Jeff Drucker

(i) Professional Preparation

University of California, Irvine	B.A. in Physics, 1981
University of California, Santa Barbara	Ph.D. in Physics, 1986
Arizona State University	Dept. of Physics and Astronomy, 1989-1991
Arizona State University	Center for Solid State Science, 1991-1992

(ii) Appointments

2006-present	Associate Professor, School of Materials, Arizona State University
2000 - present	Associate Professor, Dept. of Physics, Arizona State University
2000	Associate Professor, Physics Dept., University of Texas at El Paso
1994 - 2000	Assistant Professor, Physics Dept., University of Texas at El Paso

(iii) Publications

Five publications related to the proposed work

Kinetic Control of Ge(Si)/Si(100) Dome Cluster Composition, E. P. McDaniel, Qian Jiang, P. A. Crozier, Jeff Drucker and David J. Smith, Appl. Phys. Lett., **87**, 223101, (2005).

Nanometer scale composition measurements of Ge/Si(100) islands, Margaret Floyd, Yangting Zhang, K. P. Driver, Jeff Drucker, P. A. Crozier and David J. Smith, Appl. Phys. Lett., **82**(9), 1473 - 1475 (2003).

Self-Assembling Ge/Si(100) Quantum Dots, **Invited Review**, Jeff Drucker, IEEE Journal of Quantum Electronics, **38**, 975 (2002).

Strain Relief via Trench Formation in Ge/Si(100) Islands, S.A. Chaparro, Y. Zhang and Jeff Drucker, Appl. Phys. Lett. **76**, 3534 (2000).

Strain Assisted Alloying in Ge/Si(100) Coherent Island Quantum Dots, Sergio Chaparro, Zhang Yangting, Jeff Drucker, D. Chandrasekhar, M. McCartney and David J. Smith, Phys. Rev. Lett. **83**, 1199 (1999).

Five other significant publications

Real-time coarsening dynamics of Ge/Si(100) nanostructures, Michael R. Mckay, John Shumway and Jeff Drucker, J. Appl. Phys., **99**, 094305 (2006).

Microstructural evolution of Ge/Si(100) nanoscale islands, David J. Smith, D. Chandrasekhar, S.A. Chaparro, P.A. Crozier, J. Drucker, M. Floyd, M.R. McCartney and Y. Zhang, J. Cryst. Growth, **259**, 232-244 (2003)

Shape Evolution of Ge/Si(100) Coherent Islands: Coverage, Size and Temperature Dependence, S.A. Chaparro, Y. Zhang, Jeff Drucker, D. Chandrasekhar and David J. Smith, J. Appl. Phys., **87**(5), 2245-2254 (2000).

Diffusional Narrowing of Ge on Si(100) Coherent Island Quantum Dot Size Distributions, Jeff Drucker and Sergio Chaparro, Appl. Phys. Lett., **71**(5), 614 (1997).

Coherent Islands and Microstructural Evolution, Jeff Drucker, Phys. Rev. B **48**, 18,203 (1993).

(iv) Synergistic Activities

• Real-time in situ scanning tunneling microscopy 'movies' acquired by a former PhD student working in my research group featured in DVD produced by NSF funded Nanoscale Undergraduate Education grant. This PhD student is a member of an group underrepresented in science and engineering.

• Active in development of unique state-of-the-art environmental microscopy capabilities. At ASU we have upgraded a Tecnai 20F (scanning) transmission electron microscope to an environmental capability with funds from a NSF Instrumentation for Materials Research grant.

• I have served on several review panels at the National Science Foundation.

• Co-organized 2001 Lawrence Symposium on Critical Issues in Epitaxy and organized the 2003 Lawrence Symposium.

• Supervised senior design projects developing equipment used in my research laboratories: microprocessor controlled scanning tunneling microscope tip etcher, feed back controlled electron beam evaporator power supply.

• In collaboration with undergraduate researchers at UTEP, developed solid-on-solid Monte Carlo code used in Ph.D. level Materials Science curriculum for investigation of the role of kinetics in the approach to equilibrium thin film morphologies.

(v) Collaborators & Other Affiliations

(a) Collaborators
ASU : P. Bennett, J. Bird, P.A. Crozier, R.B. Doak, D.K. Ferry, S. Goodnick, J. Kouvetakis, J.W. Mayer, M. McKelvey, J. Menendez, A. Panitch, C. Poweleit, R. Sharma & D.J. Smith
CIMAV : L. Fuentes
UTEP : S.B. Aley, R.R. Chianelli, J. Craig, S. Das, D. Russell, E. Smith & P. Wang
Univ. of Kentucky : V. Singh
Los Alamos National Laboratory: S.T. Picraux

(b) Graduate Students
UTEP : S. Chaparro
ASU : M. Floyd, E. McDaniel, S. Ketharanathan, M. McKay and Y. Zhang

(c) Graduate and Postdoctoral Advisors
University of California Santa Barbara : P.K. Hansma & V. Jaccarino
Arizona State University : J.A. Venables