

ASM International West Michigan Chapter offers a New Failure Analysis Workshop: Constructing Competence in Failure Analysis: A Holistic Approach

When: M-Th, NOV. 11-14, 2024 with optional lab visit the morning of NOV 15, 2024. We'll start at 8:30 am (Registration Monday, teaching T-Th) and end around 4:30 pm.

Registration Deadline: October 7, 2024

Where: 5680 Kraft Ave SE Ste A, Grand Rapids, MI , USA

This is the training center at Augusta Tower Technologies, just south of Lacks on the opposite side of Kraft.

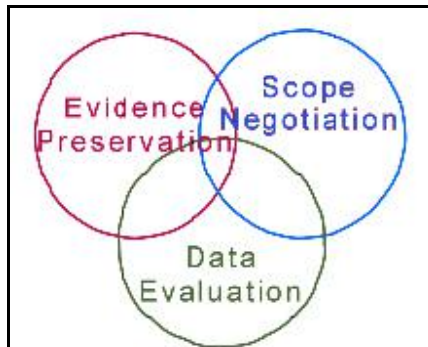
For Whom: People doing or reviewing failure analysis work, or those who must procure failure analysis services from outside services. Focused on mechanical failures, including fracture, deformation and wear, but also with an introduction to corrosion and thermal damage. Good for materials engineers, mechanical engineers, experienced materials testing lab technicians, quality engineers, design engineers, civil engineers, and products liability attorneys. If you have “failed” parts that are readily portable, or photos you may / can share, bring them along for group discussion, preferably with information about the material type, prints, etc.

Instructor: Debbie Aliya, FASM <https://www.linkedin.com/in/debbie-aliya-9817ab1/>



Science and Engineering, and Epistemology.

Experienced independent consultant with a demonstrated history of supporting client's engineering management teams. Strong critical and creative thinker, skilled in Failure Analysis, Manufacturing Engineering, Component Design Philosophy, Automotive, Materials



What makes a failure analysis different from other materials lab testing? THESE THREE ACTIVITIES! No admonishments in this seminar. Clear, practical strategies and coaching.

Summary of Approach

This seminar is based on Aliya's new book *Constructing Competence in Failure Analysis: a technical and human factors guide*.

(<https://a.co/d/001jumod>) The book is focused on evaluating components that have been damaged due to exposure to forces and environmental conditions beyond their capacity to endure. Applying the methodology presented will shed light on the reasons


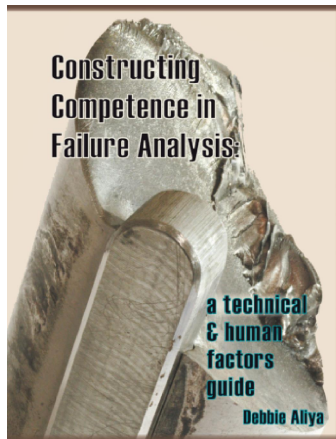
for the demise of the component or assembly. We will discuss the fallacy of the single root cause. The case studies are mostly metallic parts, but include some polymers. The basic methodology applies to all physical parts requiring failure analysis. The methodology has the potential to reveal damaging factors including operations outside of the design envelope, manufacturing problems, or something else entirely. The attentive participant will gain an appreciation for the idea that engineering damage is a measurable physical fact, while failure is always due to a human factor.

Cost: Members of ASM International- \$2000.00, Non-Members - \$2250.00
Additional fee for payment by credit card.

Multiple attendees from same company may have discount if there are at least 14 confirmed registrants as of October 1, 2024.

Includes Coffee on arrival, morning snack, lunch, afternoon snack, and color printed notebook of all slides (with space for notes), and a personal use only pdf of the slide shows presented. A step by step guide to visual examination and damage categorization will also be included.

Special Book Price by Pre-Order at time of Registration: \$150.00 (Ebooks not available)



New - Just Released in 2024

A technical, epistemological view of failure investigations and analysis with a focus on metal alloys and polymers for professionals, college students and the experts who intersect with investigations.

By FASM, Debbie Aliya

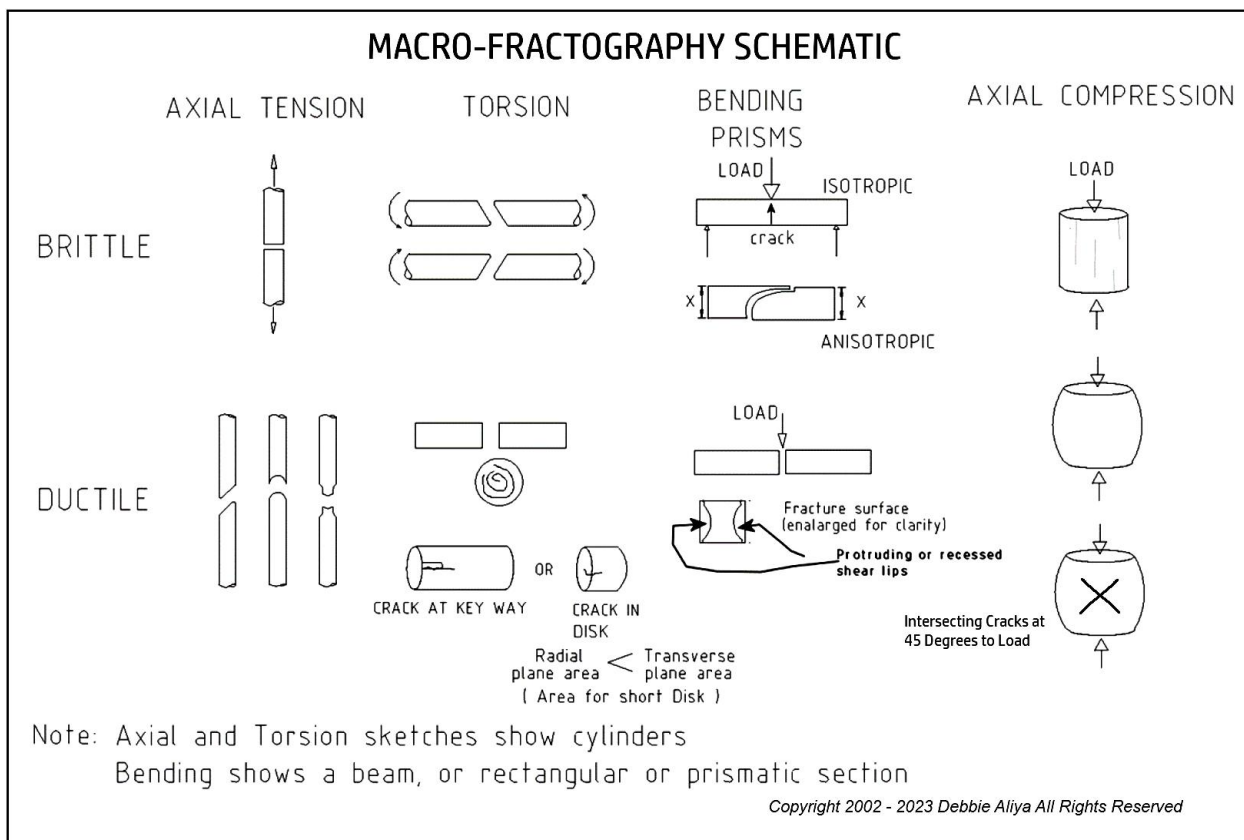
Learning Goals

- 1) Correctly identify the different damage categories, figure out the reasons for damage in a given component, and be able to clearly explain how you know what you say you determined.
- 2) The attentive participant will learn vocabulary that will facilitate restructuring of their current knowledge into a more useful and powerful way to see the world of engineering. This will be accomplished via inclusion of an integrated workshop presenting a seven step method of cultivating mental clarity.
- 3) The method of failure analysis in Constructing Competence in FA includes hints on background data collection, visual inspection, specification / negotiation of the scope of the particular project, along with detailed coaching on how to preserve evidence all

along the project journey. In other failure analysis books, most of these steps are covered as mere admonishments, without practical guidelines on how to achieve results. Hints for negotiating evaluation of reference specimens where appropriate is also covered.

4) Learn how to perform failure analysis work effectively, including such nitty gritty details as how to decide from where to extract the microscopy, metallography and mechanical test coupons.

5) The crown of the technical content is a new three step method to perform what is usually called macro-fractography, the key to understanding and visualizing the loads and forces that actually resulted in the fracture. Participants will have multiple chances to practice the macrofractography technique on the instructor’s fairly extensive “Museum of Failure.”



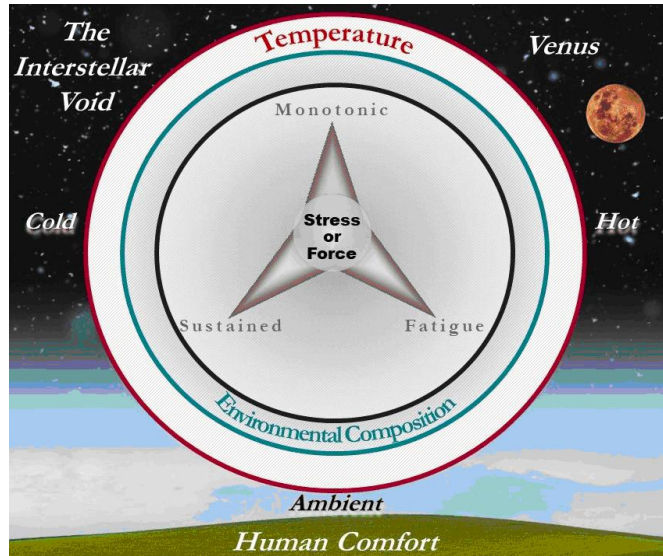
Learn how to use this chart to figure out whether the crack resulted from the anticipated loading, or something else! This is a key aspect of assigning responsibility for any failure involving a crack.

6) Most importantly, unavailable in any other FA training method, there are extensive sections on organizing your thinking processes, including gathering knowledge, confirming the relevant context, exercises to practice rational, creative and systems thinking, an introduction to a practical theory of knowledge, so that you may improve your data evaluation skills

7) Finally, participants will learn about a way of wrapping the whole analysis into a clear and compelling narrative that conveys the key learnings, including recurrence prevention ideas, to anyone who takes the time to read or listen.

NOTE

This failure analysis methodology goes far beyond gathering data and subjecting it to logic. It is a comprehensive technique for seeing more clearly into the past (the failure), the present (the analysis), and the future (potential prevention). If we're the ones helping others figure out what they can't on their own, does it behoove us to have ways to check our own work? The method will allow those who continue practicing these steps to continue to grow in knowledge, and perhaps even wisdom.



How does the environment affect the durability of any component? Join us for the seminar to find out!

Engineering Failure Analysis



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REGISTRATION for ASM International West Michigan Chapter Holistic FA Seminar

Date: M-Th, NOV. 11-14, 2024 with optional lab visit at Aliya Analytical, Inc., the morning of NOV 15, 2024.

Registration Deadline: October 7, 2024

Where: Augusta Tower Technologies at 5680 Kraft Ave SE Ste A, Grand Rapids, MI 49512

Application to Attend Holistic FA Seminar

I, _____, wish to attend the ASM International West Michigan Chapter's seminar on the new, unique and powerful Holistic Failure Analysis methodology. I certify, by my signature below, that I have carefully read the seminar description, and understand that this will not be a dry technical program, but will include practical exercises preparing the attentive participant for the development of more comprehensive critical thinking skills, along with technical content. I agree to participate in the group activities and discussions.

Signature (Print Name in UPPER Blank)

Date

Company Name

A questionnaire will be sent out ahead of the program to solicit ideas for customization based on industries and experience levels represented by the attendees.

If you have any questions or doubts about the suitability of the content, please contact Debbie Aliya to discuss your concerns.
DaAliya@itothen.com or 1-616-475-0059

Payment Worksheet:

A minimum of 8 people must be registered / paid up by October 7, or the program will be cancelled and refunds provided. A maximum of 15 people will be accepted into the seminar / workshop. Please call by October 1 if at all possible, to arrange payment. Any additional available slots will be filled after the deadline if the course runs.