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Fatigue Testing Expansion at IMR Test Labs

IMR Test Labs made a major investment in fatigue testing this year based on requests from our Aerospace and Medical customers. We have added 22 kip and 55 kip MTS fatigue frames to our Ithaca lab. With these frames we can run a variety of fatigue testing including LCF, HCF S-N curve, endurance limits, J1C, K1C, ASTM F series tests, thermal spray coating fatigue, spring testing, strap testing, fastener testing and product component testing. We will continue to grow our fatigue testing department and plan to add additional frames by the end of 2010.



Our New 55 kip MTS Fatigue Frame with T-Slot Table for Large Samples

We also have a DynaMight axial/torsional tester in Ithaca, and Rotating Beam Fatigue (up to 1800°F) capabilities in Portland.

IMR Test Labs can handle your engineering and design challenges that extend far beyond a simple material certification. If your fatigue testing needs are part of a sophisticated failure analysis or product performance claim research requiring additional testing, we can help you. Our engineers are able to manage projects that span weeks, or even months, multiple disciplines and multiple iterations.

Contact us today to discuss your fatigue testing program.



Bill DeLaurier, Director of Materials & Product Testing and Our New 22 kip MTS Fatigue Frame



Coating Shear Fatigue Fixture

Ron Parrington Elected an ASM Fellow

The Board of Trustees of ASM International has recently elected Ron Parrington, President of IMR Test Labs as a Fellow of the Society.

Ron is being recognized for his "distinguished contributions in the field of materials science and engineering including leadership in materials characterization and substantial contributions to materials education through mentoring, teaching and support to ASM." (*Letter from ASM International*) The entire IMR family congratulates Ron on this tremendous and well deserved honor. IMR takes pride in Ron's professional accomplishments and contributions to his field of specialty and we wish him continued success in his exemplary career in material science and engineering.

Ron's award will be presented at the Convocation of Fellows during the ASM Awards Dinner on October 19th, 2010 in Houston, TX.



Testing Cert #
NY: 1140.01 & 1140.02
SC: 1140.05 & 1140.06
KY: 1140.03 & 1140.04



Materials Testing Laboratory
NY & OR

IMR Wins Contract to Provide Support to ASM CTSO Program



Ithaca's State-of-the-Art Microscopy Lab

IMR Test Labs has been awarded the contract to test the performance examinations in the new CTSO program which is currently being rolled out by ASM International. The examination part of the program will begin in late 2010 or early 2011.

This program will help the thermal spray community to improve consistency and reliability of the thermal spray process and is supported by both manufacturers and suppliers.

For more information, visit the ASM International TSS site, <http://tss.asminternational.org/portal/site/tss/Certification/> and check back to www.imrtest.com for updates on performance qualification and our role in the CTSO program.



IMR's Continued Growth and Expansion

by Joe Springer

We've done so much in the last year, it's hard to imagine that more is coming. In Ithaca, we've introduced slow strain rate and fatigue testing, implemented 3-day turn on routine work, purchased a new XRF (see article page 2), and upgraded our GCMS.



In Portland, we've added an SEM and started an advanced chemistry lab with ICP, C/S, and wet chemistry. In Louisville, we purchased a new SEM and a new GCMS. In Charleston, we've added environmental chamber capacity and are adding European automotive testing accreditations.

But more is coming. We'll add a third and maybe a fourth fatigue frame by year-end. Additional automated salt spray chambers, temp/humidity chambers, ICP-MS, and XRD are on our capital investment list; thermal desorption units (as an enhancement to GCMS) are being ranked; and improving turnaround time on aerospace and medical bond bars is an active project. We are also continuing to evaluate possible acquisitions and greenfields in Singapore and the south-central quadrant of the USA.

IMR has definitely gotten around during the last two years. Our experts have been called to Europe, the Middle-East, and Asia. We do work for customers in China, India, Malaysia, Hong Kong, Europe, and the Americas. From our origins in Ithaca, New York (well, Lansing really - a stone's throw from Ithaca) near Cornell University we've grown tremendously and gone global. We know how to handle foreign clients and their special needs. We're not afraid to travel to your location or your supplier's location in Malaysia (or some other distant locale) to discuss your creep project.

Best of all, our strategy is designed for you, the customer: Lowest Risk Provider and Superior Customer Service. Lowest Risk Provider means getting you "the right answer, on time." Superior Customer Service means "great people who make doing business easy."

We appreciate your trust and your business. From all of us here at IMR Test Labs, "Thank You!"

New XRF Expands Ithaca's Chemistry Department

The ARL Advant'X Intellipower 3600 XRF (XRay Fluorescence Spectrometer) provides fully quantitative analyses of major, minor, and trace elements in a wide variety of materials. Metals, plastics, ceramics, glasses and even solutions can be analyzed quickly and this analysis is mostly non-destructive.

Every element from fluorine to uranium can be detected from the matrix level down to the ppm (parts per million) level and below.

Most samples can be turned around in 3 days or less, and XRF analysis can be a more cost effective alternative to traditional ICP-AES analysis.



Lead Chemist Brian Wackowicz Analyzing a Glass Sample on Ithaca's New XRF

Expanded Chemical Analysis Services Coming to IMR KHA - Portland

IMR KHA - Portland is expanding its Chemistry Department in an effort to provide a more complete line of testing to our clients. By offering more services under one roof, we can eliminate the need for outsourcing and give you results more quickly.

Alexis Puerta, Lead Chemist and Quality Manager, is leading the move to add ICP-AES chemical analysis and microwave digestion to the chemistry department. Carbon and sulfur analysis were also added to the chemistry department this past spring. IMR KHA also offers OES and hydrogen analyses.

What does ICP-AES have to offer you?

- ◆ More elements available for analysis than OES.
- ◆ Greater flexibility with regard to sample requirements. ICP methods can analyze powder, solutions and more alloy types than traditional OES analysis.
- ◆ With microwave digestion added, turnaround time is decreased. Difficult alloys (like nickel) can be digested more quickly.

If you would like to be notified when IMR KHA begins to offer ICP analysis services, please send an email to:
Jill.Howland@imrtest.com.



*Alexis Puerta
Preparing
Samples for
ICP-AES
Analysis*

Need copies of our latest accreditations?
Visit us at www.imrtest.com and click on
Accreditations.

Quality Update

This has been a busy year on the quality front at IMR Test Labs. We have had numerous audits and visits at all of our locations including successful A2LA audits in Ithaca and Louisville, and an upcoming A2LA audit at Charleston in August. Ithaca and Portland also successfully passed Nadcap audits within the past year.

Alexis Puerta, Ph.D., (formerly a Lead Chemist at the Ithaca location) has taken over as Quality Manager in Portland. Lab Directors Brett Miller, P.E. (Louisville) and Tom Ackerson, P.E. (Charleston) have taken over Quality duties at their respective labs with Deena Crossmore, VP of Quality, overseeing the corporate quality program and compliance for all locations. IMR is currently working on more collaboration and standardization among the four sites including yearly corporate round robins.

Each IMR lab strives to remain audit ready year round. Not only do we ensure we are meeting the highest quality standards by doing so, but we are poised to welcome frequent customer visits and audits.

Please feel free to contact the quality managers directly with any quality questions, or to schedule an audit at one of our facilities. You can reach our quality managers directly by going to www.imrtest.com and clicking Who We Are.

Congratulations to Tom Ackerson, P.E., Laboratory Director of IMR Test Labs - Charleston, on his recent appointment as the Chairman of the ASM International Failure Analysis Committee.

IMR Test Labs - Ithaca Develops a Large Scale Corrosion Project

IMR was asked to undertake a long term project to assess corrosion-resistance of two very large nuclear waste treatment tanks. These tanks will be buried deep underground and must last 30 or more years without need of any repairs. The waste solution itself, besides being a little radioactive, is very, very caustic. But don't fear, the solution we are testing here at IMR does not have the radioactivity - though it has a pH of 14!! - so it works on everything it touches better than OxiClean.

by Neil Burns

Begun in the Fall of 2009, the program is split into three phases. Phase 1 was a rapid screening test to see how changes in the waste composition can affect corrosion performance. This phase is complete and the 200+ page report is in the final stages of being written.

The data from Phase 1 was used to find the most aggressive waste compositions, with these solutions being used for a 90 day immersion corrosion testing in Phase 2. Currently we are at the half-way point on Phase 2, and the data, so far, shows that the tank materials should resist the most aggressive waste solutions - which is good. Phase 2 exposure testing should be complete by the middle of August.



Four Cell
Electrochemical
Corrosion Test Setup

Phase 3 is a special type of stress corrosion cracking test using a very slow type of tensile testing, called Slow Strain Rate. During testing, the tensile sample is immersed in the most aggressive solutions determined from Phase 1. This data will help determine if stress corrosion cracking is going to be a problem, which can happen in areas of high stress, like welds. This testing is about to start and will be complete in November.

Contact Neil Burns (neil@imrtest.com) to discuss your corrosion project.

Slow Strain Rate Test Sample in Corrosive Solution



An Update from Louisville

by Mick Lumb

Hello again from a sweltering Louisville, Kentucky. We wish all of our clients, colleagues and friends a great summer season!

Here at IMR Metallurgical Services we're pleased with a solid first half of 2010 despite the continued slowdown in manufacturing. We are fortunate that as we've grown into a lab serving clients nationally, we are somewhat cushioned against the ebb and flow of local economic conditions.

Big news here in Louisville is our recent acquisition of a new Tescan SEM with an Oxford EDS. This gives us added capacity, including partial vacuum inspection and enhanced EDS analysis methods. Additionally, we will have capacity for remote SEM viewing over the internet, when requested. We recently acquired TGA and DSC instruments. After some procedure development, we will be able to provide a greater level of polymer-related services.

On the major project front, John Jendrzejewski was engaged for over one month as a materials consultant on a huge refinery asphalt tank project in Michigan. The number of clients that we provide failure analysis and consultation for has continued to grow. Did you know that almost 20% of our nation's 150 oil refineries use or have used IMR Louisville for their materials consultation? Not too bad, we think!

Other areas where we have seen an appreciable uptick in business are defense-related work and Commercial Grade Dedication (CGD), which is very encouraging. With the Nuclear Industry reinventing itself over the last several years and the immense potential this implies, we will play our part in IMR's thrust to be a major player in these industries for years to come.



John Jendrzejewski on Site

Charleston Expands into the Foreign Automotive Market

by Tom Ackerson

Ron Parrington and I made a week-long tour of the German automotive industry in April to hone our expertise in European automaker corrosion standards. This will improve our corrosion testing abilities and our ability to serve the European automotive suppliers located in the Southeastern U.S.



Tom Ackerson, Lab Director
- Charleston, at the ZF
Lemforder plant in Germany

The trip began at BMW's plant in Dingolfing (Bavaria) where we met with the materials laboratory staff specializing in coatings testing.

Day 2 was spent at the Mercedes-Benz plant in Sindelfingen, where we met with corrosion testing experts for hands-on training and to discuss upcoming corrosion testing requirement changes for metallic and non-metallic coated parts.

After several hours on the Autobahn and a few u-turns later, Ron and I arrived in the small country village of Lemförde in north-central Germany. The visit with ZF Lemförder the following morning included a tour of their corrosion lab and planning for round robin testing.

The last stop of the trip on Day 4 was Wolfsburg, home of Volkswagen. VW employs a staggering 40,000 employees at that single location, and it's reportedly the world's largest automotive plant. The meeting at VW was a follow-up to a successful audit of the IMR Charleston facility in March.

Volkswagen - Wolfsburg



New Employees

Since we didn't publish a newsletter in 2009, some of our "new" employees have been here for some time now so you may already know and work with them. We still wanted to take a moment to introduce the newest members of the IMR family.

Matthew Sanaker - IT ♦ Ithaca



Matthew recently joined the IT Department as the Systems Administrator. He graduated with honors from the University of Washington in Seattle with a Bachelor of Arts degree in Anthropology and History in 1998. He is a Microsoft Certified Systems Administrator and Red Hat Certified Technician.

His hobbies include studying astronomy and astrology, gardening, raising livestock with his wife and daughters, and hunting on his family farm in Groton, NY.

Katie Moring - Chemist ♦ Ithaca

Katie has been an ICP chemist with IMR since January of 2009. She graduated from Elmira College with a B.S. in Biology. Katie enjoys spending time with her fiancée Mike, riding her horse, biking, golfing, cooking and baking.



Shana Chaffee - Receptionist ♦ Ithaca



If you've called or visited IMR in Ithaca, NY since October of 2009, then chances are good you've talked to our receptionist, Shana. Her first priority is her husband Jason and 7 year old son Zack, who is involved in a variety of activities. When Shana gets a rare moment of free time, she likes to scrapbook, read and garden.

Dan Grice - Metallurgical Engineer ♦ Ithaca



Dan recently joined our metallurgy department in January after graduating from the University of Wisconsin at Madison with a B.S. in Materials Science and Engineering. He is a member of our local ASM chapter and the Emerging Professionals committee. Dan just recently moved from Wisconsin, and returned there to get married before bringing new wife Julie back east with him. In his spare time Dan enjoys cycling and often rides to work.

Tom Ackerson, PE - Laboratory Director ♦ Charleston

Tom joined the IMR family in April of 2009 and brings over 20 years of experience as a failure analyst, metallurgist and engineer. He holds a B.S. in Materials Science & Engineering from North Carolina State University, and an M.B.A. from Averett College.



Tom is an active ASM member, and the incoming chairman of the ASM International Failure Analysis Committee. In his spare time, Tom enjoys traveling around the US, gardening/landscaping, playing guitar and football.

Tom Welch, SCWI - Specialist, Weld Inspection ♦ Portland



Tom has been a Certified Welding Inspector since 1983 and is now one of only 515 Senior CWI's worldwide. He has taught welding and blueprint reading, owned an aircraft welding business and managed projects for steel construction companies. He retired in 2007, but got bored

quickly, so he started doing special inspection and quality program consulting. He joined IMR KHA in April of this year. Tom also plays golf and spends time on his boat or Harley on the rare occasion that the sun shines in Oregon.

New Employees - Cont'd

Lisa Brown, SPHR - VP Human Resources ♦ Ithaca

Lisa obtained her Bachelor of Arts degree in English and Spanish at Bucknell University in Lewisburg, PA, and received her Masters degree in English at the State University of New York at Binghamton.

Lisa's hobbies include reading, writing, music, travel, spending time with family and gardening. Lisa joined IMR in September of 2008.



Kurt McDonald - Chemist ♦ Ithaca



Kurt joined IMR in December of 2008 as an ICP Chemist. He holds a B.S. in environmental chemistry from SUNY ESF at Syracuse University.

In his free time, Kurt enjoys extreme sports, mountain climbing and other outdoorsman activities.

Anthony Mattingly - Chemist ♦ Louisville

Anthony has been with IMR Metallurgical Services in Louisville since June of 2009. He has a B.S. in Chemistry from the University of Louisville and has worked as chemist for the past three years.



John Arroyo - Chemical Technician ♦ Ithaca



John came to us as a temp in our chemistry department after 15 years at Toshiba as a Chemical QC Technician. He has served as our receptionist, a mechanical technician and now returns to the chemistry department.

John has been a musician for over 20 years, playing the guitar, singing and more. He has been with his wife Maria since high school and has just recently welcomed his first granddaughter to the family.