Westmont College
Kenneth E. Kihlstrom

Department of Physics
Westmont College
955 La Paz Road
Santa Barbara, CA 93108-1099

Telephone: (805) 565-7015 (Westmont) (805) 969-6265 (home)
Web page: http://pulsar.westmont.edu/physics/faculty/kihlstrom.htm
e-mail kihlstr@westmont.edu

Education

Ph.D., Stanford University, 1982. Physics (area of research superconductivity).

M.S., Stanford University, 1979. Physics

B.S., Stanford University, 1976. With Distinction in Physics. Also extensive coursework in chemistry and mathematics.

Honors

David S. Levine Award, outstanding undergraduate physics major, Stanford, 1975.

Faculty Research Award, Westmont College, 1988.

Teacher of the Year Award, Natural and Behavioral Sciences, Westmont College 1989, 1995.

Vice-Chair of the Faculty, Westmont College 1995-96.

Employment

1996-	Superconducting Technologies, Inc. Research Physicist
1994 -	Westmont College, Full Professor (Dept. Head 94-99)
1992 - 1993	Conductus, Inc., Visiting Researcher
1992 - 1993	Stanford University, Visiting Scholar
1988 - 1994	Westmont College, Associate Professor (Dept. Head)
1988 - 1989	Santa Barbara Research Center, Research Consultant
1987 - 1988	R. G. Hansen & Associates, Research Consultant
1984 - 1988	Westmont College, Assistant Professor
1982 - 1984	Naval Research Laboratory, Research Assistant
1976 - 1982	Stanford University, Research Assistant
1981 - 4 mos	Stanford University, Acting Instructor
1975 - 1979	Stanford University, Senior Teaching Assistant

Teaching Experience

Asst./Assoc./Full Professor - Westmont College. Head of engineering/physics program. Restructured curriculum, developed new laboratory course.

	Courses taught in general physics, mechanics, electricity & magnetism, physical science, and laboratory courses.
Acting Instructor - TA's.	Stanford University. Gave course to improve teaching of physics
Senior Teaching - Assistant	Stanford University. Responsible for 20 TA's in first year physics courses for engineering and natural science majors.

Research Experience

Professor - Westmont College - Research in thin film superconductivity.

Visiting Researcher-superconducting Conductus, Inc. - Research on SQUID magnetometers, digital electronics.

Superconducting Technologies, Inc. - Temperature dependent microwave measurements on superconducting filters.

Research Associate - Naval Research Laboratory. Established a superconducting tunneling program and UHV sputtering of superconductors.

Research Assistant - film Stanford University. Research in synthesis of electron beam deposited thin Nb_3Ge and of its superconducting properties

Membership

American Physical Society
Science and Engineering Council of Santa Barbara, (President 1986 - 1987)
Phi Kappa Phi (Westmont Chapter President 1997 -)

Funded Proposals

1. Office of Naval Research (N0014-85-K-0345) "Synthesis and Tunneling Measurements on A15 and B1 Superconductors" Project period 2/1/85-6/1/87. Funded $49,951. (Research Proposal).

2. W.M. Keck Foundation "Equipment for Upgrading the Engineering-Physics Program Westmont College" Project period 1/1/85-12/31/85. Funded $70,000 (Education Proposal)

3. National Science Foundation (DMR - 8702994) "RUI: Tunneling Measurements on BI Superconductors" Project period 7/1/87-6/30/90. Funded $73,500.

4. National Science Foundation (DMR - 9005101) "RUI: Tunneling Measurements on Simple Cubic Perovskite Superconductors." Project period 7/1/90-12/31/94. Funded $78,000.

Patent

1. "Phase-Separated Material" A.S. Edelstein, K.E. Kihlstrom, and S.A. Wolf. Patent #5,574,961 Issue date: November 12,1996.

List of Publications:

1. "Tunneling $\alpha^2F(\omega)$ as a Function of Composition in A15 NbGe" K.E. Kihlstrom and T.H. Geballe, Phys. Rev. B 24, 4101 (1981).

2. "Preparation, Tunneling, Resistivity, and Critical Current Measurements on Homogeneous High T_c A15 Nb_3Ge Thin Films" K.E. Kihlstrom, R.H. Hammond, J. Talvacchio, T.H. Geballe, A.K. Green and Victor Rehn, J. Appl. Phys. 53, 8907 (1982).

3. "Tunneling $\alpha^2F(\omega)$ and Heat Capacity Measurements in High-T_c Nb_3Ge" K.E. Kihlstrom, D. Mael, and T.H. Geballe, Phys. Rev. B 29, 150 (1984).

4. "Local Environment Model for Cluster Formation and Percolation in Amorphous Mo-Si Alloys" A.S. Edelstein, K.E. Kihlstrom, S.A. Wolf, W.T. Elam, Characterization and Behavior of Materials with Sub-Micron Dimensions edited by J.T. Weber (World Scientific, Singapore 1985) p. 193.

5. "Superconductivity in FCC $Mo_xNb_{1-x}NyC_{1-y}$ Thin Films" S.A. Wolf, S.B. Qadri, K.E. Kihlstrom, E.F. Skelton, R.W. Simon, W.W. Fuller, D.U. Gubser, IEEE Trans Magn. MAG-21, 839 (1985).

6. "Preparation and Characterization of FCC $Mo_xNb_{1-x}(C_yN_{1-y})_z$ Thin Films" D.U. Gubser, K.E. Kihlstrom, R.W. Simon, E.F. Skelton, S.B. Qadri, W.W. Fuller, and S.A. Wolf, J. Vac. Sci. Technol A3, 644 (1985).

7. "Tunneling $\alpha^2F(\omega)$ on V_3Si Thin Films" K.E. Kihlstrom, Phys. Rev. B 32, 2891 (1985).

8. "Tunneling $\alpha^2F(\omega)$ from Sputtered Thin-Film NbN" K.E. Kihlstrom, R.W. Simon, and S.A. Wolf Phys. Rev. B 32, 1843 (1985).

9. "Tunneling $\alpha^2F(\omega)$ on High T_c A15 and B1 Compounds" K.E. Kihlstrom, Physica B 135, 198 (1985).

10. "Phase-separated Fe and Co Particles in a BN matrix" A.S. Edelstein, B.N. Dos, R.L. Holtz, N.C. Koon, M. Rubenstein, S.A. Wolf and K.E. Kihlstrom, J. Appl. Phys. 61, 3320 (1987).

11. "Evidence for Nonphononic Superconductivity in Nb_3Ge" K.E. Kihlstrom, P.D. Hovda, Vladimir Z. Kresin, and S.A. Wolf, Novel Superconductivity edited by V.Z. Kresin (Plenum, New York 1987) p. 95.

12. "Effect of Adsorption on Thin Silver Films on the Phosphorescent Triplet State of 4-Benzoylpyridine" K.E. Kihlstrom, K.A. Martin, and A.M. Nishimura, J. Phys. Chem., 92, 2932 (1988).

13. "Evidence of Nonphononic Superconductivity in Nb_3Ge" K.E. Kihlstrom, P.D. Hovda, Vladimir Z. Kresin, and S.A. Wolf, Phys. Rev. B 38, 4588 (1988).

14. "Tunneling $\alpha^2F(\omega)$ in Thin-Film Nb as a Function of Thickness" K.E. Kihlstrom, D.A. Collins, and S. I. Park, Phys. Rev. B 39, 257 (1989)

15. "Eliashberg Theory and High-Tc Superconductivity" R. Baquero, J. Gutierrez-Ibarra, L. Meza, O. Navarro, and K.E. Kihlstrom, Revista Mexicanna de Fisica 35, 461 (1989).

16. "Review of Thin Film Superconductivity" K.E. Kihlstrom, proceedings of 3rd International SAMPE Electronic Conference, Los Angeles, CA p. 590 (1989).

17. "Thin Film Materials" K.E. Kihlstrom, Metals Handbook, 10th ed., Vol 2 (ASM International Cleveland, 1990) p. 1081.

18. "High Performance Shift Register for the 10 GHz Hybrid Superconducting Digital System" Aleksandar Pance, Jon S. Martens, Andrew Barfknecht, Jay E. Fleischman, Ken. E. Kihlstrom, and Stephen R. Whiteley, Extended Abstracts of the International Superconductive Electronics Conference, Boulder, CO p. 104 (1993).

19. "Dual Beam Atomic Absorption Spectroscopy for Controlling Thin Film Deposition Rates" S.J. Benerofe, C.H. Ahn. M.M. Wang, K.E. Kihlstrom, K.B. Do, S.B. Arnason, M.M. Fejer, T.H. Geballe, M.R. Beasley, and R.H. Hammond, J. Vac. Sci. Technol. B 12, 1217 (1994).

20. "Surface Study of $YBa_2Cu_3O_{7-\delta}$ Epitaxial Films Cleaned by an Atomic Oxygen Beam" N. Terada, C.H. Ahn, D. Lew, Y. Suzuki, K.E. Kihlstrom, K.B. Do, S.B. Arnason, T.H. Geballe, R.H. Hammond, and M.R. Beasley, Appl. Phys. Lett. 64, 2581 (1994).

21. "Photoemission and tunneling study of epitaxial $YBa_2Cu_3O_{7-\delta}$ films cleaned using an atomic oxygen beam" N. Terada, C.H. Ahn, D. Lew, Y. Suzuki, K.E. Kihlstrom, K.B. Do, S.B. Arnason, T.H. Geballe, R.H. Hammond, and M.R. Beasley, Physica C, 235-240, pt.2, 1061 (1994).

22. "Use of 2-dimensional arrays to determine the uniformity of Josephson junctions" J.S. Martens, K. Char, A. Pance, L.P. Lee, M.E. Johansson, S.R. Whiteley, K.E. Kihlstrom, J.R. Wendt, V.M. Hietala, T.A. Plut, G.A. Vawter, S.Y. Hou, J.M. Phillips, and W.Y. Lee, IEEE Transactions on Applied Superconductivity 3, 3095 (1994).

23. "Microwave Loss and Intermodualtion in $Tl_2Ba_2CaCu_2O_y$ Thin Films" Balam A. Willemsen, K.E. Kihlstrom, T. Dahm, D.J. Scalapino, B. Gowe, D.A. Bonn, W.N. Hardy, Phys. Rev. B 58, 6650 (1998).

24. "Unusual Power Dependence of Two-Tone Intermodulation in HTS Microwave Resonators", Balam A. Willemsen, K.E. Kihlstrom and T. Dahm, Appl. Phys. Lett. 74, 753 (1999).

Invited Talks

Eighteen Invited talks including 1985 Gordon Conference on Superconducting films, the 1989 International SAMPE Electronic Conference, Los Angeles; research seminars at Stanford (1981), Naval Research Lab (1982, 1985), Westinghouse (1982), Univ. of Florida (1984), Indiana Univ. (1984), Washington Univ. (1984), UCLA (1984), Yale (1984).