On October 6-8, 2002, the International Titanium Association (ITA) will hold the 18th Annual Conference & Exhibition at the Royal Pacific Resort, a Loews Hotel at Universal Orlando in Florida.

The ITA Conference serves as a gathering for hundreds of titanium related professionals. All facets of the titanium industry will be represented, providing an unprecedented opportunity for networking with both existing and new colleagues. Attendees of the conference stay current on issues essential to successful titanium practices as well as gain valuable insight through exchanging experiences with their colleagues. Other conference events include the Keynote Speaker, Annual Meeting of the Members, the Titanium Achievement Award, and other prize contests.

In addition to enjoying all the sights and sounds of the conference, attendees will have the opportunity to participate in the 8th Annual Golf Classic at the legendary Orange County National Golf Resort on the Panther Lake course.

The ITA Conference has something to offer everyone. So whether you’re new to the titanium industry or a seasoned veteran in the field, ITA delivers quality resources for your organization. We hope you will be a part of this event.

Call For Papers Extended
Due to recent modifications in the preliminary agenda for the 18th Conference & Exhibition Program, ITA will extend the “Call For Papers” deadline to May 1, 2002.

Interested authors need to submit a 300 word or one-page abstract of a topic of interest to a broad audience in your area of expertise related to the titanium industry. We encourage you to contribute as well as contact your colleagues who will have something special to offer to this event.
What’s New in Titanium?

Perryman Company Creates New Web Site

The Perryman Company announced that it recently introduced its new company web site at www.perrymanco.com. This new site hosts user-friendly features enabling customers to navigate through the various areas such as products and capabilities, requests for information and press releases. The web site also provides the user with background information regarding the company as well as pertinent contact information. For more information visit the Perryman Company on the internet at www.perrymanco.com or call 724-746-9390.

ITA Participates at Industrial College Study

For the second year in a row the International Titanium Association (ITA) has participated in supporting the Industrial Colleges Industry Study Program. On March 8, 2002 Mr. Charles Entrekin, TIMET, represented the ITA in discussions at the Industrial College of the Armed Forces (ICAF) in Washington, DC. Mr. Entrekin’s presentation provided an overview of titanium metal, the production and processes endured by titanium, as well as current and emerging applications for titanium metal. He further explained the various relationships that are developed within the industry and how they interact with one another. Of particular interest to the group was Mr. Entrekin’s characterization of innovative research and development efforts that may eventually impact military capabilities.

This is the second year the ITA has participated in this event. Forty students and faculty participated in this event. As part of the study, students will incorporate the discussion and compose a report based on the contemporary nature of the strategic materials industries and their posturing to support our national security needs. This encompasses the entire spectrum from building national economic and industrial strength to actually supporting the nation’s military needs in peace and war. This year’s research effort is concentration on lessons learned in the commercial sector, which may translate into new ways of managing and leading within our government.

Titanium Tubes Enhance Life of Heat Exchanger in H2S, NaCl

Two new grades of titanium tubes are now available for heat exchanger and piping applications in the hydro metallurgy, liquid natural gas, petro-chemical refining, and salt refining industries from Sandvik Steel, Sweden. The two new grades, designated ASTM/ASME grades 12 and 16, offer enhanced corrosion properties. Grade 12 is titanium alloy containing 0.03% molybdenum and 0.8% nickel. Grade 26 is an unalloyed titanium with the addition of 0.08 to 0.14% ruthenium to increase corrosion resistance.

The size range available covers outside diameters from 8 to 35 mm in tube lengths up to 28 meters, supplied as straight or as U-bent tubing. Some tubes operate in highly corrosive tube side condition of 8000-ppb hydrogen sulfide gas at 93°C (200°F), and shell side sea water with 0.2 to 0.5 ppb chlorine at an average temperature of 25°C (80°F).

For more information contact AB Sandvik Steel, at +46 26 26 37 41 or visit their web site at www.steel.sandvik.com.

Right Photo: Heat Exchanger
Exhibition Filling Quickly

Hurry the exhibition is almost sold out and it’s only April! There are only 5 exhibit spaces remaining for the 2002 Exhibition. Upon reserving an Exhibit Space you must have one Conference attendee who is prepaid for their conference registration. To select your booth space visit the conference area of the ITA web site at www.titanium.org or complete the attached registration form and fax to (303) 404-9111.

Exhibition Colors

The Exhibit hall colors are burgundy and white back drape, burgundy side drape, and burgundy table skirts

**Your Exhibition Booth Rental Fee Includes:**
- 3’high side drape & 8’ high back drape
- One 6’ x 30” skirted table
- Two side chairs and wastebasket
- Security throughout the Conference & Exhibition
- Aisle carpet, Maintenance & Cleaning
- All Meal Receptions & Events
- Advance attendee list for pre-show distribution
- A 7”x 44” identification sign
- Listing on ITA web site
- Listing in all ITA promotional materials
- Listing in registration materials.
  plus... 1 complimentary exhibit booth pass

### 2002 Participating Exhibitors Include:

<table>
<thead>
<tr>
<th>Booth #</th>
<th>Organization</th>
</tr>
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<tbody>
<tr>
<td>102</td>
<td>Howmet Corporation</td>
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<td>103</td>
<td>RTI International Metals, Inc.</td>
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<tr>
<td>104</td>
<td>Strohecker Incorporated</td>
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<td>105</td>
<td>Zak Incorporated</td>
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<td>106</td>
<td>Solar Atmospheres</td>
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<td>107</td>
<td>Dynamic Machine Works Inc.</td>
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<td>108</td>
<td>Xiamen Huaxia</td>
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<td>109</td>
<td>Allegheny Technologies Incorporated</td>
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<td>110</td>
<td>Bodycote Rancho Dominguez</td>
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<td>Peryman Company</td>
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<td>Reading Alloys Inc</td>
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<td>AstroCosmos Metallurgical</td>
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<td>CISC “CETAB” Nikopol</td>
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<td>115</td>
<td>Spectore Corporation</td>
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<td>116</td>
<td>TIMET</td>
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<td>117</td>
<td>Rome Metals Inc</td>
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<td>118</td>
<td>Dynamet Incorporated</td>
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<td>119</td>
<td>Retech Systems LLC</td>
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<td>122</td>
<td>Stork HGBMBH Uralredmet</td>
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<td>123</td>
<td>GFE Metalle und Materialien GmbH</td>
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<td>124</td>
<td>Consumer Products Display</td>
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<td>Strator Performance Materials</td>
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<td>Strategic Minerals</td>
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<td>FAE S.A.</td>
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<td>Japan Titanium Society</td>
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<tr>
<td>134</td>
<td>Bahco/ Milford Saw Blades</td>
</tr>
<tr>
<td>135</td>
<td>Ulbrich Stainless Steels &amp; Special Metals, Inc.</td>
</tr>
</tbody>
</table>
We appreciate your participation in this year’s Orlando Exhibition. Please note that upon reserving an Exhibit Space you must have one Conference attendee who is prepaid for their conference registration.

Yes, we would like to reserve a booth at the upcoming Orlando Exhibition!

(please insert name of attendee)

**BOOTH PREFERENCE:** Indicate the booth number in order of preference that you would like to reserve:

1st Choice: ________

Send Booth packet information to:

Name: __________________________________________

2nd Choice ________

Company: _______________________________________

Address: ________________________________________

3rd Choice: ________

City, State, ZIP: _________________________________

4th Choice: ________

Country: _______________________________________

Exhibitor Company:

(Exact spelling of how you would like your company displayed – limited to 32 characters)

**REGISTRATION FEES:** Your receipt and booth packet will be mailed to you once the ITA has processed your booth registration.

<table>
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<tr>
<th>Booth Size</th>
<th>Before April 1, 2002</th>
<th>After April 1, 2002</th>
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<tbody>
<tr>
<td>10’ x 10’ Booth</td>
<td>$275 ITA Members</td>
<td>$1,499 Non-Members</td>
</tr>
<tr>
<td>10’ x 20’ Booth</td>
<td>$499 ITA Members</td>
<td>$1,799 Non-Members</td>
</tr>
<tr>
<td>20’ x 20’ Booth</td>
<td>$749 ITA Members</td>
<td>$2,499 Non-Members</td>
</tr>
</tbody>
</table>

1 complimentary booth worker pass is provided. Extra booth worker passes are available for an additional charge.

**Additional Exhibit Booth Worker**: (Enter Quantity) _____ $150 ITA Members _____ $150 Non-Members

*For booth staff not participating in the Conference. This will enable the booth worker to participate in all food related activities.

**Name(s) of Exhibit Booth Worker:**

________________________________________

________________________________________

**ENTER GRAND TOTAL:** $_________

**QUESTIONS?** Please visit the ITA Web Site at: www.titanium.org (Click on Conference icon) or contact (303) 404-2221

**Paying by Check?**

Be sure that your check is in U.S. currency drawn from a U.S. Banking Institution, payable to the International Titanium Association. Include a printed copy of this completed form with your check and mail to: ITA, 350 Interlocken Blvd., Suite 390, Broomfield, CO 80021

**Paying by Electronic Wire?**

Banking Institution: Colorado Business Bank, 821 Seventeenth St., Denver, CO 80202 USA

Telephone Number: 1-303-413-6000

ABA Routing Number: 102003206

Credit: International Titanium Assoc.

Account 4006769

Must include $25 U.S. Wire Fee

**METHOD OF PAYMENT:** (Prepayment Required)

Paying by Credit Card? Select one **Note: Only MasterCard or Visa Accepted**

☑ Credit Card Number:

_________ ___________ ___________ ___________ ___________ ___________

Name Exactly as Appears on Card: ________________________________

Expiration Date: Month: __________ Year: __________

Authorized Signature

**CANCELLATION POLICY:** A $15 Processing fee will be charged on all cancellations.

Cancellations received in writing before August 19th will receive 75% Refund. Cancellations received in writing before September 16th will receive 50% Refund. No Refunds will be provided after September 16th.

Mail Completed Form to: International Titanium Assoc., 350 Interlocken Blvd., #390, Broomfield, CO 80021-3485 USA

OR

Fax Completed Form to: International Titanium Assoc. (303) 404-9111
The ITA Safety Committee has announced plans for a new publication focused on the safe processing and handling of titanium. According to Joseph Knecht, Committee Chairman: "The safety committee members have worked hard to raise the level of safety awareness within the industry for many years, but have stopped short of publishing a comprehensive guide that could be used as a reference for users and producers." "Several years ago, long time committee chairman Eldon Poulsen (TIMET) worked with Stephen Stocks (OREMET), Steve Giangiordano (RMI Titanium Co.), Eric Jarvis (IMI), and Jim Silvus (Allvac) to publish Safe Design for Melting Systems for Titanium that will serve as a basis along with more recent industry experience for covering the melting processes."

Along with the continued focus on melting incidents and safeguards, other papers have been presented at committee meetings over the years dealing with confined space risks, dust collection, handling of powders and fines, fire fighting, safety program management, as well as other areas. Knecht added: "Our goal is to build on the lessons and experience of the past, capture the recent advances in technology and controls to produce a guide that will serve as a very practical reference for both manufacturers and users of all forms of titanium."

Although the guide is still in the early stages of development, the topics under consideration include: Sponge and powder handling safety, Melting Safety for Vacuum Arc (VAR), Electron Beam (EB), Plasma Arc (PAM), and Induction Skull (ISM) processes, Hot & Cold Working Safety Considerations, Machining Safety Considerations, Fabricating Safety, Scrap Handling, Dust Collection, Confined Space Risks, and Firefighting.

Committee members will be contributing in their specific areas of experience and expertise. The committee plans to have the guide available through the ITA by mid 2003. This year on February 21, 2002, the Safety Committee met at the RMI Titanium Company facility and had 30 participants. Proceedings of the most recent and selected previous meetings are available to interested members by contacting Stacey Jorgensen at: sjorgensen@titanium.org.

ITA Welcomes Toho Titanium Company, Ltd.

Toho Titanium Company, Ltd. was founded in 1953. The company is currently located at Chigasaki, Chigasaki-City, Kanagawa, Japan. The primary duties include the manufacturing of titanium metals, catalysts for propylene polymerization, and electro-ceramic materials. There are roughly 370 workers at Toho Titanium Company, Ltd. For more information visit them at their web site located at www.toho-titanium.co.jp or call +81(0) 467-87-2843.
Technical Discussion Forum

Just when you thought the ITA web site couldn’t get any better, you discovered the ITA Technical Discussion Forum. The Technical Discussion Forum is an excellent opportunity to educate the general public on titanium. This Forum allows individuals to post questions or seek advice on applications involved with titanium.

The openness and transparency of technical information benefits industry at large, a public forum such as this will only be successful if individuals respond to the posted questions. ITA relies on membership to actively participate in assisting with technical questions. The next few editions of the newsletter will feature the most recent inquiries that need your help.

How to do I access the Technical Discussion Forum?
2. Click on the “Technical Support” tab from the navigation bar.
3. Click on Technical Discussion Forum.
4. The discussion forum is divided among many topics and areas of interest. Pick your area of expertise and enter your response.
5. Or, go to the bottom of the screen and click on “Getting Started”. This is a basic tutorial.

How do I respond to a question?
1. Click on the question.
2. In the “Add a Message” box, write your comments (No password is necessary).
3. Then click on the Preview/Post Message button.

Why should I participate?
ITA relies on membership to actively participate in assisting with technical questions. With the Technical Discussion Forum, you can check in and respond at your leisure. That is the beauty of this program! You never know what potential customer contacts you may find by answering the posted inquiries.

The Association is designed to educate people on titanium. Your participation in this program is greatly appreciated.

Special Note For The Frequent Traveler… The bulletin board is traveler friendly! For those often on the road, you may check the bulletin board by viewing the topics for a day or week. An overall view of issues can be found by utilizing the tree view icon.

Inquiries - Do you have a comment?.

Corrosion: Hardness Grade 12 above 92 RB
What information or experience exists that would show Grade 12 to be suitable in oil & gas with H2S present and Hardness at 95 RB - above 92 RB max. allowed by NACE MR0175 spec.? Any SSC or Crevice corrosion susceptibility above 92 RB?

Welding: Mig welding titanium
I’ve been working on a trailer mounted weld shop for the military and wish to weld grade 5 titanium in field conditions for repairs. Is this a feasible prospect to put effort to without any use of a purge chamber?

Shielding Gas For GMAW-P on Thin Grade 2
We are going to do some Pulsed GMAW on thin gage Grade 2 Titanium. What shielding gas works best, Pure Argon or an Argon Helium mixture? If a mixture works well what should the percentages be? Our material is .9 to 1.4 mm thick. All the joints are lap joints. We are using ERTi-1 Filler material.

Medical Applications
A discussion has taken place asking if there is any reaction to titanium implants when individuals seek electroylogy treatments, with specifically galvanic current. The questions have been asked for dental post implants and joint implants.

Titanium Oxidation
I am preparing a seminar & a small project for oxidation of ti-produts, mainly titanium pipe used in sea water applications. Can I get the details how oxidation is to be done for these or are there any web site extracts available.
ITA Classified Ads

ITA On-line Classified Ads

ITA members rely on the ITA website for the latest news & upcoming events. The website reaches more qualified personnel for titanium related operations.

Advertise:
Equipment
Materials
Products
or
Business Opportunities

The Classified’s section of the ITA Web Site is located at www.titanium.org. Simply click on ITA E-News & Classified’s icon from the Home Page.

When you submit a classified ad, ITA will proof your advertisement, process your payment, and post it to the website within 2-3 business days. ITA is not liable for confidentiality in classified advertising at any time and reserves the right to reject any advertising not in compliance with ITA standards.

This is a free service to ITA Members

Non-Member Fee: $25.00 for 120-day period. You will be notified via e-mail 3 weeks prior to the expiration date at which time you may renew your ad for an additional 120-days.

Business Opportunities: In Search Of

Marketing Manager
Contact Name: Kathy Migely
Contact Email: kathymigely@hotmail.com
Description: Marketing Manager Marketing Manager who can come into a titanium/super alloys fabricator and conduct an in-depth market analysis to uncover new applications for client’s current product line as well as potential good prospects for new product offerings created from capital equipment. Career advancement prospects excellent. Engineer with 5 to 10 years experience. MBA a plus. West Coast location.

Materials: Wanted

Ti Na Ti Alloy Powders Wanted
Name of Your Company: Ceramet Technologies Pte Ltd
Contact Name: Dunstan Peiris
Contact Email: cmet@ceramet.com.sg
Description: Looking for Ti and Ti-Alloy powders of size <40 microns

Materials: For Sale

Niobium Titanium Rods For Sale
Name of Your Company: Whatcom
Contact Name: David Pollack
Contact Email: davepoll@yahoo.com
Description: This product is 46.5% Titanium. No other composition percentages available. Approximately 5700 lbs. -.126” dia. x 23-11/16” lg. Approximately 900 lbs. -.278” dia. x 23-11/16” lg. Approximately 110 lbs -.131” dia. x 23-11/16” lg. Packaged in crates on 5 skids weighing a total of approx. 7500 lbs.

Calendar of Events

April
6-9  Casting Industry Suppliers Assoc. Spring Conference, San Antonio, TX
7-12  NACE expo, Denver, CO
9-11  Aviation Week MRO, Phoenix, AZ
25-27  Society for Biomaterials 28th Annual Meeting & Exposition, Tampa, FL
29-02  Rapid Prototyping Manufacturing 2002,

May
4-7  Cast Expo ‘02, Kansas City, MO
6-9  Offshore Technology Conference 2002: Deep Into the Future, Houston, TX
6-12  International Aerospace Exhibition & Conference,

Berlin, Germany
12-16  SAMPE 2002, Long Beach, CA
14-15  Friction Stir Welding for Defense Applications, Columbus, OH
15-17  IISI World Conference 2002, Luxembourg
28-30  China Strategies for the Metals Industry, Hong Kong

June
3-6  20th Anniversary Medical Design & Manufacturing Show, New York, NY
8-13  Wire Expo 2002, Chicago, IL
10-13  Aeromat 2002, Orlando, FL
11-13  Power Gen Europe 2002, Milan, Italy
Current Membership Includes the Following Companies

Affinity International, LLC
Allegheny Technologies Incorporated
    Allegheny-Ludlum
    Allvac
    Titanium International
    Wah Chang
    Alpha Source Incorporated
    AstroCosmos Metallurgical
    Bekaert Fibre Technologies
    BIAI / General Titanium Incorporated
    BIBUS Metals AG
    Body Cote Rancho Dominguez
    Cast Alloys Incorporated
    CK Worldwide Incorporated
    Coastcast Corporation
    CONSARC Corporation
    Corrosion Materials
    Deutsche Titan GmbH
    Dynamat Incorporated
    Dynamat Technology Incorporated
    Dynamic Machine Works Incorporated
    Dynamic Materials Corporation
    Excelco Developments Incorporated
    F.W. Hempel & Co.
    FAE S.A. Fabricación de aleaciones especiales
    Flowserve Corporation
    Fort Wayne Metals Research Products Corp.
    GfE Metalle & Materialien GmbH
    GFI Aerospace
    GIB Resources Incorporated
    Grandis Metals
    GITT Ginatta Tecnologie Titanio
    Harvey Titanium Limited
    Hi Tech Alloys
    Howmet Corporation
    Hyundai Titanium Company, Ltd.
    International Titanium Powder
    Itochu Non-Ferrous Materials Company, Ltd.
    Joseph Oat Corporation
    JSC "FIKO"
    K.P.C. Corporation
    Keywell LLC Vac Air Division
    Lectrotherm
    LOTERIOS S.p.A., a TIMET Company
    Luxembourg Company of Metals and Alloys S.A.
    Metem Corporation
    Monico Alloys Incorporated
    Naval Surface Warfare Center
    NF & M International Incorporated
    Noble Alloy Valve
    North American Alloys
    Northwest Institute for Nonferrous Metal Research

    Pacific Cast Technologies, Inc.
    Pacific Titanium, Inc.
    Perryman Company
    Plymouth Extruded Shapes
    Plymouth Tube Company
    Poggipoloni SRL
    President Company, Ltd.
    President Titanium Incorporated
    Reading Alloys Incorporated
    Rome Metals Inc.
    RTI International Metals Inc.
    Galt Alloys Incorporated
    Sandinox Comercio
    Sandvik Special Metals Corporation—Sweden
    Sandvik Special Metals Corporation—USA
    Solar Atmospheres Incorporated
    Solar Atmospheres of Western PA
    Spectore Corporation
    Spemet Company, Ltd.
    STADCO
    Strohecker Incorporated
    Suisman Titanium Corporation
    Sumitomo Corporation of America
    Sumitomo Sitix of Amagasaki Incorporated
    Supra Alloys Incorporated
    TechSpec Incorporated
    Tibrasil Titanio Ltda.
    TICO Titanium Incorporated
    TIMET
    TIODIZE Company, Inc.
    Titania S.p.A.
    Titanium Engineers Incorporated
    Titanium Fabrication Corporation
    Titanium Finishing Company
    Titanium Industries Incorporated
    Titanium Sports Technologies LLC
    Toho Titanium Company, Ltd.
    Trans World Alloys Company
    Tricor Industrial Incorporated
    U.S. Chrome Corporation of California
    U.S. Vanadium Corporation
    Ulbrich Stainless Steels & Special Metals, Inc.
    United Alloys Aircraft Metals, Inc.
    United Titanium Incorporated
    VALTIMET
    VSMPO
    Vulcainium Metals International
    Wellmet International Inc
    Western Titanium Incorporated
    Xiamen Huaxia International Trading Co. Ltd
    ZAK, Inc.
    Zirconium Research Corporation

Founded in 1984 the International Titanium Association is a nonprofit networking trade association for the titanium industry. The primary focus of the Association is to promote the continued growth of the industry as well as educate the public on benefits and implementation of using titanium. Current membership includes 106 organizations.