

Richard A. Blanchard, Ph.D.

Professional Profile

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 is a named inventor on more than 170 issued U.S. patents. As a result, he has been involved in numerous patent and trade secret litigation matters including a number of ITC proceedings. He has also authored or co-authored books and articles dealing with semiconductor design, process development, and failure analysis.

Before joining InSciTech, Dr. Blanchard worked at Blanchard Associates, Los Altos, Silicon Valley Expert Witness Group, Mountain View, Exponent Failure Analysis Associates, Inc., Menlo Park, CA, IXYS Corporation, San Jose, Siliconix, Inc. Santa Clara, Supertex, Inc. Sunnyvale, Cognition, Inc. Mountain View, Foothill College, Los Altos Hills, and at Fairchild Semiconductor, Mountain View, CA.

Credentials and Professional Affiliations

1982	Stanford University	Ph.D., Electrical Engineering
1970	M.I.T.	MSEE
1968	M.I.T.	BSEE

- 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

Patents

<u>Patent Number</u>	<u>Date Issued</u>	<u>Title</u>
8,679,903	3/25/2014	Vertical quadruple conduction channel insulated gate transistor
8,674,593	3/18/2014	Diode for a printable composition
8,669,612 B2	3/11/2014	Technique for Forming the Deep Doped Columns in Superjunction
8,643,055 B2	2/14/2014	Series Current Limiter Device
8,581,341 B2	11/12/2013	Power Mosfet with Embedded Recessed Field Plate and Methods of Fabrication
8,580,644 B2	11/12/2013	Multi-Level Lateral floating Coupled Capacitor Transistor Structures
8,575,688 B2	11/5/2013	Trench Device Structure and Fabrication
8,569,117 B2	10/29/2013	Systems and Methods Integrating Trench-Gated Thyristor with Trench-Gated Rectifier
8,513,732 B2	8/20/2013	High Voltage Power Mosfet having low on-resistance
8,456,393	6/4/2013	Method of Manufacturing a Light Emitting, Photovoltaic or other Electronic Apparatus and System
8,456,392	6/4/2013	Method of Manufacturing a Light Emitting, Photovoltaic or other Electronic Apparatus and System
8,450,795	5/28/2013	Technique for Forming the Deep Doped Columns in Superjunction
8,415,879	4/9/2013	Diode for Printable Composition
8,395,568	3/12/2013	Light Emitting, Photovoltaic or other Electronic Apparatus and System
8,390,060	3/5/2013	Power Semiconductor Devices, Structures, and Related Methods
8,384,630	2/26/2013	Light Emitting Photovoltaic or other Electronic Apparatus and System
8,354,711	1/15/2013	Power MOSFET and its Edge Termination
8,330,217	12/11/2012	Devices, Methods, and Systems with MOS-Gated Trench-to-Trench Lateral, Current Flow
8,330,213	12/11/2012	Power Semiconductor Devices, Methods, and Structures with Embedded Dielectric Layers Containing Permanent Charges
8,319,278	11/27/2012	Power Device Structures and Methods Using Empty Space Zones
8,310,006	11/13/2012	Devices, Structures, and Methods using Self-aligned Resistive Source Extensions
8,193,565	6/5/2012	Multi-level Lateral Floating Coupled Capacitor Transistor Structures
8,133,768	03/13/2012	Method of Manufacturing a Light Emitting Photovoltaic or Other Electronic Apparatus and System
8,049,271	11/01/2011	Power Semiconductor Device Having a Voltage Sustaining Layer with a Terraced Trench Formation of Floating Islands
7,989,293	08/02/2011	Trench Device Structure and Fabrication
7,825,492	11/02/2010	Isolated Vertical Power Device Structure with Both N-Doped and P-Doped Trenches
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 Two-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
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-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 High 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 (sic. Transistor) Having Dielectrically Isolated Sources and Drains and Methods for Making Same
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 Nan (sic. 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	09/18/2001	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
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, (sic) Isolated DMOS IC Technology
5,132,235	07/21/1992	Method for Fabricating a High Voltage MOS Transistor
5,034,785	07/23/1991	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	09/11/1990	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
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 ₂ 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
4,835,586	05/30/1989	Dual-Gate High Density FET
4,827,324	05/02/1989	Implantation of Ions into an Insulating Layer to Increase Planar PN Junction Breakdown Voltage
4,824,795	04/25/1989	Method for Obtaining Regions of Dielectrically Isolated Single Crystal Silicon
4,816,882	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 ₂ and SiC Resistors
4,707,909	11/24/1987	Manufacture of Trimmable High Value Polycrystalline Silicon Resistors

4,682,405	07/28/1987	Methods 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 Bipolar Transistor Device and Fabrication Method Therefor (sic)
4,145,703	03/20/1979	High Power MOS Device and Fabrication Method Therefor (sic)

Publications – Books

- Blanchard, R. A., Burgess, David, "Wafer Failure Analysis for Yield Enhancement," Accelerated Analysis, 2000.
- Blanchard, R.A., "Electronic Failure Analysis Handbook," co-author of three chapters, P. L. Martin, ed., McGraw-Hill, 1999.
- Blanchard, R.A., Trapp, O., Lopp, L., "Semiconductor Technology Handbook," Portola Valley, California, Technology Associates, 1993.
- Blanchard, R.A., "Discrete Semiconductor Switches: Still Improving," Chapter 3, Section 6, Modern Power Electronics, B. K. Bose, ed., Piscataway, N.J, IEEE Press, 1992.
- Blanchard, R.A., "Power Integrated Circuits: Physics, Design, and Application," (Chapter 3 with J. Plummer) McGraw Hill, 1986.
- Blanchard, R.A., Gise, P., "Modern Semiconductor Fabrication Technology," Reston Publishing Company, 1986.

Publications - Papers

- Blanchard, R.A. and others, "MOSPOWER Applications Handbook," *Siliconix, Inc.*, 1984; Sections 1.3, 2.9, 2.9.1, 2.11, 4.2, 5.6, 5.6.2, 7.1.
- Blanchard, R.A., Gise, P., "Semiconductor and Integrated Circuit Fabrication Techniques," *Reston Publishing Company*, 1979.
- Blanchard, R.A., Wong, Chuck, "Off-Line Battery Charger Circuit with Secondary-Side PWM Control," HFPC 2000 Proceedings, October 2000.
- Blanchard, R. A., Kusko, Alexander, "Electrical Arcing—Its Impact on Power Quality," *Power Quality Assurance*, May/June 1996.
- Blanchard, R. A., Kusko, Alexander, "Standby vs. Online UPS," *Power Quality Assurance*, March/April 1996.

Publications (continued)

Blanchard, R. A., Kusko, Alexander, "Power Electronic Equipment Protection," Power Quality Assurance, January/February 1996.

Blanchard, R.A., Li, R., "Quantitative Analysis and Measurements of Computer Local Area Network (LAN) Failures," PCIM/Power Quality/Mass Transit '95 Conference, Long Beach, California, to be presented September 9-15, 1995.

Blanchard, R.A., Medora, N., Kusko, A., "Power Factor Correction ICs - A Topological Overview," Proceedings, High Frequency Power Conversion Conference, HFPC '95, San Jose, California, May 1995.

Blanchard, R.A., Kusko, A., "Operation of Electrical Loads Supplied from Sine-Wave Current Source UPS," Proceedings, High Frequency Power Conversion Conference, San Jose, California, April 1994.

Cogan, A., Maluf, Blanchard, R.A., "A Very Large-Area, High-Power, High-Voltage DMOS Transistor," Electronic Components Conference, May 1987.

Blanchard, R.A., Dawes, W., et al., "Transient Hardened Power FETs," *IEEE Transactions on Nuclear Science*, Vol. NS-33 (6), December 1986.

Blanchard, R.A., Severns, R., Cogan, A., Fortier, T., "Special Features of Power MOSFETs in High-Frequency Switching Circuits," Proceedings, High Frequency Power Conversion Conference, Virginia Beach, Virginia, May 1986.

Blanchard, R.A., Fortier, T., Cogan, A., Harnden, J., "Low-On-Resistance, Low Voltage Power MOSFETs for Motor-drive Applications," Proceedings, Electro 86 Session 10, Boston, Massachusetts, May 1986.

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

Blanchard, R.A., Thibodeau, P., "Use of Depletion-Mode MOSFETs in Synchronous Rectification," Proceedings of the 1986 Power Electronics Specialist Conference, Vancouver, B.C., Canada, 1986.

Blanchard, R.A., Dawes, W., et al., "Power MOSFET Usage in Radiation Environments; Circuit Design Techniques and Improved Fabrication Methods," *Digest of Papers GOMAC 1986*, San Diego, California. Received the Meritorious Paper of the Conference Award.

Blanchard, R.A., Williams, "D/CMOS Technology: SMARTPOWER Processes that Solve Different Design Problems," Proceedings of Electro '86, Session 13, March 15, 1986.

Publications (continued)

Blanchard, R.A., Cogan, A., "Future Trends in Semiconductor Switching," Proceedings, SATECH 85, Chicago, Illinois, October 1985.

Blanchard, R.A., Thibodeau, P. "The Design of a High Efficiency, Low Voltage Power Supply Using MOSFET Synchronous Rectification and Current Mode Control," PESC '85 Record, Toulouse, France, June 1985.

Blanchard, R.A., Severns, R., "The Use of MOSFETs in High-Dose-Rate Radiation Environments," Proceedings of APEC, 1986.

Blanchard, R.A., Numann, "SMARTPOWER Technology: Empty Promises or Emerging Products?" *Powertechniques*, July 1985.

Blanchard, R.A., "SMARTPOWER ICs: Process Innovation Produces Significant New Circuits," *Electronic Components News*, May 1984.

Blanchard, R.A., "The Application of High-Power MOS-Gated Structures," Proceedings, Electro 85, New York, New York, May 1985.

Blanchard, R.A., Buchanan, Tubis, "Power MOS Technology Invades Telecom," Proceedings of Intelec '84, October 1984.

Blanchard, R.A., Severns, R., "Practical Synchronous Rectification Using MOSFETs," Proceedings of Powercon 11, 1984.

Blanchard, R.A., "Process Improvements and Innovations Spur New Power ICs," *Electronic Engineering Times*, September 24, 1984.

Blanchard, R.A., "MOSPOWER Devices and Coming on Strong," *Electronic Products*, pp 71-76, July 2, 1984.

Alexander, M., Blanchard, R.A., Abramczyk, E., "Depletion-Mode MOSFETs Open a Channel into Power Switching," *Electronic Design*, June 28, 1984.

Blanchard, R.A., Severns, R., "MOSFETs Schottky Diodes Vie for Low-Voltage-Supply Designs," *EDN*, June 28, 1984.

Blanchard, R. A., "MOSPOWER Devices Boost Power-Supply Performance," *Electronic Engineering Times*, June 4, 1984.

Publications (continued)

Blanchard, R.A., Allan, G., "Understanding MOS Power Transistor Characteristics Minimizes Incoming Testing Requirements," *Test & Measurement World*, pp. 78-87, January 1984.

Blanchard, R.A., Severns, R., "Practical Synchronous Rectification Using MOSFETs," Proceedings, Powercon 11, Dallas, Texas, 1984.

Blanchard, R.A., Buchanan, W., Tubis, C., "Power MOS Technology Invades Telecom," Proceedings, Intelec 84, New Orleans, Louisiana, October 1984.

Blanchard, R.A., "Power Control with Integrated CMOS/DMOS Output," Proceedings of Electro 1983, May 1983.

Blanchard, R.A., Berger, P., "Discrete and Integrated MOSPOWER Transistors in Power Conversion and Power Control Applications," Proceedings of PCI, Orlando, Florida, November 1983.

Blanchard, R.A., "MOSFETs in Arrays and Integrated Circuits," Proceedings of Electro '83, Session 7, April 1983.

Blanchard, R.A., "Status and Emerging Direction of MOS Power Technology," Proceedings of PCI/MOTOR CON '83, April 1983.

Blanchard, R.A., Alexander, M., "Use MOSPOWER as Synchronous Rectifiers in Switched-Mode Power Supplies," *Powerconversion International*, Vol. 9, No. 4, pp. 16-26, April 1983.

Blanchard, R.A., "Power Control With Integrated CMOS/DMOS Output," Proceedings, Electro 1983, New York, New York, May 1983.

Blanchard, R.A., Alexander, M., "Use of MOSPOWER as Synchronous Rectifiers in Switched-Mode Power Supplies," *Powerconversion International*, Vol. 9, No. 4, March 1983.

Blanchard, R.A., Severns, R., "Designing Switched-Mode Power Converters for Very Low Temperature Operation," Proceedings, Powercon 10, San Diego, California, March 1983.

Blanchard, R.A., Harnden, J., "MOSFETs Control More Power in the Same-Sized Package," *Electronic Design*, pp 107-114, December 9, 1982.

Blanchard, R.A., Oxner, "Logic-Compatible MOSFETs Simplify High-Power Interfacing," *EDN*, pp 105-109, November 24, 1982.

Blanchard, R.A., "Bipolar and MOS Transistors: Emerging Partners for the 1980's," Proceedings, Intelec 1982, Washington, D.C., October 1982.

Publications (continued)

Blanchard, R.A., "The Use of MOS Power Transistors in Hybrid Circuits," *The International Journal for Hybrid Microelectronics*, Vol. 5(2), pp. 130-137, November, 1982.

Blanchard, P.A., "A New High-Power MOS Transistor for Very High Current, High Voltage Switching Applications," Proceedings of Powercon 8, 1981.

Blanchard, R.A., "VMOS Power Transistors in Automotive Systems - An Update," International Automotive Engineering Congress and Exposition, Detroit, Michigan, February 1981.

Blanchard, R.A., Glogolja, M., Baker, R., White, K., "A New High-Power MOS Transistor for Very High Current, High Voltage Switching Applications," Proceedings, Powercon 8, Dallas, Texas, 1981.

Blanchard, R.A., "Power MOS transistors: Structure and Performance," *Powerconversion International*, March/April 1980.

Blanchard, R.A., "The VMOS Power Device - A Direct Interface between Microprocessors and Electromechanical Actuators," International Automotive Engineering Congress and Exposition, Detroit, Michigan, March 1977.

Horiuchi, S., Blanchard, R.A., "Boron Diffusion in Polycrystalline Silicon Layers," *Solid-State Electronics*, Vol. 18, pp. 529-532, 1974.

Blanchard, R.A., Lane, R., Gray, P., Stafford, K., "A Completely Monolithic Sample/Hold Amplifier Using Compatible Bipolar and Silicon-Gate FET Devices," *IEEE Journal of Solid-State Circuits*, Vol. SC-9 (6), December 1974.

Blanchard, R.A., "High Voltage Simultaneous Diffusion Silicon-Gate CMOS," *IEEE J.S.S.C.*, SC-9, No. 3, pp. 103-110, June 1974.