

Curriculum Vitae

Kevin Hewitt, PhD
Dalhousie University
Department of Physics
Halifax, Nova Scotia B3H 3J5
Phone: (902) 494-2991 Fax: (902) 494-5191 e-mail: hewittk@is.dal.ca

Objective

- Science and technology teaching, research and planning.

Education

- Simon Fraser University, Ph.D., Physics, February 2000
Advisor: Prof. John C. Irwin
Dissertation: Atomic Substitution in High Temperature Superconductors: Elucidating the Nature of Raman Spectra Excitations
- University of Toronto, B. Sc., Physics Specialist & Biology Major, June 1992

Publications

First author:

1. K. C. Hewitt and J. C. Irwin. Doping dependence of the Superconducting gap in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$. Submitted to *Phys. Rev. B* - Dec. 20, 2000.
2. K. C. Hewitt, C. Roch, J. Chrzanowski, J. C. Irwin, E. Altendorf, W. N. Hardy and R. Liang. Hole concentration and phonon renormalization in Ca-doped $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$. In Process.
3. K. C. Hewitt, L. Y. Beaulieu and J. R. Dahn. InSb as a Li insertion host: Problems & Prospects. Submitted to *J. Electrochem. Soc.*, June 20, 2000.
4. K. C. Hewitt, N. L. Wang, J. C. Irwin, D. M. Pooke, A. E. Pantoja and H. J. Trodahl. Isotope shift of the 590 cm^{-1} feature in underdoped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$. *Phys. Rev. B* **60**, R9943 (1999).
5. K. C. Hewitt, T. P. Devereaux, X. K. Chen, X-Z. Wang, J. G. Naeini, A. Martin and J. C. Irwin. Comment on "Superconducting Gap Anisotropy vs. Doping level in High-Tc cuprates" *Phys. Rev. Lett.* **78**, 4891 (1997).
6. K. C. Hewitt, X. K. Chen, X. Meng-Burany, A. E. Curzon and J. C. Irwin. Raman investigation of Pb-substituted $\text{Bi}_2\text{Sr}_2\text{CuO}_{6+\delta}$. *Physica C* **251**, 192-204 (1994).
7. K. C. Hewitt, A. Martin, Y. H. Shi and M. J. G. Lee. Effects of Pb doping on the Raman spectrum of $\text{Bi}_2\text{Sr}_2\text{CuO}_{6+\delta}$. *Physica C* **216**, 463-470 (1993).

Contributing author:

1. J. G. Naeini, K. C. Hewitt, J. C. Irwin, T. Sasagawa, Y. Togawa, K. Kishio. Temperature induced normal state redistribution of B_{1g} spectral weight in underdoped $La_{2-x}Sr_xCuO_4$. *Physica C* **341**, 907-908 (2000).
2. C. Boulesteix, K. C. Hewitt and J. C. Irwin. Temperature-induced frequency shift of the Raman-active CuO_2 planar oxygen vibrational modes of Bi-2212 related to a change of the Cu-O bonding. *J. Phys.: Cond. Matter* **12**, 9637-9643 (2000).
3. J. G. Naeini, X. K. Chen, K. C. Hewitt, J. C. Irwin, T. P. Devereaux, M. Okuya, T. Kimura and K. Kishio. Evidence for Magnetic pseudoscaling in overdoped $La_{2-x}Sr_xCuO_4$ *Phys. Rev.* **B57**, R11077 (1998)
4. X. K. Chen, J. G. Naeini, K. C. Hewitt, J. C. Irwin, R. Liang and W. N. Hardy. Electronic Raman scattering in underdoped $YBa_2Cu_3O_{6.5}$. *Phys. Rev.* **B56**, R513-R 516 (1997)
5. A. Martin, J. A. Sanjuro, K. C. Hewitt, X-Z Wang, J. C. Irwin and M. J. G. Lee. Phonon self-energy effects due to superconductivity in $Bi_2Sr_2CaCu_2O_{8+\delta}$. *Phys. Rev.* **B56**, 8426 (1997).

Technical expertise

- Magnetron sputtering and thin film growth
- Lasers (Argon ion)
- Raman spectroscopy
- X-ray crystallography
- Mossbauer spectroscopy
- Crystal growth
- Temperature control systems (Liquid He and N cryostats)
- Glove box procedures
- Thermo-gravimetric Analysis

Awards

- President's Ph.D. Research stipend, Sept. – Dec. 1999
- Youth Community Service Award, SVGAGV, Oct. 1999
- Sidney Hogg Memorial Graduate Scholarship, Jan. – Apr. 1998
- Caribbean Educational and Cultural Association Scholarship, 1997
- Graduate Research Engineering and Technology (GREAT) Scholarship, May 1 – Sept. 30 1996.
- Simon Fraser University Graduate Fellowship (4 awarded)
Sept. – Dec. 1996, Sept. – Dec. 1995, Sept. – Dec. 1994, Jan. – Apr. 1994
- Canron Limited – Sidney Hogg Memorial Graduate Scholarship (3 awarded)
Jan. – Apr. 1996, Jan. – Apr. 1995, Jan. – Apr. 1994
- Natural Science and Engineering Research Council Undergraduate Student Research Award (2 awarded)
May – Aug. 1991, May – Aug. 1992
- University of Toronto, Scarborough College Physics Prize, 1990

Computer Languages and Operating Systems

- C++, Visual Basic, UNIX

Courses taught at the post-secondary level

- Simon Fraser University, Introductory Physics Lab, Sept. – Dec. 1999.
- University of Toronto, Introductory Physics Lab, Sept. 1990 – Aug. 1990.
- University of Toronto, Second year Plant Physiology Lab, Sept. 1990 – Aug. 1990.

Courses assisted at the post-secondary level*

- Electronic Principles Lab (3rd yr), Jan. – Apr. 1999
- Energy, Physics and the Environment (3rd yr), Jan. – Apr. 1998
- Advanced Optics (3rd yr), Sept. – Dec. 1997, Sept. – Dec. 1996, Sept. – Dec. 1993
- Introductory Physics Lab, Jan. – Apr. 1998, Sept. – Dec. 1997, Jan. – Apr. 1993
- Applied Optics (4th yr), Jan. – Apr. 1997
- Thermodynamics (2nd yr), Jan. – Apr. 1995
- Solid State Physics (4th yr), Jan. – Apr. 1995

Professional development

- Instructional Skills Workshop Certificate, May 1997
- Voice Projection Class, May 1998

Talks & Presentations

Invited

- Dalhousie university, "Raman Spectroscopy: A versatile tool", November 17, 2000.
- Dalhousie university, "Science & Your future possibilities", Transition Year Program Graduation, April 20, 2000.
- SFU TA/TM Day, Opening Plenary Session Speaker, "Inclusivity in the Classroom, Diversity Working Group" Sept. 10, 1999.
- SFU TA/TM Day, Workshop leader, "Promoting Cultural Diversity Within the Classroom and Across the Campus," Sept. 10, 1999.
- Dalhousie University, "Raman Scattering in High Temperature Superconductors", August 1999.
- Simon Fraser University, "Shattering our isolated silences: Claiming and Unifying Our Academic Space", June 1999.
- Kwantlen College, "The Black Porters in Canada", Feb. 10, 1999.
- Simon Fraser University, "Science: Some personal experiences", July 1997
- University of British Columbia, "Cry Freedom: allying ourselves", March 6, 1998.

Contributed (American Physical Society March Meetings)

- The 590 cm⁻¹ B_{1g} feature in underdoped Bi₂Sr₂CaCu₂O₈₊, May 21, 1999. University of British Columbia, Vancouver BC, Canada
- On the 600cm⁻¹ B_{1g} feature in Bi₂Sr₂CaCu₂O_{8+δ}, March 22, 1999. Georgia World Congress Center, Atlanta GA, USA.

- Determination of oxygen concentration in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ from Raman spectra, March 17, 1999. Los Angeles Convention Center, Los Angeles CA, USA
- Raman scattering investigation of the superconducting gap symmetry in overdoped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$, March 1997. Kansas City Convention Center, Kansas City MO, USA
- Lattice Vibrational Modes in Bi-2201 and the influence of the structural modulation. March 20, 1995. San Jose Convention Center, San Jose Ca USA.
- Raman investigation of Pb-Substituted $\text{Bi}_2\text{Sr}_2\text{CuO}_{6+\delta}$, March 1993. Seattle Convention Center, Seattle WA, USA.

Participating (American Physical Society March Meetings)

- An investigation of the oxygen isotope effect in BSCCO 2212 as a function of oxygen doping. March 20, 1999, Los Angeles Convention Center, Los Angeles, CA, USA
- Evidence for Magnetic Pseudoscaling in overdoped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$. March 17, 1999, Los Angeles Convention Center, Los Angeles, CA USA
- Electronic Raman Scattering Investigation of underdoped $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$. March 19, 1997, Kansas City Convention Center, Kansas City MO USA.
- Electronic Raman Scattering Investigation of overdoped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$. March 19, 1997, Kansas City Convention Center, Kansas City MO USA
- Electronic Raman Scattering Investigation of underdoped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$. March 19, 1997, Kansas City Convention Center, Kansas City MO USA

Science Education & Other Initiatives

- Imhotep's Legacy: African Canadians in Science, Theme: "Seeing is Believing?" Biology and Physics of Optics through hands-on activities - Pinhole Cameras, Cow-Eye Dissections, making 3D films, Holography, Kaleidoscopes. K-3,4-7,8-9,10-12 aged groups. Introduced African Canadian Scientists and performed a magic show - Burning \$100 bill, Magnetic Levitation, Disappearing Water. In association with Dirka Proud, Brooke Melles and under the auspices of the ad-hoc group African Canadians for the Advancement of Science and in collaboration with SFU Department of Physics, Association for Students of African Descent and Science World of British Columbia. Simon Fraser University (Harbour Center), June 5, 1999.
- Established a one-on-one tutoring program for African Canadian Youth under the auspices of the Association for Students of African Descent. 1994-1997

Professional activities & memberships

- Referee for Physica C - Superconductivity, March 1997
- American Physical Society, Member, 1993 - present
- Canadian Association of Physicists, Member, 1997 - present
- Electrochemical Society, Member, 2000 - present
- Materials Research Society, Member, 2000 - present

Radio and Television appearances

- VTV Television, Imhotep's Legacy: African Canadians in Science, June 4, 1999
- Rogers Cable Television "Plug-in" program, Vancouver BC Canada, History of Black History Month, Feb. 7, 1996.

- CITR Radio (University of British Columbia), History of the Association for Students of African Descent, Oct. 1994
- CJSF Radio (Simon Fraser University), Multiple appearances, 1997-1999
- Co-op Radio 102.7FM, Vancouver BC Canada, Journey: Africa to the Americas, Feb. 1996
- Co-op Radio 102.7FM, Vancouver BC Canada, The Black Porters in Canada, March 1999
- CBC Television: The Passionate Eye, Racism & Youth in Toronto, July , 1990

University bodies: Elected Positions*

- Senate, Student Representative, 1996-1997
- Senate Committee on International Activities, Student Representative, 1996-2000
- Senate Committee on Academic Planning, Student Representative, 1996-1997
- Senate Graduate Studies Committee, Faculty of Science Representative, 1994-1995
- Physics Graduate Student Association, Vice President, 1993-1994

Community organizations: Elected Positions

- Black Cultural Centre Committee, Board of Directors, 1996-1997
- St. Vincent and the Grenadines Association of Greater Vancouver, Board of Directors, 1995-1997

Student Organizations: Elected

- Association for Students of African Descent (SFU), Studies in African Heritage Committee Chair, 1995-1998
- Association for Students of African Descent (SFU), Founding President, 1994-1995
- African Caribbean Students Association (UofT), President, 1989-1990
- African Caribbean Students Association (UofT), Vice-President, 1988-1989

Volunteer Experience

- SVGAGV Scholarship Committee, Vancouver, BC, March 1999- Feb. 2000
- Diversity Working Group, Center for University Teaching, Simon Fraser University, 1999/2000
- Festival of Science and Technology Open House, Simon Fraser University, Oct. 23, 1998
- Grade 4-6 Science Open House, Simon Fraser University, May. 5, 1999
- Akoma Ntoaso - Youth Building Bridges Together. 5-13yrs age. Group Leader: Sundials, Building a battery, Building a motor. Fraserview Boys and Girls Club, Vancouver BC, Sept. 27, 1998
- Association for Students of African Descent, Tutor, 1994-1997
- Black History Month (Vancouver, BC) Opening Ceremonies, Member Ad-hoc Committee, 1996
- S.U.C.E.S., Scarborough Board of Education, Tutor, 1991-1992

Hobbies

- Basketball, Canoeing, Aikido, Soccer, Football, Travel, Biking....

References

Prof. John Chuck Irwin

Professor Emeritus
Department of Physics
Simon Fraser University
Burnaby, B.C., Canada V5A 1S6
e-mail: irwin@sfu.ca
Phone: 604-291-3160
Fax: 604-291-3592

Prof. Jeff Dahn

Professor of Physics & Chemistry
NSERC Research Chair
Dalhousie University
Halifax, N.S. Canada B3H 3J5
email: jeffdahn@is.dal.ca
Phone: 902-494-2991
Fax: 902-494-5191

Dr. Michael Chen

Senior Lecturer
Department of Physics
Simon Fraser University
Burnaby, B. C, Canada V5A 1S6.
e-mail: mxchen@sfu.ca
Phone:
Fax:

Prof. Bret Heinrich

Professor of Physics
Director of the Surface Physics Lab
Simon Fraser University
Burnaby B. C., Canada V5A 1S6
e-mail: bheinric@sfu.ca
Phone: 604-291-4402
Fax: 604-291-3592