George C. Alexandrakis

PERSONAL:
Born, November 10, 1938
Crete Island, Greece

Physics Department
University of Miami
Coral Gables, Fl 33124
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EDUCATION

1961	B.S. Physics	University of Athens
1965	M.S. Physics	Princeton University
1968	Ph.D. Physics	Princeton University

PROFESSIONAL EXPERIENCE

Professor	University of Miami	1977
Associate Professor	University of Miami	1973–1977
Assistant Professor	University of Miami	1969–1973
Instructor	Princeton University	(Feb.)1968–1969
Research Assistant	Princeton University	1965–1967
Teaching Assistant	Princeton University	1964–1965
Research Assistant	Princeton University	1963–1964
Research Assistant	Nuclear Research Center 'Democritus', Greece	1961–1963

ADMINISTATIVE EXPERIENCE

Chairman	Department of Physics	University of Miami	1986-2007
			1976–1980
Acting Dean	School of Science and	University of Crete	Fall Sem. 1978
Acting Chairman (Founding)	Department of Physics		

VISITING APPOINTMENTS

Visiting Scholar	Princeton University	Spring Sem. 1981
Visiting Professor	University of Crete	Fall Sem. 1978

CONSULTANTSHIPS

Consultant	Naval Reserach Laboratory	1987–1989
Visiting Consultant	University of Crete	1979–1982
Visiting Consultant	Princeton University	Summer–1971
Visiting Consultant	Princeton University	Summer–1970

FIELDS OF INTEREST

Transmission resonance in Curie paramagnetic and ferromagnetic metals and alloys.

Magnetoelastic and electromagnetic excitation of high frequency sound.

Phonon-magnon interaction in ferromagnetic metals.

Ferroelectric sensors of fluid velocity and hydroacoustic particle velocity.

Lecture demonstrations and student experiments. Use of video cassettes in physics teaching.

Microwave transmission experiments through type II superconductors.

MEMBERSHIP IN SOCIETIES

American Physical Society

American Association of Physics Teachers

HONORS AND AWARDS

2009 Honorary Doctor's Degree, University of Crete

2002 Faculty Senate Outstanding Teaching Award, University of Miami

2002 Outstanding Service Award, University of Crete

2002 James L. McLamore Outstanding Service Award, University of Miami

Who's Who Among America's Teachers, 1998

Iron Arrow Honor Society, 1991

Naval Research Laboratory–ASEE, Senior Summer Faculty Research Fellowship, 1987.

Naval Research Laboratory–ASEE, Senior Summer Faculty Research Fellowship, 1986.

United Nations (TOKTEN) Fellowship, University of Crete, Greece, 1986.

Greek Atomic Energy Commission Fellowship, 1963–1965

Fulbright Scholarship, 1963–1964

BOOKS

'Introduction to the Electron Theory of Solids', Greek Atomic Energy Commission, Athens (1962).

PUBLICATIONS

(with F. Zuo, X. Su, P. Zhang, K. Wu) '*Magnetic and Transport Properties of the Ni2-xMn1+xGa Alloys*' *Journal of Physics: Condensed Matter* 11 2821 (1999).

(with F. Zuo, X. Su, J.A. Schlueter, M.E. Kelly, J. M. Williams) 'Interlayer Transport in the Organic Superconductor $\kappa - (BEDT - TTF)_2Cu[N(CN)_2]Br$' Physica C **282-287**, 1901 (1997).

(with S. Khizroev, F. Zuo, J.A. Schlueter, U. Geiser and J.M. Williams) 'Vortex Pinning in Layered Organic Superconductors: $\kappa - (BEDT - TTF)_2Cu[N(CN)_2]Br$' J. Appl. Phys. **79** (8) (1996).

(with F. Zuo, S. Khizroev, J.A. Schlueter, U. Geiser and J.M. Williams) 'Anomalous magnetization in single-crystal
κ-[bis(ethlenedithiotetrathiafulvalene)]$_2Cu[N(CN)_2Br$ superconductors'
Phys. Rev. B**52**, 1326 (1995).

(with F. Zuo, S. Khizroev, V.N. Kopylov) 'Anomalous Magnetization in Single Crystals of $T\ell_2Ba_2CuO_6$: Evidence of Dimensional Crossover' Phys. Rev. B**52**, 755 (1995).

(with K.M. Rittenmyer and P.S. Dubbelday) 'Ferroelectric Hydroacoustic Particle Velocity Sensor', NRL Review **112-2630**, 125 (1988).

(with K.M. Rittenmyer and P.S. Dubbelday) 'Detection of Fluid Velocity and Hydroacoustic Particle Velocity Using a Temperature Autostablized Nonlinear Dielectric Element (Tandel)', J. Acoust. Society Am. **84**, 2002 (1988).

(with R. Homer and G. Dewar) 'Ultrasonic Attenuation in Nickel and Iron at 9.4 GHz', J. Appl. Phys. **61**, 4133 (1987).

(with G. Dewar) 'Temperature Dependence of Electromagnetically Excited Sound in Single Crystals of Fe', J. Appl. Phys. **57**, 3733 (1985).

(with G. Dewar), 'Electromagnetic Generation of 9.4 GHz Phonons in Fe and Ni', J. Appl. Phys. **55**, 2467 (1984)

(with G. Dewar), 'Phonon Excitation and Propagation in Thick Iron Films', J. Appl. Phys. **53**, 8116 (1982).

(with J.H. Abeles and T.R. Carver), 'Microwave Transmission Measurement of the Critical Exponent Beta in Iron and Iron-Silicon', J. Appl. Phys. **53**, 8116 (1982).

(with R.A.B. Devine and J.H. Abeles) 'High Frequency Sound as a Probe of Exchange energy in Nickel', J. Appl. Phys. **53**, 2095 (1982).

(with R.A.B. Devine and J.H. Abeles) 'Resonant and Non-Resonant Sound Excitation and Transmission in Nickel Crystals at 9.37 GHz', Solid State Comm. **41**, 781 (1982).

(with R.A.B. Devine) 'Observation of Anomalous Transmission Modes in Nickel at Microwave Frequencies', Solid State Comm. **38**, 405 (1981).

(with I.A. Privorotskii and R.A.B. Devine) 'Generation and Attenuation of Phonons at Ferromagnetic Resonance in Thick Ni Films' J. of Appl. Phys. **50**, 7732 (1979).

(with J.W. Allen and I.A. Privorotskii) 'Magnetoelastic Excitations and Ferromagnetic Resonance', J. Appl. Phys. **50**, 2443 (1979).

(with J.W. Allen) 'Phonon Propagation in Ferromagnetic Resonance', Solid State Comm. **27**, 251 (1978).

'Determination of the Molecular Size and the Avogadro Number: A Student Experiment', American Journal of Physics, **46**, 810 (1978).

(with O.H. Horan) 'Spin Relaxation in Ferromagnetic Gadolinium', Phys. Rev. B**16**, 4180 (1977).

(with J.B. Holmes) 'Observation of Nonlinear Phenomena in Ferromagnetic Transmission Resonance', Phys. Rev. B**16**, 484 (1977).

(with O.L.S. Lieu and M.A. Huerta) 'Theory of Nonlinear Phenomena in Ferromagnetic Transmission Resonances', Phys. Rev. B**16**, 476 (1977).

(with J.B. Holmes) 'Subharmonic Generation in Iron', AIP Conference Proceedings, **No. 34**, 239 (1976). J.J. Becker and G.H. Lander, Eds.

(with J.B. Holmes) 'Experimental Studies of Nonlinear Phenomena in Ferromagnetic Metals', Phys. Letters **56A**, 496 (1976).

(with O.L.S. Lieu) 'Nonlinear Effects in Ferromagnetic Metals', AIP Conference Proceedings, Vol. **24**, p. 512 (1974) C.D. Graham, Jr., G.H. Lander, and J.J. Rhyne, Eds.

(with T.R. Carver and O. Horan) 'Microwave Magnetic Resonance Transmission in Gadolinium', Phys. Rev. B1 **5**, 3472 (1972).

'Susceptibility Tensor Components for Ferromagnetic and Paramagnetic Materials', Phy. Rev. B1 **5**, 3481 (1972).

(with O. Horan, T.R. Carver and C.N. Manikopoulos) 'Parallel Pumping in Ferromagnetic Resonance Transmission?', Phys. Rev. Letters **25**, 1758 (1970).

(with O. Horan and C.N. Manikopoulos) 'Magnetic Resonance Transmission in Ferromagnetic Gadolinium and Nickel', Phys. Rev. Letters **25**, 246 (1970).

(with R.B. Lewis and T.R. Carver) 'Paramagnetic Resonance Transmission in Gadolinium', Phys. Rev. Letters **17**, 854 (1966).

(with G.C. Dousmanis) 'Modulation of Carrier Surface Lifetime and the Surface States in Si', J. Appl. Phys. **34**, 3077 (1963).

CONFERENCES

(with F.Zuo, X. Su, G.C.Alexandrakis, J.A.Schlueter, M.E. Kelly, Jack M. Williams) 'Interlayer Transport in Organic Superconductors' Kansas City, Missouri, APS March Bulletin **42**, 711 (1997).

(with F.Zuo, X.Su, G.C.Alexandrakis, J.A.Schlueter, Jack M. Williams) 'Interlayer Transport in Organic Superconductor $\kappa-(BEDT-TTF)_2Cu[N(CN)_2]Br$, 5th International Conference Materials and Mechanisms of Superconductivity High-Temperature Superconductors. Beijing, China, Feb.28-Mar4, 1997.

(with F. Zuo, S. Khizroev, J.A. Schlueter, U. Geiser, and J.M. Williams) 'Anomalous Magnetization in Layered Organic Superconductors'. American Phys. Soc. March 1996.

(with F. Zuo and S. Khizroev, J.A. Schlueter, U. Geiser, and J.M. Williams) '$\kappa-(BEDT-TTF)_2Cu[N(CN)_2]Br$', 40th Annual Conference Magnetism and Magnetic Materials. November 1995.

(with K.M. Rittenmyer and P.S. Dubbelday) 'TANDEL Measurement of Hydroacoustical Particle Motion', 112 Meeting of the Acoustical Society of America. December 1986.

(with R.Homer and G.Dewar) 'Ultrassonic Attenuation in Nickel and Iron at 9.4 GHz', 31 Annual Conference on Magnetism and Magnetic Materials, Nov. 1986.

(with G. Dewar) 'Temperature Dependence of Electromagnetically Excited Sound in Single Crystals of Fe' Abstract published for the 30th MMM Conference (1984).

(with G. Dewar) 'Electromagnetic Generation of 9.4 GHz phonons in Fe and Ni,' Abstract published for the 29th MMM Conference (1983).

(with J.H. Abeles and T.R. Carver) 'Microwave Transmission Measurement of the Critical Exponent Beta in Iron and Iron-Silicone', Abstract published for the 3rd Joint Intermag - MMM Conference (1982).

(with G. Dewar) 'Phonon Excitation and Propagation in thick Iron Films', Abstract published for the 3rd Joint Intermag — MMM Conference (1982).

(with R.A.B. Devine and J.H. Abeles) 'High Frequency Sound as a Probe of the Exchange Energy in Nickel', Abstract published for the 27th Annual Conference on Magnetism (1981).

(with I.A. Privorotskii and R.A.B. Devine) 'Generation and Attenuation of Phonons at Ferromagnetic Resonance in Thick Ni Films', Abstract published for the 25th Annual Conference on Magnetism (1979).

(with J.W. Allen and I.A. Privorotskii) 'Magnetoelastic Excitations and Ferromagnetic Resonance', Abstract published for the 24th Annual Conference on Magnetism (1978).

(with J.W. Allen) 'Magnetoelastic Coupling in Ferromagnetic Resonance', Bull. of American Physical Society **22**, 1239 (1977).

(with J.B. Holmes) 'Subharmonic Generation in Iron', Abstracts Published for the 22nd Annual Conference on Magnetism (1976).

(with E.M. Rogers) 'A Video Cassette on Momentum. Can Video Cassettes Become of Use to Physics Teeaching?' Abstract published in AAPT Announcer **IV**, 40 (1974).

(with O. Horan) 'Nonlinear Effects in Ferromagnetic Metals', Abstract published in 20th Conference on Magnetism and Magnetic Materials, (1974).

(with O. Horan) 'Solution of the Mixed Boundary Conditions Problem in Ferromagnetic Transmission Resonance,' Abstract published for the 18th Annual Conference on Magnetism and Magnetic Materials, Nov. 1972.

(with O. Horan) 'Temperature–Induced Transmission Resonance in Dysprosium and Holmium', Bull. APS, Series II, Vol. **16**, 1427 (1971).

(with C.N. Manikopoulos and T.R. Carver) 'Transmission Resonance in Ferromagnetic Materials', Bull. of APS Series II, Vol. **14**, 348 (1969).

(with G.C. Dousmanis) 'Modulation of Carrier Surface Lifetime and the Surface States in Si, Bull. Am. Phys. Soc. **8**, 421 (1963).

DOCTORAL DISSERTATIONS CHAIRED

Dr. Oanh–Liet Sanh Lieu, 'A Theory of Nonlinear Effects in Ferromagnetic Metals', University of Miami, 1974.

Owen H. Horan, 'Transmission Resonance in Ferromagnetic Gadolinium', University of Miami, 1975.

Dr. Johnny Brent Holmes, 'Subharmonic Generation in Ferromagnetic Metals', University of Miami, 1976.

Dr. Jerry William Allen, 'Electromagnetic and Magnetoelastic Transmission Resonance Investigations in Nickel', University of Miami. 1977.

Dr. Dustin Alexander Woodbury, 'Electronic Transport in Low Mobility Semiconductor Systems', University of Miami, 1977.

Dr. Robert M. Homer 'Ultrasonic Attenuation in Nickel and Iron at 9.4GHz.' University of Miami, 1987.

Dr. Francisco Carvajal 'Temperature Dependence of 9.37 GHz Sound Transmission Through Invar.' University of Miami, 1992 (co-chair)

Sharon Zane, 'Microwave Interaction with High Temperature Superconductors', University of Miami, 2002 (chair)

MEMBER IN DOCTORAL COMMITTEES IN OTHER INSTITUTIONS ONLY

Dr. Joseph H. Abeles, 'Measurement of the Critical Exponent Beta in Iron an Iron–Silicon', Princeton University, 1982.

TEACHING EXPERIENCE

Solid State Seminar (Phy 601)

Quantum Mechanics, (Phy 560–561)

Solid State Physics (520)

Advanced Laboratory (Phy 505–506)

Modern Physics, (Phy 360–361)

Electromagnetic Theory, (Phy 350–351)

University Physics, (Phy 211–212) currently (205, 206, 207)

Honors Physics, (Phy 201–202)

Physics of Energy, (Phy 120)

Physical Science, (PSC 101–102)

Pre-Med Physics, (Phy 101–102)

OTHER ACADEMIC EXPERIENCE

Elected:

Chairman	Faculty Senate	1988–1991
Vice Chairman	Faculty Senate	1985–1988
Co-Chairman	Provost Consultative Committee	1985–1986
Chairman	Dean of Arts and Sciences Consultative Committee	1984–1985
Chairman	Dean of Arts and Sciences Consultative Committee	1997
Chairman	Dean of Arts and Sciences Consultative Committee	2002

Appointed:

President's Task Force on Academic Structure (chair)

University Long Range Planning Committee

University and Senate Master Planning Committees

University Research Council

Senate Budget Committee

University Curriculum Committee

Graduate Council and Graduate Fellowship Committee

Provost's Promotion and Tenure Review Committee

Faculty Representative to the Board of Trustees (Full Board, Executive Committee, Finance and Audit Committee)