Angewandte Chemie International Edition

H. W. Roesky

Herbert W. Roesky

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Education:	1957–1961 Undergraduate degree, University of Göttingen (after an apprenticeship in a dairy) 1961–1963 PhD with Oskar Glemser, University of Göttingen 1965–1967 Postdoc at DuPont, Wilmington, Delaware
Awards:	**2004** ACS Award of Inorganic Chemistry; Victor Grignard–Georg Wittig Lecture; Rao Award of the Chemical Research Society of India; **2009** Prix Henri Moissan; **2012** Heinrich Rössler Preis
Research:	Fluorine chemistry; homogeneous catalysis; chemistry of main-group elements
Hobbies:	Hiking; road cycling; chemical experiments for the younger generation

The author presented on this page has published more than ***170 articles*** *in Angewandte Chemie, most recently:*
"A Stable Singlet Biradicaloid Siladicarbene: (L:)$_2$Si": K. C. Mondal, H. W. Roesky, M. C. Schwarzer, G. Frenking, B. Niepötter, H. Wolf, R. Herbst-Irmer, D. Stalke, *Angew. Chem.* **2013**, *125*, 3036–3040; *Angew. Chem. Int. Ed.* **2013**, *52*, 2963–2967.

I like refereeing because … I learn a lot of new and interesting chemistry.

The biggest problem that scientists face is … distraction by trivial things.

What I look for first in a publication is … the originality of the work.

If I won the lottery, I would … like to continue my work in chemistry for a few years.

The most important thing I learned from my parents is … to work hard.

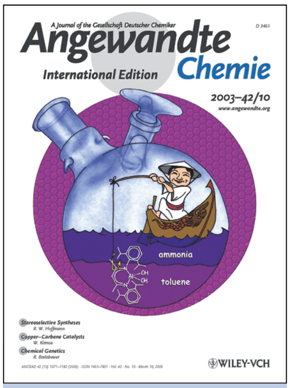
If I were not a scientist, I would be … an expert in dairy products.

My worst nightmare is … to make mistakes in a manuscript.

The most exciting thing about my research is … I always find something new and exciting.

The best stage in a scientist's career is … when they have enough money for research and are not involved in routine administrative work.

My biggest motivation is … curiosity about the newest result of my co-workers.



The work of H. W. Roesky has been featured on the cover of Angewandte Chemie:
"Aluminum Dihydroxide with Terminal OH Groups: An Unprecedented Congener of Boronic Acid": G. Bai, Y. Peng, H. W. Roesky, J. Li, H.-G. Schmidt, M. Noltemeyer, *Angew. Chem.* **2003**, *115*, 1164–1167; *Angew. Chem. Int. Ed.* **2003**, *42*, 1132–1135.

How have your scientific interests evolved?

I have changed my research topic nearly every ten years in order to find a new challenge in my research.

What would you do differently were you to start an academic career today?

The field of chemistry is still fascinating for me, although I started to work in my discipline about 60 years ago. I still enjoy daily visits to my laboratory and I hope that I can do this for many more years.

Is a fundamental approach to chemistry still appropriate today?

One of the fundamental approaches in chemistry is the periodic table. When you realize that in the whole universe, you find the same elements that are present on earth and are listed in the periodic table, then everyone has to agree that this is a universal approach to chemistry.

What are the main difficulties in collaborative efforts between disciplines?

The different fields in science are currently using abbreviations with the consequence that communication between the various branches of sciences becomes more difficult. Chemists in particular have the tendency to use more and more abbreviations, and I am afraid that the younger generation in a few years' time will not understand today's publications.

What are the most important challenges in your field for the next two decades?

The challenge for fluorine chemistry in the future is the development of specific reagents, for example, to selectively replace a specific hydrogen atom in a natural product by a fluorine atom in high yield.

What are the main impacts of the Bologna Process in your own experience?

The Bologna-type education system in Europe gives students the chance to earn their credit points at a university of their choice. This possibility is a great challenge for them to learn about the different facets in their field of interest. However, the organization of the Bologna Process means that the students have no time to use these options if they do not want to extend the time for their bachelor's or master's degree.

Should teaching and research, in accordance with Wilhelm von Humboldt's educational ideal, remain a mutually beneficial liaison?

The Humboldt principle of research and teaching is still very important in the classroom. The teacher is excited about the latest discoveries in research and he or she communicates this with the class. In general, this type of teaching finds the best resonance with the audience.

The interview questions were provided by David Scheschkewitz (Universität des Saarlandes).

My 5 top papers:

1. "Triazatrimetallabenzenes, a New Class of Inorganic Heterocycles; Synthesis and structure of $[Cp^*TaN(Cl)]_3$": H. Plenio, H. W. Roesky, G. M. Sheldrick, *Angew. Chem.* **1988**, *100*, 1377–1378; *Angew. Chem. Int. Ed. Engl.* **1988**, *27*, 1330–1331.
   The first reported unsaturated six-membered ring with alternating nitrogen and tantalum atoms contributed to the development of a number of ring compounds. These ring systems contain transition metals as well as the main-group elements sulfur, nitrogen, phosphorus, and boron. These ring compounds are precursors for the preparation of metal-containing polymers.
2. "Playing the Keyboard of Fluorine Chemistry": H. W. Roesky, *Inorg.Chem.* **1999**, *38*, 5934–5943.
   Fluorine chemistry was an important part of my scientific career. Trimethyltinfluoride, and in recent years $RSn^{II}F$ compounds, are ideal reagents for the fluorination of organometallic compounds. According to this method, a stable monomeric calcium monofluoride was prepared and is soluble in organic solvents.
3. "Synthesis and Structure of a Monomeric Aluminum(I) Compound $[\{HC(CMeNAr)_2\}Al]$ (Ar = 2,6-$i Pr_2C_6H_3$): A Stable Aluminum Analogue of a Carbene": C. Cui, H. W. Roesky, H.-G. Schmidt, M. Noltemeyer, H. Hao, F. Cimpoesu, *Angew. Chem.* **2000**, *112*, 4444–4446; *Angew. Chem. Int. Ed.* **2000**, *39*, 4274–4276.
   The first reported monomeric aluminum(I) compound that is stable at room temperature leads to a number of oxidation products. In particular, the three-membered aluminacyclopropene derivatives react selectively with various reagents in ring-expansion or ring-opening reactions.
4. "Mononuclear Aluminum Hydroxide for the Design of Well-Defined Homogeneous Catalysis": G. Bai, S. Singh, H. W. Roesky, M. Noltemeyer, H.-G. Schmidt, *J. Am. Chem. Soc.* **2005**, *127*, 3449–3455.
   The first reported molecular aluminum compound that bears a hydroxy and a methyl group at the same aluminum atom shows a surprising kinetic stability. Compounds of this type were used to prepare heterobimetallic compounds. The different metal atoms were connected only by an oxygen bridge. Experiments as well as theory showed that such an element arrangement was important for the development of highly reactive catalysts.
5. "Lewis Base Stabilized Dichlorosilylene": R. S. Ghadwal, H. W. Roesky, S. Merkel, J. Henn, D. Stalke, *Angew.Chem.* **2009**, *121*, 5793–5796; *Angew. Chem. Int. Ed.* **2009**, *48*, 5683–5686.
   The chemistry of silicon has mainly been developed from silicon in the oxidation state +4. However, the accessibility of dichlorosilylene allows the development of a broad range of compounds with low-valent silicon. Spectacular compounds that originate from dichlorosilylene are a four-membered ring with two bicoordinate silicon atoms and a silicon atom trapped by two cyclic (alkyl)(amino)carbenes.

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