

**Dr. Volker Rose***Physicist*

X-ray Microscopy

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Dr.rer.nat. RWTH Aachen University

Dr. Volker Rose holds an advanced degree in physics (Dipl.-Phys.) and received a doctoral degree (Dr.rer.nat.) from RWTH Aachen. From 2001 to 2005, he conducted research at Research Center Julich, the largest interdisciplinary research center in Europe. After a postdoctoral appointment at the Center for Nanoscale Materials (CNM), he joined the Microscopy Group at the Advanced Photon Source (APS) as Assistant Physicist in 2007, where he was promoted to the rank of Physicist in 2012. Currently he holds an interdivisional appointment between APS and CNM.

Dr. Rose's research focuses on the study of nanoscale materials by means of high-resolution x-ray microscopy techniques. He currently leads a team that develops a novel technique, which combines scanning probe microscopy with synchrotron x-rays ([SXSPM](#)). The goal is to achieve a fundamental understanding of nanoscale structures with both the ability to resolve nanometer structure and to provide detailed information about chemical, electronic, and magnetic state.

Dr. Rose's has published about 50 journal articles and book chapters as well as given more than 50 invited talks at international conferences and higher institutions around the world. His work has been covered by media outlets including The New York Times, Chicago Tribune, Discover Magazine, Voice of America, and many more. Research achievements include a DOE Early Career Research Program Award in 2012, a prestigious R&D 100 Award in 2009, as well as an International Exchange Program Award, sponsored by U.S. Department of Energy and American Nuclear Society in 2004. In 2013, he was selected to participate in the Strategic Laboratory Leadership Program of The University of Chicago Booth School of Business.

**Selected Publications:**

Nozomi Shirato, Marvin Cummings, Heath Kersell, Yang Li, Benjamin Stripe, Daniel Rosenmann, Saw-Wai Hla, and **Volker Rose**, [Elemental Fingerprinting of Materials with Sensitivity at the Atomic Limit](#), NANO LETTERS 14, 6499-6504 (2014).

M. Holt, R. Harder, R. Winarski, and **V. Rose**, [Nanoscale Hard X-ray Microscopy Methods for Materials Studies](#), ANNUAL REVIEW OF MATERIALS RESEARCH 43, 183 (2013).

**V. Rose**, J.W. Freeland, S.K. Streiffer, [New Capabilities at the Interface of X-rays and Scanning Tunneling Microscopy](#) in *Scanning Probe Microscopy of Functional Materials: Nanoscale Imaging and Spectroscopy*, S.V. Kalinin, A. Gruverman, (Eds.), SPRINGER, New York (2011), pg 405-432.

**V. Rose**, K. Brüggemann, R. David, R. Franchy, [Two-Dimensional Surface Magnetism in the Bulk Paramagnetic Intermetallic Alloy CoAl\(100\)](#), PHYSICAL REVIEW LETTERS 98 (2007) 037202.

