F. Besenbacher

*The author presented on this page has recently published his **10th article** since 2000 in Angewandte Chemie*: "Charge State of Gold Nanoparticles Supported on Titania under Oxygen Pressure": S. Porsgaard, P. Jiang, F. Borondics, S. Wendt, Z. Liu, H. Bluhm, F. Besenbacher, M. Salmeron, *Angew.Chem.* **2011**, *123*, 2314 – 2317; *Angew.Chem. Int. Ed.* **2011**, *50*, 2266 – 2269.

Flemming Besenbacher

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Position:	Director of the Interdisciplinary Nanoscience Center, iNANO, Aarhus University and Professor at the Department of Physics and Astronomy, Aarhus University (Denmark)
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Education:	1978 MSc in Physics, Aarhus University 1982–1983 Visiting professor, Sandia National Laboratories, Albuquerque (USA) 1994 DrSc, Aarhus University
Awards:	**2003** Villum Kann Rasmussen Award for Outstanding Research Achievements in Science; **2006** Grundfos Award for Outstanding Nanoscience Research; **2007** Knighted by the Danish Queen; **2009** Elected Fellow of The Royal Society of Chemistry; **2009** Einstein Professorship, Chinese Academy of Sciences
Current research interests:	Since the 1980s, my research groups have taken part in the development and use of high-speed and high-stability scanning tunneling microscopes, now commercialized as the "Aarhus STM". A key to our successful use of the STM has been to design and build everything in-house and continuously push STM to its limits. We use STM and complementary surface-sensitive techniques to study the structure and reactivity of clean and adsorbate-covered metal, metal alloy, and oxide surfaces, and to characterize in situ synthesized nanostructures on surfaces. In particular, we have studied model systems related to heterogeneous catalysis and adsorption, self-assembly and chirality of organic molecules on surfaces.
Hobbies:	I follow many Danish teams and individuals of the sports world, especially in soccer, handball, and tennis. Also, I enjoy unwinding with garden maintenance.

I enjoy ... the wee hours spent bouncing e-mails back and forth with my many good colleagues all over the world.

If I were a car I would be … electric.

The most important thing I learnt is … to hire students, postdocs, and young colleagues who are smarter than me.

My favorite drink is … beer–a Carlsberg–probably the best drink in the world.

My favorite quote is … by Louis Pasteur (1871): "There is no category of science that can be named applied science. There is science AND the applications of science, bound to each other like fruit to the tree that bears it."

If I could be a piece of lab equipment, I would be … an "Aarhus STM"–fast, productive, and one-of-a-kind.

I admire … Gerhard Ertl for his groundbreaking surface-science research and for being the smartest and kindest person I know.

My 5 top papers:

1. "Design of a Surface Alloy Catalyst for Steam Reforming": F. Besenbacher, I. Chorkendorff, B. S. Clausen, B. Hammer, A. Molenbroek, J. K. Nørskov, I. Stensgaard, *Science* **1998**, *279*, 1913 – 1915. (This article was an important demonstration that it is possible to discover new catalysts based on atomic-scale insight.)
2. "Enhancement of surface self-diffusion of platinum atoms by adsorbed hydrogen": S. Horch, H. T. Lorensen, S. Helveg, E. Lægsgaard, I. Stensgaard, K. W. Jacobsen, J. K. Nørskov, F. Besenbacher, *Nature* **1999**, *398*, 134 – 136. (One of the first examples of the extraction of diffusion constants from atomically resolved "STM movies".)
3. "Chiral recognition in dimerization of adsorbed cysteine observed by scanning tunnelling microscopy": A. Kühnle, T. R. Linderoth, B. Hammer, F. Besenbacher, *Nature* **2002**, *415*, 891 – 892. (We demonstrated chiral recognition at the atomic scale, even from a racemic mixture.)
4. "Specificity of Watson–Crick Base Pairing on a Solid Surface Studied at the Atomic Scale": R. Otero, W. Xu, M. Lukas, R. E. A. Kelly, E. Lægsgaard, I. Stensgaard, J. Kjems, L. N. Kantorovitch, F. Besenbacher, *Angew.-Chem.* **2008**, *120*, 9819 – 9822; *Angew.Chem. Int. Ed.* **2008**, *47*, 9673 – 9676. (We found a surprisingly simple correspondence between WC pairing between bases in real DNA and on surfaces.)
5. "The Role of Interstitial Sites in the Ti*3d* Defect State in the Band Gap of Titania": S. Wendt, P. T. Sprunger, E. Lira, G. K. H. Madsen, Z. Li, J. Ø. Hansen, J. Matthiesen, A. Blekinge-Rasmussen, E. Lægsgaard, B. Hammer, F. Besenbacher, *Science* **2008**, *320*, 1755 – 1759. (We were the first to propose a new role of interstitial Ti in the diffusional behavior of surface-bound species.)

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