

# David P. Norton

---

## BIOGRAPHICAL INFORMATION

---

### Personal Information

- Office Contact: University of Florida  
Office of Research  
223 Grinter Hall  
PO Box 115500  
Gainesville, FL 32611-6550  
Phone: (352) 392-9271  
FAX: (352) 846-0491  
Email: dpnorton@ufl.edu

### Education

- Ph.D., Electrical and Computer Engineering, Louisiana State University (1989)
- B.S., Electrical and Computer Engineering (Magna Cum Laude), Louisiana State University (1984)

### Professional Experience

- Vice President for Research, University of Florida (2012-present)
- Associate Dean for Research, College of Engineering, University of Florida (2009-2012)
- Professor, Dept. of Materials Science and Engr, University of Florida (2003-present)
- Associate Professor, Dept. of Materials Science and Engr, University of Florida (2000-2003)
- Sr. Research Staff Member, Solid State Division, Oak Ridge National Laboratory (1997-2000)
- Research Staff Member, Solid State Division, Oak Ridge National Laboratory (1991-1997)
- Eugene P. Wigner Postdoctoral Fellow, Oak Ridge National Laboratory (1989-1991)

### Honors and Awards

- Fellow, American Associate for the Advancement of Science (2009)
- Fellow, American Physical Society (2007)
- UF Research Foundation Research Professorship (2007)
- UF College of Engineering Doctoral Dissertation Advisor Award (2007)
- Fellow, American Vacuum Society (2006)
- UF-MSE Faculty Excellence Award (2004)
- DOE Energy 100 Award for RABiTS Superconducting Tape (2001)
- Federal Laboratory Consortium (FLC) 2001 Award for Excellence in Technology Transfer (2001)
- Second-in-Class Award, Ceramographic Competition, Scanning Electron Microscopy Category, 2001. Annual Meeting of the American Ceramic Soc., Indianapolis, IN (2001)
- R&D 100 Award for Coated Superconducting Tape (1999)
- American Museum of Science and Energy Technological Achievement Award (1999)
- Lockheed-Martin Technical Achievement Award (1999)
- National Academy of Engineering Frontiers of Engineering Invitee (1998)
- Lockheed-Martin Corporation Nova Award (1997)
- Lockheed-Martin Technical Achievement Award (1997)
- Lockheed-Martin Significant Event Award (1996)
- Dept. of Energy Division of Materials Research Competition Award (1996)
- Martin Marietta Energy Systems Technical Achievement Award (1991)
- Martin Marietta Energy Systems Significant Event Award (1991)
- Martin Marietta Energy Systems Technical Achievement Award (1990)

- Martin Marietta Energy Systems Significant Event Award (1990)
- ORNL Eugene P. Wigner Postdoctoral Fellow (1989)
- Louisiana State University 1989 Distinguished Dissertation Award (1989)
- Louisiana State University Troy H. Middleton Scholarship (1985)
- Louisiana State University Alumni Federation Fellow (1984)

---

### **ADMINISTRATIVE EXPERIENCE**

---

- Vice President for Research, University of Florida (2012-present)
  - Management of the Division of Sponsored Research which handles proposal submission and award negotiation for the UF campus
  - Coordination and development of research policy for the University of Florida
  - Oversight of various university-wide research institutes, centers, and auxiliaries
  - Facilitate interdisciplinary research across colleges
  - Oversight of research compliance across the University which include export control, outside activities, conflict of interest, IRB, IACUC, and research-related fiscal matters.
  - Serve as Institutional Official for Institutional Review Board and IACUC
  - Serve as liaison between the University and external research entities
  - Promotion and development of research contract and grant activities from external sponsors.
- Associate Dean for Research, College of Engineering, University of Florida (2009-2012)
  - Support faculty, post-docs, and students within the College in developing and maintaining internationally recognized research programs
  - Identifying new research opportunities, facilitating interdisciplinary pursuits, and promote the College's research portfolio to research sponsors
  - Serve as the College's primary interface with the UF Division of Sponsored Research.
  - Oversight of the Office of Engineering Research which assists faculty with proposal submissions and administration of awards.
  - Review and approval of all research proposals and cost sharing commitments.
  - Oversee compliance efforts in the College which include export control, outside activities, conflict of interest, IRB, IACUC, and research-related fiscal matters.
  - Oversees various College-wide centers, institutes, and auxiliaries

---

### **RESEARCH EXPERIENCE**

---

#### **Research Interests**

- Thin-Film Electronic Materials (synthesis, properties, and devices)
- Electronic Oxides (superconductors, ferroelectrics, dielectrics, magnetic and optical)
- Nanostructure Synthesis and Properties

#### **Supervised Ph.D. Dissertations Completed**

1. Seonhoo Kim, "Room Temperature Deposited Amorphous Semiconducting Oxides and Perovskite Complex Oxide Heterostructures," December 2011

2. Joseph Cianfrone, "Functional complex oxide thin films and related superlattices grown via pulsed laser deposition," December 2010
3. Fernando Lugo, "Synthesis and characterization of silver doped zinc oxide thin films for optoelectronic devices," May 2010
4. Patrick Sadik, "Examination of ZnO, CuCrO<sub>2</sub>, and CuScO<sub>2</sub> properties for use in transparent electronics and chemical sensors," August 2009.
5. Charlee J. Callender, "Synthesis and characterization of BaFeO<sub>3</sub> and BiFeO<sub>3</sub> epitaxial films," May 2009.
6. Lii-Cherng (Daniel) Leu, "Development of alternative diffusion barriers for advanced copper interconnects," December 2008
7. Hyun-Sik Kim, "Growth and characterization of ZnO thin films for light emitting diodes," May 2008
8. Li-Chia Tien, "Synthesis and applications of metal oxide nanowires," May 2008
9. Mat Ivill, "Development of transition-metal doped Cu<sub>2</sub>O and ZnO dilute magnetic semiconductors for spintronic applications," August 2007
10. Jean-Marie (George) Erie, "Pulsed laser deposition of doped ZnO and (Mg,Zn)O films for optoelectronic applications," May 2007
11. Seemant Rawal, "Alternative nitride diffusion barriers on silicon and germanium for copper metallization," December 2006
12. Kyung-Hoon Kim, "Nucleation and epitaxy of conductive buffers on (001) Cu For coated high-temperature superconducting conductors," August 2005
13. Hyung-Jin Bae, "Epitaxial Growth and Properties of KTaO<sub>3</sub> and Related Alloys," May 2005
14. Yuanjie Li, "development of ZnO-based thin film transistors and phosphorus-doped ZnO and (Zn,Mg)O by pulsed laser deposition," May 2005
15. Byoung-Seong Jeong, "Growth and Ferromagnetic Semiconducting Properties of TiO<sub>2</sub> thin films: an oxide-diluted magnetic semiconductor (O-DMS) for spintronics," May 2004
16. Jennifer Sigman, "Dielectric Response of K(Ta,Nb)O<sub>3</sub> thin films and superlattices grown by pulsed laser deposition," August 2004
17. Seh-Jin Park, "Growth of biaxially textured template layers using ion beam assisted deposition," December 2004
18. Yongwook Kwon, "Fabrication and characterization of ZnO-Based thin film field effect transistors," December 2004
19. Young-Woo Heo, "Growth and characterization of ZnO nanowires and thin films," December 2003.

#### **Patents Issued**

1. Norton DP, Park S-J, "Method of producing biaxially textured substrates and related articles, devices and systems," August 4, 2009, US Patent #7,569,521
2. Norton DP, Selvamanickam V, "Method of producing biaxially textured buffer layers and related articles, devices and systems," February 1, 2005, US Patent #6,849,580
3. Norton DP, Park C, Goyal A, "Buffer architecture for biaxially textured structures and method of fabricating same," April 6, 2004, US Patent #6,716,795
4. Goyal A, Kroeger DM, Paranthaman M, Lee DF, Feenstra R, Norton DP, "Method of depositing a protective layer over a biaxially textured alloy substrate and composition therefrom," September 17, 2002, US Patent #6,451,450
5. Norton DP "Method of physical vapor deposition of metal oxides on semiconductors," April 10, 2001, US Patent # 6,214,712.
6. Budai JD, Christen DK, Goyal A, He Q, Kroeger DM, Lee DF, List III FA, Norton DP, Paranthaman M, Sales BC, Specht ED, "High Tc YBCO superconductor deposited on biaxially textured Ni substrate," October 19, 1999, US Patent #5,968,877
7. Goyal A, Budai JD, Kroeger DM, Norton DP, Specht ED, Christen DK, "Structures having enhanced biaxial texture," September 28, 1999, US Patent #5,958,599

8. Goyal A, Budai JD, Kroeger DM, Norton DP, Specht ED, Christen DK, “Structures having enhanced biaxial texture and method of fabricating same,” April 27, 1999, US Patent #5,898,020
9. Goyal A, Budai JD, Kroeger DM, Norton DP, Specht ED, Christen DK, “Structures having enhanced biaxial texture and method of fabricating same,” April 21, 1998, US Patent #5,741,377
10. Goyal A, Budai JD, Kroeger DM, Norton DP, Specht ED, Christen DK, “Structures having enhanced biaxial texture and method of fabricating same,” April 14, 1998, US Patent # 5,739,086

### **Publication Record**

Author of over 350 refereed journal articles. Publications cited over 11,000 times; *h*-index is 55.

1. Heo YW, Cho KM, Sun SY, Kim SY, Lee JH, Kim JJ, Norton DP, Pearton SJ, “Effects of channel dimensions on performance of a-InGaZnO(4) thin-film transistors,” *Journal Of Vacuum Science & Technology B* 29, (2011), 021203
2. Lee KC, Jo KM, Sung SY, Lee JH, Kim JJ, Jeong BS, Pearton SJ, Norton DP, Heo YW, “Low temperature processing of indium-tin-zinc oxide channel layers in fabricating thin-film transistors,” *Journal Of Vacuum Science & Technology B* 29, (2011), 021008
3. Khanna R, Douglas EA, Norton DP, Pearton SJ, Ren F, “Ti/Au Ohmic contacts to indium zinc oxide thin films on paper substrates,” *Journal Of Vacuum Science & Technology B* 28, (2010), L43-L46.
4. Sung SY, Kim SY, Jo KM, Lee JH, Kim JJ, Kim SG, Chai KH, Pearton SJ, Norton DP, Heo YW, “Fabrication of p-channel thin-film transistors using CuO active layers deposited at low temperature,” *Applied Physics Letters* 97, (2010), 222109/1-3.
5. Heo, YW, Pearton SJ, Norton, DP, “Size-Dependent UV Photosensitivity of Indium Zinc Oxide,” *Journal Of Nanoelectronics And Optoelectronics* 5, (2010), 143-146.
6. Chu MH, Kim SY, Sung SY, Lee JH, Kim JJ, Norton DP, Pearton SJ, Heo YW, “Catalyst-Free Patterned Growth of Well-Aligned ZnO Nanowires on ITO Substrates Using an Aqueous Solution Method and Lithography Process,” *Journal Of Nanoelectronics And Optoelectronics* 5, (2010), 186-190.
7. Kim S, Cianfrone JA, Sadik P, Kim KW, Ivill M, Norton DP, “Room temperature deposited oxide p-n junction using p-type zinc-cobalt-oxide,” *Journal Of Applied Physics* 107, (2010), 103538/1-5.
8. Jang JH, Kim HS, Norton DP, Craciun V, “Investigations of microstructural evolutions after rapid thermal annealing of phosphorus doped ZnO films grown by pulsed laser deposition,” *Journal Of Optoelectronics And Advanced Materials* 12, (2010), 535-537.
9. Polyakov AY, Smirnov NB, Govorkov AV, Kozhukhova EA, Belogorokhov AI, Norton DP, Kim HS, Pearton SJ, “Shallow and Deep Centers in As-Grown and Annealed MgZnO/ZnO Structures with Quantum Wells,” *Journal Of Electronic Materials* 39, (2010), 601-607.
10. Wang YL, Chang CY, Lim W, Pearton SJ, Norton DP, Chu BH, Lo CF, Ren F, Johnson JW, Rajagopal P, Roberts JC, Piner EL, Linthicum KJ, “Oxygen gas sensing at low temperature using indium zinc oxide-gated AlGaIn/GaN high electron mobility transistors,” *Journal Of Vacuum Science & Technology B* 28, (2010), 376-379.
11. Sung SY, Choi JH, Han UB, Lee KC, Lee JH, Kim JJ, Lim W, Pearton SJ, Norton DP, Heo YW, “Effects of ambient atmosphere on the transfer characteristics and gate-bias stress stability of amorphous indium-gallium-zinc oxide thin-film transistors,” *Applied Physics Letters* 96, (2010), 102107/1-3.
12. Lim W, Douglas EA, Norton DP, Pearton SJ, Ren F, Heo YW, Son SY, Yuh JH, “Improvement in bias stability of amorphous-InGaZnO<sub>4</sub> thin film transistors with SiO<sub>x</sub> passivation layers,” *Journal Of Vacuum Science & Technology B* 28, (2010) 116-119.
13. Lim W, Douglas EA, Norton DP, Pearton SJ, Ren F, Heo YW, Son SY, Yuh JH, “Low-voltage indium gallium zinc oxide thin film transistors on paper substrates,” *Applied Physics Letters* 96, (2010), 053510/1-3.

14. Wright JS, Lim W, Norton DP, Pearton SJ, Ren F, Johnson JL, Ural A, "Nitride and oxide semiconductor nanostructured hydrogen gas sensors," *Semiconductor Science And Technology* 25, (2010), 024002/1-8.
15. Buyanova IA, Murayama A, Furuta T, Oka Y, Norton DP, Pearton SJ, Osinsky A, Dong JW, Tu CW, Chen WM, "Spin Dynamics in ZnO-Based Materials," *Journal Of Superconductivity And Novel Magnetism* 23, (2010), 161-165.
16. Pearton SJ, Ren F, Wang YL, Chu BH, Chen KH, Chang CY, Lim W, Lin JS, Norton DP, "Recent advances in wide bandgap semiconductor biological and gas sensors," *Progress In Materials Science* 55, (2010), 1-59.
17. Leu LC, Norton DP, Anderson TJ, McElwee-White L, "Stability of Cu/Ir/Si trilayer structure to moderate annealing," *Materials Science In Semiconductor Processing* 12, (2009), 151-155.
18. Chen KH, Wu WH, Chu BH, Chang CY, Lin JS, Pearton SJ, Norton DP, Ren F, "UV excimer laser drilled high aspect ratio submicron via hole," *Applied Surface Science* 256, (2009), 183-186.
19. Lim W, Douglas EA, Lee J, Jang J, Craciun V, Norton DP, Pearton SJ, Ren F, Son SY, Yuh JH, Shen H, Chang W, "Transparent dual-gate InGaZnO thin film transistors: OR gate operation," *Journal Of Vacuum Science & Technology B* 27, (2009), 2128-2131.
20. Ajmera HM, Anderson TJ, Koller J, McElwee-White L, Norton DP, "Deposition of  $WN_xC_y$  thin films for diffusion barrier application using the dimethylhydrazido ( $\eta^2$ ) tungsten complex  $(CH_3CN)Cl_4W(NNMe_2)$ ," *Thin Solid Films* 517, (2009), 6038-6045.
21. Kim D, Kim OH, Anderson T, Koller J, McElwee-White L, Leu LC, Tsai JM, Norton DP, "Chemical vapor deposition of  $WN_xC_y$  using the tungsten piperidylhydrazido complex  $Cl_4(CH_3CN)W(N-pip)$ : Deposition, characterization, and diffusion barrier evaluation," *Journal Of Vacuum Science & Technology A* 27, (2009), 943-950.
22. Jang JH, Kim HS, Norton DP, Craciun V, "Study of microstructural evolutions in phosphorus-doped ZnO films grown by pulsed laser deposition," *Journal Of Crystal Growth* 311 (2009), 3143-3146.
23. Polyakov AY, Smirnov NB, Govorkov AV, Kozhukhova EA, Kim HS, Norton DP, Pearton SJ, Belogorokhov AI, "Persistent photoconductivity in MgZnO alloys," *Semiconductors* 43, (2009), 577-580.
24. Lim W, Jang JH, Kim SH, Norton DP, Craciun V, Pearton SJ, Ren F, Chen H, "Interface dependent electrical properties of amorphous InGaZnO4 thin film transistors," *Journal Of Vacuum Science & Technology B* 27, (2009), 126-129.
25. Sadik PW, Ivill M, Craciun V, Norton DP, "Electrical transport and structural study of  $CuCr_{1-x}Mg_xO_2$  delafossite thin films grown by pulsed laser deposition," *Thin Solid Films* 517, (2009), 3211-3215.
26. Davies RP, Abernathy CR, Pearton SJ, Norton DP, Ivill MP, Ren F, "Review of recent advances in transition and lanthanide metal-doped GaN and ZnO," *Chemical Engineering Communications* 196, (2009), 1030-1053.
27. Chen JY, Pan CJ, Tsao FC, Kuo CH, Chi GC, Pong BJ, Chang CY, Norton DP, Pearton SJ, "Characterization of ZnO nanowires grown on Si (100) with and without Au catalyst," *Vacuum* 83, (2009), 1076-1079.
28. Lugo FJ, Kim HS, Pearton SJ, Abernathy CR, Gila BP, Norton DP, Wang YL, Ren F, "Rectifying ZnO:Ag/ZnO:Ga Thin-Film Junctions," *Electrochemical And Solid State Letters* 12, (2009), H188-H190.
29. Lim W, Douglas EA, Kim SH, Norton DP, Pearton SJ, Ren F, Shen H, Chang WH, "High mobility InGaZnO4 thin-film transistors on paper," *Applied Physics Letters* 94, (2009), 072103/1-3.
30. Leu LC, Norton DP, McElwee-White L, Anderson TJ, "Properties of reactively sputtered W-B-N thin film as a diffusion barrier for Cu metallization on Si," *Applied Physics A-Materials Science & Processing* 94, (2009), 691-695.
31. Kim KH, Norton DP, Christen DK, Cantoni C, Paranthaman M, Aytug T, "Epitaxial growth of MgO/TiN multilayers on Cu," *Vacuum* 83, (2009), 897-901.

32. Tien LC, Norton DP, Budai JD, "Epitaxial growth of transparent tin oxide films on (0001) sapphire by pulsed laser deposition," *Materials Research Bulletin* 44, (2009) 6-10.
33. Lim W, Douglas EA, Kim SH, Norton DP, Pearton SJ, Ren F, Shen H, Chang WH, "Low-temperature-fabricated InGaZnO<sub>4</sub> thin film transistors on polyimide clean-room tape," *Applied Physics Letters* 93, (2008), 252103/1-3.
34. Chu BH, Leu LC, Chang CY, Lugo F, Norton D, Lele T, Keselowsky B, Pearton SJ, Ren F, "Conformable coating of SiO<sub>2</sub> on hydrothermally grown ZnO nanorods," *Applied Physics Letters* 93, (2008), 233111/1-3.
35. Tien LC, Pearton SJ, Norton DP, Ren F, "Synthesis and microstructure of vertically aligned ZnO nanowires grown by high-pressure-assisted pulsed-laser deposition," *Journal Of Materials Science* 43, (2008), 6925-6932.
36. Pearton SJ, Norton DP, Tien LC, Guo J, "Modeling and Fabrication of ZnO Nanowire Transistors," *IEEE Transactions On Electron Devices* 55, (2008), 3012-3019.
37. Budai JD, Liu W, Tischler JZ, Pan ZW, Norton DP, Larson BC, Yang W, Ice GE, "Polychromatic X-ray micro- and nanodiffraction for spatially-resolved structural studies," *Thin Solid Films* 516, (2008), 8013-8021.
38. Leu LC, Sadik P, Norton DP, McElwee-White L, Anderson TJ, "Comparative study of ZrN and Zr-Ge-N thin films as diffusion barriers for Cu metallization on Si," *Journal Of Vacuum Science & Technology B* 26, (2008), 1723-1727.
39. Ajmera HM, Heitsch AT, Anderson TJ, Wilder CB, Reitfort LL, McElwee-White L, Norton DP, "Deposition of WN<sub>x</sub>C<sub>y</sub> for diffusion barrier application using the imido guanidinato complex W((NPr)-Pr-i)Cl<sub>3</sub>[(PrNC)-Pr-i(NMe<sub>2</sub>)(NPr)-Pr-i]," *Journal Of Vacuum Science & Technology B* 26, (2008), 1800-1807.
40. Ajmera HM, Heitsch AT, Bchir OJ, Norton DP, Reitfort LL, McElwee-White L, Anderson TJ, "Deposition of WN<sub>x</sub>C<sub>y</sub> using the allylimido complexes Cl<sub>4</sub>(RCN)W(NC<sub>3</sub>H<sub>5</sub>): Effect of NH<sub>3</sub> on film properties," *Journal Of The Electrochemical Society* 155, (2008), H829-H835.
41. Pearton SJ, Lim WT, Wright JS, Tien LC, Kim HS, Norton DP, Wang HT, Kang BS, Ren F, Jun J, Lin J, Osinsky A, "ZnO and related materials for sensors and light-emitting diodes," *Journal Of Electronic Materials* 37 (2008), 1426-1432.
42. Lim WT, Jang JH, Kim SH, Norton DP, Craciun V, Pearton SJ, Ren F, Shen H, "High performance indium gallium zinc oxide thin film transistors fabricated on polyethylene terephthalate substrates," *Applied Physics Letters* 93, (2008), 082102/1-3.
43. Kim KH, Norton DP, Christen DK, Budai JD, "Formation of oxidation-resistant Cu-Mg coatings on (001) Cu for oxide superconducting tapes," *Surface & Coatings Technology* 202, (2008), 5136-5139
44. Wang YL, Ren F, Kim HS, Norton DP, Pearton SJ, "Materials and process development for ZnMgO/ZnO light-emitting diodes," *IEEE Journal Of Selected Topics In Quantum Electronics* 14, (2008), 1048-1052
45. Kim K, Norton DP, Christen DK, Cantoni C, Aytug T, Goyal A, "Epitaxial (La, Sr)TiO<sub>3</sub> on textured Ni-W as a conductive buffer architecture for high temperature superconducting coated conductor," *Physica C* 468, (2008), 961-967.
46. Kim HS, Lugo F, Pearton SJ, Norton DP, Ren F, "Properties of post-annealed ZnO films grown with O<sub>3</sub>" *Physica Status Solidi A* 205, (2008), 1631-1635.
47. Erie JM, Ivill M, Kim HS, Pearton SJ, Gila B, Ren F, Norton DP, "Acceptor state formation in arsenic-doped ZnO films grown using ozone," *Physica Status Solidi A* 205, (2008), 1647-1652.
48. Kim HS, Lugo F, Pearton SJ, Norton DP, Ren F, "The effects of buffer growth parameters on heteroepitaxial ZnO films grown by pulsed laser deposition," *Vacuum* 82, (2008) 1259-1263.
49. Buyanova IA, Wang XJ, Pozina G, Chen WM, Lim W, Norton DP, Pearton SJ, Osinsky A, Dong JW, Hertog B, "Effects of hydrogen on the optical properties of ZnCdO/ZnO quantum wells grown by molecular beam epitaxy," *Applied Physics Letters* 92, (2008), 261912/1-3.

50. Jeong BS, Pearton SJ, Heo YW, Norton DP, Hebard AF, "Anomalous Hall effect in sputter-deposited  $\text{Co}_x\text{Ti}_{1-x}\text{O}_{2-d}$  films," *Journal Of Magnetism And Magnetic Materials* 320, (2008), 2376-2381.
51. Erie JM, Li Y, Ivill M, Kim HS, Pearton SJ, Gila B, Norton DP, Ren F, "Properties of  $\text{Zn}_3\text{N}_2$ -doped ZnO films deposited by pulsed laser deposition," *Applied Surface Science* 254, (2008), 5941-5945
52. Ivill M, Pearton SJ, Rawal S, Leu L, Sadik P, Das R, Hebard AF, Chisholm M, Budai JD, Norton DP, "Structure and magnetism of cobalt-doped ZnO thin films," *New Journal Of Physics* 10, (2008), 065002/1-21.
53. Lim W, Kim SH, Wang YL, Lee JW, Norton DP, Pearton SJ, Ren F, Kravchenko II, "Stable room temperature deposited amorphous  $\text{InGaZnO}_4$  thin film transistors," *Journal Of Vacuum Science & Technology B* 26, (2008), 959-962.
54. Kim HS, Lugo F, Pearton SJ, Norton DP, Ren F, "Dependence of  $\text{Zn}_{1-x}\text{Mg}_x\text{O} : \text{P}$  film properties on magnesium concentration," *Journal Of Vacuum Science & Technology B* 26, (2008), 968-972
55. Lim WT, Sadik PW, Norton DP, Gila BP, Pearton SJ, Kravchenko II, Ren F, "RF-sputtered  $\text{CrB}_2$  diffusion barrier for Ni/Au Ohmic contacts on p-CuCrO<sub>2</sub>," *Applied Surface Science* 254, (2008), 5211-5215
56. Lim W, Kim S, Wang YL, Lee JW, Norton DP, Pearton SJ, Ren F, Kravchenko II, "High-performance indium gallium zinc oxide transparent thin-film transistors fabricated by radio-frequency sputtering," *Journal Of The Electrochemical Society* 155, (2008), H383-H385.
57. Polyakov AY, Smirnov NB, Govorkov AV, Kozhukhova EA, Belogorokhov AI, Kim HS, Norton DP, Pearton SJ, "Annealing effects on electrical properties of MgZnO films grown by pulsed laser deposition," *Journal Of Applied Physics* 103, (2008), 083704/1-5.
58. Xu J, Ott R, Sabau AS, Pan ZW, Xiu FX, Liu JL, Erie JM, Norton DP, "Generation of nitrogen acceptors in ZnO using pulse thermal processing," *Applied Physics Letters* 92, (2008), 151112.
59. Lim WT, Norton DP, Jang JH, Craciun V, Pearton SJ, Ren F, "Carrier concentration dependence of Ti/Au specific contact resistance on n-type amorphous indium zinc oxide thin films," *Applied Physics Letters* 92, (2008), 122102/1-3.
60. Leu LC, Norton DP, McElwee-White L, Anderson TJ, "Ir/TaN as a bilayer diffusion barrier for advanced Cu interconnects," *Applied Physics Letters* 92, (2008), 111917/1-3.
61. Wang YL, Kim HS, Norton DP, Pearton SJ, Ren F, "Dielectric passivation effects on ZnO light emitting diodes," *Applied Physics Letters* 92, (2008), 112101/1-3.
62. Kim HS, Lugo F, Pearton SJ, Norton DP, Wang YL, Ren F, "Phosphorus doped ZnO light emitting diodes fabricated via pulsed laser deposition," *Applied Physics Letters* 92, (2008), 112108/1-3.
63. Lim WT, Sadik PW, Norton DP, Pearton SJ, Ren F, "Dry etching of  $\text{CuCrO}_2$  thin films," *Applied Surface Science* 254, (2008), 2359-2363
64. Lim W, Craciun V, Siebein K, Gila BP, Norton DP, Pearton SJ, Ren F, "Surface and bulk thermal annealing effects on ZnO crystals," *Applied Surface Science* 254, (2008), 2396-2400
65. Lim W, Wang YL, Ren F, Norton DP, Kravchenko II, Zavada JM, Pearton SJ, "Indium zinc oxide thin films deposited by sputtering at room temperature," *Applied Surface Science* 254, (2008), 2878-2881.
66. Kim HS, Erie JM, Pearton SJ, Norton DP, Ren F, "Investigation of electrical and optical properties of ZnO thin films grown with  $\text{O}_2/\text{O}_3$  gas mixture," *Applied Physics A* 91, (2008), 251-254.
67. Kim HS, Pearton SJ, Norton DP, Ren F, "Pulsed laser deposition of high-quality ZnO films using a high temperature deposited ZnO buffer layer," *Applied Physics A* 91, (2008), 255-259.
68. Chen WM, Buyanova IA, Murayama A, Furuta T, Oka Y, Norton DP, Pearton SJ, Osinsky A, Dong JW, "Dominant factors limiting efficiency of optical spin detection in ZnO-based materials," *Applied Physics Letters* 92, (2008), 092103/1-3.
69. Pearton SJ, Kang BS, Gila BP, Norton DP, Kryliouk O, Ren F, Heo YW, Chang CY, Chi GC, Wang WM, Chen LC, "GaN, ZnO and InN nanowires and devices," *Journal Of Nanoscience And Nanotechnology* 8, (2008), 99-110.

70. Wang YL, Kim HS, Norton DP, Pearton SJ, Ren F, "Hydrogen effects on the optical and electrical properties of ZnO light-emitting diodes," *Electrochemical And Solid State Letters* 11, (2008), H88-H91.
71. Tien LC, Pearton SJ, Norton DP, Ren F, "Synthesis and characterization of single crystalline SnO<sub>2</sub> nanorods by high-pressure pulsed laser deposition," *Applied Physics A* 91, (2008), 29-32.
72. Wang YL, Covert LN, Anderson TJ, Lim WT, Lin J, Pearton SJ, Norton DP, Zavada JM, Ren F, "RF characteristics of room-temperature-deposited, small gate dimension indium zinc oxide TFTs," *Electrochemical and Solid State Letters* 11, (2008), H60-H62.
73. Lim W Norton DP Pearton SJ, Wang XJ, Chen WM, Buyanova IA, Osinsky A, Dong JW, Hertog B, Thompson AV, Schoenfeld WV, Wang YL, Ren F, "Migration and luminescence enhancement effects of deuterium in ZnO/ZnCdO quantum wells," *Applied Physics Letters* 92, (2008), 032103/1-3.
74. Callender C, Norton DP, Das R, Hebard AF, Budai JD, "Ferromagnetism in pseudocubic BaFeO<sub>3</sub> epitaxial films," *Applied Physics Letters* 92, (2008), 012514/1-3.
75. Lim WT, Sadik PW, Norton DP, Gila BP, Pearton SJ, Kravchenko II, Ren F, "Ir diffusion barriers in Ni/Au ohmic contacts to p-type CuCrO<sub>2</sub>," *Journal Of Electronic Materials* 37, (2008), 161-166.
76. Claflin B, Look DC, Norton D, "Changes in electrical characteristics of ZnO thin films due to environmental factors," *Journal of Electronic Materials* 36, (2007), 442-445.
77. Galinetto P, Casiraghi A, Mozzati MC, Azzoni CB, Norton D, Boatner LA, Trepakov V, "Magnetic and structural studies in Co- and mn-implanted SrTiO<sub>3</sub> single crystals," *Ferroelectrics* 368, (2008), 120-130.
78. Pearton, SJ, Lim, W, Wang Y-L, Shoo K, Norton DP, Lee J, Ren F, Zavada JM, "Transparent thin film transistors based on InZnO for flexible electronics," *Key Engineering Materials* 380, (2008), 99-109.
79. Pearton SJ, Kang BS, Tien LC, Norton DP, Heo YW, Ren F, "ZnO-based nanowires," *NANO* 2, (2007), 201-211.
80. Kim HS, Pearton SJ, Norton DP, Ren F, "Behavior of rapid thermal annealed ZnO:P films grown by pulsed laser deposition," *Journal Of Applied Physics* 102, (2007), 104904/1-8.
81. Thompson AV, Boutwell C, Mares JW, Schoenfeld WV, Osinsky A, Hertog B, Xie JQ, Pearton SJ, Norton DP, "Thermal stability of CdZnO/ZnO multi-quantum-wells," *Applied Physics Letters* 91, (2007), 201921/1-3.
82. Lim WT, Stafford L, Wright JS, Vossa LF, Khanna R, Song JI, Park JS, Heo YW, Lee JH, Kim JJ, Norton DP, Pearton SJ, "Comparison of plasma chemistries for the dry etching of bulk single-crystal zinc-oxide and rf-sputtered indium-zinc-oxide films," *Applied Surface Science* 253, (2007), 9228-9233.
83. Jun J, Chou B, Lin J, Phipps A, Shengwen X, Ngo K, Johnson D, Kasyap A, Nishida T, Wang HT, Kang BS, Ren F, Tien LC, Sadik PW, Norton DP, Voss LF, Pearton SJ, "A hydrogen leakage detection system using self-powered wireless hydrogen sensor nodes," *Solid-State Electronics* 51, (2007), 1018-1022.
84. Polyakov AY, Smirnov NB, Govorkov AV, Kozhukhova EA, Belogorokhov AI, Markov AV, Kim HS, Norton DP, Pearton SJ, "Electrical properties of ZnO(P) and ZnMgO(P) films grown by pulsed laser deposition," *Journal Of The Electrochemical Society* 154, (2007), H825-H829.
85. Pearton SJ, Norton DP, Ren F, "The promise and perils of wide-bandgap semiconductor nanowires for sensing, electronic, and photonic applications," *Small* 3, (2007), 1144-1150.
86. Ivill M, Pearton SJ, Heo YW, Kelly J, Hebard AF, Norton DP, "Magnetization dependence on carrier doping in epitaxial ZnO thin films co-doped with Mn and P," *Journal Of Applied Physics* 101, (2007), 123909/1-5.
87. Lim W, Wang YL, Ren F, Norton DP, Kravchenko II, Zavada JM, Pearton SJ, "Room-temperature-deposited indium-zinc oxide thin films with controlled conductivity," *Electrochemical And Solid State Letters* 10, (2007), H267-H269.



88. Buyanova IA, Bergman JP, Pozina G, Chen WM, Rawal S, Norton DP, Pearton SJ, Osinsky A, Dong JW, "Mechanism for radiative recombination in ZnCdO alloys," *Applied Physics Letters* 90, (2007), 261907/1-3.
89. Rosenberg RA, Shenoy GK, Chisholm MF, Tien LC, Norton D, Pearton S, "Getting to the core of the problem: Origin of the luminescence from (Mg,Zn)O heterostructured nanowires," *Nano Letters* 7, (2007), 1521-1525.
90. Wang YL, Ren F, Lim W, Norton DP, Pearton SJ, Kravchenko II, Zavada JM, "Room temperature deposited indium zinc oxide thin film transistors," *Applied Physics Letters* 90, (2007), 232103/1-3.
91. Leu LC, Norton DP, Jellison GE, Selvamanickam V, Xiong X, "Optical and dielectric properties of CuAl<sub>2</sub>O<sub>4</sub> films synthesized by solid-phase epitaxy," *Thin Solid Films* 515, (2007), 6938-6942.
92. Sadik PW, Pearton SJ, Norton DP, Lambers E, Ren F, "Functionalizing Zn- and O-terminated ZnO with thiols," *Journal Of Applied Physics* 101, (2007), 104514/1-5.
93. Pearton SJ, Norton DP, Ivill MP, Hebard AF, Zavada JM, Chen WM, Buyanova IA, "Ferromagnetism in transition-metal doped ZnO," *Journal Of Electronic Materials* 36, (2007), 462-471.
94. Wright JS, Stafford L, Gila BP, Norton DP, Pearton SJ, Wang HT, Ren F, "Effect of cryogenic temperature deposition of various metal contacts on bulk single-crystal n-type ZnO," *Journal Of Electronic Materials* 36, (2007), 488-493.
95. Kwon YW, Norton DP, Budai JD, "Orientation and growth behavior of CaHfO<sub>3</sub> thin films on non-oxide substrates," *Materials Letters* 61, (2007), 3500-3503.
96. Pearton SJ, Norton DP, Ivill MP, Hebard AF, Zavada JM, Chen WM, Buyanova IA, "ZnO doped with transition metal ions," *IEEE Transactions On Electron Devices* 54, (2007), 1040-1048.
97. Belogorokhov AI, Polyakov AY, Smirnov NB, Govorkov AV, Kozhukhova EA, Kim HS, Norton DP, Pearton SJ, "Lattice vibrational properties of ZnMgO grown by pulsed laser deposition," *Applied Physics Letters* 90, (2007), 192110/1-3.
98. Lim WT, Sadik PW, Norton DP, Pearton SJ, Wang YL, Ren F, "Reaction-limited wet etching of CuCrO<sub>2</sub>," *Electrochemical And Solid State Letters* 10, (2007), H178-H180.
99. Lim WT, Stafford L, Sadik PW, Norton DP, Pearton SJ, Wang YL, Ren F, "Ni/Au ohmic contacts to p-type Mg-doped CuCrO<sub>2</sub> epitaxial layers," *Applied Physics Letters* 90, (2007), 142101/1-3.
100. Tien LC, Norton DP, Pearton SJ, Wang HT, Ren F, "Nucleation control for ZnO nanorods grown by catalyst-driven molecular beam epitaxy," *Applied Surface Science* 253, (2007), 4620-4625.
101. Tien LC, Norton DP, Gila BP, Pearton SJ, Wang HT, Kang BS, Ren F, "Detection of hydrogen with SnO<sub>2</sub>-coated ZnO nanorods," *Applied Surface Science* 253, (2007), 4748-4752.
102. Wright JS, Khanna R, Voss LF, Stafford L, Gila BP, Norton DP, Pearton SJ, Wang HT, Jang S, Anderson T, Chen JJ, Kang BS, Ren F, Shen H, LaRoche JR, Ip K, "Effect of cryogenic temperature deposition on Au contacts to bulk, single-crystal n-type ZnO," *Applied Surface Science* 253, (2007), 3766-3772.
103. Wang YL, Ren F, Kim HS, Pearton SJ, Norton DP, "Incorporation and drift of hydrogen at low temperatures in ZnO," *Applied Physics Letters* 90, (2007), 092116/1-3.
104. Wright JS, Khanna R, Stafford L, Gila BP, Norton DP, Pearton SJ, Ren F, Kravchenko II, "Ir/Au ohmic contacts on bulk, single-crystal n-type ZnO," *Journal Of The Electrochemical Society* 154, (2007), H161-H165.
105. Rawal S, Norton DP, Ajmera H, Anderson TJ, McElwee-White L, "Properties of Ta-Ge-(O)N as a diffusion barrier for Cu on Si," *Applied Physics Letters* 90, (2007), 051913/1-3.
106. Park JS, Song JI, Heo YW, Lee JH, Kim JJ, Lim WT, Stafford L, Norton DP, Pearton SJ, "Effects of Zn content on structural and transparent conducting properties of indium-zinc oxide films grown by rf magnetron sputtering," *Journal Of Vacuum Science & Technology B* 24, (2006), 2737-2740.
107. Wright JS, Khanna R, Ramani K, Cranciun V, Singh R, Norton DP, Pearton SJ, Ren F, Kravchenko II, "ZrB<sub>2</sub>/Pt/Au ohmic contacts on bulk, single-crystal ZnO," *Applied Surface Science* 253, (2006), 2465-2469.

108. Lim W, Voss L, Khanna R, Gila BP, Norton DP, Pearton SJ, Ren F, "Comparison of CH<sub>4</sub>/H<sub>2</sub> and C<sub>2</sub>H<sub>6</sub>/H<sub>2</sub> inductively coupled plasma etching of ZnO," *Applied Surface Science* 253, (2006), 1269-1273.
109. Rawal S, Norton DP, Kim K, Anderson TJ, McElwee-White L, "Ge/HfN<sub>x</sub> diffusion barrier for Cu metallization on Si," *Applied Physics Letters* 89, (2006), 231914/1-3.
110. Chen JJ, Jang S, Ren F, Rawal S, Li YJ, Kim HS, Norton DP, Pearton SJ, Osinsky A, "Thermal stability of Ti/Al/Pt/Au and Ti/Au ohmic contacts on n-type ZnCdO," *Applied Surface Science* 253, (2006), 746-752.
111. Lim W, Voss L, Khanna R, Gila BP, Norton DP, Pearton SJ, Ren F, "Dry etching of bulk single-crystal ZnO in CH<sub>4</sub>/H<sub>2</sub>-based plasma chemistries," *Applied Surface Science* 253, (2006), 889-894.
112. Wang XJ, Buyanova IA, Chen WM, Izadifard M, Rawal S, Norton DP, Pearton SJ, Osinsky A, Dong JW, Dabiran A, "Band gap properties of Zn<sub>1-x</sub>Cd<sub>x</sub>O alloys grown by molecular-beam epitaxy," *Applied Physics Letters* 89, (2006), 151909/1-3.
113. Rawal S, Norton DP, Anderson TJ, McElwee-White L, "Investigation of W-Ge-N deposited on Ge as a diffusion barrier for Cu metallization," *Applied Physics A-Materials Science & Processing* 85, (2006), 325-329.
114. Rawal S, Lambers E, Norton DP, Anderson TJ, McElwee-White L, "Comparative study of HfN<sub>x</sub> and Hf-Ge-N copper diffusion barriers on Ge," *Journal Of Applied Physics* 100, (2006), 063532/1-7.
115. Heo YW, Ip K, Pearton, SJ, Norton DP, Budai JD, "Growth of ZnO thin films on c-plane Al<sub>2</sub>O<sub>3</sub> by molecular beam epitaxy using ozone as an oxygen source," *Applied Surface Science* 252, (2006), 7442-7448.
116. Varadarajan V, Norton DP, "CuGaO<sub>2</sub> thin film synthesis using hydrogen-assisted pulsed laser deposition," *Applied Physics A-Materials Science & Processing* 85, (2006), 117-120.
117. Rosenberg RA, Shenoy GK, Tien LC, Norton D, Pearton S, Sun XH, Sham TK, "Anisotropic x-ray absorption effects in the optical luminescence yield of ZnO nanostructures," *Applied Physics Letters* 89, (2006), 093118/1-3.
118. Kang BS, Wang HT, Tien LC, Ren F, Gila BP, Norton DP, Abernathy CR, Lin JS, Pearton SJ, "Wide bandgap semiconductor nanorod and thin film gas sensors," *Sensors* 6, (2006), 643-666.
119. Park SJ, Norton DP, Selvamanickam V, "Formation of biaxial texture in metal films by selective ion beam etching," *Applied Surface Science* 252, (2006), 5197-5206.
120. Park SJ, Norton DP, "Ion beam assisted texturing of polycrystalline Y<sub>2</sub>O<sub>3</sub> films deposited via electron-beam evaporation," *Thin Solid Films* 510, (2006), 143-147.
121. Pearton SJ, Norton DP, Heo YW, Tien LC, Ivill MP, Li Y, Kang BS, Ren F, Kelly J, Hebard AF, "ZnO spintronics and nanowire devices," *Journal Of Electronic Materials* 35, (2006), 862-868.
122. Park SJ, Norton DP, "Uniaxial textured (001) metal film formation via YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub>/SrTiO<sub>3</sub>/metal trilayers," *Surface & Coatings Technology* 200 (2006), 5778-5781.
123. Kang BS, Chen JJ, Ren F, Li Y, Kim HS, Norton DP, Pearton SJ, "ITO/Ti/Au ohmic contacts on n-type ZnO," *Applied Physics Letters* 88, (2006), 182101/1-3.
124. Kim K, Paranthaman M, Norton DP, Aytug T, Cantoni C, Gapud AA, Goyal A, Christen DK, "A perspective on conducting oxide buffers for Cu-based YBCO-coated conductors," *Superconductor Science & Technology* 19, (2006), R23-R29.
125. Jang S, Chen JJ, Ren F, Yang HS, Han SY, Norton DP, Pearton SJ, "Simulation of vertical and lateral ZnO light-emitting diodes," *Journal Of Vacuum Science & Technology B* 24, (2006), 690-694.
126. Chang CY, Tsao FC, Pan CJ, Chi GC, Wang HT, Chen JJ, Ren F, Norton DP, Pearton SJ, Chen KH, Chen LC, "Electroluminescence from ZnO nanowire/polymer composite p-n junction," *Applied Physics Letters* 88, (2006), 173503/1-3.
127. Chen JJ, Jang SW, Ren F, Li YJ, Kim HS, Norton DP, Pearton SJ, Osinsky A, Chu SNG, Weaver JF, "Selective and nonselective wet etching of Zn<sub>0.9</sub>Mg<sub>0.1</sub>O/ZnO," *Journal Of Electronic Materials* 35, (2006), 516-519.

128. Li YJ, Heo YW, Erie JM, Kim H, Ip K, Pearton SJ, Norton DP, "Synthesis and characterization of phosphorus-doped ZnO and (Zn,Mg)O thin films via pulsed laser deposition," *Journal Of Electronic Materials* 35, (2006), 530-537.
129. Polyakov AY, Smirnov NB, Govorkov AV, Kozhuichova EA, Pearton SJ, Norton DP, Osinsky A, Dabiran A, "Electrical properties of undoped bulk ZnO substrates," *Journal Of Electronic Materials* 35, (2006), 663-669.
130. Chen JJ, Anderson TJ, Jang S, Ren F, Li YJ, Kim HS, Gila BP, Norton DP, Pearton SJ, "Ti/Au ohmic contacts to Al-doped n-ZnO grown by pulsed laser deposition," *Journal Of The Electrochemical Society* 153, (2006), G462-G464.
131. Wright JS, Khanna R, Norton DP, Pearton SJ, Ren F, Kravchenko II, "Thermally stable TiB<sub>2</sub> ohmic contacts on n-ZnO," *Electrochemical And Solid State Letters* 9, (2006) G164-G166.
132. Chen JJ, Jang S, Anderson TJ, Ren F, Li Y, Kim HS, Gila BP, Norton DP, Pearton SJ, "Low specific contact resistance Ti/Au contacts on ZnO," *Applied Physics Letters* 88, (2006), 122107/1-3.
133. Buyanova IA, Chen WM, Ivill MP, Pate R, Norton DP, Pearton SJ, Dong JW, Osinsky A, Hertog B, Dabiran AM, Chow PP, "Optical characterization of ZnMnO-based dilute magnetic semiconductor structures," *Journal Of Vacuum Science & Technology B* 24, (2006), 259-262.
134. Wang HT, Kang BS, Chen JJ, Anderson T, Jang S, Ren F, Kim HS, Li YJ, Norton DP, Pearton SJ, "Band-edge electroluminescence from N<sup>+</sup>-implanted bulk Zn," *Applied Physics Letters* 88, (2006), 102107/1-3.
135. Ip K, Thaler GT, Yang HS, Han SY, Li YJ, Norton DP, Pearton SJ, Jang SW, Ren F, "Contacts to ZnO," *Journal Of Crystal Growth* 287 (2006), 149-156.
136. Chen JJ, Jang S, Ren F, Rawal S, Li Y, Kim HS, Norton DP, Pearton SJ, Osinsky A, "Comparison of Ti/Al/Pt/Au and Ti/Au Ohmic contacts on n-type ZnCdO," *Applied Physics Letters* 88, (2006), 012109/1-3.
137. Norton DP, Ivill M, Li Y, Kwon YW, Erie JM, Kim HS, Ip K, Pearton SJ, Heo YW, Kim S, Kang BS, Ren F, Hebard AF, Kelly J, "Charge carrier and spin doping in ZnO thin films," *Thin Solid Films* 496, (2006), 160-168.
138. Han SY, Yang H, Norton D, Pearton SJ, Ren F, Osinsky A, Dong JW, Hertog B, Chow PP, "Design and simulation of ZnO-based light-emitting diode structures," *Journal Of Vacuum Science & Technology B* 23, (2005), 2504-2509.
139. Jeong BS, Heo YW, Norton DP, Hebard AF, "Structure and composition of secondary phase particles in cobalt-doped TiO<sub>2</sub> films," *Physica B-Condensed Matter* 370, (2005), 46-51.
140. Ip K, Khanna R, Norton DP, Pearton SJ, Ren F, Kravchenko I, Kao CJ, Chi GC, "Thermal stability of W<sub>2</sub>B and W<sub>2</sub>B<sub>5</sub> contacts on ZnO," *Applied Surface Science* 252, (2005), 1846-1853.
141. Tien LC, Sadik PW, Norton DP, Voss LF, Pearton SJ, Wang HT, Kang BS, Ren F, Jun J, Lin J, "Hydrogen sensing at room temperature with Pt-coated ZnO thin films and nanorods," *Applied Physics Letters* 87, (2005), 222106/1-3.
142. Jang S, Chen JJ, Kang BS, Ren F, Norton DP, Pearton SJ, Lopata J, Hobson WS, "Formation of p-n homojunctions in n-ZnO bulk single crystals by diffusion from a Zn<sub>3</sub>P<sub>2</sub> source," *Applied Physics Letters* 87, (2005), 222113/1-3.
143. Yang HS, Norton DP, Pearton SJ, Ren F, "Ti/Au n-type Ohmic contacts to bulk ZnO substrates," *Applied Physics Letters* 87, (2005), 212106/1-3.
144. Heo YW, Tien LC, Norton DP, "Cubic (Mg,Zn)O nanowire growth using catalyst-driven molecular beam epitaxy," *Journal Of Materials Research* 20, (2005), 3028-3033.
145. Chen JJ, Ren F, Li YJ, Norton DP, Pearton SJ, Osinsky A, Dong JW, Chow PP, Weaver JF, "Measurement of Zn<sub>0.95</sub>Cd<sub>0.05</sub>O/ZnO (0001) heterojunction band offsets by x-ray photoelectron spectroscopy," *Applied Physics Letters* 87, (2005), 192106/1-3.
146. Ip K, Khanna R, Norton DP, Pearton SJ, Ren F, Kravchenko I, Kao CJ, Chi GC, "Improved thermal stability CrB<sub>2</sub> contacts on ZnO," *Japanese Journal Of Applied Physics Part 1-Regular Papers Brief Communications & Review Papers* 44, (2005), 7291-7295.

147. Yang HS, Han SY, Heo YW, Baik KH, Norton DP, Pearton SJ, Ren F, Osinsky A, Dong JW, Her-  
togh B, Dabiran AM, Chow PP, Chernyak L, Steiner T, Kao CJ, Chi GC, "Fabrication of hybrid n-  
ZnMgO/n-ZnO/p-AlGaIn/p-GaN light-emitting diodes," Japanese Journal Of Applied Physics Part  
1-Regular Papers Brief Communications & Review Papers 44, (2005), 7296-7300.
148. Heo YW, Norton DP, Pearton SJ, "Origin of green luminescence in ZnO thin film grown by molec-  
ular-beam epitaxy," Journal of Applied Physics 98, (2005), 073502/1-6.
149. Chen JJ, Ren F, Norton DP, Pearton SJ, Osinsky A, Dong JW, Chu SNG, "Diffusion-controlled  
selective wet etching of ZnCdO over ZnO," Electrochemical And Solid State Letters 8, (2005),  
G359-G361.
150. Bae HJ, Norton DP, "Thickness-dependent tunability for Ti-doped K(Ta,Nb)O<sub>3</sub> thin films," Ap-  
plied Physics A-Materials Science & Processing 81, 1657-1660.
151. Pearton SJ, Norton DP, Frazier R, Han SY, Abernathy CR, Zavada JM, "Spintronics device con-  
cepts," IEE Proceedings-Circuits, Devices and Systems 152, (2005), 312-322.
152. Rawal S, Norton DP, Anderson TJ, McElwee-White L, "Properties of W-Ge-N as a diffusion barrier  
material for Cu," Applied Physics Letters 87, (2005), 111902/1-3.
153. Ip K, Li Y, Norton DP, Pearton SJ, Ren F, "Low-resistance Au and Au/Ni/Au Ohmic contacts to p-  
ZnMgO," Applied Physics Letters 87, (2005), 71906/1-3.
154. Li YJ, Heo YW, Kwon Y, Ip K, Pearton SJ, Norton DP, "Transport properties of p-type phospho-  
rus-doped (Zn,Mg)O grown by pulsed-laser deposition, Applied Physics Letters 87, (2005),  
72101/1-3.
155. Li YJ, Kwon YW, Jones M, Heo YW, Zhou J, Luo SC, Holloway PH, Douglas E, Norton DP, Park  
Z, Li S, "Progress in semiconducting oxide-based thin-film transistors for displays," Semiconductor  
Science and Technology 20, (2005), 720-725.
156. Wang HT, Kang BS, Ren F, Tien LC, Sadik PW, Norton DP, Pearton SJ, Lin J, "Detection of hy-  
drogen at room temperature with catalyst-coated multiple ZnO nanorods," Applied Physics A (Ma-  
terials Science Processing) A81, (2005), 1117-1119.
157. Varadarajan V, Norton DP, Budai JD, "Phase stability and orientation of SrCu<sub>2</sub>O<sub>2</sub> films grown by  
pulsed laser deposition," Thin Solid Films 488, (2005), 173-177.
158. Jeong BS, Heo YW, Norton DP, Hebard AF, Budai JD, Park YD, "Properties of anatase Co<sub>x</sub>Ti<sub>1-x</sub>O<sub>2</sub>  
thin films epitaxially grown by reactive sputtering," Thin Solid Films 488, (2005), 194-199.
159. Kwon YW, Li Y, Heo YW, Norton DP, "Properties of amorphous aluminate dielectrics synthesized  
via photosensitized pulsed laser ablation of luminescent targets," Thin Solid Films 489, (2005), 99-  
103.
160. Tien LC, Wang HT, Kang BS, Ren F, Sadik PW, Norton DP, Pearton SJ, Lin J, "Room-temperature  
hydrogen-selective sensing using single Pt-coated ZnO nanowires at microwatt power levels," Elec-  
trochemical and Solid-State Letters 8, (2005), G230-G232.
161. Park SJ, Norton DP, Selvamani V, "Ion-beam texturing of uniaxially textured Ni films," Ap-  
plied Physics Letters 87, (2005), 31907/1-3.
162. Kao CJ, Kwon YW, Heo YW, Norton DP, Pearton SJ, Ren F, Chi GC, "Comparison of ZnO metal-  
oxide-semiconductor field effect transistor and metal-semiconductor field effect transistor struc-  
tures grown on sapphire by pulsed laser deposition," Journal of Vacuum Science & Technology B  
(Microelectronics and Nanometer Structures) 23, (2005), 1024-1028.
163. Pearton SJ, Norton DP, "Dry etching of electronic oxides, polymers, and semiconductors," Plasma  
Processes and Polymers 2, (2005), 16-37.
164. Kim KH, Norton DP, Cantoni C, Aytug T, Gapud AA, Paranthaman MP, Goyal A, Christen DK,  
"(La,Sr)TiO<sub>3</sub> as a conductive buffer for high-temperature superconducting coated conductors,"  
IEEE Transactions on Applied Superconductivity 15, (2005), 2997-3000.
165. Wang HT, Kang BS, Ren F, Tien LC, Sadik PW, Norton DP, Pearton SJ, Lin J, "Hydrogen-  
selective sensing at room temperature with ZnO nanorods," Applied Physics Letters, Volume 86,  
Issue 24, 2005, Pages 243503/1-3.

166. Kang BS, Heo YW, Tien LC, Norton DP, Ren F, Gila BP, Pearton SJ, "Hydrogen and ozone gas sensing using multiple ZnO nanorods," *Applied Physics A: Materials Science & Processing* 80, (2005), 1029-1032
167. Yang HS, Li Y, Norton DP, Ip K, Pearton SJ, Jang S, Ren F, "Low-resistance ohmic contacts to p-ZnMgO grown by pulsed-laser deposition," *Applied Physics Letters* 86, (2005), 192103/1-3.
168. Bae H-J, Norton DP, Sigman J, Boatner L, "Low dielectric losses in annealed Ti-doped K(Ta,Nb)O<sub>3</sub> thin films grown by pulsed laser deposition," *Journal of Physics D (Applied Physics)* 38, (2005), 1331-1336.
169. Coleman VA, Bradby JE, Jagadish C, Munroe P, Heo YW, Pearton SJ, Norton DP, Inoue M, Yano M, "Mechanical properties of ZnO epitaxial layers grown on a- and c-axis sapphire," *Applied Physics Letters* 86, (2005), 203105/1-3.
170. Yang H, Li Y, Norton DP, Pearton SJ, Jung S, Ren F, Boatner LA, "Characteristics of unannealed ZnMgO/ZnO p-n junctions on bulk (100) ZnO substrates," *Applied Physics Letters* 86, (2005), 172103/1-3.
171. Jones MN, Kwon YW, Norton DP, "Dielectric constant and current transport for HfO<sub>2</sub> thin films on ITO," *Applied Physics A (Materials Science Processing)* A81, (2005), 285-288.
172. Sigman J, Bae HJ, Norton DP, Boatner LA, "Dielectric response of K(Ta,Nb)O<sub>3</sub> thin films," *Applied Physics A (Materials Science Processing)* A81, (2005), 289-293.
173. Khanna R, Ip K, Allums KK, Baik K, Abernathy CR, Pearton SJ, Heo YW, Norton DP, Ren F, Shojah-Ardalan S, Wilkins R, "Proton irradiation of ZnO Schottky diodes," *Journal of Electronic Materials*, *Journal of Electronic Materials* 34, (2005) 395-398.
174. LaRoche JR, Heo YW, Kang BS, Tien LC, Kwon YW, Norton DP, Gila BP, Ren F, Pearton SJ, "Fabrication approaches to ZnO nanowire devices," *Journal of Electronic Materials* 34, (2005) 404-408.
175. Heo YW, Kwon YW, Li Y, Pearton SJ, Norton DP, "Properties of phosphorus-doped ZnMgO Thin films and device structures", *Journal of Electronic Materials* 34, (2005), 409-415.
176. Dong J, Osinsky A, Hertog B, Dabiran AM, Chow PP, Heo YW, Norton DP, Pearton SJ, "Development of MgZnO-ZnO-AlGa<sub>N</sub> Heterostructures for Ultraviolet Light Emitting Applications", *Journal of Electronic Materials* 34, (2005) 416-423.
177. Kang BS, Ren F, Heo YW, Tien LC, Norton DP, Pearton SJ, "pH measurements with single ZnO nanorods integrated with a microchannel," *Applied Physics Letters* 86, (2005), 112105/1-3.
178. Ivill M, Pearton SJ, Norton DP, Kelly J, Hebard AF, "Magnetization dependence on electron density in epitaxial ZnO thin films codoped with Mn and Sn," *Journal of Applied Physics* 97, (2005), 53904/1-5.
179. Bae H-J, Sigman J, Norton DP, Boatner LA, "Surface treatment for forming unit-cell steps on the (001) KTaO<sub>3</sub> substrate surface," *Applied Surface Science* 241, (2005), 271-278.
180. Kang BS, Ren F, Jeong BS, Kwon YW, Baik KH, Norton DP, Pearton SJ, "Use of 370 nm UV light for selective-area fibroblast cell growth," *Journal of Vacuum Science & Technology B (Microelectronics and Nanometer Structures)* 23, (2005), 57-60.
181. Polyakov AY, Smirnov NB, Govorkov AV, Kozhukhova EA, Heo YW, Ivill MP, Ip K, Norton DP, Pearton SJ, Kelly J, Kelly J, Rairigh R, Hebard AF, Steiner T, "Properties of Mn- and Co-doped bulk ZnO crystals," *Journal of Vacuum Science & Technology B (Microelectronics and Nanometer Structures)* 23, (2005), 274-279.
182. Bae H-J, Sigman J, Norton DP, Boatner LA, "Dielectric properties of Ti-doped K(Ta,Nb)O<sub>3</sub> thin films grown by pulsed laser deposition," *Materials Science and Engineering B* 117, (2005), 87-91.
183. Lopatiuk O, Burdett W, Chernyak L, Ip KP, Heo YW, Norton DP, Pearton SJ, Hertog B, Chow PP, Osinsky A, "Minority carrier transport in p-type Zn<sub>0.9</sub>Mg<sub>0.1</sub>O doped with phosphorus," *Applied Physics Letters* 86, (2005), 12105/1-3.
184. Pearton SJ, Norton DP, Ip K, Heo YW, Steiner T, "Recent progress in processing and properties of ZnO", *Progress in Materials Science* 50, (2005), 293-340.

185. Kang BS, Kim S, Ren F, Ip K, Heo YW, Gila BP, Abernathy CR, Norton DP, Pearton SJ "Detection of CO using bulk ZnO Schottky rectifiers," *Applied Physics A: Materials Science & Processing* 80, (2005), 259 – 261.
186. Heo YW, Kaufman M, Pruessner K, Siebein KN, Norton DP, Ren F, "ZnO/cubic (Mg,Zn)O radial nanowire heterostructures," *Applied Physics A: Materials Science & Processing* 80, (2005), 263-266.
187. Heo YW, Kang BS, Tien LC, Norton DP, Ren F, LaRoche JR, Pearton SJ, "UV photoresponse of single ZnO nanowires," *Applied Physics A: Materials Science & Processing* 80, (2005), 497-499.
188. Heo YW, Kelly J, Norton DP, Hebard AF, Pearton SJ, Zavada JM, Boatner LA, "Effects of high dose Ni, Fe, Co, and Mn implantation into SnO<sub>2</sub>," *Electrochemical and Solid-State Letters* 7, (2004), G309-G312.
189. Pearton SJ, Abernathy CR, Thaler GT, Frazier RM, Heo YH, Ivill M, Norton DP, Park YD, "Progress in Wide Bandgap Ferromagnetic Semiconductors and Semiconducting Oxides," *Diffusion and defect data. Pt. A, Defect and diffusion forum* 230, (2004), 17-45.
190. Heo YW, Norton DP, Tien LC, Kwon Y, Kang BS, Ren F, Pearton SJ, LaRoche JR, "ZnO nanowire growth and devices," *Materials Science and Engineering: R: Reports* 47, (2004), 1-47.
191. Pearton SJ, Heo YW, Ivill M, Norton DP, Steiner T, "Dilute magnetic semiconducting oxides," *Semiconductor Science and Technology* 19, (2004), R59-R74.
192. Sigman J, Bae HJ, Norton DP, Budai JD, Boatner LA, "Dielectric response of asymmetric KNbO<sub>3</sub>/KTaO<sub>3</sub> superlattices," *Journal of Vacuum Science and Technology A* 22, (2004), 2010-2013.
193. Heo YW, Tien LC, Norton DP, Pearton SJ, Kang BS, Ren F, LaRoche JR, "Pt/ZnO nanowire Schottky diodes," *Applied Physics Letters* 85, (2004), 3107-3109.
194. Patel M, Kim K, Ivill M, Budai JD, Norton DP, "Reactive sputter deposition of epitaxial (001) CeO<sub>2</sub> on (001) Ge," *Thin Solid Films* 468, (2004), 1-3.
195. Khanna R, Ip K, Heo YW, Norton DP, Pearton SJ, Ren F, "Thermal degradation of electrical properties and morphology of bulk single-crystal ZnO surfaces," *Applied Physics Letters* 85, (2004), 3468-3470.
196. Khanna R, Ip K, Allums KK, Baik K, Abernathy CR, Pearton SJ, Heo YW, Norton DP, Ren F, Dwivedi R, Fogarty TN, Wilkins R, "Effects of high dose proton irradiation on the electrical performance of ZnO Schottky diodes," *Physica Status Solidi A* 201, (2004), R79-R82.
197. Ip K, Gila BP, Onstine AH, Lambers ES, Heo YW, Baik KH, Norton DP, Pearton SJ, Kim S, LaRoche JR, Ren, F, "Effect of ozone cleaning on Pt/Au and W/Pt/Au Schottky contacts to n-type ZnO," *Applied Surface Science* 236, (2004), 387-393.
198. Heo YW, Tien LC, Kwon Y, Norton DP, Pearton SJ, Kang BS, Ren F, "Depletion-mode ZnO nanowire field-effect transistor," *Applied Physics Letters* 85, (2004), 2274-2276.
199. Heo YW, Tien LC, Norton DP, Kang BS, Ren F, Gila BP, Pearton SJ, "Electrical transport properties of single ZnO nanorods," *Applied Physics Letters* 85, (2004), 2002-2004.
200. Heo YW, Abernathy C, Pruessner K, Sigmund W, Norton DP, Overberg M, Ren F, Chisholm MF, "Structure and optical properties of cored wurtzite (Zn,Mg)O heteroepitaxial nanowires," *Journal of Applied Physics* 96, (2004), 3424-3428.
201. Polyakov AY, Govorkov AV, Smirnov NB, Pashkova NV, Pearton SJ, Ip K, Frazier RM, Abernathy CR, Norton DP, Zavada JM, Wilson RG, "Optical and magnetic properties of ZnO bulk crystals implanted with Cr and Fe," *Materials Science in Semiconductor Processing* 7, (2004), 77-81.
202. Ip K, Heo YW, Norton DP, Pearton SJ, LaRoche JR, Ren F, "Zn<sub>0.9</sub>Mg<sub>0.1</sub>O/ZnO p-n junctions grown by pulsed-laser deposition," *Applied Physics Letters* 85, (2004), 1169-1171.
203. Williams LC, Norton D, Budai J, Holloway PH, "Cathodoluminescence from thin film Zn<sub>2</sub>GeO<sub>4</sub>:Mn phosphor grown by pulsed laser deposition," *Journal of the Electrochemical Society* 151, (2004), H188-H191.

204. Kang BS, Kim S, Ren F, Ip K, Heo YW, Gila B, Abernathy CR, Norton DP, Pearton SJ, "Detection of  $C_2H_4$  using wide-bandgap semiconductor sensors," *Journal of the Electrochemical Society* 151, (2004), G468-G471.
205. Pearton SJ, Norton DP, Ip K, Heo YW, Steiner T, "Recent advances in processing of ZnO," *Journal of Vacuum Science & Technology B (Microelectronics and Nanometer Structures)* 22, (2004), 932-948.
206. Ip K, Gila BP, Onstine AH, Lambers ES, Heo YW, Baik KH, Norton DP, Pearton SJ, Kim S, LaRoche JR, and Ren F, "Improved Pt/Au and W/Pt/Au Schottky contacts on n-type ZnO using ozone cleaning," *Applied Physics Letters* 84, (2004), 5133-5135.
207. Heo YW, Ip K, Pearton SJ, Norton DP, "The near band-edge emission and photoconductivity response of phosphorus-doped ZnO thin films grown by pulsed laser deposition," *Physica Status Solidi A* 201, (2004), 1500-1509.
208. Kim S, Kang BS, Ren F, Heo YW, Ip K, Norton DP, Pearton SJ, "Characteristics of Thin-Film p-ZnMgO/n-ITO Heterojunctions on Glass Substrates," *Electrochemical and Solid-State Letters* 7, (2004), G145-G147.
209. Heo YW, Kwon YW, Li Y, Pearton SJ, Norton DP, "p-type behavior in phosphorus-doped (Zn,Mg)O device structures," *Applied Physics Letters* 84, (2004), 3474-3476.
210. Ip K, Heo Y, Baik K, Norton D, Pearton SJ, Kim S, LaRoche J, Ren F, "Temperature Dependent Characteristics of P+ Schottky Contacts on n-type ZnO," *Applied Physics Letters* 84, (2004) 2835-2837.
211. Ip K, Heo Y, Baik K, Norton DP, Pearton SJ, Ren F, "Specific Contact Resistance of Ti/Al/Pt/Au Ohmic Contacts to P-doped ZnO Thin Films," *Journal of Vacuum Science and Technology B* 22, (2004), 171-174.
212. Heo Y, Ivill M, Ip K, Norton D, Pearton SJ, Kelly J, Rairigh R, Hebard AF, Steiner T, "Effects of High Dose Mn Implantation into ZnO Grown on Sapphire," *Applied Physics Letters* 84, (2004), 2292-2294.
213. Jeong B-S, Heo YW, Norton DP, Kelly JG, Rairigh R, Hebard AF, Budai JD, Park YD, "Spatial distribution and electronic state of Co in epitaxial anatase  $Co_xTi_{1-x}O_2$  thin films grown by reactive sputtering," *Applied Physics Letters* 84, (2004), 2608-2610.
214. Kwon Y, Li Y, Heo YW, Jones M, Holloway PH, Norton DP, Park ZV, Li S, "Enhancement-mode thin-film field-effect transistor using phosphorus-doped (Zn,Mg)O channel," *Applied Physics Letters* 84, (2004), 2685-2687
215. Pearton SJ, Abernathy CR, Thaler G, Frazier RM, Norton DP, Ren F, Park YD, Zavada JM, Buyanova IA, Chen WM, Hebard AF, "Wide Bandgap GaN-Based Semiconductors for Spintronics," *Journal of Physics- Condensed Matter* 16, (2004), R209-R245.
216. Kim S, Kang B, Ren F, Heo Y, Ip K, Norton DP, Pearton SJ, "Contacts to p-type ZnMgO," *Applied Physics Letters* 84, (2004), 1904-1906.
217. Norton DP, "Synthesis and properties of epitaxial electronic oxide thin-film materials," *Materials Science and Engineering: R: Reports* 43, (2004), 139-247.
218. Kim S, Kang B, Ren F, Ip K, Heo Y, Norton D, Pearton SJ, "Sensitivity of Pt/ZnO Schottky Diode Characteristics to Hydrogen," *Applied Physics Letters* 84, (2004), 1698-1700.
219. Ip K, Heo Y, Baik K, Norton DP, Pearton SJ, Ren F, "Carrier Concentration Dependence of Ti/Al/Pt/Au Contact Resistance on n-Type ZnO," *Applied Physics Letters* 84, (2004), 544-546
220. Jeong BS, Norton DP, Budai JD, Jellison GE, "Epitaxial growth of anatase by reactive sputter deposition using water vapor as the oxidant," *Thin Solid Films* 446, (2004), 18-22.
221. Bae H-J, Sigman J, Park S-J, Heo Y-H, Boatner LA, Norton DP, "Growth of semiconducting  $KTaO_3$  thin films," *Solid-State Electronics* 48, (2004), 51-54.
222. Heo YW, Ip K, Park SJ, Pearton SJ, Norton DP, "Shallow Donor Formation in P-Doped ZnO Thin Films," *Applied Physics A* 78, (2004), 53-57.
223. Norton DP, Heo YW, Ivill M, Ip K, Pearton SJ, Chisholm MF, Steiner T, "ZnO: growth, doping & processing," *Materials Today* 7, (2004), 34-40.

224. Pearton SJ, Norton DP, Ip K, Heo YW, Steiner T, "Recent Progress in processing and properties of ZnO", *Superlattices and Microstructures* 34, (2003), 3-32.
225. Pearton SJ, Abernathy CR, Thaler G, Frazier R, Ren F, Hebard A, Park Y, Norton D, Tang W, Stavola M, Zavada JM, Wilson RG, "Effect of Defects and Doping on Wide Bandgap Ferromagnetic Semiconductors," *Physica B* 340-342C, (2003), 39-47.
226. Ip K, Baik K, Heo Y, Norton D, Pearton SJ, LaRoche J, Luo B, Ren F, Zavada JM, "Annealing Temperature Dependence of Contact Resistance and Stability for Ti/Al/Pt/Ar Ohmic Contacts to Bulk n-ZnO," *Journal of Vacuum Science and Technology B* 21, (2003), 2378-2381.
227. Kim KH, Norton DP, Budai JD, Chisholm MF, Sales BC, Christen DK, Cantoni C, "Epitaxial structure and transport in LaTiO<sub>3+x</sub> films on (001) SrTiO<sub>3</sub>," *Physica Status Solidi A* 200, (2003), 346-351.
228. Norton D, Overberg M, Pearton SJ, Pruesner K, Budai J, Boatner L, Chisholm M, Lee J, Khim Z, Park Y, Wilson RG, "Ferromagnetism in Co-Implanted ZnO," *Applied Physics Letters* 83, (2003), 5488-5490.
229. Kwon YW, Norton DP, Jellison Jr GE, "Recrystallization and dielectric properties of CaHfO<sub>x</sub> films on Si," *Solid-State Electronics* 47, (2003), 2149-2153.
230. Kim K, Kwon YW, Norton DP, Christen DK, Budai JD, Sales BC, Chisholm MF, Cantoni C, Marken K, "Epitaxial (La,Sr)TiO<sub>3</sub> as a conductive buffer for high temperature superconducting coated conductors," *Solid-State Electronics* 47, (2003), 2177-2181
231. Ivill M, Overberg ME, Abernathy CR, Norton DP, Hebard AF, Theodoropoulou N, Budai JD, "Properties of Mn-doped Cu<sub>2</sub>O semiconducting thin films grown by pulsed-laser deposition," *Solid-State Electronics* 47, (2003), 2215-2220.
232. Lee J, Khim Z, Park YD, Norton D, Theodoropoulou N, Hebard AF, Budai J, Boatner L, Pearton SJ, Wilson RG, "Magnetic Properties of Co- and Mn-Implanted BaTiO<sub>3</sub>, SrTiO<sub>3</sub> and KTaO<sub>3</sub>," *Solid-State Electronics* 47, (2003), 2225-2230.
233. Theodoropoulou NA, Hebard AF, Norton DP, Budai JD, Boatner LA, Lee JS, Khim ZG, Park YD, Overberg ME, Pearton SJ, Wilson RG, "Ferromagnetism in Co- and Mn-doped ZnO," *Solid-State Electronics* 47, (2003), 2231-2235.
234. Ip K, Overberg ME, Heo YW, Norton DP, Pearton SJ, Stutz CE, Kucheyev SO, Jagadish C, Williams JS, Luo B, Ren F, Look DC, Zavada JM, "Hydrogen incorporation, diffusivity and evolution in bulk ZnO," *Solid-State Electronics* 47, (2003), 2255-2259.
235. Heo YW, Kaufman M, Pruessner K, Norton DP, Ren F, Chisholm MF, Fleming PH, "Optical properties of Zn<sub>1-x</sub>Mg<sub>x</sub>O nanorods using catalysis-driven molecular beam epitaxy," *Solid-State Electronics* 47, (2003), 2269-2273 .
236. Jeong BS, Norton DP, Budai JD, "Conductivity in transparent anatase TiO<sub>2</sub> films epitaxially grown by reactive sputtering deposition," *Solid-State Electronics* 47, (2003), 2275-2278.
237. Ip K, Overberg ME, Baik KW, Wilson R, Kucheyev S, Williams JS, Jagadish C, Ren F, Heo Y, Norton DP, Zavada J, Pearton SJ, "ICP Dry Etching of ZnO and Effects of Hydrogen," *Solid-State Electronics* 47, (2003), 2289-2294.
238. Lim W, Rack I, Lee J, Lee E, Jeon M, Cho G, Heo Y, Norton D, Pearton, SJ, "Temperature-Dependent Cl<sub>2</sub>/Ar Plasma Etching of Bulk Single-Crystal ZnO," *Applied Physics Letters* 83, (2003), 3105-3107.
239. Polyakov A, Smirnov NB, Kozhukhova EA, Vdovin V, Ip K, Norton DP, Pearton SJ, "Properties of Au and Ag Schottky Diodes Prepared by an Undoped ZnO," *Journal of Vacuum Science and Technology A* 21, (2003), 1603-1608.
240. Ip K, Frazier RM, Heo YW, Norton DP, Abernathy CR, Pearton SJ, Kelly J, Rairigh R, Hebard AF, Zavada JM, Wilson RG, "Ferromagnetism in Mn- and Co-Implanted ZnO Nanorods," *Journal of Vacuum Science and Technology B* 21, (2003), 1476-1481.
241. Polyakov A, Smirnov N, Govorkov A, Kozhukhova E, Vdovin V, Ip K, Overberg M, Heo Y, Pearton SJ, Norton D, Zavada JM, Dravin V, "Proton Implantation Effects on Electrical and Recombination Properties of Undoped ZnO," *Journal of Applied Physics* 94, (2003), 2895-2900



242. Polyakov A, Smirnov N, Kozhukhova E, Vdovin V, Ip K, Heo YW, Norton DP, Pearton SJ, "Electrical Characteristics of Au and Ag Schottky Contacts on n-ZnO," *Applied Physics Letters* 83, (2003), 1575-1577.
243. Heo YW, Park SJ, Ip K, Pearton SJ, Norton DP, "Transport properties of phosphorus-doped ZnO thin films," *Applied Physics Letters* 83, (2003), 1128-1130.
244. Polyakov A, Govonkov A, Smirnov N, Pochkova N, Pearton SJ, Overberg ME, Abernathy CR, Norton D, Zavada J, Wilson RG, "Properties of Mn- and Co-Implanted ZnO Crystals," *Solid-State Electronics* 47, (2003), 1523-1531.
245. Budai JD, Yang W, Tamura N, Chung JS, Tischler JZ, Larson BC, Ice GE, Park C, Norton DP, "X-ray microdiffraction study of growth modes and crystallographic tilts in oxide films on metal substrates," *Nature Materials* 2, (2003), 487-492.
246. Polyakov AY, Smirnov NB, Gorokov A, Ip K, Overberg ME, Heo Y, Norton DP, Pearton SJ, Luo B, Ren F, Zavada JM, "Hydrogen Plasma Treatment Effects on Electrical and Optical Properties of n-ZnO," *Journal of Applied Physics* 94, (2003), 400-406.
247. Jellison Jr GE, Boatner LA, Budai JD, Jeong BS, Norton DP, "Spectroscopic ellipsometry of thin film and bulk anatase (TiO<sub>2</sub>)," *Journal of Applied Physics* 93, (2003), 9537-9541.
248. Norton DP, "Capacitance-voltage measurements on ultrathin gate dielectrics," *Solid-State Electronics* 47, (2003), 801-805.
249. Norton DP, Chakoumakos BC, Budai JD, Lowndes DH, "Evidence for pseudo-gap behavior in defect-doped infinite layer (Ca, Sr)CuO<sub>2</sub> thin films," *Physica Status Solidi (b)* 236, (2003), 143-150.
250. Pearton SJ, Abernathy CR, Norton DP, Hebard AF, Park YD, Boatner LA, Budai JD, "Advances in wide bandgap materials for semiconductor spintronics," *Materials Science and Engineering: R: Reports* 40, (2003), 137-168.
251. Lee JS, Khim ZG, Park YD, Norton DP, Budai JD, Boatner LA, Pearton SJ, Wilson RG, "Effects of Co implantation in BaTiO<sub>3</sub>, SrTiO<sub>3</sub>, and KTaO<sub>3</sub>," *Electrochemical and Solid-State Letters* 6, (2003), J1-J3.
252. Norton DP, Pearton SJ, Hebard AF, Theodoropoulou N, Boatner LA, Wilson RG, "Ferromagnetism in Mn-implanted ZnO:Sn single crystals," *Applied Physics Letters* 82, (2003), 239-241.
253. Ip K, Overberg ME, Heo YW, Norton DP, Pearton SJ, Stutz CE, Luo B, Ren F, Look DC, Zavada J, "Hydrogen incorporation and diffusivity in plasma-exposed bulk ZnO," *Applied Physics Letters* 82, (2003), 385-387.
254. Norton DP, Theodoropoulou NA, Hebard AF, Budai JD, Boatner LA, Pearton SJ, Wilson RG, "Properties of Mn-implanted BaTiO<sub>3</sub>, SrTiO<sub>3</sub>, and KTaO<sub>3</sub>," *Electrochemical and Solid-State Letters* 6, (2003), G19-G21.
255. Pearton SJ, Abernathy CR, M. E. Overberg, Thaler GT, Norton DP, Theodoropoulou N, Hebard AF, Park YD, Ren F, Kim K, "Wide band gap ferromagnetic semiconductors and oxides," *Journal of Applied Physics* 93, (2003), 1-13.
256. Solovyov VF, Wiesmann HJ, Wu LJ, Zhu YM, Suenaga M, Norton D, Marken KR, "A method for improving nucleation of thick YBCO films in the ex-situ process," *IEEE Transactions On Applied Superconductivity* 13, (2003), 2474-2476.
257. Jeong BS, Budai JD, Norton DP, "Epitaxial stabilization of single crystal anatase films via reactive sputter deposition," *Thin Solid Films* 422, (2002), 166-169.
258. Ivill M, Patel M, Kim K, Bae H, Pearton SJ, Norton DP, Budai JD, "Epitaxial growth of CeO<sub>2</sub> on (100) InP using reactive r.f. magnetron sputtering," *Applied Physics A (Materials Science Processing)* 75, (2002), 699-702.
259. Ip K, Baik KH, Overberg ME, Lambers ES, Heo YW, Norton DP, Pearton SJ, Ren F, Zavada J, "Effect of high-density plasma etching on the optical properties and surface stoichiometry of ZnO," *Applied Physics Letters* 81, (2002), 3546-3548.
260. Ip K, Overberg ME, Heo YW, Norton DP, Pearton SJ, Kucheyev SO, Jagadish C, Williams JS, Wilson RG, Zavada J, "Thermal stability of ion-implanted hydrogen in ZnO," *Applied Physics Letters* 81, (2002), 3996-3998.

261. Heo YW, Varadarajan V, Kaufman M, Kim K, Norton DP, Ren F, Fleming PH, "Site-specific growth of ZnO nanorods using catalysis-driven molecular-beam epitaxy," *Applied Physics Letters* 81, (2002), 3046-3048.
262. Chau-Yun Y, Babcock SE, Ichinose A, Goyal A, Kroeger DM, Lee DF, List FA, Norton DP, Mathis JE, Paranthaman M, "Microstructure of pulsed laser deposited  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films on yttria-stabilized zirconia/ $\text{CeO}_2$  buffered biaxially textured Ni substrates," *Physica C* 377, (2002), 333-347.
263. Norton DP, Kim K, Christen DK, Budai JD, Sales BC, Chisholm MF, Kroeger DM, Goyal A, Cantoni C, "(La,Sr) $\text{TiO}_3$  as a conductive buffer for RABiTS coated conductors," *Physica C* 372-376, (2002), 818-820.
264. Lee YE, Norton DP, Budai JD, Rack, Peterson J, Potter MD, "Photo- and Low-Voltage Cathodoluminescence in Lithium Zinc Gallate Blue and Green Thin-Film Phosphors," *Journal of Applied Physics* 91, (2002), 2974-2977.
265. Sigman J, Norton DP, Christen HM, Fleming PH, Boatner LA, "Antiferroelectric behavior in symmetric  $\text{KNbO}_3/\text{KTaO}_3$  superlattices," *Physical Review Letters* 88, (2002), 097601/1-4.
266. Norton DP, Pearton SJ, Christen HM, Budai JD, "Hydrogen-assisted pulsed-laser deposition of epitaxial  $\text{CeO}_2$  films on (001) InP," *Applied Physics Letters* 80, (2002), 106-108.
267. Norasethekul S, Park PY, Baik KH, Lee KP, Shin JH, Jeong BS, Norton DP, Pearton SJ, "Etch characteristics of  $\text{HfO}_2$  films on Si substrates," *Applied Surface Science* 187, (2002), 77-83.
268. Norton DP, Park C, Lee YE, Budai JD, "Strontium silicide termination and silicate epitaxy on (001) Si," *Journal of Vacuum Science & Technology B (Microelectronics and Nanometer Structures)* 20, (2002), 257-262.
269. Norasethekul S, Park PY, Baik KH, Lee KP, Shin JH, Jeong BS, Shishodia V, Lambers ES, Norton DP, Pearton SJ, "Dry etch chemistries for  $\text{TiO}_2$  thin films," *Applied Surface Science* 185, (2001), 27-33.
270. Cantoni C, Christen DK, Feenstra R, Goyal A, Ownby GW, Zehner DM, Norton DP, "Reflection high-energy electron diffraction studies of epitaxial oxide seed-layer growth on rolling-assisted biaxially textured substrate Ni(001): The role of surface structure and chemistry," *Applied Physics Letters* 79, (2001), 3077-3079.
271. Lee YE, Norton DP, Budai JD, Wei Y, "Enhanced ultraviolet photoconductivity in semiconducting  $\text{ZnGa}_2\text{O}_4$  thin films," *Journal of Applied Physics* 90, (2001), 3863-3866.
272. Goyal A, Lee DF, List FA, Specht ED, Feenstra R, Paranthaman M, Cui X, Lu SW, Martin PM, Kroeger DM, Norton DP, Park C, Verebelyi DT, Thompson JR, Williams RK, Aytug T, Cantoni C, "Recent progress in the fabrication of high-Jc tapes by epitaxial deposition of YBCO on RABiTS," *Physica C* 357-360, (2001), 903-913.
273. Christen HM, Zhai HY, Cantoni C, Paranthaman M, Sales BC, Rouleau C, Norton DP, Christen DK, Lowndes DH, "Superconducting magnesium diboride films with  $T_c$  approximately=24 K grown by pulsed laser deposition with in situ anneal," *Physica C* 353, (2001), 157-161.
274. Cantoni C, Aytug T, Verebelyi DT, Paranthaman M, Specht ED, Norton DP, Christen DK, "Conductive buffer layers and overlayers for the thermal stability of coated conductors," *IEEE Transactions on Applied Superconductivity* 11, (2001), 3309-3312.
275. Lee YE, Norton DP, Park C, Rouleau CM, "Blue photoluminescence in  $\text{ZnGa}_2\text{O}_4$  thin-film phosphors," *Journal of Applied Physics* 89, (2001), 1653-1656.
276. Paranthaman M, Park C, Cui X, Goyal A, Lee DF, Martin PM, Chirayil TG, Verebelyi DT, Norton DP, Christen DK, Kroeger DM, " $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$ -coated conductors with high engineering current density," *Journal of Materials Research* 15, (2000), 2647-2652.
277. Park C, Norton DP, Lee DF, Verebelyi DT, Goyal A, Christen DK, Budai JD, "Epitaxial yttria-stabilized zirconia on biaxially-textured (001) Ni for YBCO coated conductor," *Physica C* 341-348, 2000, 2481-2482.

278. Holzapfel B, Verebelyi D, Cantoni C, Paranthaman M, Sales B, Feenstra R, Christen D, Norton DP, "Low angle grain boundary transport properties of undoped and doped Y123 thin film bicrystals," *Physica C* 341-348, (2000), 1431-1434.
279. Salluzzo M, Palomba F, Pica G, Andreone A, Maggio-Aprile L, Fischer O, Cantoni C, Norton DP, "Role of Nd/Ba disorder on the penetration depth of  $\text{Nd}_{1+x}\text{Ba}_{2-x}\text{Cu}_3\text{O}_{7-\delta}$  thin films," *Physical Review Letters* 85, (2000), 1116-1119.
280. Lee YE, Norton DP, Budai JD, Rack PD, Potter MD, "Photo- and cathodoluminescence characteristics of blue-light-emitting epitaxial  $\text{Sr}_2\text{CeO}_4$  thin-film phosphors," *Applied Physics Letters* 77, (2000), 678-680.
281. Christen HM, Harshavardhan KS, Chisholm MF, Specht ED, Budai JD, Norton DP, Boatner LA, Pickering IJ, "The effect of size, strain, and long-range interactions on ferroelectric phase transitions in  $\text{KTaO}_3/\text{KNbO}_3$  superlattices studied by X-ray, EXAFS, and dielectric measurements," *Journal of Electroceramics* 4, (2000), 279-287.
282. Lee YE, Norton DP, Budai JD, Rouleau CM, Park JW, "Epitaxial growth and luminescent properties of Mn -activated  $\text{ZnGa}_2\text{O}_4$  films," *Journal of Electroceramics* 4, (2000), 293-297.
283. Park C, Norton DP, Verebelyi DT, Christen DK, Budai JD, Lee DF, Goyal A, "Nucleation of epitaxial yttria-stabilized zirconia on biaxially textured (001) Ni for deposited conductors," *Applied Physics Letters* 76, (2000), 2427-2429.
284. Norton DP, Budai JD, Chisholm MF, "Hydrogen-assisted pulsed-laser deposition of (001)  $\text{CeO}_2$  on (001) Ge," *Applied Physics Letters* 76, (2000), 1677-1679.
285. Aytug T, Wu JZ, Cantoni C, Verebelyi DT, Specht ED, Paranthaman M, Norton DP, Christen DK, Ericson RE, Thomas CL, "Growth and superconducting properties of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films on conductive  $\text{SrRuO}_3$  and  $\text{LaNiO}_3$  multilayers for coated conductor applications," *Applied Physics Letters* 76, (2000), 760-762.
286. Yang CY, Pashitski A, Polyanskii A, Larbalestier DC, Babcock SE, Goyal A, List FA, Park C, Paranthaman M, Norton DP, Lee DF, Kroeger DM, "Microstructural homogeneity and electromagnetic connectivity of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  grown on rolling-assisted biaxially textured coated conductor substrates," *Physica C* 329, (2000), 114-120.
287. Cantoni C, Norton DP, Christen DK, Goyal A, Kroeger DM, Verebelyi DT, Paranthaman M, "Transport and structural characterization of epitaxial  $\text{Nd}_{1+x}\text{Ba}_{2-x}\text{Cu}_3\text{O}_y$  thin films grown on  $\text{LaAlO}_3$  and Ni metal substrates by pulsed-laser deposition," *Physica C* 324, (1999), 177-186.
288. Kerchner HR, Norton DP, Goyal A, Budai JD, Christen DK, Kroeger DM, Paranthaman M, Lee DF, List FA, Feenstra R, Brandt EH, "Alternating transport-current flow in superconductive films: The role of a geometrical barrier to vortex motion," *Physical Review B* 60, (1999), 6878-6883.
289. Sun EY, Goyal A, Norton DP, Park C, Kroeger DM, Paranthaman M, Christen DK, "High-resolution transmission electron microscopy/analytical electron microscopy characterization of epitaxial oxide multilayers fabricated by laser ablation on biaxially textured Ni," *Physica C* 321, (1999), 29-38.
290. Park C, Norton DP, Christen DK, Verebelyi DT, Feenstra R, Budai JD, Goyal A, Lee DF, Specht ED, Kroeger DM, Paranthaman M, "Long length fabrication of YBCO on rolling assisted biaxially textured substrates (RABiTS) using pulsed laser deposition," *IEEE Transactions on Applied Superconductivity* 9, (1999), 2276-2279.
291. Goyal A, Ren SX, Specht ED, Kroeger DM, Feenstra R, Norton D, Paranthaman M, Lee DF, Christen DK, "Texture Formation and Grain Boundary Networks in Rolling Assisted Biaxially Textured Substrates (RABiTS) and in Epitaxial YBCO Films on Such Substrates," *Micron* 30, (1999), 463-478.
292. Lee YE, Norton DP, Budai JD, "Enhanced photoluminescence in epitaxial  $\text{ZnGa}_2\text{O}_4:\text{Mn}$  thin-film phosphors using pulsed-laser deposition," *Applied Physics Letters* 74, (1999), 3155-3157.
293. Norton DP, Park C, Budai JD, Pennycook SJ, Prouteau C, "Plume-induced stress in pulsed-laser deposited  $\text{CeO}_2$  films," *Applied Physics Letters* 74, (1999), 2134-2136.

294. Qing H, Christen DK, Feenstra R, Norton DP, Paranthaman M, Specht ED, Lee DF, Goyal A, Kroeger DM, "Growth of biaxially oriented conductive  $\text{LaNiO}_3$  buffer layers on textured Ni tapes for high- $T_c$ -coated conductors," *Physica C* 314, (1999), 105-111.
295. Lee DF, Paranthaman M, Mathis JE, Goyal A, Kroeger DM, Specht ED, Williams RK, List FA, Martin PM, Park C, Norton DP, Christen DK, "Alternative buffer architectures for high critical current density YBCO superconducting deposits on rolling assisted biaxially-textured substrates", *Japanese Journal of Applied Physics (Letters)* 38, (1999), L178-L180.
296. Cantoni C, Norton DP, Kroeger DM, Paranthaman M, Christen DK, Verebelyi D, Feenstra R, Lee DF, Specht ED, Boffa V, Pace S, "Phase stability for the in situ growth of  $\text{Nd}_{1+x}\text{Ba}_{2-x}\text{Cu}_3\text{O}_y$  films using pulsed-laser deposition," *Applied Physics Letters* 74, (1999), 96-98.
297. Babcock SE, Yang CY, Reeves JL, Wu Y, Pashitski AE, Polyanskii A, Larbalestier DC, Goyal A, Paranthaman M, List FA, Norton DP, Kroeger DM, Ichinose A, "Electromagnetic connectivity and microstructure in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films on rolling-assisted biaxially-textured substrates," *Materials Science Forum* 294-296, (1999), 165-168.
298. Norton DP, Park C, Prouteau C, Christen DK, Chisholm MF, Budai JD, Pennycook SJ, Goyal A, Sun EY, Lee DF, Kroeger DM, Specht E, Paranthaman M, Browning ND, "Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films on rolled-textured metals for high-temperature superconducting applications," *Materials Science & Engineering B* 56, (1998), 86-94.
299. Yang C-Y, Babcock SE, Goyal A, Paranthaman M, List FA, Norton DP, Kroeger DM, Ichinose A, "Microstructure of electron-beam-evaporated epitaxial yttria-stabilized zirconia/ $\text{CeO}_2$  bilayers on biaxially textured Ni tape," *Physica C* 307, (1998), 87-98.
300. Goyal A, List FA, Mathis J, Paranthaman M, Specht ED, Norton DP, Park C, Lee DF, Kroeger DM, Christen DK, Budai JD, Martin PM, "High critical current density  $\text{YBa}_2\text{Cu}_3\text{O}_x$  tapes using the RABiTs approach," *Journal of Superconductivity* 11, (1998), 481-487.
301. Park C, Norton DP, Budai JD, Christen DK, Verebelyi D, Feenstra R, Lee DF, Goyal A, Kroeger DM, Paranthaman M, "Bend strain tolerance of critical currents for  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films deposited on rolled-textured (001)Ni," *Applied Physics Letters* 73, (1998), 1904-1906.
302. List FA, Goyal A, Paranthaman M, Norton DP, Specht ED, Lee DF, Kroeger DM, "High  $J_c$  YBCO films on biaxially textured Ni with oxide buffer layers deposited using electron beam evaporation and sputtering," *Physica C* 302, (1998), 87-92.
303. Christen H-M, Specht ED, Norton DP, Chisholm MF, Boatner LA, "Long-range ferroelectric interactions in  $\text{KTaO}_3/\text{KNbO}_3$  superlattice structures," *Applied Physics Letters* 72, (1998), 2535-2537.
304. Specht ED, Christen H-M, Norton DP, Boatner LA, "X-ray diffraction measurement of the effect of layer thickness on the ferroelectric transition in epitaxial  $\text{KTaO}_3/\text{KNbO}_3$  multilayers," *Physical Review Letters* 80, (1998), 4317-4320.
305. Browning ND, Buban JP, Nellist PD, Norton DP, Chisholm MF, Pennycook SJ, "The atomic origins of reduced critical currents at [001] tilt grain boundaries in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films," *Physica C* 294, (1998), 183-193.
306. Christen H-M, Norton DP, Gea LA, Boatner LA, "Pulsed laser deposition of solid-solution films using segmented targets," *Thin Solid Films* 312, (1998), 156-159.
307. Goodrich RG, Adams PW, Lowndes DH, Norton DP, "Origin of the variation of  $T_c$  with superconducting layer thickness and separation in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}/\text{PrBa}_2\text{Cu}_3\text{O}_7$  superlattices," *Physical Review B* 56, (1997), R14299-R14302.
308. Goyal A, Norton DP, Kroeger DM, Christen DK, Paranthaman M, Specht ED, Budai JD, He Q, Saffian B, List FA, Lee DF, Hatfield E, Martin PM, Klabunde CE, Mathis J, Park C, "Conductors with controlled grain boundaries: an approach to the next generation, high temperature superconducting wire," *Journal of Materials Research* 12, (1997), 2924-2940.
309. Kerchner HR, Norton DP, Goyal A, Budai JD, Christen DK, Kroeger DM, Specht ED, He Q, Paranthaman M, Lee DF, Sales BC, List FA, Feenstra R, "Alternating current losses in biaxially textured  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films deposited on Ni tapes," *Applied Physics Letters* 71, (1997), 2029-2031.

310. Paranthaman M, Goyal A, List FA, Specht ED, Lee DF, Martin PM, He Q, Christen DK, Norton DP, Budai JD, Kroeger DM, "Growth of biaxially textured buffer layers on rolled-Ni substrates by electron beam evaporation," *Physica C* 275, (1997), 266-272.
311. He Q, Christen DK, Budai JD, Specht ED, Lee DF, Goyal A, Norton DP, Paranthaman M, List FA, Kroeger DM, "Deposition of biaxially-oriented metal and oxide buffer-layer films on textured Ni tapes: new substrates for high-current, high-temperature superconductors," *Physica C* 275, (1997), 155-161.
312. Christen H-M, Boatner LA, Budai JD, Chisholm MF, Gea LA, Norton DP, Gerber C, Urbanik M, "Semiconducting epitaxial films of metastable  $\text{SrRu}_{0.5}\text{Sn}_{0.5}\text{O}_3$  grown by pulsed laser deposition," *Applied Physics Letters* 70, (1997), 2147-2149.
313. Bjoernander M, Magnusson J, Svedlindh P, Nordblad P, Norton DP, Wellhofer F, "Frequency dependence of the AC-sheet conductivity in thin  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films," *Physica C* 272, (1996), 326-334.
314. Norton DP, Lowndes DH, Budai JD, Chakoumakos BC, "Artificially-layered and metastable thin-film materials development utilizing pulsed-laser deposition," *Materials Science & Engineering B (Solid-State Materials for Advanced Technology)* B41, (1996), 374-378.
315. Norton DP, Goyal A, Budai JD, Christen DK, Kroeger DM, Specht ED, He Q, Saffian B, Paranthaman M, Klabunde CE, Lee DF, Sales BC, List FA, "Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_7$  on biaxially textured nickel (001): an approach to superconducting tapes with high critical current density," *Science* 274, (1996), 755-757.
316. Goyal A, Norton DP, Christen DK, Specht ED, Paranthaman M, Kroeger DM, Budai JD, He Q, List FA, Feenstra R, Kerchner HR, Lee DF, Hatfield E, Martin PM, Mathis J, Park C, "Epitaxial superconductors on rolling-assisted biaxially-textured substrates (RABiTS): a route towards high critical current density wire," *Applied Superconductivity* 4, (1996), 403-427.
317. Goyal A, Norton DP, Budai JD, Paranthaman M, Specht ED, Kroeger DM, Christen DK, He Q, Saffian B, List FA, Lee DF, Martin PM, Klabunde CE, Hartfield E, Sikka VK, "High critical current density superconducting tapes by epitaxial deposition of  $\text{YBa}_2\text{Cu}_3\text{O}_x$  thick films on biaxially textured metals," *Applied Physics Letters* 69, (1996), 1795-1797.
318. Lowndes DH, Geohegan DB, Puretzky AA, Norton DP, Rouleau CM, "Synthesis of novel thin-film materials by pulsed laser deposition," *Science* 273, (1996), 898-903.
319. Zhu S, Norton DP, Chamberlain JE, Shahedipour F, White HW, "Evidence of apical oxygen in artificially superconducting  $\text{SrCuO}_2\text{-BaCuO}_2$  thin films: a Raman characterization," *Physical Review B* 54, (1996), 97-100.
320. Christen DK, Norton DP, Goyal A, Budai JD, He Q, Klabunde CE, Kroeger DM, Paranthaman M, Saffian B, Specht ED, "Biaxially Oriented Metallic Tape Substrates for High-Temperature Superconductors," *Czechoslovak Journal Of Physics* 46, (1996) 1531-1532.
321. Norton DP, Chakoumakos BC, Lowndes DH, Budai JD, "Formation of artificially-layered high-temperature superconductors using pulsed-laser deposition," *Applied Surface Science* 96-98, (1996), 672-678.
322. Christen H-M, Boatner LA, Budai JD, Chisholm MF, Gea LA, Marrero PJ, Norton DP, "The growth and properties of epitaxial  $\text{KNbO}_3$  thin films and  $\text{KNbO}_3/\text{KTaO}_3$  superlattices," *Applied Physics Letters* 68, (1996), 1488-1490.
323. Wang ZL, Lowndes DH, Christen DK, Kroeger DM, Klabunde CE, Norton DP, "Growth-induced columnar defects in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  thin films grown on miscut mosaic  $\text{LaAlO}_3$  (001)," *Physica C* 252, (1995), 125-137.
324. Norton DP, Chakoumakos BC, Budai JD, Thompson JR, Lowndes DH, "Formation and properties of artificially-layered  $\text{SrCuO}_2/\text{BaCuO}_2$  superconducting superlattices," *Journal of Superconductivity* 8, (1995), 519-522.
325. Jones EC, Norton DP, Sales BC, Lowndes DH, Feenstra R, "Phonon-drag thermopower correlations to  $T_c$  in superconducting  $\text{Sr}_x\text{Nd}_{1-x}\text{CuO}_{2-\delta}$ : evidence for phonon-mediated pairing in the high- $T_c$  parent compounds," *Physical Review B* 52, (1995), R743-R746.

326. Patapis SK, Jones EC, Phillips JM, Norton DP, Lowndes DH, "Fluctuation conductivity of YBaCuO epitaxial thin films grown on various substrates," *Physica C* 244, (1995), 198-206.
327. Lowndes DH, Christen DK, Klabunde CE, Wang ZL, Kroeger DM, Budai JD, Zhu S, Norton DP, "Strong, asymmetric flux pinning by miscut-growth-initiated columnar defects in epitaxial YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> films," *Physical Review Letters* 74, (1995), 2355-2358.
328. Norton DP, Budai JD, Lowndes DH, Chakoumakos BC, "SrCuO<sub>2</sub>/(Sr,Ca)CuO<sub>2</sub> superlattice growth by pulsed-laser deposition," *Applied Physics Letters* 65, (1994), 2869-2871.
329. Zhu S, Lowndes DH, Budai JD, Norton DP, "In-plane aligned CeO<sub>2</sub> films grown on amorphous SiO<sub>2</sub> substrates by ion-beam assisted pulsed laser deposition," *Applied Physics Letters* 65, (1994), 2012-2014.
330. Lowndes DH, Norton DP, "Experimental investigations of superconductivity in quasi-two-dimensional epitaxial copper oxide superlattices and trilayers," *Journal of Electronic Materials* 23, (1994), 841-847.
331. Norton DP, Chakoumakos BC, Budai JD, Lowndes DH, Sales BC, Thompson JR, Christen DK, "Superconductivity in SrCuO<sub>2</sub>-BaCuO<sub>2</sub> superlattices: formation of artificially layered superconducting materials," *Science* 265, (1994), 2074-2077.
332. Jones EC, Norton DP, Christen DK, Lowndes DH, "Anomalous T inverse Hall mobilities observed in Sr<sub>1-x</sub>CuO<sub>2</sub> and Sr<sub>0.9</sub>Nd<sub>0.1</sub>CuO<sub>2</sub> infinite-layer thin films," *Physical Review Letters* 73, (1994), 166-169.
333. Norton DP, Lowndes DH, Sales BC, Budai JD, Jones EC, Chakoumakos BC, "Transport and structural properties of Pr<sub>1-x</sub>Ca<sub>x</sub>Ba<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> thin films grown by pulsed-laser deposition," *Physical Review B* 49, (1994), 4182-4188.
334. Norton DP, Chakoumakos BC, Budai JD, Jones EC, Christen DK, Lowndes DH, "Properties of doped and undoped (Ca,Sr)CuO<sub>2</sub> thin films," *Bulletin of the Electrotechnical Laboratory* 58, (1994), 69-73.
335. Norton DP, Chakoumakos BC, Jones EC, Christen DK, Lowndes DH, "Anomalous transport and structural properties of Sr<sub>1-x</sub>CuO<sub>2-δ</sub> thin films," *Physica C* 217, (1993), 146-150.
336. Norton DP, Lowndes DH, "Transport properties of ultrathin YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> layers: evidence for two-dimensional vortex fluctuations," *Physical Review B* 48, (1993), 6460-6464.
337. Norton DP, Lowndes DH, "Enhanced superconducting properties in ultrathin YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> layers," *Applied Physics Letters* 63, (1993), 1432-1434.
338. Browning ND, Chisholm MF, Pennycook SJ, Norton DP, Lowndes DH, "Correlation between hole depletion and atomic structure at high-angle grain boundaries in YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub>," *Physica C* 212, (1993), 185-190.
339. Pennycook SJ, Feenstra R, Chisholm MF, Norton DP, "Amorphization and recrystallization of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> by ion implantation and annealing," *Nuclear Instruments & Methods in Physics Research B* 79, (1993), 641-644.
340. Norton DP, Chakoumakos BC, Budai JD, Lowndes DH, "Epitaxial growth of single-crystal Ca<sub>1-x</sub>Sr<sub>x</sub>CuO<sub>2</sub> thin films by pulsed-laser deposition," *Applied Physics Letters* 62, (1993), 1679-1681.
341. Norton DP, Budai JD, Chakoumakos BC, Feenstra R, "Epitaxial growth of Ba<sub>1-x</sub>K<sub>x</sub>BiO<sub>3</sub> thin films by pulsed-laser deposition," *Applied Physics Letters* 62, (1993), 414-416.
342. Chisholm MF, Pennycook SJ, Norton DP, Browning ND, "Atomic structure of grain boundaries in YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> as observed by Z-contrast imaging," *Interface Science* 1, (1993), 339-345.
343. Zhu S, Christen DK, Klabunde CE, Thompson JR, Jones EC, Feenstra R, Lowndes DH, Norton DP, "Superconducting transport properties of epitaxial YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> thin films: a consistent description based on thermally-activated flux motion," *Physical Review B* 46, (1992), 5576-5580.
344. Carlos WE, Kaplan R, Lowndes DH, Norton DP, "Microwave properties of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> / PrBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> superlattices," *Physica C* 198, (1992), 247-255.
345. Jones EC, Christen DK, Klabunde CE, Thompson JR, Norton DP, Feenstra R, Lowndes DH, Budai JD, "Flux creep in the Josephson mixed state of granular-oriented YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> thin films," *Applied Physics Letters* 59, (1991), 3183-3185.

346. Norton DP, Lowndes DH, Zheng X-Y, Zhu S, Warmack RJ, "Scanning tunneling microscopy of pulsed-laser-deposited  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  epitaxial thin films: surface microstructure and growth mechanism," *Physical Review B* 44, (1991), 9760-9763.
347. Norton DP, Lowndes DH, Pennycook SJ, Budai JD, "Depression and broadening of the superconducting transition in superlattices based on  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ : influence of the barrier layers," *Physical Review Letters* 67, (1991), 1358-1361.
348. Pennycook SJ, Chisholm MF, Jesson DE, Norton DP, Lowndes DH, Feenstra R, Kerchner HR, Thomson JO, "Interdiffusion growth mechanisms, and critical currents in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  /  $\text{PrBa}_2\text{Cu}_3\text{O}_{7-\delta}$  superlattices," *Physical Review Letters* 67, (1991), 765-768.
349. Budai JD, Chisholm MF, Feenstra R, Lowndes DH, Norton DP, Boatner LA, Christen DK, "Preferred alignment of twin boundaries in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films and  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  /  $\text{PrBa}_2\text{Cu}_3\text{O}_{7-\delta}$  superlattices on  $\text{SrTiO}_3$ ," *Applied Physics Letters* 58, (1991), 2174-2176.
350. Norton DP, Lowndes DH, Sales BC, Budai JD, Chakoumakos BC, Kerchner HR, "Superconductivity and hole doping in  $\text{Pr}_{0.5}\text{Ca}_{0.5}\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films," *Physical Review Letters* 66, (1991), 1537-1540.
351. Norton DP, Lowndes DH, Budai JD, Christen DK, Jones EC, Lay KW, Tkaczyk JE, "High critical current densities in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films on polycrystalline zirconia," *Applied Physics Letters* 57, (1990), 1164-1166.
352. Lowndes DH, Norton DP, Budai JD, "Superconductivity in nonsymmetric epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  /  $\text{PrBa}_2\text{Cu}_3\text{O}_{7-\delta}$  superlattices: the superconducting behavior of Cu-O bilayers," *Physical Review Letters* 65, (1990), 1160-1163.
353. Christen DK, Klabunde CE, Feenstra R, Lowndes DH, Norton D, Budai JD, Kerchner HR, Thompson JR, Boatner LA, Narayan J, Singh R, "Large, orientation-dependent enhancements of critical currents in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  epitaxial thin films: evidence for intrinsic flux pinning?," *Physica B* 165-166, (1990), 1415-1416.
354. Norton DP, Lowndes DH, Budai JD, Christen DK, Jones EC, McCamy JW, Ketcham TD, St. Julien D, Lay KW, Tkaczyk JE, "Y-Ba-Cu-O thin films grown on rigid and flexible polycrystalline yttria-stabilized zirconia by pulsed laser ablation," *Journal of Applied Physics* 68, (1990), 223-227.
355. Norton DP, Ajmera PK, "Mass spectroscopic study of photolytic decomposition of triethylgallium and arsine," *Materials Letters* 9, (1990), 321-324.
356. Norton DP, Ajmera PK, "Ultraviolet light-driven epitaxial growth of gallium arsenide at reduced substrate temperatures," *Journal of Electronic Materials* 19, (1990), 367-374.
357. Norton DP, Ajmera PK, "Preparation and properties of arsenic thin films deposited by mercury-photosensitized chemical vapor deposition," *Materials Letters* 9, (1989), 41-47.
358. Norton DP, Ajmera PK, "Mercury-sensitized photochemical vapor deposition of gallium arsenide on quartz," *Journal of the Electrochemical Society* 136, (1989), 2371-2376.
359. Norton DP, Ajmera PK, "Spatially selective photochemical vapor deposition of GaAs on synthetic fused silica," *Applied Physics Letters* 53, (1988), 595-597.

### **Published Refereed Conference Proceedings**

Author of over 100 refereed articles in conference proceedings

1. Cook CJ, Khan S, Sanders GD, Wang X, Reitze DH, Jho YD, Heo Y-W, Erie J-M, Norton DP, Stanton CJ, "Ultrafast carrier relaxation and diffusion dynamics in ZnO," *Proceedings of SPIE -- Volume 7603 - Oxide-based Materials and Devices*, (2010), 760304/1-14.
2. Pearton SJ, Ren F, Wang Y-L, Chu BH, Chen KH, Chang CY, Lim W, Lin J, Norton DP, "Recent advances in wide bandgap semiconductor biological and gas sensors", *Materials Research Society Symposium Proceedings Volume 1202*, (2010), 3-14.
3. Pearton SJ, Lim W, Douglas E, Ren F, Heo YW, Norton DP, "Oxide thin film transistors on novel flexible substrates," *Proceedings of SPIE -- Volume 7603 - Oxide-based Materials and Devices*,

- (2010), 760315/1-11.
4. Chu BH, Chang CY, Leu LC, Norton D, Lee J, Lele T, Jiang P, Tseng Y, Pearton SJ, Gupte A, Keselowsky B, Ren F, "Hydrothermally grown ZnO nanorods as cell adhesion control coating for implant devices," 50th State-of-the-Art Symposium on Compound Semiconductors, SOTAPOCS 50 and 3rd International Symposium on Processes at the Semiconductor-Solution Interface, PSSI 3 - 215th ECS Meeting, ECS Transactions 19, (2009), 147-157.
  5. Norton DP, Kim HS, Erie JM, Pearton SJ, Wang YL, Ren F, "P-type ZnO thin films via phosphorus doping," Proceedings of SPIE -- Volume 6895, Zinc Oxide Materials and Devices III, Ferechteh H. Teherani, Cole W. Litton, Editors, (2008), 68950W/1-8
  6. Pearton SJ, Ren F, Lin J, Norton DP, "Wide-bandgap nanowire sensors," Proceedings of the SPIE Defense and Security Symposium, Vol. 6959 - Micro (MEMS) and Nanotechnologies for Space, Defense, and Security III, (2008), 695903/1-11
  7. Wang Y-L, Kim HS, Norton DP, Pearton SJ, Ren F, "Plasma-Enhanced Chemical Vapor Deposited SiN<sub>x</sub> and SiO<sub>2</sub> Passivation Effects on ZnO Heterojunction Light Emitting Diodes, 214th ECS Meeting, ECS Transactions 16, (2008), 81-86.
  8. Lim W, Wang Y-L, Lee J, Norton DP, Ren F, Pearton SJ, "High Performacne InGaZnO<sub>4</sub>-based Thin film Transistors Fabricated at Low Temperature," 214th ECS Meeting, ECS Transactions 16, (2008), 303-308.
  9. Wang Y-L, Kim HS, Norton DP, Pearton SJ, Ren F, "Demonstration of hydrogen effects on ZnO LEDs in current-voltage and electroluminescence characteristics," 48th State-of-the-Art Program on Compound Semiconductors, (SOTAPOCs 48) and the ZnO, InZnO, and InGaO Related Materials and Devices for Electronic and Photonic Applications - 213th ECS Meeting, ECS Transactions 13, (2008), 169-176.
  10. Wang Y-L, Lim W, Covert LN, Anderson TJ, Lin J, Pearton SJ, Norton DP, Ren F, "Room temperature deposited enhancement mode and depletion mode indium zinc oxide thin film transistors," 48th State-of-the-Art Program on Compound Semiconductors, (SOTAPOCs 48) and the ZnO, InZnO, and InGaO Related Materials and Devices for Electronic and Photonic Applications - 213th ECS Meeting, ECS Transactions 13, (2008), 159-164.
  11. Norton DP, Kim HS, Pearton SJ, Wang YL, Ren F, "P-type doping and light emitting junction formation in ZnO," 48th State-of-the-Art Program on Compound Semiconductors, (SOTAPOCs 48) and the ZnO, InZnO, and InGaO Related Materials and Devices for Electronic and Photonic Applications - 213th ECS Meeting, ECS Transactions 13, (2008), 115-133.
  12. Pearton SJ, Kang BS, Gila BP, Norton DP, Tien LC, Kryliouk O, Wang HT, Ren F, Heo YW, "Wide bandgap nanowire sensors," Proceedings of SPIE -- Volume 6769, Nanosensing: Materials, Devices, and Systems III, M. Saif Islam, Achyut K. Dutta, Editors, (2007), 67690A/1-11.
  13. Pearton SJ, Kang BS, Gila BP, Norton DP, Tien LC, Kryliouk O, Wang HT, Ren F, Heo Y-W, "GaN, ZnO and InN nanowires for gas sensing systems," Proceedings of the 2007 TMS Annual Meeting, (2007), 55-64.
  14. Pearton SJ, Norton DP, Ivill MP, Hebard AF, Chen WM, Buyanova IA, Zavada JM, "Transition metal doped ZnO for spintronics," MRS Symp. On Novel Semiconductor Materials for Room-Temperature Ferromagnetism, Materials Research Society Symposium Proceedings 999, (2007), 43-54.
  15. Wright JS, Khannat R, Stafford L, Gila BP, Norton DP, Pearton SJ, Ren F, Kravchenko II, "Ir/Au ohmic contacts on bulk, single-crystal n-type ZnO," Functional Interfaces in Oxides - 2007 MRS Spring Meeting; Materials Research Society Symposium Proceedings 1000, (2007), 25-32.
  16. Pearton SJ, Ren F, Kang BS, Wang HT, Gila BP, Norton DP, Tien LC, Chancellor TJ, Lele TP, Tseng Y, Lin J, "GaN and ZnO-based sensors for bio, nuclear materials and chemical detection," 47th State-of-the-Art Program on Compound Semiconductors (SOTAPOCS 47) and the 8th Symposium on Wide Bandgap Semiconductor Materials and Devices - 212th ECS Meeting; ECS Transactions 11, (2007), 259-270.



17. Pearton SJ, Chen JJ, Lim WT, Ren F, Norton DP, "Wet chemical etching of wide bandgap semiconductors-gan, ZnO and SiC," 46th State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLVI) and the 2nd International Symposium on Processes at the Semiconductor-Solution Interface - 211th ECS Meeting; ECS Transactions 6, (2007), 501-512.
18. Pearton SJ, Kang BS, BP Gila, Norton DP, Kryliouk O, Ren F, Heo Y-W, Chang C-Y, Chi G-C, Wang W-M, Chen L-C, "Wide bandgap semiconductor nanowires for sensing applications," 46th State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLVI) and the 2nd International Symposium on Processes at the Semiconductor-Solution Interface - 211th ECS Meeting, ECS Transactions 6, (2007), 115-126.
19. Tien LC, Norton DP, Kang BS, Wang HT, Ren F, Lin J, Pearton SJ," ZnO nanowires for sensing and device applications," 1<sup>st</sup> Nanoscale One-Dimensional Electronic and Photonic Devices, NODEPD - 212th ECS Meeting ECS Transactions 11, (2007), 23-33.
20. Wright JS, Khanna R, Voss LF, Stafford L, Gila BP, Norton DP, Pearton SJ, Ren F, Kravchenko I, "Thermally stable novel metal contacts on bulk, single-crystal n-type ZnO," 46th State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLVI) and the 2nd International Symposium on Processes at the Semiconductor-Solution Interface - 211th ECS Meeting, ECS Transactions 6, (2007), 279-284.
21. Lim W, Stafford L, Gila B, Norton D, Pearton S, Ren F, Song J, Park J-S, Heo Y-W, Lee J-H, Kim J-J, "High Density Inductively Coupled Plasma Etching of Zinc-Oxide(ZnO) and Indium-Zinc Oxide(IZO)," 46th State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLVI) and the 2nd International Symposium on Processes at the Semiconductor-Solution Interface - 211th ECS Meeting, ECS Transactions 6, (2007), 239-247.
22. Wright J, Stafford L, Gila BP, Norton DP, Pearton SJ, Wang HT, Ren F, "Effect of cryogenic temperature deposition of various metal contacts to bulk, single-crystal n-type ZnO," Materials Research Society Symposium Proceedings 957 (Zinc Oxide and Related Materials), (2007), 143-148.
23. Pearton SJ, Tien LC, Kim HS, Norton DP, Chen JJ, Wang HT, Kang BS, Ren F, Lim WT, Wright J, Khanna R, Voss LF, Stafford L, Jun J, Lin J, "Development of thin film and nanorod ZnO-based LEDs and sensors," Materials Research Society Symposium Proceedings 957 (Zinc Oxide and Related Materials), (2007), 3-14.
24. Rawal, Seemant; Kim, KeeChan; Norton, David P.; Anderson, Tim; McElwee-White, Lisa., "Properties of Ge/HfNx bilayer as a diffusion barrier for Cu metallization," Advanced Metallization Conference Proceedings, (2007), 245-250.
25. Li Y, Kim HS, Erie JM, Ren F, Pearton SJ, Norton DP, "Effect of argon annealing of phosphorus-doped ZnO and (Zn,Mg)O thin-films grown pulsed laser deposition," Proceedings of SPIE-The International Society for Optical Engineering 6337 (Sixth International Conference on Solid State Lighting, (2006), 633708/1-633708/9.
26. Jun J, Chou B, Lin J, Phipps A, Shengwen X, Ngo K, Johnson D, Kasyap A, Nishida T, Wang HT, Kang BS, Ren F, Tien LC, Sadik PW, Norton DP, Voss LF, Pearton SJ, "Low-power detection of hydrogen leakage using a self-powered wireless hydrogen sensor node," Proceedings of the AIChE 2006 Spring National Meeting, (2006), 24C/1-10.
27. Xie JQ, Dong JW, Osinsky A, Chow PP, Heo YW, Norton DP, Pearton SJ, Dong XY, Adelman C, Palmstrom CJ, "Growth of a-plane ZnO thin films on r-plane sapphire by plasma-assisted MBE," Materials Research Society Symposium Proceedings 891 (Progress in Semiconductor Materials V--Novel Materials and Electronic and Optoelectronic Applications), (2006), 407-412.
28. Osinsky AV, Dong JW, Xie JQ, Hertog B, Dabiran AM, Chow PP, Pearton SJ, Norton DP, Look DC, Schoenfeld W, Lopatiuk O, Chernyak L, Cheung M, Cartwright AN, Gerhold M, "ZnCdO/ZnMgO and ZnO/AlGaIn heterostructures for UV and visible light emitters," Materials Research Society Symposium Proceedings 891 (Progress in Semiconductor Materials V--Novel Materials and Electronic and Optoelectronic Applications), (2006), 371-379.
29. Li Y, Erie JM, Kim HS, Pearton SJ, Norton DP, Chen JJ, Ren F, "Synthesis and characterization of (Zn,Mg)O:P/ZnO heterostructures," Proceedings of SPIE-The International Society for Optical En-

- gineering 6122 (Zinc Oxide Materials and Devices), (2006), 61220R/1-10.
30. Chen J-J, Jang S, Anderson TJ, Ren F, Li YJ, Kim H-S, Rawal S, Gila BP, Norton DP, Pearton SJ, Osinsky A, Dong JW, Chu SNG, "Fabrication process of ZnO-based LEDs," State-of-the-Art Program on Compound Semiconductors XLIV 209th Electrochemical Society Meeting, ECS Transactions 2, (2006), 153-172.
  31. Lim W, Voss LF, Khanna R, Wright J, Gila BP, Norton DP, Pearton SJ, Ren F, "Comparison of ZnO dry etching in high density inductively coupled CH<sub>4</sub>/H<sub>2</sub> and C<sub>2</sub>H<sub>6</sub>/H<sub>2</sub>-based chemistries," State-of-the-Art Program on Compound Semiconductors XLIV 209th Electrochemical Society Meeting, ECS Transactions 2, (2006), 209-216.
  32. Wright JS, Khanna R, Norton DP, Pearton SJ, Ren F, Kravchenko I, "Thermally stable boride Ohmic contacts on n-ZnO," State-of-the-Art Program on Compound Semiconductors XLIV 209th Electrochemical Society Meeting, ECS Transactions 2, (2006), 173-179.
  33. Buyanova IA, Wang XJ, Chen WM, Izadifard M, Norton DP, Pearton SJ, Osinsky A, Dong JW, Dabiran A, "Optical characterization of Zn<sub>1-x</sub>Cd<sub>x</sub>O alloys grown by molecular-beam epitaxy," State-of-the-Art Program on Compound Semiconductors 45 (SOTAPOCS 45) -and- Wide Bandgap Semiconductor Materials and Devices 7 - 210th Electrochemical Society Meeting, ECS Transactions 3, (2006), 391-398.
  34. Jang S, Chen JJ, Ren F, Han S-Y, Norton DP, Pearton SJ, "ZnO light emitting diode simulation," State-of-the-Art Program on Compound Semiconductors XLIV 209th Electrochemical Society Meeting, ECS Transactions 2, (2006), 187-197.
  35. Heo Y-W, Kang BS, Tien LC, Kwon Y, LaRoche JR, Gila BP, Ren F, Pearton SJ, Norton DP, "Metal-oxide semiconductor field-effect transistors using single ZnO nanowire," Progress in Compound Semiconductor Materials IV-Electronic and Optoelectronic Applications (Materials Research Society Symposium Proceedings Vol. 829), (2005), 327-332.
  36. Norton DP, Heo YW, Tien LC, Ivill MP, Li Y, Kang BS, Ren F, Kelly J, Hebard AF, Pearton SJ, "ZnO spintronics and nanowire devices," Progress in Compound Semiconductor Materials IV-Electronic and Optoelectronic Applications. Symposium (Materials Research Society Symposium Proceedings Vol. 829), (2005), 339-350.
  37. Wang HT, Kang BS, Ren F, Fitch RC, Gillespie JK, Moser N, Jessen G, Jenkins T, Dettmer R, Via D, Crespo A, Lin J, Gila BP, Abernathy CR, Tien LC, Norton DP, Voss LF, Pearton SJ, "Hydrogen-induced reversible changes in drain current of Pt-gated AlGaIn/GaN high electron mobility transistors (HEMT)," 43rd State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLIII)and Nitride and Wide Bandgap Semiconductors for Sensors, Photonics, and Electronics VI Symposium - 208th Meeting of the Electrochemical Society, ECS Transactions 1, (2005), 274-283.
  38. Wang HT, Kang BS, Ren F, Jun J, Lin J, Tien LC, Sadik PW, Norton DP, Voss LF, Pearton SJ, Fitch RC, Gillespie JK, Moser N, Jessen G, Jenkins T, Dettmer R, Via D, Crespo A, "Highly sensitive hydrogen sensor using Pt nanoparticles coated ZnO single and multiple nanorods," 43rd State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLIII)and Nitride and Wide Bandgap Semiconductors for Sensors, Photonics, and Electronics VI Symposium - 208th Meeting of the Electrochemical Society, ECS Transactions 1, (2005), 238-247 .
  39. Han SY, Yang HS, Heo YW, Baik KH, Norton DP, Pearton SJ, Ren F, Osinsky, A, Dong JW, Hertog B, Dabiran AM, Chow PP, Chemyak L, Steiner T, Kao CJ, Chi GC, "Fabrication of ZnO/GaN hybrid light-emitting diodes," 43rd State-of-the-Art Program on Compound Semiconductors (SOTAPOCS XLIII)and Nitride and Wide Bandgap Semiconductors for Sensors, Photonics, and Electronics VI Symposium - 208th Meeting of the Electrochemical Society, ECS Transactions 1, (2005), 58-63.
  40. Lin J, EL Kouche A, Law ME, Ren F, Kang BS, Pearton SJ, Norton DP, Abernathy CR, "GaN-Based and ZnO Nanorod Sensors for Wireless Hydrogen Leak Detection," Proceedings of the State-Of-The-Art Programs On Compound Semiconductor at the 207<sup>th</sup> Meeting of the Electrochemical Society, Volume 4, (2005) 449-460.

41. Pearton SJ, Abernathy CR, Thaler GT, Frazier R, Norton DP, Kelly J, Rairigh R, Hebard AF, Park YD, Zavada J, "Wide bandgap materials for semiconductor spintronics," Progress in Compound Semiconductor Materials III - Electronic and Optoelectronic Applications Symposium (Materials Research Society Symposium Proceedings) 799, (2004), 287-298.
42. Holloway PH, Davidson MR, Shepherd ND, Kale A, Glass W, Harrison BS, Foley TJ, Reynolds JR, Schanze KS, Boncella JM, Norton DP, Sinnott SB, "Near-infrared display materials," Proceedings of the SPIE - The International Society for Optical Engineering 5080, (2004), 340-345.
43. Kwon YW, Li Y, Heo YW, Jones M, Vijay V, Jeong BS, Zhou J, Li S, Holloway P, Norton DP, "Transparent Transistors Based on Semiconducting Oxides," MRS Proceedings Volume 786, Fundamentals of Novel Oxide/Semiconductor Interfaces, Editors: C.R. Abernathy, E. Gusev, D. Schlom, S. Stemmer, (2003), E6.30/1-4.
44. Pearton SJ, Abernathy CR, Thaler GT, Frazier R, Norton DP, Kelly J, Rairigh R, Hebard AF, Park YD, Zavada JM, "Wide Bandgap Materials for Semiconductor Spintronics," Progress in Compound Semiconductor Materials III--Electronic and Optoelectronic Applications, Editors: Daniel J. Friedman, Omar Manasreh, Irina A. Buyanova, Anneli Munkholm, F. Danie Auret, MRS Proceedings Volume 799, (2004), Z9.6/1-4.
45. Kwon Y, Li Y, Heo YW, Jones M, Holloway PH, Norton DP, Li S, "Electric Field Modulation Of ZnO Film Conductance In ZnO-Based FET Structures", in State-of-the-Art Program on Compound Semiconductors XXXIX -and- Nitride and Wide Bandgap Semiconductors for Sensors, Photonics, and Electronics IV, editors A. G. Baca and R. F. Kopf, PV2003-11 Proceedings of the 204<sup>th</sup> Meeting of the Electrochemical Society, Orlando, FL, (2004), 68-72.
46. Ivill M, Norton DP, Hebard AF, Kelly J, "Ferromagnetism in Mn- And Sn- Doped ZnO Films Grown By Pulsed Laser Deposition," in State-of-the-Art Program on Compound Semiconductors XXXIX -and- Nitride and Wide Bandgap Semiconductors for Sensors, Photonics, and Electronics IV, editors A. G. Baca and R. F. Kopf, PV2003-11 Proceedings of the 204<sup>th</sup> Meeting of the Electrochemical Society, Orlando, FL, (2004), 375-383.
47. Sigman J, Christen HM, Fleming PH, Boatner LA, Norton DP, "Evidence for Antiferroelectric Behavior in  $\text{KNbO}_3/\text{KTaO}_3$  Superlattices," Mat. Res. Soc. Symp. Vol. 720, Materials Issues for Tunable RF and Microwave Devices III, Editors: S. C. Tidrow, J. S. Horwitz, X. Xi, and J. Levy, (2002), 179-183.
48. Heo YW, Varadarajan V, Kaufman M, Kim K, Ren F, Fleming PH, Norton DP, "Deterministic Synthesis of ZnO Nanorods," Functional Nanostructured Materials Through Multiscale Assembly and Novel Patterning Techniques, (Editor: Steven C. Moss,), MRS Proceedings 728, (2002), S3.15/1-5.
49. Cantoni C, Christen DK, Goyal A, Heatherly L, Ownby GW, Zehner DM, Norton DP, Rouleau CM, Christen HM, "Effect of Sulfur Surface Structure on Nucleation of Oxide Seed Layers on Textured Metals for Coated Conductor Applications," Materials for High-Temperature Superconductor Technologies, (Editors: M.P. Paranthaman, M.W. Rupich, K. Salama, J. Mannhart, T. Hasegawa), MRS Proceedings Volume 689, (2002), E9.8/1-6.
50. Lee YE, Norton DP, Budai JD, Rack PD, Peterson J, Potter MD, "Epitaxial oxide thin-film phosphors for low voltage FED applications," Electron-Emission Materials, Vacuum Microelectronics and Flat-Panel Displays Symposium, Materials Research Society Symposium Proceedings 621, 2001, Q2.4/1-6.
51. Paranthaman M, Feenstra R, Lee DF, Beach DB, Morrell JS, Chirayil TG, Goyal A, Cui X, Verebelyi DT, Mathis JE, Martin PM, Norton DP, Specht ED, Christen DK, Kroeger DM "Demonstration of High Current Density YBCO Coated Conductors On  $\text{Re}_2\text{O}_3$  Buffered Ni Substrates with Two New Alternative Architectures," Advances in Cryogenic Engineering 46, Part B, Proc. of the Cryogenic Engineering and International Cryogenic Materials Conf., Montreal, Canada, (2000), 879-886.
52. Norton DP, Park C, Lee YE, Budai JD, Chisholm MF, Verebelyi DT, Christen DK, Kroeger DM, "Pulsed-laser deposition of electronic oxides: superconductor and semiconductor applications,"

- Proceedings of the SPIE - The International Society for Optical Engineering, Volume 3933, (2000), 124-130.
53. Norton DP, Budai JD, Chisholm MF, "Epitaxial Electronic Oxides on Semiconductors Using Pulsed-Laser Deposition," Materials Research Society Symposium Proceedings 0272-9172, Volume 587, (2000), O3.7/1-8.
  54. Paranthaman M, List FA, Lee DF, Goyal A, Feenstra R, Norton DP, Park C, Verebelyi DT, Christen DK, Martin PM, Specht ED, Kroeger DM, "Fabrication of High Current  $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$  Coated Conductors Using Rolling Assisted Biaxially Textured Substrates," Proceedings of the 9th CIMTEC-World Forum on New Materials, 6th Symp. on Science and Engineering of HTC Superconductivity, Florence, Italy, (1999), 169-176.
  55. Lee YE, Rouleau CM, Park C, Norton DP, "ZnGa<sub>2</sub>O<sub>4</sub> thin-film phosphors grown by pulsed laser ablation," Luminescent Materials. MRS Symposium Proc., (1999), 59-64.
  56. Lee YE, Norton DP, Budai JD, Park C, Kim M, Pennycook SJ, Potter MD, Rack PD, "Enhanced Luminescence In Epitaxial Oxide Thin-Film Phosphors," International Conference On The Science And Technology Of Display Phosphors -Extended Abstracts, (1999), 109-112.
  57. Prouteau C, Duscher G, Christen DK, Browning ND, Pennycook SJ, Chisholm MF, Norton DP, Goyal A, Park C, "Correlation of transport properties with grain boundary atomic structure in high  $T_c$  superconducting films and tapes," Advances in Superconductivity X. Proceedings of the 10th International Symposium, Volume 2, (1998), 1015-1018.
  58. Browning ND, Buban JP, Prouteau C, Verebelyi D, Norton DP, Christen DK, Pennycook SJ, Nelligist PD, "Investigating the Atomic-Scale Superconducting Properties of Grain Boundaries in High- $T_c$  Superconductors," in Proceedings of Fourteenth International Congress on Electron Microscopy, ed. by H. A. C. Benavides and M. J. Yacaman, Institute of Physics Publishing, Bristol, United Kingdom, 1998, 599-600.
  59. Prouteau C, Duscher G, Browning ND, Pennycook SJ, Verebelyi D, Christen DK, Chisholm MF, Norton DP, "Investigation of the Local Superconducting Properties at Grain Boundaries in High- $T_c$  Superconductors," in Proceedings of Microscopy & Microanalysis 98, ed. by G. W. Bailey, K. B. Alexander, W. G. Jerome, M. G. Bond, and J. J. McCarthy, Springer-Verlag, New York, (1998), 690-691.
  60. Christen DK, Norton DP, Goyal A, Budai JD, Feenstra R, Qing He, Klabunde CE, Kroeger DM, Lee DF, List FA, Paranthaman M, "Fabrication and properties of high- $J_c$ , biaxially aligned  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thick films on metallic tape substrates," Proceedings of the International Workshop, Critical Currents in Superconductors for Practical Applications, (1998), 94-99.
  61. Norton DP, Budai JD, Goyal A, Lowndes DH, Kroeger DM, Christen DK, Paranthaman M, Specht ED, "Low-cost metal substrates for films with aligned grain structures", AIP Conference Proceedings, Issue 404, (1997), 175-181.
  62. Goyal A, Norton DP, Paranthaman M, Specht ED, He Q, List FA, Kroeger DM, Christen DK, Budai JD, "Low cost, single crystal-like substrates for practical, high efficiency solar cells," AIP Conference Proceedings, Issue 404, Future Generation Photovoltaic Technologies, (1997), 377-394.
  63. Paranthaman M, Goyal A, Norton DP, List FA, Specht ED, Christen DK, Kroeger DM, Budai JD, He Q, Saffian B, "Development of biaxially textured buffer layers on rolled-Ni substrates for high current  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  coated conductors," Advances in Superconductivity IX. Proceedings of the 9th International Symposium on Superconductivity (ISS'96) Volume 2, (1997), 669-672.
  64. Goyal A, Norton DP, Paranthaman M, Budai JD, Specht ED, Christen DK, Kroeger DM, He Q, Saffian B, List, F, "Fabrication of high critical current density superconducting tapes by epitaxial deposition of YBCO thick films on biaxially textured metal substrates," Advances in Superconductivity IX. Proceedings of the 9th International Symposium on Superconductivity (ISS'96), Volume 2, (1997), 685-688.
  65. Norton DP, Goyal A, Budai JD, Christen DK, Park C, Kroeger DM, Specht ED, He Q, Saffian B, Paranthaman M, "Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  on biaxially textured (001) Ni: an approach to high criti-

- cal current density superconducting tapes," 1997 International Workshop on Superconductivity (The 3rd Joint ISTEC/MRS Workshop). Program and Extended Abstracts, (1997), Pages 35-38.
66. Christen DK, Kerchner HR, Norton DP, Goyal A, Budai JD, Feenstra R, Qing He, Klabunde CE, Kroeger DM, Lee DF, List F, "Superconducting transport properties of high  $J_c$  biaxially aligned  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  deposits on metallic tape substrates," 1997 International Workshop on Superconductivity (The 3rd Joint ISTEC/MRS Workshop). Program and Extended Abstracts, (1997), 112-115.
  67. Norton DP, Park C, Saffian B, Budai JD, Goyal A, Christen DK, Kroeger DM, Lee D, He Q, Paranthaman M, "Epitaxial growth of oxide thin films on (001) metal surfaces using pulsed-laser deposition", Epitaxial Oxide Thin Films III. MRS Symposium Proc., (1997), 401-406.
  68. Christen H, Mandrus DG, Norton DP, Boatner LA, Sales BC, "Properties of  $\text{CoSb}_3$  films grown by pulsed laser deposition," Thermoelectric Materials - New Directions and Approaches, MRS Symposium Proc, (1997), 217-222.
  69. Feenstra R, Pennycook SJ, Chisholm MF, Browning ND, Budai JD, Norton DP, Jones EC, Christen DK, Matsumoto T, Kawai T, "Defect formation and carrier doping in epitaxial films of the infinite layer compound," Proceedings of the SPIE - The International Society for Optical Engineering, Volume 2697, (1996), 228-239.
  70. Norton DP, Chakoumako BC, Budai JD, "Formation and properties of novel artificially-layered cuprate superconductors using pulsed-laser deposition," Proceedings of the SPIE - The International Society for Optical Engineering, Volume 2697, (1996), 295-305.
  71. Norton DP, Budai JD, Chakoumakos BC, Geohegan DB, Puzos A, "Epitaxial growth of metal fluoride thin films by pulsed-laser deposition," Advanced Laser Processing of Materials - Fundamentals and Applications. MRS Symposium Proc, (1996), 259-264.
  72. Christen H-M, Boatner LA, English LQ, Gea LA, Marrero PJ, Norton DP, "Pulsed laser deposition of epitaxial  $\text{Sr}(\text{Ru}_x\text{Sn}_{1-x})\text{O}_3$  thin film electrodes and  $\text{KNbO}_3/\text{Sr}(\text{Ru}_x\text{Sn}_{1-x})\text{O}_3$  bilayers," Epitaxial Oxide Thin Films II. MRS Symposium Proc, (1996), 203-207.
  73. Feenstra R, Norton DP, Budai JD, Jones EC, Christen DK, Kawai T, "Defect formation and carrier doping in epitaxial films of the "parent" compound  $\text{SrCuO}_2$ : synthesis of two superconducting descendants," Proc. 1995 International Workshop on Superconductivity 'Controlled Processing of High-Temperature Superconductors: Fundamentals and Applications', (1996), 228-239.
  74. Zhu S, Lowndes DH, Budai JD, Thundat T, Norton DP, Warmack RJ, "Morphology and microstructure of (111) crystalline  $\text{CeO}_2$  films grown on amorphous  $\text{SiO}_2$  substrates by pulsed-laser ablation," Beam-Solid Interactions for Materials Synthesis and Characterization. MRS Symposium Proc., Pages (1995), 603-608.
  75. Norton DP, Chakoumakos BC, Lowndes DH, Budai JD, "Formation of artificially-layered thin-film compounds using pulsed-laser deposition," Film Synthesis and Growth Using Energetic Beams, MRS Symposium Proc, (1995), 57-66.
  76. Feenstra, R, Budai, JD, Norton DP, Jones EC, Christen, DK, "Branches on a Family Tree: Superconductivity in Epitaxial Films of "First-in-Line" Descendants of the Parent Compound  $\text{SrCuO}_2$ ," Proc. High Temperature Superconductor Workshop on Applications and New Materials, Univ. of Twente, Enschede, The Netherlands, (1995), 51-56.
  77. Wang ZL, Christen DK, Klabunde CE, Kroeger DM, Lowndes DH, Norton DP, "Flux-Pinning Related Defects in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Thin Films Grown on Miscut  $\text{LaAlO}_3$  (001) Substrates," Proc. 52nd Annual Meeting of Microscopy Society of America, San Francisco Press, New Orleans, (1994), 790-791.
  78. Norton DP, Chakoumakos BC, Budai JD, Lowndes DH, Sales BC, Thompson JR, Christen DK, "Formation of Artificially-Layered Superconducting Materials by Pulsed-Laser Deposition," in Novel Techniques in Synthesis and Processing of Advanced Materials (ed. by J. Singh and S. M. Copley, The Minerals, Metals & Materials Society, Warrendale), (1994), 231-240.
  79. Norton DP, Lowndes DH, "Growth and properties of ultrathin  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  layers," Superconductivity and its applications- AIP Conference Proceedings, Issue 273, (1993), 73-79.

80. Pennycook SJ, Browning ND, Chisholm MF, Zhu Z, Feenstra R, Norton DP, Lowndes DH, "High-Resolution Z-Contrast Imaging and Hole Concentration Mapping of YBCO Thin Films," Program and Extended Abstracts, Int. Workshop on Superconductivity, Hakodate, Japan, (1993), 103-106.
81. Norton DP, Chakoumakos BC, Budai JD, Lowndes DH, "Pulsed-laser deposition of metastable  $\text{Ca}_{1-x}\text{Sr}_x\text{CuO}_2$  thin films," Laser ablation: mechanisms and applications - II. - AIP Conference Proceedings, Issue 288, (1993), 595-600.
82. Carlos WE, Kaplan R, Lowndes DH, Norton DP, "Microwave absorption in YBCO/PrBCO superlattices," Layered Superconductors: Fabrication, Properties and Applications. MRS Symposium Proc, (1992), 79-83.
83. Feenstra R, Norton DP, Budai JD, Christen DK, Lowndes DH, Matijasevic VC, Eom C-B, Geballe TH, Hellman ES, Hartford EH, "Tc-  $[\delta]$  relations in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films: effects of oxygen pressure during growth," Layered Superconductors: Fabrication, Properties and Applications. MRS Symposium, (1992), 101-106.
84. Lowndes DH, Norton DP, Zhu S, Zheng XY, "Superconducting Properties and Microstructure of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-d}/\text{PrBa}_2\text{Cu}_3\text{O}_{7-d}$  Superlattices," in Advances in Superconductivity IV (ed. by H. Hayakawa and N. Koshizuka, Springer-Verlag, Tokyo), (1992), 29-36.
85. Zhu S, Lowndes DH, Zheng XY, Norton DP, Warmack RJ, "Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-d}$  Thin Films: Scanning Tunneling Microscopy Study of the Initial Stages of Epitaxial Growth, Growth Mechanisms, and Effects of Substrate Temperature," in MRS Proceeding: Interface Dynamics and Growth, ed. by K. S. Liang, M. P. Anderson, R. F. Bruinsma, and G. Scoles, Materials Research Society, Pittsburgh, PA, (1992) 541-549.
86. Kerchner HR, Klabunde CE, Christen DK, Budai JD, Lowndes DH, Norton D, Thomson JO, "Anisotropic electrical resistivity of YBCO/PBCO superlattice films grown on miscut substrates," Layered Superconductors: Fabrication, Properties and Applications. MRS Symposium Proc, (1992), 353-357.
87. Lowndes DH, Norton DP, Zhu S, Zheng XY, "Laser ablation synthesis and properties of epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}/\text{PrBa}_2\text{Cu}_3\text{O}_{7-\delta}$  superconducting superlattices," Laser Ablation of Electronic Materials. Basic Mechanisms and Applications, Edited by E. Fogarassy and S. Lazare, Elsevier Science (1992), 265-280.
88. Norton DP, Lowndes DH, Zheng Z-Y, Feenstra R, Zhu S, "Properties of epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  - based superconducting superlattices," AIP Conference Proceedings, Issue 251, (1992), 33-43.
89. Feenstra R, Christen DK, Budai JD, Pennycook SJ, Norton DP, Lowndes DH, Klabunde CE, Galloway MD, "Properties of low temperature, low oxygen pressure post-annealed  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films," High Tc Superconductor Thin Films. Proceedings of Symposium A1 on High Temperature Superconductor Thin Films of the International Conference on Advanced Materials-ICAM 91, (1992), 331-342.
90. Lowndes DH, Norton DP, Budai JD, Christen DK, Klabunde CE, Warmack RJ, Pennycook SJ, "Growth and transport properties of Y-Ba-Cu-O/Pr-Ba-Cu-O superlattices," Proceedings of the SPIE - The International Society for Optical Engineering, Volume 1394, (1991), 150-160.
91. Christen DK, Klabunde CE, Feenstra R, Lowndes DH, Norton DP, Budai JD, Kerchner HR, Thompson JR, Zhu S, Marwick AD, "Orientation-dependent critical currents in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  epitaxial thin films: evidence for intrinsic flux pinning?," Superconductivity and its applications. AIP Conference Proceedings, Issue 219, (1991), 336-342.
92. Norton DP, Lowndes DH, Zheng X, Warmack RJ, Pennycook SJ, Budai JD, "Superconducting Transport Properties and Surface Microstructure for  $\text{YBa}_2\text{Cu}_3\text{O}_{7-d}$ -Based Superlattices Grown by Pulsed Laser Deposition," in Laser Ablation Mechanisms and Applications, (ed. by J. C. Miller and R. F. Haglund, Jr., Springer-Verlag, Berlin), (1991), 311-319.
93. Lowndes DH, Norton DP, "Kosterlitz-Thouless-Like Behavior Over Extended Ranges of Temperature and Layer Thickness in Crystalline  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}/\text{PrBa}_2\text{Cu}_3\text{O}_{7-x}$  Superlattices," in High-

- Temperature Superconductivity, (ed. by J. Ashkenazi, S. Barnes, F. Zuo, G. Vezzoli, and B. Klein, Plenum Press, New York), (1991), 377-388.
94. Lowndes DH, Norton DP, Budai JD, Christen DK, Klabunde CE, Warmack RJ, Pennycook SJ, "Growth and Transport Properties of Y-Ba-Cu-O/Pr-Ba-Cu-O Superlattices," Proc. Soc. Photo-Opt. Instrum. Eng. Conf. on Progress in High-Temperature Superconducting Transistors and Other Devices, SPIE volume 1394, (1991), 150-60.
  95. Lowndes DH, Norton DP, Budai JD, Pennycook SJ, Christen DK, Sales BC, Feenstra R, "Superconductivity in Nonsymmetric Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ - $\text{PrBa}_2\text{Cu}_3\text{O}_{7-x}$  Superlattices Grown by Pulsed Laser Ablation," in Laser Ablation for Material Synthesis, ed. by D. C. Paine and J. C. Bravman, (Materials Research Society, Pittsburgh), (1990), 153-160.
  96. Christen DK, Klabunde CE, Feenstra R, Lowndes DH, Norton DP, Kerchner HR, Thompson JR, Sekula ST, Budai JD, Boatner LA, Narayan J, Singh R, "Electrical Transport Dissipation Effects in Epitaxial  $\text{Y}_1\text{Ba}_2\text{Cu}_3\text{O}_{7-x}$  Thin Films," in High-Temperature Superconductors: Fundamental Properties and Novel Materials Processing, ed. by D. K. Christen, J. Narayan, and L. F. Schneemeyer, (Materials Research Society, Pittsburgh), (1990), 883-890.
  97. McCamy JW, Norton DP, Lowndes DH, Boatner LA, Christen DK, Feenstra R, Sonder E, "In Situ Growth of Epitaxial Superconducting  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Films on Insulating, Semiconducting and Ferroelectric  $\text{K}(\text{Ta},\text{Nb})\text{O}_3$  by Pulsed Laser Ablation," in High-Temperature Superconductors: Fundamental Properties and Novel Materials Processing, ed. by D. K. Christen, J. Narayan, and L. F. Schneemeyer, (Materials Research Society, Pittsburgh), (1990), 469-476.
  98. Pennycook SJ, Chisholm MF, Jesson DE, Norton DP, McCamy JW, Lowndes DH, "Direct Imaging of the Atomic Structure and Chemistry of Defects and Interfaces by Z-Contrast STEM," in High-Temperature Superconductors: Fundamental Properties and Novel Materials Processing, ed. by D. K. Christen, J. Narayan, and L. F. Schneemeyer, (Materials Research Society, Pittsburgh), (1990) 765-772.
  99. Lowndes DH, Norton DP, McCamy JW, Feenstra R, Budai JD, Christen DK, Poker DB, "In Situ Growth of High Quality Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Thin Films at Moderate Temperatures By Pulsed Laser Ablation," in High-Temperature Superconductors: Fundamental Properties and Novel Materials Processing, ed. by D. K. Christen, J. Narayan, and L. F. Schneemeyer, (Materials Research Society, Pittsburgh), (1990), 431-438.
  100. Norton DP, Ajmera PK, "Mass spectroscopic study of photolytically driven deposition of gallium arsenide," SOUTHEASTCON '89 Proceedings. Energy and Information Technologies in the Southeast (Cat. No.89CH2672-4), Volume 1, (1989), 351-355.
  101. Norton DP, Ajmera PK, "Photochemical vapor deposition of gallium arsenide," Proceedings of the SPIE - The International Society for Optical Engineering, Volume 945, (1988), 55-61.
  102. Norton DP, Kak SC, "On shuffling of 2-D data," Proceedings of the 20<sup>th</sup> Annual Conference on Information Science and Systems, Princeton, N.J., (1986), 552-556.
  103. Kak SC, Norton DP, El-Amawy A, "An efficient implementation of the Aryabhata algorithm," Proceedings of the 20<sup>th</sup> Annual Conference on Information Sciences and Systems, Princeton, N.J., (1986), 790-792.

### **Book Chapters**

1. Heo YW, Pearton SJ, Norton DP, Ren F, "ZnO Thin Film and Nanowire Based Sensor Applications", in Semiconductor Device-Based Sensors for Gas, Chemical, and Biomedical Applications, eds. Fan Ren and Stephen J Pearton, (CRC Press), (2011).
2. Pearton SJ, Kang BS, Ren F, Norton DP, Tien LC, "Properties of ZnMgO Nanowires for Sensors," in Metal Oxide Nanostructures and their Applications, ed. A.Umar and Y.B.Hahn (American Scientific Publishers, Stevenson Ranch, CA), (2008).
3. Norton DP, "Pulsed laser deposition of complex materials: Progress toward applications," in Pulsed Laser Deposition of Thin Films, ed. R. Eason, (Wiley), (2007), pp. 1-32.

4. Pearton SJ, Kang BS, Norton DP, Ren F, Heo Y-W, Chang C-Y, Chi G-C, Wang W-M, Chen L-C, "Wide Bandgap Semiconductor Nanowires and Devices", in Physics, Chemistry and Applications of Doped Nano Materials, ed. H.S.Nalwa (American Scientific Publishers, Stevenson Ranch, CA (2006).
5. Ip K, Pearton SJ, Norton DP, Ren F, "Advances in Processing of ZnO," in Zinc Oxide Bulk, Thin Films, and Nanostructures, eds. C. Jagadish and S. J. Pearton, (Elsevier), pp. 313-338, (2006) .
6. Heo Y-W, Ren F, Norton DP, "Gas, Chemical, and Biological Sensing with ZnO," in Zinc Oxide Bulk, Thin Films, and Nanostructures, eds. C. Jagadish and S. J. Pearton, (Elsevier), (2006), pp. 491-524.
7. Norton DP, Pearton SJ, Zavada JM, Chen WM, Buyanova IA, "Ferromagnetism in ZnO doped with transition metal ions," in Zinc Oxide Bulk, Thin Films, and Nanostructures, eds. C. Jagadish and S. J. Pearton, (Elsevier), (2006), pp. 555-576.
8. Heo YW, Pearton SJ, Norton DP, Ren F, "ZnO Nanowires", in Encyclopedia of Nanoscience and Nanotechnology, ed. H.S. Nalwa, (American Scientific Publishers, Stevenson Ranch, CA), (2004).
9. Norton DP, "Epitaxial growth of superconducting cuprate thin films," in Handbook of High-Temperature Superconductor Electronics, ed. Neeraj Khare, (Dekker Publishing), (2003), pp. 29-84.
10. Norton DP, Cantoni C, Christen DK, Budai JD, Park C, "Nucleation and Epitaxy of Oxides on Metals", in Crystal Growth in Thin Films: Control of Epitaxy, ed. A. Perrin, (Transworld Research Network), (2002), pp. 87-104.
11. Pennycook SJ, Prouteau C, Chisholm MF, Christen DK, Verebelyi D, Norton DP, Kim M, Brown- ing ND, Buban JP, Pan T, Hamet JF, "The Relationship Between Grain Boundary Structure and Current In High-T<sub>c</sub> Superconductors," in Studies of High Temperature Superconductors: Micro- structural Studies In HTSC," ed. A. V. Narlikar, (Nova Science Publishers, New York), (2000).
12. Norton DP, "Science and Technology of High-Temperature Superconducting Films," in Annual Reviews of Materials Science, vol. 28, (1998), pp. 299-347.

### **Books Edited**

1. Advances in Electronic Ceramics II, Eds. Shashank Priya, Anke Weidenkaff, and David P. Norton, Volume 30, Issue 9, Wiley, 2009.
2. Developments in Strategic Materials, Eds. H.-T. Lin, K. Koumoto, W. M. Kriven, E. Garcia, I. E. Reimanis, and D. P. Norton, Volume 29, Issue 10, 2008.
3. Laser-Solid Interactions for Materials Processing, Eds. D. Kumar, D. P. Norton, C. B. Lee, K. Ebi- hara, and X. Xi, Materials Research Society Proceedings Volume 617, MRS, 2001.
4. Substrate Engineering-Paving the Way to Epitaxy, Eds. D. P. Norton, D. G. Schlom, N. Newman, and D. H. Matthiesen, Materials Research Society Proceedings Volume 587, MRS, 2000.
5. Advanced Laser Processing of Materials-Fundamentals and Applications, Eds R. K. Singh, D. Nor- ton, L. D. Laude, J. Narayan, and J. Cheung, Materials Research Society Proceedings Volume 397, MRS, 1996.
6. Laser Ablation in Materials Processing: Fundamentals and Applications, Eds B. Braren, J. J. Dubowski, and D. Norton, Materials Research Society Proceedings Volume 285, MRS, 1993.

### **Invited Seminars**

1. "Research Activities within the College of Engineering at the University of Florida," Harris Corpo- ration, Melbourne, FL, 2010
2. "Emerging Science and Technology Opportunities in Electronic Oxides," Army Research Laborato- ry, Aberdeen Proving Grounds, Aberdeen, MD, June 2009.
3. "ZnO Thin Films and Nanowires for Photonics, Spintronics, and Sensors," Vanderbilt University, Nashville, TN, December 2007
4. "ZnO Thin Films and Nanowires for Photonics, Spintronics, and Sensors," Seoul National Labora- tory, Seoul, Korea, October 2007



5. "ZnO Thin Films and Nanowires for Photonics, Spintronics, and Sensors," Kyungpook National Laboratory, Daegu, Korea, October 2007
6. "Charge and Spin-Based Electronics using ZnO Thin Films and Nanowires," University of Alabama, Tuscaloosa, AL, October 2004
7. "Nucleation and Epitaxy of Heteroepitaxial Oxide Films," Naval Research Laboratory, October 2000.
8. "Status of Rolling Assisted Biaxially Textured Substrates for HTS Coated Conductors," Institut für Festkörper- und Werkstofforschung, Institute for Metallic Materials, Dresden, Germany, October 2000.
9. "Electronic oxide thin-film materials: From superconductivity to microelectronics," ENEA, Frascati Research Center, Rome, Italy, June 2000.
10. "Electronic oxide thin-film materials: From superconductivity to microelectronics," University of Twente, Enschede, Netherlands, May 2000.
11. "Electronic oxide thin-film materials: From superconductivity to microelectronics," Département Physique, De La Matière Condensée, University of Geneva, Geneva, Switzerland, May 2000.
12. "Electronic oxide thin-film materials: From superconductivity to microelectronics," Dept. of Physics, Vanderbilt University, April 2000
13. "High-k Dielectrics for MOSFET Gate Oxides," Intel Corp., Santa Clara, CA, April 1999.
14. "Properties of Infinite Layer (Ca,Sr)CuO<sub>2</sub> Thin Films," IBM Yorktown Heights, 1994.
15. "Thin Film Heterostructures by Laser Ablation," Dept. of Materials Science and Engr., University of Florida, October, 1995.
16. "Formation of Artificially Layered Superconducting Materials by Pulsed-Laser Deposition," Dept. of Materials Science and Engineering, University of Tennessee, Knoxville, TN, October 1994.

### **Presentations At Professional Conferences/Meetings**

#### ***Invited Presentations (First-Author)***

1. "Pulsed-Laser Deposition of ZnO Thin Films and Heterostructures for Device Applications," American Physical Society March Meeting, Pittsburgh, PA, March 2009
2. "P-type conduction and light-emitting diodes using phosphorus-doped ZnO," 2008 Fall Meeting of the Materials Research Society, Materials Research Society, Boston, MA, November 2008.
3. "ZnO thin film and nanowire devices," 214th Meeting of the Electrochemical Society, Honolulu, HI, October 2008.
4. "P-type Doping and Light Emitting Junction Formation in ZnO," 213<sup>th</sup> Meeting of the Electrochemical Society, Phoenix, AR, May 2008
5. "ZnO P-Type Doping in ZnO Thin Films: Current Status," 14<sup>th</sup> International Workshop on Oxide Electronics, Jeju Island, Korea, October 2007
6. "Doping in ZnO Thin Films and Heterostructures," Annual Meeting of the Southeast Section of the American Physical Society, Nashville, TN, November 2007.
7. "Synthesis and Doping in ZnO Films and Nanowires," Conference on Laser Ablation, Tenerife, Spain, September 2007
8. "ZnO Thin Films and Nanowires for Photonics, Spintronics, and Sensors", 5th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Kanagawa, Japan, May 2007
9. "Transition metal doped ZnO for spintronics," 2007 Spring Meeting of the Materials Research Society, Materials Research Society, San Francisco, CA, April 2007
10. "Nanostructured Perovskite Thin Films for Tunable RF Applications," 32<sup>nd</sup> Annual GOMACTech Conference, GOMAC, Lake Buena Vista, FL, March 2007
11. "Chemical Sensing with ZnO nanorods," TMS 2007 Annual Meeting & Exhibition, TMS, Orlando, FL, February 2007
12. "ZnO PN Junctions for Highly-Efficient, Low-Cost Light Emitting Diodes," DOE Solid State Lighting Workshop, DOE, Phoenix, AR, January 2007
13. "Charge Carrier And Spin Doping In ZnO Thin Films For Device Applications", 2006 Fall MRS

- Meeting, Boston, MA December 2006
14. "P-type doping and electroluminescence for ZnO," SPIE Meeting , San Diego, CA, August 2006
  15. "Charge- and Spin-Based Devices in ZnO Thin Films and Nanostructures," American Physical Society March Meeting, Baltimore, MD, March 2006
  16. "Ferromagnetism in ZnO:Mn Epitaxial Films: Dependence on Carrier Density," AFOSR Wide Band Gap Ferromagnetic Semiconductors Workshop, Edinburgh, Scotland, May 2005
  17. "Pulsed laser deposition of acceptor doped ZnO," European-MRS, E-MRS, Strasbourg, France, May 2005
  18. "Charge carrier and spin doping in ZnO thin films," 4th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Tokyo, Japan, April 2005
  19. "Ferromagnetism in ZnO:Mn Epitaxial Films: Dependence on Carrier Density," ARO Workshop on Spintronics in Wide Bandgap Semiconductors, Gainesville, FL, February 2005
  20. "ZnO Spintronics and Nanowire Devices," 2004 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2004
  21. "Charge and Spin-Based Electronics using ZnO Thin Films," 206nd ECS Meeting, The Electrochemical Society, Honolulu, Hawaii, October 2004
  22. "Dielectric Response Of K(Ta,Nb)O<sub>3</sub> Thin Films And Asymmetric KNbO<sub>3</sub>/KTaO<sub>3</sub> Superlattices," XIII International Materials Research Congress 2004, Cancun, Mexico, August 2004.
  23. "Growth of the Anatase Polymorph of TiO<sub>2</sub> Doped with Co using Epitaxial Stabilization: Do we have a 300 K DMS?", ONR Workshop on Frontiers of Epitaxial Engineering, Moab, Utah, May 2004
  24. "Charge and Spin Doping in Epitaxial ZnO Thin Films and Nanostructures," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
  25. "Wide Bandgap Semiconductors for Semiconductor Spintronics," 2003 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2003
  26. "Doping ZnO for charge and spin electronics," 10<sup>th</sup> International Workshop on Oxide Electronics, Augsburg, Germany, September, 2003.
  27. "Dielectric Response Of K(Ta,Nb)O<sub>3</sub> Thin Films Grown By Pulsed Laser Deposition," XII International Materials Research Congress 2003, Cancun, Mexico, August 2003.
  28. "Hydrogen-Assisted Oxide Epitaxy on Semiconductors," ONR Workshop on Epitaxial Heterogeneous Interfaces – Formation & Epitaxy, Tenaya Lodge at Yosemite, Fish Camp, CA, May 4-8, 2003
  29. "Pulsed Laser Deposition Of Oxides: Recent Advances And Challenges," 2003 Spring Meeting of the Materials Research Society, San Francisco, CA, April 21-25, 2003
  30. "ZnO Thin Films And Nanostructures Of Functional Electronics," Florida Chapter of the American Vacuum Society 2003 Annual Symposium, Orlando, FL, March 17-18, 2003
  31. "Charge and Spin Functionality in Wide Bandgap Semiconducting Oxides," SPIE Conference on Quantum Sensing: Evolution and Revolution from Past to Future, San Jose, CA, January 25-31, 2003
  32. "Spin And Charge Functionality In Doped ZnO," 2002 Fall Meeting of the Materials Research Society, Boston, MA, December 1-5, 2002
  33. "Gate Dielectrics For FET Structures," 2002 Fall Meeting of the Materials Research Society, Boston, MA, December 1-5, 2002
  34. "Epitaxy of complex oxides on dissimilar substrates", Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002.
  35. "Materials for quantum computing," 5<sup>th</sup> Annual Southeast Ultrafast Conference, Nashville, TN, January 11-12, 2002.
  36. "Reactive sputter deposition of epitaxial CeO<sub>2</sub> on (001) Ge and InP," MRS Workshop on Dielectric Science & New Functionality in Device Physics for Crystalline Oxides on Semiconductors, Chattanooga, TN, September, 2001.

37. "Current status of coated conductor development based on the RABiTS Process," 5<sup>th</sup> European Conference on Applied Superconductivity, Copenhagen, Denmark, August 2001
38. "Heteroepitaxial growth of complex oxides on metals and semiconductors," 2001 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2001.
39. "Nanostructured oxide interfaces and thin films," International Conference on Metallurgical Coatings and Thin Films, San Diego, CA, May 2001.
40. "Electronic oxide film growth for microelectronics and superconductivity," 2000 International Conference on Electronic Materials and European Materials Research Society Meeting, Strasbourg, France, June 2000.
41. "Dissimilar epitaxy of oxides," D. P. Norton, Workshop on Nanoscale Phenomena in Perovskite Thin Films, Argonne, IL, February 2001.
42. "RABiTS-based HTS coated conductors," SCENET European Network for Superconductivity, Topical Workshop on Coated Conductors, Göttingen, Germany, May 2000.
43. "Chemical deposition techniques for high temperature superconducting film growth," SCENET European Network for Superconductivity, Topical Workshop on Coated Conductors, Göttingen, Germany, May 2000.
44. "BaF<sub>2</sub> method for high temperature superconducting film growth," SCENET European Network for Superconductivity, Topical Workshop on Coated Conductors, Göttingen, Germany, May 2000.
45. "Reel-to-reel processing of HTS tapes," SCENET European Network for Superconductivity, Topical Workshop on Coated Conductors, Göttingen, Germany, May 2000.
46. "Plume-Induced Strain and Texture in Pulsed Laser Deposited Oxides," American Physical Society March 2000 Meeting, DMP Focused Session on Laser Applications in Materials Physics," Minneapolis, MN 2000.
47. "Pulsed-Laser Deposition of Electronic Oxides: Superconductor and Semiconductor Applications," SPIE LASE 2000, Laser Applications in Microelectronic and Optoelectronic Manufacturing V, " San Jose, CA 2000.
48. "Alternative Gate Dielectrics on Semiconductors for MOSFET Device Applications," 6th International Workshop on Oxide Electronics, College Park, MD 1999.
49. "Energetic Ion Effects in Pulsed-Laser Deposition," Gordon Research Conference on Laser Interactions with Materials, Andover, NH 1998.
50. "Synthesis of Epitaxial YBCO / Oxide / Metal Heterostructures for Deposited HTS Conductors," Symp. on Advances in Laser Ablation of Materials, 1998 Spring Meeting of the Materials Research Society, San Francisco, CA 1998.
51. "Epitaxial YBCO on Rolled-Textured Metals for HTS Applications," 4th International Workshop on Oxide Electronics, College Park, MA 1997.
52. "High Critical Current Y-123 Thick Films on Industrially Scalable Substrates for Conductor Applications," Cryogenic Engineering Conference / International Cryogenic Materials Conference, Portland, OR 1997.
53. Epitaxial YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub> on Biaxially Textured (001) Ni: An Approach to High Critical Current Density Superconducting Tapes," ISTEC/MRS International Workshop on Superconductivity, Big Island, Hawaii 1997.
54. "Low Cost Metal Substrates for Films with Aligned Grain Structure" First Conference on Future Generation Photovoltaic Technologies, Denver, CO 1997.
55. "Role of Energetic Species in Laser Ablation Film Growth," 1997 Annual Meeting of the TMS, Orlando, FL 1997.
56. "Epitaxial Growth of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub> on Biaxially-Textured (001) Ni," 1996 Fall Meeting of the Materials Research Society, Boston 1996.
57. "Formation and Properties of Artificially-Layered Cuprate Superconductors," SPIE Intl. Symp. on Lasers and Integrated Optoelectronics, San Jose, CA 1996.
58. "Synthesis of Artificially-Layered Cuprate Superconductors By Pulsed Laser Deposition," Gordon Research Conference on Superconductivity, Les Diablerets, Switzerland 1995.

59. "Formation of Artificially-Layered High Temperature Superconductors Using Pulsed Laser Deposition," Eighth International Conference on Superlattices, Microstructures, and Microdevices, Cincinnati, OH 1995 .
60. "Formation of Artificially-Layered High-Temperature Superconductors Using Pulsed-Laser Deposition," Third International Conference on Laser Ablation, Strasbourg, France 1995.
61. "Formation of Artificially-Layered Thin-Film Compounds Using Pulsed-Laser Deposition," Spring Meeting of the Materials Research Society, San Francisco, CA 1995.
62. "Recent Developments in Metal-Oxide Film Growth Using Pulsed-Laser Deposition," TMS Conference on Ion Beam and Laser Processing of Materials, Las Vegas, NV 1995.
63. "Formation and Properties of Artificially-Layered SrCuO<sub>2</sub>/BaCuO<sub>2</sub> Superconducting Superlattices," Workshop on High-Temperature Superconductivity: Physical Properties and Mechanisms, Miami, FL 1995.
64. "Artificially-Layered and Metastable Thin-Film Materials Development Utilizing Pulsed-Laser Deposition", International Conference on Novel Techniques in Synthesis and Processing of Advanced Materials, Rosemont, IL 1994.
65. "Artificially-Layered and Metastable Thin-Film Materials Development Utilizing Pulsed-Laser Deposition", International Conference on Processing and Advanced Applications of Lasers, Palm Coast, FL 1994.
66. "Properties of Doped and Undoped (Sr, Ca)CuO<sub>2</sub> Thin Films," ETL Workshop on High Temperature Superconductors, Tsukuba-shi, Japan 1993.
67. "Properties of Doped and Undoped (Sr, Ca)CuO<sub>2</sub> Thin Films," Japanese Applied Physics Society Workshop on Infinite Layer Materials, ISTEK, Tokyo, Japan 1993.
68. "Transport Properties of Ultrathin YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-d</sub> Layers: Evidence For Two-Dimensional Vortex Fluctuations," Adriatico Research Conference on Vortex Fluctuations in Superconductors, Trieste, Italy 1993.
69. "Laser Ablation Film Growth of High Temperature Superconductors," 1993 WATtec Conference, Knoxville, TN 1993.
70. "Growth and Properties of Ultrathin YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-d</sub> Layers," Sixth Annual Conference on Superconductivity and Applications, Buffalo, NY 1992.
71. "Properties of Oxide-Based Superconducting Superlattices," Fifth Annual Conference on Superconductivity and Applications, Buffalo, NY 1991.
72. "Epitaxial Growth of Oxide Superconductor Thin Films and Superlattices," Scanning Microscopy / 1991, Bethesda, MD 1991.
73. "High-T<sub>c</sub> Superconductivity and Hole-Filling in R-123 Superlattices and Thin Films," March Meeting of The American Physical Society, Cincinnati, OH 1991.
74. "Superconductivity in Epitaxial Layers of High T<sub>c</sub> Materials," Gordon Conference on Superconductivity, Ventura, CA 1991.

***Contributed Presentations (First Author)***

1. "P-Type ZnO Thin Films via Phosphorus Doping," 2008 SPIE Photonics West San Jose, CA, January 2008
2. "P-type doping and electroluminescence in ZnO thin films," 2007 March Meeting of the American Physical Society, Denver, CO, March 2007
3. "Copper and Ni-Alloy Substrates," AFOSR HTS Coated Conductor Review Meeting, St. Petersburg, FL, January 22-24, 2003.
4. "Ferromagnetism in Mn-implanted Single Crystal Oxides," American Vacuum Society 49<sup>th</sup> International Meeting, Denver, CO, November 3-8, 2002
5. "Doping For Charge, Bandgap, and Spin In ZnO Nanorods And Thin Films," Materials Research Society Workshop On ZnO, Dayton, OH, October 23-25, 2002.

6. "Epitaxial growth and properties of CeO<sub>2</sub> on (001) InP," 2001 Fall Meeting of the Materials Research Society, Boston, MA, November 2001.
7. "Luminescent properties of Li-doped ZnGa<sub>2</sub>O<sub>4</sub> thin films," 7<sup>th</sup> International Workshop on Oxide Electronics, Les Diablerets, Switzerland, October 2000.
8. "Nanostructured thin-film oxides," D. P. Norton, Meta- Materials Workshop, Greenbelt, MD, September, 2000.
9. "Ferromagnetic wide bandgap semiconductors for quantum computing," Quantum Information Science and Technology Workshop, Greenbelt, MD, October, 2000.
10. "Epitaxy of oxides on dissimilar substrates using pulsed-laser deposition," Spring Meeting of the Materials Research Society, San Francisco, CA, April 2000.
11. "Epitaxial Electronic Oxides on Semiconductors Using Pulsed-Laser Deposition," Symp on Substrate Engineering-Paving the Way to Epitaxy, 1999 Fall Meeting of the Materials Research Society, Boston, MA (1999)
12. "Investigation of Oxide Film Growth on Biaxially-Textured Metals Using Reflection High Energy Electron Diffraction," Symp. on Superconducting Materials-Properties, Crystal Chemistry and Processing, Fall Meeting of the Materials Research Society, Boston, MA 1999.
13. "Enhanced Luminescence in Epitaxial Oxide Thin Film Phosphors," 5th International Display Phosphors Conference, San Diego, CA 1999.
14. "Epitaxial Growth and Luminescent Properties of Mn<sup>2+</sup>-Activated ZnGa<sub>2</sub>O<sub>4</sub> Films", 5th International Workshop on Oxide Electronics, College Park, MD 1998.
15. "Plume-Induced Stress and Texture in Pulsed-Laser Deposited CeO<sub>2</sub> Films", Symp. on Film Growth and Processing Using Hyperthermal Beams, 1998 Fall Meeting of the Materials Research Society, Boston, MA 1998.
16. "Epitaxial Growth of Oxide Thin Films on (001) Metal Surfaces Using Pulsed-Laser Deposition," Spring Meeting of the Materials Research Society, San Francisco, CA 1997.
17. "Low-Cost Metal Substrates for Films with Aligned Grain Structures," Future generation photovoltaic technologies, Denver; CO, March 1997.
18. "Effect of energetic ions on cerium oxide films deposited by pulsed-laser deposition," March Meeting of the American Physical Society, Kansas City, MO, March 1997.
19. "Epitaxial Growth of Metal Fluoride Thin Films by Pulsed-Laser Deposition," Fall Meeting of the Materials Research Society, Boston, MA, November 1995.
20. "Superconductivity in SrCuO<sub>2</sub>/BaCuO<sub>2</sub> Superlattices: Formation of Artificially-Layered Superconducting Materials," Fall Meeting of the Materials Research Society, Boston, MA 1994.
21. "Artificially-Layered SrCuO<sub>2</sub>-Based Materials Grown by Pulsed-Laser Deposition, World Congress on Superconductivity, Orlando, FL 1994.
22. "Transport and Structural Properties of Trivalent Cation and Defect-Doped SrCuO<sub>2</sub> Thin Films Grown by Pulsed-Laser Deposition," Fall Meeting of the Materials Research Society, Boston, MA 1993.
23. "Structural and Transport Properties of Ca<sub>1-x</sub>Sr<sub>x</sub>CuO<sub>2</sub> Thin Films Grown by Pulsed Laser Deposition," March Meeting of The American Physical Society, Seattle, WA 1993.
24. "Pulsed Laser Deposition of Metastable Ca<sub>1-x</sub>Sr<sub>x</sub>CuO<sub>2</sub> Thin Films," Second International Conference on Laser Ablation, Knoxville, TN 1993.
25. "Epitaxial Growth and Properties of Ca<sub>1-x</sub>Sr<sub>x</sub>CuO<sub>2</sub> Thin Films Grown by Pulsed-Laser Deposition," Fall Meeting of the Materials Research Society, Boston, MA 1992.
26. "Superconductivity and Reduced Dimensionality in Ultrathin YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-d</sub> Films and YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-d</sub> Based Superlattice Structures," Applied Superconductivity Conference, Chicago, Illinois 1992.
27. "Epitaxial growth and properties of Ba<sub>1-x</sub>K<sub>x</sub>BiO<sub>3</sub> thin films grown by pulsed laser deposition," Fall Meeting of the Materials Research Society, Boston, MA 1991.

28. "Hole Filling and Effects of Reduced Dimensionality in Pulsed-Laser Ablated High- $T_c$  Superlattice Structures," Workshop on Laser Ablation, Oak Ridge, TN 1991.
29. "Pulsed Laser Deposition of YBCO-Based Superconducting Superlattices," 11th Annual Symposium of the Tennessee Valley Chapter of the American Vacuum Society, Oak Ridge, TN 1991.
30. "Superconductivity, Hole-Doping, and Hole-Filling in  $YBa_2Cu_3O_{7-d}/(Y_{1-x}Ca_y)Pr_xBa_2Cu_3O_{7-d}$  Superlattices," Fall Meeting of the Materials Research Society, Boston, MA 1990.
31. "Superconductivity in Single Unit Cell  $YBa_2Cu_3O_{7-x}$  Layers in  $YBa_2Cu_3O_{7-x}/PrBa_2Cu_3O_{7-x}$  Superlattices," Conference on the Science and Technology of Thin Film Superconductors, Denver, CO 1990.
32. " $YBa_2Cu_3O_{7-x}$  Thin Film Growth on Single Crystal and Polycrystalline Ytria-Stabilized Zirconia," Conference on the Science and Technology of Thin-Film Superconductors, Denver, CO 1990.
33. "Mass Spectroscopic Study of Photolytically-Driven Deposition of Gallium Arsenide," IEEE Southeastcon 89, Columbia, SC 1989.
34. "Excimer Laser and Hg-Xe Arc Lamp Driven Low Temperature Deposition of Gallium Arsenide," Conference on Lasers and Electro-Optics, Baltimore, MD 1989.
35. "Photochemical vapor deposition of gallium arsenide," SPIE-Advanced Processing of Semiconductor Devices II, Newport Beach; CA, March 1988.
36. "Photochemical Vapor Deposition of GaAs for Photovoltaics," Third International Photovoltaic Science and Engineering Conference, Tokyo, Japan 1987.
37. "On Shuffling of 2-D Data," Twentieth Conference on Information Sciences and Systems, Princeton, NJ 1986.
38. "An Efficient Implementation of the Aryabhata Algorithm," Twentieth Conference on Information Sciences and Systems, Princeton, NJ 1986.

***Presentations by Students / Post-Doctoral Associates in Norton Group (student/post-doc listed)***

1. Cianfrone J, "Structural, magnetic, and electronic properties of  $ZnCo_2O_4$  thin films grown via pulsed laser deposition, 2008 TMS Electronic Materials Conference, Santa Barbara, CA, June 2008
2. Callendar C, "Ferroelectric and magnetic properties of epitaxial  $BiFeO_3 / BaFeO_{3-x}$  heterostructures," 2008 Spring Meeting of the Materials Research Society, San Francisco, CA, March 2008
3. Tien LC "Pulsed laser deposition of metal oxide nanowires," 2008 Spring Meeting of the Materials Research Society, San Francisco, CA, March 2008
4. Kim DH, "The effect of structural and chemical perturbations in multiferroic  $BiFeO_3$  epitaxial films," 2008 March Meeting of the American Physical Society, New Orleans, LA, March 2008
5. Sadik P, "Characterization of  $CuCrO_2/CuSc_{1-x}Mg_xO_2$  heterostructures grown by pulsed laser deposition," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2008
6. Cianfrone J, "Structural, magnetic, and electronic properties of  $ZnCo_2O_4$  thin films grown via pulsed laser deposition," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2008
7. Kim HS "Electrical and Optical Properties of  $ZnMgO:P$  Films grown by Pulsed Laser Deposition," 2007 Fall Meeting of the Materials Research Society, Boston, MA, November 2007
8. Tien LC, "Catalyst-free growth of vertically well-aligned ZnO nanowires," 54<sup>th</sup> Annual Meeting of the American Vacuum Society, San Francisco, CA, October 2007
9. Callendar CJ, "Properties of  $BaFeO_3$ -Based Thin Films and Superlattices," 2007 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2007
10. Sadik P, "Examination Of  $CuCr_{1-x}Mg_xO_2$  Thin Film Delafossites Grown By Pulsed Laser Deposition," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2007
11. Ivill M, "Magnetic And Magneto-Transport Properties In ZnO Films Heavily Doped With Cobalt," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2007

12. Tien LC, "Self-Catalytic Growth Of Well-Aligned ZnO Nanorods By High Pressure Assisted Pulsed Laser Deposition," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2007
13. Kim HS, "Carrier Type Conversion In Post Annealed ZnO:P Thin Films," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2007
14. Callendar C, "Ferromagnetic Properties Of Epitaxial BaFeO<sub>3</sub> Films," Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2007
15. Kim HS, "Investigation of carrier type conversion of post annealed ZnO:P thin films as a function of the substrate temperature," TMS 2007 Annual Meeting & Exhibition Orlando, FL, February 2007
16. Leu LC, "Properties of Ge/HfN<sub>x</sub> as a Diffusion Barrier for Cu Metallization," TMS 2007 Annual Meeting & Exhibition Orlando, FL, February 2007
17. Sadik P, "Examination of Thiol Adsorption on Zn-Terminated and O-Terminated ZnO Substrates," TMS 2007 Annual Meeting & Exhibition Orlando, FL, February 2007
18. Tien LC, "Highly Selective Hydrogen Sensing with Pt-functionalized ZnO Thin Films and Nanorods," 2006 Fall Meeting of the Materials Research Society, Boston, MA, November 2006
19. Ivill M, "Magnetic Properties and Observation of Anomalous Hall Effect in Cobalt-Doped ZnO," TMS Electronic Materials Conference, State College, PA, June 2006
20. Leu LC, "Investigation of W-Ge-N Deposited on Ge as a Diffusion Barrier for Cu Metallization", 2006 Spring MRS Meeting, San Francisco, CA, April 2006.
21. Sadik P, "Examination Of Thiol Adsorption On Zn-Terminated And O-Terminated Substrates" Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2006
22. Callendar C, "Properties of (Ba<sub>x</sub>Sr<sub>1-x</sub>)FeO<sub>3</sub> Thin Films and Multilayers" Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2006
23. Tien LC, "Highly Selective Hydrogen Sensing at Room Temperature with Platinum-Functionalized ZnO Thin Films and Nanorods" Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2006
24. Ivill M, "Magnetic Properties and Observation of Anomalous Hall Effect in Cobalt-Doped ZnO", Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2006
25. Rawal S, "Properties of W-Ge-N Deposited on Ge as a Diffusion Barrier for Cu", Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2006
26. Tien LC, "Enhanced Hydrogen Sensing at Room Temperature by Pd-Functionalized ZnO Nanorods" 2005 Fall MRS Meeting, Boston, Massachusetts, December 2005
27. Callendar C, "Properties of (Ba<sub>x</sub>-Sr<sub>1-x</sub>)FeO<sub>3</sub> thin films and multilayers" Southeast Section of the American Physical Society Meeting, Gainesville, FL, November 2005
28. Tien LC, "Hydrogen-Selective Sensing at Room Temperature with Pt-Coated ZnO nanorods" Southeast Section of the American Physical Society Meeting, Gainesville, FL, November 2005
29. Rawal S, "Properties of W-Ge-N as a diffusion barrier material for Cu" Southeast Section of the American Physical Society Meeting, Gainesville, FL, November 2005
30. Kim HS, "Synthesis and characterization of P-doped ZnO and (Zn,Mg)O thin films for optoelectronic applications" Southeast Section of the American Physical Society Meeting, Gainesville, FL, November 2005
31. Erie JM, "Electrical, optical and structural properties of Arsenic-doped (Zn,Mg)O films" 52nd American Vacuum Society Meeting, Boston, MA, November 2005
32. Kim HS, "Fabrication of ZnO-based P-N junction diodes", 2005 Annual Joint Symposium of Florida Chapter of the AVS and Florida Society for Microscopy, Florida AVS, Orlando, FL, March 2005
33. Li YJ, "Realization of phosphorus-doped p-type (Zn,Mg)O thin films via pulsed laser deposition", 2005 Electronic Materials Conference (EMC), TMS, Santa Barbara, CA, June 2005
34. Kim KH, "(La,Sr)TiO<sub>3</sub> as a Conductive Buffer for High Temperature Superconducting Coated Conductors", Applied Superconductivity Conference 2004, Jacksonville, FL, October 2004

35. Heo YW, "Nanodevices using Single ZnO Nanowire", 2004 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2004
36. Ivill M, "The Dependence Of Ferromagnetism On Sn Concentration in ZnMnO:Sn Epitaxial Films", 2004 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2004
37. Sigman J, "Dielectric Response of Asymmetric KNbO<sub>3</sub>/KTaO<sub>3</sub> Superlattices", 2003 Annual Meeting of the American Vacuum Society, AVS, Baltimore, MD, November 2003
38. Heo YW, "Properties of p-Doped ZnMgO Thin Films", 2003 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2003
39. Kwon YW, "Transparent Transistors Based On Semiconducting Oxides", 2003 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2003
40. Sigman J, "Dielectric Response of K(Ta,Nb)O<sub>3</sub> Thin Films", 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
41. Heo YW, "Growth and Microstructure of Cored (Zn<sub>1-x</sub>Mg<sub>x</sub>)O Nanorods," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
42. Ivill M, "Ferromagnetism In Mn- And Sn-Codoped ZnO Films Grown By Pulsed Laser Deposition," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
43. Jeong BS, "Transition metal doped TiO<sub>2</sub> thin films grown by reactive sputtering deposition," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
44. Jones M, "Leakage Current Behavior for HfO<sub>2</sub> Thin Films," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
45. Kwon YW, "Electric Field Modulation of ZnO Film Conductance in ZnO-Based FET Structures," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
46. Li Y, "Transparent ZnO-Based FET Structures for Displays," 202nd ECS Meeting, The Electrochemical Society, Orlando, Florida, October 2003
47. Heo YW, "Zn<sub>1-x</sub>Mg<sub>x</sub>O Nanorods Via Molecular Beam Epitaxy," 2002 Fall Meeting of the Materials Research Society, Boston, MA, December 1-5, 2002
48. Ivill M, "Ferromagnetism In TM-Doped Semiconducting Oxides," 2002 Fall Meeting of the Materials Research Society, Boston, MA, December 1-5, 2002
49. Bae HJ, "Treatment Of (100) KTaO<sub>3</sub> For Atomically-Flat Surfaces," 2002 Fall Meeting of the Materials Research Society, Boston, MA, December 1-5, 2002
50. Heo YW, "Optical Properties of Zn<sub>1-x</sub>Mg<sub>x</sub>O Nanorods Via Molecular Beam Epitaxy," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
51. Ivill M, "Ferromagnetism In Mn-Doped Cu<sub>2</sub>O Semiconducting Thin Films Grown By Pulsed-Laser Deposition," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
52. Jeong BS, "Conductivity In Transparent Anatase TiO<sub>2</sub> Films Epitaxially Grown By Reactive Sputtering Deposition," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
53. Kwon YW, "Electrical Properties Of CaHfO<sub>3</sub> And HfO<sub>2</sub> For Gate Dielectrics," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
54. Kim KH, "(La,Sr)TiO<sub>3</sub> Conductive Buffer Layers on Biaxially Textured Ni for Coated Conductors," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
55. Heo YW, "Deterministic synthesis of ZnO nanorods," 2002 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2002.
56. Sigman J, "Evidence for antiferroelectric behavior in KNbO<sub>3</sub>/KTaO<sub>3</sub> superlattices," 2002 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2002.
57. Heo YW, "ZnO nanorods growth with molecular beam epitaxy," Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002
58. Kwon YW, "Deposition of CaHfO<sub>3</sub> thin films using pulsed-laser deposition," Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002.



60. Heo YW, "Epitaxial growth of zinc oxide thin films on  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> by molecular beam epitaxy," Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002
61. Sigman J, "Evidence for antiferroelectric behavior in KNbO<sub>3</sub> / KTaO<sub>3</sub> superlattices," Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002
62. Kim KH, "LaTiO<sub>3</sub> conductive buffer layers on biaxially textured Ni for coated conductors" Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002.
63. Jeong BS, "Epitaxial growth of anatase TiO<sub>2</sub> films by reactive sputter deposition," Florida Chapter of the American Vacuum Society, AVS-FSM Joint Symposium, Orlando, FL, March 2002.
64. Kim KH, "LaTiO<sub>3</sub> conductive buffer layers on biaxially textured Cu for coated conductors," 2001 Fall Meeting of the Materials Research Society, Boston, MA, November 2001.
65. Patel M, "Reactive sputter deposition of epitaxial CeO<sub>2</sub> on (001) Ge," 2001 Fall Meeting of the Materials Research Society, Boston, MA, November 2001.
66. Sigman J, "Temperature-dependent dielectric response and tunability of KTaO<sub>3</sub>/KNbO<sub>3</sub> superlattices," 2001 Fall Meeting of the Materials Research Society, Boston, MA, November 2001.
67. Lee YE, "Epitaxial oxide thin film phosphors for low voltage FED applications," Spring Meeting of the Materials Research Society, San Francisco, CA, April 2000.
68. Lee YE, "ZnGa<sub>2</sub>O<sub>4</sub> Thin-Film Phosphors Grown by Pulsed Laser Ablation," Spring Meeting of the Materials Research Society, San Francisco, CA, April 1999.
69. Lee YE, "Growth and characterization of ZnGa<sub>2</sub>O<sub>4</sub> :Mn thin film phosphors using pulsed laser deposition," 1998 Fall Meeting of the Materials Research Society, Boston, MA 1998.
70. Cantoni C, "Phase stability for the in-situ growth of Nd<sub>1+x</sub>Ba<sub>2-x</sub>Cu<sub>3</sub>O<sub>7</sub> films using pulsed-laser deposition," 1998 Fall Meeting of the Materials Research Society, Boston, MA 1998.
71. Park C, "Pulsed laser deposition of YBCO film and oxide buffer layers on 1cmx10cm rolling assisted biaxially textured substrates," 1998 Fall Meeting of the Materials Research Society, Boston, MA 1998.
72. Park C, "Long Length Fabrication of YBCO on Rolling Assisted Biaxially Textured Substrates (RABiTS) Using Pulsed Laser Deposition," IEEE Applied Superconductivity Conference, Palm Desert; CA, September 1998
73. Park C, "The Effect Of Bend Strain On The Critical Current Of YBCO Films Deposited On Biaxially Oriented Metallic Substrates" Fall Meeting of the Materials Research Society, Boston, MA 1997.

***Other Contributed Presentations as Co-Author***

1. "Indium Zinc Oxide Thin Films Deposited by Sputtering at Room Temperature," 213<sup>th</sup> Meeting of the Electrochemical Society, Phoenix, AR, May 2008
2. "High Room Temperature Deposited Enhancement Mode and Depletion Mode Indium Zinc Oxide Thin Film Transistors," 213<sup>th</sup> Meeting of the Electrochemical Society, Phoenix, AR, May 2008
3. "Demonstration of Hydrogen Effects on ZnO LEDs in Current-Voltage and Electroluminescence Characteristics," 213<sup>th</sup> Meeting of the Electrochemical Society, Phoenix, AR, May 2008
4. "Dielectric response in potassium tantalite/potassium niobate multilayers," 2008 March Meeting of the American Physical Society, New Orleans, LA, March 2008
5. "GaN and ZnO-Based Nanowire Sensors for Bio and Chemical Detection," TMS 2008 Annual Meeting & Exhibition , New Orleans, LA, March 2008
6. "Functional Wide Bandgap Semiconductor Nanowire Devices," TMS 2008 Annual Meeting & Exhibition , New Orleans, LA, March 2008
7. "ZnO for Spintronics: Some Critical Issues," 2007 Fall Meeting of the Materials Research Society, Boston, MA, November 2007
8. "Origin of the Near-Band-Edge Emission in ZnCdO Alloys," 2007 Fall Meeting of the Materials Research Society, Boston, MA, November 2007

9. "Indium Zinc Oxide Transparent Thin Film Transistors with MgO Gate Oxide," 2007 Fall Meeting of the Materials Research Society, Boston, MA, November 2007
10. "Room Temperature Deposited Indium Zinc Oxide Thin-Film Transistors," 2007 Fall Meeting of the Materials Research Society, Boston, MA, November 2007
11. "Indium Zinc Oxide Thin Films Deposited by Sputtering at Room Temperature," 2007 Fall Meeting of the Materials Research Society, Boston, MA, November 2007
12. "CdZnO/MgZnO multilayer structures for photonic applications: growth and devices," 2007 TMS Electronic Materials Conference, South Bend, Indiana, June 2007
13. "Wide Bandgap Semiconductor Nanowires for Sensing Applications," 211<sup>th</sup> Meeting of the Electrochemical Society, Chicago, IL, May 2007
14. "Wet Chemical Etching of Wide Bandgap Semiconductors- GaN, ZnO and SiC, 211<sup>th</sup> Meeting of the Electrochemical Society, Chicago, IL, May 2007
15. "High Density Inductively Coupled Plasma Etching of Zinc-Oxide and Indium-Zinc Oxide," 211<sup>th</sup> Meeting of the Electrochemical Society, Chicago, IL, May 2007
16. "Thermally Stable Novel Metal Contacts on Bulk, Single-Crystal n-type ZnO," 211<sup>th</sup> Meeting of the Electrochemical Society, Chicago, IL, May 2007
17. "Ir/Au ohmic contacts on bulk, single crystal n-type ZnO," 2007 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2007
18. "Ferroelectric phase transition study of coupling KTN perovskites oxides by scanning microwave microscope," 2007 March Meeting of the American Physical Society, Denver, CO, March 2007
19. "Effect of Cryogenic Temperature Deposition of Various Metal Contacts to Bulk, Single-Crystal n-type ZnO," 2006 Fall Meeting of the Materials Research Society, Boston, MA, November 2006
20. "High-density Plasma Etching of Zinc-Oxide and Indium-Zinc-Oxide in Cl<sub>2</sub>/Ar and CH<sub>4</sub>/H<sub>2</sub>/Ar Chemistries," 2006 Fall Meeting of the Materials Research Society, Boston, MA, November 2006
21. "Electroluminescence from ZnO Nanowire/Polymer Composite p-n Junction," 53<sup>rd</sup> Annual Meeting of the American Vacuum Society, San Francisco, CA, November 2006
22. "X-ray Excited Optical Luminescence Studies of ZnO Nanowires and ZnO/MgxZn(1-x)O Core-Shell Nanowires," 53<sup>rd</sup> Annual Meeting of the American Vacuum Society, San Francisco, CA, November 2006
23. "Changes in Electrical Characteristics of p-Type Zinc Oxide Thin Films Due to Light and Gas Ambient," TMS Electronic Materials Conference, State College, PA, June 2006
24. "Determination Of MgO/GaN And Zn<sub>0.95</sub>Cd<sub>0.05</sub>/ZnO Heterojunction Band Offsets By X-Ray Photoelectron Spectroscopy" Florida Chapter American Vacuum Society Meeting, Orlando, FL, March 2006
25. "Simulation of ZnO-based UV and Visible Light-Emitting Diode Structures" Southeast Section of the American Physical Society Meeting, Gainesville, FL, November 2005
26. "Improved Pt /Au and W/Pt/Au Schottky Contacts on n-type ZnO Using Ozone Cleaning", 2005 Annual Joint Symposium of Florida Chapter of the AVS and Florida Society for Microscopy, Florida AVS, Orlando, FL, March 2005
27. "Thermal Stability of Tungsten-Based Schottky Contacts to N-Type ZnO", 207<sup>nd</sup> ECS Meeting, The Electrochemical Society, Quebec City, Canada, May 2005
28. "Fabrication of ZnMgO:P/ZnO p-n Junctions on ZnO Substrates", 2005 Electronic Materials Conference (EMC), TMS, Santa Barbara, CA, June 2005
29. "Effect of Ozone Cleaning on Pt /Au and W/Pt/Au Schottky Contacts to n-type ZnO", 27<sup>th</sup> Int. Conf. Physics of Semiconductors, Flagstaff, AZ, July 2004
30. "Carrier Concentration Dependence of Ti/Al/P+/Au Ohmic Contacts to p-doped ZnO Thin Films", 2004 MRS Spring Meeting, Materials Research Society, San Francisco, California, April 2004
31. "Sensitivity of Pt/ZnO Schottky Diode Characteristics to Hydrogen", 203<sup>rd</sup> Meeting of ECS, The Electrochemical Society, San Antonio, Texas, May 2004
32. "Ferromagnetism in Mn- and Co-implanted ZnO Nanorods", IEEE Nano-2003, IEEE, San Francisco, August 2003

33. "Ion Implantation for Creating Room Temperature Ferromagnetism in Wide Bandgap Semiconductors", ISCS-2003, IEEE, La Jolla, California, August 2003
34. "Annealing Temperature Dependence of Contact Resistance and Stability for Ti/Al/Pt/Au Ohmic Contacts from Bulk n-ZnO", ISCS-2003, IEEE, La Jolla, California, August 2003
35. "Thermal Stability and Magnetic Properties of Mn- and Co-Implanted ZnO Nanorods", 11th Intl. Cong. On II-VI Compounds, IEEE, Niagara Fall, NY, September 2003
36. "Modification of MBE Grown ZnO Nanorods with Mn and Co Effects on Microstructure and Properties", 2003 Fall MRS Meeting, Materials Research Society, Boston, Massachusetts, December 2003
37. "Near Infrared Display Materials," SPIE-The International Society for Optical Engineering Conference on Cockpit Displays, Orlando, FL, April 21-25, 2003
38. "Effects Of Hydrogen And Dry Etching On ZnO," 2002 Fall Meeting of the Materials Research Society, Boston, MA, December 1-5, 2002
39. "Pulsed Laser Deposited Zn<sub>2</sub>GeO<sub>4</sub> Thin Films for Field Emission Displays," American Vacuum Society 49<sup>th</sup> International Meeting, Denver, CO, November 3-8, 2002
40. "Hydrogen Incorporation, Diffusivity and Evolution in Bulk ZnO," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
41. "ICP Dry Etching of ZnO and Effects of Hydrogen," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
42. "Magnetic Properties of Co- and Mn-Implanted BaTiO<sub>3</sub>, SrTiO<sub>3</sub> and KTaO<sub>3</sub>," 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
43. "Ferromagnetism in Co- and Mn-Doped ZnO, 9<sup>th</sup> International Workshop on Oxide Electronics, St. Pete Beach, FL, October 20-23, 2002
44. "A Method for Improving Nucleation of Thick YBCO Films in the Ex-situ Process," Applied Superconductivity Conference, Houston, TX, August 2002.
45. "Orientation and strain mapping in RABiTS using X-ray microbeam diffraction," 2001 Fall Meeting of the Materials Research Society, Boston, MA, November 2001.
46. "Effect of sulfur surface structure on nucleation of oxide seed layers on textured metals for coated conductor application," 2001 Fall Meeting of the Materials Research Society, Boston, MA, November 2001.
47. "Submicron-Resolution Measurement of Texture and Strain in Oxide Films Using X-ray Microdiffraction.," The American Ceramic Society 103rd Annual Meeting, Indianapolis, IN American Ceramic Society, April 2001.
48. "X-Ray Microbeam Mapping of Local Lattice Orientations and Strains in Oxide Films," March 2001 Meeting of the American Physical Society, Seattle, WA USA March 2001.
49. "X-ray microbeam mapping of local lattice orientation and strains in oxide films," 2001 March Meeting of the American Physical Society, Seattle, WA, March, 2001.
50. "Superconducting MgB<sub>2</sub> films with T<sub>c</sub> > 20 K by Pulsed Laser Deposition," March Meeting of the American Physical Society, Seattle, WA, March 2001.
51. "Effects of Surface Chemistry and Structure on Buffer Layer Epitaxy," ISTEC/MRS HTS Conductors, Processing and Applications, Honolulu, HI USA, June 2001
52. "Conductive buffer layers and overlayers for the thermal stability of coated conductors," Applied Superconductivity Conference, Virginia Beach, VA, September 2000.
53. "Comparison between the effects of substrate surface conditions and ion irradiation defects on flux-pinning properties of YBCO epitaxial films," Fall Meeting of the Materials Research Society, Boston, MA November 2000.
54. "Submicron-Resolution Texture and Strain Determination Using X-Ray Microbeams," Workshop on Texture in Electronic Applications, Gaithersburg, MD October 2000.
55. "Recent progress in the fabrication of High-J<sub>c</sub> tapes by epitaxial deposition of YBCO on RABiTS," International Symp. On Superconductivity, Tokyo, Japan, October 2000.

56. "Materials Science Using Submicron-Resolution Polychromatic X-Ray Diffraction," Tenth Users Meeting for the Advanced Photon Source, Argonne, IL May 2000.
57. "Crystalline oxides as gate dielectrics for MOSFETs," Spring Meeting of the Materials Research Society, San Francisco, CA, April 2000.
58. "High- $J_c$  YBCO Conductors Fabricated By Epitaxial Deposition Of YBCO On Rolling Assisted Biaxially Textured Substrates (RABiTS)," Fall Meeting of the Materials Research Society, Boston, MA (1999)
59. "Microstructure In YBCO Coated Conductors," Fall Meeting of the Materials Research Society, Boston, MA 1999.
60. "Epitaxial Growth Of Oxide Films On Textured Ni Substrates Studied By X-Ray Microbeam Diffraction," Fall Meeting of the Materials Research Society, Boston, MA 1999.
61. "Reel-To-Reel Dip-Coating Unit For Fabricating Long RABiTS For HTS Coated Conductors," Fall Meeting of the Materials Research Society, Boston, MA 1999.
62. "Growth Regimes And Nucleation Of Thick High- $J_c$  YBCO Films On Flexible Metallic Substrates," Fall Meeting of the Materials Research Society, Boston, MA 1999.
63. "Effects Of Pulsed-Laser Deposition Regimes On Flux-Pinning Properties Of YBCO Thin Films," Fall Meeting of the Materials Research Society, Boston, MA 1999.
64. "Epitaxial Growth Of Conductive Buffer Layers For The Development Of Coated Conductors," Fall Meeting of the Materials Research Society, Boston, MA 1999.
65. "Comparison Of Microstructure In YBCO Films Deposited On Alternative Oxide Buffer Layers On RABiTS," Fall Meeting of the Materials Research Society, Boston, MA 1999.
66. "Demonstration of High Current Density YBCO Coated Conductors On  $\text{Re}_2\text{O}_3$  Buffered Ni Substrates with Two New Alternative Architectures," Advances in Cryogenic Engineering 1999, Cryogenic Engineering and International Cryogenic Materials Conf., Montreal, Canada, July 1999.
67. "High  $J_c$  YBCO conductors fabricated by epitaxial deposition of YBCO on strengthened, nonmagnetic rolling assisted biaxially textured substrates," Advances in Cryogenic Engineering 1999, Cryogenic Engineering and International Cryogenic Materials Conf., Montreal, Canada, July 1999.
68. "X-Ray Microbeam Investigation Of Epitaxial Oxide Films On Textured Metal Substrates." Spring Meeting of the Materials Research Society, San Francisco, CA, April 1999.
69. "Power loss of AC transport current flow in superconductive films, March Meeting of the American Physical Society, Atlanta, GA, 1999.
70. "Crystallographic Tilting of Oxide Films on Textured Metal Substrates Investigated by X-Ray Microbeams," March Meeting of the American Physical Society, Atlanta, GA, 1999
71. "Barrier to vortex entry raises both critical current and ac loss in superconductive film," 1998 Fall Meeting of the Materials Research Society, Boston, MA 1998.
72. "Important effect of YBCO microstructural homogeneity on electrical connectivity of coated conductors fabricated by the RABiTS approach," 1998 Fall Meeting of the Materials Research Society, Boston, MA 1998.
73. "Investigating the Atomic Scale Superconducting Properties of Grain Boundaries in High-T(Sub c) Superconductors," 14th Int. Conf. on Electron Microscopy, Cancun, Mexico, August, 1998.
74. "Fabrication of High Current  $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$  Coated Conductors Using Rolling Assisted Biaxially Textured Substrates," 9th CIMTEC-World Forum on New Materials, 6th Symp. on Science and Engineering of HTC Superconductivity, Florence, Italy, June 1998.
75. "Depositions of epitaxial noble metal buffer layers on textured Ni tapes by sputtering for the fabrication of flexible high- $J_c$  HTS wires," 1998 Spring Meeting of the Materials Research Society, San Francisco, CA 1998.
76. "Electrical connectivity and microstructure in YBCO films fabricated on RABiTS," March Meeting of the American Physical Society, Los Angeles, CA, March 1998.
77. "Effect of layer thickness on the ferroelectric transition in epitaxial  $\text{KTaO}_3/\text{KNbO}_3$  multilayers," March Meeting of the American Physical Society, Los Angeles, CA, March 1998.

78. "Superconducting transport properties of single grain boundaries in large magnetic fields: Correlation with atomic structure," March Meeting of the American Physical Society, Los Angeles, CA, March 1998.
79. "Comparison of ac transport current flow in superconductive films," March Meeting of the American Physical Society, Los Angeles, CA, March 1998.
80. "Investigation of the Local Superconducting Properties at Grain Boundaries in High-T(Sub c) Superconductors," Microscopy and Microanalysis '98, Atlanta, GA, July 1998.
81. "Superconducting Properties Of HTS Films On Textured Metallic Tape Substrates: Prospects For A New Generation Of Wires," Fall Meeting of the Materials Research Society, Boston, MA 1997.
82. "High-Resolution TEM/AEM Characterization Of Epitaxial Oxide Multilayers Fabricated By Laser Ablation On Biaxially Textured Ni," Fall Meeting of the Materials Research Society, Boston, MA 1997.
83. "Growth Of Biaxially Textured Buffer Layers On Rolled-Ni Substrates For High Current YBaCuO Conductors," Fall Meeting of the Materials Research Society, Boston, MA 1997.
84. "Towards Long Lengths Of High Critical Current Density YBaCuO Tapes," Fall Meeting of the Materials Research Society, Boston, MA 1997.
85. "Alternating Current Losses In YBaCuO and TlBaCaCuO Films," Fall Meeting of the Materials Research Society, Boston, MA 1997.
86. "Stability Of Epitaxially Grown Superconducting Films On Biaxially Textured Metal Substrates," Fall Meeting of the Materials Research Society, Boston, MA 1997.
87. "Correlation of Transport Properties with Grain Boundary Atomic Structure in High-T(Sub c) Superconducting Films and Tapes," Advances in Superconductivity X, Proc. 10th Int. Symp. on Superconductivity (ISS '97), Gifu, Japan, October 1997.
88. "Superconducting transport properties of High- $J_c$  biaxially aligned YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub> deposit on metallic tape substrates," ISTE/MRS International Workshop on Superconductivity, Big Island, Hawaii 1997.
89. "High critical current density tapes by epitaxial deposition of superconducting thick films on biaxially textured metal substrates," 1997 Annual Meeting of the TMS, Orlando, FL 1997.
90. "Properties of CoSb<sub>3</sub> films grown by pulsed laser deposition," Spring Meeting of the Materials Research Society, San Francisco, CA 1997.
91. "Superconducting properties of High- $J_c$  biaxially aligned YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub> thick films on metallic tape substrates," Spring Meeting of the Materials Research Society, San Francisco, CA 1997.
92. "Superconducting properties of High  $J_c$  biaxially textured YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub> thin films of metallic tape substrates," March Meeting of the American Physical Society, Kansas City, MO, March 1997.
93. "Fabrication and Properties of High- $J_c$ , Biaxially Aligned YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7- $\delta$</sub>  Thick Films on Metallic Tape Substrates," International workshop - Critical currents in superconductors for practical applications, Xian; China, March 1997.
94. "Low Cost, Single Crystal-like Substrates for Practical, High Efficiency Solar Cells," Conference on Future Generation Photovoltaic Technologies, Denver, CO, March 1997.
95. "Superconducting Transport Properties of High- $J_c$  Biaxially Aligned YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7- $\delta$</sub>  Deposits on Metallic Tape Substrates," International Workshop On Superconductivity, Big Island, Hawaii, June 1997.
96. "Pulsed laser deposition of Sr<sub>2</sub>Cu<sub>1+x</sub>O<sub>y</sub>(CO<sub>3</sub>)<sub>1-x</sub> infinite layer oxycarbonate films," March Meeting of the American Physical Society, March 1997.
97. "Biaxially oriented metallic tape substrates for high-temperature superconductors," International Conference on Low Temperature Physics; 21st -- 1996 Aug : Prague, Czechoslovakia, August 1996.
98. "Fabrication of High Critical Current Density Superconducting Tapes by Epitaxial Deposition of YBCO Thick Films on Biaxially, Textured Metal Substrates," Advances in superconductivity IX, Sapporo; Japan, October 1996.

99. "Development of Biaxially Textured Buffer Layers on Rolled-Ni Substrates for High Current  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  Coated Conductors," Advances in superconductivity IX, Sapporo; Japan, October 1996.
100. "Fabrication of biaxially textured superconductors using the RABiTS process," Spring Meeting of the Materials Research Society, San Francisco, CA 1996.
101. "Superconducting transport properties of high- $J_c$   $\text{YBa}_2\text{Cu}_3\text{O}_7$  thick films deposited on biaxially oriented metallic substrates," Fall Meeting of the Materials Research Society, Boston, MA 1996.
102. "The atomic origins of reduced critical currents at [001] tilt grain boundaries in YBCO thin films," Fall Meeting of the Materials Research Society, Boston, MA 1996.
103. "Toward the atomic level engineering of grain boundaries in ceramic superconductors," Fall Meeting of the Materials Research Society, Boston, MA 1996.
104. "Defect Formation and Carrier Doping in Epitaxial Films of the Infinite Layer Compound," vol.2697, Oxide Superconductor Physics and Nano-Engineering II, Soc. Photo-Opt. Instrum. Eng. Photonics West '96 Symp., San Jose, CA, Jan. ,1996.
105. "Sub-coherence length determination of the effects of interface structure on hole depletion in high-temperature superconductors," March Meeting of the American Physical Society, March 1994.
106. "Pulsed Laser Deposition of  $\text{Sr}_2\text{Cu}_{1+x}\text{O}_y(\text{CO}_3)_{1-x}$  Infinite Layer-Oxycarbonate Films," March Meeting of the American Physical Society, St. Louis, MO, March 1996.
107. "Raman characterization of artificially layered superconducting  $\text{SrCuO}_2$ - $\text{BaCuO}_2$  thin films," March Meeting of the American Physical Society, St. Louis, MO, March 1996.
108. " $\text{KTaO}_3/\text{KNbO}_3$  thin-film superlattices compared to  $\text{KTa}_{1-x}\text{Nb}_x\text{O}_3$  solid-solution layers," March Meeting of the American Physical Society, St. Louis, MO, March 1996.
109. "Growth-induced columnar defects in  $\text{YBa}_2\text{Cu}_3\text{O}_7$  grown on miscut  $\text{LaAlO}_3$ ," Fall Meeting of the Materials Research Society, Boston, MA, November 1995.
110. "Fabrication of biaxially aligned polycrystalline HTSC using a new process," Fall Meeting of the Materials Research Society, Boston, MA, November 1995.
111. "Synthesis of HTS-Oxycarbonate epitaxial films," Fall Meeting of the Materials Research Society, Boston, MA, November 1995.
112. "Superlattices of epitaxial ferroelectric  $\text{KNbO}_3$  and paraelectric  $\text{KTaO}_3$  films," Fall Meeting of the Materials Research Society, Boston, MA, November 1995.
113. "Defect Formation and Carrier Doping in Epitaxial Films of the "Parent" Compound  $\text{SrCuO}_2$ : Synthesis of Two Superconducting Descendants," Intl. Workshop on Superconductivity, Maui, HI, June,1995.
114. "Branches on a Family Tree: Superconductivity in Epitaxial Films of "First-in-Line" Descendants of the Parent Compound  $\text{SrCuO}_2$ ," High Temperature Superconductor Workshop on Applications and New Materials, Univ. of Twente, Enschede, The Netherlands, May, 1995
115. "Sub-Coherence Length Determination of the Effects of Interface Structure on Hole Depletion in High-Temperature Superconductors," March Meeting of the American Physical Society, Pittsburgh, PA, March, 1994.
116. "Flux-Pinning Related Defects in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Thin Films Grown on Miscut  $\text{LaAlO}_3$  (001) Substrates," 52nd Annu. Meet. Microsc. Soc. Am., New Orleans, July, 1994.
117. "Epitaxial  $\text{YBaCuO}$  films on metal substrates and buffer layers," March Meeting of The American Physical Society, Seattle, WA 1993.
118. "Atomic resolution mapping of hole concentrations around  $\text{YBa}_2\text{Cu}_3\text{O}_7$  grain boundaries," March Meeting of The American Physical Society, Seattle, WA 1993.
119. "Superconductive transport properties of heavy ion irradiated epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_7$  thin films," March Meeting of The American Physical Society, Seattle, WA 1993.
120. "Experimental Investigations of Superconductivity in Quasi-Two-Dimensional Epitaxial Copper Oxide Superlattices and Trilayers," TMS Symposium on the Synthesis and Processing of Electronic and Photonic Material, Denver, CO, February 1993.

121. "Transport-Current resistivity and inductive impedance of  $\text{YBa}_2\text{Cu}_3\text{O}_7/\text{PrBa}_2\text{Cu}_3\text{O}_7$  superlattice films," Applied Superconductivity Conference, Chicago, Illinois 1992.
122. "Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_7$  thin films: Scanning tunneling microscope study of initial stages of growth, growth mechanism, and surface microstructure," Fall Meeting of the Materials Research Society, Boston, MA 1991.
123. "Evidence for doping effects in  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films processed at low oxygen pressures," Fall Meeting of the Materials Research Society, Boston, MA 1991.
124. "Effects of oxygen defects and thermal processing on flux pinning in High- $J_c$   $\text{YBa}_2\text{Cu}_3\text{O}_7$  thin films," Fall Meeting of the Materials Research Society, Boston, MA 1991.
125. "Growth mechanisms of  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films and superlattices studied by Z-contrast STEM," Fall Meeting of the Materials Research Society, Boston, MA 1991.
126. "Evidence for K-T transition in  $\text{YBa}_2\text{Cu}_3\text{O}_7/\text{PrBa}_2\text{Cu}_3\text{O}_7$  superlattice films," Fall Meeting of the Materials Research Society, Boston, MA 1991.
127. "Superconducting Properties and Microstructure of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\Delta}/\text{PrBa}_2\text{Cu}_3\text{O}_{7-\Delta}$  Superlattices," Advances in Superconductivity IV, 4th Int. Symp. on Superconductivity (ISS' 91), Tokyo, Oct. 1991.
128. "Laser Ablation Synthesis and Properties of Epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\Delta}/\text{PrBa}_2\text{Cu}_3\text{O}_{7-\Delta}$  Superconducting Superlattices," Laser Ablation of Electronic Material, Basic Mechanism and Application, Meet. Eur. Mater. Res. Soc., Carcans-Maubuisson, France, Sept. 1991.
129. "Epitaxial copper oxide superconductor superlattices," 19<sup>th</sup> Rare Earth Research Conference, Lexington, Kentucky 1991.
130. "Localized conversion of epitaxial YBCO from c-perp to a-perp by ion implantation and low oxygen pressure annealing," March Meeting of The American Physical Society, Cincinnati, Ohio 1991.
131. "Aspects of thermally activated flux motion in  $\text{YBa}_2\text{Cu}_3\text{O}_7$  epitaxial thin films," March Meeting of The American Physical Society, Cincinnati, Ohio 1991.
132. "Transport critical currents in granular-oriented  $\text{YBa}_2\text{Cu}_3\text{O}_7$  thin films," March Meeting of The American Physical Society, Cincinnati, Ohio 1991.
133. "Effects of oxygen composition on critical currents and flux pinning in epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_7$  thin films," March Meeting of The American Physical Society, Cincinnati, Ohio 1991.
134. "Kosterlitz-Thouless-Like Behavior Over Extended Ranges of Temperature and Layer Thickness in Crystalline  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}/\text{PrBa}_2\text{Cu}_3\text{O}_{7-x}$  Superlattices," Univ. of Miami Workshop on Electronic Structure and Mechanisms for High Temperature Superconductivity, Coral Gables, FL, Jan. 1991.
135. "Growth and Transport Properties of Y-Ba-Cu-O/Pr-Ba-Cu-O Superlattices," Soc. Photo-Opt. Instrum. Eng. Conf. on Progress in High-Temperature Superconducting Transistors and Other Devices, Santa Clara, Oct. 1990.
136. "Orientation-Dependent Critical Currents in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Epitaxial Thin Films: Evidence for Intrinsic Flux Pinning," Conf. on Superconductivity and Its Applications, Buffalo, NY, Sept. 1990.
137. "In situ growth of high quality epitaxial  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films at moderate substrate temperature and over large areas by pulsed laser ablation," Fall Meeting of the Materials Research Society, Boston, MA 1989.
138. "In situ growth of epitaxial superconducting  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films on insulating, semiconducting and ferroelectric  $\text{KTaO}_3$  by pulsed laser ablation," Fall Meeting of the Materials Research Society, Boston, MA 1989.
139. "Epitaxial and superconducting properties of  $\text{YBa}_2\text{Cu}_3\text{O}_7$  films on five perovskite substrates," Fall Meeting of the Materials Research Society, Boston, MA 1989.
140. "Atomic scale characterization of defects and interfaces by Z-contrast STEM," Fall Meeting of the Materials Research Society, Boston, MA 1989.

### **Research Funding at UF**

Over \$6.4M external funding as lead PI in 11 years at UF

1. "Development of Materials and Fabrication of Nanoelectronic Devices and Sensors,"

- Office of Naval Research, (08/01/2009 - 07/31/2011), \$2,499,523 (5%), co-P.I.
2. "Acceptor doping and hole transport in ZnO films and heterostructures,"  
National Science Foundation, (06/15/2008 - 05/31/2011), \$414,032 (100%), P.I.
3. "ZnO Nanowire Nanosensors for Biodetection and Identification,"  
Center for NanoBio Sensors/State of Florida, (06/01/07-08/30/08), \$80,000 (100%), P.I.
4. "Center for Sensor Materials and Technologies,"  
Office of Naval Research, (05/14/07-05/13/09), \$2,328,000 (60%), P.I.
5. "Low Dimensional K(Nb,Ta)O<sub>3</sub>-(Ba,Sr)FeO<sub>3</sub> Thin Film Nanostructures,"  
Army Research Office, (10/01/05-09/30/08), \$270,856 (100%), P.I.
6. "ZnO PN Junctions for Highly-Efficient, Low-Cost Light Emitting Diodes,"  
Department of Energy, (01/01/05-12/31/07), \$914,537 (35%), P.I.
7. "Robust Self-Powered Wireless Hydrogen Sensor",  
NASA, (10/01/04-09/30/06), \$70,000 (25%), co-P.I.
8. "H<sub>2</sub> Gas Sensors: GaN MOS-HEMTs and ZnO Schottky Diodes with Integrated On-Chip Heater",  
NASA, (10/01/04-09/30/06), \$70,000 (25%), co-P.I.
9. "Novel Hydrogen Gas Sensors: ZnO Nanorod Hydrogen Gas Sensors",  
NASA, (10/01/04-09/30/06), \$70,000 (25%), co-P.I.
10. "Transition Metal Doped ZnO for Spintronics,"  
Air Force Office of Scientific Research, (8/01/03-06/30/06), \$450,000 (65%), P.I.
11. "Alternative Chemistries for Barrier Materials in Cu Metallization,"  
National Science Foundation, (09/01/03-08/31/08), \$2,366,692 (30%), co-P.I.
12. "Nanoscale phenomenon in perovskite thin films,"  
Argonne National Laboratory, months (02/14/04-02/16/04), \$10,000 (100%), P.I.
13. "Nanoscale phenomenon in perovskite thin films,"  
Argonne National Laboratory, (03/14/02-08/13/03), \$10,000 (100%), P.I.
14. "Carrier Doping Epitaxial (Zn,Mg) O Thin Films,"  
National Science Foundation, (06/15/03-04/30/06), \$349,990 (100%), P.I.
15. "Polymer Light Emitting Display using a Transparent Thin Film Transistor Array,"  
Army Research Office, (09/01/02-08/31/04), \$416,983 (30%), P.I.
16. "Nucleation and epitaxy of conductive buffers on (001) Cu,"  
Air Force Office of Scientific Research, (09/01/02-07/30/05), \$75,000 (100%), P.I.
17. "Laser molecular beam epitaxy system for nanostructured oxides,"  
Dept. of Defense /DURIP, (04/01/02-03/01/03), \$230,000 (100%), P.I.
18. "Development of High Temperature Physical Property Measurement System for Probing Spin and  
Charge-Functionalized Thin-Film Materials,"  
National Science Foundation-MRI, (07/01/02-06/30/03), \$161,463 (100%), P.I.
19. "Nanoscale phenomenon in perovskite thin films,"  
Argonne National Laboratory, (03/01/02-06/01/02), \$10,000 (100%), P.I.
20. "Equipment for Nanofabrication Facility,"  
University of Florida Research Foundation, (2/1/02), \$2,492,270 (100%), P.I.
21. "Ion beam assisted deposition of NiO as biaxially-textured buffer for HTS coated conductor,"  
IGC-SuperPower, (11/01/01-10/31/06), \$254,831 (100%), P.I.
22. "Intelligent luminescence for communication, display, and identification,"  
Georgia Institute of Technology/MURI, (06/01/01-05/31/04), \$707,501 (25%), co-P.I.
23. "Low-dimensional K(Nb,Ta)O<sub>3</sub> thin films structures,"  
Army Research Office, (05/01/01-10/31/04), \$434,000 (100%), P.I.
24. "Nanoscale phenomenon in perovskite thin films,"  
Argonne National Laboratory, (03/01/01-06/01/01), \$10,000 (100%), P.I.
25. "High temperature superconducting films and buffers on biaxially textured Cu,"  
Oak Ridge National Laboratory, (10/01/00-09/30/01), \$53,239 (100%), P.I.



---

## TEACHING AND SERVICE

---

### Courses Taught as Faculty in Materials Science and Engineering

- **EMA 3010: Introduction to Materials Science and Engineering (undergraduate)**  
Atomic structure and bonding, crystal structures, defects, diffusion, mechanical properties of metals, phase diagrams and transformations, ceramics, polymers, composites, corrosion, and electronic properties
- **EMA 3413: Introduction to Electronic Materials (undergraduate)**  
Electrons in solids, electrical properties of metals, semiconductors, and insulators, optical properties, magnetic properties, thermal properties
- **EMA 6110: Electron Theory in Solids (graduate)**  
Topics covered include wave mechanics, quantum mechanics, statistical mechanics, free electron theory, quantum mechanics for crystals, semiconductor properties, optical properties, dielectric/ferroelectrics, and magnetic properties
- **EMA 6111: Electron Theory in Solids II: Optical and Magnetic Properties (graduate)**  
Electromagnetic waves, physics of metals, optical properties of insulators, semiconductor absorption and photoluminescence, lasers, nonlinear opticals, magnetism
- **EMA 6938 Electronic Oxides: Properties and applications (graduate)**  
Survey of properties, chemistry of oxides, thermodynamic stability of oxides, structural aspects of oxides, structural families, models of electronic structure, insulating oxides, semiconducting oxides, metallic and magnetic oxides, superconducting oxides

### Activities in Organizing Professional Conferences

- International Program Committee: 17<sup>th</sup> International Workshop on Oxide Electronics, Jawaji City, Japan, October 2010.
- International Program Committee: 16th International Workshop on Oxide Electronics, Tarragona, Spain, October 2009.
- Session Co-Organizer, Focused Session on Zinc Oxide: Growth, Doping, Defects, Nanostructures, and Devices; Electronic Materials Conference, Pennsylvania, June 2009
- Focused Session Organizer, 33rd International Conference on Advanced Ceramics and Composites (ICACC), Daytona Beach, FL, January 2009
- Session Co-Organizer, Focused Session on Zinc Oxide: Growth, Doping, Defects, Nanostructures, and Devices; Electronic Materials Conference, California, June 2008
- Focused Session Organizer, 32nd International Conference on Advanced Ceramics and Composites (ICACC), Daytona Beach, FL, January 2008
- Symposium Organizer, Zinc Oxide and Related Materials, 2007 Fall Meeting of the Materials Research Society, Boston, MA November, 2007.
- International Program Committee: 14<sup>th</sup> International Workshop on Oxide Electronics, Jeju Island, Korea, October 2007.
- Subcommittee Member: 34th International Symposium on Compound Semiconductors (ISCS 2007), Kyoto University, Kyoto, Japan, October 2007
- Session Co-Organizer, Focused Session on Zinc Oxide: Growth, Doping, Defects, Nanostructures, and Devices; Electronic Materials Conference, Indiana, June 2007
- Session Co-Organizer, Focused Session on Zinc Oxide: Growth, Doping, Defects, Nanostructures, and Devices; Electronic Materials Conference, Pennsylvania, June 2006
- International Program Committee: 13<sup>th</sup> International Workshop on Oxide Electronics, Ischia, Italy, October 2006.
- Session Organizer: Multi-Functional Materials and Devices: 2006 Lester Eastman Conference On

- High Performance Devices, Cornell University, Ithaca, NY August 2006
- Co-Organizer: 12<sup>th</sup> International Workshop on Oxide Electronics, Chatham, MA, October 2005.
- Focused Session Organizer, APS DMP, American Physical Society March Meeting, Los Angeles, CA March 2005
- Session Co-Organizer, Focused Session on Zinc Oxide: Growth, Doping, Defects, Nanostructures, and Devices; Electronic Materials Conference, Santa Barbara, CA, June 2005
- Symposium Organizer, Functional and Multifunctional Oxide Films, 2004 Fall Meeting of the Materials Research Society, Boston, MA November, 2004.
- International Program Committee: 11<sup>th</sup> International Workshop on Oxide Electronics, Japan, September 2004.
- International Program Committee: 10<sup>th</sup> International Workshop on Oxide Electronics, Augsburg, Germany, September 2003.
- Session Chair, ONR Workshop on Epitaxial Heterogeneous Interfaces – Formation & Epitaxy, Tenaya Lodge at Yosemite, Fish Camp, CA, May, 2003
- Session Chair, 2003 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2003
- International Program Committee: 10<sup>th</sup> International Workshop on Oxide Electronics, Augsburg, Germany, September 2003.
- Session Chair, 2002 Fall Meeting of the Materials Research Society, Boston, MA, November 2002
- Organizer and Co-Chair, 9<sup>th</sup> International Workshop on Oxide Electronics, St. Petersburg, FL, October 2002.
- Session Chair, 5<sup>th</sup> European Conference on Applied Superconductivity, Copenhagen, Denmark, August 2001.
- Organizing Committee: 8<sup>th</sup> International Workshop on Oxide Electronics, Osaka, Japan, September 2001.
- International Advisory Committee: Second International Symposium on Laser Precision Microfabrication, Singapore, May 2001
- Program Committee: SPIE International Symposium on High-Power Lasers and Applications; Conference on Laser Applications in Microelectronic and Optoelectronic Manufacturing VI, San Jose, CA, January 2001.
- Organizing Committee: 7<sup>th</sup> International Workshop on Oxide Electronics, Les Diablerets, Switzerland, October 2000.
- Session Chair, 2000 International Conference on Electronic Materials and European Materials Research Society Meeting, Strasbourg, France, June 2000.
- Symposium Organizer and Co-Chair: "Symposium on Laser-Solid Interactions for Materials Processing," Spring Meeting of the Materials Research Society, San Francisco, CA April 2000.
- Session Chair, Spring Meeting of the Materials Research Society, San Francisco, CA, April 2000.
- Symposium Organizer and Co-Chair, "Symposium on Substrate Engineering-Paving the Way to Epitaxy," Fall Meeting of the Materials Research Society, Boston, MA, November 1999.
- Session Chair, Fall Meeting of the Materials Research Society, Boston, MA 1999
- Session Chair, Spring Meeting of the Materials Research Society, San Francisco, CA 1998.
- Organizer, DMP Focused Sessions: "Laser Ablation and Low-Energy Beam-Assisted Film Growth", American Physical Society March Meeting, Kansas City, MO, March 1997
- Conference Organizer and Co-Chair, "Advanced Applications of Lasers in Materials Processing," IEEE/LEOS Summer Topical Meeting, Keystone, CO, March 1996.
- Session Chair, Spring Meeting of the Materials Research Society, San Francisco, CA 1995.
- Session Chair, TMS Annual Meeting, Las Vegas, NV 1995.
- Symposium Organizer and Co-Chair, "Symposium on Advanced Laser Processing of Materials-Fundamentals and Applications," Fall Meeting of the Materials Research Society, Boston, MA, November 1995.
- Session Chair, Spring Meeting of the Materials Research Society, San Francisco, CA 1995.

- Session Chair, ETL Workshop on High Temperature Superconductors, Tsukuba-shi, Japan 1993.
- Symposium Organizer and Co-Chair, "Symposium on Laser Ablation in Materials Processing: Fundamentals and Applications," Fall Meeting of the Materials Research Society, Boston, MA, November 1992.

#### **Editorial Activities For Scholarly Journals**

- Associate Editor, Journal of Crystal Growth (2002-present)
- Current reviewer for the following journals: Applied Physics Letters, Journal of Applied Physics, Journal of Materials Research, Physical Review B, Physical Review Letters, Physica B, Physica C, Physica E, Journal of Vacuum Science and Technology, Applied Physics A, Advanced Materials, Surface and Coating Technology, Journal of Physics: Condensed Matter, Journal of Physics D: Applied Physics, The Journal of Physical Chemistry, Crystal Growth & Design, Chemical Physics Letters, Materials Letters, Applied Surface Science, Inorganic Chemistry, Materials Research Bulletin, Semiconductor Science and Technology, Superconductor Science and Technology

#### **Professional Society Membership**

- Fellow, American Physical Society
- Fellow, American Vacuum Society
- Fellow, American Association for the Advancement of Science
- Member, Materials Research Society
- Member, Electrochemical Society
- Member, American Society for Engineering Education

#### **Professional Service Activities**

- Government Affairs Committee, Materials Research Society 2010-present
- Proposal Review Committee, Oak Ridge National Laboratory 2010  
*Center for Nanophase Materials Sciences (CNMS)*
- ORNL NA-22 Program Review, Oak Ridge National Laboratory 2010
- Proposal Review Committee, Oak Ridge National Laboratory 2009  
*Center for Nanophase Materials Sciences (CNMS)*
- Review Panelist; 2009 DOE Annual Superconductivity Peer Review, 2009  
Washington, D.C. August 2009
- Proposal Review Committee, Oak Ridge National Laboratory 2008  
*Center for Nanophase Materials Sciences (CNMS)*
- ORNL NA-22 Program Review, Oak Ridge National Laboratory 2008
- ORNL DOE Center Proposal Review, Oak Ridge National Laboratory 2008
- Proposal Review Committee, Oak Ridge National Laboratory 2007  
*Center for Nanophase Materials Sciences (CNMS)*
- On-Site Reviewer, NSF Materials Research Science and 2009  
Engineering Center, Yale University, Connecticut
- Proposal Review Committee, Oak Ridge National Laboratory 2006  
*Center for Nanophase Materials Sciences (CNMS)*
- Review Panelist; 2006 DOE Annual Superconductivity Peer Review, 2006  
Washington, D.C. July
- Review Panelist; 2005 DOE Annual Superconductivity Peer Review, 2005  
Washington, D.C. July
- Review Panelist; 2004 DOE Annual Superconductivity Peer Review, 2004  
Washington, D.C. July
- Review Panelist; 2004 NSF CAREER Awards, 2004  
Washington, D.C., October
- Panelist for Reverse-Site Proposal Review; NSF MRSEC Awards, 2005

- Washington, D.C. May, Review Panelist; 2003 DOE Annual Superconductivity Peer Review, Washington, D.C. July 2003
- Review Panelist; 2002 DOE Annual Superconductivity Peer Review, Washington, D.C. July 2002
- Executive Committee, Electronic Materials and Processing Division, American Vacuum Society, 2002
- Reviewer for grant proposals to the National Science Foundation, Air Force Office of Scientific Research, Department of Energy

**University Governance And Service**

University level

- Vice President for Research 2012-present
- Associate Dean for Research 2009-2012
- Nanoscience Institute for Medical and Engineering Technologies Committee (NIMET) 2004-2011
- UF Task Force on the Governor's Initiative in Technology College Level 2002
- Chair, Search Committee for Associate Dean for Academic Affairs 2010
- Chair, College of Engineering Nanotechnology Bldg. Committee 2001-2002
- NanoScience and Technology Ctr. Faculty Steering Committee 2002-2004
- UF NanoFabrication Facility Committee 2003-2008
- UF Nanofabrication Facility Director 2006-2008
- Nanoscale Research Facility Cleanroom Director 2008

Department Level

- MAIC Committee 2003-2010
- MSE Safety Committee 2004-2008
- Dept. of Materials Science and Engr. Curriculum Committee 2002-2008
- Dept of Materials Science and Engr. Qualifying Exam Committee 2002-2008
- Search Committee for Faculty, Materials Science and Engr. 2002
- Search Committee for Nanoscience Faculty, Dept. of Physics. 2002-2004
- Search Committee for Dept. Chair, Materials Science and Engr. 2002-2003
- Search Committee for MSE Assistant in Engr. 2002-2003