Dr. Carsten Schmuck Thesis: <i>"Multifunctional Oligopeptides as an Artificial Toolkit for Molecular Recognition Events"</i> - Investigated the binding of oligopeptides by artificial receptors under physiological conditions - Developed a new method for the femtomolar detection of peptide receptors on single polystyrene beads by Surface Enhanced Raman Scattering (SERS) - Synthesized multivalent peptides and studied their antimicrobial activity, the ability of bacterial biofilm inhibition and the potential of membrane crossing - Examined an innovative method for the surface recognition of proteins using a new and fast combinatorial technique allowing a fast enzyme screening directly on solid support - Discovered potent inhibitors for the serine protease β -tryptase based on multivalent structures featuring a unique binding and inhibition mechanism | MAY 05 - SEP 09 |
| RESEARCH ASSISTANT , DEPT. OF CHEMISTRY AND BIOCHEMISTRY, UC SAN DIEGO (USA) Advisor: Prof. Jerry Yang (Research Cooperation supported by BaCaTec-Program) | OCT 05 / NOV 06 |
| DIPLOMA RESEARCH , DEPT. OF ORGANIC CHEMISTRY, UNIVERSITY OF WÜRZBURG (GERMANY) Advisor: Prof. Dr. Carsten Schmuck Thesis: <i>"Substrate selectivity of artificial peptide receptors - Synthesis and screening of a combinatorial library of tetrapeptides"</i> | JUN 04 - FEB 05 |
| RESEARCH ASSISTANT , DEPT. OF ORGANIC CHEMISTRY, HERIOT WATT UNIVERSITY EDINBURGH (UK) Advisor: Prof. Dave R. Adams (Research work funded by EU SOCRATES EXCHANGE PROGRAM) Thesis: <i>"Model Studies Towards the Synthesis of an Anti-Influenza Agent"</i> | MAR 03 - JUL 03 |
| RESEARCH ASSISTANT , INST. OF INORGANIC CHEMISTRY, UNIVERSITY OF WÜRZBURG (GERMANY) Advisor: Prof. Dr. Carsten Strohmann Thesis: <i>"Experimental and quantum mechanical studies on chiral α-silyl substituted pyrrolidine rings: New precursors for optical active carbanions"</i> | FEB 02 - MAR 02 |

AWARDS AND SCHOLARSHIPS

AWARDS

- ▶ **2020 Polymer Chemistry Emerging Investigator** - biennial selection of polymer scientists in the early stages of their independent careers (RSC Polymer Chemistry) (JAN 2020)
- ▶ **2019 IUPAC Periodic Table of Younger Chemists** - awarded to represent the element Roentgenium 111 as part of the celebrations for the 100th anniversary of the IUPAC and the international year of the periodic table (JUN 2019)
- ▶ **2019 Soft Matter Emerging Investigator** - biennial selection of soft matter scientists in the early stages of their independent careers (RSC Soft Matter) (JAN 2019)
- ▶ **2017 Literature Prize of the Fonds der Chemischen Industrie** (FCI; Chemical Industry Fund) for the text book "Organische Chemie - Beyer/Walter" published by S. Hirzel Verlag (Price money: 5000 Euro) (NOV 2017)
- ▶ **2017 Winner of the Galenus Technology Prize**. Biennial award for innovative achievements in the field of Pharmaceutical Technology, Vienna, Austria (Price money: 5000 Euro) (AUG 2017)
- ▶ **2016** Selected as new **Member of the "Junge Akademie" of the Academy of Sciences and Literature**, Mainz, Germany (Akademie der Wissenschaften und der Literatur Mainz) (APR 2016)
- ▶ **2015+2016+2017** winner of **Galenus Supports (Galenus-Privatstiftung, Wien)** Support for early career independent researchers in the field of pharmaceutical technology (APR 2015+2016+2017)
- ▶ **2014 Innovation Prize in Medicinal/Pharmaceutical Chemistry (GDCh/DPhG)** for our work on innovative bioinspired nanomaterials - The prize acknowledges outstanding and innovative scientific achievements in the areas of medicinal and pharmaceutical chemistry (Price money: 5000 Euro) (MAR 2014)
 Awarded by the Medicinal Chemistry Division of the German Chemical Society (GDCh) and the Pharmaceutical/Medicinal Chemistry Division of the German Pharmaceutical Society (DPhG).
- ▶ **2012** Award of the **"Emil und Paul Müller-Gedächtnisstiftung"** Mainz, Germany (DEC 2012)
- ▶ **2010 Dr. Luis Moroder Award (Excellent Stone Award)** for the best Young Investigator Lecture at the 5th International Peptide Symposium, Kyoto, Japan (DEC 2010)
- ▶ **Faculty-Award for Best PhD Thesis** (2009/2010) Department of Chemistry, University of Würzburg, Germany
- ▶ **2010 Reaxys PhD Prize (Runner-Up)** (Selected as one of the 45 finalists from over 300 submissions from international chemistry departments. Invitation to present at winners symposium at EuCheMS 2010 meeting)
- ▶ **2010 IUPAC Prize for Young Chemists (Honorable Mention Award)** (International prizes for the best PhD theses in the chemical sciences awarded by the International Union of Pure and Applied Chemistry)
- ▶ **2010 Award of the "Unterfränkische Gedenkjahrstiftung für Wissenschaft"** (University-wide award for excellent scientific achievements honoring the best PhD theses at the University of Würzburg)
- ▶ **1st Prize Oral Presentation**: *"Artificial Oligopeptides as a Versatile Toolkit for Molecular Recognition Events - New Insights into Multivalency Effects, Protein Recognition and Enzyme Inhibition"* 11th JCF Frühjahrssymposium (international symposium, 400 participants, 27 oral presentations), Essen, Germany (MAR 2009)

- **Merck-Poster Award:** “Multivalent Peptide Receptors for the selective Recognition of biological relevant Structures in Water” Chem-SyStM 2007, Würzburg, Germany (DEC 2007)
- **Poster award:** “Peptide binding by one-armed artificial receptors in water – Molecular recognition towards new lead structures” 8th JCF Frühjahrssymposium, Konstanz, Germany (MAR 2006)
- **Faculty-Award for Best Diploma** (2004/2005) Department of Chemistry, University of Würzburg, Germany
- **Award for the Best A-Level Exam** (“Abitur”) in chemistry at grammar school (awarded by Fonds der Chemischen Industrie, FCI) (JUN 1998)

SCHOLARSHIPS/FELLOWSHIPS

- **Feodor Lynen Research Fellowship** for postdoctoral researchers (Alexander von Humboldt Foundation, Germany) (SEP 2010 - FEB 2012)
- **A.T. Kearney Falling Walls Lab Scholarship** Selected speaker of 2012 Falling Walls Lab Conference, Berlin (one of 100 short talks, selected out of 600 international applicants) (NOV 2012)
- **Travel and Congress Scholarship** (For the participation at the 2010 Reaxys PhD winners symposium held during the EuCheMS 2010 meeting, Nürnberg, Germany (AUG 2010)
- **Grantee** of the “Jubiläums-Stiftung zum 400-jährigen Bestehen der Universität Würzburg”, full financial support (flight, accommodation, congress fee) for the participation at the 21st American Peptide Symposium, Bloomington, USA (FEB 2009)
- **PhD Scholarship** of the “Studienstiftung des deutschen Volkes” (German National Academic Foundation), full financial support for 3 years of doctoral research (JAN 2006 - DEC 2008)
- **Selected Participant** (10 in total) of the **2007 German Exchange Program** between the NESACS (Northeastern Section of the American Chemical Society) and the GDCh (German Chemical Society) including a travel and congress scholarship to the **234th ACS National Meeting and Exposition**, Boston, MA, USA (AUG 2007)
- **Travel and Congress Scholarship** (Asia-Link program, initiative of the European Union) to the Intensive Course Medicinal Chemistry 2006, HCM-City, Vietnam (NOV 2006)
- **Travel and Congress Scholarship** to the 1st EuCheMS Chemistry Congress 2006, Budapest, Hungary (AUG 2006)
- **Travel and Congress Scholarship** (Asia-Link program, initiative of the European Union) to the Medicinal Chemistry Summer School 2005, Shanghai, China (OCT 2005)
- **Representative of the Faculty** (Chemistry and Pharmacy, University of Würzburg) at the **55. Nobel Prize Meeting** in Lindau (2nd interdisciplinary meeting of 44 Nobel prize winners in chemistry, physics and medicine) (JUN 2005)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

SCIENTIFIC AFFILIATIONS AND MEMBERSHIPS

- Australian Centre for NanoMedicine (ACN), UNSW Sydney (2018 - PRESENT)
- Centre for Advanced Macromolecular Design (CAMD), UNSW Sydney (2018 - PRESENT)
- Australasian Colloid and Interface Society (ACIS) (2020 - PRESENT)
- Royal Australian Chemical Institute (RACI) (2019 - PRESENT)
- German Chemical Society (GDCh) (2004 - PRESENT)
- American Chemical Society (ACS) (2012 - PRESENT)
- German Pharmaceutical Society (DPhG) (2012 - PRESENT)
- Junge Akademie Mainz, Germany (Academy of Sciences and Literature, Mainz) (2016-2020)
- German Society for Biomaterials (DGBM) (2014 - 2018)
- German Association of University Professors and Lecturers (DHV) (2013 - PRESENT)

PEER REVIEW / JOURNAL EDITOR

- Review of external Master and PhD theses (Macquarie University, Monash University, University of Queensland) (2019 - PRESENT)
- Editorial Board Member of PLOS ONE (2018 - PRESENT)
- Peer review for manuscript submissions in: *Angewandte Chemie*, *JACS*, *ACS Nano*, *Biomacromolecules*, *ACS Macro Letters*, *Polymer Chemistry*, *Journal of Polymer Science*, *Journal of Materials Chemistry B*, *Nature Scientific Reports*, etc. (2011 - PRESENT)
- Review member of UNSW Faculty of Engineering Admission Scheme (FEAS) (2019 - PRESENT)
- Review member of UNSW Faculty of Engineering Postgraduate Admission Scheme (EPAS) (2019 - PRESENT)
- Review and selection of finalists for Reaxys PhD Prize (2012 - PRESENT)

COMMITTEE SERVICE

- UNSW Faculty of Engineering Committees: Equity, Diversity, and Inclusion Committee (2021 - Present)
- UNSW Faculty of Engineering Committees: HDR Recruitment Workgroup (2021 - Present)
- UNSW School of Chemical Engineering Committees: Engagement, HDR Recruitment (2019 - PRESENT)
- ACN Research Engagement Officer (Australian Centre for NanoMedicine) (2020 - PRESENT)
- Member of the selection committee to review new applicants of the “Studienstiftung des deutschen Volkes” (German National Academic Foundation) (2013 - PRESENT)
- Coordinator of tutors program between the Department of Pharmacy and Biochemistry (IPB, Mainz) and the Max-Planck-Institute for Polymer Research (MPIP, Mainz); exchange of PhD students in the area of medicinal chemistry (2012 - 2018)

CONFERENCE ORGANIZATION / SESSION CHAIR

- Organizing Committee and Conference Chair, 12th International Nanomedicine Conference, Sydney, Australia (27.-29. JUN 2022)
- Organizing Committee and Conference Chair, 11th International Nanomedicine Conference, Sydney, Australia (28. MAY 2021)
- Member of Organizing Committee and Chair of Monthly Seminar Series in the Australian Centre for NanoMedicine (2021 - Present)
- Session Chair at 37th Australasian Polymer Symposium APS, Sunshine Coast, Australia (10. Nov 2019)
- Session Chair at 10th International Nanomedicine Conference, Sydney, Australia (25. JUN 2019)
- Session Chair at 2016 Global Forum on Advanced Materials and Technologies for Sustainable Development (GFMAT), Toronto, Canada (26. JUN - 01. JUL 2016)
- Member the organizing committee for the 2014 Reaxys Inspiring Chemistry Conference, Grindelwald, Switzerland, (21.-24. SEP 2014)
- First chairman of the Jungchemikerforum Würzburg (local group of German Chemical Society) (OCT 2005-FEB 2008)
- Initiation and first time organisation of the “Chem-SyStM 2007” (Chemistry Symposium for PhD students in Würzburg) under the management of the Jungchemikerforum Würzburg (DEC 2007)

CAREER AND PROFESSIONAL DEVELOPMENT

- UNSW Course Design Institute - Peer Facilitator (MAR 2022); Return as a CDI Alum to provide guidance and leadership in the Teaching and Learning community by participating in the first UNSW wide Course Design Institute as peer facilitator. (5-day, full time program)
- UNSW Engineering Course Design Institute - Participant (AUG 2020); A 5 day intensive program based on contemporary course design principles and evidence-based practices, that provides participants with the skills, knowledge, and support necessary to design significant learning experiences and foster a learner-centred environment.
- UNSW Foundations of University Learning and Teaching Program - FULT (JAN-MAY 2019); comprehensive blended learning program about theory and practice of learning and teaching; Module 1: Student Learning and Teaching, Module 2: Educational Design, Module 3: Assessment and Feedback Module 4: Reflection and Evaluation
- Participation in continuing education (GDCh training program): “*Leadership Training for Young Professionals*” (*Führung für Nachwuchsführungskräfte*) (OCT 2007)

ADDITIONAL LEADERSHIP

- UNSW School of Chemical Engineering: Coordinator of External Relations/Social Media activities (2020 - PRESENT)
- Senior researcher and group manager (of UC Berkeley lab) on behalf of Prof. J.M.J. Fréchet during his sabbatical leave to King Abdullah University of Science and Technology (KAUST) (DEC 2010-FEB 2012)
- Scientific coordinator of the polymeric drug delivery subgroup in the Fréchet lab (UC Berkeley) (OCT 2009-FEB 2012)

ADDITIONAL QUALIFICATIONS AND ACTIVITIES

SCIENCE EDUCATION (see also videos on wichlab.com)

- Co-coordinator and lead by the Faculty of Engineering for the NRL Indigenous Youth Leadership Summit in the School of Chemical Engineering (UNSW) - Highschool students from all over Australia visit the School of Chemical Engineering for a hands-on experience in teaching and research labs (MAY 2021 + JULY 2022)
- Guest appearances in popular German TV edutainment show “Galileo” (Pro 7) - Episode about E-Numbers and the food additives nitrate and nitrite (MAR 2013) - Episode about E-numbers that represent the food colours (broadcast date OCT 2013)
- Several guest appearances as science expert in German TV show “Planetopia” (Sat 1) - Topics: “Why is salt in our oceans? Where is the origin of the dust in our apartments? Where the sand on our beaches comes from? Why does everything look blurry under water?” (broadcast date APR AND AUG 2013)
- Coordination of experiments for German TV edutainment show “Galileo” (Pro 7) - Several PhD students of our lab carry out experiments to explain fascinating chemistry related claims (broadcast date DEC 2013, FEB 2014, APR 2014)
- Appearance in television quiz show for children “1, 2 oder 3” (a production of the German TV network ZDF “Second German Television”) Presentation of a chemical demonstration to explain the use of inert gas on oil tankers to prevent explosions in cargo tanks (broadcast date OCT 2009)
- Founder of the largest and most successful online portal for chemical experiments, demonstrations and teaching resources in the German speaking area: www.experimentalchemie.de (regular care and updates; 10.5 million individual visitors (as of June 2022); several awards as well as reports in television and printed media, e.g.: 3sat nano, NBC Giga, FAZ, c’t, P.M.-Magazine) (2001-PRESENT)

BUSINESS KNOWLEDGE

- Head of registered small-scale business company. Online shop at www.experimentalchemie.de with a wide range of chemistry related teaching and “edutainment” materials (2003-PRESENT)
- Workshop participation “Certified Project Manager of Business Chemistry, GDCh” (2004-2006) (four modules: Strategy, Competition Analysis, Innovation Management, Product Management)
- Participation in seminar: “*Economical Utilization of Innovations (Wirtschaftliche Verwertung von Innovationen)*” (NOV 2004)

TEACHING EXPERIENCE / MENTORING

TEACHING EXPERIENCE

Australia

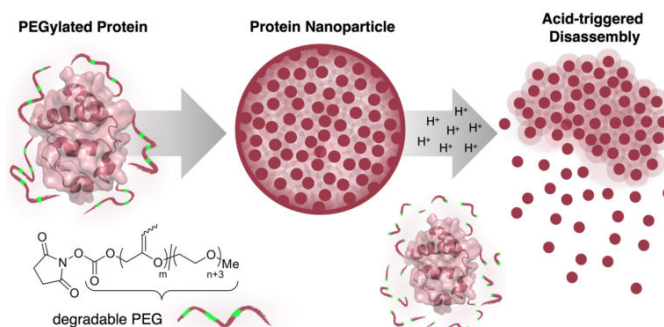
- ▶ CEIC6712 Pharmaceutical Design and Engineering (UNSW Sydney), course coordination, lectures and exams (2020 - present)
- ▶ CEIC1000 Sustainable Product Engineering and Design / Sustainable Food Product Manufacturing (UNSW Sydney), lectures and assessments (2021 - present)
- ▶ CHEN6701 Advanced Reaction Engineering (UNSW Sydney), course coordination, lectures, exams (2018 - present)
- ▶ CEIC2007 Chemical Engineering Lab A (UNSW Sydney), supervision of several lab experiments (2019 - present)
- ▶ BMET5944 Bioinspired Materials - (Sydney University), guest lecturer (2021 - present)
- ▶ CEIC2004 Industrial Chemistry for Chemical Engineers (UNSW Sydney), lectures and exams (2019 - 2020)
- ▶ CEIC4951/CEIC4952/CEIC4953, Thesis A/B/C (UNSW Sydney), (2018 - present)
- ▶ CEIC9951/CEIC9952/CEIC9953, Advanced Thesis A/B/C (UNSW Sydney), (2018 - present)

Germany

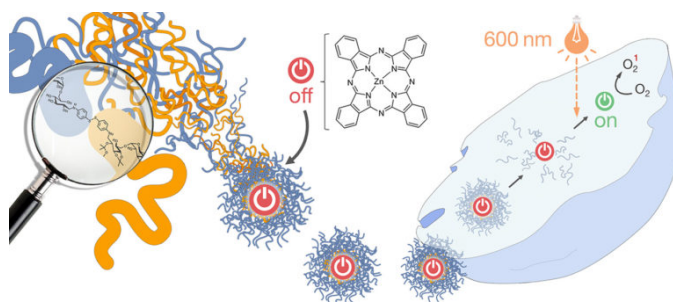
- ▶ “Pharmazeutische/Medizinische Chemie I: Quantitative Bestimmung von Arznei-, Hilfs- und Schadstoffen” Lecture series + coordination of accompanying laboratory course for 2. semester pharmacy students (University of Mainz), compulsory lecture, participants: approx. 45 (SS 2012 - WS 2017/18)
- ▶ “Einführung in Instrumentelle Analytik I bzw. II” (Lecture series about methods in analytical chemistry and instrumental analysis for pharmacy students, University of Mainz), participants: approx. 40 (SS 2014 - WS 2017/18)
- ▶ “Prinzipien und Spezielle Aspekte des Wirkstoffdesign” (Lecture series about drug design and nano materials for advanced pharmacy students and BMC master students (biomedical chemistry), University of Mainz), optional lecture, participants: approx. 50 (WS 2013/14 - WS 2017/18)
- ▶ “Pharmazeutische/Medizinische Chemie” (Lecture series about medicinal chemistry for advanced pharmacy students, University of Mainz) compulsory lecture, participants: approx. 150 (WS 2012/13 - WS 2017/18)
- ▶ Mentoring of several PhD Students and undergraduates in the Fréchet lab (UC Berkeley) (OCT 2009-FEB 2012)
- ▶ Multiple mentoring of laboratory assistants and undergraduates (University of Würzburg) (2005 - 2008)
- ▶ Teaching Assistant: organic chemistry for students of biology (WINTER SEMESTER 2005/06, 2006/07 AND 2007/08)
- ▶ Teaching Assistant: chemistry for students of medicine (APR - JUL 2002)
- ▶ Several public talks with topics about the combination of chemistry and internet at the University of Würzburg (OCT 2003, OCT 2004, OCT 2005)

SELECTED IMPORTANT PUBLICATIONS

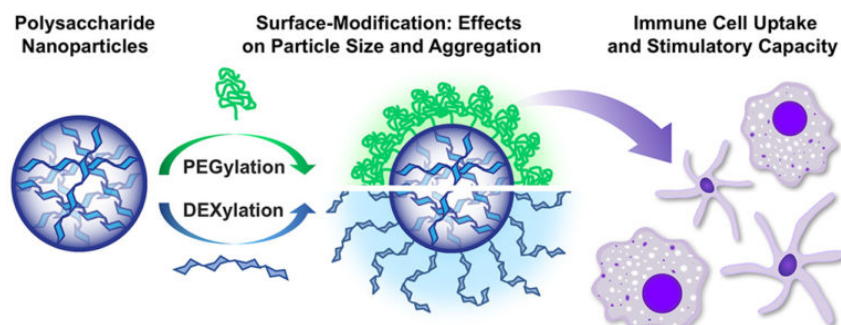
10. “pH-Responsive Protein Nanoparticles via Conjugation of Degradable PEG to the Surface of Cytochrome *c*” E. Steiert, J. Ewald, A. Wagner, U. A. Hellmich, H. Frey and P. R. Wich, **Polym. Chem.**, **2020**, *11*, 551 - 559.



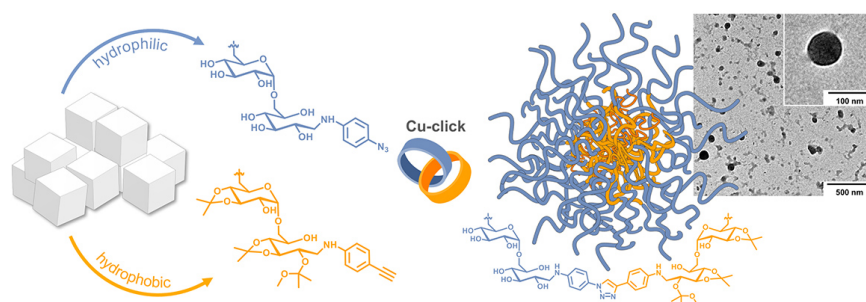
9. “Double Stimuli-Responsive Polysaccharide Block Copolymers as Green Macrosurfactant for Near-Infrared Photodynamic Therapy” B. Breitenbach, E. Steiert, M. Konhäuser, L.-M. Vogt, Y. Wang, S. H. Parekh and P. R. Wich, **Soft Matter**, **2019**, *15*, 1423–1434 (Special Edition: Soft Matter Emerging Investigators 2019).



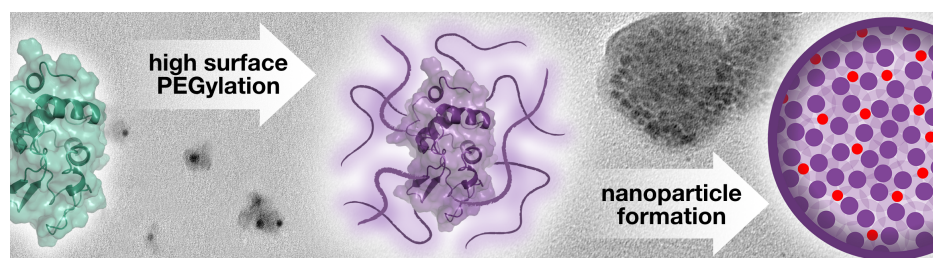
8. “Surface Modification of Polysaccharide-Based Nanoparticles with PEG and Dextran and the Effects on Immune Cell Binding and Stimulatory Characteristics” D. Bamberger, D. Hobernik, Matthias Konhäuser, M. Bros P. R. Wich, **Mol. Pharmaceutics** **2017**, *14* (12), 4403–4416.



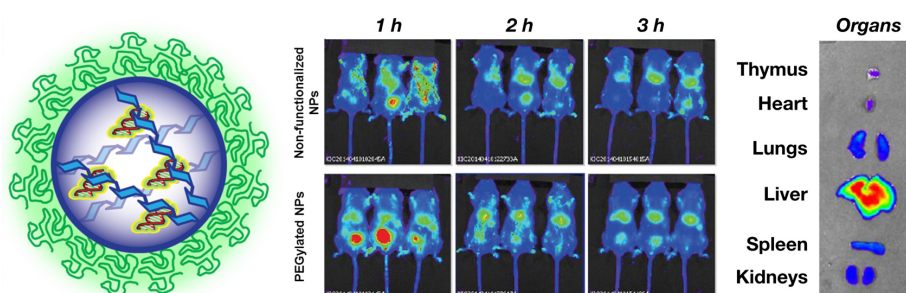
7. “Amphiphilic Polysaccharide Block Copolymers for pH-responsive Micellar Nanoparticles” B. Breitenbach, I. Schmid, P. R. Wich, **Biomacromolecules** **2017**, *18* (9), 2839–2848.



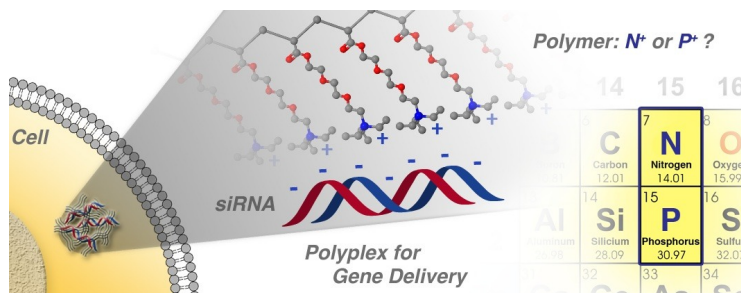
6. “Nanoparticle Assembly of Surface-Modified Proteins” M. Fach, L. Radi, P. R. Wich, **J. Am. Chem. Soc.** **2016**, *138* (45), 14820–14823. (including cover picture)



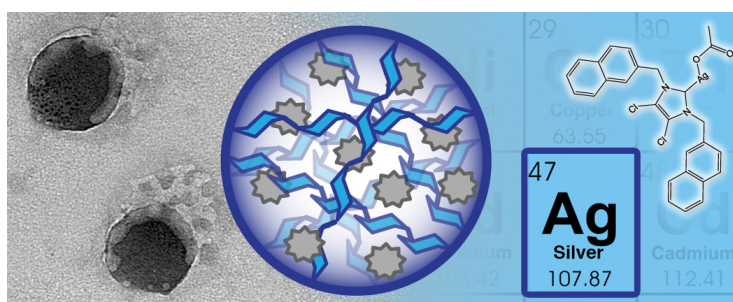
5. “Dextran-based Therapeutic Nanoparticles for Hepatic Drug Delivery” F. Foerster, D. Bamberger, J. Schupp, M. Weilbacher, L. Kaps, S. Strobl, L. Radi, M. Diken, D. Strand, A. Tuettenberg, P. R. Wich, D. Schuppan, **Nanomedicine** **2016**, *11* (20), 2663–2677.



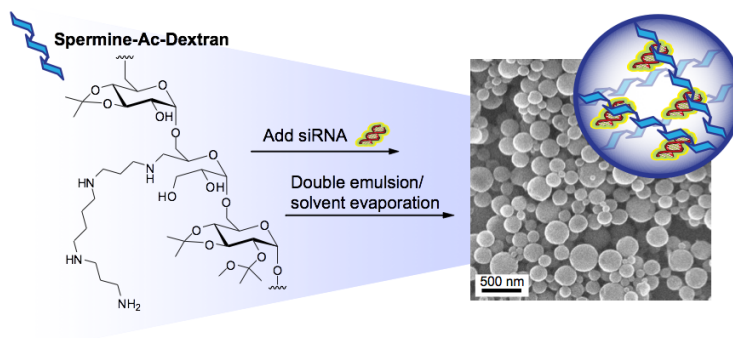
4. "Polyphosphonium Polymers for siRNA Delivery: An Efficient and Non-Toxic Alternative to Polyammonium Carriers" C. Ornelas-Megiatto, P. R. Wich, J. M. J. Fréchet, **J. Am. Chem. Soc.** **2012**, *134*, 1902–1905.



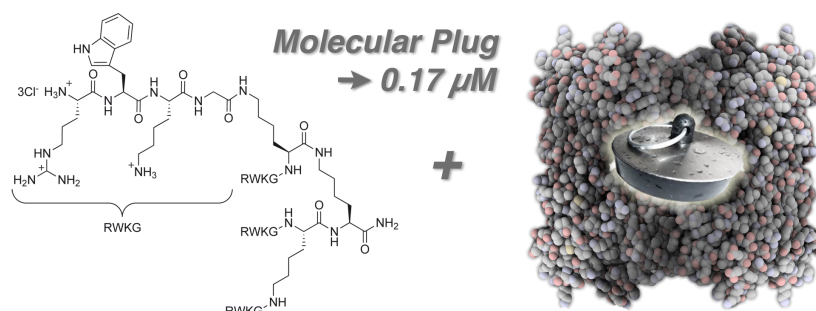
3. "Aerosolized Antimicrobial Agents Based on Degradable Dextran Nanoparticles Loaded with Silver Carbene Complexes" C. Ornelas-Megiatto, P. Shah, P. R. Wich, J. Cohen, J. Tagaev, J. Smolen, B. Wright, M. Panzner, W. Youngs, J. M. J. Fréchet, C. Cannon, **Mol. Pharmaceutics**. **2012**, *9* (11), 3012–3022.



2. "Acid-Degradable Cationic Dextran Particles for the Delivery of siRNA Therapeutics" J. L. Cohen, S. Schubert, P. R. Wich, L. Cui, J. A. Cohen, J. L. Mynar, and J. M. J. Fréchet, **Bioconjugate Chem.** **2011**, *22*, 1056–1065.



1. "Reversible and Non-Competitive Inhibition of β -Trypsin by Tetraivalent Peptide Ligands Identified from a Combinatorial Split-Mix-Library" P. R. Wich, C. Schmuck, **Angew. Chem. Int. Ed.** **2010**, *49*, 4113–4116.



PUBLICATIONS (JOURNALS, BOOKS)

47. "Versatility of acetalated dextran in nanocarriers targeting respiratory diseases" P. Prasher, M. Sharma, S. K. Singh, M. Gu-lati, D. Kumar, G. Gupta, D.K. Chellappan, B. G.G. Oliver, P. R. Wich, K. Dua, **Mater. Lett.**, **2022**, 132600. <https://doi.org/10.1016/j.matlet.2022.132600>
46. "Co-Encapsulation of L-Asparaginase and Etoposide in Dextran Nanoparticles for Synergistic Effect in Chronic Myeloid Leukemia Cells" M.Konhäuser, V. K. Kannaujiy, E. Steiert, K. Schwickert, T. Schirmeister, P. R. Wich, **Int. J. Pharm.**, **2022**, 622, 121796.
45. "Attenuation of Cigarette-Smoke-Induced Oxidative Stress, Senescence, and Inflammation by Berberine-Loaded Liquid Crystalline Nanoparticles: In Vitro Study in 16HBE and RAW264.7 Cells" K. R. Paudel, N. Panth, B. Manandhar, S. K. Singh, G. Gupta, P. R. Wich, Srinivas Nammi, R. MacLoughlin, J. Adams, M. E. Warkiani, D. K. Chellappan, B. G. Oliver, P. M. Hansbro, K. Dua, **Antioxidants**, **2022**, 11, 873. <https://doi.org/10.3390/antiox11050873>
44. "Nanoparticulate strategies for the delivery of miRNA mimics and inhibitors in anticancer therapy and its potential utility in oral submucous fibrosis" J. Manikkath, P. V. Jishnu, P. R. Wich, A. Manikkath, R. Radhakrishnan, **Nanomedicine**, **2022**, 17 (3), 181–195.
43. "Can dextran-based nanoparticles mitigate inflammatory lung diseases?" P. Prasher, M. Sharma, P. R. Wich, N.K. Jha, S. K. Singh, D. K. Chellappan, K. Dua, **Future Med Chem.**, **2021**, 13 (23), 2027–2031.
42. "Recent trends of NFκB decoy oligodeoxynucleotide-based nanotherapeutics in lung diseases" M. Mehta, K. R. Paudel, S. D. Shukla, V. S. R. R. Allam, V. K. Kannaujiya, N. Panth, A. Das, V. K. Parihar, A. Chakraborty, M. K. Ali, N. Ku. Jha, D. Xenaki, Q. P. Su, P. R. Wich, J. A., P. M. Hansbro, D. K. Chellappan, B. G. G. Oliver, K. Dua, **J. Controlled Release**, **2021**, 337, 629–644.
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52. **12th International Nanomedicine Conference**, Sydney, Australia, 28. JUN 2022. (INVITED)
51. **4th G'Lowing Polymer Symposium** (Kanto Branch, Society of Polymer Science, Japan), Online Symposium, 31. JUL 2021. (INVITED)
50. **Australasian Polymer Summer School (APSS)**, ANU Canberra, Australia, 20. NOV 2020. (INVITED)
49. **Drug Delivery Australia Conference (CRS 2019)**, Brisbane, Australia, 18. NOV 2019.
48. **37th Australasian Polymer Symposium APS**, Sunshine Coast, Australia, 10. NOV 2019.

47. **Centre for Advanced Food Enginomics (CAFE) Seminar**, The University of Sydney, Sydney, Australia, 01. NOV 2019. (INVITED)
46. **Chemeca 2019**, SMC Conference and Function Centre, **Sydney, Australia**, 29. SEP 2019.
45. **UNSW Chemistry Seminar**, UNSW, Sydney, Australia, 05. SEP 2019. (INVITED)
44. **Biomimetics in Bioengineering 2019**, Nature Conferences, QUT, **Brisbane, Australia**, 04. AUG 2019. (INVITED)
43. **Sydney Surfaces And Soft Stuff Meeting 2019**, UNSW, **Sydney, Australia**, 30. MAY 2019.
42. Manufacturing with Advanced Materials Seminar Series, **Soft Matter Materials Laboratory, QUT, Brisbane, Australia**, 10. JAN 2019. (INVITED)
41. Adult Cancer Program (ACP) Seminar, **Lowy Cancer Research Centre, Sydney, Australia**, 25. Oct 2018. (INVITED)
40. "Biopolymer-based Nanoparticles for Applications in Drug Delivery and Immunotherapy" P. R. Wich, **World Polymer Congress MACRO18, Cairns, Australia**, 5. JUL 2018.
39. "Full Polysaccharide Amphiphilic Block Copolymers for Nanoparticulate Drug Delivery" P. R. Wich, **World Polymer Congress MACRO18, Cairns, Australia**, 3. JUL 2018.
38. "Protein-based Nanoparticles: A New Class of Multifunctional Biomaterials" P. R. Wich, **World Polymer Congress MACRO18, Cairns, Australia**, 2. JUL 2018.
37. "Biopolymer-based Nanoparticles for Applications in Drug Delivery and Immunotherapy" P. R. Wich, **9th International Nanomedicine Conference, Coogee, Australia**, 25. JUN 2018. (INVITED)
36. "Polysaccharides and Proteins as Versatile Biopolymer Material for Nanoparticles" P. R. Wich, **Sino-German Young Researcher Workshop, LMU Munich, Germany**, 6. APR 2018. (INVITED)
35. "Biopolymer-based Nanoparticles for Applications in Drug Delivery and Immunotherapy" P. R. Wich, **Department Seminar, Helmholtz Institute for Pharmaceutical Research Saarland, Saarbrücken, Germany**, 30. JAN 2018. (INVITED)
34. "Biopolymer-based Nanoparticles for Applications in Drug Delivery and Immunotherapy" P. R. Wich, **Department Seminar, Technische Universität Wien, Austria**, 6. NOV 2017. (INVITED)
33. "Biopolymer-based Nanoparticles for Applications in Drug Delivery and Immunotherapy" P. R. Wich, **Nachwuchswissenschaftler-Workshop, GDCh Makro. Chemie, Ludwigshafen, Germany**, 25. SEP 2017.
32. "Protein-based Nanoparticles: A New Class of Multifunctional Biomaterials" P. R. Wich, **Bayreuth Polymer Symposium 2017, Bayreuth, Germany**, 17-19. SEP 2017.
31. "Amphiphilic Polysaccharide Block Copolymers for Nanoparticulate Drug Delivery" P. R. Wich, **ACS 254th National Meeting & Exposition, Washington D.C., USA**, 20.-24. AUG 2017. (INVITED)
30. "Biopolymer-based nanoparticles for applications in drug delivery and immunotherapy" P. R. Wich, **ACS 254th National Meeting & Exposition, Washington D.C., USA**, 20.-24. AUG 2017.
29. "Protein-based nanoparticles: A new class of multifunctional biomaterials" P. R. Wich, **ACS 254th National Meeting & Exposition, Washington D.C., USA**, 20.-24. AUG 2017.
28. "Biopolymer-based Nanoparticles for Applications in Drug Delivery and Immunotherapy" P. R. Wich, **Department Seminar, University Jena, Jena Center for Soft Matter (JCSM), Germany**, 13. JUL 2017. (INVITED)
27. "Nanoparticle Assembly of Surface-modified Proteins" P. R. Wich, **ACS 253th National Meeting & Exposition, San Francisco, USA**, 02.-06. APR 2017.
26. "Surface-modified Proteins as New Type of Biomaterials for Nanoparticles" P. R. Wich, **Chemiedozententagung 2017, Marburg, Germany**, 13.-15. FEB 2017.
25. "Biopolymers as Multifunctional Materials for Nanoparticulate Drug Delivery" P. R. Wich, **DPhG-Jahrestagung 2016, München, Germany**, 05.-07. OCT 2016.
24. "Biopolymer-based Nanoparticles: Dynamic Materials for Drug Delivery" P. R. Wich, **Warwick Polymer Conference 2016, Warwick, UK**, 11.-14. JUL 2016.
23. "Biopolymer-based Nanoparticles: Dynamic Materials for Drug Delivery" P. R. Wich, **Global Forum on Advanced Materials and Technologies for Sustainable Development (GFMAT 2016), Toronto, Canada**, 26. JUN - 01. JUL 2016. (INVITED)
22. "Protein-based Nanoparticles by Lipophilic Surface Modification of Lysozyme" P. R. Wich, **Chemiedozententagung, Heidelberg, Germany**, 21.-23. MAR 2016.
21. "Biopolymers as Dynamic Materials for Nanoparticulate Drug Delivery" P. R. Wich, **24. Nachwuchswissenschaftler-Symposium Bioorganische Chemie, Hamburg, Germany**, 23.-25. SEP 2015.
20. "Acid-Degradable Polysaccharide Nanoparticles for the Delivery of Biotherapeutics" P. R. Wich, **6th European Conference Chemistry in the Life Sciences (ECCLS), Lisbon, Portugal**, 12. JUN 2015.
19. "Biopolymers as Versatile Materials for Molecular Recognition and Drug Delivery" P. R. Wich, **TU Braunschweig, GDCh Colloquium, Braunschweig, Germany**, 08. JUN 2015. (INVITED)
18. "Supramolecular and Nanoparticulate Biopolymers for Therapeutic Applications" P. R. Wich, **Lehrstuhl für Funktionswerkstoffe FMZ-LCTM Institutskolloquium, Würzburg, Germany**, 06. MAY 2015. (INVITED)
17. "Biopolymers for Supramolecular Recognition and Nanoparticulate Drug Delivery" P. R. Wich, **Fraunhofer ICT-IMM Institutskolloquium, Mainz, Germany**, 13. NOV 2014. (INVITED)
16. "Supramolecular Recognition of Peptides and Proteins - An Attractive Tale" P. R. Wich, **Reaxys Inspiring Chemistry Conference 2014, Grindelwald, Switzerland**, 21.-24. SEP 2014.
15. "Dynamic Polysaccharide-based Carrier Systems for the Delivery of Biotherapeutics" P. R. Wich, **26th European Conference on Biomaterials, Liverpool, UK**, 31. AUG. - 3. SEP 2014.
14. "Playing with Nature's Toolkit" P. R. Wich, **From Graduation to Innovation (GDCh/REAXYS event), Chemnitz, Germany**, 24. JUN 2014. (INVITED)

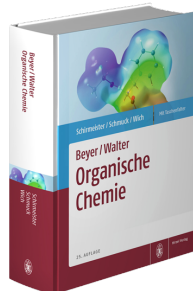
13. "Supramolecular and Nanoparticulate Biopolymers for Therapeutic Applications" P. R. Wich, **Frontiers in Medicinal Chemistry, Tübingen, Germany**, 19. MAR 2014.
12. "Multifunctional Polysaccharide Nanoparticles with Tunable Degradability" P. R. Wich, **SFB 1066 Seminar, Mainz, Germany**, 27. JAN 2014.
11. "Polymeric Particles as Multifunctional Delivery Systems for Biotherapeutics" P. R. Wich, **Reaxys Inspiring Chemistry Conference 2013, Grindelwald, Switzerland**, 22.-24. SEP 2013.
10. "Breaking the Walls of Protein Manipulation" P. R. Wich, **Falling Walls Lab, Berlin, Germany**, 8. NOV 2012.
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5. "Acetal-modified Dextran Particles for siRNA Delivery" P. R. Wich, J. L. Cohen, S. Hornig, J. A. Cohen, J. M. J. Fréchet, **3rd EuChemS Chemistry Congress, Nürnberg, Germany**, 29. AUG - 02. SEP 2010.
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3. "Molecular recognition by one-armed artificial receptors in water - New insights from combinatorial methods as an ideal tool to identify peptide binders" P. Wich, **Second Joint Ph.D. Students Meeting SFB 544/630, New Trends in Infectious Disease Research, Heidelberg, Germany**, 23.-25. NOV 2006.
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MISCELLANEOUS PUBLICATIONS

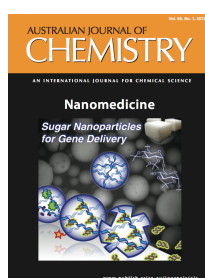
- IX. "Nanoparticle Assembly of Surface-Modified Proteins" M. Fach, L. Radi, P. R. Wich, **Cover Picture**, J. Am. Chem. Soc. **2016**, 138 (45), 14820-14823.
- VIII. "Degradable Dextran Particles for Gene Delivery Applications" P. R. Wich, J. M. J. Fréchet, **Cover Picture**, Aust. J. Chem. **2012**, 1, 15-19.
- VII. "Multifunctional Oligopeptides as an Artificial Toolkit for Molecular Recognition Events" P. R. Wich, **Ph.D. Thesis, 2009**, Würzburg (Germany).
- VI. "Characterization of guanidiniocarbonyl pyrroles in water by pH-dependent UV Raman spectroscopy and component analysis" S. K. Srivastava, S. Niebling, B. Küstner, P. R. Wich, C. Schmuck, S. Schlücker, **Inside Cover Picture**, Phys. Chem. Chem. Phys. **2008**, 10, 6730.
- V. "Combinatorial receptor finding - small and focused vs. large and random libraries" C. Schmuck, P. Wich, **Cover Picture**, New J. Chem. **2006**, 30, 1349.
- IV. "Atropodistatereoselective cleavage of configurationally unstable biaryl lactones with amino acid esters" G. Bringmann, H. Scharl, K. Maksimenka, K. Radacki, H. Braunschweig, P. Wich, C. Schmuck, **Cover Picture**, Eur. J. Org. Chem. **2006**, 19, 4301.
- III. "Die strategische Entwicklung der ALTANA Gruppe mit dem Beispiel der Aufspaltung in ALTANA Pharma und ALTANA Chemie" P. Wich, **Final Thesis for degree: Certified Project Manager of Business Chemistry (GDCh), 2006**, Würzburg (Germany).
- II. "Substratselektivität künstlicher Peptidrezeptoren - Synthese und Screening einer kombinatorischen Tetrapeptidbibliothek" P. Wich, **Diploma Thesis, 2005**, Würzburg (Germany).
- I. Author of monthly published column "World Wide Web - Tips" in Journal of the German Chemistry Society (GDCh) "Nachrichten der Chemie" (Blaue Blätter), (DEC 2002 - DEC 2005).



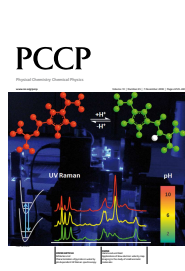
SEE IX. (2016)



SEE 20. (2016)



SEE VIII. (2012)



SEE VI. (2008)



SEE V. (2006)



SEE IV. (2006)