

Dr. Eric Bogatin

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Adjunct Professor in Electrical Computer and Energy Engineering

Areas of Expertise: Signal integrity, EMI and interconnect design, high frequency measurement and simulation tools and technology, microelectronics packaging and interconnect technologies; contact resistance, failure analysis, surface analysis and materials analysis; analog electronics; MEMs technology and sensor technology.

Professional positions held: President, CTO, VP of R&D, technical director, strategic marketing manager, product manager, technical program manager, principle engineer, senior member of the research staff, Adjunct Associate Professor

Excellent communication skills: written 6 technical books, one of which is a popular Signal Integrity text book used at over 10 universities, over 300 papers published, over 150 presentations at conferences, frequent invited speaker world wide on signal integrity and interconnect technologies, 25 years of teaching technical classes, monthly columnist for three magazines with over 200,000 total circulation, syndicated blogger on signal integrity topics, Distinguished Lecturer for IEEE EMC Society, Editor of the Signal Integrity Journal, a publication of Horizon House, publisher, Addie Rose Press

Education:

Ph.D. in Physics, 1980, University of Arizona, Tucson. Dissertation title: "Three New high Precision Tests of Special Relativity and Mach's Principle"

M.S. in Physics, 1978, University of Arizona, Tucson

B.S. in Physics, 1976, M.I.T., Cambridge, Mass.

Employment:

Bogatin Enterprises, Longmont, CO (Acquired in July 2011 by Teledyne LeCroy)

Jan 1988 to present: President and Signal Integrity Evangelist

Created a new signal integrity training and education business based on presenting live public classes, onsite classes and online lectures streamed over

the web. Clients include top electronics companies such as Intel, Motorola, TI, Agilent, nVidia, HP, National Semiconductor, Dell and Cisco.

Interconnect Devices Inc, Kansas City, KS

Jan 2004 to July 2006: Chief Technology Officer

Developed a corporate product and technology roadmap, developed and implemented a research program to control contact resistance in specialized connectors, lead the technical problem solving teams to meet numerous customers' requirements, positioned company as world leader in high bandwidth interconnects in the industry and with strategic accounts.

Ansoft Corp

Nov 96- Nov 98: Product Manager, Signal Integrity Products

Led the product marketing for all signal integrity related software tools

Silicon Light Machines (acquired by Cypress Semiconductor)

June 1995 to Nov 1996: Manager and Principal Engineer, Packaging

Technology. Created and led the packaging team for a new MEMs based optical device based on diffracting ribbons. Developed and implemented a new packaging technology for an optical MEMs device.

Sun Microsystems

Nov 1992 to June 1995: Manager, Ball Grid Array Technology Implementation, Processor Modules, and New Technologies Group. Lead multiple, worldwide teams to introduce new packaging and interconnect technologies into Sun product families, including MCMs and BGAs. Directed cross disciplinary projects with product groups, manufacturing, R&D teams and vendors.

Xinix Inc. (acquired by Luxtron)

May 1989 to May 1990: VP of R&D and Chief Technology Officer. Lead the new product development effort for a small company which manufactured instruments for real time, in situ monitor and control of IC manufacturing processes.

Raychem Corp (acquired by Tyco)

July 1984 to May 1989: Director, Systems Engineering and Product Marketing.

Managed multiple R&D teams and projects on high performance interconnect products. Responsible for groups doing strategic marketing, technical marketing, product development and test engineering for new interconnect and MCM technologies.

AT&T Bell Labs

Aug 1980 to July 1984; Senior Member of the Research Staff; Created and implemented the manufacturing technology for a major component of a new interactive display device. Created sensors for the in situ monitor and control of manufacturing processes.

College Teaching Experience:

2012-present: Adjunct Professor, University of Colorado, Boulder, ECEE, teaching graduate course on Signal Integrity and working with graduate students on research programs

2014- Spring, Instructor, Physics I, Front Range Community College, Longmont, CO.

1988-present: Instructor, Bogatin Enterprises, providing intensive 1, 2 and 3 day short courses and web based distance learning modules on signal integrity topics to professional engineers

Summer 1976, Instructor, Worchester Junior College, Worchester, MA, teaching third semester physics: Vibrations and waves with intro to quantum mechanics

May 1990 to Nov 1992: Adjunct Associate Professor, San Jose State University, Center for Microelectronics and Materials Research, Taught graduate classes on signal integrity and interconnect design and conducted research and consulting on interconnect design.

1988-1995 Invited signal integrity short course instructor at numerous UC Extension programs: UC Berkeley, UC Santa Cruz, UCLA, on signal integrity topics, lasting from a 3 day intensive course to a semester long course

1978-1980, Instructor, Pima Junior College, Tucson, AZ, Teaching first and second semester pre-calculus physics

1976 Summer, instructor, Physics III, Worchester Community College, Worchester, Mass.

Other:

- ❑ Editor, Signal Integrity Journal
- ❑ Columnist, EDN
- ❑ Engineer of the Year Award from DesignCon, 2016
- ❑ Five best paper awards at DesignCon, 2010-2016
- ❑ 10 patents awarded on microelectronics and packaging applications
- ❑ MIT education councilor, 1983-present
- ❑ Distinguished Lecturer with IEEE EMC Society, 2009- present
- ❑ Co-chair of the Global SI/EMC University for the IEEE EMC Society World Wide Symposium, 2012- 2015

Publications: Books

Bogatin, E., Signal and Power Integrity- Simplified, Prentice Hall, 2010

Resso, M., and Bogatin, E., "Signal Integrity Characterization Techniques," International Engineering Consortium, 2009

Bogatin, E., Signal Integrity- Simplified, Prentice Hall, 2008.

Bogatin, E., "Packaging Technology Update, ICE, 2000

Bogatin, E., "Roadmaps for Advanced Packaging Technology, ICE, 1998

Bogatin, E., "Advanced Packaging Technologies," ICE, 1996

Monthly Columns:

Blogger and editor for Signal Integrity Journal, a publication of Horizon House

Blogger for UBM publications, including EE Times, EDN, Test and Measurement World, Design Con Community and The Connecting Edge, 2012-present

Signal Integrity column for Printed Circuit Design and Fabrication Magazine, 2004-2011

Astrophysics in the News Column for Cosmic Messenger, 2009-2010

Altera Web Site Signal Integrity Column, 2008-2009

Advanced Packaging Technology Column for Semiconductor International Magazine and Electronic Packaging and Production Magazine, 2006-2008

Publications: refereed

Bogatin, E. "Essential Principles of Signal Integrity", IEEE Microwave Magazine, Aug 2011, P. 34-42.

Bogatin, E., "A Closed Form Analytical Model for Electrical Properties of Microstrip Interconnects", IEEE TRANSACTIONS ON COMPONENTS, HYBRIDS, AND MANUFACTURING TECHNOLOGY, VOL. 13, NO. 2, JUNE 1990

Bogatin, E., "Design Rules for Microstrip Capacitance", IEEE TRANSACTIONS ON COMPONENTS, HYBRIDS, AND MANUFACTURING TECHNOLOGY, VOL. 11, NO. 3. SEPTEMBER 1988.

Jost, S., R., Bogatin, E., Weaver, J. C., "Detection of quantized vortex lines in superfluid helium at known pinning sites", Physics Letters A - PHYS LETT A. 01/1974; 49:147-148.

Refereed Conference Publications

Bogatin, E., Simonovich, L., "Dramatic Noise Reduction using Guard Traces with Optimized Shorting Vias", DesignCon, 2013, best paper award

Bogatin, E., DeGroot, D., Huray, P., Shlepnev, Y., "Which one is better? Comparing Options to Describe Frequency Dependent Losses", DesignCon 2013

Bell, J., Blankman, A., Bogatin, E., Neves, A., Noh, G., Spadaro, M., "Robust Method for Addressing 12 Gbps Interoperability for High-Loss and Crosstalk-Aggressed Channels", DesignCon 2012

DeGroot, D., Blankman, A., Bogatin, E., "A Practical Approach for Using Circuit Board Qualification Test Results to Accurately Simulate High Speed Serial Link Performance", DesignCon, 2012

Bogatin, E., Loyer, J., Olufemi Oluwafemi, and Hall, S., "Rethinking How Signals Interact with Interconnects", DesignCon 2011.

Bogatin, E., DeGroot, D., Gupta, S., Warwick, C., "Frequency Dependent Material Properties- so what?", DesignCon 2010, Best paper award

E. Bogatin, L. Simonovich, C. Warwick and S. Gupta, "Practical Analysis of Backplane Vias for 5 Gbps and Above," paper 7-TA2, DesignCon 2009., best paper award