

Gregory F. Taylor

Intel Fellow, Technology and Manufacturing Group

Director, Mixed Signal Circuit Technology

INTEL CORPORATION

Patents

- » 7,602,663, Fuse cell array with redundancy features, 10/13/2009 (with Zhanping Chen, Jonathan P Douglas, Praveen Mosalikanti, and Kevin Zhang)
- » 7,501,845, On-chip frequency degradation compensation, 3/10/2009 (with Ravisangar Muniandy and Payman Aminzadeh)
- » 7,471,102, Measuring threshold voltage of transistors in a circuit, 12/30/2008 (with Atul Maheshwari)
- » 7,417,459, On-die offset reference circuit block, 8/26/2008 (with Timothy M Wilson and Songmin Kim)
- » 7,394,274, On-chip frequency degradation compensation, 7/1/2008 (with Ravisangar Muniandy and Payman Aminzadeh)
- » 7,348,790, AC testing of leakage current in integrated circuits using RC time constant, 3/25/2008 (with Tawfik R. Arabi, Srirama Pedarla, Patrick Elwer, and Dan Murray)
- » 7,282,937, On-chip frequency degradation compensation, 7/1/2008 (with Ravisangar Muniandy and Payman Aminzadeh)
- » 7,242,261, Voltage control for clock generating circuit, 7/10/2007 (with Keng L. Wong; Hong-Piao Ma)
- » 7,233,162, Arrangements having IC voltage and thermal resistance designated on a per IC basis, 6/19/2007 (with Tawfik Arabi, Hung-Piao Ma, Gregory M. Iovino, Shai Rotem, and Avner Kornfeld)
- » 7,199,624, Phase locked loop system capable of deskewing, 4/3/2007 (with Keng L Wong and Chee How Lim)
- » 7,157,924, Method and apparatus for on die voltage fluctuation detection, 1/2/2007 (with Ali Muhtaroglu, Kent Callahan, and Tawfik Arabi)
- » 7,143,381, Resonance reduction arrangements, 11/28/2006 (with Cangsang Zhao)
- » 7,112,979, Arrangements having IC voltage and thermal resistance designated on a per IC basis, 9/26/2006 (with Tawfik Arabi, Hung-Piao Ma, Gregory M Iovino, Shai Rotem, and Avner Kornfeld)
- » 7,109,737, Arrangements having IC voltage and thermal resistance designated on a per IC basis, 9/19/2006 (with Tawfik Arabi, Hung-Piao Ma, Gregory M Iovino, Shai Rotem, and Avner Kornfeld)
- » 7,049,865, Power-on detect circuit for use with multiple voltage domains, 5/23/2006 (with Rachael J Parker, Mark L Neidengard, and Patrick J Ott)

- » 7,038,513, Closed-loop independent DLL-controlled rise/fall time control circuit, 5/2/2006 (with Timothy M Wilson, Michael C. Rifani, Songmin Kim, and Navindra Navaratnam)
- » 7,038,512, Closed-loop independent DLL-controlled rise/fall time control circuit, 5/2/2006 (with Timothy M Wilson, Michael C. Rifani, and Songmin Kim)
- » 6,985,041, Clock generating circuit and method, 1/10/2006 (with Keng L. Wong, Niraj Bindal, Hong-Piao Ma, George Geannopoulos, and Edward A. Burton)
- » 6,967,496, AC testing of leakage current in integrated circuits using RC time constant, 11/22/2005 (with Tawfik R. Arabi, Srirama Pedarla, Patrick Elwer, and Dan Murray)
- » 6,924,710, Voltage ID Based Frequency Control for Clock Generating Circuit, 8/2/2005 (with Keng L. Wong, Hong-Piao Ma, Chee How Lim, Robert Greiner, Edward A. Burton, and Douglas R. Huard)
- » 6,885,231, Variable delay element for use in delay tuning of integrated circuits, 4/26/2005 (with Ravishankar Kuppuswamy)
- » 6,874,083, Method and apparatus to ensure proper voltage and frequency configuration signals are defined before applying power to processor, 3/29/2005 (with Ananda Sarangi, Rachael Jade Parker, and Edward P. Osburn)
- » 6,809,606, Voltage ID based frequency control for clock generating circuit, 10/26/2004 (with Keng L. Wong, Hong-Piao Ma, Chee How Lim, Robert Greiner, Edward A. Burton, and Douglas R. Huard)
- » 6,792,489, Multistage configuration and power setting, 9/14/2004 (with Edward P. Osburn and Ananda Sarangi)
- » 6,777,970, AC testing of leakage current in integrated circuits using RC time constant, 8/17/2004 (with Tawfik R. Arabi, Srirama Pedarla, Patrick Elwer, and Dan Murray)
- » 6,771,134, Frequency control for clock generating circuit, 8/3/2004 (with Keng L. Wong, Hong-Piao Ma, Chee How Lim, and Edward A. Burton)
- » 6,747,470, Method and apparatus for on die voltage fluctuation detection, 6/8/2004 (with Ali Muhtaroglu, Kent Callahan, and Tawfik Arabi)
- » 6,748,549, Clocking an I/O buffer, having a selectable phase difference from the system clock, to and from a remote I/O buffer clocked in phase with the system clock, 6/8/2004 (with Chi-Yeu Chao, Chee How Lim, Keng L. Wong, and Songmin Kim)
- » 6,727,597, Integrated circuit device having C4 and wire bond connections, 4/27/2004 (with George L. Geannopoulos)
- » 6,717,455, Apparatus and Method to Use a Single Reference Component in a Master-Slave Configuration for Multiple Circuit Compensation, 4/6/2004 (with Usman A. Mughal, Razi Uddin, Chee How Lim, and Songmin Kim)
- » 6,691,241, Delay tuning to improve timing in multi-load systems, 2/10/2004
- » 6,671,847, I/O Device Testing Method and Apparatus, 12/30/2003 (with Chi-Yeu Chao, Tawfik R. Arabi, and Thomas D. Barrett)

- » 6,628,157, Variable Delay Element for Use in Delay Tuning of Integrated Circuits, 9/30/2003 (with Ravishankar Kuppuswamy)
- » 6,584,591, Timing control for input/output testability, 6/24/2003
- » 6,573,764, Method and apparatus for voltage-mode differential simultaneous bi-directional signaling, 6/3/2003
- » 6,552,570, Input circuit with non-delayed time blanking, 4/22/2003 (with Chi-Yeu Chao)
- » 6,535,047, Apparatus and Method to Use a Single Reference Component in a Master-Slave Configuration for Multiple Circuit Compensation, 3/18/2003 (with Usman A. Mughal, Razi Uddin, Chee How Lim, and Songmin Kim)
- » 6,452,502, Method and apparatus for early detection of reliability degradation of electronic devices , 9/17/2002 (with Terrance J Dishongh, and David H. Pullen)
- » 6,453,421, Processor System with Power Supply Selection Mechanism, 9/17/2002
- » 6,410,990, Integrated circuit device having C4 and wire bond connections, 6/25/2002 (with George L. Geannopoulos)
- » 6,396,309, Clocked sense amplifier flip flop with keepers to prevent floating nodes, 5/28/2002 (with Cangsang Zhao, and Chi-Yeu Chao)
- » 6,298,105, Method and apparatus for a low skew, low standby power clock network, 10/2/2001 (with Xia Dai, George L. Geannopoulos, John Orton and Keng Wong)
- » 6,236,695, Output buffer with timing feedback, 5/22/2001
- » 6,208,169, Internal clock jitter detector, 3/27/2001 (with Keng L. Wong, Ravishankar Kuppuswamy, Douglas R. Parker, Hung-Piao Ma, Kent Callahan, and Xia Dai)
- » 6,157,206, On-chip termination, 12/5/2000 (with Jack A. Price, and Chee How Lim)
- » 6,124,755, Method and apparatus for biasing a charge pump, 9/26/2000 (with Douglas R. Parker)
- » 6,085,345, Timing control for input/output testability, 7/4/2000
- » 6,075,285, Semiconductor package substrate with power die, 6/13/2000 (with George L. Geannopoulos and Larry E. Mosley)
- » 6,075,832, Method and apparatus for deskewing clock signals, 6/13/2000 (with George L. Geannopoulos, Keng L. Wong, and Xia Dai)
- » 5,801,561, Power-on initializing circuit, 9/1/1998 (with Keng L. Wong, Roshan J. Fernando, and Jeffrey E. Smith)
- » 5,748,033, Differential power bus comparator, 5/5/1998 (with Golnaz Kaveh and Jeffrey E. Smith)
- » 5,627,736, Power supply noise filter, 5/6/1997
- » 5,539,337, Clock noise filter for integrated circuits, 7/23/1996 (with Jeffrey E. Smith)

- » 5,399,918, Large fan-in, dynamic, BiCMOS logic gate, 3/21/1995 (with Lawrence T. Clark)
- » 5,345,120, Swing limiting circuit for BiCMOS sense amplifiers, 9/6/1994
- » 5,306,964, Reference generator circuit for BiCMOS ECL gate employing PMOS load devices, 4/26/1994
- » 5,153,848, Floating point processor with internal free-running clock, 10/6/1992 (with Bob Elkind, Jay D. Lessert, James R. Peterson)
- » 4,982,352, Methods and apparatus for determining the absolute value of the difference between binary operands, 1/1/1991 (with James R. Peterson)
- » 4,972,362, Method and apparatus for implementing binary multiplication using Booth type multiplication, 11/20/1990 (with Bob Elkind, Jay D. Lessert, and James R. Peterson)

Publications

- » Mohamed Abdel-moneum, David Duarte and Greg Taylor, "A Wide Dynamic Range Self-Biased Fully Differential Operational Amplifier for Micro Mechanical Sensors and Actuators Circuitry", IEEE Sensors, November 2010.
- » David Duarte, Paola Zepeda, Shuching Hsu, Atul Maheshwari, and Greg Taylor, "HVM Performance Validation and DFM Techniques used in a 32nm CMOS Thermal Sensor System", IEEE Sensors, November 2010.
- » David Duarte, Paola Zepeda, Shuching Hsu, Atul Maheshwari and Greg Taylor, "HVM Performance Validation and DFM Techniques used in a 32nm CMOS Thermal Sensor System", IEEE Custom Integrated Circuits Conference, September 2010.
- » Suresh Srinivasan, Sanu Mathew, Rajaraman Ramanarayanan, Farhana Sheikh, Mark Anders, Himanshu Kaul, Vasantha Erraguntla, Ram Krishnamurthy, Greg Taylor, "2.4GHz 7mW All-Digital PVT-Variation Tolerant True Random Number Generator in 45nm CMOS", 2010 VLSI Circuit Symposium, June 2010.
- » Hasnain Lakdawala, Y. William Li, Arijit Raychowdhury, Greg Taylor, and Krishnamurthy Soumyanath, "A 1.05 V 1.6 mW, 0.45 °C 3σ Resolution $\Sigma\Delta$ Based Temperature Sensor With Parasitic Resistance Compensation in 32 nm Digital CMOS Process", IEEE Journal of Solid State Circuits, December 2009, pp. 3621-3630.
- » Y. William Li, Hasnain Lakdawala, Arijit Raychowdhury, Greg Taylor, and Krishnamurthy Soumyanath, "A 1.05 V 1.6 mW, 0.45 °C 3σ Resolution $\Sigma\Delta$ Based Temperature Sensor With Parasitic Resistance Compensation in 32 nm Digital CMOS Process", International Solid State Circuits Conference, Feb 2009, pp. 340-341,341a.
- » Kelin Kuhn, Chris Kenyon, Avner Kornfeld, Mark Liu, Atul Maheshwari, Wei-Kai Shih, Sam Sivakumar, Greg Taylor, Peter VanDerVoorn, Keith Zawadski, "Managing Process Variation in Intel's 45nm CMOS Technology", Intel Technology Journal, June 2008, pp. 93-110.
- » Jianping Xu, Peter Hazucha, Zuoguo Wu, Paolo Aseron, Mingwei Huang, Fabrice Paillet, Gerhard Schrom, James Tschanz, Vivek De, Tanay Karnik, Greg Taylor, "A Band-Limited Active Damping Circuit with 13 dB Power Supply Resonance Reduction", IEEE Journal of Solid State Circuits, January 2008, pp. 61-68.
- » Jianping Xu, Peter Hazucha, Mingwei Huang, Paolo Aseron, Fabrice Paillet, Gerhard Schrom, James Tschanz, Cangsang Zhao, Vivek De, Tanay Karnik, Greg Taylor, "On-Die Supply-Resonance Suppression Using Band-Limited Active Damping", International Solid State Circuits Conference, Feb 2007.
- » Tawfik Rahal-Arabi, Ali Muhtaroglu, and Greg Taylor, "Designing for Low Power", Electrical Performance of Electronic Packaging, October 2006.
- » Ananda Sarangi, Greg Taylor, "The Impact of Leakage to the Power Supply Impedance of a Microprocessor", Signal Propagation on Interconnects, May 2006.

- » Keng L Wong, Tawfik Rahal-Arabi, Matthew Ma, Greg Taylor, "Enhancing microprocessor immunity to power supply noise with clock/data compensation", IEEE Journal of Solid State Circuits, April 2006, pp. 749-758.
- » Tawfik Rahal-Arabi, Keng L. Wong, Matthew Ma, Javed Barkatullah, Greg Taylor, "Reducing the impact of power supply noise on microprocessor performance", Electrical Performance of Electronic Packaging, October 2005.
- » Gang Ji, Tawfik R Arabi, Greg Taylor, "Design and Validation of a Power Supply Noise Reduction Technique", IEEE Transactions on Advanced Packaging, August 2005, PP. 445-448.
- » Tawfik Rahal-Arabi, Greg Taylor, Javed Barkatullah, Keng L Wong, Matthew Ma, "Enhancing microprocessor immunity to power supply noise with clock/data compensation", 2005 VLSI Circuit Symposium, June 2005.
- » Tawfik Rahal-Arabi, Gang Ji, Greg Taylor, "Impact of on-die decoupling on the core and IO supplies of high performance microprocessors", Signal Propagation on Interconnects, May 2005.
- » Ali Muhtaroglu, Benoit Provost, Tawfik Rahal-Arabi, Greg Taylor, "I/O self-leakage test," ITC 04, October 2004, pp 903-906
- » Tawfik Rahal-Arabi, Gang Ji, Matthew Ma, Ali Muhtaroglu, and Greg Taylor, "Development and Validation of an Electromagnetic Distributed Power Grid Model for High Frequency Microprocessors," VLSI 04, June 2004
- » Ali Muhtaroglu, Greg Taylor, Tawfik Rahal-Arabi, "On-die droop detector for analog sensing of power supply noise," JSSC 04, April 2004, vol 39, issue 4, pp 651-660
- » Gang Ji, Tawfik Arabi, Greg Taylor, "Design and Validation of a Power Supply Noise Reduction Technique," EPEP 03, October 2003
- » Ananda Sarangi, Sean R. Babcock, Jeff R. Jones, Gregory F. Taylor, "Maintaining Microprocessor Compatibility across Process Generations," EPEP 03, October 2003
- » Ali Muhtaroglu, Greg Taylor, Tawfik Rahal-Arabi, and Kent Callahan, "On-Die Droop Detector for Analog Sensing of Power Supply Noise," VLSI 03, June 2003
- » Ananda Sarangi, Gregory F. Taylor, Rachael J. Parker, Edward P. Osburn, Patrick J. Ott, "Power Level Management in an IA32 Microprocessor," EPEP 02, October 2002
- » Tawfik Rahal-Arabi, Greg Taylor, Matthew Ma, Jeff Jones and Clair Webb, "Design and Validation of the Core and IOs Decoupling of the Pentium® III and Pentium® 4 Processors," EPEP 02, October 2002
- » Gang Ji, Tawfik Arabi, Greg Taylor, Mark Beiley, "A Design Methodology for the I/O Power Supply of Next Generation Packaging," EPEP 02, October 2002
- » Tawfik Rahal-Arabi, Greg Taylor, Matthew Ma, and Clair Webb, "Design & Validation of the Pentium® III and Pentium® 4 Processors Power Delivery," VLSI 02, June 2002, pp 220-223

- » Altaf Hasan, Ananda Sarangi, Christopher S Baldwin, Robert L Sankman, Gregory F Taylor, "High Performance Package Designs for a 1 GHz Microprocessor," IEEE Transactions on Advanced Packaging, November 2001, pp 470-476
- » Greg Taylor, Craig Deutschle, Tawfik Arabi, Brian Owens, "An Approach to Measuring the Power Supply Impedance of Microprocessors," EPEP 01, October 2001, pp 211-214
- » Ananda Sarangi, Gang Ji, Tawfik Arabi, Gregory F. Taylor, "Design and Performance Evaluation of Pentium® III Microprocessor Packaging," EPEP 01, October 2001, pp 291-294
- » Ravi Kuppuswamy, Kent Callahan, Keng Wong, Dan Ratchen, Greg Taylor, "On-die Clock Jitter Detector for High Speed Microprocessors," VLSI 01, 6/14/2001, pp 187-190
- » Tawfik Rahal-Arabi, Greg Taylor, "A JTAG Based AC Leakage Self Test," VLSI 01, 6/14/2001, pp 205-206
- » Altaf Hasan, Ananda Sarangi, Christopher S Baldwin, Robert L Sankman, Gregory F Taylor, "High Performance Package Designs for a 1 GHz Microprocessor," ECTC 00, August 2000, pp 1178-1184
- » Greg Taylor, Tawfik Arabi, Hans Greub, Richard Muyschondt, Alicia Manthe, and Payman Aminzadeh, "Reliability and Performance Tradeoffs in the Design of On-Chip Power Delivery and Interconnects," EPEP 99, 10/30/1999, pp 49-52
- » Tawfik Arabi, Jeff Jones, Greg Taylor, and Dave Riendeau, "Modeling, Simulation, and Design Methodology of the Interconnect and Packaging of an Ultra-High Speed Source Synchronous Bus," EPEP 98, October 1998, pp 8-11
- » Greg Taylor, Tawfik Arabi, Ken Hose, Jeff Jones, Songmin Kim, Ravi Kuppuswamy, Randy Mooney, Jack Price, Ananda Sarangi, "A 2MB, 3.6GB/s Back-side Bus Cache for an IA32 450 MHz Microprocessor," VLSI 98, 6/11/1998
- » Greg Taylor, George Geannopoulos, "Microprocessor Clock Distribution," EPEP 96, 10/28/1996
- » Greg Taylor, Keng Wong, "Power-On Contention Elimination," VLSI 96, June 1996, pp 22-23
- » Lawrence T. Clark and Gregory F. Taylor, "High Fan-in Circuit Design," JSSC 96, January 1996, pp 91-96
- » Lawrence T. Clark and Gregory F. Taylor, "High Fan-in Circuit Design," BCTM 94, 10/10/1994
- » Greg Taylor, Panel: "Low Power Design," BCTM 94, 10/10/1994
- » G. Sanguinetti, G. Taylor, and D. Clinkenbeard, "Building the world's fastest floating point processor," ASIC Technology & News, January 1991, pp 12-13
- » G. Taylor, G. Sanguinetti, and R Lane, "An Approach to 150K Gate Low Power ECL Cell Based Integrated Circuits," ICCD 90, September 1990, pp 263-268
- » Greg Taylor, "A 100 MHz Floating Point/Integer Processor," Hot Chips 90, Aug-90,

- » Greg Taylor, Alex Rekow, Jory Radke, Greg Thompson, "A 100 MHz Floating Point/Integer Processor," CICC 90, 5/13/1990, pp 24.5.1-4
- » G. F. Taylor, R. H. Steinvorth, and J. F. McDonald, "An Architecture for a Video Rate Two-Dimensional Fast Fourier Transform Processor," IEEE Transactions on Computers, September 1988, Vol 37, No 9, pp 1145-1148
- » Bob Elkind, Jay Lessert, Jim Peterson, and Greg Taylor, "A Sub 10 ns Bipolar 64 Bit Integer/Floating Point Processor Implemented on Two Circuits," BCTM 87, September 1987, pp 101-104
- » Bob Leibowitz and Greg Taylor, "ECL gains ground in battle against CMOS," Computer Design, 4/1/1987, pp 91-95
- » J. F. McDonald, R. H. Steinvorth, A. S. Bergendahl, G. F. Taylor, "Fabrication and Performance Considerations for Gallium Arsenide Wafer Scale Integration," ICCD 85, October 1985, pp 400-405
- » R. H. Steinvorth, G. F. Taylor, J. F. McDonald, A. S. Bergendahl, "Wafer Scale Integration of a Video Rate Fuzzy Golay Processor," ICCD 85, October 1985, pp 672-677
- » G. F. Taylor, Lt. B. J. Donlan, J. F. McDonald, A. S. Bergendahl, R. H. Steinvorth, "The Wafer Transmission Module - Wafer Scale Integration Packaging," CICC 85, May 1985, pp 55-58
- » S. Bergendahl, J. F. McDonald, R. H. Steinvorth, G. F. Taylor, "Thick Film Stripline Micro Transmission Line Interconnections for Wafer Scale Integration," Electrochemical Society Spring Meeting, May 1985, pp 311-312
- » Lt. B. J. Donlan, J. F. McDonald, G. F. Taylor, R. H. Steinvorth, A. S. Bergendahl, "Computer-Aided Design and Fabrication for Wafer Scale Integration," VLSI Design, April 1985
- » G. F. Taylor, R. H. Steinvorth, J. F. McDonald, "An Architecture for a Wafer Scale Integration Video Rate Two Dimensional Fast Fourier Transform Processor," ICCD 84, October 1984, pp 623-628
- » J. Donlan, G. F. Taylor, R. H. Steinvorth, A. S. Bergendahl, J. F. McDonald, "Wafer Scale Integration Using Discretionary Microtransmission Line Interconnections," Wafer Scale Integration, 1986, chapter 2.3, pp 31-45
- » S. Bergendahl, B. J. Donlan, J. F. McDonald, R. H. Steinvorth, G. F. Taylor, "A Thick Film Lift-Off Technique for High Frequency Interconnection in Wafer Scale Integration," VLSI Multilevel Interconnect Conf, 1985
- » R. H. Steinvorth, G. F. Taylor, J. F. McDonald, T. Hunter, "An Architecture for a Video Rate Fuzzy Golay Processor," Int Conf on Parallel Proc, 1985
- » S. Bergendahl, J. F. McDonald, R. H. Steinvorth, G. F. Taylor, "Thick Film Stripline Micro Transmission Line Interconnections for Wafer Scale Integration," VLSI Science and Technology/1985, 1985, pp 175-184

Professional Affiliations

- » Fellow of the IEEE
- » Member of the RPI Key Executives Conference