

**Silicon Valley Expert Witness Group, Inc.  
Consultant Curriculum Vitae**

**Richard A. Blanchard, Ph.D.**

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**Expertise**

- MOS and Bipolar Device Technology
  - Semiconductor Device Physics
  - Microchip Fabrication & Analysis
  - Electronic Systems
  - Electrical & Electronic Failures
  - ESD & EOS Failures
  - Assembly & Packages
  - CMOS, DMOS & BiCMOS
  - Power IC's & Power Electronics
  - Printed Circuit Board Manufacturing
  - Semiconductor Process & Control
  - Patents & Trade Secrets
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**Professional Summary**

Dr. Blanchard has over 40 years of combined industry, research, academic, and consulting experience. His research covers semiconductor device and electronics design, semiconductor device physics, semiconductor manufacturing processes and equipment, failure analysis, and reverse engineering of semiconductor devices and electronic circuits. Dr. Blanchard's work has resulted in more than 140 U.S. issued patents. As a result, he has been involved in numerous patent and trade secret litigation matters. He has also authored or co-authored books and articles dealing with semiconductor design, process development, and failure analysis.

**Employment History**

From: 1998      **Silicon Valley Expert Witness Group, Inc.**  
To: Present     Mountain View, CA  
Position: *Expert Consultant*

Silicon Valley Expert Witness Group, Inc. (SVEWG) is a high technology, "Silicon Valley" consulting company specializing in expert witness litigation support and technology consulting. SVEWG has an extensive roster of world-class technology experts used in the defense and promotion of intellectual property rights and other litigation disputes. SVEWG Principals offer extensive in-house technology, legal and business expertise and have direct access to senior litigation and technology consultants worldwide.

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From: 1991      **Failure Analysis Associates, Inc. (Now named “Exponent”)**  
To: 1998      Menlo Park, CA  
Position: *Principal Engineer & Division Manager*  
Responsible for the Electrical/Electronic Division of Failure Analysis Associates providing consulting services to the electrical and electronics industry. Specific duties include:

- Semiconductor devices. Failure analysis and reverse engineering of solid-state electronic components and circuits. Semiconductor processing and semiconductor process equipment. Semiconductor manufacturing and process control.
- Failure analysis of electric and electronic systems, subsystems, and components, including causes of electrical fires
- Reliability modeling and lifetime prediction of electrical and electronic systems and subsystems
- Automotive electronics. Design of discrete devices and integrated circuits
- Power Electronics. Power MOS and Smart Power Technologies

From: 1987      **IXYS Corporation**  
To: 1991      San Jose, CA  
Position: *Senior Vice President*  
Responsible for the development of IC products. Established an in-house CAD capability. Recruited an IC design team and coordinated the definition and development of IXYS ICs. Identified, qualified and monitored the IC foundries that manufactured these circuits. Set up testing capability at IXYS. Coordinated assembly on IC's. Worked on various MOSFET and IGBT device, test, and assembly problems.

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From: 1982      **Siliconix, Inc.**  
To: 1987      Santa Clara, CA  
Position: *Vice President, Engineering*  
Other titles held at Siliconix, Inc. were Engineering Manager (1982-1983) and Director (1983-1984). Responsible for the development of advanced process technology and the design of both discrete devices (JFETs, lateral and vertical DMOS transistors) and integrated circuits (low and high voltage CMOS, D/CMOS and bipolar-JFET). These responsibilities included providing technical and administrative direction to two IC design groups in the United Kingdom and the U.S., one device and process design group and a “quick-turn” processing line. Two CAD groups, one in the U.K. and one in the U.S., and a CAE group developing computer software and hardware for the engineering community rounded out the department. Personally responsible for many key innovations and inventions in power MOS and D/CMOS IC technology and their assembly and test requirements. He submitted approximately 20 patent disclosures while employed at Siliconix, Inc. He holds the two key “trench FET” patents, of which he is the sole inventor.

From: 1976      **Supertex, Inc.**  
To: 1982      Sunnyvale, CA  
Position: *Founder and Vice President, MOS Power Products*  
Responsible for investigation of new semiconductor devices and new technologies. In charge of Power MOS device research, design and development. His work lead to the design and development of both the discrete power MOS device family and the high voltage IC (HVIC) family sold by Supertex, Inc. Responsible for an in-house assembly area as well as engineering aspects of power MOS and HVIC testing.

From: 1976      **Cognition, Inc.**  
To: 1978      Mountain View, CA  
Position: *Founder and Consulting Engineer*  
Responsible for developing the process technology for fabricating monolithic silicon pressure sensors. A process line was established for the manufacture of piezoresistive pressure sensors, including the precision etching of thin silicon diaphragms.

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From: 1974      **Foothill College**  
To: 1978      Los Altos Hills, CA  
Position: *Associate Professor, Assistant Division Chairman, Engineering & Technology Division*  
Accomplishments included developing the curriculum for the Semiconductor Technology Program, and establishing a small processing facility for teaching students the fundamentals of semiconductor technology. Supervised approximately 60 instructors in the evening and off-campus programs.

From: 1974      **Independent Consultant**  
To: 1976      Los Altos Hills, CA  
Duties: Consultant to the semiconductor industry, including court appointed "Special Master" in the Fairchild Semiconductor Corporation v. National Semiconductor Corporation Isoplanar patent suit.

From: 1970      **Fairchild Semiconductor**  
To: 1974      Mountain View, CA  
Position: *Senior Engineer, Department Manager*  
Responsible for the fabrication of the integrated circuits in the Polaroid SX-70 camera. Technologies directly related to this work include standard bipolar technology, bipolar- MOS technology, silicon gate technology and flip-chip assembly technology.

**Deposition and Trial Testimony (Past Five Years)**

Apple Computer, Inc. v. Tatung Co., International Court of Arbitration of the International Chamber of Commerce, Case No. 10099 AER. (D, R)

Anne Camilleri as Guardian for Andrea Camilleri, an incompetent Adult, v. Costco Companies, Inc., Thompson Merchandising, Everstar Merchandise, So Yang Enterprises Co. Ltd. And Does 1 to 1000. Superior Court of the State of California, County of San Mateo, Case No. 407 06 & Case No. 408 615. (D)

Micrel, Inc. v. Federal Insurance Company, Superior Court of the State of California and Santa Clara County, Case No. CV786627. (D, R)

Sun Microsystems v. Kingston Technology, United States District Court, Northern District of California, Case No. C99-03610VRW. (D, R)

Level One v. Altima, United States International Trade Commission, Washington, D.C., Investigation No. 337-TA-435. (D, R, T)

Optus Networks Pty Ltd CAN 008 570 330 and Ors v. Leighton Contractors Pty Ltd CAN 000 893 667 and Ors, Supreme Court of New South Wales Sydney Registry Common Law Division Construction List, No. 55059 of 1997. (R, T)

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Federal Insurance Company v. Metex Corporation, Superior Court of the State of California, County of San Francisco, No. 988899. (D, R)

Pekin Insurance Company and Green Bay Motor Sports, Inc. v. American Suzuki Motor Corporation, Circuit Court of the State of Wisconsin, County of Brown, No. 01-CV-416 (4/2002). (D)

Kenneth Toner and Daniel J. Harper, as Trustee of the Recall Claimants Trust v. Cadet Manufacturing Company, I.R.C.A. S.P.A., Zoppas Industries S.P.A. and Still-man Heating Products Inc., Superior Court of the State of Washington, County of King, No. 98-2-10876-2SEA (4/2002). (D)

Allen Scott Schneider, Tami Schneider v. Sentry Alarm, Inc., Sylvester's Alarm, Inc. a.k.a. Sylvester's Security Services, Inc. Automatic Alarm, Inc., Superior Court of the State of California, County of Santa Clara, Case No. CV 795867. (D)

David Bryte, Personal Representative of the Estate of Lova E. Bryte, deceased, et al, plaintiffs v. Sunbeam Corporation & Sears Roebuck and Co., defendants. In the United States District Court for the Northern District of West Virginia, Case No. 2:00-CV-93. (D, R)

SimpleTech, Inc. v. Atmel Corporation, Superior Court of the State of California, County of Santa Clara, Case No. CV 809851 (2004). (D, R)

Pavel Kuzmenko; Karina Kuzmenko and Kristina Kuzmenko v. Morningside Apartments, William R. Canihan, and MacFrugal's Bargain Close Out, Superior Court of the State of California, County of Sacramento, Case No. 01AS00112 (2004). (D)

State Farm Fire & Casualty Insurance Company; as subrogee for Terry Swan, and Terry Swan, individually v. Sears, Roebuck and Co., a foreign corporation, the United States District Court for the Western District of Washington, Case No. C01-129 (C). (D, R)

Rexford Agin, Susan Agin and Daniel Agin v. Sunbeam Products, Inc., in the United States District Court for the Southern District of Ohio Eastern Division, Civil Action No. C2030052. (D, R)

Bobby Cook, as Personal Representative of the Estate of Cathy Lynn Cook, Deceased; and Bobby Cook, Individually v. Sunbeam Corporation, Sunbeam Products, Inc., Wal-Mart Stores, Inc., and Wal-Mart Stores, East, Inc., United States District Court for the Northern District of Alabama Southern Division, Case No. CV-01-B-2000-S. (D, R)

IXYS Corporation v. Advanced Power Technology, Inc., United States District Court for the Northern District of California San Francisco Division, Case No. C 02-3942 MHP. (D, R)

Motorola, Inc. v. Analog Devices, Inc., United States District Court for the Eastern District of Texas Beaumont Division, Civil Action No. 1:03-CV-0131 (RHC). (D, R)

Siliconix Inc., a Delaware corporation v. Alpha and Omega Semiconductor Inc., a California corporation, and Alpha and Omega Semiconductor Limited, a Bermuda corporation, United

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States District Court for the Northern District of California San Francisco Division, Case No. C03-04803 WHA (Inventor). (D)

Sunex, Inc. v. Omnivision Technologies/Omnivision Technologies, Inc., a Delaware Corporation v. Sunex, Inc, Superior Court of the State of California County of San Diego, North County Division, Case No. 031205. (D)

Fujitsu Limited v. Cirrus Logic, Inc., Amkor Technology, Inc., Sumitomo Bakelite Co., Ltd., and Sumitomo Plastics America, Inc., Superior Court of the State of California County of Santa Clara, Case. No. 1-03-CV-009885. (D)

Silicon Laboratories, Inc. v. Ali Niknejad & Axiom Microdevices, Inc., United States District Court for the Western Division of Texas Austin Division, Civil Action No. A-04-CA-155-SS. (D, R, T)

Joel R. Bertelson, Daniel E. Mendl, Daniel E. Mendl as Trustee, The Bigfoot Ranch, II, Inc., Daniel E. Mendl as Attorney In Fact for Katherine Hope Bertelson and Union Mutual Fire Insurance Co. and New England Guaranty Insurance Co., Inc. v. Sunbeam Products, Inc. and The Allen Agency, Inc., Superior Court of the State of Vermont Chittenden County, SS, Docket No. S0312-04 CnC. (D, R)

Micrel Inc. v. Monolithic Power Systems, Michael R. Hsing, James C. Moyer, and DOES 1-20 inclusive, Unites States District Court for the Northern District of California San Francisco Division, Case No. C04-04770 JSW (JCS). (D)

Siliconix, Inc. v. Denso Corporation, United States District Court for the Northern District of California, San Francisco Division, Case No. C05-01507 WHA and Consolidated Actions Nos. C04-00344 WHA and C05-03617 WHA. (D)

Siliconix, Inc. v. Semiconductor Components Industries, LLC d/b/a On Semiconductor, American Arbitration Association, Phoenix, Arizona, Case No. 76 133 Y 00327 05 DEAR. (D, T)

John Rumans, Jeanne Rumans and Jessica Rumans v. Sunbeam Products, Inc., United States District Court for the Western District of Missouri Western Division, Case No. 05-1226-CV-W-HFS. (D)

Markel American Insurance Company, Insurance Company of North America and State Farm Fire and Casualty Company v. Cadet Heater Manufacturing Company v. ZIMM (Third-Party Defendants), United States District Court for the District of Oregon, Case No. 3:05-CV-1188 KI (Lead Case). (D, R)

Verigy US, Inc. v. Romi Omar Mayder, Wesley Mayder, Silicon Test Systems, Inc., and Silicon Test Solutions, LLC, United States District Court for the Northern District of California San Jose Division, Case No. C07-04330 RMW (HRL). (D, R)

Nathan J. Sheridan v. Fladeboe Volkswagen, Inc., Volkswagen of America, Inc., Superior Court of the State of California for the County of Orange, Case No. 06CC09510. (D, T)

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Quantum Research Group v. Apple Computer Company, Inc., Cypress Semiconductor Corp., Cypress Microsystems, and Fingerworks, Inc., Unites States District of Maryland, Civil Action No. 1:05-CV-03408-WMN. (D, R)

Safeco Insurance v. Eaton Electrical, Inc., et al., Marin Superior Court, Case No. 60820. (D)

State Farm Fire and Casualty Co., as Subrogee of Benjamin Parr and June Parr, and Benjamin Parr and June Parr, Individually v. Sunbeam Products, Inc., United States District Court, Central District, Peoria Division, Case No. 1:06-CV-01208. (D, R, T)

Olivia Evans, et al. v. G3 Energy, LLC, et al., Alameda County Superior Court Case No.: VG-05-218563. (D)

Safeco Insurance Company of Illinois v. BSH Home Appliances Corporation and Chun Yuen Ng, Superior Court of California, County of San Francisco, Case No. 060-08-471246. (D)

LG Display Co., Ltd. v. Chi Mei Optoelectronics Corporation, AU Optronics Corporation, AU OPtronics Corporation of America: Tatung Company, Tatung Company of America, Inc. and Viewsonic Corporation, United States District Court, District of Delaware, Civil Action No. 06-726 (JJF). (D, R)

Sun Yen v. Volkswagen Group of America, Inc., Superior Court of California, County of Alameda, Case No. RG08416335. (D)

Tessera, Inc. v. United Test and Assembly Center, LTD and UTAC America, Inc., Superior Court of California, County of Alameda, Case No. RG08410327. (D)

Barbara Kay and James Kay v. Sunbeam Products, Inc., United States District Court, Western District of Missouri, Central Division, Case No. 2:09CV-4065-NKL. (D, R)

Jeffery Quist, as Trustee for the heirs and next of kin of Jerald Quist, Deceased, and Virginia Quist v. Sunbeam Products, Inc., d/b/a Jarden Consumer Solutions. (D, R)

Kay A. Reed and Charlie Wear, Trust Administrators for the Vornado Liquidating Trust v. Tyco Electronics Corporation, Global Wire Technologies of Indiana, Inc. GWT Investments, Inc. and Unicable, Inc., Superior Court of California, County of San Francisco, Case No. CGC-05-441279. (D, T)

DC-DC Controllers and Products Containing the Same (CONFIDENTIAL), United States International Trade Commission, Washington, DC, Case No. 337-TA-698. (D, R)

D = Deposition

R = Report

T = Testimony in Court

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**Patents**

<u>Patent Number</u>	<u>Date Issued</u>	<u>Title</u>
7,745,885	06/29/2010	High Voltage Power MOSFET Having Low On-Resistance
7,736,976	06/15/2010	Method for Fabricating a Power Semiconductor Device Having a Voltage Sustaining Layer with a Terraced Trench Facilitating Formation of Floating Islands
7,705,397	04/27/2010	Devices, Methods, and Systems with MOS-Gated Trench-to-Trench Lateral Current Flow
7,704,842	04/27/2010	Lateral High-Voltage Transistor with Vertically-Extended Voltage-Equalized Drift Region
7,586,165	09/08/2009	Microelectromechanical Systems (MEMS) Device Including a Superlattice
7,586,148	09/08/2009	Power Semiconductor Device Having a Voltage Sustaining Region that Includes Doped Columns Formed by Terraced Trenches
7,557,394	07/07/2009	High-Voltage Transistor Fabrication with Trench Etching Technique
7,544,544	06/09/2009	Low Capacitance Tow-Terminal Barrier Controlled TVS Diodes
7,535,041	05/19/2009	Method for Making a Semiconductor Device Including Regions of Band-Engineered Semiconductor Superlattice to Reduce Device-On Resistance
7,531,850	05/12/2009	Semiconductor Device Including a Memory Cell with a Negative Differential Resistance (NDR) Device
7,531,829	05/12/2009	Semiconductor Device Including Regions of Band-Engineered Semiconductor Superlattice to Reduce Device-On Resistance
7,504,305	03/17/2009	Technique for Forming the Deep Doped Regions in Superjunction Devices
7,473,966	01/06/2009	Oxide-Bypassed Lateral High Voltage Structures and Methods
7,442,584	10/28/2008	Isolated Vertical Power Device Structure with Both N-Doped and P-Doped Trenches
7,411,249	08/12/2008	Lateral High-Voltage Transistor with Vertically-Extended Voltage-Equalized Drift Region
7,397,097	07/08/2008	Integrated Released Beam Layer Structure Fabricated in Trenches and Manufacturing Method Thereof
7,339,252	03/04/2008	Semiconductor Having Thick Dielectric Regions
7,304,347	12/04/2007	Method for Fabricating a Power Semiconductor Device Having a Voltage Sustaining Layer with a Terraced Trench Facilitating Formation of Floating Islands
7,244,970	07/17/2007	Low Capacitance Two-Terminal Barrier Controlled TVS Diodes
7,224,027	05/29/2007	High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Trench Etching and Diffusion from Regions of Oppositely Doped Polysilicon
7,202,494	04/10/2007	FinFET Including a Superlattice
7,199,427	04/03/2007	DMOS Device with a Programmable Threshold Voltage

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7,138,289	11/21/2006	Technique for Fabricating Multilayer Color Sensing Photodetectors
7,094,621	08/22/2006	Fabrication on diaphragms and 'Floating' Regions of Single Crystal Semiconductor for MEMS Devices
7,091,552	08/15/2006	High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Trench Etching and Ion Implantation
7,084,455	08/01/2006	Power Semiconductor Device Having a Voltage Sustaining Region that Includes Terraced Trench with Continuous Doped Columns Formed in an Epitaxial Layer
7,067,376	06/27/2006	High Voltage power MOSFET Having Low On-Resistance
7,061,072	06/13/2006	Integrated Circuit Inductors Using Driven Shields
7,023,069	04/04/2006	Method for Forming Thick Dielectric Regions Using Etched Trenches
7,019,360	03/28/2006	High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Trench Etching Using an Etchant Gas that is also a Doping Source
7,015,104	03/21/2006	Technique for Forming the Deep Doped Columns in Superjunction
6,992,350	01/31/2006	High Voltage Power MOSFET Having Low On-Resistance
6,949,432	09/27/2005	Trench DMOS Transistor Structure Having a Low Resistance Path to a Drain Contact Located on an Upper Surface
6,921,938	07/26/2005	Double Diffused Field Effect Transistor Having Reduced On-Resistance
6,906,529	06/14/2005	Capacitive Sensor Device With Electrically Configurable Pixels
6,882,573	04/19/2005	DMOS Device with a Programmable Threshold Voltage
6,861,337	03/01/2005	Method for Using a Surface Geometry for a MOS-Gated Device in the Manufacture of Dice Having Different Sizes
6,812,526	11/02/2004	Trench DMOS Transistor Structure Having a Low Resistance Path to a Drain Contact Located on an Upper Surface
6,812,056	11/02/2004	Technique for Fabricating MEMS Devices Having Diaphragms of "Floating" Regions of Single Crystal Material
6,794,251	09/21/2004	Method of Making a Power Semiconductor Device
6,790,745	09/14/2004	Fabrication of Dielectrically Isolated Regions of Silicon in a Substrate
6,777,745	08/17/2004	Symmetric Trench MOSFET Device and Method of Making Same
6,750,523	06/15/2004	Photodiode Stacks for Photovoltaic Relays and the Method of Manufacturing the Same
6,750,104	06/15/2004	High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Trench Etching Using an Etchant Gas that is also a Doping Source
6,734,495	05/11/2004	Two Terminal Programmable MOS-Gated Current Source
6,730,963	05/04/2004	Minimum Sized Cellular MOS-Gated Device Geometry
6,724,044	04/20/2004	MOSFET Device Having Geometry that Permits Frequent Body Contact
6,724,039	04/20/2004	Semiconductor Device Having a Schottky Diode
6,713,351	03/30/2004	Double Diffused Field Effect Transistor Having Reduced On-

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		Resistance
6,710,414	03/23/2004	Surface Geometry for a MOS-Gated Device that Allows the Manufacture of Dice Having Different Sizes
6,710,400	03/23/2004	Method for Fabricating a High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Rapid Diffusion
6,689,662	02/10/2004	Method of Forming a Higher Voltage Power MOSFET Having Low On-Resistance
6,686,244	02/03/2004	Power Semiconductor Device Having a Voltage Sustaining Region that Includes Doped Columns Formed with a Single Ion Implantation Step
6,660,571	12/09/2003	High Voltage Power MOSFET Having Low On-Resistance
6,656,797	12/02/2003	High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Trench Etching and Ion Implantation
6,649,477	11/18/2003	Method for Fabricating a Power Semiconductor Device Having a Voltage Sustaining Layer with a Terraced Trench Facilitating Formation of Floating Islands
6,627,949	09/30/2003	High Voltage Power MOSFET Having Low On-Resistance
6,624,494	09/23/2003	Method for Fabricating a Power Semiconductor Device Having a Floating Island Voltage Sustaining Layer
6,621,107	09/16/2003	Trench DMOS Transistor with Embedded Trench Schottky Rectifier
6,593,619	07/15/2003	High Voltage Power MOSFET Having Low On-Resistance
6,593,174	07/15/2003	Field Effect Transistor Having Dielectrically Isolated Sources and Drains and Method for Making Same
6,576,516	06/10/2003	High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Trench Etching and Diffusion from Regions of Oppositely Doped Polysilicon
6,566,201	05/20/2003	Method for Fabricating a High Voltage Power MOSFET Having a Voltage Sustaining Region that Includes Doped Columns Formed by Rapid Diffusion
6,538,279	03/25/2003	High-Side Switch With Depletion-Mode Device
6,492,663	12/10/2002	Universal Source Geometry for MOS-Gated Power Devices
6,479,352	11/12/2002	Method of Fabricating High Voltage Power MOSFET Having Low On-Resistance
6,472,709	10/29/2002	Trench DMOS Transistor Structure Having a Low Resistance Path to a Drain Contact Located on an Upper Surface
6,468,866	10/22/2002	Single Feature Size MOS Technology Power Device
6,465,304	10/15/2002	Method for Fabricating a Power Semiconductor Device Having a Floating Island Voltage Sustaining Layer
6,432,775	08/13/2002	Trench DMOS Transistor Structure Having a Low Resistance Path to a Drain Contact Located on an Upper Surface
6,420,764	07/16/2002	Field Effect Transistor Having Dielectrically Isolated Sources and Drains and Methods for Making Same

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6,403,427	06/11/2002	Field Effect Transistor Having Dielectrically Isolated Sources and Drains and Method for Making Same
6,399,961	06/04/2002	Field Effect Transistor Having Dielectrically Isolated Sources and Drains and Method for Making Same
6,369,426	04/09/2002	Transistor with Integrated Photodetector for Conductivity Modulation
6,368,918	04/09/2002	Method of Fabricating an Embedded Flash EEPROM with a Tunnel Oxide Grown on a Textured Substrate
6,331,794	12/18/2001	Phase Leg with Depletion-mode Device
6,316,336	11/13/2001	Method for Forming Buried Layers With Top-Side Contacts and the Resulting Structure
6,291,845	19/18/2001	Fully-Dielectric-Isolated FET Technology
6,272,050	08/07/2001	Method and Apparatus for Providing an Embedded Flash-EEPROM Technology
6,239,752	05/29/2001	Semiconductor Chip Package that is also an Antenna
6,225,662	05/01/2001	Semiconductor Structure with Heavily Doped Buried Breakdown Region
6,215,170	04/10/2001	Structure for Single Conductor Acting as Ground and Capacitor Plate Electrode Using Reduced Area
6,198,114	03/06/2001	Field Effect Transistor Having Dielectrically Isolated Sources and Drains and Method for Making Same
6,069,385	05/30/2000	Trench MOS-Gated Device
6,064,109	05/16/2000	Ballast Resistance for Producing Varied Emitter Current Flow Along the Emitter's Injecting Edge
6,046,473	04/04/2000	Structure and Process for Reducing the On-Resistance of MOS-Gated Power Devices
6,011,298	01/04/2000	High Voltage Termination with Buried Field-Shaping Region
5,985,721	11/16/1999	Single Feature Size MOS Technology Power Device
5,981,998	11/09/1999	Single Feature Size MOS Technology Power Device
5,981,318	11/09/1999	Fully-dielectric-isolated FET Technology
5,960,277	09/28/1999	Method of Making a Merged Device with Aligned Trench FET and Buried Emitter Patterns
5,897,355	05/27/1999	Method of Manufacturing Insulated Gate Semiconductor Device to Improve Ruggedness
5,869,371	02/09/1999	Structure and Process for Reducing the On-Resistance of MOS-gated Power Devices
5,856,696	01/05/1999	Field Effect Transistor Having Dielectrically Isolated Sources and Drains
5,821,136	10/13/1998	Inverted Field-Effect Device with Polycrystalline Silicon/Germanium Channel
5,801,396	09/01/1998	Inverted Field-Effect Device with Polycrystalline Silicon/Germanium Channel
5,798,549	08/25/1998	Conductive Layer Overlaid Self-Aligned MOS-Gated Semiconductor Devices
5,773,328	06/30/1998	Method Of Making A Fully-Dielectric-Isolated Fet

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5,756,386	05/26/1998	Method of Making Trench MOS-Gated Device with A Minimum Number of Masks
5,710,443	01/20/1998	Merged Device with Aligned Trench Fet and Buried Emitter Patterns
5,708,289	01/13/1998	Pad Protection Diode Structure
5,701,023	12/23/1997	Insulated Gate Semiconductor Device Typically Having Subsurface-Peaked Portion of Body Region For Improved Ruggedness
5,691,555	11/25/1997	Integrated Structure Current Sensing Resistor For Power Devices Particularly For Overload Self-Protected Power MOS Devices
5,668,025	09/16/1997	Method of Making a FET with Dielectrically Isolated Sources and Drains
5,663,079	09/02/1997	Method of Making Increased Density MOS-Gated Semiconductor Devices
5,648,670	07/15/1997	Trench MOS-Gated Device with a Minimum Number of Masks
5,640,037	06/17/1997	Cell with Self-Aligned Contacts
5,637,889	06/10/1997	Composite Power Transistor Structures Using Semiconductor Materials With Different Bandgaps
5,591,655	01/07/1997	Process for Manufacturing a Vertical Switched-Emitter Structure with Improved Lateral Isolation
5,589,415	12/31/1996	Method For Forming a Semiconductor Structure with Self-Aligned Contacts
5,576,245	11/19/1996	Method of Making Vertical Current Flow Field Effect Transistor
5,574,301	11/12/1996	Vertical Switched-Emitter Structure with Improved Lateral Isolation
5,528,063	06/18/1996	Conductive-Overlaid Self-Aligned MOS-Gated Semiconductor Devices
5,485,027	01/16/1996	Isolated DMOS IC Technology
5,298,781	03/29/1994	Vertical Current Flow Field Effect Transistor with Thick Insulator Over Non-Channel Areas
5,237,481	08/17/1993	Temperature Sensing Device for Use in a Power Transistor
5,218,228	06/08/1993	High Voltage MOS Transistors with Reduced Parasitic Current Gain
5,164,325	11/17/1992	Method of Making a Vertical Current Flow Field Effect Transistor
5,156,989	10/20/1992	Complementary Isolated DMOS IC Technology
5,132,235	07/21/1992	Method for Fabricating a High Voltage MOS Transistor
5,034,785	07/23/1992	Planar Vertical Channel DMOS Structure
4,983,535	01/08/1991	Vertical DMOS Transistor Fabrication Process
4,978,631	12/18/1990	Current Source with a Process Selectable Temperature Coefficient
4,958,204	09/18/1990	Junction Field-Effect Transistor with a Novel Gate
4,956,700	19/11/1990	Integrated Circuit with High Power, Vertical Output Transistor Capability
4,952,992	08/28/1990	Method and Apparatus for Improving the On-Voltage Characteristics of a Semiconductor Device
4,929,991	05/29/1990	Rugged Lateral DMOS Transistor Structure
4,920,388	04/24/1990	Power Transistor with Integrated Gate Resistor
4,916,509	04/10/1990	Method for Obtaining Low Interconnect Resistance on a Grooved Surface and the Resulting Structure

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4,914,058	04/03/1990	Grooved DMOS Process with Varying Gate Dielectric Thickness
4,896,196	01/23/1990	Vertical DMOS Power Transistor with an Integral Operating Condition Sensor
4,893,160	01/09/1990	Method for Increasing the Performance of Trenched Devices and the Resulting Structure
4,868,537	09/19/1989	Doped SiO <sub>2</sub> Resistor and Method of Forming Same
4,851,366	07/25/1989	Method for Providing Dielectrically Isolated Circuit
4,845,051	07/04/1989	Buried Gate JFET
4,832,586	05/30/1989	Dual-Gate High Density FET
4,827,324	05/02/1989	Implantation of Ions into an Insulating Layer of Increase Planar PN Junction Breakdown Voltage
4,824,795	04/25/1989	Method for Obtaining Regions of Dielectrically Isolated Single Crystal Silicon
4,813,882	03/28/1989	Power MOS Transistor with Equipotential Ring
4,799,100	01/17/1989	Method and Apparatus for Increasing Breakdown of a Planar Junction
4,798,810	01/17/1989	Method for Manufacturing a Power MOS Transistor
4,794,436	12/27/1988	High Voltage Drifted-Drain MOS Transistor
4,791,462	12/13/1988	Dense Vertical J-MOS Transistor
4,774,196	09/27/1988	Method of Bonding Semiconductor Wafers
4,767,722	08/30/1988	Method for Making Planar Vertical Channel DMOS Structures
4,759,836	07/26/1988	Ion Implantation of Thin Film CrSi <sub>2</sub> and SiC Resistors
4,707,909	11/24/1987	Manufacture of Trimmable High Value Polycrystalline Silicon Resistors
4,682,405	07/28/1987	Method for Forming Lateral and Vertical DMOS Transistors
4,402,003	08/30/1983	Composite MOS/Bipolar Power Device
4,398,339	08/16/1983	Fabrication Method for High Power MOS Device
4,393,391	07/12/1983	Power MOS Transistor With a Plurality of Longitudinal Grooves to Increase Channel Conducting Area
4,345,265	08/17/1982	MOS Power Transistor with Improved High-Voltage Capability
4,344,081	08/10/1982	Combined DMOS and a Vertical Device and Fabrication Method Therefore
4,145,703	03/20/1979	High Power MOS Device and Fabrication Method Therefore

**Education**

<u>Year</u>	<u>University</u>	<u>Degree</u>
1982	Stanford University	Ph.D., Electrical Engineering Thesis: "Optimization of Discrete High Power MOS Transistors."
1970	M.I.T.	MSEE Thesis: "The Use of a Thermal Feedback Mechanism in Power Transistor Structures."
1968	M.I.T.	BSEE

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**Publications – Books**

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**Publications - Papers**

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Blanchard, R.A., "The Use of MOSFETs in High-Dose-Rate Radiation Environments," Proceedings, APEC 86, New Orleans, Louisiana (With R. Severns).

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**Professional Associations and Achievements**

- Senior Member, Institute of Electrical and Electronics Engineers
  - Member, Electronic Device Failure Analysis Society
  - Member, International Microelectronics & Packaging Society
  - Member, American Vacuum Society
  - Member, National Fire Protection Association
  - Court Appointed Special Master
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