

Note: Please disregard our most recently sent newsletter. We hope you enjoy the final version of our newsletter below.

Dear Colleague,

Spring is here and lead-free is in full bloom. Learn what is happening around the world and here at DfR Solutions!

Last chance to sign up for Best Practices in Reliability! (April 3-7)

DfR Solutions and have teamed up to offer a week-long workshop on HALT/HASS and best practices in reliability

- **Apr 3-4** (Craig Hillman / Fred Schenkelberg)
- **Apr 3-4** (Gregg Hobbs)
- **Apr 5** (James McLeish)*
- **Apr 5** (Gregg Hobbs)
- **Apr 6-7** (Dave Steinberg)

*This special course will be presented by General Motors' Global Strategist for Quality/Reliability/Durability of Electrical, Software, and Control Engineering.

Contact [DfR Solutions](#) or [Hobbs Engineering](#) for more details and .

[Wal-Mart Takes Role in RoHS Compliance](#)

Do we need to say more? All the American manufacturers who have avoided RoHS because they don't sell into Europe just woke up to find RoHS on their shores. Can Home Depot and Best Buy be far behind?

Reliability Assessment of SnCuNiGe (SN100C)

DfR Solutions is pleased to announce that they have been selected by [Nihon Superior Co., Ltd.](#) to undertake a [comprehensive investigation on the reliability of tin-copper-nickel-germanium solder \(SN100C\)](#), a lead-free alloy exclusively patented by Nihon Superior. This study will use DfR's expertise in Physics of Failure (PoF) and extensive knowledge of solder joint degradation to capture the long-term reliability of SN100C under thermal cycling, vibration, mechanical shock. For more information, please contact [Cherelle Jeudy](#).

Ready for the RoHS police?

Don't think RoHS is for real? The UK Department of Trade and Industry is now [looking](#)

This issue:

[DfR and Hobbs Engr](#)

[Walmart and RoHS](#)

[DfR and Nihon Superior](#)

[Ready for RoHS?](#)

[Tin Whiskering](#)

[Pb-Free in Washington DC](#)

[SnAgCu Solder](#)

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[Package Obsolescence](#)

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Contact Us

Telephone:

(301) 474-0607

Email:

askdfr@dfrsolut...

for a few good men (and women) to find products masquerading as RoHS-compliant. Could that be you?

Tin Whiskering: Worse than you thought?

Overwhelming of testing of tin whiskering is constantly tested in 'clean' environments (test chambers). Such environments do not exist in the real world and this [article](#) shows how 'dirty' environments, with corrosive chemicals, can result in tin whisker growth rates too fast to imagine.

Pb-Free in Washington, DC!

The Washington DC chapter of SMTA, in collaboration with DfR Solutions, will be hosting the definitive showcase on RoHS/Pb-Free at the Center for Innovative Technology, located in Herndon, VA, from 2 – 7 pm on May 9. Sessions will include legislation, material certification, compliance/regulatory issues, reliability, and much more. If your company designs, manufactures, or uses electronics, you won't want to miss this unique opportunity. To register or for more information, please contact [Karen Ebner](#).

Predicting End-of-Life for SnAgCu Solder (the New Engelmaier Model)

DfR Solutions presents its model for predicting SnAgCu solder joint reliability at the IPC/JEDEC Conference on Pb-Free on March 7-9. An initial validation study is provided . For more information, contact [Nathan Blattau](#).

RoHS Legislation – Part I (California)

As discussed on our [website](#), current California legislation is limited to electronics with video displays larger than four inches. However, a [new bill](#) proposes to expand RoHS-style requirements to all electronic products.

RoHS Legislation – Part II (China)

It never stops. Click [here](#) for a very informative presentation by Design Chain Associates on the latest legislation out of China and Japan

Package Obsolescence

Prepared for obsolescence driven by die technology? How about obsolescence in packaging? Reports out of East Asia indicate that a number of contract packaging houses have decided to no longer offer J-leaded packages. While this change should not affect functionality, it can impact end-of-life behavior (think solder joint fatigue).

UPCOMING EVENTS

Capacitor and Resistor Technology Symposium (Orlando, FL: April 4 – 6)

DfR Solutions will be presenting our work on Robustness of Surface Mount Multilayer Ceramic Capacitors Assembled with Pb-Free Solder. If you would like to meet with us during our visit to discuss your experiences or questions regarding quality/reliability of passive components, please contact [Nathan Blattau](#) as soon as possible.

DfR in Upstate New York (April 17 – April 21)

Craig Hillman will be presenting to a number of companies in the Upstate NY region (Johnson City, Binghamton, Skaneateles Falls, etc.) in late April on a variety of topics (Pb-free, design-for-reliability assessments, product qualification, etc.). If you are interested in having Dr. Hillman speak to your company, please contact [Cherelle Jeudy](#) to make arrangements.

Del Mar Electronics Show: Race to RoHS (San Diego, CA – April 26)

This comprehensive program, sponsored by CircuiTree magazine, will include expert presentations and workshops by senior CircuiTree columnists and Industry Experts, including Craig Hillman's presentation on Lead-Free Reliability. Please feel free to click through for more [information](#) or to [register](#) or contact [Dr. Hillman](#).

SMTA Boston/NEPCON EAST (Boston, MA – May 9)

Craig Hillman will be presenting a full-day seminar, "The Reality of Pb-Free Reliability." This overview of potential reliability issues, including tin whiskering, solder joint reliability, and degradation of printed circuit boards is a comprehensive presentation rarely found among industry experts. For more information or to register, please contact [Craig Hillman](#) or [Melissa Serres](#).

SMTA Medical Electronics (Minneapolis, MN -- May 15)

DfR Solutions will be co-hosting a short course with Dr. Daniel Baldwin of Engent/Georgia Tech on Reliability Assurance in Medical Electronics. The course will provide an environment where engineers and managers can have a frank discussion on ensuring reliability, either through design, supplier assurance, product testing, or corrective actions based on lessons learned. If you are interested in attending, please contact [Cherelle Jeudy](#) or [JoAnn Stromberg](#).

Components for Military and Space Electronics (Portsmouth, UK: June 27 – 29)

Nathan Blattau will be presenting a full-day seminar, "Performance of Pb Free Materials in Electronics." This course provides an overview of potential reliability issues, including end-of-life performance of Pb-free solders under typical military/space environments. For more information or to register, please contact [Nathan Blattau](#) or [Leon Hamiter](#).