



Dr. Volker Rose

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Dr. Volker Rose holds an advanced degree in physics (Dipl.-Phys.) and received a doctoral degree (Dr.rer.nat.) from RWTH Aachen, Germany in 2005. During this time 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. He currently 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 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.

More information about the SXSPM project can be found [here](#).

Selected Publications:

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.

M.L. Cummings, T.Y. Chien, C. Preissner, V. Madhavan, D. Diesing, M. Bode, J.W. Freeland, **V. Rose**, "[Combining Scanning Tunneling Microscopy and Synchrotron Radiation for High-Resolution Imaging and Spectroscopy with Chemical, Electronic, and Magnetic Contrast](#)", *ULTRAMICROSCOPY* 112, 22 (2012).

V. Rose, T.Y. Chien, J. Hiller, D. Rosenmann, R.P. Winarski, "[X-ray nanotomography of SiO₂-coated Pt₉₀Ir₁₀ tips with sub-micron conducting apex](#)", *APPLIED PHYSICS LETTERS* 99 (2011) 173102.

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