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Research summary:

I am interested in developing a full-field and tomographic x-ray research program using the unique capabilities associated with the design of the Hard X-ray Nanoprobe Beamline (<http://www.cnm.anl.gov/research/xray.html>).

Awards:

R&D 100 Award for the Hard X-ray Nanoprobe (2009)

Selected Recent Publications:

V. Rose, T.Y. Chien, J. Hiller, D. Rosenmann, and R.P. Winarski, X-ray nanotomography of SiO₂-coated Pt₉₀Ir₁₀ tips with sub-micron conducting apex, accepted for publication in Applied Physics Letters (2011).

John L. Provis, Volker Rose, Robert P. Winarski, and Jannie S.J. van Deventer, Hard X-ray nanotomography of amorphous aluminosilicate cements, Scripta Materialia (65) 316–319 (2011).

H. C. Kang, H. Yan, R. P. Winarski, M. V. Holt, J. Maser, C. Liu, R. Conley, S. Vogt, A. T. Macrander, and G. B. Stephenson, Focusing of hard x-rays to 16 nanometers with a multilayer Laue lens, Applied Physics Letters 92 221114 (2008).

Proceedings:

D. Shu, J. Maser, M. Holt, R. P. Winarski, C. Preissner, B. Lai, S. Vogt, G.B. Stephenson, *Design of a Precision Specimen Exchange Robot-Arm System for a Hard X-ray Nanoprobe Instrument*, Proceedings of the American Society for Precision Engineering 22nd Annual Meeting, The American Society for Precision Engineering, 40 295 - 298 (2008).

D. Shu, J. Maser, M. Holt, R. P. Winarski, C. Preissner, A. Smolyanitskiy, B. Lai, S. Vogt, and G. B. Stephenson, *Optomechanical Design of a Hard X-ray Nanoprobe Instrument with Nanometer-Scale Active Vibration Control*, Ninth International Conference on Synchrotron Radiation Instrumentation, AIP 879, 1321-1324 (2007).

Patents:

D. Shu, J. Maser, B. Lai, S. Vogt, M. Holt, C. Preissner, R. P. Winarski, and G. B. Stephenson, *Optomechanical Structure for a Multifunctional Hard X-ray Nanoprobe Instrument*, Patent Number 7331714, February 2008.