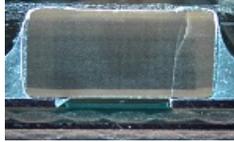


## Temperature and Humidity Acceleration Factors on MLV Lifetime

A fundamental principal of accelerated testing is that the failures modes encountered must be the same as those anticipated for normal operating conditions. The model describing the acceleration obtained by a given stress is useful and valid only for a population affected by the same failure mode. As such, any statistical analysis can only be effective if the failed items have been carefully analyzed so that they can be separated into groups having the same failure modes and mechanisms. This [white paper](#) assesses the temperature and humidity acceleration factors both with and without DC bias. The influence of these factors on MLV lifetime is addressed, especially as it relates to the operating environment seen by MLVs. For more information please contact [Greg Caswell](#).



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### Upcoming Webinars

#### Simulation and Modeling Requirements -Specifying and Satisfying PoF Reliability Predictions

Presented by Ed Dodd

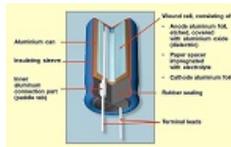
Thursday, December 17, 2015

11am and 2pm sessions available

[Register Now](#)

## Long Term Storage of Aluminum Electrolytic Capacitors

The selection of liquid aluminum electrolytic capacitors tends to be driven by a combination of cost, voltage, capacitance and ESR. The capacitance is stable over a range of temperatures and voltages while the ESR tends to be higher, but the impedance is stable as a function of frequency. This [presentation](#) provides insight into the failure modes for these capacitors and the impact of degradation during storage (shelf life). The degradation modes with respect to long term storage are electrolyte evaporation and dielectric dissolution. This [presentation](#) provides insight regarding storage from several capacitor manufacturers and yet points out that there is still a knowledge gap with regard to long term storage of these components. For more information please contact [Craig Hillman](#).



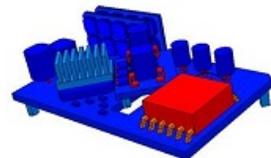
## Connector Design for Wearables

As electronics continue to shrink and their performance capabilities grow, these electronics are becoming more and more integrated into our daily lives. The next step is the internet of everything and wearable electronics. Communication between devices and providing power through the use of



connectors is critical; connector sales are a \$50 billion/year industry. As critical as they are, separable connectors are often times the first item to fail in electronics. This problem is only expected to worsen as electronics are used in increasingly challenging environments. This [paper](#) discusses contact physics, contact plating options, normal force requirements and general tradeoffs that

### Can you build this in 10 minutes?



If we told you that this model took 10 minutes to create in Sherlock, how would that change your organization? To learn more about [Sherlock Automated Design Analysis™](#) view the demos in the right hand column or contact [Tom O'Connor](#) to view the 3D PDF.

See for yourself.

[Register today for your 30 day Free Trial of Sherlock.](#)

### See You There

**Jan 26-28:** RAMS, Tucson, AZ

**Mar 9:** Annual Conference on Best Practices in Electronics Design and Manufacturing

**Mar 9-10:** Sherlock Technical Training

**Mar 15-17:** IPC APEX, Las Vegas, NV

frequently occur when designing or selecting a connector for an application. Physics of failure along with a number of connector failure examples is also presented. For more information please contact [Randy Schueller](#).

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## 2016 Annual Conference on Best Practices in Electronics Design and Manufacturing

Wednesday, March 9, 2016

8:30am to 4pm

Join us at our Annual Conference on Electronics Design and Manufacturing. Attend high level technical presentations, meet with DfR Solutions experts, tour our lab, and participate in a free Sherlock Automated Design Analysis™ Software demonstration.

This year, presentation topics will include an overview of best practices in:

- Modeling and Simulation of Electronics co-presented with Simulia
- Selecting Coating and Potting Material co-presented with H.B. Fuller Company
- Design for Reliability
- Contamination Avoidance co-presented with Kyzen
- Mitigating EOS/ESD co-presented with Electronic Polymers
- Electromagnetic Interference co-presented with MET Labs

**Reserve Your Spot Today!**

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## Sherlock Technical Training

### Advance Your Sherlock Software Technical Skills

Increase your Sherlock user skills, learn more about critical features, and earn a Sherlock User Certificate. We offer two levels of training to our Sherlock Automated Design Analysis™ software users. Sign up for the next session today.

#### Sherlock Intermediate Technical Training

Wednesday, March 9, 2016 1:00pm – 5:00pm

*Following the DfR Solutions Annual Open House*  
**Learn More and Register**

Location: **DfR Solutions Corporate Headquarters, Beltsville, MD**

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#### Sherlock Advanced Technical Training

Thursday, March 10, 2016 9:00am – 4:30pm

**Learn More and Register**

Location: **DfR Solutions Corporate Headquarters, Beltsville, MD**

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## In the News

**“The Large Hadron Collider: The Extraordinary Story of the Higgs Boson and Other Stuff That Will Blow Your Mind”** by Don Lincoln. One chapter of this book talks about the startup accident caused by a faulty solder joint that resulted in massive damage that took a year to repair. Since the incident in 2008, DfR has provided a [DfX seminar](#) and [Failure Analysis Training](#) to CERN indicative of our involvement. For more information please contact [Jim McLeish](#).

## Sherlock Demo



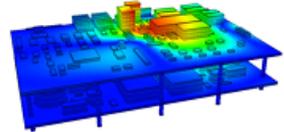
### Work with Us!

DfR Solutions is seeking a customer-focused engineer or scientist to join our Technical Staff in the Washington, DC, area (Beltsville, MD). Because of the broad range of potential projects, this position is flexible in regards to degree, experience, and expertise. Qualified candidates must have a Bachelor's Degree in an engineering (EE, MechE, MatSci, ChemE) or physical science (Physics, Chemistry) field; applicants with Masters and Doctorate degrees are also encouraged to apply. Resumes that demonstrate direct experience with some aspect of electronics design and/or manufacturing will receive preference.

**Learn more about this exciting opportunity and submit a resume.**

### 3D Glasses Not Required

Click the image to see Sherlock's 3D Capabilities



### Sherlock User Forum

To better accommodate the users of Sherlock Automated Design Analysis™ software, DfR Solutions has established a User Forum which will provide insight in FAQs, discussions on Sherlock releases, Feature requests, Tips and Tricks, and also where you, the user, can input your experiences.

Please go to **Sherlock User Forum**. Once you enter your information you will need to wait for DfR confirmation.

### Personal Visit

At DfR Solutions we still believe that personal relationships are best. Our Senior Staff spend a lot of time visiting clients in order to personally ensure that their projects are going well and discussing their overall reliability needs. If you would like a personal visit from DfR Solutions, please **Contact Us**.

