O. Seitz

*The author presented on this page has published **25 articles** since 2000 in Angewandte Chemie:*
"A Type of Auxiliary for Native Chemical Peptide Ligation beyond Cysteine and Glycine Junctions": S. F. Loibl, Z. Harpaz, O. Seitz, *Angew. Chem. Int. Ed.* **2015**, *54*, 15055; *Angew. Chem.* **2015**, *127*, 15269.

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Current research interests:	Protein synthesis and modification; DNA/RNA-controlled synthesis and assembly; protein imaging; RNA imaging
Hobbies:	Can I say TV?!

I would have liked to have discovered solid-phase synthesis.

If I won the lottery, I would buy a huge forest.

The most amusing chemistry adventure in my career was thin-layer chromatography with a toluene-containing eluent that remained after a rather fruitless attempt to dry the plate. I was shocked—under the UV light everything was dark!

My top three films/TV shows of all time are *Blade Runner*; *Paris, Texas*; *The Wire*.

The downside of my job is to have too little time for too many things.

In retrospect I would never again wait so long until becoming a father.

My favorite song/piece of music is composed by Bill Laswell (Material) or Gustav Mahler or always Pink Floyd or Kante or …

My favorite saying is when in doubt, do the right thing. (I once saw this on a postcard and the simplicity sounds very convincing to me.)

I like refereeing because this probably is the only moment when I can get to the core of a development.

The most significant scientific advance of the last 100 years has been imaging techniques in medical diagnosis.

The biggest problem that scientists face is the oversized ego.

My favorite piece of research is the development of DNA sequencing.

When I'm frustrated, I cook pasta.

The most important thing I learned from my parents is eat well, dress warmly, and stay honest.

If I could have dinner with three famous scientists from history, they would be Emil Fischer, Charles Darwin, and Konrad Lorenz.

And I would ask them if they ever had any doubts.

My favorite place on earth is my sofa.

I chose chemistry as a career because I thought it would be fun to create drugs. I didn't know it was so complicated.

My best investment was a pair of shoes for my partner. Now she earns more than I do.

My not-so-secret passion is cooking.

If I were not a scientist, I would be a helicopter pilot.

My most exciting discovery to date has been fatherhood. Sounds terribly cheesy, but it is nonetheless true.

My greatest achievement has been a shot from near the baseline, which saved my basketball team.

The most exciting thing about doing research is approaching the moment when it finally starts to work.

I can never resist a well-stocked farmers market.

I celebrate success by doing nothing, unfortunately.

Has your approach to chemistry research changed since the start of your career

I was always fascinated by the conceptual novelty of a method. Driven by what is called "Funktionslust" in psychology and (translated only poorly by "desire of action", that is, taking pleasure in what one does well) I liked the idea of creating something that did not exist prior to my action. The prospect of discovering what has been overlooked seemed most exciting. This probably still motivates me. But as the years pass, it appears important to me that we must not forget to find appropriate use of the tax money we are allowed to dissipate. This means that I increasingly think about the end of a project while I am conceiving it, and usefulness becomes an important criterion. Hopefully, I will be able to combine both approaches.

What advice would you give to up-and-coming scientists?

I am not at all sure whether I would have considered this advice myself. But from today's perspective, I would advise scientists not to be shocked by negative reviews saying that the proposal would not be feasible based on the expertise of the applicant. The chances are high that the reviewer is less flexible than the applicant. On the contrary, one should not be scared to approach methods that are beyond current expertise. One should accept the possibility of failure. A good idea must be tried. After all, it is the higher propensity for failure which marks the difference between fundamental research and development. Maybe this advice is more important for policy makers and recruitment committees. In particular, young scientists in basic research should be allowed to fail (but not always), otherwise we are restraining the drive towards novelty.

My 5 top papers:

1. "Forced Intercalation Probes (FIT Probes): Thiazole Orange as a Fluorescent Base in Peptide Nucleic Acids for Homogeneous Single-Nucleotide-Polymorphism Detection": O. Köhler, D. V. Jarikote, O. Seitz, *ChemBioChem* **2005**, *6*, 69.
   After we published the principle of a new method for the homogeneous detection of nucleic acids, we discussed in detail the options provided by the replacement of a canonical nucleobase by an intercalating dye. We even dared to name the probes—this was important for increasing the awareness of the method.
2. "Fluorescence Imaging of Influenza H1N1 mRNA in Living Infected Cells Using Single-Chromophore FIT-PNA": S. Kummer, A. Knoll, E. Socher, L. Bethge, A. Herrmann, O. Seitz, *Angew. Chem. Int. Ed.* **2011**, *50*, 1931; *Angew. Chem.* **2011**, *123*, 1972.
   Thanks to a collaboration with my colleague Andreas Herrmann from biology, we could eventually show that our FIT probes work in living cells. This opened the door to the biological world.
3. "DNA-Catalyzed Transfer of a Reporter Group": T. N. Grossmann, O. Seitz, *J. Am. Chem. Soc.* **2006**, *128*, 15596.
   Initially, we focused on DNA-template-controlled ligation reactions. Then a very talented PhD student had the idea to redesign native chemical ligation. Together we contemplated many options for achieving the transfer of an acyl group from one nucleic acid strand onto another. The reaction performs extremely well, proceeds with living cells, and can be adapted to many scenarios. Thank you Tom for the idea.
4. "DNA-Triggered Synthesis and Bioactivity of Proapoptotic Peptides": A. Erben, T. N. Grossmann, O. Seitz, *Angew. Chem. Int. Ed.* **2011**, *50*, 2828; *Angew. Chem.* **2011**, *123*, 2880.
   Already during my postdoctoral work, I was developing the idea of a method that, much like ribosomal action, would allow an RNA template to instruct the synthesis of a peptide. The vision is to hijack cell-endogenous mRNA for the synthesis of cytotoxic compounds. Fifteen years later, we showed the chemical principle of a method that installs a shortcut from the RNA world to the protein world. The realization of the vision will keep us busy for quite a while.
5. "Solid-Phase Synthesis of Peptide Thioesters with Self-Purification": F. Mende, O. Seitz, *Angew. Chem. Int. Ed.* **2007**, *46*, 4577; *Angew. Chem.* **2007**, *119*, 4661.
   Solid-phase peptide synthesis seems unthinkable without HPLC purification. Really? We showed that the use of a few tricks can make HPLC redundant. This saves plenty of time and money and, as we will show in the very near future, speeds up the functional analysis of posttranslational protein modification.

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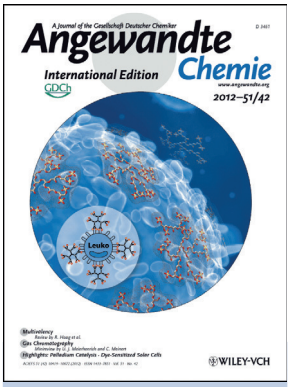

The work of O. Seitz has been featured on the cover of Angewandte Chemie: "Multivalency as a Chemical Organization and Action Principle": C. Fasting, C. A. Schalley, M. Weber, O. Seitz, S. Hecht, B. Koksch, J. Dernedde, C. Graf, E.-W. Knapp, R. Haag, *Angew. Chem. Int. Ed.* **2012**, *51*, 10472; *Angew. Chem.* **2012**, *124*, 10622.