



**ROCHESTER SECTION
IEEE NEWS FOR APRIL 2012**



Jacob Z. Schanker, P.E., Newsletter Chair
Rochester IEEE home page at: <http://rochester.r1.ieee.org>

Rochester Section Meeting – Tuesday, April 3, 2012 at 12 Noon

Bringing in the New Year is the next Rochester Section business meeting on Tuesday, April 3, 2012 at 12:00pm, at the Shanghai Restaurant, 2920 West Henrietta Road, just south of the intersection with Brighton-Henrietta Town Line Road.

Any IEEE member is welcome to attend and to participate, or just to observe. Lunch is \$3 for IEEE members. No reservation or RSVP is needed, just show up.

GRSS Meeting March 29 in Buffalo

Title: What Ice Sheets Hate

Speaker: Dr. Robert Bindshadler (NASA Emeritus Scientist)

Date: Thursday, March 29, 2012

Time: 4pm -5pm (refreshments served at 3:45pm)

Location: Screening Room of UB's Center for the Arts; University at Buffalo; 103 Center For The Arts; Buffalo; New York; 14260

Abstract:

The great ice sheets of Greenland and Antarctica are shrinking faster and faster, increasing the rate of sea level rise. Observations of this accelerating ice loss have surprised the experts and confounded the predictive models that policy makers might rely on to take action. The distant future is easy to forecast—less ice on Earth—one million years of paleoclimate data say so, but more detail is needed. Direct field studies have identified a number of causes for the sudden awakening of the ice sheets. All have a common element. Those attending the lecture will learn what that common element is; it will not be revealed in this abstract. The analogue of tidewater glacier retreat casts a disheartening picture on our future that continued ice sheet mass loss may well be irreversible and will affect your life—whether you attend the lecture or not!

Biography:

Dr. Robert Bindshadler's career spanned more than 30 years at NASA where he retired in 2010 as the Chief Scientist of NASA's Hydrospheric and Biospheric Sciences Laboratory and a Senior Fellow of the Goddard Space Flight Center. He is a Fellow of the American Geophysical Union, a past President of the International Glaciological Society and is currently both a NASA Emeritus Scientist and a Senior Research Scientist at Morgan State University. He maintains an active interest in glaciers and ice sheets and has led 16 Antarctic field expeditions to study dynamics of the West Antarctic ice sheet. During his NASA career, he developed numerous unique applications of remote sensing data for glaciological research including measuring ice velocity and elevation using both visible and radar imagery, monitoring melt of the ice sheet by microwave emissions, and detecting changes in ice-sheet volume by repeat space-borne radar altimetry. He testified before Congress, briefed the U.S. Vice President, published over 140 scientific papers, including numerous review articles and is often quoted commenting on glaciological impacts of the climate on the world's ice sheets and glaciers.

IEEE Joint Chapters Meeting - April 4

One of our major spring events is the annual Joint Chapters Meeting (JCM). This year, it will be held on Wednesday, April 4 at the RIT Inn and Conference Center. The full details and program of this event will be found in the full-page announcement at the end of this issue, or online.

The keynote speaker is Mark Gabriel - well known author and speaker on issues in the energy industry. His book, *Visions for a Sustainable Energy Future* (Fairmont Press) won the Indie Award for Excellence in Environmental writing. Mark is a Senior Vice President with Halcrow Inc., and consults with leading utilities and energy companies in both the water and power business. He is a frequent speaker and management consultant.

Electromagnetic Compatibility (EMC) and Product Safety Engineering (PSE) Joint Chapters

Title: Proven PWBA Design Techniques to Eradicate the Common Mode Noise-Induced EMI that is the Bane of Many Modern Electronic Designs

Speaker: James Herrmann, a Principal Engineer and Managing Partner at AppliedLogix, LLC

Date: Wednesday, April 4, 2012

Location: At Joint Chapters meeting (see announcement) at RIT Inn and Conference Center

Abstract: This talk is targeted at board and system level electronics design and EMC engineering professionals. The circuit and interconnect level mechanisms by which modern digital electronic subsystems generate differential and common mode noise will be presented. Mode conversion from differential to common mode noise will also be discussed. The radiating modes and efficiencies from unintentional radiating elements, e.g., both shielded and unshielded IO and power cabling, will be explored. With a basic understanding of the noise generation mechanisms and radiating elements in-place, the second half of the talk will present and detail specific circuit design, PWB stack-up, PWB layout and routing, and board-to-board interconnect techniques that will minimize the generation of both differential and common mode noise. By following these best design practices, engineers will maximize the likelihood that their electronic product design will enjoy first-pass EMI agency certification success.

Speaker Biography: Mr. James Herrmann is a Principal Engineer and Managing Partner at AppliedLogix, LLC, a Rochester based electronics and software design services firm. He has 20+ years of hands-on industry experience designing and commercializing embedded electronics subsystems. He has developed, and continues to refine, a rigorous yet lean PWBA design methodology. This quantitative approach has consistently delivered first-pass success as characterized by reliable operation and robust EMC characteristics. Product applications have ranged across a broad spectrum, from very high performance digital signal processing boards to hand-held, low power, wireless devices.

Mr. Herrmann began his engineering career at Eastman Kodak, where he worked for 14 years as a design engineer and team leader. He then moved to Xerox, where he spent three years as a hardware design manager within their wide-format printer division. Mr. Herrmann was a co-founder and VP of Engineering at Allworx, a successful and growing Rochester area high-tech company. During his eight year tenure there, Mr. Herrmann led the consulting engineering group and provided digital system design engineering expertise to numerous OEM customers.

Mr. Herrmann received his BSEE degree from the State University of New York at Buffalo (1981), and his MSEE degree from the University of Rochester (1991). The EMC/PSE Joint Chapter will also meet in early May for three short topics on EMI Reduction Materials:

Speakers and Presentations:

- Scott Casper, EMI Gasket Design and Applications
- Peter Torok, Engineered Conductive Thermoplastics in Electronic Applications
- Brian Hantzis, New Technology Development in EMI/RFI Gasket Materials

Date: Wednesday, May 9, 2012

Time: 6:00pm -- Networking & Refreshments

6:30pm -- Presentations

Location: Rochester Institute of Technology, Orange Hall, Room ORN-1355.

RSVP: by May 4 (to ensure adequate food & beverages) to james.shipkowski@ieee.org

Cost: Free

Abstract:

EMI Gasket Design and Applications will begin with initial decision points and progress through design considerations including shielding effectiveness and environmental matters. Material specifications and cost, tolerances, groove designs for extrusions, and die-cut designs for sheets will be discussed. A brief Finite Element Analysis comparison will be reviewed.

Engineered Conductive Thermoplastics in Electronic Applications will treat the advantages of conductive thermoplastics for portable electronics. Comparisons to traditional plastic shielding, and manufacturing and fabrication options will be presented. Material composition and shielding performance will be addressed. Applications, plus an Example Product and tradeoffs will be discussed.

New Technology Development in EMI/RFI Gasket Materials will review Ni/Al, Ecoplate, and Form-In-Place. Ni/Al is a new corrosion resistant silicone and fluorosilicone with a Ni/Al particle that provides the same shielding effectiveness and corrosion resistance as the higher cost military grade materials. Ecoplate is a machine applied conductive coating that has a high bonding strength. It resists flaking and abrasion by bonding with the base material using heat instead of a chemical bonding method. Form-in-Place gaskets may be applied using robotic methods. This effectively bonds the gasket to the housing while eliminating gasket application labor cost.

Biographies:

Scott Casper is an Applications Engineer with the Chomerics Division of Parker Hannifin Corporation. He has been with Chomerics for 12 years, starting as a process engineer in the Metals unit. As an Ecoplate process engineer he developed a new molding process and during a stint in R&D developed new machinery for new materials and processes. Mr. Casper became an Applications Engineer in 2006.

Peter Torok is the Program Manager for Premier conductive plastics and electronics programs at the Chomerics Division of Parker Hannifin Corporation. With Chomerics 7 years, he started as a project engineer in the Webster Plastics unit. In his present position since 2006, Mr. Torok has been instrumental in improving manufacturing efficiency and expanding Premier applications to include military, consumer, and automotive areas.

Brian Hantzis is a Territory Sales Engineer in the Chomerics Division of Parker Hannifin Corporation. He has been with Chomerics for 28 years, serving as Quality Control Manager, Quality Assurance Manager, Optical Products Engineer and Sales Engineer. Mr. Hantzis was a member of the team that developed the Premier material. He has been designing EMI/RFI Shielding and Thermal Management materials into Military, Telecom, Medical and Industrial applications since 1997.

Now coming – a reality show on engineers?

Yes, really. Have you ever wondered about all those reality shows and how they are cast? A new show titled "Top Engineer" is in the works. Although the deadline for applying to appear on the show may have passed, you can still read about it at the Pilgrim Studios website: <http://pilgrimstudios.com/casting/topengineer/>

Free Books for IEEE members

[Six new titles](#) were added for the 2012 membership year. IEEE members now have access to more than 250 eBooks from the IEEE Press collection through IEEE *Xplore*, at no additional cost.

The eBook collection spans a number of today's technologies across 15 different content areas, and includes:

- practical handbooks;
- introductory and advanced texts;
- reference works; and
- professional books.

New eBooks will be added every year.

Finding IEEE eBook Classics

1. Login to [IEEE Xplore](#) using your IEEE Member Web account.
2. Under the "Browse" heading in the left-hand navigation, click on "Books."
3. Select the "Classics" tab from the top of the page. Under this tab you will find a listing of all the free titles.

-- or --

1. Login to [IEEE Xplore](#) using your IEEE Member Web account.
2. Under the "Browse" heading in the left-hand navigation, click on "Books."
3. On this page, you can browse alphabetically by book title, or if you prefer, browse by keyword, such as "software."
4. If the title is included in the IEEE eBook Classics, you will see an orange "FREE" icon to the right of the book's title, and individual chapters will have live links.



2012 Rochester Section Joint Chapters Meeting

April 4, 2012

RIT Inn & Conference Center, 5257 W. Henrietta Road

Registration and refreshment: 4:30 – 5:30 PM
 Chapter Technical Presentations: 5:30 – 6:30 PM (please see presenters/titles below)
 Networking (cash bar): 6:30 – 7:00 PM
 Dinner & Keynote Presentation: 7:00 – 9.30 PM



Keynote Speaker: Mark Gabriel

Senior Vice President, Strategy and Business Process, Black and Veatch

Visions for a Sustainable Energy Future

Much has been made of the “smart grid” for utilities with promises of significant customer benefits, reduced carbon emissions, improved reliability and the freedom to include renewable energy. While the concept of intelligent infrastructure is indeed real, there is significant hype and misunderstanding. Black & Veatch is the world’s leading company assisting electric, gas and water utilities in developing their smart grid projects. Mark Gabriel will discuss the reality of intelligent infrastructure and critically, how it plays a key role as one of the six Megatrends facing society in the U.S. as outlined in his award winning book, Visions for a Sustainable Energy Future.

Parallel Technical Presentations (5:30 – 6:30 PM)*

<i>Electromagnet Compatibility / Product Safety Engineering & Electron Devices Societies</i>	James Herrmann	Managing Partner and Principal Engineer at Applied Logix, LLC	Proven PWBA Design Techniques To Eradicate The Common Mode Noise-Induced EMI That Is The Bane Of Many Modern Electronic Designs
<i>Microwave Theory & Techniques Society</i>	Dr. Ehsan Afshari	Professor Cornell University	A New Frontier for Microwave Engineers: Terahertz Systems on Chip
<i>Power & Energy Society</i>	Daniel O’Connell	Director, GM’s Fuel Cell Commercialization	Electrification of the Automotive Industry - General Motors Plan with the VOLT and Fuel Cell Vehicles
<i>Technology Management Council</i>	Paul R Tolley	VP Disruptive Technologies & Ex Dir. STC of CNSE Smart System Technology & Commercialization Center	Nano Technology for a Smarter Economy
<i>Geoscience and Remote Sensing Society</i>	Dr. Bea Csatho	University at Buffalo	Our dynamic planet: NASA’s ICESat laser altimetry missions to measure ice sheet and vegetation changes
<i>Signal Processing Society</i>	Robert T. Collins	Professor CSE Penn State University	Computer Vision Analysis of Crowded Scenes
<i>Communications, Aerospace and Electronic Systems Societies</i>	George L. Heron	Product Management, CyberPoint International	Cyber Safe? An unconventional view from the behind the lines in today’s unconventional (cyber) war
<i>Oceanics and Tuna Fish Society</i>	Charles Poisson	UKPA	Are Fish Responsible for Global Climate Change? **

*No charge for attending technical presentations. Reservation / registration not required. **Rescheduled from April 1

Dinner Selections

Prime Rib of Beef

Ten Ounces, slow-roasted with Natural Juices

Or Lobster, Fra Diavolo

Linguine tossed with Lobster in a Spicy Tomato Sauce

Or Eggplant Napoleon

Breaded Eggplant, roasted Red Pepper, Parmesan Cheese and Baby Spinach, Toasted Walnuts and Amaretto Cream Sauce

Reservations (required for dinner):

Register on-line (pay-pal accepted) or contact Gene Saltzberg at gene.saltzberg@ieee.org

Dinner: \$25.00 (IEEE members), \$35.00 (Non-members), and \$15 for Student members.

Further details and on-line registration at: https://meetings.vtools.ieee.org/meeting_view/list_meeting/10885