



2007 Newsletter

Serving your testing needs since 1998

IMR Celebrates Ten Years of Excellence

By Ron Parrington,
President IMR Test Labs



It's hard to believe, but IMR Test Labs is already celebrating its 10th anniversary! In January 1998 IMR was started and opened a new 6,600 ft² lab. The unwritten vision statement was clear and singular; To Do Materials Testing the Right Way. Now, ten years later, IMR Test Labs has swelled to over 30,000 ft² and with more than 60 employees in Lansing (NY) and two sister labs adding another 20+ employees in Charleston (SC) and Louisville (KY). Our vision statement is a little bit more formal now, but we still pride ourselves on doing testing the right way.

Doing materials testing the right way is not just about the data. Sure, IMR as a business has survived for ten years. However, I think it's more notable that for a decade an IMR "family" of clients and staff has flourished. Many of the same employees who worked on moving day in 1997 are still here and scores of first year clients remain loyal to IMR. Meanwhile, IMR continues to build strong relationships with new employees and clients.

How did this happen? We combined a team of talented people with a strong customer service ethic. Deadlines, quality and attention to detail are sacred to us. Customers are readily connected with the person performing their tests. We call that our "front line approach". We strive to complete quotes for services within hours of a call. We email our reports so that people don't have to wait for snail mail delivery. (We mail a bound copy of the report as well.) We conduct phone interviews with every new client after their first job and, years later, we randomly interview long standing clients.

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View of the Past, Present & Future

By Pete Damian, Director of Chemistry



The Chemistry Department at IMR Test Labs opened with just five employees. The main pieces of equipment available then were a Perkin Elmer 5100 PC Graphite Furnace Atomic Absorption Spectrophotometer, a Spectro SpectroFlame ICP-AES, a Spectro SpectroLab M5 OES and a couple Leco Determinators. Back in those days when chemists at IMR rode horses to work we took great care to get the right answer using the instrumentation that was available. Alright, maybe the horse commute is an exaggeration, but serious efforts to get the right answer were real. The same painstaking care we took using a lever to load a sample into our old nitrogen analyzer we continue to take today with our current state of the art instruments.

Instrumentation and equipment have been updated so that our lab reflects the best technology that's currently available. ICP-AES analysts use simultaneous spectrophotometers which allow both axial and radial viewing. Multiple sample runs are often performed using autosamplers to help us get your data more quickly. We've also added many new analytical techniques to our repertoire like Ion Chromatography, particle size analysis by laser light diffraction, mercury analysis by combustion and microwave digestion to name just a few. The addition of our handheld XRF now provides us onsite PMI (Positive Material Identification), Nondestructive Testing and RoHS (Restriction on Hazardous Substances) screening. This instrumentation, combined with our experienced staff, has put IMR at the forefront of materials and declarable substances testing. From our original group of five we've grown to a department which now employs sixteen people in our New York location alone.

Looking to the future, IMR's Chemistry Department is preparing a further expansion of its capabilities. We expect to continue the growth trend in specialized cleanliness testing, system contamination analysis, chemical exposure testing, and process problem resolution. And we expect to add newer techniques for material testing to our arsenal. All this exciting technology will help us to do our most enjoyable work; satisfying the needs of our customers.

Visit our Booth

CNY Med Tech Leadership Summit

September 17-18

Skaneateles, NY

MS&T (Materials Science & Technology Conference)

September 17-20

Detroit, MI

Fabtech International & AWS

Welding Show

November 12-16

Chicago, IL



In All Locations



New York Only

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IMR – Charleston Update

IMR Test Labs – Charleston continues to increase their customer base as many Southeast manufacturers expand their operations.



IMR Test Labs – Charleston recently purchased a new Hydraulic Bend Tester. Bend testing determines the ductility or the strength of a material by bending the material over a given radius. Following the bend, the sample is inspected for surface cracks. This provides insight into the modulus of elasticity and the bending strength of a material. With this new equipment we can test a wider variety of materials on site. This will better serve our existing customers and hopefully attract new ones.

A QUV accelerated weathering tester was also purchased for the Charleston location. Accelerated weathering simulates the damaging effects of long term outdoor exposure. Materials and coatings are exposed to varying conditions of the most aggressive components of weathering: ultraviolet radiation, moisture and heat. A QUV test chamber uses fluorescent lamps to provide a radiation spectrum centered in the ultraviolet wavelengths. Moisture is provided by forced condensation, and temperature is controlled by heaters. Up to 20 test samples at a time may be mounted in the QUV and subjected to intense ultraviolet radiation followed by moisture from condensation. Various cycles are defined depending upon the intended end use application.



Other additions to Charleston's capabilities include an upgrade to our Tinius Olsen Universal Tester which allows us to control the tension testing speed and provides for data capture. We also upgraded our photographic capabilities with the purchase of a state of the art digital camera and imaging system for stereo-zoom macro-photography.

IMR Test Labs – Charleston recently passed an onsite audit conducted by ASCO, a leading manufacturer of solenoid valves. The audit was related to specific requirements necessary for processing work from their manufacturing facilities. We are happy to submit to customer audits in order to provide our customers with the assurance that we are committed to highest quality standards. Continued on Page 3

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The future is difficult to predict, however, we are confident that IMR will continue to thrive and excel. Here are some bold (and not so bold) predictions for the next ten years.

- 1) IMR will add additional test labs at other locations through acquisitions, mergers and/or start ups.
- 2) More than one hundred employees will work at IMR Test Labs in Lansing alone.
- 3) Significant new test capabilities and technologies will be developed and implemented to better serve our clients.
- 4) An IMR employee will patent a new process or product.
- 5) IMR will manufacture and sell a unique new product.
- 6) A test protocol developed by IMR will become an industry standard.
- 7) IMR will host a week-long ASM Materials Camp to excite young people in materials, science and engineering careers.
- 8) My golf game will continue to improve! (I know that is a pretty lofty goal, but I'm keeping it on the list.)

Much of the credit for IMR's past and future success goes to the efforts and talents of our employees. However, we know that our customers are even more important. As part of IMR's 10th anniversary celebration, a spectacular open house is being planned for Friday, October 5th. We hope to see many of our clients and suppliers at this event. In this newsletter, you will find a number of articles written with an anniversary theme. Enjoy!

Employee Fund Raising -- "Doing Good by Eat'n Good"

We've all gladly paid suggested donations for charity suppers but Fred Anderson, Metallurgical Specialist, has made an important discovery -- to get more money don't ask for it! Fred said, "I noticed that whenever I put out snacks in a public place IMR employees migrate directly towards them. That's how I discovered the secret to getting IMR people together for contributing to the Muscular Dystrophy Association. With help from other employees I held an early spring barbecue. I did not suggest a donation amount. I just wanted everyone to come. It was understood that a donation box would be available but all were welcome whether they donated or not. I paid for the burgers. Everything else; the salads, beverages, desserts, set-up, clean-up was all contributed by coworkers. The result was over \$300 raised! It was a lot of fun and very gratifying to see people giving more money than they would have paid to buy a lunch."

Brenda Arcangeli, Chemical Technician, used a lab pancake breakfast to raise money for her daughter's travel softball team. "I raised \$275. It was enough to get jerseys and shorts for all 14 girls. I smelled like a burned pancake all day long but it was fun!"

Mike Parkhurst, Client Services Representative, has been participating for 8 years in the local AIDS Ride for Life. It's a 100 mile bicycle ride around Cayuga Lake so a Carbo Loading Barbeque was in order. Mike said, "I was overwhelmed with how generous IMR people were with their time as well as their money. A crew worked around the clock to slowly smoke the meat for the pulled pork barbecue. That raised \$340 plus."

Barb Andrews, Quality Assistant, is a cancer survivor and works to raise money for the American Cancer Society Tompkins County "Relay for Life". She said, "It's all about the food. Nothing's as personal as having a meal with your coworkers. Everybody here loves to eat so a "Pasta for Life" luncheon raised \$273.10. One contributor cleaned the pennies out of his car so I ended up with the extra 10 cents!"

The Annual IMR Contest!

(Announcer:) **"Why are they wearing glasses?"**



- Paris Hilton claims they're "HOT". IMR must substantiate.
- They're watching The Anaglyph From Space! in 3D.
- IMR's first test of edible eyewear.
- We're ready for Ray Charles night at the Karaoke Bar!

If you are among the first 10 respondents with the correct answer you will win a luxurious IMR Golf Shirt! We'll mail your prize directly to you. One entry per person please. Email your answer to mparkhurst@imrtest.com.

IMR Charleston Continued from Page 2

Debbie Fourney continues to be active on The Minerals, Metals, and Materials Society (TMS) Professional Registration Committee. This committee meets biannually to oversee the professional engineer's exam for materials engineering. Not only does this require writing new exam questions but it also involves reviewing previous questions for their appropriateness, lack of ambiguity, and their current timeliness.



Debbie has also been invited to participate on the National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals Engineering Committee. The committee consists of Engineers from all 50 states and Canada. They meet four times a year at Clemson University to review and write questions for the Fundamental Engineering (Engineer Intern) exam which covers math, chemistry, dynamics, thermodynamics, engineering economy, strength of materials, and other basic engineering courses

One of the most interesting samples ever analyzed at IMR Test Labs – Charleston came through the lab this year. It was a piece of 2000 year old steel, reportedly recovered from a Roman era shipwreck. The steel was suspected to be a piece of raw material for use by metal workers. It would likely become fabricated into a sword or other weapon.



Five Years of Progress in Louisville

By Brett Miller, Laboratory Director and Metallurgist



We are happy to announce that IMR Metallurgical Services in Louisville will be celebrating our fifth anniversary this fall! We are still growing, including the recent hiring of a new technician, chemist and metallurgical engineer. This brings us up to a staff of thirteen professionals that are dedicated to being the best materials laboratory in the region. The list of clients we support is expanding and our marketing efforts are continuing to provide a variety of new opportunities. We continuously monitor customer satisfaction and try to address the ever changing needs of the marketplace.

We have completed a wide variety of interesting projects in the last year, including analysis of pellets from a poached deer, cracked dentist drills, solid gold jewelry that wasn't, and sand discovered in a gas tank! We are always looking for new opportunities to expand our services and we have recently purchased a CNC mill to facilitate larger mechanical testing jobs and materials investigations. The team in Louisville is looking forward to greater challenges and larger opportunities in our next five years!

A Decade of Progress At IMR Test Labs Lansing, NY

2007 Tenth Anniversary Celebration!



2005 A new 10,000 square foot expansion opens in September. This and previous expansions have increased the lab size to 30,000 square feet.

2002 IMR opens its third lab. This time in Louisville, KY.

2001 Charleston, SC is the location for IMR's second laboratory



1998 The local Chamber of Commerce chooses IMR Test Labs as "New Business of the Year". The lab celebrates its first open house on May 15th.

1997 In late December IMR Test Labs opens for business. The new lab boasts chemistry, mechanical testing and failure analysis departments plus a machine shop.



New Members of the IMR Family

Bob Southworth

ESS Test Specialist — Lansing, NY

Bob is from Cortland, NY and received his Electrical Eng. and Technology Associates Degree from SUNY Morrisville. He and his two boys (ages 6 & 12) spend their time with Civil War reenactments, car shows, swimming and hiking in the Adirondacks. "Elfie" their tabby cat is also part of the party.



Paula Horton-Fearn

Technical Report Specialist — Lansing, NY

Paula has an Associates Degree in Business Admin. from Keystone College and attended the University of VT while working for the VT Cancer Center. She has worked in several biologically related positions. Paula enjoys vegetable and flower gardening and shares "SERI" (short for serious) a mixed breed pointer with her husband Jeff.



John DeFranks

Nonmetallic Test Specialist — Lansing, NY

John hails from balmy Buffalo, NY. He has studied applied physics at SUNY Geneseo and Material Science & Failure at RIT where he is currently preparing to defend his thesis. So, for now John reads a lot of non-fiction. He also enjoys doing home improvement projects.



Diane Hartwig

Associate Chemist — Lansing, NY

From Neversink, NY, Diane has a B.S. in Chemistry from St. John Fisher. Her previous work experience includes biological testing for Monsanto and UCB Pharmaceuticals. Watch for her mean slap-shot when she plays ice hockey against her goalie husband Adam. She and Adam both enjoy hiking the Finger Lakes trails together.



Sophia Ezell

Nonmetallics/ESS Lab Tech. — Lansing, NY

Sophia grew up just a few miles from IMR in Groton, NY. She has a Math/Science Associates Degree from TC-3 and a BS in Animal Science from Cornell. Recently married, she and her husband Stephen share an interest in making Renaissance Costumes. She enjoys bow hunting and is introducing Stephen to horseback riding.



Scott Ponton

Building Maintenance — Lansing, NY

Scott returned to Upstate New York after managing his own successful residential and commercial contracting firm in Colorado. He's also been an Emergency Medical Technician for 6 years and has firefighting and hazmat experience. He enjoys spending time with his four children, bicycle riding with his wife Sherry and writing short stories.



Joe Gassenheimer

Chemical Tech. — Charleston, NC

Joe comes to us from the College of Charleston with a B.S. degree in Chemistry. Joe is originally from Alabama and enjoys reading, cooking and Alabama football.



Christa Bogan

Receptionist — Charleston, NC

Christa has joined IMR-Charleston as a part-time receptionist. She has previously worked for a local medical practice. Christa is a Charleston native. She and her husband are kept busy raising three active boys.



Interns at IMR-Lansing

(Seated) Dennis Prentice, Nonmetallics Intern;
(Standing, left to right) Stefan Christie, Summer Helper; Dan Cheatham, Chemistry Intern; Brad Argyle, Chemistry Intern; Michael Schrameyer, Mechanical Intern.

J.T. Zellers

Metallurgical Engineer — Louisville, KY

J. T. earned his B.S. in Materials Engineering at the University of Kentucky where he also worked with carbon nanotubes. J.T. enjoys camping and hiking, and he plays several instruments including guitar, sitar, banjo and piano.



Jacob Goran

Analytical Chemist — Louisville, KY

Jacob holds a B.S. in Chemistry and a B.A. in Music from the University of Louisville. He previously worked in an Environmental Chemistry Laboratory which was part of the U.S. Army Engineer R&D Development Center. Jacob is a frequent jazz performer and enjoys running and weightlifting.



Brian Metcalfe

Machinist/Metallurgical Technician — Louisville, KY

Brian is a Certified Journeyman Tool & Die Maker with over 20 years of experience in the forging industry. Brian also owns and operates a small landscaping business. He enjoys playing golf and spending time with his two sons.





New Capabilities at IMR Test Lab Lansing, NY



In the past 12 months IMR has acquired several major pieces of equipment to help us better serve our clients. (Clockwise from bottom left) Jody Russell, Lead Specialist-ESS & Electrical Testing, with Q-Fog Cyclic Corrosion Chamber; Fred Niggli, Machine Shop Preparation, with Struers Exotom-150 Chop Saw; Stan DeForest, Nonmetallics Manager, with Wabash 25 Ton Hydraulic Molding Press; Otto Roser, ESS/Product Test Specialist, with CM Rapid Temp Furnaces; a look inside the furnace at 2100°F.



Audits at IMR by Deena Crossmore, VP, Corp. Quality

Quality is very important to everyone at IMR and each year IMR has several audits to assure that we're meeting quality standards. In IMR's early years these audits were strictly to satisfy customer's requirements or ISO Guide 25 (the precursor to ISO 17025). But, as we have progressed the variety of audits have expanded. Now some audits satisfy newly legislated requirements. Examples of these are the RoHS (Restriction of Hazardous Substances) directive and the PED (Pressure Equipment Directive) which regulates storage tanks and aerosol containers. Other audits are industry specific such as those performed by the US Postal Service to approve us for testing mail boxes or SEFA (Scientific Equipment and Furniture Association) for approval to test laboratory furniture. Our latest audit was to the NQA-1 standard used in the nuclear industry. This is due to the fact that in the coming years more nuclear power reactors are scheduled to be built with components which must be qualified. Lastly, we have our audits to maintain our accreditations with A2LA and Nadcap. Each of these in-depth audits usually requires a week to complete. We always welcome customer audits. At IMR we all see audits as a great learning experience and we're proud to be up to the challenges.

Classes at IMR Test Labs

IMR's Aerospace Metallography and Coating Evaluation training program, which has been formally endorsed by Pratt & Whitney Aircraft, is now in its third year. 2006 was extremely busy, with classes being taught not only at IMR, but also in far-away locations such as Singapore and Tokyo -- and things have not slowed down in 2007. Two of our instructors, Art Geary and John Sauer, recently returned from teaching an encore week-long course in Singapore. Doug Puerta also taught a version of the Aerospace Metallography and Coating Evaluation course in May at the International Thermal Spray Conference in Beijing. Here are upcoming courses to be taught at IMR:

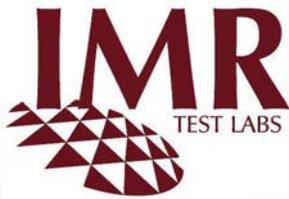
Scanning Electron Microscopy with Dr. Ed Brothers — September 10 through September 14, 2007; Lansing

Aerospace Metallography and Coating Evaluation with Doug Puerta, Art Geary, John Sauer and Gregg Anderson — September 24 through September 28, 2007; Lansing

Practical Fracture Mechanics & Fractography with Ron Parrington, Dave Christie and Dr. John Landes — October 8 through October 12, 2007; Lansing

Nonmetallic Materials Workshop with Ron Parrington — December 13 and 14, 2007; Charleston

For more information about IMR courses contact Doug Puerta at dpuerta@imrtest.com



IMR Expands its Composite Testing Capabilities

IMR is proud to announce expanded testing capabilities for composites and aerospace adhesives. We test to many standards including Lockheed Martin, Sikorsky, Boeing, SACMA and ASTM. Some examples of our capabilities include:

- ASTM D638 Tensile Properties of Plastics
- ASTM D5766 Open Hole Tensile Strength
- ASTM D695 Compression Properties of Plastics
- ASTM D7136/D7137 Compression after Impact
- ASTM D790 Flexural Properties of Plastics (3 and 4 point)
- ASTM D3039 Tensile Properties of Polymer Matrix Composite Materials
- ASTM E1545 Glass Transition by TMA
- ASTM D6484 Open Hole Compressive Strength
- ASTM D2344 Short Beam Shear Strength
- ASTM D4255 In-Plane Shear

We can now perform most adhesives testing such as flow, drape, tack, t-peel and tensile shear. Our hot-platen compression press provides the ability to perform many adhesive tests as well as sample preparation. For more information contact Stan DeForest at stan.deforest@imrtest.com.

**Not just data.
Knowledge.**

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**Photomicrograph of
Tungsten Carbide
In Cobalt Binder**
Photomicrograph by
Doug Puerta

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It's called a Viscous Damper and is manufactured by Taylor Devices in North Tonawanda, NY. It absorbs the shocks of strong winds and earthquakes on large architectural structures. Bill DeLaurier, Director of Materials & Product Evaluation examines it prior to corrosion testing in one of IMR's environmental stress simulation chambers. Examples of this damper are destined for a large structure in Australia. This baby weighs 900 pounds and will absorb an output force of 400,000 pounds!

Visit our website www.imrtest.com

IMR Test Labs 10th Anniversary Open House and Technical Seminars!



Come join us in the heart of the Finger Lakes
for this fun and educational event.

Free Seminars:

Fracture Mechanics with noted authority Dr. John Landes

**Automotive Plastics-A Love/Hate Relationship
with IMR Nonmetallics Manager, Stan DeForest**

- Free SEM Analysis (1/2 hour max)
- Live Demonstrations
- IMR 10% Discount Coupon
- Ithaca Beer Tasting
- Barbeque Lunch
- Gift Bags
- Door Prizes
- Grand Prize Drawing

All our guests are invited to stay for the
Fantastic Fireworks Display!

Friday, October 5, 2007

11:30am until *Fireworks at Dusk!*

You must pre-register for the open house.

Please complete the back of this invitation and

FAX to 607.533.9210

or email to jcanfield@imrtest.com

Yes! I will be attending IMR's Open House

Name: _____

Company: _____

I'll be joined by:

1. _____

2. _____

3. _____

Send map _____ (fax number or email address)

For Discounted Hotel Accommodations contact Jane at jcanfield@imrtest.com

I would like to meet with someone to discuss:

I would like to attend the following seminars

12:00PM – 1:00PM
An Introduction to Fracture Mechanics
By Dr. John Landes, Professor of Mechanical and Aerospace Engineering, Engineering Science at the University of Tennessee

Fracture mechanics is the science of determining the resistance to fracture of a material or an engineering component; a topic of great public interest since the Minneapolis Bridge Disaster. Dr. Landes will present a broad overview of fracture mechanics introducing important concepts and theories. Case studies will be utilized to illustrate the application of fracture mechanics to solving problems.

1:30PM – 2:30PM
Automotive Plastics: A Love/Hate Relationship
By Stan DeForest – Nonmetallics Manager, IMR Test Labs, Lansing, NY

Plastic materials have found widespread use in automotive and other 'must not fail' applications. Their light weight, low cost, and design flexibility have made them a favorite choice for many critical components. Unfortunately, some commonly specified plastics have characteristics which can lead to failures in the field, potential product recalls and litigation. This presentation will highlight some often overlooked selection and processing issues. Polyamide (nylon), polyester, and polycarbonate are just a few examples of materials that will be discussed. In addition to highlighting the pitfalls, Stan will provide solutions for anticipating and counteracting the risks associated with these materials.

Please fax to 607.533.9210

Or email to jcanfield@imrtest.com