



K. Kaneda

Kiyotomi Kaneda

Date of birth: August 4, 1943
Position: Specially Appointed Professor, Research Center for Solar Energy Chemistry, Osaka University (Japan)
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Education: 1967 BSc, Osaka University
 1969 MSc, Osaka University
 1969–1972 PhD with Prof. S. Teranishi, Osaka University
 1986 Overseas Research Scholar with Prof. D. E. Bergbreiter, Texas A&M University
 1987 Overseas Research Scholar with Prof. A. W. Nienow, The University of Birmingham (UK)
Awards: 2001 Green and Sustainable Chemistry Award; 2004 Catalysis Society of Japan Award
Current research interests: High-performance heterogeneous metal catalysts; dendrimers as nanocatalysts; precise design of active metal species from mononuclear metal atoms to metal nanoparticles
Hobbies: Gardening and swimming

The author presented on this page has recently published his **10th article** in the last 10 years in *Angewandte Chemie*:

“Design of a Silver–Cerium Dioxide Core–Shell Nanocomposite Catalyst for Chemoselective Reduction Reactions”: T. Mitsudome, Y. Mikami, M. Matoba, T. Mizugaki, K. Jitsukawa, K. Kaneda, *Angew. Chem.* **2012**, 124, 140–143; *Angew. Chem. Int. Ed.* **2012**, 51, 136–139.

My favorite piece of music is ... “The Four Seasons” (Antonio Vivaldi).

My biggest motivation is ... the joy of doing research with my colleagues and students.

The most important thing I learned from my parents is ... “efforts never get you down”.

The biggest problem that scientists face is ... the development of sustainable energy to replace nuclear power.

My favorite piece of research is ... oxidations using molecular oxygen.

If I won the lottery, I would ... contribute to the Alumni Association of Osaka University.

My favorite place on earth is ... my birthplace, Takamatsu City (Japan).

If I were not a scientist, I would be ... manager of a professional baseball team.

I like refereeing because ... I can keep in touch with state-of-the-art research from all over the world.

My greatest achievement has been ... the development of high-performance “concerto catalysts” using inorganic crystallites.

The most exciting thing about my research is ... finding new catalytic functions.

The best advice I have ever been given is ... from my supervisor Prof. S. Teranishi, who recommended that I ask myself “do you enjoy chemistry?” when I got depressed.

My 5 top papers:

1. “Creation of a Monomeric Ru Species on the Surface of Hydroxyapatite as an Efficient Heterogeneous Catalyst for Aerobic Alcohol Oxidation”: K. Yamaguchi, K. Mori, T. Mizugaki, K. Ebitani, K. Kaneda, *J. Am. Chem. Soc.* **2000**, 122, 7144–7145. (The starting point in the development of hydroxyapatite-supported metal catalysts.)
2. “Controlled Synthesis of Hydroxyapatite-Supported Palladium Complexes as Highly Efficient Heterogeneous Catalysts”: K. Mori, K. Yamaguchi, T. Hara, T. Mizugaki, K. Ebitani, K. Kaneda, *J. Am. Chem. Soc.* **2002**, 124, 11572–11573. (The first step in the development of highly efficient heterogeneous Pd nanoparticle and Pd^{II} catalysts.)
3. “Dendritic Nanoreactors Encapsulating Pd Particles for Substrate-Specific Hydrogenation of Olefins”: M. Ooe, M. Murata, T. Mizugaki, K. Ebitani, K. Kaneda, *Nano Lett.* **2002**, 2, 999–1002. (The nanovoids of the dendrimers play important roles not only in stabilizing Pd nanoparticles but also in trapping substrates.)
4. “An Acidic Layered Clay Is Combined with A Basic Layered Clay for One-Pot Sequential Reactions”: K. Motokura, N. Fujita, K. Mori, T. Mizugaki, K. Ebitani, K. Kaneda, *J. Am. Chem. Soc.* **2005**, 127, 9674–9675. (One of my favorite pieces of work that utilizes the characteristic features of heterogeneous catalysts.)
5. “Supported Gold and Silver Nanoparticles for Catalytic Deoxygenation of Epoxides into Alkenes”: T. Mitsudome, A. Noujima, Y. Mikami, T. Mizugaki, K. Jitsukawa, K. Kaneda, *Angew. Chem.* **2010**, 122, 5677–5680; *Angew. Chem. Int. Ed.* **2010**, 49, 5545–5548. (The first report of efficient metal-nanoparticle-catalyzed deoxygenation of epoxides into alkenes by using alcohols as reductants.)

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The work of K. Kaneda has been featured on the cover of *Angewandte Chemie*: “Wacker-Type Oxidation of Internal Olefins Using a PdCl₂/N,N-Dimethylacetamide Catalyst System under Copper-Free Reaction Conditions”: T. Mitsudome, K. Mizumoto, T. Mizugaki, K. Jitsukawa, K. Kaneda, *Angew. Chem.* **2010**, 122, 1260–1262; *Angew. Chem. Int. Ed.* **2010**, 49, 1238–1240.