

Suneel Kodambaka

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Nationality -- U.S.A.

Employment

Vice Chair, Undergraduate studies (07/2013-present)
Associate Professor, UCLA (07/2013-present)
Assistant Professor, UCLA (02/2007-06/2013)
Post-doctoral Researcher, IBM T.J. Watson (2005-2007)
Post-doctoral Researcher, UIUC (2002-2004)

Education

University of Illinois, Urbana-Champaign, IL (1997-2002)
Ph.D., Materials Science and Engineering (September 2002) Advisor: **Prof. Joseph E. Greene.**
Thesis: "In Situ High-Temperature Scanning Tunneling Microscopy Studies of Early Stage Growth Kinetics During TiN Epitaxy."

Southern Illinois University, Carbondale, IL (1995-1996)
M.S. in Mechanical Engineering (December 1996) Advisor: **Prof. Rasit Koc**
Thesis: "Synthesis of WC Powder Using Novel Tungsten Trioxide Precursors."

Indian Institute of Technology, Madras, India (1991-1995)
Bachelor of Technology in Metallurgical Engineering (May 1995).

Courses taught at UCLA

- Designed, developed, and taught new *Characterization of Nanomaterials* course (Spring 2008).
- *Introduction to Electron Microscopy* (Winter 2008)
- *Diffusion and Diffusion-Controlled Reactions Laboratory* (Winter 2008, 2009)
- Co-designed, co-developed, and taught new *Principles of Nanoscience and Nanotechnology* course (Fall 2007, Fall 2008).
- Guest lecturer in *Introduction to Materials, E 87 for Engineering freshmen*, and graduate-level *Surface characterization* courses (Fall 2007, 2008).
- *Science of Engineering Materials* (Winter 2009, 2010)
- *Materials Science of Semiconductors* (Spring 2009, 2010)

Current/Past funding as a PI or co-PI: ACS-PRF, AFOSR, ONR, NRO, NSF-MSE, NSF-MoM, SAIT GRO (Samsung), Northrop Grumman (co-PI/Hicks, UCLA), Easton Sports, UC Discovery, UCEI, UC MICRO, and UCLA Faculty Grant Program.

Ongoing research collaborations:

- Prof. Cristian Ciobanu (Colorado School of Mines): *Graphene growth on Pd(111)*.
- Prof. Per Persson (Linkoping Univ., Sweden): *In situ high-T TEM studies of ceramics*
- Prof. Rasit Koc (SIUC): *Carbothermal reduction reactions in C-coated titania particles*.
- Prof. Ryan Richards (Colorado School of Mines): *Characterization of metal and metal oxide nanocrystals*.

Professional activities

Organizer:

- Program Chair, Int'l Conf. Metallurgical Coatings and Thin Films (ICMCTF), San Diego, CA (2015).
- Symposium (Fullerenes, CNTs, Graphene), AACGE-18, Monterey, CA (2011).
- Symposium, Materials Research Society (MRS) Fall meeting, Boston, MA (2008).
- Topical session, AVS Int'l meeting, Seattle, WA (2007).
- Organizer, AVS Prairie Chapter meeting, Urbana, IL (2004).

Co-organizer:

- Chair, Symposium F, ICMCTF, San Diego, CA (2013).
- Focus Session (Surface/Interfaces of Non-Oxides), APS 2012.
- EMC meeting (Graphene and Characterization) sessions (2009-present).
- CECAM workshop on nanowires, Crete, Greece (Sept. 2010).
- Topical symposium, Amer. Assoc. of Crystal Growth, Lake Geneva, WI (2009).
- Focused topic, American Physical Society (APS) March meeting, Pittsburgh, PA (2009).
- Topical session, American Vacuum Society (AVS) Int'l meeting, Boston, MA (2008).
- Topical session in ICMCTF, San Diego, CA (2004, 2005, 2008-'12).

Editorial/Referee (partial list):

(**Editor**) MRS Fall '08 Symposium NN Proceedings.

(**Guest Editor**) ICMCTF, San Diego, CA (2013).

Applied Physics Letters (APL), ACS Nano, Chemical Reviews, Chemistry of Materials, J. Crystal Growth, Materials Letters, Nano Letters, Nature Materials, Physical Review Letters (PRL), Science, Surface Science, Thin Solid Films (TSF), Vacuum.

Reviewed proposals submitted to (partial list):

Agency for Science Technology and Research (A*STAR), Singapore; Vienna Science and Technology Fund (WWTF), Austria; NSF (CBET, MSE, DMR), ACS PRF, DOE, ONR, Canadian Space Agency, NSERC, and Georgia National Science Foundation.

Professional Affiliations

- American Vacuum Society (1999, 2002-'04, 2007-present)
- Materials Research Society (2001, '02, '04, 2006-2012)
- American Ceramic Society (1996)

- American Physics Society (2007-'08)
- The Metals Society (TMS) (2008-'10)

Awards and honors

- Program Chair, ICMCTF 2015
- Member, Executive Committee, Applied Surface Engineering Division (ASED), part of the AVS (2013-present)
- Guest Editor, Proceedings of the ICMCTF 2013.
- Editorial Board Member, Vacuum (2012-present)
- Discussion leader, GRC (Thin Film & Crystal Growth Mechanisms), Maine (2011).
- Alumni Achievement Award, Southern Illinois University at Carbondale (2010).
- Paul H. Holloway Young Investigator Award, AVS Int'l Conf. (2009).
- Member, User Executive Committee (2009-2011), C.I.N.T.
- Best Paper Award, IBM Materials Research Community (2008).
- Ross J. Martin award, outstanding doctoral thesis, College of Engineering, UIUC (2003).
- Best poster presentation award: AVS Prairie Chapter, Chicago, IL (2002).
- Gold medal, outstanding graduate research, MRS spring meeting, San Francisco, CA (2001).
- Mavis Memorial Fund Scholarship, College of Engineering, UIUC (2001).
- Ivan Racheff award, outstanding graduate research, Dept. Materials Science, UIUC (2000).
- Best poster presentation award: NSF-DARPA Virtual Integrated Prototyping project review, Champaign, IL (1998).

Presented over 100+ invited talks and seminars.

Peer-reviewed publications in journals and books (Total: 70+, 2500+ citations, *h*-index: 25)

Invited Review articles and Book Chapters

1. S. Kodambaka, *In Situ Observations of Vapor-Liquid-Solid Growth of Silicon Nanowires*, in [Silicon and Silicide Nanowires: Applications, Fabrication, and Properties] Ed., Y. Huang, and K. N. Tu, pp 1-14 (Pan Stanford, 2013).
2. S. Kodambaka and F.M. Ross, *Ultra-High Vacuum Transmission Electron Microscopy Studies of Synthesis and Stabilities of Low-Dimensional Structures*, in [Handbook of Instrumentation and Techniques for Semiconductor Nanostructure Characterization] World Scientific Publishing (2012).
3. T. Dumitrică, S. Kodambaka, and S. Jun, *Synthesis, electromechanical characterization, and applications of graphene nanostructures*, **J. Nanophoton.** 6, 064501 (2012), DOI:10.1117/1.JNP.6.064501
4. S.V. Khare, S.K.R. Patil, and S. Kodambaka, *Germanium Nanowires* in [Handbook of Nanophysics: Nanotubes and Nanowires], CRC Press Taylor & Francis (2010).
5. J. Barenó, S. Kodambaka, S.V. Khare, W. Swiech, V. Petrova, I. Petrov, and J.E. Greene, *TiN Surface Dynamics: Role of Surface and Bulk Mass Transport Processes*, Eds., O. Miranda, M.

- Carbajal, L.M. Montano, O. Rosas-Ortiz, and S.A.T. Velazquez, *AIP Conf. Proc.* 885, 205 (2007).
6. F.M. Ross, J. Tersoff, S. Kodambaka, and M.C. Reuter, *Growth and surface structure of silicon nanowires observed in real time in the electron microscope*, in [Microscopy of Semiconducting Materials Part V], Springer Proceedings in Physics 107, 283-286 (2006).
 7. T.-Y. Lee, S. Kodambaka, J. G. Wen, R. G. Twesten, J. E. Greene, and I. Petrov, *Controlled Nanostructural Evolution in $Ti_{0.8}Ce_{0.2}N$ Layers Grown as a Function of Low Energy, High Flux Ion Irradiation*, in [Nanoscale Magnetic Oxides and Bio-World], ed. I. Nedkov and Ph. Tailhades] (Heron Press, Sofia), 156-165 (2004).
 8. S. Kodambaka, S.V. Khare, I. Petrov, and J.E. Greene, *Two-dimensional island dynamics: Role of step energy anisotropy*, ***Surf. Sci. Rep.*** 60, 55 (2006).

Peer-reviewed journal articles:

9. S. Kiani, C. Ratsch, A. M. Minor, S. Kodambaka, and J.-M. Yang, *Orientation- and Size-Dependent Room-Temperature Plasticity in ZrC Crystals*, ***Philosophical Magazine***, DOI: 10.1080/14786435.2015.1012568 (2015).
10. S. Kiani, C. Ratsch, A. M. Minor, J. M. Yang, and S. Kodambaka, *In situ transmission electron microscopy observations of room-temperature plasticity in sub-micron-size TaC(100) and TaC(011) single crystals*, ***Scr. Mater.***, 100[0] 13-16 (2015).
11. T. S. Yoder, J. E. Cloud, G. J. Leong, D. F. Molk, M. Tussing, J. Miorelli, C. Ngo, S. Kodambaka, M. E. Eberhart, R. M. Richards, and Y. Yang, *Iron Pyrite Nanocrystal Inks: Solvothermal Synthesis, Digestive Ripening, and Reaction Mechanism*, ***Chem. Mat.*** 26, 6743-6751 (2014).
12. J. P. Bell, J. E. Cloud, J. Cheng, C. Ngo, S. Kodambaka, A. Sellinger, S. K. Ratanathanawongs Williams, and Y. Yang, *N-Bromosuccinimide-based bromination and subsequent functionalization of hydrogen-terminated silicon quantum dots*, ***RSC Advances*** 4, 51105-51110 (2014).
13. Y. Murata, and S. Kodambaka, *In situ high-temperature scanning tunneling microscopy studies of thermochemical stability of rutile- $TiO_2(110)$ and 6H-SiC(0001)*, ***Surface and Coatings Technology*** 257, 348-354 (2014).
14. S. Kiani, K. W. K. Leung, V. Radmilovic, A. M. Minor, J. M. Yang, D. H. Warner, and S. Kodambaka, *Dislocation glide-controlled room-temperature plasticity in 6H-SiC single crystals*, ***Acta Mater.*** 80, 400-406 (2014).
15. B. J. Kim, J. Tersoff, S. Kodambaka, J.-S. Jang, E. A. Stach, and F. M. Ross, *Au Transport in Catalyst Coarsening and Si Nanowire Formation*, ***Nano Lett.*** 14, 4554-4559 (2014).
16. G. J. Leong, A. Ebnonnasir, M. Schulze, M. Strand, C. Ngo, D. Maloney, S. Frisco, H. Dinh, B. Pivovar, G. Gilmer, S. Kodambaka, C. Ciobanu, and R. Richards, *Shape-directional growth of Pt and Pd nanoparticles*, ***Nanoscale*** 6, 11364-11371 (2014).
17. K. W. Schwarz, J. Tersoff, S. Kodambaka, and F. M. Ross, *Jumping-Catalyst Dynamics in Nanowire Growth*, ***Phys. Rev. Lett.*** 113, 055501 (2014).

18. A. Ebnonnasir, B. Narayanan, S. Kodambaka, and C. V. Ciobanu, *Tunable MoS₂ bandgap in MoS₂-graphene heterostructures*, **Appl. Phys. Lett.** 105, 031603 (2014).
19. H. S. Mok, A. Ebnonnasir, Y. Murata, S. Nie, K. F. McCarty, C. V. Ciobanu, and S. Kodambaka, *Kinetics of monolayer graphene growth by segregation on Pd(111)*, **Appl. Phys. Lett.** 104, 101606 (2014).
20. [Cover Page article] I. Jouanny, J. Palisaitis, C. Ngo, P. H. Mayrhofer, L. Hultman, P. O. Å. Persson, and S. Kodambaka, *In situ Transmission Electron Microscopy Studies of the Kinetics of Pt-Mo alloy Diffusion in ZrB₂ Thin Films*, **Appl. Phys. Lett.** 103, 121601-121605 (2013).
21. S. Kodambaka, C. Ngo, J. Palisaitis, P. H. Mayrhofer, L. Hultman, and P. O. Å. Persson, *Kinetics of Ga Droplet Decay on Thin Carbon Films*, **Appl. Phys. Lett.** 102, 161601-161604 (2013).
22. L. Chen, J. Hu, F. Lin, C. Cadigan, W. Cao, Z. Qi, M. Pozuelo, S. Prikhodko, S. Kodambaka, and R. Richards, *Self-Assembled Single-crystalline ZnO Nanostructures*, **CrystEngComm.** 15, 3780-3784 (2013).
23. K. Hillerich, K. A. Dick, C.-Y. Wen, M. C. Reuter, S. Kodambaka, and F. M. Ross, *Strategies to control morphology in hybrid group IV/group III-V heterostructure nanowires*, **Nano Lett.** 13, 903-908 (2013).
24. G. Youssef, R. Crum, S. V. Prikhodko, D. Seif, G. Po, N. Ghoniem, S. Kodambaka, and V. Gupta, *The Influence of Laser-Induced Nanosecond Rise-Time Stress Waves on the Microstructure and Surface Chemical Activity of Single Crystal Cu Nanopillars*, **J. Appl. Phys.** 113, 084309-084306 (2013).
25. B.B. Kappes, A. Ebnonnasir, S. Kodambaka, and C.V. Ciobanu, *Orientation-dependent binding energy of graphene on palladium*, **Appl. Phys. Lett.** 102, 051606 (2013).
26. Y. Murata, V. Petrova, I. Petrov, C.V. Ciobanu, and S. Kodambaka, *Role of Ethylene on Surface Oxidation of TiO₂(110)*, **Appl. Phys. Lett.** 101, 211601-211605 (2012).
27. L. Chen, J. Hu, S. Prikhodko, M. Pozuelo, S. Kodambaka, H. Yang, and R. Richards, *Controlled synthesis and catalytic activities of nanoscale icosahedral gold particles at room temperature*, **ChemCatChem**, DOI: 10.1002/cctc.201200230 (2012).
28. H. Ye, Z.Y. Yu, S. Kodambaka, and V.B. Shenoy, *Kinetics of axial composition evolution in multi-component alloy nanowires*, **Appl. Phys. Lett.** 100, 263103 (2012).
29. Y. Murata, V. Petrova, I. Petrov, and S. Kodambaka, *In situ high-temperature scanning tunneling microscopy study of bilayer graphene growth on 6H-SiC(0001)*, **Thin Solid Films** 520, 5289-5293 (2012).
30. Y. Murata, S. Nie, A. Ebnonnasir, E. Starodub, B. B. Kappes, K. F. McCarty, C. V. Ciobanu, and S. Kodambaka, *Growth structure and work function of bilayer graphene on Pd(111)*, **Phys. Rev. B** 85, 205443 (2012).
31. J. Kwak, J. H. Chu, J.-K. Choi, S.-D. Park, H. Go, S. Y. Kim, K. Park, S.-D. Kim, Y.-W. Kim, E. Yoon, S. Kodambaka, and S.-Y. Kwon, *Near room-temperature synthesis of transfer-free graphene films*, **Nat. Commun.** 3, 1-7 (2012).
32. K.W. Schwarz, J. Tersoff, S. Kodambaka, Y.-C. Chou, and F.M. Ross, *Geometrical Frustration in Nanowire Growth*, **Phys. Rev. Lett.** 107, 265502 (2011).

33. C. Ngo, H. Zhou, M. Mecklenburg, M. Pozuelo, B.C. Regan, Q.F. Xiao, V.B. Shenoy, R.F. Hicks, and S. Kodambaka, *Effect of Precursor Flux on Compositional Evolution in $\text{InP}_{1-x}\text{Sb}_x$ Nanowires Grown via Self-Catalyzed Vapor-Liquid-Solid Process*, **J. Crystal Growth** 336, 14-19 (2011).
34. M. Pozuelo, H. Zhou, S. Lin, S. A. Lipman, M. S. Goorsky, R. F. Hicks, and S. Kodambaka, *Self-catalyzed growth of InP/InSb axial nanowire heterostructures*, **J. Crystal Growth** 329, 6-11 (2011).
35. C.-Y. Wen, J. Tersoff, K. Hillerich, M. C. Reuter, J. H. Park, S. Kodambaka, E. A. Stach, and F. M. Ross, *Periodically changing morphology of the growth interface in Si, Ge, and GaP nanowires*, **Phys. Rev. Lett.** 107, 025503 (2011).
36. Y. Liu, J. Hu, C. Ngo, S. Prikhodko, S. Kodambaka, J. Li, and R. Richards, *Gram-Scale Wet Chemical Synthesis of Wurtzite-8H Nanoporous ZnS Spheres with High Photocatalytic Activity*, **Applied Catalysis B: Environmental** 106, 212-219 (2011).
37. H. Zhou, M. Pozuelo, R.F. Hicks, and S. Kodambaka, *Self-catalyzed vapor-liquid-solid growth of $\text{InP}_{1-x}\text{Sb}_x$ nanostructures*, **J. Crystal Growth** 319, 25-30 (2011).
38. V. Evoen, H. Zhou, L. Gao, M. Pozuelo, B. Liang, J. Tatebeyashi, S. Kodambaka, D.L. Huffaker, and R.F. Hicks, *Structural and optical characterization of wurtzite InP/InAsP core-shell nanopillars*, **J. Crystal Growth** 314, 34-38 (2011).
39. Y. Murata, E. Starodub, B.B. Kappes, C.V. Ciobanu, N.C. Bartelt, K.F. McCarty, and S. Kodambaka, *Orientation-Dependent Work Function of Graphene Domains on Pd(111)*, **Appl. Phys. Lett.** 97, 143114 (2010).
40. Y. Murata, V. Petrova, B.B. Kappes, A. Ebnonnasir, I. Petrov, Y.-H. Xie, C.V. Ciobanu, and S. Kodambaka, *Moiré Superstructures of Graphene on Faceted Nickel Islands*, **ACS Nano** 4, 6509-6514 (2010).
41. M. Pozuelo, S.V. Prikhodko, R. Grantab, H. Zhou, L. Gao, S.D. Sitzman, V. Gambin, V.B. Shenoy, R.F. Hicks, and S. Kodambaka, *Zincblende to Wurtzite Transition during the Self-Catalyzed Growth of InP Nanostructures*, **J. Crystal Growth** 312, 2305-2309 (2010).
42. L. Chen, J. Hu, R. Richards, S. Prikhodko, and S. Kodambaka, *Synthesis and Surface Activity of Single-Crystalline $\text{Co}_3\text{O}_4(111)$ Holey Nanosheets*, **Nanoscale** 2, 1657-1660 (2010).
43. F.M. Ross, C.-Y. Wen, S. Kodambaka, B.A. Wacaser, M.C. Reuter, and E.A. Stach, *The growth and characterization of Si and Ge nanowires grown from reactive metal catalysts*, **Phil. Mag.** 90, 2807-2816 (2010).
44. T.-Y. Lee, H. Seo, H. Hwang, B. Howe, S. Kodambaka, J.E. Greene, and I. Petrov, *Fully strained low-temperature epitaxy of $\text{TiN}/\text{MgO}(001)$ layers using high-flux, low-energy ion irradiation during reactive magnetron sputter deposition*, **Thin Solid Films** 518, 5169-5172 (2010).
45. S.-Y. Kwon, C.V. Ciobanu, V. Petrova, V.B. Shenoy, J. Bareno, V. Gambin, I. Petrov, and S. Kodambaka, *Growth of Semiconducting Graphene on Palladium*, **Nano Lett.** 9, 3985-3990 (2009).

46. C.-Y. Wen, M.C. Reuter, J. Bruley, J. Tersoff, S. Kodambaka, E.A. Stach, and F.M. Ross, *Formation of compositionally abrupt axial heterojunctions in Si/Ge nanowires*, **Science** 326, 1247-1250 (2009).
47. L. Chen, Z. Song, S.V. Prikhodko, J. Hu, S. Kodambaka, and R. Richards, *Three-Dimensional Morphology Control During Wet Chemical Synthesis of Porous Chromium Oxide Spheres*, **ACS Applied Materials & Interfaces** 1, 1931-1937 (2009).
48. L. Gao, R.L. Woo, B. Liang, M. Pozuelo, S. Prikhodko, M. Jackson, N. Goel, M.K. Hudait, D.L. Huffaker, M.S. Goorsky, S. Kodambaka, and R.F. Hicks, *Self-Catalyzed Epitaxial Growth of Vertical Indium Phosphide Nanowires on Silicon*, **Nano Lett.** 9, 2223-2228 (2009).
49. R.L. Woo, L. Gao, N. Goel, M.K. Hudait, K.L. Wang, S. Kodambaka, and R.F. Hicks, *Kinetic Control of Self-catalyzed Indium Phosphide Nano - Wires, Cones, and Pillars*, **Nano Lett.** 9, 2207-2211 (2009).
50. (Invited paper) S. Kodambaka, J. Tersoff, and F. M. Ross, *Growth kinetics of Si and Ge nanowires*, **Proc. SPIE** 7224, 72240C (2009).
51. B.J. Kim, J. Tersoff, S. Kodambaka, M.C. Reuter, E.A. Stach, and F.M. Ross, *Kinetics of individual nucleation events observed in nanoscale vapor-liquid-solid growth*, **Science** 322, 1070-1073 (2008).
52. S.V. Prikhodko, S. Sitzman, V. Gambin, and S. Kodambaka, *In Situ Electron Backscattered Diffraction of Individual GaAs Nanowires*, **Ultramicroscopy** 109, 133-138 (2008).
53. K.A. Dick, S. Kodambaka, M.C. Reuter, K. Deppert, L. Samuelson, W. Seifert, L.R. Wallenberg, and F.M. Ross, *The morphology of axial and branched nanowire heterostructures*, **Nano Lett.** 7, 1817 (2007).
54. S. Kodambaka, J. Tersoff, and F.M. Ross, *Ge nanowire growth below the eutectic temperature*, **Science** 316, 729 (2007).
55. C. Lang, S. Kodambaka, F.M. Ross, and D.J.H. Cockayne, *Real time observation of GeSi/Si(001) island shrinkage due to surface alloying during Si capping*, **Phys. Rev. Lett.** 97, 226104 (2006).
56. S. Kodambaka, J.B. Hannon, R.M. Tromp, and F.M. Ross, *Control of Si nanowire growth by oxygen*, **Nano Lett.** 6, 1292 (2006).
57. S. Kodambaka, J. Tersoff, M.C. Reuter, and F.M. Ross, *Diameter-independent kinetics in the vapor-liquid-solid growth of Si nanowires*, **Phys. Rev. Lett.** 96, 096105 (2006).
58. J.B. Hannon, S. Kodambaka, F.M. Ross, and R.M. Tromp, *The influence of the surface migration of gold on the growth of silicon nanowires*, **Nature** 440, 69 (2006).
59. S. Kodambaka, J.B. Hannon, R.M. Tromp, M.C. Reuter, J. Tersoff, and F.M. Ross, *Si and Ge Nanowire Growth Mechanisms Observed using In Situ Microscopy*, **Microsc. Microanal.** 12, 472 (2006).
60. P.O.Å. Persson, S. Kodambaka, I. Petrov, and L. Hultman, *Epitaxial Ti₂AlN(0001) thin films deposited by dual target reactive magnetron sputtering*, **Acta Mat.** 55, 4401 (2007).
61. S.-J. Tang, S. Kodambaka, W. Swiech, I. Petrov, C.P. Flynn, and T.-C. Chiang, *Sublimation of atomic layers from a Chromium surface*, **Phys. Rev. Lett.** 96, 126106 (2006).

62. S.K.R. Patil, S.V. Khare, B.R. Tuttle, J. Bording, and S. Kodambaka, *Mechanical stability of possible structures of PtN investigated using first-principles calculations*, **Phys. Rev. B** 73, 104118 (2006).
63. J. Bareño, S. Kodambaka, S.V. Khare, W. Świąch, I. Petrov, and J.E. Greene, *Orientation-dependent mobilities from analyses of two-dimensional TiN(111) island decay kinetics*, **Thin Solid Films** 510, 339 (2006).
64. S. Kodambaka, J. Bareño, S.V. Khare, W. Świąch, I. Petrov, and J.E. Greene, *Nucleation and growth kinetics of spiral steps on TiN(111): An in situ LEEM study*, **J. Appl. Phys.** 98, 034901 (2005).
65. F. Watanabe, S. Kodambaka, W. Świąch, J.E. Greene, and D.G. Cahill, *LEEM study of island decay on Si(110)*, **Surf. Sci.** 572, 425 (2004).
66. S. Kodambaka, Navot Israeli, J. Bareño, W. Świąch, K. Ohmori, I. Petrov, and J.E. Greene, *Low-energy electron microscopy studies of interlayer mass transport kinetics on TiN(111)*, **Surf. Sci.** 560, 53 (2004).
67. S. Kodambaka, S.V. Khare, W. Świąch, K. Ohmori, I. Petrov, and J.E. Greene, *Dislocation-driven surface dynamics on solids*, **Nature** 429, 49 (2004). Also reported in *Materials Today July/Aug'04*.
68. (Invited paper) S. Kodambaka, S.V. Khare, V. Petrova, A. Vailionis, I. Petrov, and J.E. Greene, *Determination of absolute orientation-dependent TiN(001) and TiN(111) step energies*, **Vacuum** 74, 345 (2004). *Featured article in the Omicron Pico 7, 8 (2003): "In situ high-temperature STM studies of surface dynamics on atomically smooth TiN(001) and TiN(111)."*
69. T.-Y. Lee, S. Kodambaka, J.G. Wen, R. Twesten, I. Petrov, and J.E. Greene, *Nanostructural evolution of Ti_{0.8}Ce_{0.2}N layers grown on oxidized Si(001) by magnetron sputter deposition as a function of low energy, high flux ion irradiation*, **Appl. Phys. Lett.** 84, 2796 (2004).
70. S. Kodambaka, David L. Chopp, I. Petrov, and J.E. Greene, *Coalescence kinetics of two-dimensional TiN islands on atomically-smooth TiN(001) and TiN(111) terraces*, **Surf. Sci. Lett.** 540, L611 (2003).
71. D. Gall, S. Kodambaka, M.A. Wall, I. Petrov, and J.E. Greene, *Pathways of atomistic processes on TiN(001) and (111) surfaces during film growth: an ab initio study*, **J. Appl. Phys.** 93, 9086 (2003).
72. S. Kodambaka, V. Petrova, A. Vailionis, I. Petrov, and J.E. Greene, *In situ high-temperature STM studies of 2D TiN island coarsening kinetics on TiN(001)*, **Surf. Sci.** 526, 85 (2003).
73. S. Kodambaka, S.V. Khare, V. Petrova, D.D. Johnson, I. Petrov, and J.E. Greene, *Absolute orientation-dependent anisotropic TiN(111) island step energies and stiffnesses from shape fluctuation analyses*, **Phys. Rev. B** 67, 035409 (2003).
74. S.V. Khare, S. Kodambaka, D.D. Johnson, I. Petrov, and J.E. Greene, *Determining absolute orientation-dependent step energies: A general theory for the Wulff-construction and for anisotropic 2D island shape fluctuations*, **Surf. Sci.** 522, 75 (2003).
75. S. Kodambaka, V. Petrova, S.V. Khare, A. Rockett, I. Petrov, and J.E. Greene, *Size-dependent detachment-limited decay kinetics of 2D TiN islands on TiN(111)*, **Phys. Rev. Lett.** 89, 176102 (2002).

76. S. Kodambaka, S.V. Khare, V. Petrova, A. Vailionis, I. Petrov, and J.E. Greene, *Absolute orientation-dependent TiN(001) step energies from 2D equilibrium island shape and coarsening measurements on epitaxial TiN(001) layers*, **Surf. Sci.** 513, 468 (2002).
77. S. Kodambaka, V. Petrova, S.V. Khare, D.D. Johnson, I. Petrov, and J.E. Greene, *Absolute TiN(111) step energies from analysis of anisotropic island shape fluctuations*, **Phys. Rev. Lett.** 88, 146101 (2002).
78. (Invited paper) F.H. Baumann, D.L. Chopp, T. Díaz de la Rubia, G.H. Gilmer, J.E. Greene, H. Huang, S. Kodambaka, P. O'Sullivan, and I. Petrov, *Multi-scale modeling of thin film deposition: Applications to Si device processing*, **MRS Bull.** 26, 182 (2001).
79. M.J. Williamson, D.N. Dunn, R. Hull, S. Kodambaka, and J.E. Greene, *Evolution of nano-scale texture in ultra-thin films*, **Appl. Phys. Lett.** 78, 2223 (2001).
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