ISSUE
09
MARCH
2010

SEMITRACKS
MONTHLY
NEWSLETTER

INFOTRACKS

Troubleshooting Human Interaction

this issue:

It's a common situation: a high-importance analysis comes into the lab or you're called on to manage a project that's crucial to your company's success.

Yet the biggest problem isn't the project; it's working around personality conflicts, miscommunications, and inefficiencies that occur within the team. This frustrating, counterproductive experience is only complicated by the recession, which is forcing everyone to do more with less.

However, by learning to respond to observable data, you can improve your ability to get commitment from others, increase your value in any group situation, and free up your workplace "bandwidth" to focus on the issues, not the people.

Like your manufacturing and development processes, human interactions are driven by two knowable and measurable factors: **behavior** and **motivation**.

Behavior is the observable data you can use to immediately make corrections in any human interaction. Behavior is easy to read when you know what to look for. Visible behaviors impart a tremendous amount of knowledge regarding those with whom we work. Whether you're selling, influencing, coaching, leading, or trying to chart your own career development, an operational knowledge of behavioral factors and appropriate responses is crucial to success.

Motivation is the set of hidden drivers behind people's actions that give you clarity about why people do what they do. Our ability to understand it directly influences our persuasive skills and our capacity to lead or manage others. Many of us struggle to understand what motivates ourselves; it is no wonder that we have a hard time understanding the motivation of others. And yet, like behavior, motivation is measurable; it need not be nebulous or abstract. In combination, the two models give you a powerful set of analytical tools to take the "noise" out of your workplace interactions – and get back to business.

Yet how can you begin to utilize these important tools to solve, or better yet, avoid team problems altogether? Semitracks' brand new one-day ***Troubleshooting Human Interactions*** course will equip you to do just that.

This is not a "soft skills" class. It's an analytical approach to human interaction, presented by an engineer for engineers, technical professionals, supervisors, and managers at all levels. The instructor is an award winning author and an expert in the application of analytical models to human productivity.

Discover how you can revolutionize your human interactions today!

What our Alumni Say:

"Incredibly enlightening. I have never thought of my work relationships in this way."

"The lessons you taught will serve us for the rest of our careers."

"Things that have concerned me in my teen years and as an adult were answered."

"Content-rich and fast paced."

"Well worth the time."

"Immediately applicable; very practical."

SEMITRACKS, INC.
Semiconductor, Microelectronics, Microsystems, and Nanotechnology Training

Ask the Experts

Q: Would IDDQ help identify "weak" wire bonding? We have undetectable micro-cracks in our bonding that starts normally (e.g. part passes) but fails after temperature cycling. Do you have any ideas on how we might non-destructively & quickly test them to screen out the weak or "walking wounded" ones? I don't think TDR would be sensitive to this reliability problem (at least until the crack gets large).

A: It is possible that the Neocera Magma SQUID tool can detect weak wire bonds. The SQUID tool uses a sensitive high temperature superconductor detector to examine low level magnetic fields non-destructively. When the current necks down to a small region to get by a crack in a PCB, the current narrowing causes a dipole moment in the SQUID image which is visible. It's possible the same thing could happen with a bond wire. Good luck!

To post, read, or answer a question, visit http://forums.semitracks.com/.
We look forward to hearing from you!

Announcements

International Reliability Physics Symposium 2010

May 2-6, 2010 • Anaheim, CA

For nearly 50 years, the International Reliability Physics Symposium (IRPS) has been the premiere conference for engineers and scientists to present new and original work in the area of microelectronics reliability. Learn more.

Advanced Materials Failure Analysis Workshop 2010

May 21, 2010 • Reston, VA

This year's AMFA program consists of presentations covering emerging topics in microelectronics and biotechnology. Learn more.

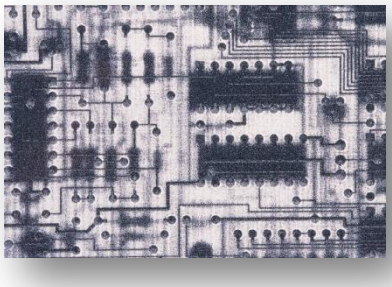
Technical Tidbit

[Acoustic Microscopy Detectability]

Acoustic microscopy must be addressed within the context of X-Y resolution and Z resolution. In this technical tidbit, we'll discuss X-Y resolution. X-Y resolution requires a mathematical approach. The detectability is determined by size of the acoustic beam, which depends on many variables such as the speed of sound in the material inspected. Frequently these variables are unknown and not easily measured.

However, approximations can be useful. The beam diameter can be approximated by the equation shown in Figure 1, where FL is the focal length, C is the velocity of sound in the material, f is the frequency of the transducer, and D is the diameter of the piezoelectric transducer.

Higher frequency transducers provide better



Upcoming Courses

Defect-Based Testing
March 24-26 • Malaysia

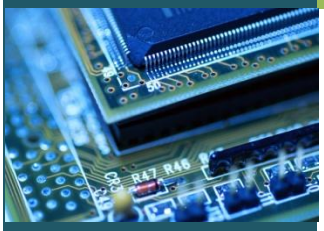
Semiconductor Reliability
April 12-14 • San Jose, CA, USA

Wafer Fab Processing
April 19-22 • Enschede, Netherlands

Photovoltaics Technology and Manufacturing
April 27 & 29 • New: LIVE Webinar!

Packaging Technology & Metallurgy
May 26-28 • Malaysia

MEMS Technology
May 31- June 2 • Malaysia



Customer Feedback

If you have a suggestion or a comment regarding our courses, online training, discussion forums, or reference materials or if you wish to suggest a new course or location, please feel free to call us at 1-505-858-0454 or e-mail us at info@semitracks.com.

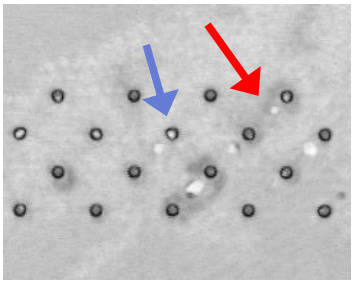
To submit questions to the Q&A section, inquire about an article, or suggest a topic you would like to see covered in the December newsletter, please contact Alicia Constant by email at alicia.constant@semitracks.com.

We are always looking for ways to enhance our courses and educational materials.

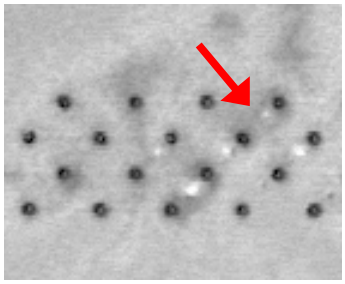
~

For more information on Semitracks online training or public courses, visit our website! www.semitracks.com

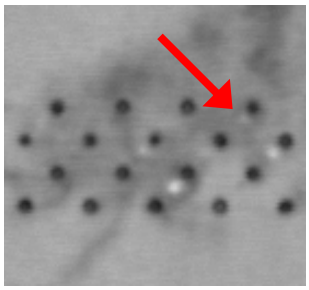
detectability. Figure 2 shows three images of the identical area of a flip chip. The top images show the best resolution. However, the consequence of using higher frequencies is a lack of penetration through the material. Only very dense and thin materials such as metals can be imaged using ultra-high frequencies. Notice how the defect is almost unnoticeable in the 75Mhz image. The solder ball noted by the blue arrow cannot be easily seen in either of the other two images.



260 MHz UHF 5.9mm FL



110 MHz 8mm FL

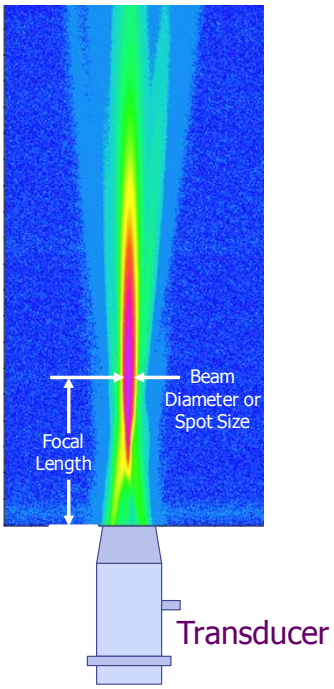


75 MHz 12mm FL

Figure 2.Three images showing the same area on a flip chip. All images were provided courtesy of Sonix Inc.

$$BD = 1.028\left(\frac{FL \cdot C}{f \cdot D}\right)$$

Figure 1. Equation approximating detectability (top) and model of the acoustic microscopy transducer (bottom).



New! Photovoltaics Technology Webinar

[Course Spotlight]

Have you ever wanted to sign up for our instructor-led Photovoltaics Technology classes but never had the time or the money? Now's your chance to reap **all the benefits of live training without the hassle** of traveling. With our latest Photovoltaics Technology webinar, you can enjoy an enriching multimedia learning experience from the comfort of your home or office.

As part of our mission to give you fast, focused, and affordable training, the live webinar combines all the curriculum of the live class, allowing you to learn from the experts at a fraction of the price.

Some of the exciting topics the class covers include

- **Characteristics of Solar Radiation.**
- **Semiconductor Material Properties.**
- **Junction Properties.**
- **Efficiency and Losses.**
- **Design of Silicon Solar Cells.**
- **High Efficiency Designs.**
- **Silicon Solar Cell Fabrication.**

What makes ours different?

Our webinar course is one-of-a-kind. No one else offers the opportunity to experience all the benefits and curriculum of a live Photovoltaics Technology course for only **$99**-- a fraction of the price for the live course! The course focuses on the key aspects of photovoltaics technology simply and concisely, teaching you what you need to know in a minimum amount of time.

Our courses are dynamic. We use a combination of instruction by lecture, problem solving, and question/answer sessions to give you the tools you need to excel in the photovoltaics industry. From the very first moments of the seminar until the last sentence of the training, the driving instructional factor is **application**.

Our instructors are internationally recognized experts. Our instructors have years of current and relevant experience in their fields. They're focused on **answering your questions** and teaching you what you need to know.

Find out more and **register today**!