# Claudia Cantoni

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**Education**:

**1999 Ph.D. in Physics**, University of Salerno (Italy).
Thesis title: "*Growth and Characterization of High Tc and Jc* $Nd_{1+x}Ba_{2-x}Cu_3O_y$ *Films on Single Crystal and Nickel Substrates*".
**1994 M.S./B.S. in Physics**, University of Naples "Federico II" (Italy).
Cum laude and maximum score of 110/110
Thesis title: "*Measurements of the Magnetic Penetration Depth of the Superconducting Compound* $YBa_2Cu_3O_{7-\delta}d$ *: Study of the Electronic Wave-Function Pairing Symmetry*"
Equivalent grade point average: 4.04

**Professional Experience:**

**January 2008 - present,** Research Staff, ORNL – UT Battelle, Materials Science & Technology Division.
**December 2001-2007,** Research Associate, ORNL – UT Battelle, Condensed Matter Sciences Division.
**1999-2001,** Postdoctoral Research Associate, ORNL (Condensed Matter Sciences Division).
**1996-1998,** Graduate Research Assistant, Italian National Laboratory ENEA, Rome, Italy.
**1995-1996**, Undergraduate fellowship assignment at the Italian Center for National Research CNR Bologna, Italy.

**Honors & Awards:**

**2012 R&D 100 Award** for "High-Temperature Superconducting Wires with Double-Perovskite, Tantalate, Nano-Pinning Centers."
**2011 R&D 100 Award** for "Self-assembled, Ferromagnetic-Insulator Nanocomposites for Ultrahigh-Density Data Storage."

**2011 National FLC Award** for co-developing flexible thin-film solar photovoltaics on RABiTS in conjunction with the National Renewable Energy Laboratory.
**2010 R&D 100 Award** for high-performance superconducting wires enabled via self-assembly of non-superconducting columnar defects.
**2009 R&D 100 Award** for development of round superconducting wires.
**2009 ORNL Significant Event Award** for development of round superconducting wires.
**2009** Listed among most cited authors worldwide during the decade 1999 – 2009 in the field of high-temperature superconductors in an analysis conducted by ScienceWatch.com.
**2008 ORNL Significant Event Award** for development of IBAD-based second generation superconducting wires.
**2007 R&D100 Magazine's MICRO/NANO Newsletter** top 25 technologies for the project "Nanocomposites via Epitaxial, 3-D Self-Assembly of Nanodots of One Complex Material within Another."
**2003 European Society for Applied Superconductivity Award** for Best Scientific Contribution at the European Conference on Applied Superconductivity.
**2002 Superconductivity Peer Review** recognition for outstanding contributions, accomplishment, and commitment in government-industry collaboration, from American Superconductor Corporation.
**2002** Finalist for **Early Career Award** for scientific accomplishment from ORNL for providing the scientific basis for controlling the reproducible deposition of high-quality crystalline-oriented oxide coating on metal surfaces for the development of high-temperature superconducting wires.
**2001 Energy100** Award from DOE.
**1999 R&D 100** Award for the development of Rolling Assisted Biaxially Textured Substrates (RABiTS).
**1999 AMSE** American Museum of Science and Education, for technological achievement.

**Peer-Reviewed Publications:**

Total 107, 4 book chapters (citations > 1500; h-index = 20)

**Professional Activity:**

**2014** - Program Committee Member and Editor for the 2014 Applied Superconductivity Conference
**2010** - MRS Spring 2011 lead symposium organizer
**2009-present** - Member of Executive Committee for ORNL SHaRE program
**2006** - Co-organized MRS Spring symposium

**Research Projects:**

**2011-present** - Role of nanoscale chemical/structural inhomogeneity on the local magnetic moment, ground state, and electronic properties of iron-based superconductors and parents by aberration-corrected STEM/EELS.
**2007-present** - Atomic and electronic structure of complex oxide interfaces (e.g.: LaAlO3/SrTiO3, La1-xSrxMnO3/La2-xSrxCuO4 etc.), and structure-property relationships at internal interfaces in self-assembled, nanocomposite oxide films by aberration- corrected STEM/EELS.
**1998-2011** - Strategic research within high-temperature superconductivity (HTS) program (growth and nucleation mechanisms on metal surfaces, development of buffer and superconducting films on textured metal substrates, flux pinning, engineered embedded nanostructures) using the following techniques: PLD, RHEED, TEM, AFM, transport measurements, XRD.
**2009-2012** - Development of single-crystal-like flexible substrates for low cost, large area Si-based photovoltaics.

**Recent Invited Talks:**

2014 Spring MRS, San Francisco, CA
2014 APS March Meeting, Denver, CO
2014 Electronic Materials & Applications (EMA), Orlando, FL
2013 American Conference on Crystal Growth and Epitaxy (ACCG), Keystone, CO
2013 Electronic Materials & Applications (EMA), Orlando, FL
2011 University of Tennessee, Materials Sciences Department, Knoxville, TN
2011 Center for Nanophase Material Sciences (CNMS), Oak Ridge, TN
2010 University of Houston, Materials Sciences Department, Houston, TX
2010 Materials Science & Technology (MS&T), Houston, TX
2010 Electronic Materials & Applications (EMA), Orlando, FL

**Publications:**

1. C. Cantoni, J. E. Mitchell, A. F. May, M. A. McGuire, J-C. Idrobo, T. Berlijn, E. Dagotto , M. F. Chisholm, W. Zhou ,S. J. Pennycook, A. S. Sefat , and B. C. Sales, "Orbital Occupancy and Charge Doping in Iron-Based Superconductors" *Advanced Materials*, DOI: 10.1002/adma.201401518. (2014) ORNL Press release @ http://www.ornl.gov/ornl/news/news-releases/2014/ornl-scientists-uncover-clues-to-role-of-magnetism-in-iron-based-superconductors-
2. C. Cantoni, A.F. May, J.E. Mitchell, A.S. Sefat, M.A. McGuire and B.C. Sales, "Electronic Signature of Magnetic Moment and Fe-Vacancy Order in Fe-Based TlFe1.6Se2 Investigated by STEM/EELS" Microscopy and Microanalysis **19,** Supplement S2, pp 340 – 341, Published October 2013.
3. D. Parker, J. C. Idrobo, C. Cantoni, and A. S. Sefat "Evidence for superconductivity at

*T*c = 12 K in oxygen-deficient MoO2−δ and properties of molybdenum arsenide and oxide binaries" Phys. Rev. B **90,** (2014) 054505.

4. V. Foglietti, N. Yang, A. Tebano, C. Aruta, E. Di Bartolomeo, S. Licoccia, C. Cantoni, and G. Balestrino, "Heavily strained BaZr0.8Y0.2O3−x interfaces with enhanced transport properties" *Appl. Phys. Lett.* **104,** 081612 (2014)
5. B. Saparov, C. Cantoni, M. Pan, T. C. Hogan, W. Ratcliff II, S. D. Wilson, K. Fritsch, B. D. Gaulin, and A. S. Sefat "Complex structures of different CaFe2As2 samples" *Scientific Reports* **4**, Article number: 4120 doi:10.1038/srep04120.
6. M. P. Paranthaman, T. Aytug, L. Stan, Q. Jia, C. Cantoni and S. H. Wee "Chemical solution derived planarization layers for highly aligned IBAD-MgO templates" *Supercond. Sci. Technol.* **27,** (2014) 022002.
7. K. Gofryk, M. Pan, C. Cantoni,B. Saparov, J. E. Mitchell, and A. S. Sefat. "Local inhomogeneity and filamentary superconductivity in Pr-doped CaFe2As2" *Phys. Rev. Lett.* ***112,***047005 (2014).
8. S. H. Wee Y. Zuev, C. Cantoni, Amit Goyal, "Engineering nanocolumnar defect configurations for optimized vortex pinning in high temperature superconducting nanocomposite wires" *Scientific Reports* **3**, (2013) 2310.
9. E. Di Gennaro, U. Scotti di Uccio, C. Aruta, C. Cantoni, A. Gadaleta, A. R. Lupini, D. Maccariello, D. Marré, I. Pallecchi, D. Paparo, P. Perna, M. Riaz, and F. Miletto Granozio, "Persistent photoconductivity in 2-dimensional electron gases at different oxide interfaces" *Advanced Optical Materials* **1**, (2013) 834.
10. C Cantoni, A Goyal "Nanotechnologies to Enable High-Performance Superconductors for Energy Applications" in Nanotechnology for the Energy Challenge, Second Edition, 327-354 Wiley-VCH Verlag GmbH & Co. KGaA.
11. M. Staruch, C. Cantoni, M. Jain, "Systematic study of magnetotransport properties and enhanced low-field magnetoresistance in thin films of La0. 67Sr0. 33MnO3+ Mg (O)" *Applied Physics Letters* **102,** 062416.
12. A. McDannald, M. Staruch, G. Sreenivasulu, C. Cantoni, G Srinivasan, M. Jain, "Magnetoelectric coupling in solution derived 3-0 type PbZr0.52Ti0.48O3:*x*CoFe2O4 nanocomposite films" *Applied Physics Letters* **102**, 122905-122905-4
13. J. Sinclair, Y. L. Zuev, C. Cantoni, S. H. Wee, C. V. Varanasi, J. R. Thompson, and D. K. Christen, "Matching field effects at tesla-level magnetic fields in critical current density in high-Tc superconductors containing self-assembled columnar defects", *Supercond. Sci. Technol*. **25,** (2012) 115003.
14. F. May, M. A. McGuire, H. Cao, I. Sergueev, C. Cantoni, B. C. Chakoumakos, D. S. Parker, B. C. Sales, "Spin reorientation in TlFe1.6Se2 with complete vacancy ordering", *Phys. Rev. Lett.* **109,** (2012) 077003.
15. C. Cantoni , J. Gazquez , F. Miletto Granozio , M. P. Oxley ,M. Varela , A. R. Lupini , S. J. Pennycook , C. Aruta , U. Scotti di Uccio , P. Perna , and D. Maccariello "Electron transfer and ionic displacements as the origin of the 2D electron gas at the LAO/STO interface: direct measurements with atomic-column spatial resolution" *Advanced*

*Materials* **24,** (2012) 3952.

16. S. Sathyamurthy, M. Paranthaman, H-Y. Zhai, S. Kang, C. Cantoni, S. Cook, L. Heatherly, A. Goyal, H. M. Christen "Solution Buffer Layers for YBCO Coated-Conductors" in "Fabrication of Long-Length and Bulk High-Temperature Superconductors" John Wiley & Sons Inc. 149 (2012) 1-8.
17. A. F. May, M. A. McGuire, C. Cantoni, B. C. Sales "Physical properties of Ce3−*x*Te4 below room temperature" *Phys. Rev. B* **86,** (2012) 035135.
18. H. Cao, C. Cantoni, A. F. May, M. A. McGuire, B. C. Chakoumakos, S. J Pennycook, R. Custelcean, A. S. Sefat, B. C. Sales "Evolution of the nuclear and magnetic structures of TlFe1.6Se2 with temperature" *Physical Review B* **83**, (2012) 224520.
19. J. Shin, A. Goyal, C. Cantoni, J. W. Sinclair, J. R. Thompson "Self-assembled ferromagnetic cobalt/yttria-stabilized zirconia nanocomposites for ultrahigh density storage applications" *Nanotechnology* **23**, (2012) 155602.
20. S.-H. Wee, C. Cantoni, Y. L. Zuev, E. D. Specht, A. Goyal "Phase stability of cubic pyrochlore rare earth tantalate pinning additives in YBa2Cu3O7-d superconductor" *Journal of the American Ceramic Society* **95**, (2012) 1174.
21. S. H. Wee, C. Cantoni, T. R. Fanning, C. W. Teplin, D. F. Bogorin, J. Bornstein, K. Bowers, P. Schroeter, F. Hasoon, H. M. Branz, M. P. Paranthaman, and A. Goyal "Heteroepitaxial film silicon solar cell grown on Ni-W foils" *Energy & Environmental Science* **5**, (2012) 6052-6056.
22. C. Cantoni, J. Gazquez, M. Oxley, A. Lupini, M. Varela, S. Pennycook, P Perna, D.Marre', C. Aruta, U. Scotti di Uccio, F. Miletto Granozio "Differences in Structural and Electronic Properties of Conducting LGO/STO and LAO/STO Interfaces" *Microscopy and Microanalysis* **17,** (2012) 1402-1403.
23. Claudia Cantoni, Yanfei F. Gao, Sung Hun Wee, Eliot D. Specht, Jaume Gazquez, Jianyong Y. Meng, Stephen J. Pennycook, and Amit Goyal "Strain-driven oxygen deficiency in self-assembled, nanostructured, composite oxide films". *ACS Nano* 5, (2011) 4783.
24. C. W. Teplin, M. P. Paranthaman, T. R. Fanning, K. Alberi, L. Heatherly, S.-H. Wee, K. Kim, F. A. List, J. Pineau, J. Bornstein, K. Bowers, D. F. Lee, C. Cantoni, S. Hane, P. Schroeter, D. L. Young, E. Iwaniczko, K. M. Jones, and H. M. Branz "Heteroepitaxial film crystal silicon on Al2O3 for solar cells on cube-textured metal foil". *Energy & Enviromental Science* **4,** (2011) 3346.
25. T. Aytug, Z. Chen, V. A. Maroni, D.J. Miller, C. Cantoni, E. D. Specht, A.J. Kropf, N. Zaluzec, Y. Zhang, Y. Zuev, M. Paranthaman "Fabrication and Characterization of Ce- and Ho-doped MOCVD YBa2Cu3O6+d". *Journal of Applied Physics* **109**, (2011) 113923.
26. Wee Sung Hun; Specht Eliot D.; Cantoni Claudia; *et al*. "Formation of stacking faults and their correlation with flux pinning and critical current density in Sm-doped YBa2Cu3O7-d films" *Physical Review B* **83,** 224520 (2011).
27. P. Perna, D. Maccariello, M. Radovic, U. Scotti di Uccio, I. Pallecchi, M. Codda, D.

Marré, C. Cantoni, J. Gazquez , M. Varela, S. J. Pennycook, and F. Miletto Granozio "Novel conducting interfaces between band insulating oxides" *Applied Physics Letters* **97**, (2010) 152111**.**

28. Sung Hun Wee, Amit Goyal, Eliot D. Specht, Claudia Cantoni, Yuri L. Zuev, V Selvamanickam and Sy Cook "Enhanced flux-pinning and critical current density via incorporation of self-assembled rare earth barium tantalite nanocolumns within YBa2Cu3O7-δ films" *Physical Review B* **81**, (2010) 140503.
29. Enis Tuncer, Isidor Sauers, D. Randy James, Georgios Polizos, Alvin R. Ellis, Karren I. More, Claudia Cantoni, "Structural Characteristics of Nanocomposites Fabricated With *in situ* Particle Synthesis Method" Proceedings of the ASME 2010 Conference on Smart Materials, Adaptive Structures and Intelligent Systems. Vol. 2 (2010) 251-255.
30. Enis Tuncer, Claudia Cantoni, Karren L. More, D. Randy James, G. Polizos, I. Sauers and A. R. Ellis, "Breakdown properties of epoxy nanodielectric", Proceedings of the IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), 17-20 Oct. 2010, page(s): 1 - 4.
31. C. Cantoni and A. Goyal "High-*T*c Superconducting Thin and Thick-Film Based Coated Conductors for Energy Applications" in *Thin Film Metal-Oxides,* S. Ramanathan Ed.(Springer, New York 2010) ch. 7.
32. C. Cantoni and A. Goyal "Nanomaterials for Superconductors from the Energy Perspective" in *Nanotechnology for the Energy Challenge,* J. Garcia-Martinez Ed. (Wiley-VCH, Weinheim 2010) ch. 9.
33. J. E. Mathis, G. Eres, C. Cantoni, K. Kim, and H. M. Christen "Synthesis of complex-oxide nanorods via Pulsed-Laser Deposition", Proceedings of the Materials Research Society Spring Meeting 2010, Symposium N.
34. Sung Hun Wee, Amit Goyal, Yuri L. Zuev, Claudia Cantoni and Eliot D. Specht "Formation of self-assembled Ba2YNbO6 nanocolumns and their contribution to flux-pinning and Jc in Nb-doped YBa2Cu3O7-δ films" *Applied Physics Express* **3**, (2010) 023101.
35. M. Parans Paranthaman, S. Sathyamurthy, Xiaoping Li, E. D. Specht, S. H. Wee, C. Cantoni, A. Goyal, and M. W. Rupich "Modified Lanthanum Zirconium Oxide Buffer Layers for Low-Cost, High Performance YBCO Coated Conductors" *Physica C-Superconductivity and its applications* **470**, (2010) 352**.**
36. V. Selvamanickam, A. Guevara, Y. Zhang, I. Kesign, Y. Xie, G. Carota, Y. Chen, J. Dackow, Y. Zhang, Y. Zuev, C. Cantoni, A. Goyal, J. Coulter, and L. Civale "Enhanced and Uniform in-Field Performance in Long (Gd,Y)-Ba-Cu-O Tapes with Zirconium Doping Fabricated by Metal Organic Chemical Vapor Deposition" *Superconductor Science & Technology* **23**, (2010) 014014**.**
37. Sung Hun Wee, Junsoo Shin, Claudia Cantoni, Yuri. L. Zuev, Sy Cook, and Amit Goyal "Multifunctional, phase-separated, cap buffer layers for improved flux-pinning in YBa2Cu3O7-δ based coated conductors" *Superconductor Science and Technology* **23**, (2010) 014007**.**

38. T. Aytug, M. Paranthaman, E. D. Specht, K. Kim, Y. L. Zuev, C. Cantoni, Y. Zhang, A. Goyal, D. K. Christen, V. A. Maroni, Y. Chen, and V. Selvamanickam "Enhanced Flux Pinning in MOCVD-YBCO Films through Zr-Additions: Systematic Feasibility Studies" *Superconductor Science and Technology* **23** (2010) 014005**.**
39. J. R. Thompson, J. W. Sinclair, D. K. Christen, Y. Zhang, Y. L. Zuev, C. Cantoni, Y. Chen, and V. Selvamanickam "Field, Temperature, and Angle Dependent Critical Current Density Jc(H,T,q) in Coated Conductors via Contact-Free Methods" *Superconductor Science and Technology* **23,** (2010) 014002**.**
40. S. H. Wee, J. Shin, C. Cantoni, H. M. Meyer, S. W. Cook, M. P. Paranthaman, Y. L. Zuev, and A. Goyal, "Phase-Separated, Epitaxial, Nanostructured LaMnO3+MgO Composite Cap Layer Films for Propagation of Pinnign Defects in YBa2Cu3O7-δ Coated Conductors" *Applied Physics Express* **2**, (2009) 063008.
41. Y. Zhang, E. D. Specht, C. Cantoni, D. K. Christen, J. R. Thompson, J. W. Sinclair, A. Goyal, T. Aytug, M. P. Paranthaman, Y. Chen, and V. Selvamanickam, "Magnetic field orientation dependence of flux pinning in (Gd,Y)Ba2Cu3O7-x coated conductor with tilted lattice and nanostructures" *Physica C: Superconductivity* **469**, (2009) 2044-2051.
42. C. Cantoni, E.D. Specht, A. Goyal, X. Li, M. Rupich, "Influence of oxygen deficiency on the out-of-plane tilt of epitaxial Y2O3 films on Ni–5%W tapes" *Journal of Materials Research* **24**, (2009) 520.
43. Yimin Chen,Venkat Selvamanickam, Yifei Zhang, Yuri Zuev, Claudia Cantoni, Eliot Specht, M. Parans Paranthaman, Tolga Aytug, Amit Goyal, and Dominic Lee "Enhanced flux pinning by BaZrO3 and (Gd,Y)2O3 nanostructures in metal organic chemical vapor deposited GdYBCO high temperature superconductor tapes"*Applied Physics Letters* **94**, (2009) 062513.
44. K.H. Kim, D.P. Norton, D.K. Christen, C. Cantoni, M. Paranthaman and T. Aytug, "Epitaxial growth of MgO/TiN multilayers on Cu" *Vacuum* **83**, (2009) 897.
45. Polat, O., T. Aytug, M. Paranthaman, K. Kim, Y. Zhang, C. Cantoni, Y. L. Zuev, A. Goyal, J. R. Thompson, D. K. Christen, X. Xiong, and V. Selvamanickam, "Properties of YBCO on LaMnO3-Capped IBAD MgO-Templates without Homo-Epitaxial MgO Layer" *IEEE Trans. Appl. Supercond.* **19**, (3) 3315-3318 (2009).
46. Y. Zhang, R. Feenstra, C. Cantoni, D. K. Christen, and D. J. Miller, "Modification and Conversion of E-Beam Co-Evaporated Precursors for Fabricating High Critical Current YBa2Cu3O7-d Films," *IEEE Trans. Appl. Supercond.* **19**, (3) 3188-3191 (2009).
47. Y. L. Zuev, E. D. Specht, C. Cantoni, D. K. Christen, J. R. Thompson, R. Jin, A. S. Sefat, D. G. Mandrus, M. A. McGuire, and B. C. Sales, "Aligned Crystallite Powder of NdFeAsO0.86F0.14: Magnetic Hysteresis and Penetration Depth," *Physical Review B* **79**, (2009) 224523.
48. S. H. Wee, A. Goyal, Y. L. Zuev, and C. Cantoni "Tuning Flux-pinning in Epitaxial NdBa2Cu3O7-d Films via Engineered, Hybrid Nanoscale Defect Structures" *Applied Physics Express* **1**, (2008) 111702.

49. Sung-Hun Wee, Amit Goyal, Yuri L. Zuev, and Claudia Cantoni, "High performance superconducting wire in high applied magnetic fields via nanoscale defect engineering" *Supercond. Sci. Technol.* **21**, (2008) 092001.
50. M. Parans Paranthaman, M.S. Bhuiyan, S. Sathyamurthy, L. Heatherly, C. Cantoni, and A. Goyal "Improved Textured La2Zr2O7 Buffer on La3TaO7 Seed for All-MOD Buffer/YBCO Coated Conductors" *Physica C-Superconductivity* **468**, (2008) 129.
51. Kim K., Norton D. P., Christen D. K., Cantoni C., Aytug T., Goyal, A. "Epitaxial (La, Sr)TiO3 on textured Ni-W as a conductive buffer architecture for high temperature superconducting coated conductor" *Physica C-Superconductivity* **468**, (2008) 961.
52. M. Parans Paranthaman, M.S. Bhuiyan, S. Sathyamurthy, L. Heatherly, C. Cantoni, and A. Goyal "Improved Textured La2Zr2O7 Buffer on La3TaO7 Seed for All-MOD Buffer/YBCOCoated Conductors" *Physica C-Superconductivity* **468**, (2008) 129.
53. J. H. Durrell, D. M. Feldmann, and C. Cantoni "Suppression of vortex channeling in meandered YBa2Cu3O7−$\delta$ grain boundaries" *Appl. Phys. Lett.* **91**, (2007) 182506.
54. D. M. Feldmann, T. G. Holesinger, C. Cantoni, R. Feenstra, N. A. Nelson, D. C. Larbalestier, D. T. Verebelyi, X. Li and M. Rupich "Grain orientations and grain boundary networks of YBa2Cu3O7-d films deposited by metalorganic and pulsed laser deposition on biaxially textured Ni-W substrates" *Journal of Materials Research* **21**, (2006) 923.
55. K. Kim, M. Paranthaman, D. P. Norton, T. Aytug, C. Cantoni, A. A. Gapud, A. Goyal and D. K. Christen "A perspective on conducting oxide buffers for Cu-based YBCO-coated conductors" *Supercond. Sci. Technol.* **19**, (2006) R23-R29.
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57. A. Gapud, D. Kumar,, S. KV. Viswanathan, C. Cantoni, M. Varela, J. Abiade, S. J. Pennycook, and D. K. Christen "Enhancement of flux pinning in YBa2Cu3O7-δ thin films embedded with epitaxially grown Y2O3 nanostructures using a multi-layering process" *Supercond. Sci. Technol.* **18**, (2005) 1502-1505.
58. Goyal, N. Rutter, C. Cantoni, and D. F. Lee "Long-range current flow and percolation in RABiTS-type conductors and the relative importance of out-of-plane and in-plane misorientations in determining Jc" *Physica C-Superconductivity* **426**, (2005) 1083-1090.
59. J. R. Thompson, K. D. Sorge, C. Cantoni, D. K. Christen, and M. Paranthaman "Vortex pinning and slow creep in high-Jc'c MgB2 thin films: a magnetic and transport study" *Supercond. Sci. Technol*. **18**, (2005) 970-976.
60. A. Cantoni, A. Goyal, U. Schoop, X. Li, M. W. Rupich, C. Thieme, A. A. Gapud, T. Kodenkandath, T. Aytug, M. Paranthaman, K. Kim K, J. D. Budai, and D. K. Christen "Investigation of TiN Seed Layers for RABiTS Architectures With a Single-Crystal-Like Out-of-Plane Texture" *IEEE Transactions on Applied Superconductivity* **15**, (2005)

2981 – 2984.

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62. Cantoni, D. T. Verebelyi, E. D. Specht, J. Budai, and D. K. Christen "Anisotropic, non-monotonic behavior of the superconducting critical current in thin YBCO films on vicinal SrTiO3 surfaces" *Physical Review B* **71**, (5) (2005) Art. No. 054509.
63. S. Sathyamurthy, M. Paranthaman, H-Y. Zhai, S. Kang, T. Aytug, C. Cantoni, K. J. Leonard, E. Payzant, H. M. Christen, and A. Goyal, "Chemical solution deposition of lanthanum zirconate barrier layers applied to low-cost coated-conductor fabrication" *Journal of Materials Research* **19**, (2004) 2117-2123.
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