

TMS2004

Exhibition Directory

133rd Annual Meeting & Exhibition

*Detailing the products and services for over
130 companies taking part in the
TMS 2004 Annual Meeting Exhibition.*

**March 15–17, 2004
Charlotte Convention Center,
Exhibit Hall B
Charlotte, North Carolina**

Show Dates and Hours:

*Monday, March 15, 2004
12:00 Noon–6:00 PM*

*Tuesday, March 16, 2004
9:30 AM–5:30 PM*

*Wednesday, March 17, 2004
9:30 AM–3:00 PM*

Special attractions at the 2004 Exhibition:

Hosted Grand Opening Reception—

*Enjoy complimentary hors d'oeuvres music and
cocktails while touring the Exhibition Floor*
Monday 5:00–6:00 PM

Discounted Lunch Concessions—

*Redeem the ticket in your registrants packet
for a \$1 off lunch, hosted by the Exhibitors
in the Exhibit
Concession Area*

..... All show hours

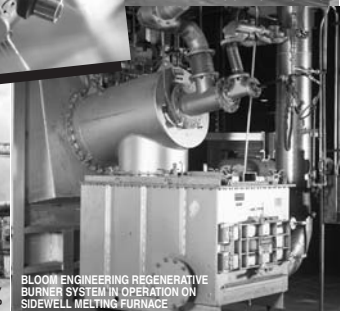
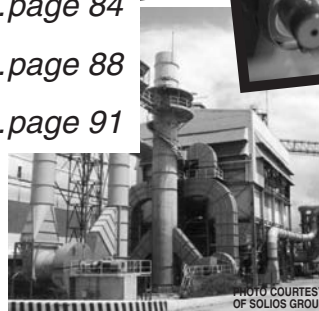
Afternoon Snack—

*Join us in the exhibit hall for an ice cream treat.
Ticket in your registrants packet redeemable at
stations throughout the trade show.*

Wednesday 12:15–2:00 PM

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LISTING OF EXHIBITING COMPANIES AND BOOTH NUMBERS

Company	Booth #	Company	Booth #	Company	Booth #
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Aluminium International Journal	230	Hereaus Electro-Nite Co.....	507	PCE Eng. Ltda.....	708
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Aluminium Times	713	Materials Laboratory.....	538	Precimeter/Sentech.....	800
The American Ceramic Society	815	HMR Hydeq	600	Premelt Systems Inc.....	716
American Metal Market.....	606	Holton Machinery Ltd.....	512	Process Engineering	
Anter Corporation	502	Hönnun	800	Resources Inc.....	712
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The World Review	431	Industrial Heating.....	541	Pyrotek Inc.....	314
AUMUND Foerdertechnik GmbH ...	338	INDUSTRI-TEKNIK,		R&D Carbon	522
B&P Process Equipment		Bengt Fridh AB	800	Rafhönun	800
Systems LLC	617	innovatherm GmbH+Co.KG	522	Resco Products	532
BDH Industries Inc.....	707	JOM	513	Riedhammer GmbH.....	700
Blasch Precision Ceramics Inc.....	807	Kabert Industries	116	Saint Gobain Ceramics.....	223
Bloom Engineering	515	KB Alloys Inc.....	523	Scientific Forming	
BMP Bi-Metal Products	436	KBM Affilips BV.....	433	Technologies Corp.....	813
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Cast Steel Products Inc.....	817	MagChem.....	118	SNF Inc.....	808
COGNEX.....	801	Master Alloys Co.....	416	SoliosGroup.....	408
Cometals	430	McAllister Mills.....	137	STAS	120
CompuTherm LLC.....	130	Menardi Filters.....	725	Stellar Canada.....	322
Corus Ceramics Research Centre...	128	Metallurgical Society of CIM.....	612	Stellar Materials.....	428
CRC Press.....	809	Metaullics Systems Co LP.....	308	SUB (Slovakke strojirn)	800
Davy Process Technology		MEXTRA Eng,		Sunnhordland Mek Verksted	
(Switzerland) AG.....	522	Extrativa de Metals.....	608	AS (SMV).....	800
Deutsche Gesellschaft für		Mid-Mountain Materials	715	Techmo Car s.p.a.	528
Materialkunde (DGM)	437	Mikropul	723	The Institute of Materials, Minerals	
DISA Systems.....	925	Milward Alloys Inc.....	706	and Mining (IOM3).....	138
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Dross Engineering	709	Mobiquip Industries Ltd	501	Thermal Systems America.....	722
EBSA Analytical Inc.....	816	Molten Metal Equipment		Thermcon Ovens BV	236
ECL.....	738	Innovations Inc	613	Thermo Calc Software.....	724
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PRODUCT/SERVICES INDEX:

Refer to this convenient index to locate the exhibiting companies who supply the products and services you are looking for.

AIR POLLUTION

CONTROL EQUIPMENT

Bloom Engineering
Boreal Laser
FLSmith Group
Menardi
Mikropul
OP SIS, Inc.
Procedair Industries
Parker Hannifin Corp
SMV A/S
Solios
SUB (Slovakie strojirni)

ALUMINUM INDUSTRY WEAR PARTS

B&P Process Equipment
C A Picard
Saint Gobain Ceramics

ALUMINUM PRODUCTION TECHNOLOGY & EQUIPMENT

ABB Inc, Metal Refining Systems
ABB Industrie AG
Almeq Norway AS
Anter Corporation
AUMUND Foerdertechnik
Brochot
Cast Steel Products Inc
Davy Process Technology
DISA Systems Inc
ECL
Eirich Machines, Inc.
GE Water Technologies
Glama Maschinenbau GmbH
Hamilton Research & Technology (Pty) Ltd
Hencon B.V.
Heraeus Electro-Nite Co
Holton Machinery Ltd
Kempe International
LMI Technologies (USA) Inc
Mobiquip Industries, Ltd.
Murlin Chemical, Inc.
Outokumpu
Pechiney
Premelt Systems
Pyrogenesis Inc

Pyrotek Inc
Riedhammer GmbH
SETARAM
Silver Needle
Solios
STAS, Ltd.
Stein Atkinson Stordy, Ltd.
Techmo Car SPA
Thermal Systems America
Thermcon Ovens BV
Wagstaff, Inc.
Wienalco

ALUMINUM QUALITY

ABB Bomem, Inc.
Cambridge Scientific Abstracts
FLSmith Group
LMI Technologies (USA) Inc
MagChem, Inc.
Precimeter, Inc.
Premelt Systems
Whetstone Technology

ALUMINUM REFINING SYSTEMS

ABB Inc, Metal Refining Systems
FLSmith Group
Menardi
Mikropul
Pyrotek, Inc.
STAS, Ltd.

ANODE:

ASSEMBLY

Almeq Norway AS
Altech
Cast Steel Products Inc
DMC Clad Metal
ECL
GNA alutech inc
Hamilton Research & Technology (P) Ltd
Hencon BV
HMR Group AS
Kempe International
Laeis GmbH
Riedhammer GmbH
SETARAM

CLEANING, TRANSPORTATION

Altech
AUMUND Foerdertechnik
HMR Group AS

Solios Carbone
Techmo Car SPA

AUTOMATION/COMPUTER SIMULATION/ SOFTWARE

ABB Industrie AG
ABB Inc, Metal Refining Systems
CompuTherm LLC
LMI Technology (USA) Inc
Netzsch Instruments
Scientific Forming Technologies Corp.
Sente Software and Thermotech Ltd
Thermcon Ovens BV
Thermo-Calc Software AB
Thorpe Technologies Inc
Wagstaff Inc

BUTT CRUSHING/STRIPPING

Outokumpu
ECL
Solios
Techmo Car SPA

CARBON:

PASTE PRODUCTION & EQUIPMENT

Anter Corporation
B&P Process Equipment and Systems
C A Picard
Davy Process Technology
Eirich Machines Inc
Hamilton Research & Technology (P) Ltd
LAEIS GmbH
Outokumpu
Pechiney
SETARAM
Solios

TECHNOLOGY AND SUPPLIES

Anter Corporation
Davy Process Technology
GNA alutech inc
Innovatherm GmbH +Co KG
R&D Carbon, Ltd.
Riedhammer GmbH
SETARAM
Solios
Wienalco

CASTING

Almeq Norway AS
Brochot
Cast Steel Products Inc
ECL
GE Advanced Ceramics
Holton Machinery Ltd
LMI Technologies (USA) Inc
MAGChem, Inc
Murlin Chemical, Inc.
Outokumpu
Pechiney
Precimeter
Premelt Systems
Pyrotek
Solios
Thermcon Ovens BV
Wagstaff, Inc.
Zircar Ceramics Inc

CHEMICALS AND ADDITIVES

Aleatur
Cometal
GE Water Technologies
KBAloys
MagChem, Inc.
Milward Alloys
MINTEQ Intl Inc
SNF Inc

CLOTHING – PROTECTIVE

L.P. Royer Inc.
Pyrotek Inc
Silver Needle Inc

COMBUSTION TECHNOLOGY

Bloom Engineering Co., Inc.
North American Mfg Co Ltd
Pyrogenesis Inc
Thorpe Technologies Inc

CORROSION/SURFACE TREATMENT

COGNEX
DMC Clad Metal
GE Water Technologies
Pyrogenesis Inc

CRANES

ECL
NKM/Noell
Wienalco

DEGASSING

ALTECH
Blasch Precision Ceramics
Graphite Engineering
Metallics Systems Co LP
Molten Metal Equipment Innovations, Inc.
Pechiney
Pyrotek, Inc.
SELEE Corporation
STAS
Thermcon Ovens BV

DROSS:**HANDLING/PROCESSING
EQUIPMENT**

Altech
Dross Engineering
Aisco Systems Inc/Outokumpu
Almeq Norway AS
Brochot SA
GE Advanced Ceramics
Glama Maschinenbau
HMR Group AS
Kempe International
Premelt Systems
Pyrotek, Inc.
STAS

COOLING/REMOVAL

Hencon
STAS

**ENGINEERING, CONSULTING,
CONTRACTORS**

ABB Inc
Almeq Norway a/s
Altech
Bloom Engineering
COGNEX
CompuTherm LLC
Corus Ceramics Research Centre
Davy Process Technology
Fluor
Hencon B.V.
High Temperature Materials Laboratory
Holton Machinery Ltd
Hönnun
Laeis GmbH
Metallurgical Society of CIM
North American Mfg Co Ltd
Pyrotek Inc
R&D Carbon, Ltd.
Rafhönnun
Riedhammer GmbH

SETARAM

Solios Thermal
STAS
Techmo Car SPA
Thermo-Calc Software AB
Thorpe Technologies Inc
Tri-State Refractories Corp
Wagstaff, Inc.
Wienalco

FILTRATION

BDH Industries
DISA Systems Inc
Kabert Industries Inc
Metallics Systems Co L.P.
Pechiney
Pyrotek, Inc.
SELEE Corporation
STAS
Zircar Ceramics, Inc.

FURNACES

ABB Industrie AG
Core Furnace Systems
Dross Engineering
Minteq Intl Inc
North American Mfg Co Ltd
Pyrogenesis Inc
Pyrotek Inc
R&D Carbon Ltd
Riedhammer GmbH
SETARAM
Solios Thermal
Thermal Systems America
Thermcon Ovens BV
Thorpe Technologies
Tri-State Refractories Corp

GRAIN REFINERS/HARDENERS

Aleatur
KBM Affilips B.V.
KB Alloys, Inc.
Master Alloys
Milward Alloys

GRAPHITE PARTS

Graphite Engineering & Sales
Graphite Machining Inc
Metallics Systems Co L.P.
Molten Metal Equipment Innovations, Inc.
Pyrotek, Inc.

**HF MEASUREMENT SYSTEMS –
POT ROOMS/STACKS**

ALTECH
DISA System Inc
OP SIS, Inc.
STAS

**INGOT & SOW CASTING
HANDLING & STACKING**

Mobiquip Industries, Ltd.
NKM/Noell
Outokumpu
Thermcon Ovens BV
Thorpe Technologies Inc
Wagstaff, Inc.

INSTRUMENTATION

ABB Bomem, Inc.
Anter Corporation
Buehler
COGNEX
EDAX Inc./TSL
Fluor
GE Water Technologies
Hysitron Inc
LMI Technologies (USA) Inc
Netzsch Instruments
OP SIS AB
R&D Carbon
SETARAM
Thermcon Ovens BV

LUBRICANTS

GE Advanced Ceramics
MagChem, Inc.
Pyrotek, Inc.

MASTER ALLOYS

Aleaur of America LLC
Holton Machinery Ltd
KB Alloys, Inc.
KBM Affilips B.V.
Master Alloys Co.
Pyrotek Inc.
Zircar Ceramics, Inc.

MATERIAL HANDLING

Almeq Norway a/s
Altech
AUMUND Foerdertechnik
Glama Maschinenbau GmbH
GNA alutech inc
Hencan BV

HG Engineering
HMR Group AS
Kempe International
Laeis GmbH
Mobiquip Industries, Ltd.
Outokumpu
Techmo Car SPA
Thermcon Ovens BV
Wienalco

**MEASUREMENT/TESTING
AND ANALYSIS**

ABB Bomem Inc.
Anter Corporation
Boreal Laser
Buehler
Corus Ceramics Research Centre
EBSD Analytical Inc
EDAX Inc./TSL
Heraeus Electro-Nite Co
Hönnun
Hysitron Inc
LMI Technologies (USA) Inc
Netzsch Instruments
Opsis
R & D Carbon, Ltd.

MOLTEN METAL PUMPS

ABB Inc, Metal Refining Systems
Metallics Systems Co L.P.
Molten Metal Equipment Innovations, Inc.
Pyrotek, Inc.
STAS

PROCESS EQUIPMENT

Altech
AUMUND Foerdertechnik
ABB Inc, Metal Refining Systems
B&P Process Equipment & Systems
Cast Steel Products Inc
Davy Process Technology
DMC Clad Metal
Eirich Machines, Inc.
GE Water Technologies
Kempe International
North American Mfg Co Ltd
OP SIS AB
Pyrotek, Inc.
R&D Carbon, Ltd.
Riedhammer GmbH
SETARAM
Solios
SUB (Slovakce strojirni)

Thermcon Ovens BV
Wienalco

PUBLISHERS

Aluminium Times
Aluminium International Journal
Aluminium International Today
American Metal Market/Metal Bulletin
APT Aluminium
Cambridge Scientific Abstracts
CRC Press
Industrial Heating Magazine
The Institute of Materials, Minerals
and Mining
JOM
Light Metal Age
Metallurgical Society of CIM
R & D Carbon, Ltd.

RECYCLING/SCRAP PROCESSING

Almeq Norway a/s
AUMUND Foerdertechnik
Dross Engineering
Hencan B.V
Holton Machinery Ltd
Metallics Systems Co. L.P.
Premelt Systems
Pyrogenesis Inc
Solios Thermal
Thermcon Ovens BV
Thorpe Technologies Inc

**REFRACTORY &
INSULATING PRODUCTS**

Blasch Precision Ceramics
Corus Ceramics Research Centre
GE Advanced Ceramics
Gouda Vuurvast N V
Kabert Industries Inc
Laeis GmbH
McAllister Mills
Mid-Mountain Materials
Minteq International Inc
Murlin Chemical Inc
Pyrotek, Inc.
Resco Products
Saint-Gobain Ceramics
SELEE Corporation
Skamol Americas Inc
Stellar Canada Inc
Stellar Materials
Thermal Ceramics
Thermal Systems America

Tri-State Refractories
Whetstone Technology
Zircar Ceramics, Inc.

MAINTENANCE/REPAIR

Gouda Vuurvast N V
Minteq International, Inc.
Resco Products
Thermal Systems America

RESEARCH & DEVELOPMENT

Aluminium Intl Journal
CompuTherm LLC
Corus Ceramics Research Centre
EBSD Analytical Inc
EDAX Inc TSL
Heraeus Electro-Nite Co.
High Temperature Materials Lab
Hönnun
Hysitron Inc
KB Alloys
LMI Technologies (USA) Inc
Minteq International, Inc.
NIST Advanced Technology Program
R&D Carbon Ltd

Rafhönnun
Sente Software
Thermo-Calc Software AB
US Department of Energy
USDOE FreedomCAR and Vehicle Technologies
Wienalco

SAWING SYSTEMS

ALTECH
Buehler
Mag Chem Inc.

SERVICE CONTRACTORS

BHA Group
EBSD Analytical Inc
Fluor
Gouda Vuurvast
R&D Carbon, Ltd

SOFTWARE

EDAX Inc TSL
CompuTherm LLC
CRC Press
Fluor

Scientific Forming
Technologies Corporation
Sente Software and Thermotech Ltd
Thermo-Calc Software AB

**VEHICLES FOR POTROOMS
& CASTHOUSES**

Altech
Brochot SA
Glama Maschinenbau GmbH
Hencor BV
HMR Group AS
SMV A/S
Techmo Car SPA

WATER COOLING & TREATMENT

GE Water Technologies
Nalco Company

X-RAY DIFFRACTION

Corus Ceramics Research Centre
EBSD Analytical Inc
EDAX Inc TSL

PRODUCTS, APPLICATIONS & SERVICES SHOWCASE

Make plans to attend these featured presentations, conducted by the TMS 2004 Exhibiting companies.

The supplier presentations will feature up-to-the-minute information on the latest technologies, equipment and processes.

Location: Presentation Areas Inside Hall B

Times: Monday and Tuesday 11:45 am to 1:45 pm

SESSION I: MONDAY, MARCH 15, 2004

12:00 pm Evolution and Future of Titanium Additions to Aluminum

Joseph A. Megy and David Whitehead, Jamegy Inc, Richland, WA

About 20% of the world's production of titanium metal is used to provide alloy materials for the aluminum and steel industry. In an effort to provide rapid dissolution at the temperature of the aluminum cast house, at best cost, and without introducing impurities, several competing approaches have evolved over the last century, an evolution which continues today.

The most efficient approaches are carefully crafted to optimize utilization of the lowest valued streams from the titanium industry most of which contain 4% vanadium present in aerospace alloys. Dr. Megy will discuss the advantages of the past and current approaches and their expected evolution in the near future. David Whitehead will show how the patented Jamegy technology provides a useful solution to the value/quality of titanium additions to aluminum.

12:15 pm Modern & Ancient Uses of Bone Ash

Dr. Edward Murray, Murlin Chemical, Inc., West Conshohocken, PA

The focus of this supplier showcase will be Bone Ash. The importance of bone ash in modern metallurgy of non-ferrous metals. Techniques for application and benefits to Aluminum and Copper foundries will be described along with some physical and chemical properties of bone ash.

The history of bone ash from surprisingly ancient uses to the present will be a feature of this presentation by Dr. Edward Murray. President of Murlin Chemical, Inc.

12:30 pm New High Temperature, Low Biopersistence Insulating Fibers

Lance Caspersen, Thermal Ceramics

Thermal Ceramics is a leading global manufacturer of refractory ceramic fiber products under such well known brand names as Kaowool, Cerablanket and Pyro-Bloc. In order to meet customer demand for higher temperature fiber insulation products with low biopersistence, or reduced capacity of the fibers to stay in the human lungs without dissolution, Thermal Ceramics has developed the world's first 1300C (2372F) temperature classified product with these characteristics - Superwool 613. This material, available in various insulation forms like fiber bulk, blanket, modules, paper, and boards, has found numerous applications in the aluminum industry.

12:45 pm New PoDFA Reusable Crucible

Jasmin Prouix, Paul Rochette, ABB, Metallurgical Analyzers Div, Quebec, Canada

The new PoDFA Reusable Crucible has been designed to better respond to the needs of casthouses and foundries doing PoDFA inclusion measurements in molten aluminum. This innovative approach effectively enables metal manufacturers to:

- reduce the cost per sample
- significantly reduce filter detachment occurrence
- eliminate preparation time

The Reusable Crucible can last more than 100 samples and employs a filter for every test. This filter can be installed in the crucible in a few seconds. Thanks to this leading-edge design, the filter detachment problem has almost been completely eliminated. Original PoDFA users (big PoDFA bell and hard ceramic crucibles) can now get the same low cost per sample and truly benefit from the ease of use and portability of the latest PoDFA technology developments.

1:00 pm Autopak System - Total Automation for Dc Casting

John V. Griffin, Pechiney Aluminum Engineering, Inc, 333 Ludlow Street, Stamford, CT 06902

The AUTOPAK system permits the automation of a DC slab casting facility. In industrial use for over 20 years in a large number of casthouses, a new generation of the AUTOPAK system has now been developed focused on new concepts: modularity, reliability, flexibility and rapidity of commissioning. It can be easily integrated on an existing DC casting pit or implemented on a new casting line.

The core of the system manages basic metal control (in the molds) functions and controls automatic machine operation. The new concept also proposes the management of additional modules dedicated for example to the furnaces, casting table movements or the

cooling circuit amongst other functions.

The major benefits of the use of the AUTOPAK SYSTEM are improved operator safety, repeatable, on-target slab quality, and consequently an overall increase in the productivity of the casting facility.

1:15 pm New Laser Line Sensors for Automated Level Control in Pouring

Dr. Walt Pastorius, LMI Technologies, Windsor, Ontario, Canada

A new laser line sensing technology for level monitoring and control is described. Compared to traditional single point sensing, laser line sensing provides dramatically enhanced level control performance in the presence of smoke and steam.

The principle of operation of laser line sensing, using 3D digital technology, is described, with a discussion of advantages. Sensor packaging requirements to survive the hostile molten aluminum environment are described.

Interfacing to level control actuators is outlined, including components to insure safe operation under all conditions.

Configurations used for specific applications, including molds/DC casters, launders, holding furnaces and continuous casters are described, with related specifications.

1:30 pm State Of The Art Aluminium Casting Machines

Don Martosko, Core Furnace Systems Inc, Pittsburgh, PA; Dr. Gerd J. Brockmann, CSE, maerz-gautschi Industrieofenlagen GmbH, Tagerwilen, Switzerland

Gautschi is a well respected provider of high quality, state-of-the-art equipment to the aluminum industry worldwide— for Aluminium cast-houses and recycling plants. In addition to a wide variety of melting -, holding – and heat treatment furnaces, Gautschi offers the following state of the art casting machines:

- Open mold Ingot Casting line (IC)
- Vertical Direct Chill casting machine (VDC)
- Horizontal Direct Chill casting line (HDC)

These casting machines can produce rolling ingots, extrusion billets, forging bars, buss bars, and T-bars. Each casting machine type has its advantages and limitations. Gautschi has gained years of experience with all three casting machine types and can offer excellent customer support. Aspects such as product quality, building - and foundation requirements, operating cost, alloy- and product mix, investment cost, etc. have to be considered carefully when choosing a casting line.

SESSION II: TUESDAY, MARCH 16, 2004

12:00 pm Thermal Waste Treatment Technologies and Advanced Materials

Dr. Michel Drouet, PyroGenesis Inc, Montreal, Quebec, Canada

PyroGenesis commercializes technologies related to the thermal processing of materials serving two very distinct fields:

- (i) waste treatment/recovery and
- (ii) advanced materials.

In the area of waste treatment/recovery, PyroGenesis offers advanced plasma waste treatment systems designed to treat solid waste generated either on board ships or small communities.

In addition, PyroGenesis' proprietary rotary furnace recovers aluminum or zinc from dross at lower cost and without residue or CO₂ production. In the area of advanced materials, the Company offers advanced protective and functional coatings used in industrial and aerospace applications, as well as, high quality metal powder, including fine, spherical titanium powder used in biomedical and aerospace applications.

12:15 pm Recycling Aluminium Castings With 'Cast-In' Cast Iron Inserts (The experience of Peugeot SA)

John Simpson, Dross Engineering, Alfreton, Derbyshire, United Kingdom

Fabrication rejects cost money and every foundry puts in place systems designed to reduce them. When dealing with components with 'cast-in' cast iron inserts and sleeves, an additional problem has to be overcome: separate out the iron without polluting the aluminium.

Even though such rejects represent a small percentage of overall production they exist and are a source of metal to be exploited. Recycling such components internally raises a number of issues that require resolving: choice of technique and installation running costs. This paper presents the different techniques on the market today and examines the reasons for the choice made by a major European automobile company (PSA) who opted for a system designed around a tilting 'converter' furnace designed and built by Dross Engineering. We will present the equipment itself and the results experienced by the PSA foundry division.

12:30 pm Defined Cooling of Bath Material

Matthias Moritz, AUMUND Foerdertechnik, Rheinberg, Germany

For bath material handling and cooling with the new point-feeder prebaked (PFPB) technology in aluminium smelters, Aumund deep-

drawn pan conveyors have proved to be an economical and ecological solution.

When using the point-feeder prebaked (PFPB) technology anode butts are removed together with a substantial quantity of hot bath material. This fluoride rich material has usually been collected in containers and cooled down naturally. Due to the thickness of the layer of hot material in these containers, there is no guarantee that the bath lumps will cool down below 100°C even after 24 hours of cooling time. However, before further processing, the material must cool down to a maximum temperature of 70 – 80°C.

The paper explains the solution developed by Aumund for defined cooling of bath material 850°C down to 70° within a time period of 6 hours and exposes the resulting benefits from a process and environment point of view.

12:45 pm Pot Room Technologies

Martin Taylor, STAS, Chicoutimi, Quebec, Canada

STAS is well known for its Cast House Technologies but perhaps a little less for its technologies developed for the Pot Rooms. For example, more than a dozen years ago, STAS developed a crucible cleaner for cleaning crucibles whilst hot (+650 Celsius) as well as cold.

STAS has also developed an automatic siphon tube cleaner, which does not use electricity and is essential for avoiding health and safety problems for the workers. STAS will present an update on these developments and other technologies.

1:00 pm Potroom Vehicles and Safety Aspects

*Bernard A. Canavan, HMR Group AS.
Prestnesvegen 68, 5460 Husnes, Norway,*

Safety is now seen as one to the most important aspects of how the business is run. With new ongoing legislation in respect to manufacturing and the environment, producers have to rise to the challenge in making their products safer in all areas for those who use the equipment and also for those who may be affected by it. With these challenges in mind manufacturers must design, manufacture and deliver their products to meet these criteria whilst recognizing the arduous conditions for both the operators and the equipment.

HMR Hydeq, Norway focus on the following safety aspects: potroom mobile equipment noise levels, exhaust emissions, metal splashing, risk of staff injury whilst operating or maintaining the vehicle, driver safety and comfort, cab ergonomics, cab climate control, vehicle operation and maintenance access, drivers visibility and elimination of the blind spots, safe handling and disposal of system oil and lubricants.

1:15 pm Wagstaff Update

*Craig S Johnson, Wagstaff, Inc,
Spokane, Washington*

The presentation by Wagstaff will reflect an update on Wagstaff products with a focus on the successful launch of the Wagstaff NuMax™ Billet Casting Mold which was introduced in 2003. Also presented will be an overview of advancements made in metal level control and automated casting systems. We will also discuss the success of a newly released Wagstaff Epsilon™ Rolling Ingot Casting Technology.

1:30 pm PCE Numerical Simulations Capabilities

*Eng. Dagoberto Schubert Severo, PCE Ltda,
Porto Alegre, Brazil*

The presentation will show, using animations and cases, the PCE numerical simulation capabilities for Aluminum smelters companies. It includes the PCE ability in doing fluid flow, thermal, magnetic and stress simulations using CFX, Ansys and Algor commercial packages.

We will present Aluminum pot electrical-thermal balance, MHD and stability analysis, fluid flow and thermal homogenizing furnace analysis, thermal stress mold casting, anode furnace fluid-thermal and combustion simulation.

1:45 pm Multi-Physics Modeling: Applications to Real World Problems

*Phillippe Blot, Process Engineering Resources Inc,
1945 S 1100 E, Ste 100, Salt Lake City, UT*

PHYSICA+ is a computational modeling tool that provides a software framework to model difficult and complex multi-physics processes. An overview of this integrated tool that has been used to model processes involving effects of flow-stress coupling, flow-magnetic field interaction, and heat transfer - material defects will be presented. Practical case studies in steel and aluminum are offered to demonstrate how model building can be used to improve engineering design and process analysis.

A

ABB Inc

Please see our display ad on the back cover.

#222

Quebec, CANADA

www.abb.com/metals

ABB is a leading supplier of Industrial IT solutions, electrical equipment and control systems to the metal industry.

Our approach covers the full value-added chain and we excel at merging equipment, skills and services into a comprehensive customized solution that strengthens your entire operation. We take responsibility for creating the solution from specification to commissioning and beyond, smoothly and efficiently. Stop by our booth and discover our latest innovations in metallurgical analyzers, rectifiers and plant management.

ALEASTUR OF AMERICA, LLC.

#214

Evansville, IN

www.aleastur.com/

Founded in the 80's, Aleastur manufactures a comprehensive range of Grain Refiners and

Master Alloys for the Aluminium industry. The major activity of Aleastur is concentrated in the production of AlTiB alloys in rod.

In 2003 Aleastur established Aleastur of America, LLC., and opened offices with a central warehouse in Evansville, IN, not only to meet the challenging and growing demands of the Canadian and U.S. markets but to demonstrate our commitment to these market regions by providing enhanced service for our exclusive products. Aleastur of America, LLC., currently maintains local warehousing stock of aluminium grain refiners, master alloys, and hardeners (tablets and briquettes) for primary and secondary aluminium smelters, integrated extruders, and foundries. All Canadian and U.S. sales functions are now managed by Aleastur of America, LLC., having selected distribution points with strategically located warehouses throughout both countries.

Our aim is to supply the finest products in the market, supported by our state-of-the-art technology and the utmost dedication of our technical staff. Aleastur provides full technical support to fulfill the special requirements of each customer.

Almeq Norway AS

#110

Langhus, NORWAY

www.almeq.com

ALMEQ Norway AS is an engineering, marketing and production company for a wide range of equipment to the aluminium industry, in particular for smelters and foundries. The company is a leading supplier of own designed equipment as well as an export and marketing partner for other well accepted suppliers.

Among machinery engineered and produced in Norway are crucible and tube cleaners, potliners and various electric drying and preheating systems. In co-operation with partners in Norway and abroad ALMEQ deliver anode and metal transporters, and various pot room equipment.

In its 19th year of exhibiting at the TMS, ALMEQ will focus on a new product range for the casthouse, which include metal treatment systems and metal weighing systems.

We will also show the results of our implementation of 3D construction tools giving our equipment a new "look".

ALMEQ welcomes you to visit our exhibition stand (booth 110) at the TMS 2004 in Charlotte. Mr. Jan D. Hansen, Mr. Knut Torgersen and Mr. Hans Christian Ly will be happy to answer any questions concerning our products and services.

Altech and Partners

#800

Reykjavik, ICELAND

www.altech.is/

ALTECH has since 1987 been supplying Equipment and Systems for the Aluminium Industry for improved environment, efficiency and economy.

At TMS 2004 ALTECH will specially present: ALTRACK - Anode and Rod Tracking and Quality Control System.

ANODE RODDING SHOP: Turn-key Rodding Shops, Automatic Stub Straightening Machines - eliminate cowboy effect, Stub

**Late additions to this
Exhibition Directory are included
on page 112.**

Protection System - automatic collar placing and filling with paste, Stub Equalizing - milling stub ends for a better mating with the anode, Semi Automatic Casting Machines for precision assembling of anode and rod, Electric Heaters for heating of ladles, crucibles, stubs and anode holes.

CAST HOUSE: PPM-Purification of Pot-room Metal by automatic Skimmers and Purification RotoJet (AlF₃) injection for cleaner metal in transport crucibles, and ALTRACK Billet Coding and Tracking.

POTROOMS: Electric Siphon Tube Heaters.

BOREAL LASER of Canada is now the leading supplier of HF monitors to primary Aluminium smelters worldwide. GasFinder2 is a portable open path HF monitor used for HF emissions reduction studies and potline roof monitoring. GasFinderFC is a portable stack or duct HF monitor. GasFinderMC is a fixed, multiple path system that can monitor up to eight paths and/or ducts at the same time. Primary benefits of the GasFinder technology are self-calibration, robustness, ease-of-use and industry-leading technical support. In the past five years, more than 60 GasFinder systems have been installed in over 25 smelters in 12 countries worldwide. Spruce Grove, Alberta, Canada www.boreal-laser.com/

HÖNNUN is an independent engineering consulting company in Iceland. Main fields of specialization are civil, structural, environmental and mechanical engineering and project management. Hönnun was founded in 1963 and now employs about 115 people, mostly professional engineers, and thereby is the largest company of its kind in Iceland.

Hönnun has been an active participant in the recent large projects in Iceland, in particular projects in the field of harnessing the countries hydroelectric energy resources and the associated power intensive industrial development – namely aluminum smelters. For the expansion and new development of aluminum smelters in Iceland, Hönnun has definitely been the lead local firm for environmental preparations (EIA), technical preparations and construction.

Reykjavik, Iceland
www.honnun.is

HRV ENGINEERING GROUP

The HRV ENGINEERING GROUP is an alliance of three of Iceland's largest and longest-established engineering consultants – Hönnun, Rafhönnun and VST – the HRV Engineering Group offers a level of specialist engineering skills and technical expertise developed through operating in some of the world's most extreme climates and most unstable geological conditions.

A one-stop provider of engineering services and solutions ranging from environmental impact assessment to design, construction and project management, HRV has played a leading role in the construction of all of Iceland's three aluminium smelter plants, including the new 322,000- tonne Alcoa Fjardaal smelter due to begin construction in 2004.

Further information at: <http://www.hrv.is> and at TMS 2004 exhibition booth No. 800.

INDUSTRI-TEKNIK, Bengt Fridh AB Aluminium Preheating System, APS

For the primary aluminium industry we are manufacturing our own constructed system for preheating the cathodes in the cells up to 900-950°C before putting the cell to work. By using the APS system the lifetime for the cell is increased, compared to the normal coke-preheating. The system consists of one container on wheels containing the gas safety equipment and the computer control equipment. The two or four burners are tailor-made for the cells and use pulsation flames to maximise the heat transfer to the cathode for best isothermal result. As fuel we use gas, natural or propane, but developing a new APS burner for light oil.

Arlöv, Sweden
www.industri-teknikbf.se

PRECIMETER

Gothenberg, Sweden
www.precimeter.com/

Precimeter delivers level control systems for automating the casting process in aluminium foundries. These systems can be used in a variety of applications such as:

- Level control for Mold and Head-box
- Level control for Trough and Launder
- Furnace Level Control

Precimeter's laser sensor system guard the quality of the casting and the purity of the alloy

at every stage from smelting to final pouring. The sensor and actuator combination form a complete control system, no external equipment is needed. Precimeter sensors are delivered with a PI-controller built into the sensors or directly connected to your existing system.

RAFHÖNNUN is an independent electrical engineering consulting company, with a broad spectrum of expertise in the fields of power, telecommunication, industrial and building engineering. Rafhönnun was founded 1969. Number of employees are 40. Rafhönnun is one of the leading Electrical Engineering Consulting firms in Iceland.

Rafhönnun is presently documenting its Quality Management System (QMS) and has applied for formal certification to the ISO 9001 standard.

Services: Project planning. General technical and economic studies. Plant and systems layout and detail design. Tender specification procurement, bid evaluation, contract administration and project management. Construction site supervision, commissioning and acceptance testing.
Reykjavik, Iceland
www.rafhonnun.is

SMV—Sunnhordland Mek., Verksted AS

Mobile and stationary equipment and especially designed solutions is the forte of SMV A/S in Norway, with over 40 years history of providing to the industry. Mobile units include Feeder Trucks, Anode Pallet Vehicles, Hot Anode Milling Machines, Cathode Transporters, Crust Breakers, Hot Metal Transporters. Stationary units include Hot Anode Milling Machines PB, Anode Milling Machines Söderberg, Hot Bath Crushing Lines (SMV HBC), Pallet Cleaning & Tilting Stations, Pot-lining equipment. Technically excellent machines, aimed at increasing the safety and efficiency of the customer's workforce.
Skaanevik, Norway

SUB (Slovakke strojirni), located in the Czech Republic, has supplied over 450 units of cranes to the Primary Aluminium Industry for both Pre-Bake and Söderberg technologies. SUB has more than 50 years history of design and fabrication of Overhead Gantries and Jib Cranes, High Lifting Platforms and Grabs. Also Pot Tending Machines with pre-baked anodes for furnaces up to 260kA, and other transferring equipment for the industry such as Cathode Shell Cranes with carrying capacity

up to 300 tonnes and Transfer Gantries with carrying capacity of 520 tonnes. SUB has an ISO 9001 Quality Certificate since 1989.

References: Egyptalum, ETI Aluminium, NALCO, BALCO, SKODA, Sayansk Aluminium and others.

Uhersk_ Brod CZECH REPUBLIC
www.sub.cz

Aluminium International Journal

#230

Isernhagen, GERMANY
www.giesel.de

Giesel Verlag is the publisher of ALUMINIUM International journal for industry, research and applications. ALUMINIUM deals with everything that concerns the material, its extraction, processing, recycling and applications. Matters of economics and the ecological consequences of using aluminium are also considered. The scope of the month-by-month reporting includes scientific contributions and condensed information about new technologies and applications. The journal addresses aluminium producers, semis manufacturers, foundries, processors, metal and semis traders and, not least, research institutes concerned with aluminium. ALUMINIUM is circulated in over 40 countries worldwide.

Aluminium International Today

#503

Redhill Surrey, UNITED KINGDOM

www.aluminiumtoday.co.uk

Aluminium International Today—the leading international English language journal dedicated exclusively to the aluminium production and processing industries - is the Professionals' Choice!

Founded in 1988 and now published six times a year, the journal consistently brings to its readers a wealth of technical features aimed at providing producers and processors with information on the latest technologies, and business and market developments. Added to this is a regular digest of industry news, contracts, events, product reviews and conference coverage. Regular foreign language editions, including Russian and Chinese.

Aluminium International Today's editorial team has a firm background in the sector, and worldwide experience of the present day industry

to provide topical coverage of the most significant events and advances.

Publisher, dmg world media (uk) ltd is also joint venture partner in the organisation of the leading international ALUMINIUM World Trade Fair and Conference sequence of events in Essen, Germany. Also organisers of many other events worldwide.

Aluminium Times

#713

Shaveham-by-Sea, UNITED KINGDOM
www.mmc.dircon.co.uk/

If you target your products to defined areas of the world, Aluminium Times can help you reach Europe and the Middle East. 100% of copies are distributed to these areas. If you target specific managers in primary and secondary production, then 50.2% of our readers are in this category.

If you want to reach managers involved in the purchase of plant, equipment and consumables, 96.7% of our readers are part of the buying process.

Apart from that, we publish an attractive magazine, and European and World Aluminium maps.

The American Ceramic Society

#815

Westerville, Ohio
www.ceramics.org

The American Ceramic Society (ACerS) is the world's leading organization dedicated to the advancement of ceramics, serving more than 8,000 members and 50,000 subscribers in 80 countries. ACerS members include ceramic engineers, scientists, researchers, educators, students, sales and production personnel, manufacturers and others in the ceramics and related materials industry.

Founded in 1898, ACerS provides the latest technical, scientific and educational information to its members and other constituencies. Stop by our booth to see the latest in technical resources for the ceramic and glass professional.

APT Aluminium Process & Product Technology

431

London, United Kingdom
www.aluminiumtechnology.com

APT Aluminium Process & Product Technology is the only multimedia publication harnessing the power of print, CD-ROM and the internet that provides an indispensable resource for all senior and technical management operating smelting and processing plants worldwide.

APT Aluminium is the only ground breaking publication promoting the latest applied processes and product technology throughout the international aluminium industry with contents of lasting value in each edition.

APT Aluminium has the most expansive and targeted international circulation of 13,000 reaching a readership of 70,000. This offers the best value for money for the serious marketing and advertising campaigns.

Anter Corporation

#502

Pittsburgh, PA
www.anter.com/

Anter Corporation is a manufacturer of thermophysical properties measuring instruments and a provider of contract testing services. Products include a full range dilatometers for thermal expansion/shrinkage measurement, thermal conductivity meters and thermal diffusivity systems, covering temperatures from -180° to 2800° C. A number of instruments are specifically designed for the aluminum industry and are in world-wide use, such as: uni-therm model 1101 dilatometer for cored samples (50 mm diameter by up to 150 mm long) of carbon anodes; model 2022 thermal conductivity meter for 50mm diameter samples; model 9609 electrical resistivity meter for carbon and graphite; flashline-3000 thermal diffusivity system for coarse-grain refractories and highly conductive materials. ISO 9001 certified.

AUMUND Group

#338

Rheinberg, GERMANY

www.aumund.com

Since 1922 AUMUND offers high quality products for conveying and storing of bulk materials in power stations, iron and steel plants, aluminum plants, cement plants, foundries, quarries, chemical industry.

The AUMUND Group: Offices in the USA, Brazil, China, India, France, Great Britain, Poland and Switzerland including SCHADE stockyards, LOUISE handling equipment and B&W mobile loading equipment.

- Transport and defined cooling of hot bath material
- Pan conveyors for Pellets, DRI, HCl, sinter up to 900°C
- Cooling conveyors in inert atmosphere
- Conveying and cooling in foundries
- Conveying, storing, blending or coal, iron ore, limestone

B

B&P Process Equipment Systems LLC

Please see our display ad on the inside front cover.

#617

Saginaw, MI

www.bpprocess.com

B&P Process Equipment (manufacturers of Baker Perkins machinery) is a supplier of specialized process equipment for the production of carbon paste, energetic materials, plastics, industrial chemicals, and for chemical separation. Many built since the 1930's are still in service. In 1952, the aluminum industry production requirements grew, and the Continuous Kneader became the preferred method of manufacturing carbon paste. Today, our batch mixers and continuous kneads are used worldwide in the production of carbon paste. B&P also offers a complete line of continuous pusher centrifuges for liquid/solid separation.

B&P also has a joint venture with Battaggon S.R.L., headquartered in Bergamo, Italy, for a broad line of mixing equipment.

BDH Industries

#707

Chicoutimi, Quebec, CANADA

www.bdhtech.com

Founded in 1991 and located in Chicoutimi (Canada), BDH Industries is proud of its expertise in the field of instrumentation and filtration. Our company uses state-of-the-art materials to produce filters for a wide range of applications, such as pulp and paper, primary metal, and chemical processing, and mining operations. Whether your applications require wet or dry filtration or any measurement devices, BDH stands ready to deliver products that are superior in both performance and price.

Our personal approach allows us to carefully analyze your requirements, and to recommend the right products that are optimally suited to your need

Blasch Precision Ceramics

807

Albany, New York

www.blaschceramics.com/

Founded in 1979, Blasch Precision Ceramics manufactures complex refractory shapes via a patented injection molding process. Parts manufactured using this proprietary process have unique qualities that offer distinct advantages such as precise tolerances without machining ($\pm 0.5\%$), excellent thermal shock resistance, controlled porosity, sub-particle distribution control, and outstanding resistance to spalling, erosion and metal penetration.

In addition, parts intended for aluminum applications are treated with a proprietary non-wetting agent. So whether you need low pressure stalk tubes, rotary degassers, thermocouple protection tubes, porous plugs, or immersion heater tubes, Blasch can deliver.

A dedicated staff of engineers is always available to develop materials and design parts that satisfy specific customer needs. We welcome you to visit us at booth 807.

Bloom Engineering Co.

#515

Pittsburgh, PA

www.bloomeng.com

Bloom Engineering, a global combustion company, specializes in problem solving through custom engineering. Product lines include low NOx burner designs, combustion pipe train components and control systems.

Bloom Engineering optimizes the burner combustion pattern required for the application. Burner designs are based on extensive experience obtained in the ferrous and nonferrous industries, development laboratory tests, and computational fluid dynamics design techniques.

Offerings include the 1500 Series cold air burners, 1630 Series recuperative burners and the 1150 Series regenerative burners which are currently the lowest NOx producing burners in the industry.

BMP Bi-Metal Products

#436

Fountain Valley, CA

www.doall.com/bimetal.htm

BROCHOT SA

#539

Tremblay en France, FRANCE

www.brochot.fr

Activities in the Light Metal Industries: BROCHOT's company designs, manufactures, carries out installation, provides after sales services and spare parts of special machines; complete plants. We provides also full turn key solutions and integrated process

solutions. With our 3 departments, BROCHOT – SYPRIM – BERGER, we propose the full range of equipment necessary for aluminium and magnesium smelters :

BROCHOT Department as a World leader with:

- Electric pot ramming machines
- Dross crucible skimming equipment (Ekumax)
- Dross handling equipment (Ekumax)

World Leaders in the Casthouse with :

- Ingot casting & stacking lines
- High throughput Dross free ingot casting wheel

In the Foundry - BROCAST:

- We resolve your nightmarish problems with our revolutionary Process!
- Full workshop supply or single pieces of equipment delivery among which we have developed a vacuum pressure pouring technology

SYPRIM:

Anode handling system

- Anode cooling
- Anode & groove cleaning systems
- Anode Slot cutting machine

World Leader in the Anode rodding shop with all the necessary equipment as:

- All solutions for Anode Hooking & unhooking station
- Automatic bath removal system
- Carbon Butt & Thimble removing
- Anode mating & casting station for all kind of technology

BERGER:

- Special vehicles for anode & molten metal transport
- Furnace charging & tending vehicles

Call us to discuss your requirements at +33 149 63 74 00 or visit our booth #539 where we 'll show you our latest developments and discuss innovative solutions.

Buehler Ltd.

#336

Lake Bluff, IL

www.Buehler.com

For over half a century, Buehler has been the leading manufacturer of scientific instruments and supplies for cross-sectional analysis. Buehler products are used throughout

the world by metallurgical laboratories, quality control departments and failure analysis facilities for the analysis of all types of materials including ceramics, composites, semi-conductors, metals, rocks and minerals, and plastics. You can visit us at Booth #336, or on our website at www.Buehler.com/



C.A. PICARD International

#238

www.capicard.com

C.A. PICARD is specialized in manufacturing of high quality wear parts for continuous kneaders for the manufacture of green anodes for the primary aluminum industry.

PICARD manufactures kneading teeth, wearing plates / liners and screw flights out of different highly wear resistant qualities.

Cast Steel Products

817

St Petersburg, Florida

www.caststeelproducts.com/

CSP (Cast Steel Products) is an international company which specializes in the design, and manufacture of castings and fabricated products primarily used in the process of Iron Ore Pellets, aluminum smelting, waste incineration, construction and open pit mining.

From the head office in St. Petersburg, Florida, CSP directs the operation and engineering for its world wide activities. With offices and representatives in Montreal and Edmonton, Canada, Beijing China, Hibbing Minn, Victoria, Brazil, Bangalore India and Puerto Ordiz Venezuela, CSP provides complete customer service. This can include complete turn-key design, supply, training and installation services for a variety of products, some of which include:

- CSP pelletizing trucks for the induration processing of iron ore to pellets for blast furnace use.
- Traveling grate assemblies for iron ore pelletizing, waste incineration, hog fuel burning, cement drying etc.
- Undercarriage components for construction cranes, open pit mining shovels and drag lines.
- Custom casting for virtually any industrial application and

manufacturing process.

- Aluminum industry anode bases and cross beams for pot furnace use.

Please feel free to call use for any of your casting of fabrication needs, we can be contacted at csp@caststeelproducts.com or by phone at 727-363-7303.

CSA – Cambridge Scientific Abstracts

#536

Bethesda, MD

www.csa.com/

Cambridge Scientific Abstracts publishes a wide variety of databases covering all aspects of science and technology. Databases are delivered through the new Internet Database Service Version 6, featuring site-wide access with unlimited use. Databases offered through this service include METADEX, Sociological Abstracts, Aquatic Sciences & Fisheries Abstracts (ASFA), and the NTIS Database. Other features include the Web Resources Database, which provides searchable links to Internet information sources in the sciences; Recent References Related to Your Search, a citation-only current-awareness service; and full text document acquisition features including Links-to-Full text and Link-to-Holdings modules.

COGNEX

801

Natick, Massachusetts

www.cognex.com/

Cognex® is the world's leading supplier of machine vision systems, or computers that can "see". Our machine vision systems gauge, guide, inspect, and identify products on the fastest production lines. Cognex's SmartView Metals system is a state-of-the-art surface inspection system that allows manufacturers to automatically detect, identify, and visualize defects in steel, aluminum, copper and other metal surfaces as they are being produced. Our SmartView Metals inspection system can help you to reduce overall operational costs and optimize processes.

Additionally, the SmartView Metals system helps you to:

- Improve product quality
- Maximize yield
- Ensure more thorough and

- objective grading of materials
- Detect, identify and visualize defects before value added processes
- Minimize the need for manual inspections
- Generate inspection reports
- Decrease the number of customer returns

Cometals

430

Fort Lee, New Jersey

www.commercialmetals.com/cometals.asp

Cometals is division of Commercial Metals Company. Cometals is active in marketing and logistics of industrial minerals, metals, and chemicals. We maintain office presence in all global business centers with focus in China and CIS. For the Aluminum industry we supply carbon products such as anodes, coke, and electrodes; minerals such as Fluorspar, Aluminum Fluoride, and Bauxite; And alloying ingredients such as Silicon, Manganese, and Magnesium.

CompuTherm LLC

Please see our display ad on page 39.

#130

Madison, WI

www.computherm.com

CompuTherm LLC develops phase diagram and thermodynamic calculation software as tools for industrial, academic, and educational use. Professor Y. Austin Chang, Wisconsin Distinguished Professor and member of the National Academy of Engineering, established CompuTherm LLC in 1996.

Pandat is a software package for calculating phase diagrams and thermodynamic properties of multi-component alloys. PanEngine is a calculation engine for creating custom software applications such as microstructure and microsegregation simulations. CompuTherm

has developed thermodynamic databases for aluminum, nickel, magnesium, titanium commercial alloy systems. A lead-free solder database is also available.

Core Furnace Systems Inc

#919

Coraopolis, PA

www.corefurnace.com/

Core Furnace Systems is a leader in the design and supply of furnaces and related equipment for the primary metals industry. Heat treating furnaces, reheat furnaces, specialty furnaces, carbon baking furnaces, calciners, and melt shop furnaces are our areas of expertise. High quality heat treating designs include; batch and continuous roller hearth, STC, 100% hydrogen annealing, batch and continuous vacuum, motor core annealing, bright annealing, solution annealing, rotary hearth, tip-up, brazing, super clean copper tube and aluminum. Core Furnace Systems also designs and supplies atmospheric generators as well as process control and automation.

For aluminum processing, CORE is the North American representative for maerz-gautschi of Switzerland. Together, CORE and Gautschi provide state-of-the-art furnace systems for melting, holding, heat treating, annealing, continuous float annealing, reheating, and homogenizing, as well as systems for vertical DC casting, horizontal continuous casting, and foundry ingot casting & stacking.

CORE provides a complete range of services to help you achieve optimal product quality and efficiency from your existing equipment.

Corus Ceramics Research Centre

#128

IJmuiden, THE NETHERLANDS

www.ceramics-research.com

The Ceramics Research Centre (CRC) is part of Corus Research Development & Technology and traditionally is dedicated to refractory applications in steel and aluminium production.

To apply best value refractory materials in use and to develop improved refractories, an integrated approach is used. Together with users and suppliers, CRC plays an important role in finding tailor made refractory solutions. CRC has developed advanced aluminium, iron and steelmaking refractories, improving reliability and availability of Corus production facilities significantly.

CRC is unique in being fully dedicated to testing, characterizing and developing of high-temperature materials for the ferrous and non-ferrous industry. This includes research and pilot-studies on inorganic, non-metallic, waste products produced by these industries.

The services of CRC range from consultancy and materials testing to product development, process simulation, computer modelling (temperature/stress calculations), prototyping, damage analysis and refractory training.

CRC Press

809

Boca Raton, FL

www.crcpress.com

CRC Press, a member of the Taylor & Francis Group, invites you to view our new and established titles on MEMS, NEMS, Optics and our bestseller *CRC Materials Science and Engineering Handbook, 3rd Edition*. CRC Press is recognized as a leader in scientific, engineering, medical, environmental, technical, and statistics publishing producing books, journals and databases. CRC Press is also the creator of ENGnetBASE.com and CHEMnetBASE.com, a wealth of information online. Visit us at <http://www.crcpress.com> for more details.

D**Davy Process Technology
(Switzerland) AG**

#522

Hohenrainstrasse 10,
CH-4133 Pratteln, SWITZERLAND
www.davyprotech.com

Davy Process Technology (Switzerland) AG or DPT the former BUSS AG is still regarded as the world leader for carbon paste technology being the sole supplier to the aluminium industry of the well known BUSS KNEADER for anode paste mixing.

Efficient processing of anode paste using mixing energy in the range of 7 to 10 kWh per ton of paste is vital for the economic production of anodes, being suitable for the high amperage smelting technology. The continuously operating Buss Kneader guarantees uniform paste quality for trouble free anode forming and baking and for smooth operation of the pot rooms.

Over 200 Buss Kneaders, with capacities up to 50 tons/h in single units, are in operation worldwide. Our unsurpassed services include the supply of genuine spare parts from stock and revamping or upgrading of existing installations.

Additionally we are supplying complete paste plants and as well as our own technology and proprietary equipment for the continuous pitch melting and manufacture of aluminium fluoride.

**Deutsche Gesellschaft
für Materialkunde**

#437

Frankfurt, GERMANY
www.dgm.de

DISA Systems Inc

#925

Thomasville, North Carolina
www.disafilter.com/

DISA, formerly NORDFAB Systems, is a world leader in dust and fume collection technology. The DISA brand encompasses filters and dust

collectors formerly made and manufactured under the names Airmaster, BMD-Garant and NORDFAB Systems. With more than 10,000 units sold worldwide, the DISA engineering team has experience designing systems to collect an expansive range of dusts and other industrial by products. The company's complete line of filtration unit's range from single-source 400 CFM collectors to modular units that operate at more than 100,000 CFM.

DMC Clad Metal

#739

Boulder, CO
www.dynamicmaterials.com

DMC is the world's leading manufacturer of explosion welded products. DMC manufactures Detaclad[®] explosion clad at its Nobel-clad factory in France, its Nitro Metall factory in Sweden and its Mt. Braddock Clad Metal factory in the USA. Virtually any metal combination can be welded using the Detaclad[®] process. High quality clad plates are supplied for manufacture of autoclaves, pressures vessels, heat exchangers and tanks. DMC also supplies a large range of bi-metal welding transition joints for making fully welded connections of aluminum-to-steel and aluminum-to-copper.

Dross Engineering

#709

Alfreton, Derbyshire,
UNITED KINGDOM
www.dross-engineering.com

Dross Engineering, a Franco-British company manufacturing furnaces and foundry equipment for non-ferrous metals industry are highlighting their recent developments to the 'converter' furnace concept including an innovative patented drive system: the 'Power ring' that is compact, direct and reliable and withstands wide variations of load at temperature. And their "Vari-Gas" patented combustion system, which offers increased yields, operational flexibility and metallurgical possibilities unheard of till now. Their furnaces have applications in metal recovery in the primary and secondary sectors and also in the die-casting foundry sector where automobile manufacturer Peugeot are using the tilting converter to recycle in-house reject engine components with iron inserts.

E**EBSD Analytical Inc**

#816

Lehi, Utah
www.ebsdanalytical.com

EBSD Analytical Inc. offers complete microstructural analysis services for scientists and researchers worldwide. We specialize in electron backscatter diffraction (EBSD) and EDS techniques, and guarantee the quality of our results. In addition to providing comprehensive analytical reports, we also provide high resolution EBSD data collection only on a Schottkey FEG SEM for customers who wish to do their own analysis. Our consulting services include custom on-site software and hardware training to ensure you are getting the most out of your own EBSD or EDS system.

ECL Company

#607

Ronchin, FRANCE
www.ecl.fr/

Worldwide market leaders in equipment for primary aluminium smelters, ECL is entirely dedicated to this industry and exports 97% of its turnover to all continents. Our highly skilled workforce and integrated design and manufacturing operations, allow us to complete successfully the most challenging projects.

With such a wide product range ECL is the only supplier to offer a complete package including conception, turnkey delivery, installation and maintenance in all the sectors of a smelter. ECL business strategy is to consolidate further technical support and after sales service capabilities globally. We are in the process of establishing fully owned subsidiaries on a worldwide basis in order to localize our know-how and reduce considerably our response time.

Address: 100 rue chalant -
59790 RONCHIN - FRANCE
Phone: +33 3 20 88 70 70
Fax: +33 3 20 88 70 99

EDAX Inc.

Please see our display ad on page 9.

#822

Mahwah, NJ

www.edax.com/

EDAX/TSL has been at the forefront of research and development of the Electron Backscatter (EBSD) technique. Today, the product line includes OIM™, Delphi, ACT and Pegasus. OIM™ is a powerful tool for investigating key aspects of polycrystalline microstructures including local crystallographic textures and grain boundary analysis. Delphi is phase identification by electron diffraction; Delphi integrates SEM and EDS functionality with EBSD data collection. ACT, Automated crystallography in the TEM, brings OIM-type capabilities to the TEM, allowing fast and easy indexing of spot diffraction patterns, indexing Kikuchi diffraction patterns and determining grain size distributions and grain maps. The Pegasus system is the powerful combination of chemical and structural analysis provided by EDS and EBSD techniques within the single environment.

Eirich Machines, Inc.

#530

Gurnee, IL

www.eirichusa.com

Eirich Machines, Inc. of Gurnee, Illinois, are manufacturers of the Eirich Intensive Mixer noted for the many advantages it provides the metallurgy industries, including:

- Significantly reduced process times, pronounced vertical and horizontal movement, and high speed mixing pan rotation facilitate faster mixing and faster discharge
- Low maintenance, low wear-no lubrication points in the mix, large access doors, no contact between product and shaft seals, no material build up due to wall/bottom scraper
- Cost effective-75.6% of connected power available for mixing, lowest operating cost over lifetime of any mixer, minimum 20 years life expectancy, without rework.

F

F L Smidt Group

#733

Bethlehem, PA

www.ffeminerals.com

The F. L. Smidth Group of companies is involved in many aspect of alumina refining and smelting and will present an overview of its technology at the 2004 TMS show.

FFE Minerals provides sizing and grinding equipment for bauxite, gas suspension calcinations systems for alumina and solid liquid calcination systems for liquid purification. FFE also provides complete coke calcinations systems for use in anode production.

F. L. Smidth Airtech provide a wide line of environmental control equipment for particulate and SO 2 control including electrostatic precipitators, fabric filters and semi dry scrubbing systems.

Moeller Materials Handling provide dense phase conveying systems, direct pot feeding systems, dosing systems for fume treatment centers and a wide line of bulk unloading and storage equipment.

Fluor

#924

Greenville, South Carolina

www.fluor.com/

Fluor is one of the world's largest and most diversified engineering, procurement, construction, and operations & maintenance services companies. We specialize in executing projects for the metals and mining industries with an international workforce of more than 30,000 employees with a network of 50 offices in more than 25 countries.

Consistently rated as one of the world's safest contractors, Fluor executes fit-for-purpose, high-quality capital projects on schedule and within budget. For over 50 years, we have successfully executed hundreds of mining and metals projects ranging from ore extraction and refining, reduction and smelting through recycling, casting, and rolling.

G

GE Advanced Ceramics

Please see our display ad on page 8.

#228

22557 West Lunn Road

Cleveland, OH

440-878-5781 Fax: 440-878-5928

www.advceramics.com

GE Advanced Ceramics (part of GE Specialty Materials) is a leading producer of advanced ceramic (non-oxide) powders, hot-pressed and chemically vapor deposited shapes. GE Advanced Ceramics produces boron nitride powders, coatings, hot-pressed shapes, and composites for metallurgical and other applications. Boron nitride coatings are non-wetting and inert with aluminum, magnesium, and related alloys and drosses, and provide outstanding lubricity and refractory properties. Innovative boron nitride solids and composites possess unique properties including outstanding release, wear resistance, and inertness in aggressive environments which make them broadly useful for metallurgical processes.

GE Water Technologies

#229

Trevose, PA

www.gewater.com

GE Water Technologies is the worldwide leader in providing specialty chemical treatment programs for the aluminum industry, metal processing, mineral processing and for water systems such as boilers, cooling towers and influent and effluent systems.

Our industry specific chemical treatment programs help to reduce operating costs and meet environmental objectives that improve product quality for Influent Water · Boiler Systems · Cooling Towers · Wastewater Systems · Caster Systems · Dust Control · Scale Control · Corrosion Inhibitors · Finishing Treatment · Conversion Coatings · Cleaners · Passivation Treatments · Heavy Metals Removal · Legionella Control · Combustion Additives.

Call us at (800)775-7175 or visit our website at www.gewater.com

GLAMA
Maschinenbau GmbH
#623
Gladbeck, GERMANY
www.glama.de

GLAMA has designed and built heavy-duty Mobile Equipment for Aluminium pot rooms, cast houses and anode rodding shops throughout the world for almost 30 years. The following types of mobile equipment are available:

- Anode Changing Vehicles
- Hammer Crustbreakers
- Tapping Trucks
- Anode Pallet Transporters
- Furnace Charging Machines
- Furnace Tending Machines
- Molten Metal Carriers
- Ladle Charging Trucks
- Butt Cleaning Manipulators
- Coil Lift Trucks

Gouda Vuurvast N.V.
#328
Gouda, NETHERLANDS
www.goudarefractories.com

For more than 100 years Gouda Vuurvast is a manufacturer and supplier of high quality refractory materials. Gouda Vuurvast is a Dutch company with production plants in The Netherlands, close to the world's largest harbour: Rotterdam.

Unlike other refractory manufacturers, Gouda Vuurvast has specialised in the demands and needs of a few industries, out of which the aluminium industry is the most important.

In addition to our products, Gouda Vuurvast offers a complete range of services:

- Inspection and trouble shooting
- refractory design and engineering
- construction and construction supervision
- project management
- training

The full range of products and services give the opportunity to handle small and large projects and also to offer long term full service maintenance contracts.

Our worldwide supply flexibility and expertise make Gouda Vuurvast the company for solving all your refractory problems.

Graphite Engineering & Sales
#601
Greenville, MI
www.graphite-eng.com

Graphite Engineering & Sales Co is a customer-oriented company specializing in cutting and machining graphite products. The level of excellence we demand of our quality and service have provided Graphite Engineering with continuing success and growth.

Graphite Engineering will have on hand knowledgeable Sales Engineers to answer any questions you may have. Graphite Engineering specializes in machining graphite per your specifications.

Graphite Engineering will be displaying the following items:

- nuts and bolts
- brazing fixtures
- degassing shaft and rotor
- canister inserts
- run-out plates
- molds
- secondary billet casting rings
- heating elements
- electrodes
- crucibles
- sintering trays
- sintering boats

Visit Graphite Engineering & Sales Co at booth #601 to discuss your graphite requirements.

Graphite Machining Inc
#439
Rocky River, Ohio
www.graphitemachininginc.com

H
Hamilton Research & Technology (P) Ltd.
812
Kolkata, India
www.hamiltonresearch.com

Hamilton Research & Technology (P) Ltd. (HART) provides complete Process Automation solution for the Aluminum Industry. HART's cost-effective technology solutions are available for Soederberg as well as Pre-baked type of pots of various sizes.

HART's distributed control system for Aluminum Smelters uses individual Electronic Pot Controllers (EPC) as Distributed control elements connected to a central Computer System. Proprietary control algorithm, designed by internationally renowned Aluminum experts and developed by Indian Software experts, is customized to suit parameters of individual smelters leading to optimum current efficiency. Systems have been implemented in major Aluminum smelters in India (INDAL, HINDALCO, MALCO) and in Russia (SaAZ , BrAZ).

HART has implemented a third generation Heating Regulation System for Carbon Anode baking plant. Individual controllers control the air inlet, draught as well as burner firing to provide accurate adherence to the ideal heating curve. Unique wireless infrared communication system designed for communication between field modules and master computer eliminates frequent maintenance.

Hencon B.V.
#317
Ulf, THE NETHERLANDS
www.hencon.nl/

SPECIAL VEHICLES FOR
THE ALUMINIUM INDUSTRY

Backed by more than 45 years experience, Hencon Holland is a main and worldwide supplier in the field of "Special Mobile Equipment" for the aluminium industry. The delivery pro-

gram covers the complete range for potroom (Söderberg and prebaked) and for the cast-house, such as:

- Furnace Charging Machines
- Furnace Tending Machines
- Hot Metal Transport and Tilting Vehicles
- Multipurpose Vacuum Cleaners
- Anode Pallet Transporters
- Tapping Trucks
- Anode Changing Machines
- Alumina/Fluoride/Soda/Bath Feeding Trucks
- Anode Covering Trucks
- Cavity Cleaners
- Crust Breakers
- Anode Briquette Feeders
- Rack Raising Trucks
- Pot Trimming Vehicles
- Anode Spading / Tamping Trucks
- Side Loading Forklift Trucks
- Platform Lifting Trucks

At the TMS 2004 Exhibition, Hencon will be present at booth no. 317, where the products of the delivery program will be shown.

SPECIFIC NEW DEVELOPMENTS ARE:

- Hot Metal Transport and Tilting Vehicles for AP30/35 technology
- Bath Tapping Trucks
- High Discharge Feeder for AP30/35 technology
- Anode Transporters for AP30/35 technology
- Combined Furnace Charging/Skimming Machine
- Compact Hot Metal Transport and Tilting Vehicle
- New Type Multipurpose Vacuum Cleaner H-7000-V

Heraeus Electro-Nite Co.

#507

Philadelphia, PA

www.electro-nite.heraeus.com/

Heraeus Electro-Nite Co., the market leader in molten metal sensor technology, has introduced the 9 Box Control strategy to many smelters worldwide. This provides a total system for a more efficient cell operation. 9 Box Control incorporates the use of several sensors; Cry-O-Therm "Superheat" sensor, CV-Therm (bath temperature and cathode voltage drop) and Positherm-AL® (bath temperature). A semi-automatic manipulator enables multiple Cry-O-Therm measurements to be

taken on the shop floor with ease. The Cry-O-Therm system will be on show to demonstrate the measurement of superheat. Also, the Digilance IV AI, the latest technology for bath temperature/CVD measurement, combined with latest data logging/IR downloading capabilities will be displayed.

High Temperature Materials Laboratory

#538

Oak Ridge, Tennessee

www.html.ornl.gov

The High Temperature Materials Laboratory (HTML) helps solve materials problems that limit the efficiency and reliability of advanced energy conversion systems. The HTML comprises six user centers, which are available to researchers in industry, universities, and federal laboratories.

Instruments available at the user centers have extensive capabilities for characterizing the microstructure, microchemistry, physical, and mechanical properties of materials over a wide range of temperatures.

HMR Group

#600

Husnes, NORWAY

www.hmr.no

For 45 years HMR Group of seven Norwegian companies supplies products, equipment and engineering advice to the aluminium industry.

Our potroom vehicles, anode stud bars and collector bars are used in all Norsk Hydro's smelters in Norway. We obtained this position by continuous development of our competence, reliability and competitiveness.

Contact us for information regarding:

- Potroom vehicles and equipment, including:
 - Tapping Vehicles
 - Anode Changing
 - Feeders
 - Spading Vehicles
 - Wheel Crust Breakers, etc.
- Pot construction and start-up, including:
 - Potshells
 - Superstructures
 - Busbars and flexibles installation
 - Anode stud bars
 - Collector bars

- Anode yoke and rod assemblies

Holton Machinery Ltd

#512

Bournemouth, Dorset, United Kingdom

Phone: +44 (0) 1202 581 881

Fax: +44 (0) 1202 581 789

E-mail: sales@holton-conform.com

www.holton-conform.com

Holton Machinery Limited manufactures the Holton Conform™ range of continuous rotary extrusion machines which are now in profitable production in 22 countries around the world. The company is a world leader in continuous rotary extrusion, with over 20 years experience and the backing of its multinational parent company, The Outokumpu Group.

Capitalizing on its new Holton Conform™ 2000 machine, Holton has taken orders for 6 new Conform™ lines in the last nine months as well as for a number of major refurbishment projects. Holton continues to challenge the accepted norms in applications for Conform™ and is spearheading new technologies and metallurgical processes through partnerships with universities and industrial technical centers.

Hysitron Inc

429

Minneapolis, Minnesota

www.hysitron.com

As the world leader in nanomechanical testing, Hysitron is solely dedicated to the development of testing solutions for nanoscale mechanical characterization. Known as the Pioneers of Scanning Nanoindentation, Hysitron's instruments provide high-speed in-situ SPM imaging, as well as measurement of many mechanical properties, including modulus, hardness, fracture toughness and wear resistance. Newly developed advanced techniques include acoustic emission sensing, dynamic testing (nanoDMA™) and a nanometer resolution Modulus Mapping technique. Higher force indentation and 3-D scratch capabilities provide the ability to study micro to nano scale connectivity. Stop by the booth to discuss a testing solution specific to your application.

I

Industrial Heating Magazine

#541

Pittsburgh, PA

www.industrialheating.com

Industrial Heating is the leading thermal processing journal in the world. As the industry's largest and most preferred publication, Industrial Heating has over 22,100 monthly subscribers. Written for thermal process engineers, articles deal with nonferrous and ferrous thermal processing technologies and practices. Please come to our booth and take a FREE copy of our publication.

Innovatherm GmbH & Co KG

#522

Butzbach, GERMANY

Phone: 0049-6033-9696-0

Fax: 0049-6033-9696-9

E-mail: dmaiwald@innovatherm.dewww.innovatherm.de/

Innovatherm GmbH & Co. KG is concerned with thermal processes and has specialized in tuning, reconstruction and optimization of existing furnaces. Especially in the field of the anode baking process, innovatherm has gained many years of experience in open and closed pit, single and triple baffle furnace technology. Innova therm continues and improves the former Leisenberg technology for firing and control systems for anode baking furnaces.

The Institute of Materials, Minerals and Mining

#136

London, United Kingdom

www.iom3.org

The Institute of Materials, Minerals and Mining, based in the UK, is the professional body for the international materials, minerals and mining community. The Institute has recently linked up with TMS to provide reciprocal benefits to members of the two organisations: TMS members gain access to the Institute's Materials Information Service and its online Careers Development Service. The Institute provides a range of activities and initiatives for its members, e.g. information and library services, conferences and workshops, publica-

tions, and promotes the materials discipline to younger generations through various educational resources. Full details at www.iom3.org

J

JOM

The official publication of TMS and the TMS 2004 Annual Meeting & Exhibition.

#513

Warrendale, PA

www.tms.org/pubs/journals/JOM/jom.html

Published monthly by TMS (The Minerals, Metals, and Materials Society), *JOM* is a technical journal devoted to exploring the many aspects of materials science and engineering. *JOM* reports scholarly work that explores the state-of-the-art processing, fabrication, design, and application of metals, ceramics, plastics, composites, and other materials. In pursuing this goal, *JOM* strives to balance the interests of the laboratory and the marketplace by reporting academic, industrial, and government-sponsored work from around the world.

K

KB Alloys, Inc.

#523

Reading, PA

www.kballoys.com

KBAlloys, Inc. and Anglo Blackwells Ltd. produce Aluminum-Based Master Alloys including TIBOR[®], TITAL[®], AND TICAR[®] grain refiners, binary hardeners and special purpose alloys, including BORAL[®], Strontium-aluminum, strontium-boron (STROBOR[®]) and beryllium-aluminum. The master alloys are available in a variety of convenient to use forms including coiled rod, cut rod, ingot. With the use of statistical process control, KB Alloys controls its processes from alloy conception through all the manufacturing steps, including raw materials, process monitoring and product testing, to on-time delivery of quality products.

KB Alloys is the exclusive distributor for NGK Metals' beryllium-aluminum, Bostlan's compacted hardeners, and Sunxing Chemicals' grain refiner rod.

This traditional quality system is now even stronger with certification of all our facilities to ISO 9001-2000 standard by the British Standard Institute. If consistency in product performance is important to your success, selecting KB Alloys or Anglo Blackwells as a vendor is your critical path to success. Our technical specialists and field sales engineers can assist you in creating the best master alloy for your needs, increasing your production, solving problems and improving the performance of your aluminum alloys. Please see us at our booth or contact us at www.kballoys.com.

KBM Affilips B.V.

#433

Oss, The Netherlands

Phone: +31 412 681311;

Fax: +31 412 635594

E-mail: info@kbmaffilips.comwww.kbmaffilips.com

KBM AFFILIPS is dedicated to the development, manufacture and marketing of specialty master alloys for the metallurgical industry. The company is backed by manufacturing facilities located in The Netherlands (KBM) and Belgium (AFFILIPS). Both KBM and AFFILIPS are fully ISO 9000-ISO 14001 approved and offer the most complete range of master alloys for the metallurgical industry.

Products for the Aluminium industry include AlTiB, AlTiC, AIB, AlSr as well as a full range of hardeners, tablets and briquettes (a.o. Cr, Fe, Mn & Ti).

The very complete product range for the Copper industry includes products like CuB, CuCo, CuCr, CuFe, CuMg, CuSi, CuTi & CuZr. KBM AFFILIPS is also the right address for NiMg (& complex FeNiMg), additives for super alloy production as well as Pb and Zn master alloys.

For further information please visit our booth 433 or contact our office.

Kabert Industries

#116

Villa Park, IL

Phone: (630) 833-2115;

Fax (630) 833-9298

www.kabert.com

Since 1960, Kabert Industries, Inc. has been furnishing the aluminum industry with casting

supplies. Fiberglass cloth, an inexpensive and effective method of nonferrous molten metal distribution and filtration, is specially woven for the aluminum industry. In addition to roll goods, the cloth can be cut and sewn into mini channel bags, trough socks and a variety of other shapes.

Other products available include gaskets, which are primarily used to seal and insulate troughs. Kabert also is a leading supplier of vacuum formed shapes and board. New product enhancements are routinely developed to improve the overall performance of the products we make.

We are proud of our reputation in the aluminum industry. Our total commitment is focused in continuing to offer our customers across the world the latest technology and unparalleled service at competitive rates.

Kempe International

#129

Geelong, Victoria, AUSTRALIA
www.kempe.com.au

Kempe International is a leading supplier of turnkey facilities, specialized equipment, engineering consulting and maintenance support services to the aluminium smelting industry.

Kempe offers products and services in a variety of areas including:

- Potrooms
- Casthouse
- Anode Handling and Cleaning
- Rodding Shop
- Materials Handling and Processing

Kempe has extensive experience in the smelting industry with clients in Australasia, India, Middle East, North America, South America and Southern Africa. In addition to these regions, we are keen to work with clients in China, Russia, and other European countries.

L

L P Royer Inc

#232

Lac-Drolet, Quebec, CANADA
www.lproyer.com/

Since 1934, L.P.Royer makes and develops specialized safety footwear. Even if it is for pro-

tection against molten metal infiltration, lineman, woodcutter or pruner, specialized chemical boot, for extreme cold or simply for a general use, available for men and women. L.P. Royer Inc has the solution to protect feet from injury. With the certification ISO 9001-2000, our products meet the Canadian (CSA), the American (ANSI) and the European (CE) standards.

L.P. Royer is proud to supply pot room boots for all the aluminum companies in Canada and part of Alcoa's group in the United States. You can learn more about L.P. Royer by visiting our website at www.lproyer.com.

Laeis GmbH

Please see our display ad on page 32
#522

Trier, GERMANY
www.laeis-bucher.com/

Laeis Bucher is a leading supplier of machines and plants for the ceramics and refractories industry, the building materials industry, the carbon industry and others. The product range includes:

- Hydraulic high performance presses with pressing forces from 600 up to 4200 tons
- Kilns & dryers with a temperature range up to 1850 °C
- Automation and handling systems
- High intensity hot mixers and grain heaters for batch sizes up to 2000 l
- Plant engineering

Laeis Bucher has developed a new concept for a paste preparation and anode pressing plant including cooling mixer, weighing and mould filling system and hydraulic press for a capacity of up to about 50 t/h in a single line.

Light Metal Age

#330

San Francisco, CA
www.lightmetalage.com

For 61 years, *Light Metal Age* magazine has covered primary production and semi-fabrication of light metals, primary aluminum and associated nonferrous industries throughout the world. Circulation goes to smelters, rolling mills, extrusion plants, sheet rod and wire mills, foundries and die casting, anodizing, roll casting, coil coating and forging operations.

Recipients are executives, general managers, plant managers, technicians, metallurgists, chemists and engineers responsible for fabrication, production and operations.

LMI Technologies (USA) Inc

Please see our display ad on page 13
#506

Detroit, MI
web: www.lmint.com
e-mail: sales.aluminum@lmint.com

Class II Selcom™ XLine™ laser triangulation sensors for level measurement and control of molten metal will be shown and demonstrated. Revolutionary XLine™ sensors combine the latest advances in digital technology, advanced image processing/recognition algorithms and laser line projection to provide more data than other type of sensors. Effects of smoke and steam do not interfere with the performance of the sensor. Variety of configurations will be introduced.

LMI Technologies will also exhibit its other laser sensor technology and supporting hardware solutions such as actuators and overpour protection. It's cornerstone Selcom® brand SLS 5000 sensor will also be shown. The new XLine targets level and flow control for mold level, launder level and furnace level applications.

M

MagChem, Inc.

#118

Boucherville, Quebec, CANADA
www.magchem.com/

Specialized Casting and Sawing Lubricants
MagChem Inc. is a leader manufacturer and designer of high tech casting and sawing lubricants.

MagChem casting lubricants have been developed to provide the following properties:

- High flash point, low smoke formulations
- Ecological acceptance in the DC process
- High thermal stability
- Low volatility
- High lubricity
- Stable lubricant film at the molten metal-mold interface

- Low oxidation properties at high temperatures

MagChem sawing lubricants are critical to ensure the integrity of the surface and the quality of the cut. High heat extraction properties, elimination of staining in heat treat stages and high lubrication values are distinct advantages provided by MagChem sawing lubricants. These lubricants are formulated with anti-oxidation and lubrication additives.

MagChem has also developed a full line of quality products for aluminum wire drawing and strip rolling.

Master Alloys Co.

#416

Wabash, IN

www.wabashalloys.com/

Master Alloys will be exhibiting its popular 100% pre-weighed hardeners. The elements are packaged in moisture-proof containers. The product is unique in that it is 100% element in powder form, which increases the surface area insuring fast dissolution. Because it is 100%, it reduces inventory and is more economical than other forms of hardeners.

Because of the unique packaging, the product is also:

- EASY TO USE
- EASY TO STORE
- MINIMUM METAL CONTAMINATION
- MINIMUM OXIDATION OF MELT
- GUARANTEED COMPOSITION

Master Alloys also supplies grain refiners and specialty alloys to the aluminum industry.

McAllister Mills

#137

Independence, Virginia

www.mcallistermills.com/

Come visit us at TMS 2004 in Charlotte. McAllister Mills has several new products we are introducing along with our standards. Our Maxsil CF6-2000 is the original Silica Fiber Needled Blanket, good for temperatures to over 2000°F. Maxsil CF6-2000 is shot free as well as one of the most durable Blanket products on the market at high temperature. Other products of note are specialized Oven/Furnace Door Seals, Coil Pads, Furnace Curtains, Filter Bags and Socks, Gaskets, Spe-

cialized Trough Cover Etc.

Tritex LLC, our Insulation Division is introducing a new alternative to RCF/Ceramic Fiber. The new Blanket product is suitable for temperatures to 1800°F, is Biosoluble and is strong and easy to fabricate. The new Blanket is available ¼" – 1" thickness and a standard 9# density.

Menardi

#725

Trenton, South Carolina

www.menardifilters.com

Menardi manufactures all OEM style filter bags, cages, pleated filters, cartridge filters, baghouse parts, as well as providing a wide variety of baghouse services. Media options include: high and low temperature felts, woven fabrics, fiberglass and pleatable media. Cage options include (but are not limited to): carbon steel, galvanized, stainless steel and epoxy coated. Baghouse services available include: bag changouts, system conversions, tubesheet installations, inspections and baghouse seminars. Menardi also offers baghouse control systems such as PulsePro™, a baghouse performance analyzer and controller, and the Continuous DustGauge™, a particulate flow monitor. Phone: 803-663-6551.

Metal Bulletin LLC

#606

London, UNITED KINGDOM

www.metalbulletin.com

American Metal Market & Metal Bulletin provide readers with up to date metals news and prices. They are the titles of choice for management at metals producers, semi-fabricators, traders, end-users, recyclers, and capital equipment suppliers.

AMM is the leader in North America, distinguished by reliable email delivery of time sensitive information, enabling executives to access their copy wherever they access email.

Metal Bulletin is widely known internationally for its comprehensive coverage of international news and prices. MB is complimented by MBR, its research arm, and a comprehensive range of directories and conferences covering various industry segments world-wide.

Metallurgical Society of CIM

#612

Montreal CANADA

www.metsoc.org

The Metallurgical Society (MetSoc) of the Canadian Institute of Mining, Metallurgy and Petroleum was formed in 1967 under the umbrella of CIM to serve the needs of all Canadian Metallurgists working to transform ores to metals and other useful commercial products. MetSoc, 1,400 strong, provides an open forum for engineers, scientists and technical personnel and students to exchange and share new knowledge. MetSoc also acts as a catalyst in enhancing the growth of its members who are engaged in all phases of the minerals, metals and materials industry.

To enhance the exchange of information MetSoc publishes a number of proceedings that touch a number of topics including:

- Hydrometallurgy of non-ferrous metals
- Light metals
- Pyrometallurgical operations, covering the smelting of sulphides and laterites
- Iron and steel developments
- Technology of zinc and lead processing
- Waste processing and environment issues
- Computer applications
- Management in metallurgy
- Mineral processing

MetSoc would like to take this opportunity to invite you to visit Booth 612. See you in Charlotte!

Metaullics Systems Co. LP

#308

Solon, OH

www.metaullics.com

Metaullics Systems is a leading supplier of engineered solutions for handling and processing non-ferrous molten metals. Metaullics, along with its subsidiary EMP Technologies provide products and systems that improve productivity, reduce energy consumption, increase metal recovery rates, and improve product quality. Metaullics offers the following low maintenance products.

- State-of-the-art Tensor Series™ pumps designed to last up to a year between rebuilds
- High flow EMP pumps which provide the reliability inherent with no moving parts

- Light gauge melting systems such as LOTUSS™ which maximize recovery of swarf and other hard to melt products
- Re-usable bonded particle molten metal filters with the ability to remove particles down to 5 microns in size
- Graphite degassing shafts and rotors using our proprietary anti-oxidation treatment and patented Shur-Lok™ coupling for long life and easy maintenance

MEXTRA Eng. Extrativa de Metais

#608

Jardim Inamar Diadema SP, BRAZIL

www.mextrametal.com.br

Producing ferro alloys and non-ferrous metals, MEXTRA started its activities in 1978, as a result of the aspirations of a metallurgical engineer, Eduardo Barchese, who wanted to have his doctoral thesis transformed into an enterprise. Before long, MEXTRA reached an outstanding position in the market, producing metals and metal alloys which had never yet been produced in Brazil. Today, dynamic and aggressive management brings the company to expand its businesses, obtaining international recognition.

More recently, with the production and grinding of metals, MEXTRA increased its range of products and developed a line called Mextral Alloying Tablets. They are alloying tablets for aluminum, such as; iron, chromium, manganese, copper and titanium which add excellent mechanical properties to aluminum. We have become well-known supplying the main aluminum manufacturers such as ALCAN, ALCOA, CBA, BILLITON, ALUVALE and others, with this line of products.

Our company has grown aiming at satisfying our clients and respecting our employees, aware that this is the pathway to our continuous growth.

Mid-Mountain Materials

#715

Mercer Island, WA

Phone: 1-800-382-2208

www.mid-mountain.com

Mid-Mountain Materials specializes in industrial textile manufacturing, coating formulation

& coated fabrics, insulation mats, refractory specialties, and fabricated components. Our expertise in diverse material technologies enables the design and manufacture of engineered solutions for severe applications across multiple industries. Mid Mountain's focus in the Aluminum Industry is energy efficiency and environmental compliance thru custom designed sealing systems for aluminum processing equipment. Designed specifically for the Aluminum Industry, our proprietary "Q" coating has been a key in the performance success of many composite material-sealing systems. Armatex Q coating is impregnated into traditional textiles to enhance temperature, chemical & abrasion resistance.

"The Final Barrier Against Abrasion, Chemicals & Heat."

Mikropul

723

Sewickley, Pennsylvania

www.mikropul.com

MikroPul, a Beacon Industrial company, offers complete turnkey air quality system design and implementation capabilities including process analysis, system design, equipment supply, installation, start-up and testing.

MikroPul invented the pulse jet dust collector in 1956 but also has considerable experience and a proven line of products including cyclones, cartridge collectors, reverse air collectors, shaker collectors, wet and dry scrubbers, wet electrostatic precipitators and gas coolers.

As a world leader in dust control and product recovery systems, MikroPul has offices throughout North America and also in Australia, France, Germany, South Africa and South America. MikroPul is headquartered in Charlotte, North Carolina.

MikroPul Pittsburgh has been established specifically to serve the Metals Industries (steel, foundries and non-ferrous).

Milward Alloys, Inc.

#706

Lockport, New York

www.milward.com

Milward Alloys, Inc. is a manufacturer of both

copper and aluminum based master alloys. It produces a wide variety of grain refiners, hardeners, modifiers, and degasifiers for the non-ferrous industry in the form of rod, waffle, ingot, shot, cut-cast and Acu-Stix.

Several unique alloys are available like 1% and 5% Beryllium Aluminum, 10% and 15% Strontium Aluminum and 8% and 15% Phosphorus Copper. Milward Alloys also possesses unique capabilities to manufacture specialty alloys upon request. We invite you to stop at our booth #706 to discuss your special needs.

MINTEQ International, Inc.

#707

Slippery Rock, PA

www.mineralstech.com

MINTEQ International Inc. is one of the world's largest producers of monolithic and specialty refractory materials for the steel, cement, glass, and non-ferrous metals industries. MINTEQ is a resource and technology based company with R&D facilities in five locations around the globe. Our aluminum resistant, self-flowing and shotcrete castable products are the most advanced in the industry.

One of our newest product lines is the proprietary STARFLOW family of products. STARFLOW products were developed for high temperature maintenance and repair of melting and holding furnaces, troughs, ladles, and molten metal containing vessels. STARFLOW products provide the following benefits:

- Furnished as a dry product that requires no addition of water
- No mixing required
- No dusting during application (safe, environment friendly application)
- Contains no pitch or other organic additives
- Wets out and flows upon exposure to heat
- Sets up within minutes
- Eliminates costly downtime for maintenance and repair

Stop by our booth at the TMS in Charlotte for a STARFLOW demonstration!

Mobiquip

#501

Delta, British Columbia, Canada

E-mail: sales@mobiquip.com

www.mobiquip.com

MOBIQUIP INDUSTRIES LTD. specializes in the design and manufacture of unique heavy duty mobile and industrial equipment utilized in Aluminium Smelters and other industries.

- Our reputation as a "Key Supplier - Partner", highlights our corporate strengths
- The ability to define both the task and the required solution.
- The willingness to do whatever is needed for any particular design requirement.

After developing some 49 prototypes, we still hold a 100% success rate.

If you expect satisfaction through value analysis and project teams, we can assure your success - MOBIQUIP- part of your team!!!!

Molten Metal Equipment Innovations

#613

Middlefield, OH

www.info@mmei-inc.com

Molten Metal Equipment Innovations, Inc. is a dynamic and innovative company that designs and manufactures people-friendly equipment for the aluminum industry. Products include molten metal circulation, transfer and gas injection pumps, scrap melting systems and rotary degassers. We specialize in the ability to customize any of our products to meet our customers' unique needs. MMEI invests heavily into engineering, upgrading of existing equipment and new products. We are fully staffed to offer a variety of services to our customers. This includes on-site installation and start-up of the initial equipment. Contact us at 440-632-9119 and our web site at www.mmei-inc.com.

Murlin Chemical, Inc.

#407

West Conshohocken, PA

Phone: (610) 825-1165

Fax: (610) 825-8659

E-mail: general@murlinchemical.com

www.murlinchemical.com

Aluminum Grade Natural Bone Ash, Natural Bone Ash and Synthetic Bone Ash are manufactured at the Murlin Chemical Plant in

West Conshohocken PA, USA. All these products are accepted world wide in the non-ferrous metals industries as the premium mold release agent. Bone ash provides a consistent barrier against attack by the molten non-ferrous metal when applied to a mold, a refractory trough, a surface, or a tool that will be exposed to molten metal. Bone ash not only provides a non-wetting barrier to molten non-ferrous metal but also protects as a thermal insulator while allowing easy release of castings.

Plan to visit BOOTH 407 to learn more about advantages gained by using Murlin Bone Ash.

You may contact us at any time at 610-825-1165 (phone), 610-825-8659 (fax), email at general@murlinchemical.com or visit our web page at www.murlinchemical.com.

N

Nalco

#814

Naperville, Illinois

www.nalco.com

National Institute of Standards and Technology

Advanced Technology Program

#921

Gaithersburg, Maryland

www.atp.nist.gov

The Advanced Technology Program (ATP) is administered by the Department of Commerce's National Institute of Standards and Technology to provide cost-shared funding to industry to accelerate the development and commercialization of high-risk technologies that promise widespread economic benefits for the nation. In sharing the development risks of technologies that create new products, services and industrial processes, ATP fosters projects with a high payoff for the United States. For-profit companies propose, co-fund, and conduct ATP projects in partnership with academia, R&D organizations and federal labs. Since 1990, ATP has selected 709 projects for its public-private partnerships, representing a total investment of \$2.1B from ATP, matched by \$2.0B from industry. For further information, please visit the website, at: <http://www.atp.nist.gov>

NKM Noell Special Cranes GmbH & Co KG

#622

Wurzburg, Germany

www.nkm.com

NKM Noell Special Cranes GmbH & Co KG is a leading supplier of cranes and special equipment to the aluminium industry for Reduction, Carbon and Rodding. The scope of supply covers the complete engineering, detail design, manufacturing, start up and commissioning for individual, equipments as well as for turn key projects.

Aluminium Reduction:

- Pot Tending Cranes
- Anode Jacking Frames
- Transfer Gantry Systems
- Cathode Crane
- Crucible Heaters
- Crucible Cleaning Machines
- Pipe Cleaning Machines
- Anode Clamps
- Roof Filling Spouts
- Retractable Buffers

Aluminium Carbon:

- Furnace Tending Cranes
- Flue Wall Brushing Machines
- Anode Stacker Cranes
- Flue Wall Straightening Machines

Aluminium Rodding:

- Green & Baked Anode Handling
- Casting Station
- Mating Station
- Stem & Pin Monitoring
- Stem Brushing
- Stem repair
- Butt Precleaning
- Butt Stripper
- Butt handling/Treatment
- Bath handling/Treatment
- Loading/Unloading Station
- Pin Graphite Coating
- Thimble Stripper
- Pin Heating

Netzsch Instruments Inc.

#806

Burlington, Massachusetts

www.e-Thermal.com

Maker of instruments for thermal analysis, in-situ dielectric analysis, thermal conductivity measurement, & contract testing ser-

vices; DSC, TGA, Simultaneous TGA-DSC/DTA, TMA, DMA, DEA - Micromet-series cure monitoring by dielectric analysis in-process and lab-scale, evolved gas analysis coupling thermal analyzers to FTIR & MS, dilatometers, thermal conductivity & laser flash diffusivity. We will display our range of instruments for thermal analysis & thermal conductivity measurement and will offer information on our fully accredited contract testing lab services.

North American Manufacturing Company Ltd.

#124

Cleveland, OH
www.namfg.com

North American Manufacturing is a solution provider for combustion and process control systems. The company produces and sells combustion hardware as well as complete systems including installation drawings and complete control systems.

North American has been providing systems for the aluminum industry for better than forty years, specializing in energy savings, emissions reduction and melt rate optimization.

O

Opsis, Inc

#332

San Marcos, CA
www.opsis.se

Opsis Inc. is the North American supplier of Open Path Monitoring systems for air quality monitoring, continuous emissions monitoring (CEM) and process control. The ultraviolet DOAS technology, developed by Opsis, has received international approvals and provides customers with reliable system solutions for a number of applications. All systems feature dynamic calibration capability and simple hardware configurations. The ambient system is an EPA approved equivalent method for SO₂, NO₂ and O₃.

Other Opsis benefits include complete DOAS system packages, fully automatic monitoring systems, multi gas and multi path systems, fast, continuous measurements, modular construction which allows expanding or updating of existing installations and simple report generations.

Applications for Opsis equipment include Trend Monitoring, Air Quality Monitoring at street level, Fence Line Monitoring of fugitive emissions, Monitoring Background Levels, Measurement of Aircraft emissions, Waste Incinerations, Power Plants, Mineral Wool Production, Cement Industry, Chemical Industries, Sulfuric Acid Production, Fertilizer Production and Aluminum Smelters.

Outokumpu Technology Ltd.

Please see our display ad on the inside back cover.

#512

www.outokumpu.fi/metallurgy/aluminium.htm

In 2001, Outokumpu, a leading global metals and technology group, expanded their offerings to the alumina and aluminum industries. The acquisition of German companies, KHD Aluminium Technology GmbH and Lurgi Metallurgie GmbH, compliments the technologies of its Canadian subsidiary Aisco Systems Inc.

Outokumpu Aluminum Technology specializes in the design, engineering and delivery of alumina calcining plants (Lurgi Metallurgie), paste plants (KHD Aluminium Technology), rodding shops (Aisco and KHD Aluminium Technology) and casting machines (Aisco).

Outokumpu's long term commitment to the metals industries combined with the technologies of these three reputed suppliers, positions Outokumpu Aluminum Technology to be the technology and service partner of choice for the aluminum industry. e-mail: aluminum.technology@outokumpu.com

P

Parker Hannifin

#231

Ulricehamn, SWEDEN
www.parker.com

Parker is the world's leading diversified manufacturer of motion and control technologies and systems. Parker provides precision-engineered solutions for a variety of commercial mobile, industrial and aerospace markets. We design and manufacture optimal systems using fluid connectors, hydraulics, pneumatics, instrumentation, refrigeration, filters, electro-

mechanical components, and seals required in motion-control systems.

Parker's experience in the aluminium industry spans over more than 30 years. Parker has equipped machinery in all phases of aluminium production including smelters, casters & extruders through grinders, rolling mills & strip processing lines etc.

PCE Ltda

#706

Rua Felix da Cunha, 332
90570-000 - Porto Alegre, RS - BRAZIL
Phone: +55.51.3346.1287
Fax: +55.51.3346.5205
Email: pceltda@portoweb.com.br
URL: <http://www.pce.com.br>

Founded in 1993, PCE Ltda is a consulting company located in Porto Alegre, Brazil, working with engineering projects and numerical modeling. We have a technical staff of 12 mechanical, metallurgical and electrical engineers specialized in the use of CFX, Ansys and Algor numerical simulation packages. In addition to having more than 40 clients in Automotive, Petrochemical, Mining and Railroad companies our company has also developed an expertise in the Aluminum field, working with pot thermal balance, MHD and stability analysis, anode furnace thermal and combustion simulation. PCE Aluminum Smelters clients are ALBRAS, VALESUL, ALMA, HILLSIDE, DUBAL, RUSAL, ALCOA and ALUMAR.

Pechiney Group

#422

Voreppe, FRANCE
www.pechiney.com

With an annual alumina production of nearly 2 Mt. and aluminium production of 1 Mt., Pechiney is one of the major producers.

The Aluminium Pechiney Technology has always been very innovative and has set many records, particularly for power consumption, cathode performances and environmental protection (more than 2800 AP 18 cells and 2,000 AP-30 cells are operated around the world).

Pechiney Aluminium Engineering markets the Pechiney Group's Technologies for casthouse equipment. They are specialists in the areas of

degassing and filtration, including its recently improved Alpur TS system, automatic DC casters and continuous strip casters using the Jumbo 3C process. They are also suppliers of technical assistance in the manufacture of flat-rolled aluminium products, for rolling and finishing or basic engineering, and operating know-how for turn key plants.

Premelt Systems Inc

716

North Canton, Ohio

www.premelt.com

Premelt Systems is the premier supplier of complete metal scrap cleaning, processing, and melting systems worldwide. Our patented chip melting technology combines the conventional vortex well with our nitrogen operated gas lift molten metal circulating pump. The addition of an enclosed charge well hood in combination with our continuous scrap feeding systems results in a scrap melt system with no moving parts in the bath, hands-free operation, and optimum thermal efficiency with the highest melt yield possible.

Our innovative metal processing and melting techniques ultimately result in unprecedented operational efficiencies and metal cost savings of 10% or more. Please visit us at booth #716

Process Engineering Resources Inc

#712

Salt Lake City, UT

www.processeng.com

Process Engineering Resources is dedicated to the creation of leading edge simulation tools and software, specifically targeted at the computational modelling of the most challenging multi-physics engineering processes governed by the equations of continuum physics.

PHYSICA+, a new generation of software to enable the computational modelling of multi-physics phenomena in a unified environment. Multi-physics simulation essentially involves interaction amongst continuum phenomena (e.g fluid-structure interaction, magneto-hydrodynamics with heat transfer and solidification/melting, heat transfer-material defects, aero-acoustics; these are but a few of the common examples around us).

PHYSICA+ Solve challenging computational modeling problems with -

- Multi-Physics simulation technology (electromagnetics, acoustics)
- Navier-Stokes flows, heat transfer, phase changes, structures
- One-way, two-way, or fully coupled physics
- Open software architecture
- Essentially parallel
- Feature-rich (in terms of physics)
- Competitive cost

Pyrogenesis Inc

Please see our display ads on pages 44 and 56.

#825

Montreal, Quebec, Canada

www.pyrogenesis.com

PyroGenesis commercializes technologies related to the thermal processing of materials serving two very distinct fields: (i) waste treatment/recovery and (ii) advanced materials. In the area of waste treatment/recovery, PyroGenesis offers advanced plasma waste treatment systems designed to treat solid waste generated either on board ships or small communities. In addition, PyroGenesis' proprietary rotary furnace recovers aluminium or zinc from dross at lower cost and without residue or CO₂ production. In the area of advanced materials, the Company offers advanced protective and functional coatings used in industrial and aerospace applications, as well as, high quality metal powder, including fine, spherical titanium powder used in biomedical and aerospace applications.

Pyrotek Inc.

#314

Spokane, WA

www.pyrotek.info

Our mission is to provide innovative solutions to customer needs utilizing our global resources. With extensive technological resources and experience, Pyrotek offers aluminium producers, casters and fabricators a comprehensive range of high temperature products, metal treatment systems and technical services.

Pyrotek provides a complete line of products and processing solutions for:

- Pot Rooms
- Carbon Bake
- Metal Treatment

- Centrifugal Casting
- Ingot Casting
- Pig Casting
- Wire Casting
- T-Ingot Casting
- Strip Casting
- Billet Casting
- Rolling Mills
- Extrusion and Fabrication

Pyrotek has over 60 locations worldwide and an extensive team of sales engineers for in-plant consulting on melting, treating, transferring, filtering and casting processes. sales@pyrotek.info; Pyrotek Inc., 9503 E. Montgomery, Spokane, WA 99206 USA

R

R&D Carbon Ltd.

#522

Sierre, SWITZERLAND

www.rd-carbon.com

R&D Carbon is a leading expert in carbon technology with a long history of research and development, anode plant operation and customer support. Our products and services include:

- Engineering:
We design paste plant and bake furnace with our network of renowned equipment suppliers, refractory and system engineers for lowest investment and operating cost.
- Plant Optimisation:
We transfer our expertise e.g. by auditing coke calciners and anode plants, followed by plant optimization and fine tuning to increase plant productivity and improve product quality.
- Laboratory Testing:
Our agent TEM sells exclusively our laboratory test equipment for coke, pitch, anodes, cathodes and lining material. In our performant technology center we evaluate raw materials and anodes with ISO methods.
- Training:
We give on-site or centralized courses about general or tailored carbon topics.

Resco Products

#532

Pittsburgh, PA

Resco Products, Inc. offers a full line of specialty refractories for monolithic repairs and perpetual linings for applications such as carbon baking, primary smelting, secondary melting, die casting and foundry operations. These brick monolithics and specialty refractories provide the dependable performance you require under the harshest conditions and in the most corrosive atmospheres.

Along with our aluminum-resistant high alumina brick products, Resco has a complete product line of aluminum-resistant monolithics for the lower sidewall, ramp and hearth. High strength, alkali and creep resistant castables for the upper sidewall and roof of aluminum melting reverberatory furnaces complete the product offerings. Most of these these monolithic refractories can also be pumpcast into place. Resco also offers a complete line of castables for carbon baking furnace applications.

Riedhammer GmbH

#700

Nuremberg, GERMANY
www.riedhammer.de

Since 1925, specialized in the design and construction of high productive, state of the art Ring Pit Furnaces for baking of high quality anodes and cathodes for the aluminum industry as well as electrodes for the steel industry: more than 105 furnaces, in 25 different countries have been built or modernized based of this concept. Riedhammer also supplies the pertinent equipment for the aforesaid furnaces like Auto Firing System for a wide range of fuels, waste gas treatment system, tending cranes and conveyors, focusing outstanding product quality, maximum fuel efficiency, reliability and world class environmental friendliness in an affordable way.

S

Saint Gobain Ceramics

#223

Worcester, MA
Phone: 508.795.4081, or 508.795.2173;
FAX: 508.795.5011
www.refractories.saint-gobain.com

The Non-Ferrous Metals Group, a business unit of Metallurgy Solutions, Saint-Gobain

Ceramics & Plastics, Inc. will exhibit at the 2004 TMS Annual Meeting Exhibition. The Non-Ferrous Metals Group represents the former AnnaWerk, Norton Company, Carborundum Company and Savoie Refractaires. Non-Ferrous Metals provides specialty refractories for molten metal containment and other critical metal contact applications. Refractory products for the aluminum industry include reduction cell sidewall bricks and blocks, melting/holding furnace ramp and hearth bricks, castables and mortars, immersion heater and thermocouple protection tubes for degassing equipment.

Non-Ferrous Metals also supplies specialty and proprietary materials for critical areas in filter systems, molten metal pumps, troughs and dry vibration cements for coreless induction melting/holding furnaces. Non-Ferrous Metals products for the copper industry include shaft furnace liners, bricks, burner components, associated mortars and ramming cements, low moisture/high strength castables for launders, spoons and other critical metal contact applications.

Non-Ferrous Metals, Metallurgy Solutions is a worldwide business of Saint-Gobain Ceramics & Plastics, Inc. with a North American offices located in Worcester, Massachusetts-USA (telephone: 508-795-2667, or 508.795.2173.)

Scientific Forming Technologies Corporation

#813

Columbus, Ohio
www.deform.com

Scientific Forming Technologies Corporation develops, maintains and supports DEFORM™ engineering software, which enables designers to analyze metal forming process on the computer rather than the shop floor using trial and error. Process simulation using DEFORM™ has been instrumental in the improvement in cost, quality and delivery. Today's competitive pressures require forming companies to take advantage of every tool at their disposal and DEFORM™ has proven itself to be one of the most effective.

SELEE Corporation

#402

Hendersonville, NC
www.selee.com

SELEE Corporation, born as a division of an international aluminum company, introduced ceramic foam filters of SELEE® structure as a medium for filtering molten aluminum in the 1970s. SELEE immediately established a reputation as the world leader in aluminum melt treatment and filtration technology, and for ceramic material development and innovation.

SELEE Corporation is dedicated to new product development, continuous improvement and innovation, always building on its strong background in the aluminum industry. For product and service applications in the aluminum and other metal industries, SELEE's Technical Sales and Support Team consists entirely of Metallurgical Engineers. You do business with us because we know your business!

In the aluminum industry, SELEE is key to achieving the highest levels of metal cleanliness and quality. SELEE is the only supplier of molten metal handling and treatment products in the world that is certified to ISO 9001, QS-9000 and ISO 14001 standards.

Sente Software and Thermotech Ltd

#824

Guildford, United Kingdom
www.thermotech.co.uk

Sente Software & Thermotech Ltd. offer materials-focused software products for modeling the behavior and properties of complex alloys.

The thermodynamic databases produced by Thermotech set the standard for the prediction of equilibrium and non-equilibrium structures in multi-component commercial alloys. Our latest product, JMatPro, is a unique software program for predicting phase transformations, physical/mechanical properties and solidification properties for complex alloys. It provides fast and robust calculations that have been extensively validated to ensure sound predictions of the properties.

Our software combines industrial relevance with realistic physical models and user-friendly

interfaces that work with "real" materials which are multi-component in nature and exhibit complex behavior.

SETARAM

#337

Caluire, FRANCE

www.setaram.com

For more than 30 years, Setaram has been producing anode baking furnace firing and regulating systems for the aluminium industry.

The Setaram Firing Systems are available for any type of ring furnace (open or closed type) and for any type of fuel (light or heavy fuel oil, natural gas, coal gas or LPG).

Setaram proposes a complete hardware and software package to control and monitor the whole anode baking process through the following functions:

- central regulation
- real time supervision
- data management

The heating programming and regulating techniques are operating in aluminium plants all over the world. Dedicated to constantly improving our technology, Setaram Firing Systems set the standards for the industry.

Silver Needle, Inc.

#237

Kellogg, ID

Toll Free 1-800-863-7733

www.silverneedle.net

With 23 years of combined knowledge of foundry-smelter operations and safety clothing the Silver Needle was born.

- 23 years of designing and manufacturing safety apparel for the molten metals industries.
- Specializing in custom orders
- Aluminized fabrics and leathers
- Vinex™
- Spats, aprons, chaps, coats, gloves, lab coats, shirts, pants and more.

At the Silver Needle, your safety is our only business!

Skamol Americas, Inc.

#329

Charlotte, NC

www.skamol.com

skamolamericas@skamol.dk

When it comes to insulating materials, knowing the right solution can make the difference in thermal efficiency, energy savings, and lifetime of the lining. Skamol Americas can optimize insulating solutions in aluminum reduction cells, carbon baking furnaces and cast house furnaces. We offer a wide range of thermal insulating products for service temperatures up to 1150 C (2102 F) including bricks, blocks, slabs and special shape pot-set insulation to fit individual cell designs. Our Silcal 78 Nitride Bonded Silicon Carbide bricks and shapes provide world-class performance. For flow control components: T-Plates, Floats, pins and spouts, we offer Calcast high density calcium silicate from Calcast America. From Elkem Carbon, we offer Elkem's Carbon's "R" and "T" Lining Paste.

SNF Inc

808

Riceboro, GA

www.snfhc.com/

SNF Inc is the US based subsidiary of SNF Floerger, the world's leading manufacturer and lowest cost producer of flocculants and coagulants. We also manufacture a complete line of dispersants and other chemical additives. We are headquartered near Savannah, GA and invite your call or email to marketing@snfhc.com or 912-884-3366. Mail inquiries to One Chemical Plant Rd, Riceboro GA 31323.

Solios Group

#408

www.solios.com/

Solios Carbone

Givors, FRANCE

www.solios-carbone.com

Solios Carbone is a leader in turnkey plants, process and proprietary equipment in the primary aluminium industry, for :

- Green Anode Plant,
- Bath Processing,
- SPL and Carbon Butts Processing
- Pitch Processing.

Solios Carbone offers a leadership based on industrial engineering and process know-how and has also developed a wide range of proprietary equipment for dry material preparation, paste preparation, anode forming and treatment of waste.

Solios Carbone is also developing the SCAP RHODAX® process in co-operation with Aluminium Péchiney. The SCAP RHODAX® is a revolutionary scheme for dry material preparation which will drastically reduce the investment cost for new green anode plant.

Solios Environnement SA Solios Environnement Inc

St Germain en Laye, FRANCE

Montreal, Quebec, CANADA

www.solios-environnement.com

Solios Environnement is a world expert for the fume dry and wet scrubbers dedicated to the primary aluminium industry.

Solios Environnement designs, builds and installs dedusting units and fume or gas treatment plants thanks to a complete range of proprietary equipment.

Solios Environnement is well-known for providing high quality equipment based on reliability and easy maintenance. Each process is an integrated part of the aluminium production and does not produce any waste.

Solios Environnement has also developed the TGT-LIR®, the latest design of baghouse specially developed for treatment by dry-scrubbers of high amperage electrolysis pots.

Solios Thermal

Wombourne, Wolverhampton

UNITED KINGDOM

www.solios-thermal.com

Solios Thermal is a world class contractor in the design, supply and installation of thermal processing equipment both for the primary and the secondary aluminium industries.

Solios Thermal is specialised in the supply of equipment for the melting and processing of Aluminium:

- Casthouse Furnaces for Smelters
- Melting & Holding Furnaces.
- Heat Treatment Furnaces - Slab, Coil and Foil Annealing

- Recycling Equipment.
- Associated Control Systems

Solios Thermal also offers a complete range of advanced control systems .

In Secondary and Primary Aluminium, Solios Thermal has launched a new product for stirring and transferring metal : EMIX™: an Electromagnetic Induction Stirring device.

STAS

#120

Chicoutimi, Quebec, CANADA
www.stas.biz

Located in Quebec, Canada, Stas is at the heart of the world's largest concentration of aluminium plants, where a wide range of its equipment of which many are patented, is successfully installed. From these plants, new ideas are constantly being generated to help Stas continue to develop new equipment.

Our automated equipment, of which there are nearly 100 different designs, is now found in both primary and secondary aluminium plants around the world on 5 continents with agents strategically located to ensure local needs are met. They include degassers, filters and injectors to improve quality, plus automated anode handling, crucible cleaners, siphon tube cleaners and dross treatment to reduce costs.

Stellar Canada Inc

322

Burlington, ON, Canada

Ceramite® : Superior Performance in Wear Resistant Applications

Whetstone Technology, Cabot PA and Stellar Canada Inc., Burlington Ontario are pleased to present Ceramite® manufactured by Elkem Materials Inc. Kristiansand, Norway. Ceramite® is a range of products incorporating inorganic composite materials and densely packed particles, formulated to give superior performance in applications where wear resistance is a critical operating factor. Primary aluminum facilities around the world have used Ceramite® products to solve problems in hot and cold environments for the past decade. A complete list of applications, products qualities and a group of product experts will be available throughout the TMS meeting. Booth 322.

Stellar Materials, Inc.

#428

Northville, MI
www.stlr.com/

Thermbond is a unique refractory binder technology with a number of features not available in traditional refractory systems.

Unlike conventional refractory products, Thermbond refractories naturally resist penetration from molten metals. Since there are no additives in Thermbond to burn or wear out, linings always remain clean, even after long-term use or exposure to very high temperatures. Since the lining stays clean, there is far less maintenance and mechanical abuse, resulting in significantly longer refractory life.

In addition, Thermbond® refractories exhibit very high adhesion strengths to existing refractories, so they can be installed as a veneer to "renew" worn refractory linings.

Additional features of Thermbond products include fast setting and curing, very high green strengths, far less cracking, and high resistance to thermal cycling.

Thermbond is available in over 60 different formulations for virtually every refractory application. Learn more at www.thermbond.com or email us at info@thermbond.com.

T

Techmo Car s.p.a.

#228

Limena, Padova, ITALY
www.techmo.it

Over the last 40 years, Techmo has been devoted to the solution of technical problems connected with the Aluminium Industry. Among the most significant machines produced by Techmo are Anode Changers, Tapping Trucks, Feeder Vehicles, Crust Breakers, a wide range of heavy duty Transporters and the most up-to-date Furnace Tending Vehicles.

Techmo is also supplying to Aluminium Company fixed plants, such as Anode Butts Cleaning Stations and Ladle Cleaning Stations, tailor-made equipment and a wide range of services.

All of Techmo's products and services propose new, environmentally friendly and cost-effective solutions to Aluminium producers.

Thermal Ceramics

#106

Augusta, GA
www.thermalceramics.com

Thermal Ceramics, a worldwide leader in refractory and high-temperature insulation technology, offers solutions for the most demanding thermal management challenges.

Our products include:

- Tri-Mor®Albond®, Alcast®, Kaocrete® and Kaolite® Castables
- K® and JM™ Insulating Firebrick and Mortars
- TR-19®/TR-20® Structural Board Insulation
- Kaowool® Blanket/Strip/Bulk Ceramic Fibers
- Kaowool® and RPC® Boards and Shapes
- BTU-Block™ Microporous Insulation
- Kaowool® Paper and Felts
- Pyro-Bloc® Weld-On and Veneering Modules
- Superwool® 607® and Superwool 607® MAX™

Thermal Systems America

#722

Canastota, NY
www.thermalsystemsamerica.com

Thermal Systems America will be highlighting our accomplishments in Refractory Big Block Technology. We supply the total package of refractory materials that allow customers to reduce time in rebuilding melters and holders. TSA will bring furnaces back into service weeks ahead of traditional schedules. If you can not live with long rebuilds and labor is tight, come to our booth and let's talk!

Thermcon Ovens B.V.

#236

Geldermalsen, THE NETHERLANDS
www.thermcon.com

Thermcon Ovens BV, a member of the Otto Junker Group of companies, is a supplier of the complete state of the art casthouse package for the production of aluminium extrusion billets, rolling slabs and foundry ingot.

The delivery program for the casthouse comprises: charging machines, skimming machines, melting and holding furnaces, launders, casting machines, homogenizing furnaces and billet sawing systems.

Recycling furnaces for contaminated aluminium scrap are also available. Together with other members of the Otto Junker group that supply pusher furnaces, heat treatment plants for aluminium strip etc. and Elhaus equipment for around the extrusion press, unique one stop shopping is available to the aluminium industry.

Thermo-Calc Software

Please see our display ad on page 5.

#724

Stockholm, SWEDEN

www.thermocalc.com

Thermo-Calc Software is a well-established supplier of thermodynamic calculations and kinetic simulations software. Among our many products you may find:

Thermo-Calc Classic (TCC) software for thermodynamic calculations in multi-component materials. Now also available with a Graphical User Interface (TCW), that makes this software very easy to learn and operate. The software may be applied to different types of materials, such as; all kind of steels, Ni-base superalloys, Al-, Cu-, Ti- and Mg-alloys, nuclear materials, minerals, slag systems, salts, ceramic systems, semi-/superconductors and aqueous solutions. Calculations involve phase diagram calculations, calculation of all kinds of thermochemical properties such as activities and enthalpies etc., calculation of Pourbaix diagrams, solidification paths etc.

DICTRA is a highly advanced tool for simulating the kinetics of diffusion controlled phase transformations in multi-component alloys. Examples of processes that may be simulated are; carburizing and decarburizing, microsegregation during solidification, precipitate dissolution/growth/coarsening, interdiffusion in compounds etc.

TSL

#882

Draper, Utah

www.edax.com

Thorpe Technologies, Inc

#401

Whittier, CA

www.thorpetech.com

sales@thorpetech.com

Thorpe Technologies Inc, a professional engineering organization, focuses exclusively on the design, development, engineering, and construction of industrial furnaces, delacquering systems, thermal oxidizers, and related thermal technology.

Aluminum product line includes:

- Apros-based technology delacquering systems
- Rectangular Melting Furnaces
- Sidewell Melting Furnaces
- Dry Hearth Melting Furnaces
- Round Top Charge Melting Furnaces
- Tilting Melting Furnaces
- Rotary Melting Furnaces
- Stationary Holding Furnaces
- Tilting Holding Furnaces
- Batch Homogenizing Furnaces
- Continuous Homogenizing Furnaces

Thorpe Technologies Inc is headquartered in Whittier, CA; Tel: (562) 903-8230. Projects in Mexico are handled by Thorpe Mexico SA de CV; Tel: (52) (81) 8335-2025. Projects in Brazil are handled by Thorpe do Brasil Ltda; Tel: (55) (11) 5579-0092.

For 87 years the Thorpe industrial furnace design group has provided industrial furnace design and engineering services to clients throughout the United States and abroad. The Thorpe Technologies Inc organization is one more step to do an even better job in the rapidly changing, and increasingly technical, furnace design marketplace.

Tri-State Refractories Corp

#614

www.industrialcontractors.com

Telephone: 812-425-3466

Tri-State Refractory is a full service contractor specializing in the aluminum industry. We have built eight complete carbon bake furnaces and six partial furnaces since 1995. Capabilities in design, procurement, feasibility studies, anode resourcing, and scheduling enable us to become your turnkey contractor. In addition, we also do pot lining, melting/holding furnaces, crucibles, and temporary crossovers. Tri-State Refractory can assist

with any application in your plant. Customers include Alcoa, Alcan, and Kaiser Aluminum.

U

United States Department of Energy

FreedomCAR and Vehicle Technologies

#540

Washington, DC

www.eere.energy.gov/vehiclesandfuels/

The Department of Energy's FreedomCAR and Vehicle Technologies is leading the way in the research, development, and validation of cutting-edge vehicle technologies to enable fuel-efficient and environmentally-friendly vehicles. As transportation accounts for more than 65% of the oil consumed by the United States and more than we produce domestically, FreedomCAR's efforts are sharply focused on developing vehicle technologies to decrease our nation's reliance on petroleum.

FreedomCAR and Vehicle Technologies are also providing breakthroughs in reducing vehicle emissions to combat air pollution and global climate change.

U.S. Dept. of Energy/Office of Energy Efficiency and Renewable Energy

#134

Washington, DC

www.oit.doe.gov

The U.S. Department of Energy Office of Energy Efficiency and Renewable Energy's Industrial Technologies Program (DOE-OIT) has formed partnerships with the most energy intensive U.S. industries to accelerate the development of energy efficient technologies and processes. The DOE R&D partnerships with these industries will be highlighted. These partnership support and enhance the global competitiveness and ecological sustainability of U.S. industry through strategic, leveraged investments in technologies that save energy, improve productivity, and reduce waste.

W

Wagstaff, Inc.

#206

Spokane, WA
info@wagstaff.com
www.wagstaff.com

Wagstaff, Incorporated, Spokane, Washington USA - established in 1946, and known worldwide for manufacturing customized equipment for direct chill aluminum casting of rolling ingot and extrusion billet. Wagstaff customers, located in over 44 countries around the world, have long known the benefits of high quality Wagstaff MaxiCast™ Hot Top Billet Casting Tables equipped with the Wagstaff AirSlip™ Air Casting Process. Also known for it's leading technology in Wagstaff ShurCast™ Casting Machines, Wagstaff AutoCast™ Automated Casting Control System, and Wagstaff LHC™ Low Head Composite Casting System. Wagstaff quality innovations are invented, first built and tested at Wagstaff.

Whetstone Technology, LLC

#322

Cabot, PA
www.whetstone-ceramics.com

Ceramite® : Superior Performance in Wear Resistant Applications

Whetstone Technology, Cabot PA and Stellar Canada Inc., Burlington Ontario are pleased to present Ceramite® manufactured by Elkem Materials Inc. Kristiansand, Norway. Ceramite® is a range of products incorporating inorganic composite materials and densely packed par-

ticles, formulated to give superior performance in applications where wear resistance is a critical operating factor. Primary aluminum facilities around the world have used Ceramite® products to solve problems in hot and cold environments for the past decade. A complete list of applications, products qualities and a group of product experts will be available throughout the TMS meeting, Booth 322.

Wienalco

#137

Velsen-Noord, THE NETHERLANDS
www.wienalco.com

WIENALCO is formed around a group of experts with decades of experience in the aluminium smelter industry. WIENALCO serves the industry with a wide range of aluminium smelter, carbon baking and graphitizing industry dedicated machines.

Modernisation in existing smelters and baking furnaces is our special expertise. Improvement of labour working conditions, improvements on machine efficiencies including adding new operation tools are recognised to be most valuable.

The scope of supply comprises:

- Pot Tending Machines (prebake, søderberg, radio and cab control)
- Anode Baking Furnace Tending Machines (as well as stationary vacuum installations)
- Crane Transfer Systems (gantry, lifting beams, retractable buffers)
- Cathode Removal Cranes
- Anode Jacking Frames (automatic, cold and hot frames)

- Anode Rod Clamps
- Crucible Cleaning Machines (including pre-heaters, dedusting)
- Tube Cleaning Machines
- Alumina Unloading Facilities (including dust free conveying and storage systems)
- Machine power supplies
- Rails, clips, underlayment
- Storage silos.

Z

ZIRCAR Ceramics, Inc.

#500

www.zircarceramics.com
Phone: 845-651-6600;
Fax: 845-651-0442;
E-mail: sales@zircarceramics.com

ZIRCAR Ceramics, Inc., Florida, New York, USA, is a manufacturing and International marketer of a wide range of Casthouse Consumables which include:

- Castertips & Nozzles for Twin Roll & Belt Continuous Casters
- Ceramic Foam & Fiberglass Cloth Filters
- Vacuum-formed Ceramic Fiber & Non-RCF Fiber Shapes
- Ceramic Fiber Textiles - Rope, Tape, Cloth
- Ceramic Fiber & Non RCF Paper & Blankets
- Precision CNC Machined & Precast Refractory Baffles, Floats, Dams
- Microporous Insulation Fabricator

LATE ADDITIONS

Novocontrol America, Inc.

#339

Willow Springs, North Carolina
www.novocontrol.de/

Oxford nanoScience Ltd.

#409

Milton Keynes, United Kingdom
www.oxfordnanoscience.com