

ARON Z. KAIN, Ph.D.

**INTELLECTUAL
PROPERTY
SKILLS
SUMMARY** Expert Witness (Opinions, Declarations, Sworn Deposition)
Patent infringement advice, evaluation, and expert opinions
Patent technical writing, assessment, and valuation
Patent searching, prior art evaluation
In-depth Technology Assessment for Investment / Venture cooperation
Personally conceived, written, 6 successfully prosecuted patents

**TECHNICAL
AREAS OF
EXPERTISE** In-depth, Hands on experience in Sensor/ RFID/ Wireless/ RF/ Optics/
Medical Instrument/ Semiconductor Technology from concept and proof
of principle development, to prototyping, test, and commercialization

Sensor and Sensor System Design

Sensors: Load, Force, Pressure, Temperature, Humidity, Flow, Level,
Displacement (angular, linear, tilt)

Technology: Strain, Piezo, Capacitive, Acoustic, Fiber Optic, RTD

Applications: commercial, industrial, consumer, military

Analog/Digital/Embedded Electronics

Analog: discrete, OpAmp, Power, front end, RF, mixed signal

Digital: microprocessors, multi-channel, logic, state machine, FPGA

Embedded: microcontrollers, interface, firmware design and coding

Wireless Technology

Hardware: IR, NFC, UWB, Wi-Fi, amplifiers, filters, antennas, C4

Protocols: FHSS, DSSS, ASK, FSK, OOK, BPSK, Bluetooth, 802.11

Applications: telemetry, control, point to point, multi-point, embedded

RFID

TAG: active, passive, antenna, IC, material construction

Reader: communications, protocols, architecture, components

System: specifications, software, ROI

IR/RF/Microwave/mmWave (Design To 94GHz)

Components: Filters, SAW, VCO, PLL, Mixers, Amplifiers, Antennas

Systems: Transmitters/Receivers, RADAR

Electronics Manufacturing

Semiconductor: fabrication, deposition, etching, thin and thick film

Printed Circuit Board (PCB): fabrication, etching, plating, thru hole

EDUCATION Ph.D., Electrical Engineering; University of California at Los Angeles (1993)
M.S., Electrical Engineering; Columbia University (1984)
B.A., Physics and Computers; Yeshiva University (1982)

HONORS TRW Doctoral Fellowship
Research Assistantship, UCLA & Columbia University

EXPERIENCE

6/01 to
Present

B. H. Technology, LLC
Pomona, NY
Principal, Chief Technology Officer

Intellectual Property services include Expert Witness in various technology disciplines including multi- technology disciplines. Expert witness services include patent analysis for litigation, writing, editing, submitting signed Declarations to the Court, deposition preparation, sworn depositions for the Court, interfacing with Counsel, and trial preparations.

Intellectual Property services also include patent infringement evaluation, forensic patent and technology investigation, advise and consult with client on curative and technology development paths. Services also include patent development and writing, prior art assessment and searches, development of “picket fences” and other barriers to competition, as well as overall patentability, patent valuation and probable market value.

Financial services responsibilities for technical assessment include evaluation of emerging and core technologies, product development and management, and intellectual property evaluation. Assessments have been made of technologies and companies for investors that range from Angel and boutique VC to investment banks. Areas of expertise include RFID, Sensors, and Electronics.

Technical services responsibilities include engineering design, prototyping, code development, and product design for a wide technology base of clients ranging from medical implanted devices to RF telemetry systems to robotic platform development. In conjunction, Consulting responsibilities for outside clients also include technology due diligence for investment assessment, technology roadmap development for new product marketplace insertion, and business plan reviews.

12/96 To
4/01

Ansoft Corp.
Elmwood Park, New Jersey

Director of Advanced Technology

Executive responsibility for all new and current R&D contract business development, technology evaluation, bid and proposal, day-to-day contract management, and corporate/government/university liaison. Additional responsibilities included expert technical advisement for all of Ansoft’s (NJ, Pittsburgh, and Boulder, CO) advanced technology commercialization, R&D efforts, as well as technology assessment for potential company acquisitions. R&D customer contracts, consisting of SBIR/STTR Phase I and II, and MAFET Thrust I (DARPA, Tri-services); totaling \$3M per year through 2002. New business development responsibilities included idea conception, formulation, leadership, strategic planning, resource allocation, and coordination within Ansoft’s executive team as well as with outside corporate/ government/ university agencies. Liaison activities also included briefings, presentations, executive meetings on current projects and anticipated new projects, as well as monthly and quarterly reporting as appropriate.

Research efforts extended to circuit design and analysis, EM engine development, Neural network synthesis, Antenna design, MEMS Sensor design, as well as device model (HBT, Mesfet) development.

03/88 To
12/96

TRW, Inc.
Redondo Beach, California
Space Electronics and Technology Group

Responsible Design Engineer (RDE)
RF Products Group

Communication Satellite PLL Frequency Source:

Directly responsible for the design, development and production of ultra low noise, stable phase locked loop DRO. The PLLDRO is both flight and space qualified and is inserted into both DCP and WCS communication satellites as the master frequency source.

Narrowband Transmitter/Receiver Filter Bank:

Directly responsible for the design, development and production of narrowband filters for the ATDRSS satellite program. The multi-pole dielectric resonator based filters offer both performance and size/weight advantages over conventional filters.

Microwave Design Engineer (MTS II)
Superconducting Electronics Research Area

Introduced, Supervised, and Conducted a variety of Engineering Research, Device and System Design, and Development functions pertaining to: Kinetic Inductance Resonators and Filters, High Speed, High Density Packaging, Ferroelectric Phase Shifters, Superconducting Parametric Amplifiers, DRO's, mmW Detectors, Beam Forming Networks including Rotman Lenses, HTS Process Development, Cryogenics, and Superconducting Device Research.

High Temperature Superconducting Parametric Amplifier: Designed, developed, fabricated and tested the first HTS monolithic parametric amplifier at 10 and 60 GHz; +10 dB gain at 10K using a four photon excitation; monolithic antipodal finline developed at 60 GHz; I-V Josephson junction monitoring through RF chokes.

PUBLICATIONS

A. Z. Kain, "RFID Overview: What's the buzz all about?," *The Penn Club*, NY, NY August 01, 2006

A. Z. Kain, "A Novel Force Transducer and Load Cell Design Using Leaky Electromagnetic Waves", *Sensors Magazine*, June 2004

M. Markovic, A. Z. Kain, Z. Popovic, "Nonlinear Modeling of Class-E Microwave Power Amplifiers", *Int. J. of RF and Computer-Aided Engineering*, Vol. 9, No. 2, March 1999, pp.93-103

- R. A. Pucel, T. Daniel, A. Z. Kain, R. Tayrani, "A Bias and Temperature Dependent Noise Model of Heterojunction Bipolar Transistors", *1998 IEEE MTT-S*
- A. Z. Kain, " Nonlinear Microwave and Millimeter Wave Phenomena in High Temperature Superconducting Devices", *Doctoral Dissertation*, UCLA, 1993
- A. Z. Kain, H.R. Fetterman, " Measurement of Parametric Interactions in YBCO Step Edge Junctions", *Appl. Phys. Lett* ,Sept. 1993
- A. Z. Kain, J. M. Pond, H. R. Fetterman, "Impact of Kinetic Inductance Effect in High-Tc Superconducting Coplanar Waveguide Resonators" *Microwave and Optical Technology Letters*, vol. 6, no. 13, Dec. 1993
- A. Z. Kain, C.L. Pettiette-Hall, K.P. Daly, A.E. Lee, R. Hu, J.F. Burch, " Dielectric Properties of SrTiO₃ Thin Films at Low Temperature", *IEEE Transactions on Applied superconductivity*, Vol. 3, No. 1, pp. 1421-1424, March, 1993
- H. R. Fetterman, M. Martin, F. Oshita, D. V. Plant, A. Z. Kain, " Measurement of New Millimeterwave Devices and Components Using Picosecond Techniques", *1993 IEEE LEOS Summer Topical on Optical Microwave Interactions*, pp. 61-62, July 1993
- C. M. Jackson, J.H. Kobayashi, A. Z. Kain, C. L. Pettiette-Hall, A. E. Lee, R. Hu, J. F. Burch, " Novel Monolithic Phase Shifter Combining Ferroelectrics and High Temperature Superconductors", *Proc. of the 5th International Symposium on Integrated Ferroelectrics*, 1993

ARON Z. KAIN, Ph.D.**LITIGATION ADDENDUM**

EXPERT WITNESS CASSES

(1) PCB electronics failure litigation: This case involved technical analysis to determine cause of failure of PCB which resulted in scrapping a 300,000 piece lot for a safety product. Expert Report, Sworn Deposition; case settled

(2) Smart valve patent infringement litigation: Litigation concerns the infringement on a smart valve for air products that uses bluetooth technology and sensor technology. Expert Opinion; case settled

(3) Computer communications patent infringement litigation: The infringement case involved PC manufacturers and wireless communications technology, patents, electronics design and circuit board manufacturing. Expert Report, Deposition Prep.; case settled

(4) IC & PCB failure litigation: Plaintiff claims manufacturer's integrated circuit failed and damaged both the circuitry as well as the PCB resulting in 10's of millions of dollars in damages for which communications devices had to be scrapped. Expert Report, Deposition Prep.; case settled

(4) Bluetooth Controlled Motorized Skateboard failure litigation: Plaintiff claims manufacturer's defect controlling street legal motorized skateboard resulted in substantial injury. Detailed skateboard investigation into operation and product design is required. Expert Report, case settled

(5) Misappropriation of Intellectual Property: Plaintiff claimed that Defendant misappropriated significant intellectual property, formed a competing product and company, filed for patents based on this IP, and significantly damaged this multi-billion dollar company. I defended our multi-billion dollar client against these claims. Expert Report, Sworn Deposition; case settled

(6) Product liability, non-conformance usage: Plaintiff claims that the product does not meet specifications and does not function as purported. Investment in product rollout for personnel protection in prison system has resulted in millions of dollars of waste, as well as exposing personnel to possible personnel injury. I defended our multi-million dollar client against these claims. Expert Report; awaiting Trial in Canada.