Barrett O. Wells

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EDUCATION:

Undergraduate

Stanford University	Department of Physics	B.S. 1986 with Distinction

Graduate

Cornell University	Department of Matls Sci and Eng	1986-1987
Stanford University	Department of Applied Physics	M.S. 1990
Stanford University	Department of Applied Physics	Ph.D. 1992

Co-Advisors: W.E. Spicer and Z.-X. Shen

Thesis: Analysis of the gap in high temperature superconductors using photoemission spectroscopy

Postdoctoral

Mass. Inst. Tech (MIT)	Department of Physics	1992-1996

Advisor: Robert J. Birgeneau

APPOINTMENTS:

Associate Dean for Life and Physical Sciences		
	University of Connecticut – CLAS	2023-present
Department Head	University of Connecticut – Physics	2018-2023
Visiting Scientist	Paul Scherrer Inst., Switzerland	2012
Professor	University of Connecticut – Physics	2009-present
Associate Department Head for Undergraduate Affairs		
	University of Connecticut – Physics	2007-2015
Associate Professor	University of Connecticut – Physics	2004-2009
Assistant Professor	University of Connecticut - Physics	1999-2004
Asst. Professor in Residence	University of Connecticut – Physics	1998-1999
Guest Researcher	Brookhaven National Lab, NY	1998-1999
Member - Technical Staff	McDonnel Douglas/Boeing, AZ	1996-1998
Research Associate	Southwall Corporation, CA	1987

AWARDS and HONORS:

Elected to Connecticut Academy of Science and Engineering (CASE) - 2014

CAREER Award, National Science Foundation – 2003.

Cottrell Scholar, Research Corporation of America - 2002.

Sloan Foundation Research Fellow – 2000.

Sage Fellow, Cornell University - 1993

Phi Beta Kappa, Stanford University – 1992

HIGHLIGHTS OF UNIVERSITY ADMINISTRATIOM AND SERVICE

Associate Dean for the Life and Physical Sciences, CLAS, 2023-present

Head, Department of Physics, 2018 – 2023

Associate Head for Undergraduate Affairs, Department of Physics, 2007-15

Search Committee, Department Head for Molecular and Cell Biology, 2022

Advisor to the Society of Physics Students, UConn Chapter, 2003-2007 and 2015-2018

Evaluation Committee, Provost's Academic Plan Equipment for Research Competition, 2017

CLAS Academic Vision Committee 2013-14

University Academic Vision – Advanced Materials and Manucfacturing Strategic Area Advising Team 2013-14

Future of the Physics Department Advisory Committee 2014-2018

IMS Advisory Committee 2012-2018

Chair of Search Committees for hiring three tenure track faculty, three APiRs, two staff positions.

Chair, Physics Department PTR Committee 2017-18

Chair, Physics Department Teaching Assignment Committee, 2007-2008

Chair, Physics Department Development Committee, 2004-2008

Chair, Condensed Matter Physics Seminars, 1999-2005

Regular Physics Representative at UConn Open Houses and Majors Fairs, 2004-2023.

Phi Beta Kappa Undergraduate Committee 2000-2004

Women in Science and Engineering for the Girl Scouts of America, organized Physics portion of Girl Scouts Science Day. 2003

HIGHLIGHTS OF SERVICE TO THE PROFESSION

Divisional Associate Editor for Condensed Matter Physics, *Physical Review Letters*. 2014 – 2019

NSERC (Canada) review committee for Physics: Research Tools and Instrumentation, Member 2015, 2017, 2018

Visiting Review Committee, Basic Science Programs, Los Alamos National Laboratory, 2016

Canadian Light Source Peer Review Committee, 2010-2016

Proposal Study Panel, Advanced Light Source, Lawrence Berkeley National Laboratory, Department of Energy, 2003-2011

Department of Energy (DOE) Early Career Proposal Panel, 2009, 2013

DOE Beamline Review Committee: IR/UV/Soft-X-Ray Spectroscopy, National Synchrotron Light Source, Brookhaven National Laboratory, 2008

NIST Proposal Reviewer, National Center for Neutron Research, National Institute of Standards and Technology, 2008-present

NSF Review Panel for Superconductivity, 2011

NSF Review Panel for Materials Research Fellowships, 2009

Guest Professor, MaMASELF (Masters program in materials science under the Erasmus-Mundus program of the European Union) 2014

Guest Professor, University of Montpellier 2014

Visiting Scientist, Paul Scherrer Institute, Villigen, Switzerland, 2012

Organizer: *International Workshop for New Opportunities in Hard X-ray Photoelectron Spectroscopy*, Brookhaven National Laboratory, May 22-24, 2009

Organizer: *Workshop in Honor of Joseph I. Budnick on the Occasion of his 75th Birthday*, University of Connecticut, September 27, 2004.

Organizer: *Workshop on Complex Materials*, Brookhaven National Lab, May 1999.

Scientific Committee, Conference: Quantum in Condensed Matter, Ischia, Italy, May 27-June 1, 2013

DOE Proposal Reviewer, Stanford Synchrotron Radiation Laboratory, Department of Energy. 2007, 2009, 2012

DOE Proposal Reviewer, National Synchrotron Light Source, Brookhaven National Laboratory. 2002-2006, 2008-2009.

Scientific Advisory Board, Stamford Museum and Nature Center, 2021-2025

Consultant to the Connecticut Science Center (Science Museum) (2002)

Referee for Nature, Physical Review Letters, Physical Review B, Journal of Applied Physics, Applied Physics Letters, Journal of Superconductivity, Journal of Materials Science, National Science Foundation – Division of Materials Research, Department of Energy – Basic Energy Sciences, National Sciences and Engineering Research Council of Canada (NSERC), Swiss National Science Foundation.

RESEARCH INTERESTS:

A critical theme of modern materials physics is developing understanding and control of materials with novel useful properties, particularly those involving surprising behavior associated with inherently quantum properties. Such materials will enable new quantum technologies that are expected to be at the forefront of the next technological revolution. My research studies how to control properties of quantum materials.

For some time my research group has been interested in sudden changes, phase transitions, that can be induced in materials on the cusp between conducting and insulating behavior due to conduction electrons that are strongly localized. Materials near this cusp can be pushed into one type of property or another by the application of relatively small tuning fields, which may be electric, magnetic, strain, or temperature. Properties that arise from such behavior include multiple types of superconductivity, exotic magnetic states and metal-insulator transition materials. My research group has been particularly interested in compounds that spontaneously form phase-separated electromagnetic states, novel phase transitions, and strain control of magnetism. Discoveries we have made include superconductivity in thin films of $FeTeO_x$; self-organization of separate magnetic and superconducting regions within $La_{2-x}Sr_xCuO_{4+y}$ crystals; similar self-segregation in magnetic $SrCoO_{3-y}$, a comprehensive analysis of how attachment to the substrate alters the structural phases present in thin films, and a novel temperature dependent phase transition in $SrCoO_{2.88}$ with a higher symmetry low temperature phase.

At this time the group is developing a new primary research direction. We fabricate nano-sized pillars out of bulk single crystals that allow us to apply extremely high levels of strain to compress or stretch our materials. This allows extremely high levels of strain engineering, an avenue for studying quantum phase transitions and inducing new properties. Our method also leaves samples with accessible surfaces for advanced measurements of atomic structure and electromagnetic properties. The project is a collaborative effort with colleagues in chemistry, physics, and materials engineering.

TEACHING INTERESTS:

Spurred by a Cottrell Scholar award in 2002, I developed a strong interest in bringing active learning pedagogical approaches developed for large introductory courses to smaller, but often still substantial, physics majors courses. This involves a variety of strategies to promote active learning by students, which by now is common in introductory courses but less so for majors-level courses. Initially these efforts focused upon group discussion of conceptual issues and prompting student participation through clicker questions and peer evaluation of some assignments. As I began to teach more advanced courses, it became clear that our students also needed substantial practice at setting up and following through on significant computational problems. We attacked this problem by pushing most lecture material into pre-class reading and spending class time on group problem solving – a flipped classroom for advanced physics majors.

This background led me to take on several different roles in a department-wide effort to reimagine and reconstruct how we teach introductory physics using a studio-physics approach. This approach minimizes lecture while emphasizing active learning and group activities. As department head, I oversaw the implementation of the studio approach for all our calculus based introductory physics courses. I am currently teaching a studio-physics course in fall 2024.

GRADUATE STUDENTS ADVISED (as major advisor)

Masters Degree Recipients:

Jeroen Thompson 2003, Hashini Mohottala 2003, Changkun Xie 2005, Samuel Emery 2008, Naim Majdalani 2009, Franz Rueckert 2009, Lahiru Narangammana 2010, Zhihai Zhu 2012, Zhiwei Zhang 2013, Amani Jayakody 2018, Krishna Joshi 2020.

Doctor of Philosophy Recipients:

Feizhou He, 2005 – currently Science Manager, Material and Chemical Sciences, Canadian Light Source, Saskatoon, Canada.

Hashini Mohottala, 2006 – currently Professor of Physics at University of Hartford, Hartford, CT. Received the University of Connecticut Provost's award for "Outstanding Academic Achievement by a Graduating Woman"

Changkun Xie, 2008 – currently Senior Process Engr., Mirion Tech. (Canberra), Meriden, CT.

Samuel Emery, 2011 – currently at Staff Scientist, Naval Surface Warfare Lab, Indian Head, MD.

Yuefeng Nie, 2011 – currently Professor, Department of Materials Science and Engineering, Nanjing University, Nanjing, China.

Franz Rueckert, 2013 – currently Dean, Natural and Health Sciences, Lees-McCrae College, Banners Elk, NC.

Lahiru Narangammana, 2014 – currently Senior Lecturer, University of Peradeniya, Sri Lanka.

Zhihai Zhu, 2016 – currently Associate Professor, Key Laboratory for Superconductivity, Institute of Physics, Chinese Academy of Sciences, Beijing.

Zheiwei Zhang 2018 – currently Staff Scientist, Institute of Advanced Scientific Facilities, Shenzhen, China.

Amani Jayakody, 2022 – Assistant Professor, Department of Physics, Hamilton College, Clinton, NY

Postdoctoral Scholar: Zikri Yusof 1999-2002 – currently staff scientist Argonne Natl. Lab.

Continuing students: Krishna Joshi.

MAJOR FUNDING

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 12/01/99 – 11/30/02, $185,855

Sloan Foundation Research Fellowship, 9/16/00 – 9/15/02, $40,000

University of Connecticut Research Foundation, “Commissioning a New Laser-Based Film Growth Facility for Complex Oxides” 6/01/01 – 5/31/02, $21,555

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 12/01/02 – 11/30/05, $210,000

National Science Foundation - CAREER Award, “Functional Oxide Films for Spectroscopy”, 6/01/03 – 5/31/09, $450,000

Research Corporation, Cottrell Scholar Fellowship, "Interactive Classroom for Physics Majors and Interactive Electrons in Functional Oxide Films" 6/01/03 – 12/31/08, $75,000

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems - Supplement” 12/01/04 – 11/30/05, $30,000

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 12/01/05 – 11/30/08, $255,000

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 12/01/08 – 11/30/11, $288,220

University of Connecticut Research Foundation, “Measuring the oxygen content of oxide films” 1/01/09 – 12/31/09, $21,379

National Science Foundation – Division of Materials Research, “Phase Separation and Magnetism in Strained Films of Transition Metal Oxides”, 6/01/09 – 12/31/13, $ 392,676

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 12/01/11 – 12/31/14, $330,000

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 01/01/15 – 12/31/17, $350,000

Department of Energy, “Charge Inhomogeneity in Correlated Electron Systems” 01/01/17-12/31/19, $100,000

Quantum Si, “Films of opto-electronic materials” 1/1/19 – 12/31/19, $30,000

CLAS Equipment – “Nanoindenter for Superelastic Tuning” 1/2023 – 6/2023, $112,445

PUBLICATIONS:

- Published over 100 peer reviewed journal articles.
- Over 8000 citations, h_index=39. (Google Scholar)

1. Amani S. Jayakody, Joseph Budnick, Jason N. Hancock, Daniela Morales, Barrett O. Wells, “Preparation of Epitaxial Scandium Trifluoride Thin Films using Pulsed Laser Deposition” in progress.
2. F.J. Rueckert, F. Z. He, B. Dabrowski, W. A. Hines, J. I. Budnick, and B. O. Wells “Charge order in $SrCoO_3$ investigated through resonant soft x-ray scattering” submitted to *Physica B: Condensed Matter* Web: https://arxiv.org/abs/1707.04336
3. S. Holm-Dahlin, J. Larsen, H. Jacobsen, A. T. Rømer, A.-E. Ţuţueanu, M. Ahmad, J.-C. Grivel, R. Scheuermann, M. v. Zimmermann, M. Boehm, P. Steffens, Ch. Niedermayer, K. S. Pedersen, N. B. Christensen, B. O. Wells, K. Lefmann, L. Udby “Field-induced electronic phase separation in a cuprate high temperature superconductor” *Phys. Rev. B* **109,** 174517

(2024)
https://doi.org/10.1103/PhysRevB.109.174517

4. Adnan Mohammad, Krishna D Joshi, Dhan Rana, Saidjafarzoda Ilhom, Barrett Wells, Brian Willis, Boris Sinkovic, A. K. Okyay, Necmi Biyikli, "Low-temperature synthesis of crystalline vanadium oxide films using oxygen plasmas" *J. Vac. Sci. Technol. A* **41**, 032405 (2023). https://doi.org/10.1116/6.0002383
5. Ana-Elena Ţuţueanu, Henrik Jacobsen, Pia Jensen Ray, Sonja Holm-Dahlin, Monica-Elisabeta Lăcătuşu, Tim Birger Tejsner, Jean-Claude Grivel, Wolfgang Schmidt, Rasmus Toft-Petersen, Paul Steffens, Martin Boehm, Barrett Wells, Linda Udby, Kim Lefmann, and Astrid Tranum Rømer, "Nature of the magnetic stripes in fully oxygenated La_2CuO_{4+y}" *Phys. Rev. B* **103**, 045138 (2021). https://doi.org/10.1103/PhysRevB.103.045138
6. Tim Tejsner, Andrea Piovano, Ana Ţuţueanu, Astrid T. Rømer, Barrett O. Wells, Jean-Claude Grivel, Martin Boehm, and Linda Udby, "Anomalous dispersion of longitudinal optical phonons in oxygen-doped $La_{2-x}Sr_xCuO_{4+\delta}$" *Phys. Rev. B* **101**, 100504(R) (2020). Web: https://doi.org/10.1103/PhysRevB.101.100504
7. Zhiwei Zhang, W. A. Hines, J. I. Budnick, R. Sutarto, F. He, F. C. Chou, and B. O. Wells, "Nematicity and Charge Order in Superoxygenated $La_{2-x}Sr_xCuO_{4+y}$", *Phys. Rev. Lett.* **121**, 067602 (2018). Web: https://doi.org/10.1103/PhysRevLett.121.067602
8. H. Jacobsen, S. L. Holm, M.-E. Lăcătuşu, A. T. Rømer, M. Bertelsen, M. Boehm, R. Toft-Petersen, J.-C. Grivel, S. B. Emery, L. Udby, B. O. Wells, and K. Lefmann, "Distinct Nature of Static and Dynamic Magnetic Stripes in Cuprate Superconductors" *Phys. Rev. Lett*. 120, 037003 (2018). Web: https://doi.org/10.1103/PhysRevLett.120.037003
9. P. J. Ray, N. H. Andersen, T. B. S. Jensen, H. E. Mohottala, Ch. Niedermayer, K. Lefmann, B. O. Wells, M. v. Zimmermann, F. C. Chou, and L. Udby, "Staging superstructures in high-Tc Sr/O co-doped $La_{2-x}Sr_xCuO_{4+y}$" *Phys. Rev. B* **96**, 174106 (2017). Web: https://doi.org/10.1103/PhysRevB.96.174106
10. Zhiwei Zhang, William A. Hines, Joseph I. Budnick, David M. Perry, and Barrett O. Wells, "Direct evidence for the source of reported magnetic behavior in "CoTe"" *AIP Advances* **7**, 125322 (2017). Web: https://doi.org/10.1063/1.4997161
11. B.O. Wells, "Kannan M. Krishnan: Fundamentals and Applications of Magnetic Materials 1st Edition" Invited Review, *J. Mat. Sci*. (2017). https://doi.org/10.1007/s10853-017-0780-8
12. W.A. Hines, D.M. Perry, C.K. Xie, J.I. Budnick, B.O. Wells and B. Dabrowski, "Nuclear magnetic resonance study of the magnetic line phases in $SrCoO_x$ ($2.5 \leq x \leq 3$)" *Mater. Res. Express* **3,** 076104 (2016). Web: https://doi.org/10.1088/2053-1591/3/7/076104
13. Z. H. Zhu, F. J. Rueckert, J. I. Budnick, Ch. Niedermayer, L. Keller, Luetkens, B. Dabrowski, O. Wells, "Distinct Local Magnetic Structures in Single Crystalline $SrCoO_{3-y}$, *Phys. Rev. B* **93**, 224412 (2016). Web: https://doi.org/10.1103/PhysRevB.93.224412
14. Vahid Farrokhi, Bekim Bajrami, Reza Nemati, Adam J. McShane, Franz Rueckert, Barrett Wells, Xudong Yao, "Development of Structural Marker Peptides for Cystic Fibrosis Transmembrane Conductance Regulator in Cell Plasma Membrane by Reversed-Footprinting Mass Spectrometry" *Anal Chem* **87** (17), 8603–8607 (2015).
15. L. Udby, J. Larsen, N. B. Christensen, M. Boehm, Ch. Niedermayer, H. E. Mohottala, T. B. S. Jensen, R. Toft-Petersen, F. C. Chou, N. H. Andersen, K. Lefmann, B. O. Wells "Measurement of unique magnetic and superconducting phases in superoxygenated high-Tc cuprates" *Phys. Rev. Lett*. **111**, 227001 (2013).

Web: http://link.aps.org/doi/10.1103/PhysRevLett.111.227001
16. L. K. Narangammana, X. Liu, Y. F. Nie, F. J. Rueckert, J. I. Budnick, W. A. Hines, G. Gu, and B. O. Wells, "Low temperature crystal structure and large lattice discontinuity at Tc in superconducting $FeTeO_x$ films" *Appl. Phys. Lett*. **103**, 102604 (2013).
Web: http://dx.doi.org/10.1063/1.4820479
17. Espinal, Anais; Yan, Yonggao; Zhang-, Lichun; Espinal, Laura; Morey, Aimee; Wells, Barry; Aindow, Mark; Suib, Steven "Substrate Control of Anisotropic Resistivity in Heteroepitaxial Nanostructured Arrays of Cryptomelane Manganese Oxide on Strontium Titanate" *Small* **10**, 66-72 (2013) .
Web: http://dx.doi.org/10.1002/smll.201300713
18. F. J. Rueckert, Y. F. Nie, C. Abughayada, S. A. Sabok-Sayr, H. E. Mohottala, J. I. Budnick, W. A. Hines, B. Dabrowski, and B. O. Wells "Suppression of magnetic phase separation in epitaxial $SrCoO_X$ films" *Appl. Phys. Lett*. **102**, 152402 (2013).
Web: http://dx.doi.org/10.1063/1.4801646
19. Z. H. Zhu, F. J. Rueckert, J. I. Budnick, W. A. Hines, M. Jain, H. Zhang, and B. O. Wells "Magnetic and electronic structure of the film-stabilized Mott insulator $BaCrO_3$" *Phys. Rev. B* **87**, 195129 (2013). Web: http://link.aps.org/doi/10.1103/PhysRevB.87.195129
20. D. Telesca, Y. Nie, J.I. Budnick, B.O. Wells, B. Sinkovic "Surface valence states and stoichiometry of non-superconducting and superconducting FeTe films" *Surf. Sci*. **606**, 1056-1061 (2012). Web: http://dx.doi.org/10.1016/j.susc.2012.02.026
21. D. Telesca, B.O. Wells, B. Sinkovic, "Structural reorientation of PLD grown La_2NiO_4 thin films" *Surf. Sci*. **606**, 865-871 (2012).
Web: http://dx.doi.org/10.1016/j.susc.2012.02.001
22. D. Telesca, Y. Nie, J. I. Budnick, B. O. Wells, and B. Sinkovic, "Impact of valence states on the superconductivity of iron telluride and iron selenide films with incorporated oxygen" *Phys. Rev. B* **85**, 214517 (2012).
Web: http://link.aps.org/doi/10.1103/PhysRevB.85.214517
23. C. K. Xie, Y. F. Nie, B. O. Wells, J. I. Budnick, W. A. Hines, and B. Dabrowski "Magnetic phase separation in $SrCoO_x$ $(2.5 \leq x \leq 3)$" *Appl. Phys. Lett*. **99**, 052503 (2011).
Web: http://dx.doi.org/10.1063/1.3622644
24. Y. F. Nie, D. Telesca, J. I. Budnick, B. Sinkovic,R. Ramprasad and B. O. Wells, "Superconductivity and Properties of $FeTeO_x$ Films", *J Phys Chem Solids* **72**, 426 (2011).
Web: http://dx.doi.org/10.1016/j.jpcs.2010.10.045
25. J. C. Woicik, C. K. Xie, and B. O. Wells, "Effect of strain on the local perovskite structure: $La_{0.5}Sr_{0.5}CoO_3$" *J. Appl. Phys.* **109**, 083519 (2011)
Web: http://link.aip.org/link/doi/10.1063/1.3564934
26. S.B. Emery, C.-J. Cheng, D. Kan, F.J. Rueckert, S.P. Alpay, V.Nagarajan, I. Takeuchi, B.O. Wells, " Phased Coexistence Near a Morphotropic Phase Boundary in Sm-Doped $BiFeO_3$ Films" *Appl. Phys. Lett.* **97**, 152902 (2010)
Web: http://apl.aip.org/resource/1/applab/v97/i15/p152902_s1
27. L. Udby, P.K. Willendrup, E. Knudsen, Ch. Niedermayer, U. Filges, N.B. Christensen, E. Farhi, B.O. Wells and K. Lefmann, "Analysing neutron scattering data using McStas virtual experiments" *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **634**, S138-S143 (2011)

Web: http://www.sciencedirect.com/science/article/B6TJM-50CVPVN-N/2/28effc1e046738be80b1021d8448dd28
28. Y. F. Nie, D. Telesca, J. I. Budnick, B. Sinkovic, and B. O. Wells, "Superconductivity induced in iron telluride films by low-temperature oxygen incorporation" *Phys Rev B* **82**, 020508 -R (2010)
Web: http://link.aps.org/doi/10.1103/PhysRevB.82.020508
29. Anais E. Espinal, Lichun Zhang, Chun-Hu Chen, Aimee Morey, Yuefeng Nie, Laura Espinal, Barrett O. Wells, Raymond Joesten, Mark Aindow, and Steven L. Suib, "Nanostructured arrays of semiconducting octahedral molecular sieves by pulsed-laser deposition" *Nature Materials* **9**, 54 (2010).
Web: http://www.nature.com/nmat/journal/v9/n1/abs/nmat2567.html
30. Y. F. Nie, E. Brahimi, J. I. Budnick, W. A. Hines, M. Jain, and B. O. Wells, "Suppression of superconductivity in FeSe films under tensile strain" *Appl. Phys. Lett.* **94**, 242505 (2009).
Web: https://doi.org/10.1063/1.3155441
31. L. Udby, N.H. Andersen, F.C. Chou, N.B. Christensen, S.B. Emery, K. Lefmann, J.W. Lynn, H.E. Mohottala, Ch. Niedermayer, B.O. Wells, "Magnetic ordering in electronically phase separated Sr/O co-doped $La_{2-x}Sr_xCuO_{4+y}$" *Phys. Rev. B* **80**, 014505 (2009).
Web: http://link.aps.org/doi/10.1103/PhysRevB.80.014505
32. S.B. Emery and B.O. Wells, "Properties of Phase Separated, Super-Oxygenate $La_{2-x}Sr_xCuO_{4+y}$" *J Supercond Nov Magn*, **22**, 33 (2009).
Web: http://www.springerlink.com/content/h167323kp02907n4/
33. C.K. Xie, J.I. Budnick, W.A. Hines, B.O. Wells, and J.C. Woicik, "Strain-induced change in local structure and its effect on the ferromagnetic properties of $La_{0.5}Sr_{0.5}CoO_3$ thin films" *Appl. Phys. Lett.* **93**, 182507 (2008).
Web: https://doi.org/10.1063/1.3011031
34. Hashini E. Mohottala, B. O. Wells, J. I. Budnick, W. A. Hines, Ch. Niedermayer, and F. C. Chou, "Flux pinning and phase separation in oxygen rich $La_{2-x}Sr_xCuO_{4+y}$ system" *Phys. Rev. B* **78**, 064504 (2008).
Web: http://link.aps.org/abstract/PRB/v78/e064504
35. C. K. Xie, J. I. Budnick, W. A. Hines, B. O. Wells, Feizhou He, and A. R. Moodenbaugh, "Direct evidence for the suppression of charge stripes in epitaxial $La_{1.67}Sr_{0.33}NiO_4$ films" *Phys. Rev. B* **77**, 201403(R) (2008).
Web: http://link.aps.org/abstract/PRB/v77/e201403
36. B. S. Allimi, S. P. Alpay, C. K. Xie, B. O. Wells, J. I. Budnick, and D. M. Pease, "Resistivity of V_2O_3 thin films deposited on a-plane (110) and c-plane (001) sapphire by pulsed laser deposition" *Appl. Phys. Lett.* **92**, 202105 (2008).
Web: http://link.aip.org/link/?APPLAB/92/202105/1
37. Changkun Xie, J. I. Budnick, and B. O. Wells, J. C. Woicik, "Deconvolution of strain and finite size effect on the ferromagnetic properties of $La_{0.5}Sr_{0.5}CoO_3$ thin films" *Appl. Phys. Lett.* **91**, 172509 (2007).
Web: http://link.aip.org/link/?APPLAB/91/172509/1
38. Z. Yusof, B. O. Wells, T. Valla, P. D. Johnson, A. V. Fedorov, Q. Li, S. M. Loureiro, and R. J. Cava, " Angle-resolved photoemission study of the metal-insulator transition in bismuth cobaltates" *Phys. Rev. B* **76**, 165115 (2007).
Web: http://link.aps.org/abstract/PRB/v76/e165115

39. I.B. Misirlioglu, S.P. Alpay, Feizhou He, and B.O. Wells, "Stress Induced Monoclinic Phase in Epitaxial $BaTiO_3$ on MgO" *J. Appl. Phys.* **99**, 104103 (2006). Web: http://link.aip.org/link/?JAPIAU/99/104103/1
40. Hashini E. Mohottala, Barrett O. Wells, Joseph I. Budnick, William A. Hines, Christof Niedermayer, Christian Bernhard, FangCheng Chou, A.R. Moodenbaugh, "Phase Separation in Superoxygenated $La_{2-x}Sr_xCuO_{4+y}$" *Nature Materials* **5**, 377 (2006). Web: http://www.nature.com/nmat/journal/v5/n5/pdf/nmat1633.pdf
41. Feizhou He and B. O. Wells, "Lattice strain in epitaxial $BaTiO_3$ thin films" *Appl. Phys. Lett.* **88**, 152908 (2006). Web: http://link.aip.org/link/?APPLAB/88/152908/1
42. Hashini E. Mohottala, B.O. Wells, J.I. Budnick, W.A. Hines, Ch. Niedermayer, C. Bernhard, A.R. Moodenbaugh, and F.C. Chou, "Electronic phase separation in $La_{2-x}Sr_xCuO_{4+y}$" *Physica B* **374-375**, 199 (2006).
43. F. He, B. O. Wells, and S. M. Shapiro, "Strain Phase Diagram and Domain Orientation in $SrTiO_3$ Thin Films" *Physical Review Letters* **94**, 176101 (2005). Web: http://link.aps.org/abstract/PRL/v94/e176101
44. F. He, B. O. Wells, Z.-G. Ban, S. P. Alpay, S. Grenier, S. M. Shapiro, W. Si, A. Clark and X. X. Xi, "Structural Phase Transitions in Epitaxial Perovskite Films" *Phys. Rev. B* **70**, 235405 (2004). Web: http://link.aps.org/abstract/PRB/v70/e235405
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