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CastExpo 2008

CastExpo 2008 will be held May 17-20, 2008 at the Georgia World Congress Center, Atlanta Georgia. CastExpo is held once every three years and it is the single largest metals related trade show and exposition in North America. It has an international audience of over 12,000 participants from more than 40 countries. Also, more than 450 companies will be showcasing their products.

ARMI will be exhibiting in **Booth 3116** at this joint conference of the **American Foundry Society (AFS)** and the **North American Die Casting Association (NADCA)**. This is the only trade show in the Western hemisphere for the entire metal casting industry.

Please stop by our booth to discuss all of your **Certified Reference Material (CRM)** and sample preparation needs. If you have any technical problems concerning Optical Emission or X-Ray Fluorescence analysis, we will have experts attending that will be able to help.

Also, we will be exhibiting our new **Aerosol-to-Liquid Particle eXtraction System (ALPXS)**. This item allows for near real-time analysis for air-borne particulates and contaminants. Stop by to see this new cutting edge technology.

This show is quite an event and since it only happens once every 3 years -- **please try to attend.**

Popular Specific Alloy Calibration Sets

ARMI has produced several new brochures that list CRMs for calibration sets for specific metal matrices: Carbon and Low-Alloy Steel, Tool Steel, Cast Iron, Austenitic SS, Martensitic SS, High Temp SS, Duplex SS, High Mn SS, Corrosion Resistant Nickel, High Temp Nickel, High Purity Nickel, Cobalt, Titanium, Wrought Copper, Cast Copper, Wrought Aluminum, and Foundry Aluminum. These brochures contain listings of specific alloys and representative elemental concentrations for each CRM.

These new calibration sets are an update and

expansion of ARMI's very popular pre-selected sets. The certification of many new materials and our CRM inventory expansion has resulted in this extensive revision project.

Many CRM calibration sets are not specific alloys, so the CRMs would have limited use after calibration. After calibrating with the ARMI CRMs, they would also be very useful as "Type Standards", since each CRM is a specific alloy.

Although these brochures can be accessed from the ARMI web site, we would be happy to mail any of them upon request.

DC Arc Instrumentation Update

ARMI is moving forward with being able to provide D.C. Arc instrumentation at the beginning of 2009. It has been slow going, but significant progress has been made this year.

It is quite an exciting project because some analytical applications can still only best be served by this "old time" technique.

Solid Sample Analysis by DC Arc:

- ✓ **routine-analysis** of any powder, even refractories (e.g. SiC)
- ✓ metals, metal oxides, carbides, sulfides, borides, nitrides, graphite

- ✓ soil samples, sludges, ashes
- ✓ geological and environmental samples
- ✓ **organic material** (plants, tissues, food, oil products...)
- ✓ nuclear applications
- ✓ forensic **microanalysis**
- ✓ **identification tests...**

Direct analysis of solids has some distinct advantages: no costly and time-consuming digestion and very low detection limits.

This may be the right choice for your lab. **Please contact us for further information.**



Recently Certified Standards & New Alloys

We continually listen to our customers' requests and develop standards to meet their needs.

The following list of CRMs has been certified since the last Newsletter:

Carbon, Low-Alloy, & Tool Steels

IARM	Grade	UNS #	Cert.
30F	AISI 4140	G41400	Oct-07
31E	AISI 4340	G43400	Nov-07
35G	1¼Cr ½Mo	K11572	Nov-07

Stainless, & High-Temp. Steels

IARM	Grade	UNS #	Cert.
23C	17-4 PH	S17400	Oct-07
98B	Kovar	K94610	Nov-07
212B	Alloy 2205	S32205	Oct-07

Titanium Alloys

IARM	Grade	UNS #	Cert.
178B	Ti 6-6-2	R56620	Apr-08
269A	Ti 8-1-1	R54810	Apr-08

Nickel Alloys

IARM	Grade	UNS #	Cert.
51C	Alloy 400	N04400	Feb-08
59C	Alloy 825	N08825	Oct-07
59D	Alloy 825	N08825	Nov-07
157B	AL-6XN	N08367	Nov-07
275A	Alloy 925	N09925	Feb-08
66C	Alloy C276	N10276	Feb-08
100C	Haynes 556	R30556	Nov-07

We also maintain a long list of re-issued and soon-to-certify materials. Please check out the **Material Status** section of our web site at: www.ARMI.com.

The following lists contain new alloys recently added to our lineup of standards, and are yet to be

started/certified:

Stainless, & High-Temp. Steels

IARM	Grade	UNS#
276A	Alloy 864	S35135
289A	AISI 301	S30100
291A	M-152	S64152
292A	LDX 2101	S32101
294A	NMS J38	N/A
295A	NMS 140	N/A
296A	NMS MDC	N/A
301A	Alloy 2507	S32750
302A	Alloy 254SMO	S31254
308A	Alloy C-250	K92890
309A	Alloy C-350	K93540
316A	Alloy 253MA	S30815
317A	Alloy 2304	S32304
318A	Alloy 16-6-1.5-1.5	NA
319A	Zeron 100	S32760

Carbon, Low-Alloy, & Tool Steels

IARM	Grade	UNS#
233A	AISI 1144 B1	G11440
238A	F 91	K91560
281A	AISI T-4	T12004
299A	D6-AC	K22925
304A	AISI M-1	T11301
305A	NIT 135M	K24065
306A	AISI M-50	T11350
307A	AISI 1118	G11180
320A	AISI M-35	T11335
321A	Grade 722 Steel	NA
322A	Grade 75S Steel	NA

Nickel Alloys

IARM	Grade	UNS#
272A	Alloy 706	N09706
273A	Alloy 720	N07720
274A	Alloy 725	N07725
275A	Alloy 925	N09925
277A	Rene 77	N/A
282A	Alloy HR-120	N08120
283A	B1900	N/A
287A	Udimet 500	N07500

Copper, Brass and Bronze Alloys

IARM	Grade	UNS#
184A	CDA 941	C94100
263A	Fed I-848A	N/A
264A	Fed 844	C89831
265A	Fed I-836	C89833
266A	Fed III-932	C89835
267A	CDA 947	C94700
278A	CDA 145	C14500
279A	CDA 182	C18200
284A	CDA 962	C96200
288A	CDA 963	C96300
293A	DHP Copper	N/A
298A	CDA 976	C97600
310A	CDA 907	C90700
313A	CDA 693	C69300

Titanium Alloys

IARM	Grade	UNS#
261A	Ti 3-2-5	R56320
262A	Ti 7-4	R56740
271A	Ti 5-2-5	R54520
280A	Ti 4-4-2	N/A
285A	Ti 6-2-1-1	R56210
286A	Ti 3-8-6-4-4	R58640
297A	Ti 10-2-3	R56410
300A	Ti 6-7	R56700
303A	Ti CP-Gr 7	R52400
311A	Ti CP-0.5Al	(BT1-0)
312A	Ti CP4-Gr 1	R50250
314A	Ti 5-5-5-3	N/A
315A	Ti 4-2	(PT3V)

We have recently added Rene 77, B1900 (PWA 663), and Udimet 500 alloys to our lineup, and are acquiring many more Nickel based turbine alloys.

If you have an interest in these or if you have a need for a specific standard we do not offer, **please contact us**.

ILAP '08 Meeting Dates and Preliminary Agenda

It's that time of year again, ILAP '08, **October 07-10**, immediately following the ASTM E01 meeting, Oct. 07 - 09. This year we will be holding the meeting in Vail Colorado at the Vail Mountain Resort & Spa. Room rates vary between \$139-169 per night.

Vail Mountain Resort & Spa
715 West Lionshead Circle
Vail, CO 81657

Reservations Toll-Free: **(800) 648-0720**

Group Code: **ARMI ILAP 2008**

The meeting will start with the usual Pre-Meeting on Tuesday Oct. 07 in the PM. The ASTM E01 meeting will begin Wednesday Oct. 08 and finish Thursday noon Oct. 09. The ILAP '08 meeting will

pick up Thursday noon Oct. 09 and finish Oct. 10. The purpose of this schedule is to introduce the ILAP group to ASTM, and the ASTM group to the ILAP group.

We have invited speakers to come and discuss new directions of laboratory auditing, as well as the typical hurdles they experience.

We hope to get an update on LA-ICPMS and discuss Spark Ablation and Glow Discharge techniques and the complications of using these techniques in a production environment.

Numerous other things are in the works that hopefully will come to bear. If there is something you would like to discuss or hear about please let us know.



Cast Irons (SUSs) for Drift Correction

ARMI provides the world's best cast iron Set-Up Standards (SUSs) for drift correction. While these new cast irons may be used with any analytical technique, they have been specifically designed and tested for use with Atomic Emission Spectrometers – Optical Emission and Glow Discharge.

The chemistries not only cover the full range of the alloying elements, but many other elements have been added to allow accurate drift correction of the traces.

These new-technique CRMs have been made possible through a joint effort between ARMI and Crucible Research Center, Pittsburgh, PA. Crucible was an original pioneer in powdered metal technology in the early 1960s. These SUSs are produced from ultra high-purity metals. Using a patented inert gas atomization process, this high-quality liquid metal is converted into

an atomized powder in which each tiny particle is a totally homogeneous alloy unto itself. The atomized powder is then consolidated through a hot isostatic pressing (HIP) process resulting in a fully dense, very homogeneous metal, ideal for use as a SUS. The ARMI SUS Set is produced using this advanced technology. The powdered metallurgy microstructure is finer and more uniform than white cast irons produced from the traditional chilled cast process.

The very significant bonus is that the new "Cast Irons from ARMI" have been certified for the entire length of the sample (38 mm) as opposed to the traditional copper plate chill cast materials, which are only usable 10mm to 12mm from the chilled surface. The result is that you receive greatly value for the budget dollar spent.

ARMI Aluminum Set-Up Standards (SUSs)

The homogeneity of the ARMI Aluminum SUS QA series (designed after the popular ALCOA SQ SUSs) is unsurpassed, due to the careful quality control of the continuous casting production process. QA 10 (pure Al), QA 11, and QA12 will drift correct the calibration curves of most aluminum alloys, whether the calibrations are for cast or wrought aluminum. QA 15 should be added for high Si alloys, high Ni alloys or for the analysis of Strontium at trace levels.

The ARMI QA 10 is shipped with every Al based OE instrument from a major spectrometer supplier because of unsurpassed purity as a SUS or calibration reference material.

All of these ARMI SUSs are an exceptional value. Whatever SUSs you are using now makes no difference. The ARMI SUSs can be easily substituted. Try them – you'll like them. **We'll even guarantee it!**

Spectroscopy 101 — October 28th, 2008

We will be holding our very popular 1-day class on the fundamentals of Optical Emission (OE) near our facilities in Golden, Colorado on October 28th, 2008. Topics to be addressed will include: technique theory, spectrometer theory, calibration, sample preparation, accuracy determination, results reporting, routine quality control, trouble shooting, maintenance, and much, much more!

These classes are aimed at instrument operators and laboratory supervisors. Practical experience is emphasized, with an initial overview of theory to provide a firm foundation. You will be turned into

an "O.E. Expert" in just one day!

We can hold this school on other dates as well. Please specify a different date that would meet your schedule and we will try to accommodate your request. We prefer to hold the schools on Tuesdays. Monday and Wednesday would be travel days.

We can also hold the class at your facilities of a date of your choosing. It is less expensive if there are more than 2 attendees because of travel cost.

Please contact us for additional information, possible different dates or to register.

ARMI's Proficiency Testing Program (PTP)

ARMI's PTP is a very popular part of many Quality Assurance efforts. **The reasons are because of the many unique features of the ARMI PTP:**

- ✓ The "test sample" is an actual CRM, with a 95% Confidence Interval.
- ✓ Your results are sent back to you within 48 hours by fax and/or e-mail.
- ✓ The color-coded results are very easy to interpret.
- ✓ If there are out-of-tolerance results, ARMI will help you determine the cause.

- ✓ Helps to satisfy both internal and external auditors.
- ✓ Is a great part of any QA/QC program.

The ARMI PTP allows for fast corrective action in case of problems. **It is an economical, prompt, and sure way to provide a periodic assessment of a laboratory's performance.**

This Program continues to grow and expand with new materials being added annually to assist our many satisfied participants. **Let us help you and your laboratory have a successful QA program too!**

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**Meinhard
2008 Catalog**

Quite a few new items have been added for 2008; including flared-end peristaltic pump tubing, new ICPMS cones, new spray chambers, and more. Check the box on the **Fax-O-Gram** below to get your copy.

- ✓ Nebulizers – glass, quartz, and Teflon PFA.
- ✓ Torches
- ✓ Spray Chambers – glass, quartz, and Teflon PFA.
- ✓ Peristaltic Pump Tubing – Flared-End, too.
- ✓ Peristaltic Pumps from Spetec.
- ✓ Sample Prep Accessories from Spetec, and Analab.
- ✓ ALPXS



The Leader in Application-Specific Certified Reference Materials.

FAX-O-GRAM

Please indicate your needs. When finished please FAX this form back to us at (303) 216-2649

Catalog Type:

- ARMI **General** Catalog
- ALCAN **Aluminum** Catalog
- Meinhard **Glass Products** Catalog

Customer Classification:

- Foundry / Producer / General Industry
- Commercial Lab
- Academia
- Other — (Please list in comments area)

Please Respond:

- I **need** your current catalog.
- I **need** information on ISO 17025 compliancy.
- I **need** information on Proficiency Testing (PT).

Method of Analysis:

- OE Spectroscopy
- XRF Spectroscopy
- ICP / ICPMS
- Other — (Please list in comments area)

- Please **contact** me.
- Please **leave** me alone.

Comments:

Name _____

Address _____

Phone _____ E-mail Address _____

ISO 9000 Quick Quality Survey

(Please write additional comments in block provided above. Thank You!)

- Product Quality:** Excellent Good Fair Poor
- Service Quality:** Excellent Good Fair Poor

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