Curriculum Vitae: Andras Kuthi

Born:	10-08-1949, Budapest, Hungary. Married, two children	
Citzenship:	Naturalized US Citizen	
Education:	University of Uppsala, Uppsala, Sweden	B.A. 1972, M.A. 1973
	The Royal Institute of Technology, Stockholm, Sweden Experimental Plasma Physics	Ph.D. 1981
Positions:	NOVEM Co. Owner, Principal Scientist	1998 – present
	Research Scientist Department of Electrical Engineering – Electrophysics University of Southern California Los Angeles, CA	2001 – present
	Member of the Technical Staff Trikon Technologies (formerly Plasma and Materials Tech.), 9255 Deering Ave., Chatsworth, CA 91311	1996 - 1998
	Senior Physicist, First Point Scientific, Inc. (formerly John R. Bayless Co.), 5330 Derry ave. Suite J, Agoura Hills, CA 91301	1991 - 1996
	Research Physicist, Department of Physics, UCLA	1983 1991
	Consulting Physicist, Hughes Research Laboratories 3011 Malibu Cyn. Rd, Malibu, CA 90265	1991
	Consulting RF Engineer, Plasma & Materials Technologies, Inc. 9255 Deering Ave., Chatsworth, CA 91311	1990 - 1991
	Research Engineer, Dept. of Fusion Research The Royal Inst. of Technology, S-10044 Stockholm, Sweden	1975 1983
	Research Assistant, Department of Physics, University of Uppsala, Uppsala, Sweden.	1972 1975

Experience:

NOVEM Co. (1998 - present): Owner, Principal Scientist. Responsible for Plasma Generation and RF power delivery systems, diagnostics, and control instrumentation development. Consultant to leading semiconductor tool manufacturers on issues of Plasma Physics and RF technology, and to Jet Propulsion laboratory on Plasma Assisted Catalysis.

UNIVERSITY OF SOUTHERN CALIFORNIA (2001 – present): Research Scientist in the Pulsed Power Laboratory. Responsible for design, construction and testing of high voltage pulse generators from sub-nanosecond to microsecond pulse lengths for biological, combustion and aerospace applications and for experimental research into high current, high voltage, high repetition rate fast gas switches, semiconductor opening switches and magnetic pulse compression technology for compact pulsed power.

TRIKON TECHNOLOGIES INC. (1996 - 1998): Member of the Technical Staff. Responsible for advanced development of the M0RI (M=0 Helicon) plasma source, extensions of the technology to 300mm wafer size, with special emphasis on the RF source and Bias subsystems and on high power density electrostatic chucks for oxide etch applications. Initiated extensions of the M0RI source technology to gate oxide nitridation and boron implantation. Was in charge of development of efficient cleaning discharges for the M0RI-based High Density Plasma CVD system.

FIRST POINT SCIENTIFIC INC. (1993 - 1996): Senior Physicist. Principal Investigator for two projects: (1) development of a high energy far infrared laser for plasma diagnostics and (2) development of a plasma centrifuge for material and medical isotope separation. Contributed extensively to projects in the areas of high energy electron beam generation, pulsed laser concepts for plasma diagnostics, electron-beam based methods for treatment of VOCs and NO_x SO_x emissions, and neutron sources for geophysical exploration.

UNIVERSITY OF CALIFORNIA, LOS ANGELES (1983 - 1991): Research Physicist in the Plasma Physics Laboratory, was responsible for experimental R&D projects in areas including: (1) plasmoid generation and transport; (2) magnetic plasma confinement based on rotating electromagnetic fields; (3) generation of high beta, high energy density reversed field configurations by radio frequency power; (4) radio frequency plasma torch concepts for the decomposition of hazardous wastes; (5) production and characterization of atmospheric pressure, high temperature, inductively generated plasmas. In the course of these and other projects he has designed and built high-power radiofrequency generators, plasma coupling antennas, vacuum systems, high power water cooled magnetic field coil systems, laser and microwave interferometers and reflectometers for plasma diagnostics, magnetic and electric probes and associated electronic equipment, laser light scattering diagnostic equipment and spectroscopic systems.

PLASMA & MATERIALS TECHNOLOGIES (Consultant, 1989 - 1995) Consulted on problems relating to RF plasma sources and the presence of high-power RF fields in different sensitive subsystems.

HUGHES RESEARCH LABORATORIES, MALIBU (Consultant, 1989 -1991): Contributed to the development of high current, high voltage plasma switches and high power microwave devices.

PULSE SCIENCES, INC. (Consultant, 1986 1989): Contributed extensively to R&D projects in the areas of: (1) RF ion source systems for rapid reactive etching of electronic devices; (2) advanced pulsed power concepts for high average power space applications and (3) rapid tunneling in hard rock using pulsed electrical discharge techniques.

THE ROYAL INSTITUTE OF TECHNOLOGY, STOCKHOLM (1975 - 1983): Research Engineer in the Department of Fusion Research. Was responsible for the development and operation of a variety of plasma confinement, heating and diagnostic systems.

Have taught several physics and electronics courses at the Universities and instructed graduate students concerning their thesis work. Published 40 scientific papers in refereed open literature, presented 111 papers at conferences and holds 41 patents, 4 other patents pending.

Memberships: Senior member of the *Institute of Electrical and Electronics Engineers*.

Publications - Andras Kuthi:

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2. "An Interferometer and an Abel Inversion Procedure for the Measurement of the Electron Density Profile in a Cold Gas Blanket Experiment" A. Kuthy, Nucl. Inst. & Methods 180 (1981) 7.
3. "Radial Profiles of the Neutral Hydrogen Density in the F 1 Cold Gas Blanket Experiment" A. Kuthy, Physica Scripta 23 (1981) 807.
4. "The Scaling Laws of a Cold Gas Blanket Experiment" A. Kuthy, Nucl. Inst. & Methods 185 (1981) 343.
5. "The Effects of Radiating Impurities and Bohm Transport on a Cool Plasma Mantle" A. Kuthy, Physica Scripta 26 (1982) 27.
6. "Surface Magnetic Confinement in Toroidal and Linear Mirror Systems" A.Y. Wong, G. Dimonte, J. Ferron, M.Y. Fukao, K. Jones, A. Kuthi, K.L. Lam, B. Leikind, R.W. Schumacher, H. Stephanian, R. Suchannek, Nucl. Inst. & Methods 207 (1983) 207.
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8. "Mirror Ratio Scaling of Axial Confinement of Mirror Trapped Collisional Plasma" K.L. Lam, B.J. Leikind, A.Y. Wong, G. Dimonte, A. Kuthi, L. Olson, and H. Zwi, Phys. Fluids 29 (1986) 3433.
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11. "Observation of radio frequency field induced plasma loss in a simple mirror" A. Kuthi, L. Olson, K.L. Lam, H. Zwi, and A.Y. Wong, Phys. Fluids 31 (1988) 1787.
12. "Observation of Stable High Beta Axisymmetric Plasma Equilibrium" A. Kuthi, H. Zwi, L. Schmitz, and A.Y. Wong, Physics of Fluids B 1 (1989) 2054.
13. "Observations of Steady State Field Reversed Equilibrium" H.R. Zwi, A. Kuthi, A.Y. Wong, B. Wells, Phys. Fluids B 3 (1991) 126.
14. "Balance of Angular Momentum and Energy in a Rotating-Field Generated Plasma Equilibrium" A. Kuthi, H.R. Zwi and A.Y. Wong, Phys. Plasmas 1 (1994) 3246.
15. "Electron Impact Dissociation of Molecular Nitrogen in Atmospheric-Pressure Nonthermal Plasma Reactors" B.M. Penetrante, M.C. Hsiao, B.T. Merritt, G.E. Vogtlin, P.H. Wallman, A.Kuthi, C.P. Burkhart, and J.R. Bayless, Appl. Phys. Lett 67 (1995) 3096.
16. "Electron Beam and Pulsed Corona Processing of Carbon Tetrachloride in Atmospheric Pressure Gas Streams" B.M. Penetrante, M.C. Hsiao, J.N. Bardsley, B.T. Merritt, G.E. Vogtlin, P.H. Wallman, A.Kuthi, C.P. Burkhart, and J.R. Bayless, Physics Letters A 209 (1995) 69.
17. "Electron Beam and Pulsed Corona Processing of Volatile Organic Compounds in Gas Streams" B.M. Penetrante, M.C. Hsiao, J.N. Bardsley, B.T. Merritt, G.E. Vogtlin, P.H. Wallman, A.Kuthi, C.P. Burkhart, and J.R. Bayless, Pure & Applied Chemistry, Vol. 68, No. 5, 1083 (1996).
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