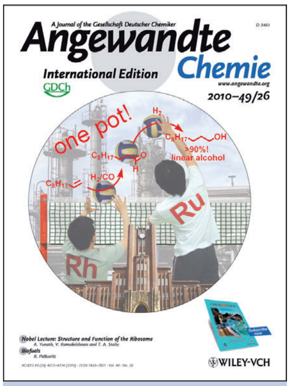
K. Nozaki

The author presented on this page has published more than ***10 articles*** *in Angewandte Chemie in the last 10 years, most recently:* "Isolation of a PBP-Pincer Rhodium Complex Stabilized by an Intermolecular C–H σ Coordination as the Fourth Ligand": M. Hasegawa, Y. Segawa, M. Yamashita, K. Nozaki, *Angew. Chem.* **2012**, *124*, 7062–7066; *Angew. Chem. Int. Ed.* **2012**, *51*, 6956–6960.



The work of K. Nozaki has been featured on the cover of Angewandte Chemie: "High-Yielding Tandem Hydroformylation/Hydrogenation of a Terminal Olefin to Produce a Linear Alcohol Using a Rh/Ru Dual Catalyst System": K. Takahashi, M. Yamashita, T. Ichihara, K. Nakano, K. Nozaki, *Angew. Chem.* **2010**, *122*, 4590–4592; *Angew. Chem. Int. Ed.* **2010**, *49*, 4488–4490.

Kyoko Nozaki

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Education: 1986 BSc, Kyoto University
1988–1989 Exchange student with Prof. Clayton H. Heathcock, University of California, Berkeley
1991 PhD with Prof. Kiitiro Utimoto, Kyoto University
Awards: **2003** OMCOS Prize; **2004** The Society of Polymer Science, Japan (SPSJ) Wiley Award; **2006** IBM Japan Science Prize; **2008** Saruhashi Award; Mukaiyama Award; **2009** Mitsui Chemicals Catalysis Science Award; Nagoya Silver Medal
Current research interests: Development of homogeneous catalysis for the synthesis of both small and macromolecules; application of new main-group compounds as a ligand for catalysis and in the synthesis of π-conjugated materials, and studying the properties of these materials
Hobby: Chemistry

The principal aspect of my personality is … I am enormously optimistic.

My motto is … fully enjoy whatever I do.

If I could be described as an animal it would be … a grasshopper chirping in the summer while ants are preparing seriously for the winter.

I am waiting for the day when someone will invent … the Dokodemo Door (a door that allows one to travel anywhere in a second; from the Japanese comic series Doraemon).

Chemistry is fun because … there are so many treasures, hidden by Mother Nature, waiting to be discovered.

My favorite drink is … Kanpai beer.

Looking back over my career, I … find I am too young to look back.

The most significant historic event of the past 100 years is … although it is slightly over 100 years ago, I cannot think of anything more important than the discovery of the Haber–Bosch process.

When I was eighteen, I wanted to be … a professional but did not know in what field it would be. I had to wait until I was 21, when I joined the chemistry lab, to be enamored with chemistry.

If I could be anyone for a day, I would be … myself when I was ten years old—I would play with my friends until it was dark.

My biggest inspiration is … the time I spend with my students.

The most important future applications of my research are … their contribution to society—could be either a discovery that makes the rewriting of textbooks necessary or could be an invention that replaces current industrial processes.

In a spare hour, I … do culinary experiments (with success rate below 30%).

If I could be any age I would be … my current age. I have experience and I have a future.

I admire … my students. They are certainly talented and highly motivated. Furthermore, they are young, adaptable, optimistic, and full of humor. Above all, each of them has a great future.

The secret of being a successful scientist is … something I want to know!

If I could be a piece of lab equipment, I would be … an NMR tube—so that I can see the results first.

How has your approach to chemistry research changed since the start of your career?

When I started my career, I had a narrow view of the research field and my information source was limited to the latest academic journals. Later, I had the chance to meet various people from different fields, which enabled me to broaden my research field from synthetic methodology to organometallic chemistry, total synthesis, polymer chemistry, theoretical chemistry, main-group chemistry, organic material chemistry, and so on. Meeting people from industry was especially eye-opening. More recently, I came to think that publication is not the only purpose of our research and am trying to evaluate my own research projects from multiple perspectives, namely, academic impact as well as their contribution to society.

How do you think your field of research will evolve over the next 10 years?

My main research field, homogeneous catalysis, will undoubtedly continue evolving. 1) New catalysts will keep appearing to mediate yet unknown reactions or to make known reactions more selective. Ligand design will continue to be the key for success. 2) The use of ubiquitous elements as substitutes for rare elements will be continuously challenged. It could be realized by base metals or organocatalysis. 3) Combination of multiple catalysts in one pot may expand the possible transformations. 4) The scope of substrate molecules will expand. In addition to commercially available single-component starting materials, more complex mixtures of compounds should be used in chemical transformations.

My 5 top papers:

1. "Highly enantioselective hydroformylation of olefins catalyzed by new phosphine phosphite–rhodium(I) Complexes": N. Sakai, S. Mano, K. Nozaki, H. Takaya, *J. Am. Chem. Soc.* **1993**, *115*, 7033–7034.
   The BINAPHOS ligand is still a benchmark for asymmetric hydroformylation, even 20 years after its discovery.
2. "Highly Enantioselective Alternating Copolymerization of Propene with Carbon Monoxide Catalyzed by a Chiral Phosphine–Phosphite Complex of Palladium(II)": K. Nozaki, N. Sato, H. Takaya, *J. Am. Chem. Soc.* **1995**, *117*, 9911–9912.
   This was the first paper I published in the field of polymer synthesis. The signal-to-noise ratio in the ^{13}C NMR spectrum for the polymer with a molecular weight over 10 000 was as high as for a small molecule with a molecular weight of 100.
3. "Chiral Bimetallic Boronic Esters: A Donor–Acceptor Coexisting Receptor for Amines": K. Nozaki, M. Yoshida, H. Takaya, *Bull. Chem. Soc. Jpn.* **1996**, *69*, 2043–2052.
   My favorite organoboron compound, which shows beautiful allosteric amine binding.
4. "Alternating Copolymerization of Vinyl Acetate with Carbon Monoxide": T. Kochi, A. Nakamura, H. Ida, K. Nozaki, *J. Am. Chem. Soc.* **2007**, *129*, 7770–7771.
   The first reported polymer synthesis from vinyl acetate that occurs through a nonradical mechanism.
5. "Stereocomplex of Poly(propylene carbonate): Synthesis of Stereogradient Poly(propylene carbonate) by Regio- and Enantioselective Copolymerization of Propylene Oxide with Carbon Dioxide": K. Nakano, S. Hashimoto, M. Nakamura, T. Kamada, K. Nozaki, *Angew. Chem.* **2011**, *123*, 4970–4973; *Angew. Chem. Int. Ed.* **2011**, *50*, 4868–4871.
   The first indication that the physical properties of poly(propylene carbonate)s can be controlled by catalytic asymmetric synthesis.

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