

Got Fastener Training?

Understanding Hydrogen Embrittlement in Fasteners

by:

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**FASTENER
TRAINING
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The **Fastener Training Institute®** will again partner with the **Industrial Fasteners Institute (IFI)** to present a new, advanced two-day workshop, *Understanding Hydrogen Embrittlement in Fasteners*, April 9 to 10, 2013, in Los Angeles, CA, USA, and May 29 to 30, 2013, at IFI headquarters in Cleveland, OH, USA.

Instructor **Salim Brahimi** will provide a broad understanding of hydrogen embrittlement with a particular focus on the conditions leading to hydrogen embrittlement failure of high-strength mechanical fasteners. Threaded mechanical fasteners and bolted joints are deceptively simple components, but damage resulting in loss of integrity or failure can occur by a complex interaction of material characteristics, environmental conditions, manufacturing flaws, installation conditions and joint design criteria.



Salim Brahimi

The most unpredictable failures result from hydrogen embrittlement. Consequences of fastener failures can range from minimal to catastrophic, even resulting in loss of life. The prevention of failure is therefore a fundamental preoccupation for designers, application engineers, fastener manufacturers and distributors alike.

Topics include:

- Fundamentals of hydrogen embrittlement
- Understanding stress in fasteners
- Manufacturing and application considerations
- Susceptibility of materials
- Hydrogen embrittlement testing
- Specifications and failure analysis

Understanding Hydrogen Embrittlement in Fasteners is a must for anyone who works with mechanical fasteners either as a manufacturer, tier supplier, distributor or OEM. There are no prerequisites—the material is suitable for people with technical and nontechnical backgrounds.

This two-day workshop is designed to provide practical information and encourages an open discussion aimed at understanding how to avoid hydrogen embrittlement failures using real-life examples. To

reinforce the topics covered in the classroom, this workshop also includes a tour of a commercial laboratory with a hands-on demonstration of hydrogen embrittlement testing and failure analysis.

Instructor Salim Brahimi is uniquely positioned to present this workshop. He not only leads a research team on the topic of hydrogen embrittlement at **McGill University** (Montreal), he also is the recipient of the Fred F. Weingruber award by **ASTM Committee F16** for his outstanding contributions to the development of fastener standards, especially in the area of hydrogen embrittlement.

Brahimi is President of **IBECA Technologies** and a licensed member of the **Quebec Order of Professional Engineers**. He has accumulated more than 24 years of experience in the fastener industry and is heavily involved in the development and maintenance of fastener standards. He currently serves as chair of ASTM Committee F16 (fasteners), is a member of the **SAE Fastener Committee** and a member of the **Research Council on Structural Connections (RCSC)**.

The Industrial Fasteners Institute provides some of the funding for Salim Brahimi's hydrogen embrittlement research.

Please contact the FTI to be placed on a mailing list for any fastener training courses by sending an email to info@fastenertraining.org. Check the website below for the complete 2013 calendar.

The Fastener Training Institute's core purpose is to enhance fastener use, safety and reliability.

For more information, visit www.fastenertraining.org.

FTI

John Wachman is Director of the **Fastener Training Institute** and the head of **Desert Distribution Sales LLC**, a manufacturer's representative company located in Scottsdale, AZ, USA. To receive additional information, visit the website listed below.
www.fastenertraining.org