

# TMS2003

## 132nd TMS ANNUAL MEETING EXHIBITION SHOW DIRECTORY

**INCLUDES**  
**PRODUCT & SERVICES INDEX • COMPANY PROFILES**

*Detailing Products and Services for over 140 Companies  
Taking Part in the TMS 2003 EXHIBITION*

**March 2–6, 2003**

San Diego Convention Center

Hall A, B1

San Diego, California

### **SPECIAL ATTRACTIONS DURING THE 2003 EXHIBITION:**

#### **HOSTED GRAND OPENING**

**Monday, 5:00–6:00 PM**

Enjoy complimentary hors d'oeuvres and  
cocktails while touring the Exhibition Floor.

#### **DISCOUNTED LUNCH CONCESSIONS**

**Tuesday and Wednesday**

Redeem the ticket in your registrants packet for  
a \$1 off lunch, hosted by the Exhibitors.

#### **AFTERNOON SNACK**

**Wednesday, 12:15–2:00 PM**

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

*Hosted by ALMEX, USA Inc.*



### **SHOW DATES AND HOURS:**

**Monday, March 3**  
**12:00 Noon–6:00 PM**

**Tuesday, March 4**  
**9:30 AM–5:30 PM**

**Wednesday, March 5**  
**9:30 AM–3:00 PM**

FIND UP-TO-THE-MINUTE DETAILS ON THE MEETING AND EXHIBITION AT:  
<http://www.tms.org/AnnualMeeting.html>

# 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

BHA Group, Inc.  
Bloom Engineering  
Boreal Laser  
F.L. Smidth Group  
Menardi  
MikroPul  
Moltech  
OP SIS, Inc.  
Norsmelt  
Solios Environmental

## ALUMINUM INDUSTRY

### WEAR PARTS

B&P Process Equipment  
C A Picard  
FATA Hunter Inc  
Saint Gobain Industrial Ceramics

## ALUMINUM PRODUCTION TECHNOLOGY & EQUIPMENT

ABB Inc, Metal Refining Systems  
Aisco Systems, Inc.  
Alcan Alesa Technologies Ltd  
Almeq Norway AS  
ALMEX USA Inc  
Altech  
American Pulverizer/Hustler Conveyor  
Anter Corporation  
AUMUND Foerdertechnik  
Brochot  
Canadian Overhead Handling  
CMI Novacast  
Davy Process Technology  
Dross Engineering  
ECL  
Eirich Machines, Inc.  
Fenn Manufacturing  
GE Betz  
Glama Maschinenbau GmbH  
Hencan B.V.  
Hertwich Engineering  
Holton Machinery Ltd  
Jayne Industries  
Kempe International  
LMI Selcom  
LOI, Inc.  
Moltech  
Murlin Chemical, Inc.  
Parker Hannifin Corporation  
Pechiney  
Precimeter  
Pyrotek Inc  
Robin Industries  
Sermas Industrie  
SETARAM  
Silver Needle  
SMV A/S  
STAS, Ltd.  
SUB (Slovakce strojirni)  
Techmo Car SPA

Thermal Systems America  
Thermcon Ovens BV  
UES Software, Inc.  
Wagstaff, Inc.  
Wienalco

## ALUMINUM QUALITY

CMI Novacast  
MagChem, Inc.  
Precimeter, Inc.

## ALUMINUM REFINING SYSTEMS

ALMEX USA Inc  
ABB Inc, Metal Refining Systems  
Pyrotek, Inc.  
STAS, Ltd.  
Stellar Canada Inc  
Whetstone Technology LLC

## ANODE:

### ASSEMBLY

Almeq Norway AS  
Altech  
ECL  
GNA alutech inc  
HMR Group AS  
Jünger+Gräter GmbH  
Feuerfestbau  
Kempe International  
KHD Aluminium Technology  
Laeis Bucher GmbH  
RAG Trading GmbH  
SETARAM  
Sermas Industrie  
Solios Carbone

## CLEANING, TRANSPORTATION

Altech  
HMR Group AS  
KHD Aluminium Technology  
SMV A/S  
Techmo Car SPA

## AUTOMATION/COMPUTER

### SIMULATION/SOFTWARE

ABB Inc, Metal Refining Systems  
Alcan Alesa Technologies Ltd  
CMI Novacast  
CompuTherm LLC  
Kempe Intl.  
LMI Selcom  
LOI, Inc. Industrial Furnaces  
Norsmelt  
Precimeter  
Riedhammer GmbH  
Thermcon Ovens BV  
Thermo/ARL  
Thermo-Calc Software  
Thorpe Technologies Inc  
UES Software, Inc.  
Wagstaff Inc

## BUTT CRUSHING/STRIPPING

ECL  
FCB Aluminium  
KHD Aluminium Technology  
SERMAS  
Techmo Car SPA

## CARBON:

### PASTE PRODUCTION & EQUIPMENT

Anter Corporation  
B&P Process Equip. and Systems  
C A Picard  
Davy Process Technology  
Eirich Machines Inc  
FCB Aluminium  
KHD Aluminium Technology  
M. Brashem Inc  
Pechiney  
Wienalco

## TECHNOLOGY AND SUPPLIES

Alcan Alesa Technologies Ltd  
Anter Corporation  
Davy Process Technology  
GNA alutech inc  
Innovatherm GmbH +Co KG  
Kempe Intl.  
KHD Aluminium Technology  
M. Brashem Inc  
R & D Carbon, Ltd.  
RAG Trading GmbH  
Riedhammer GmbH  
SETARAM  
SMV A/S  
Solios Carbone  
SUB (Slovakce strojirni)  
Wienalco

## CASTING

Almeq Norway AS  
ALMEX USA Inc  
Brochot  
C&L Development Corp  
CMI Novacast  
Canadian Overhead Handling  
CompuTherm LLC  
ECL  
FATA Hunter Inc  
Hertwich Engineering  
Holton Machinery Ltd  
Los Alamos National Laboratory  
MagChem, Inc  
Metallurg Aluminium  
Milward Alloys  
Murlin Chemical, Inc.  
Northwest China Adv. Matls. Co Ltd  
Pechiney  
Precimeter  
Pyrotek  
Rex Roto Corporation  
Solios Thermal  
Stellar Canada Inc

Wagstaff, Inc.  
Whetstone Technology LLC  
Zircar Ceramics Inc

## **CHEMICALS AND ADDITIVES**

C&L Development Corp  
GE Betz  
KBAloys  
MagChem, Inc.  
Master Alloys  
Metallurg Aluminium  
Minteq Intl Inc  
Northwest China Advanced  
Materials Co Ltd  
Struers Inc

## **CLEANING MACHINES/ SYSTEMS**

FATA Hunter Inc  
MagChem, Inc.  
SMV A/S

## **CLOTHING – PROTECTIVE**

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

## **COMBUSTION TECHNOLOGY**

Bloom Engineering Co., Inc.  
F.L. Smidth Group  
Hauck Mfg. Co.  
North American Manufacturing  
Riedhammer GmbH  
Thermcon Ovens BV  
Thorpe Technologies Inc

## **CORROSION/SURFACE**

### **TREATMENT**

GE Betz  
Los Alamos National Laboratory  
Magnesium Coating Corp.  
MTI Corporation

## **CRANES**

Alcan Alesa Technologies Ltd  
Canadian Overhead Handling  
ECL  
NKM/Noell  
SUB (Slovakce strojirní)  
Wienalco

## **DEGASSING**

Metallics Systems Co LP  
Molten Metal Equipment  
Innovations, Inc.  
Pechiney  
Pyrotek, Inc.  
Saint-Gobain Industrial Ceramics  
SELEE Corporation  
STAS  
Stellar Canada Inc  
Thermal Systems America  
Whetstone Technology LLC

## **DROSS:**

### **HANDLING/PROCESSING EQUIPMENT**

Almeq Norway AS  
Altech  
Brochot SA  
Dross Engineering  
Glama Maschinenbau  
HMR Group AS  
Kempe International  
Metallurg Aluminium  
Pyrotek, Inc.  
Rex Roto Corp  
STAS  
Thermal Systems America

### **COOLING/REMOVAL**

Altech  
Dross Engineering  
STAS

## **ENGINEERING AND CONSULTING SERVICES**

ABB Industrie AG  
Almeq Norway a/s  
ALMEX USA Inc  
Altech  
American Pulverizer/Hustler  
Conveyor  
Bloom Engineering  
C&L Development Corp  
Clayburn Industries  
CompuTherm LLC  
FATA Hunter Inc  
Fenn Manufacturing  
F.L. Smidth Group  
Hencon B.V.  
Holton Machinery Ltd  
Hönnun  
JT Thorpe & Son Inc.  
Jünger+Gräter GmbH Feuerfestbau  
Kempe International  
Laeis Bucher GmbH  
MikroPul  
Northwest China Advanced  
Materials Co Ltd  
Premelt Systems  
Pyrotek Inc  
R & D Carbon, Ltd.  
Rafhönnun  
Rex Roto Corp.  
STAS  
Techmo Car SPA  
Thermcon Ovens BV  
Thermo-Calc Software  
Thorpe Technologies Inc  
UES Software, Inc.  
Wagstaff, Inc.

## **FILTRATION**

BDH Industries  
BHA Group, Inc.  
Jünger+Gräter GmbH Feuerfestbau  
Kabert Industries Inc  
Menardi  
Metallics Systems Co L.P.

MikroPul  
Pechiney  
Pyrotek, Inc.  
Rex Roto Corp.  
SELEE Corporation  
STAS  
Zircar Ceramics, Inc.

## **FURNACES**

ABB Industrie AG  
ALMEX USA Inc  
Altech  
Dross Engineering  
GNA alutech inc  
HG Engineering  
Hauck Mfg Co  
Hertwich Engineering  
Jayne Industries  
Jünger+Gräter GmbH Feuerfestbau  
LOI, Inc. Industrial Furnaces  
Minteq Intl Inc  
North American Manufacturing  
Pyrotek Inc  
R&D Carbon Ltd  
Riedhammer GmbH  
SETARAM  
Solios Thermal  
Stellar Canada Inc  
Techint Technologies  
Thermal Systems America  
Thermcon Ovens BV  
Thorpe Technologies  
Whetstone Technology LLC

## **GRAPHITE PARTS**

Graphite Engineering & Sales  
M. Brashem Inc  
Metallics Systems Co L.P.  
Molten Metal Equip. Innovations, Inc.  
Pyrotek, Inc.  
SETARAM

## **GRAIN REFINERS/HARDENERS**

Aleaur  
KBM Affilips B.V.  
KB Alloys, Inc.  
Master Alloys  
Milward Alloys  
Metallurg Aluminium

## **HF MEASUREMENT SYSTEMS –**

### **POT ROOMS/STACKS**

Altech  
Boreal Laser  
OPSIS, Inc.  
STAS

## **INDUSTRIAL GASES**

Opsis, Inc.

## **INGOT & SOW CASTING**

### **HANDLING & STACKING**

Canadian Overhead Handling  
Hertwich Engineering  
Kempe Intl.  
LOI, Inc. Industrial Furnaces  
Mobiquip Industries, Ltd.  
NKM/Noell

Sermas Industrie  
SUB (Slovakce strojirni)  
Technical Weighing Services  
Thermcon Ovens BV  
Thorpe Technologies Inc  
Wagstaff, Inc.

#### **INSTRUMENTATION**

ABB Bomem, Inc.  
Anter Corporation  
EDAX Inc./TSL  
Heraeus Electro-Nite Co.  
Hitachi High Technologies America  
Hysitron, Inc.  
LECO Corporation  
LMI Selcom  
LOI, Inc. Industrial Furnaces  
Menardi  
MikroPul  
OP SIS Inc  
Polytec PI Inc  
R&D Carbon  
Rafhonnun  
Rigaku  
SETARAM  
Struers Inc  
Technical Weighing Services  
Thermcon Ovens BV  
Thermo/ARL

#### **LUBRICANTS**

KB Alloys  
MagChem, Inc.  
Metallurg Aluminium  
Pyrotek, Inc.

#### **MASTER ALLOYS**

Aleaur  
Holton Machinery Ltd  
KB Alloys, Inc.  
KBM Affilips B.V.  
Master Alloys Co.  
Metallurg Aluminium  
Milward Alloys, Inc.  
Pyrotek Inc.  
Zircar Ceramics, Inc.

#### **MATERIAL HANDLING**

Alcan Alesa Technologies Ltd  
Almeq Norway a/s  
Altech  
American Pulverizer/Hustler  
Conveyor  
AUMUND Foerdertechnik  
BHA Group  
C&L Development Corp  
Canadian Overhead Handling  
Glama Maschinenbau GmbH  
GNA alutech inc  
F.L. Smidth Group  
Hertwich Engineering  
HMR Group AS  
Kempe International  
Laeis Bucher GmbH  
Megaquip Industries, Ltd.

MTI Corporation  
Northwest China Advanced  
Materials Co Ltd  
Premelt Systems  
Sermas Industrie  
SMV A/S  
SUB (Slovakce strojirni)  
Techmo Car SPA  
Thermcon Ovens BV  
Wienalco

#### **MEASUREMENT/TESTING AND ANALYSIS**

ABB Bomem Inc.  
Allied High Tech Products Inc  
Anter Corporation  
Boreal Laser  
Buehler  
EDAX Inc./TSL  
Heraeus Electro-Nite Co  
Hitachi High Technologies America  
Hönnun  
Hysitron  
Leco Corporation  
LMI Selcom  
Los Alamos National Laboratory  
Opsis  
Polytec PI Inc  
Precimeter  
R & D Carbon, Ltd.  
Rex Roto Corp  
Struers Inc  
Technical Weighing Services  
Thermo/ARL

#### **MOLTEN METAL PUMPS**

ABB Inc, Metal Refining Systems  
CMI Novacast  
Metallurgs Systems Co L.P.  
Molten Metal Equip. Innovations,  
Inc.  
Premelt Systems  
Pyrotek, Inc.  
STAS  
Stellar Canada Inc  
Whetstone Technology LLC

#### **PORT AUTHORITY**

Port of Longview

#### **PROCESS EQUIPMENT**

ABB Inc, Metal Refining Systems  
Altech  
AUMUND Foerdertechnik  
B&P Process Equipment & Systems  
Eirich Machines, Inc.  
FCB Aluminium  
F.L. Smidth Group  
Fenn Manufacturing  
Hencon BV  
Jayne Industries  
Kempe International  
LOI, Inc. Industrial Furnaces  
Metallurg Aluminium  
MTI Corporation

OP SIS Inc  
Polytec PI Inc  
Premelt Systems  
Pyrotek, Inc.  
R&D Carbon, Ltd.  
Riedhammer GmbH  
SETARAM  
SUB (Slovakce strojirni)  
Wienalco

#### **PUBLISHERS**

Aluminium Times  
Aluminium International Today  
Elsevier Science  
Aluminium International Journal  
Industrial Heating Magazine  
*JOM*  
Light Metal Age  
Metallurgical Society of CIM  
R & D Carbon, Ltd.

#### **RECYCLING/SCRAP**

##### **PROCESSING**

Almeq Norway a/s  
American Pulverizer/Hustler  
Conveyor  
AUMUND Foerdertechnik  
Dross Engineering  
Hencon B.V  
Holton Machinery Ltd  
LOI, Inc. Industrial Furnaces  
Metallurgs Systems Co. L.P.  
Premelt Systems  
Solios Thermal  
Thermcon Ovens BV  
Thorpe Technologies Inc

#### **REFRACTORY & INSULATING: PRODUCTS**

Borgestad Fabrikker AS  
C&L Development Corp  
Clayburn Industries Ltd  
Culimeta America, Inc.  
FATA Hunter Inc  
Gouda Vuurvast N V  
Jayne Industries  
Jünger+Gräter GmbH  
Feuerfestbau  
Kabert Industries Inc  
Laeis Bucher GmbH  
Mid-Mountain Materials  
Minteq International Inc  
Murlin Chemical Inc  
Northwest China Advanced  
Materials Co Ltd.  
Pyrotek, Inc.  
Rex Roto Corp.  
Saint-Gobain Industrial Ceramics  
SELEE Corporation  
Skamol Americas Inc  
Stellar Canada Inc  
Stellar Materials  
Thermal Ceramics  
Thermatex/Wahl Corporation  
Whetstone Technology LLC  
Zircar Ceramics, Inc.

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**MAINTENANCE/REPAIR**

Borgestad Fabrikker AS  
Clayburn Industries  
Gouda Vuurvast N V  
JT Thorpe & Son Inc.  
Jayne Industries Inc  
Minteq International, Inc.  
Thermal Systems America  
Thermatex/Wahl Corporation

**RESEARCH & DEVELOPMENT**

Aluminium Intl Journal  
Allied High Tech Products Inc  
CompuTherm LLC  
EDAX Inc TSL  
Fenn Manufacturing  
Hitachi High Technologies America  
Hönnun  
Jünger+Gräter GmbH Feuerfestbau  
KB Alloys  
Kempe International  
Los Alamos National Laboratory  
Minteq International, Inc.  
Precimeter  
R&D Carbon Ltd  
Rafhönnun  
Rigaku  
Thermo/ARL  
US Department of Energy  
US DOE – Freedom CAR & Vehicle  
Tech

**SAWING SYSTEMS**

Allied High Tech Products Inc  
Hertwich Engineering  
LECO Corporation  
Mag Chem Inc.  
Sermas Industrie  
Struers Inc

**SERVICE CONTRACTORS**

BHA Group  
R&D Carbon, Ltd

**SOFTWARE**

Allied High Tech Products Inc  
CompuTherm LLC  
EDAX Inc TSL  
Elsevier Science  
LOI, Inc. Industrial Furnaces  
Thermo-Calc Software  
UES Software Inc

**VEHICLES FOR POTROOMS & CASTHOUSES**

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

**WATER COOLING & TREATMENT**

GE Betz

**X-RAY DIFFRACTION**

EDAX Inc TSL  
Los Alamos National Laboratory  
Rigaku  
Thermo ARL

# ALPHABETICAL LISTING OF EXHIBITORS

EXHIBITOR	BOOTH NO.	EXHIBITOR	BOOTH NO.
ABB Inc .....	407	Holton Machinery Ltd .....	923
Alcan Alesa Technologies Ltd.....	414	Hönnun .....	1111
Aleastur .....	400	Hysitron .....	705
Allied High Tech Products Inc.....	520	INDUSTRI-TEKNIK Bengt Fridh AB .....	1111
Almeq Norway AS .....	800	Industrial Heating Magazine .....	431
ALMEX USA Inc .....	1215	innovatherm GmbH+Co.KG .....	715
Altech and Partners .....	1111	Intl Magnesium Association .....	630
Aluminium International Today .....	615	Jayne Industries .....	1029
Aluminium Intl Journal .....	606	<i>JOM</i> .....	808
Aluminium Times .....	1121	JT Thorpe & Son Inc.....	931
American Pulverizer/Hustler Conveyor .....	933	Jünger+Gräter GmbH Feuerfestbau.....	521
Anter Corporation .....	323	Kabert Industries .....	1018
AUMUND Foerdertechnik GmbH .....	317	KB Alloys Inc .....	614
B&P Process Equipment Systems LLC.....	301	KBM Affilips BV.....	423
BDH Industries Inc .....	422	KEMPE International .....	300
BHA Group Inc .....	804	KHD Aluminium Technology GmbH.....	821
Bloom Engineering .....	608	L P Royer Inc.....	1034
BMP Bi-Metal Products .....	1221	Laeis Bucher GmbH .....	521
Boreal Laser .....	1111	LECO Corporation.....	507
Borgestad Fabrikker AS .....	728	Light Metal Age.....	518
Brochot .....	635	LMI Selcom .....	515
Buehler Ltd .....	822	LOI Inc.....	428
C&L Development Corp.....	830	Los Alamos National Laboratory .....	1123
C.A. Picard Intl .....	829	Lurgi Metallurgie GmbH .....	821
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Clayburn Industries Ltd .....	529	MagChem .....	1216
CMI Novacast Inc .....	321	Magnesium Coating Corp.....	704
Cometals .....	711	Manganese Metal Co .....	1220
CompuTherm LLC.....	516	Master Alloys Co .....	419
Corus Ceramics Research Centre .....	429	Menardi .....	831
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Culimeta America Inc .....	634	Metallurg Aluminium .....	913
Davy Process Technology (Switzerland) AG .....	522	Metallurgical Society of CIM .....	628
Deutsche Gesellschaft für Materialkunde.....	1213	Metallurgical Systems Co LP.....	807
Dross Engineering.....	318	Mid-Mountain Materials .....	721
ECL .....	1118	Mikropul .....	831
EDAX Inc/TSL .....	322	Milward Alloys Inc.....	421
Eirich Machines Inc .....	511	Minteq International Inc .....	528
Elsevier Science .....	1023	Mobiquiq Industries Ltd .....	306
F L Smidt Group .....	733	Moltech .....	729
Fata Hunter .....	530	Molten Metal Equipment Innovations Inc .....	835
Fenn Manufacturing .....	709	MTI Corporation .....	514
GE Betz .....	700	Murlin Chemical Inc.....	919
GLAMA Maschinenbau GmbH .....	605	National Institute of Standards & Technology/ATP .....	1219
GNA Alutech Inc .....	311	National Research Council Canada/Aluminum Tech Ctr. ....	417
Gouda Vuurvast.....	509	NKM/Noell .....	832
Granta Design Ltd .....	505	NORSMELT .....	820
Graphite Engineering & Sales .....	701	North American Mfg Co Ltd .....	1015
Hauck Manufacturing Co .....	810	Northwest China Advanced Materials Co Ltd.....	830
Hencon BV .....	828	Opsis Inc .....	600
Hereaus Electro-Nite Co .....	1117	Outokumpu/Aisco Systems Inc .....	821
Hertwich Engineering .....	932	Parker Hannifin.....	1020
Hitachi High Tech America Inc.....	533	Pechiney Group.....	813
HMR Hydeq.....	1114	Process Engineering Resources Inc .....	921

EXHIBITOR	BOOTH NO.	EXHIBITOR	BOOTH NO.
Polytec PI Inc .....	1031	STAS .....	410
Port of Longview.....	534	Stellar Materials.....	935
Precimeter Inc .....	1111	Struers Inc .....	1021
Premelt Systems Inc .....	818	SUB (Slovakce strojirni) .....	1111
Procedair Industries .....	621	Techint Technologies Inc .....	629
Pyrotek Inc .....	401	Techmo Car s.p.a. ....	714
R&D Carbon .....	521	Technical Weighing Services Inc .....	532
Rafhönnun .....	1111	Thermal Ceramics .....	501
RAG Trading GmbH .....	521	Thermal Systems America .....	404
Resco Products .....	307	Thermcon Ovens BV .....	1122
Rex Roto Corporation.....	1105	ThermoCalc Software.....	1131
Riedhammer GmbH .....	706	ThermoARL .....	632
Rigaku .....	415	Thorpe Technologies Inc .....	601
Robin Industries .....	315	Tube-Mac Industries .....	1019
Saint Gobain Industrial Ceramics .....	814	UES Software Inc .....	1129
Selee Corporation .....	801	US Department of Energy .....	1207
SERMAS Industrie .....	420	USDOE/Freedom CAR/CSMi .....	531
Services Lavigne & Baril Inc.....	303	Wagstaff, Inc .....	1001
SETARAM .....	1128	Thermatex/Wahl Corp .....	1033
Silver Needle Inc .....	1028	Whetstone Technology LLC.....	732
Skamol Americas Inc.....	928	Wienalco .....	929
SMV .....	1111	Zircar Ceramics Inc .....	602
Solios Carbone/Environmental/Thermal.....	621		





# SUPPLIER SESSIONS

Make plans to attend these featured presentations conducted by the TMS 2003 Exhibitors.

Presentations will include in-depth information on new technologies, equipment and processes shown on the show floor.

**LOCATION:** Presentation Areas Inside Hall B1

**TIMES:** Tuesday and Wednesday 11:45 AM–1:45 PM

## SESSION 1 Tuesday, March 4, 2003

11:45 AM

### **CONTINUOUS ANNEALING OF CU AND AL STRIP IN A FLOATING STATE**

*Don Martosko, Techint Technologies Inc, 100 Corporate Center Drive, Coraopolis, PA, 15108-3185*

This annealing process delivers superior metallurgical quality over conventional heat treat systems. With low strip tension, the material passes in transverse waves through the furnace in a "floating" state, using a strategically placed high velocity jet heating air circulation system. The speed of the treatment gives excellent and uniform crystallization, higher yield and tensile strengths, and better elongation than is obtained in conventional systems.

The features of this system also include low operating costs, rapid heating and cooling of material, uniform thermal processing, enhanced buckling resistance, no formation of "sea gull wings", no scratches or wrinkles, tracking that is free from vibrations and fluttering, and a finished product that is very clean and bright. The consistency of these mechanical properties is more difficult to obtain with conventional furnaces.

Depending on strip width, copper strip treatment accommodates gauges down to 0.0013", line speeds of 16-650 ft/min., and throughputs of 1-22 TPH. Aluminum strip treatment accommodates gauges down to 0.001", line speeds of 32-650 ft/min, and throughputs of 1-32 TPH.

12:15 PM

### **AUTOPAK - TOTAL AUTOMATION FOR D.C. SLAB CASTING**

*John V. Griffin, Pechiney Aluminum Engineering, Inc., 333 Ludlow Street, Stamford, CT (USA) 06902*

Pechiney Aluminium Engineering has built on 20 years of continual improvements and advancements in automatic slab casting technology to develop the "AUTOPAK".

Technology Concept. The Pechiney "AUTOPAK" technology is a complete automotive casting package consisting of "state-of-the-art" process equipment and a total integrated management and information system. The "AUTOPAK" process provides the cast house team with greater control over the operational casting station parameters; from the holding furnace(s) to the D.C. casting machine.

12:45 PM

### **CSE4 EDUPACK – A COMPLETE TEACHING RESOURCE FOR MATERIALS EDUCATION**

*Anthony Osborn, Sales Manager – Worldwide Education Sales, Granta Design Ltd, Unit 300, Rustat House, 62 Clifton Rd, Cambridge, CB1 7EG, United Kingdom*

The principles underlying CES4 EduPack are those developed by Professor Mike Ashby at Cambridge University, England for the teaching of materials. Using Ashby charts as a

basis, students have a tool they can immediately start to use in their role as engineers.

CES4 EduPack comes as a complete teaching solution – including books, lecture notes and additional teaching resources. These are specifically designed to meet a variety of course requirements and are supplied at three levels. These levels excite and inspire students from the freshman year through to senior year and graduate level – where materials information is displayed at the same level of complexity as for the full commercial database.

1:15 PM

### **OVERVIEW OF STAS FLUXING TECHNOLOGIES**

*Dominique Prive, STAS, 1846 Outarde, Chicoutimi, PQ, G7K 1H1, CANADA*

Metal quality is continually improving for a wider and wider range of alloys and products. Fluxing is a common term used to describe a variety of cleansing operations including degassing, alkaline removal and inclusion removal. STAS being a leader in fluxing technologies is able to provide options for treating molten metal at various stages in the production process. A brief overview of available equipment together with their application will be followed by supporting data illustrating the metallurgical improvements which can be achieved under a wide range of conditions for each of these equipments. They include the Treatment of Aluminium in a Crucible (TAC); Furnace Fluxing including the Rotary Flux/Gas Injectors (RFI/RGI); Degassers including the Alcan Compact inline Degasser (ACD); Filters including CFFs and Deep Bed Filters (ABFs).

1:45 PM

### **REGENERATIVE THERMAL OXIDATION FOR NON-CONVENTIONAL APPLICATIONS AND CHLORINATED GASEOUS EMISSIONS**

*G. Drouin, J.O. Gravel and E. Le Couedic, Biothermica Technologies Inc., 426 Sherbrooke East, Montreal, Quebec, Canada H2L 1J6*

The Biotox® Regenerative Thermal Oxidation (RTO) from Biothermica Technologies Inc. is a method used to treat and eliminate up to 99.9 % non-conventional emissions containing various gaseous compounds. These gaseous emissions include pollutants such as Total Reduced Sulfur (TRS), Poly-Aromatic Hydrocarbons (PAH), chlorobenzene, HCl (Hydrochloric acid), Aliphatics Compounds, dioxins and furans.

The applications are in the kraft pulp industry, aluminium industry, roofing and shingle industry and also in magnesium industry. These pollutants are characterized by their corrosivity, a high molecular bonding and very high oxidation temperature, above 1200°C for the dioxins and furans.

11:45 AM

**HAUCK HIGH TEMPERATURE BURNERS AND JASPER ECOREG ROTARY REGENERATOR SYSTEMS***Jim Feese, R&D Manager, Hauck Manufacturing Co, PO Box 90, Lebanon PA 17042*

Hauck Manufacturing has been appointed the North American distributor of the Jasper GmbH EcoReg Rotary Regenerator systems. The EcoReg, the most successful rotary regenerator ever put into operation, currently boasts dozens of units in operation all over Europe with outstanding performance. Hauck has manufactured our first unit, and placed it in operation in our main test facilities in Lebanon, PA. Hauck has also developed a line of high temperature ultra-low NOx burners called the TriOx™ to operate with this system. The TriOx™ design is a family of burners specifically designed to operate in Aluminum melting furnace applications to supplement our highly successful High Momentum burners first introduced for aluminum melting over 20 years ago. This combination will usher in many new alternatives for the design and operation of aluminum melt furnace technology.

12:15 PM

**ADVANCED N/O/H DETERMINATION WITH THE TCH600***Robert T. Pristera, Leco Corp, 8200 S Quebec St Ste A3, Englewood, CO 80112*

LECO combines innovative technology with proven performance in our state-of-the-art TCH600 Nitrogen/Oxygen/Hydrogen Determinator. Providing advanced N/O/H determination in a single analysis for a wide variety of metal and inorganic applications, it is ideal for production and research environments.

The TCH600 features re-engineered solid-state infrared and thermal conductivity detectors that provide lower detection limits and expanded instrument range. Dynamic flow compensation ensures flow system integrity

while improving accuracy and precision for nitrogen determination in high-level oxygen materials. A powerful electrode impulse furnace (controlled by power, current, or temperature) can be ramped for separation of oxides/nitrides.

The TCH600 allows for an optional batch-style sample loading carousel and autocleaner to enhance instrument performance and productivity. Easy-to-use Windows®-based operating software offers advanced diagnostics, extended archiving, and flexible reporting capabilities.

LECO's SmartLine® service modem link remotely connects the TCH600 to our service engineers. Other advantages include a smaller footprint, reduced maintenance, flexible upgrades, and pre-defined application techniques.

12:45 PM

**BONE ASH***Ed Murray, Murlin Chemical Inc, 10 Balligo Road, West Conshohocken, PA 19428*

This presentation will portray the use of bone ash in the nonferrous metals industries. Differences between Synthetic and Natural bone ash products will be described. Application methods and benefits will be discussed along with some of the physical and chemical properties of bone ash.

1:15 PM

**MANUFACTURING EXECUTION SYSTEM (M.E.S.) IN AN ALUMINUM ROLLING PLANT (CORUS L.P.): A CASE STUDY***Jean Bonhomme, Keops Technologies inc., 1155 University Street, Suite 1100, Montreal (Quebec) H3B 3A7, Canada*

This article outlines the development and implementation of a M.E.S. Solution by Keops Technologies in partnership with the Corus Canadian rolling plant.

Every step, issues, drawbacks, challenges as well as the benefits in putting into operation such systems are explained into details in the article.

## A

### ABB Inc.:

#### Force Measurement Div. #407

Brewster, New York  
[www.abb.com/pressductor](http://www.abb.com/pressductor)

At the heart of ABB technology is the understanding that flatness, tension, pressure, dimension and position can be sensed by remote methods accurately, reliably and repeatably on a continuous basis. The data generated by such sensing devices can then be used to control external equipment in such a way that process parameters are kept constant. And as a result, operators can maintain productivity and achieve high levels of consistency in product quality.

In the non-ferrous business we are emphasizing our Millmate Thickness Gauging System (MTG) with completely alloy-independent measurements. Further, our Stressometer 6.0 FSA (Flatness Server Architecture) offers superior solutions to flatness measurement & control and guarantees your long-term competitiveness

**Please see our display ad  
on the back cover.**

#### Bomem, Inc, Québec, Canada [www.bomem.com](http://www.bomem.com)

ABB Bomem's Metallurgical Instruments offer many effective solutions to the aluminium industry for inclusion and hydrogen measurement. Several measurement technologies are patented and licensed exclusively to ABB Bomem for worldwide distribution by Alcan International Limited and N-TEC. ABB Bomem also offers metallurgical technical support and metallographic analysis service.

#### ABB Industrie AG Baden-Dättwil, Switzerland [www.abb.ch/industrie](http://www.abb.ch/industrie)

ABB is proud to deliver to the aluminium industry a truly comprehensive product and service portfolio for plant and project electrification. We design and manufacture a range of electrical equipment renowned for its quality and designed to maximize end-to-end plant connectivity and automation efficiency. Then we install, optimize and service the equipment to ensure continuing and profitable results for our clients in aluminium. We safeguard your investment in plant electro-technology through unmatched experience and a commit-

ment to integration that defines the equipment we manufacture and how we put it to work for you. Our integrated, process-oriented approach to engineering, supply, construction and management (ESCM) allows us to tailor and optimize the right electrical solution for your project. To meet and exceed your goals, look to ABB for a complete technology offering enhanced by the know-how and responsibility gained in hundreds of aluminium plants worldwide.

#### ABB Metal Refining Systems Brewster, New York

ABB Inc is the worldwide leader for the design, manufacture and implementation of induction stirring systems, having delivered more than 1100 systems since 1947. The first ABB induction stirring system specifically designed for aluminum furnaces was delivered in 1969 and since then, more than 150 stirrers have been installed, worldwide, on both melting and holding furnaces. Induction stirring is a proven and acceptable technology used to increase productivity, to reduce operating costs and to enhance overall aluminum quality. Stirring systems are available for furnaces sized from 5 tons to 150 tons. Sales and service are available throughout North America.

#### AISCO Systems, Inc., an OUTOKUMPU Technology Company #821

Burlington, Ontario, Canada  
[www.aiscosystems.com](http://www.aiscosystems.com)

Aisco Systems Inc. provides engineered machinery, systems and integrated process solutions for the non ferrous metals industry including aluminium rod shops and casthouses, zinc refineries and copper tankhouses.

**Rodding Room:** Aisco is a technical leader in supplying rodding room equipment, from anode loading/unloading, butt bath cleaning systems, butt and thimble presses and rod reconditioning equipment through to anode and rod mating stations and iron pouring systems.

**Casthouse:** Aisco design and manufacture sow casting and foundry ingot casting systems, including stacking and strapping equipment for use in primary and secondary facilities. In addition, we provide sawlines with fully automated material handling for slab/t-bar and billets.

**Copper Tankhouse:** Aisco produces

copper anode preparation and tankhouse machinery and solutions to your tankhouse problems. Our unique carousel design provides high production rates and efficient use of plant space.

**Zinc Refining:** Aisco has a licence with Asturiana de Zinc of Spain to manufacture zinc processing machinery for the cellhouse.

Please call Aisco to discuss your equipment requirements or visit us at booth #821 at the 2003 TMS Annual Meeting & Exhibition.

**Please see our display ad  
on the inside back cover.**

#### Alcan Alesa Technologies Ltd. #414

Town of Mount Royal, Quebec, Canada  
[www.alcanalesa.ch](http://www.alcanalesa.ch)

Serving the industry from their engineering offices in Europe and North America, Alcan Alesa has a deservedly excellent reputation in the field of materials handling as well as technologies for the production of anodes. Furthermore, Alesa offers Alcan's proven know-how for the complete retrofit of smelters.

Alesa specializes in turnkey projects featuring systems, which emphasize low energy consumption, operations efficiency, environmental protection and automation that ensure competitive advantages for the client. Innovative skills and experience in solving client's problems have characterized Alesa projects worldwide for over 40 years.

**Please see our display ad,  
page 18.**

#### Aleastur #400

Pol. Ind. de Maqua, s/n AVILES, SPAIN  
[www.aleastur.com](http://www.aleastur.com)

Aleastur manufactures a comprehensive range of Grain Refiners and Master Alloys. The major concentration of products are AlTiB alloys produced in rod form and other shapes. Additional master alloys that compliment and complete Aleastur's range include AlSr, AlB, AlTi, AlZr, etc.

From receipt of orders to dispatch of goods, the dedication of Aleastur to quality and service is paramount. Since 1993 Aleastur has consistently maintained their Certificate of Approval for Quality Assurance (ISO 9002).

Aleastur is currently selling products in more than 50 countries and retains a global network of knowledgeable and experienced agents.

## Allied High Tech Products Inc #520

Rancho Dominguez, California  
[www.alliedhightech.com/](http://www.alliedhightech.com/)

Allied High Tech Products, Inc. provides products for Metallographic, SEM, and TEM sample preparation. Items on display include the state-of-the-art MultiPrep™ Polishing System, and Allied's complete equipment line, including the New TechCut 4 slow-speed saw, New MetPrep 3 polisher with AP-3 head, and New TechCut 5™ Sectioning Saw. Allied's line of Zeiss microscopes, and their New Micro-Vision V2.0™ imaging/archiving software will also be shown. Product Application Specialists will conduct equipment demonstrations and discuss the benefits and applications of each machine. A full range of Allied's consumable products will be displayed including: Diamond Suspensions, Lapping Film, Polishing Cloths, Phenolics and Epoxies.

## Almeq Norway AS # 800

Langhus N-1405 Norway  
[www.almeq.com](http://www.almeq.com)

ALMEQ Norway AS is an engineering and marketing company for a wide range of equipment and services to aluminium smelters. The company is a leading supplier of its own equipment as well as an export and marketing partner for other well accepted manufacturers of machines and equipment for primary aluminium smelters worldwide.

Among ALMEQ's own machinery engineered and produced in Norway are crucible and tube cleaners, potliners and various electric drying and pre-heating systems. In close co-operation with partners in Norway and abroad we deliver anode and metal transporters, hydraulic billet tongs, superstructures, potshells and cell hooding.

ALMEQ welcomes you to visit our exhibition stand at the TMS 2003 in San Diego. Mr. Jan D. Hansen and Mr. Knut Torgersen will be at the stand to answer any questions concerning our products and services.

## ALMEX USA Inc #1215

Long Beach, California  
Tel: (562)983-8026 Fax: (714)279-9000

Almex specializes in supplying Aluminium Cast-House Equipment with special emphasis on custom made designs. We supply complete turn-key systems for 7xxx and 2xxx series alloy manufacturing cast-houses to aerospace quality standards. Our sales territory is worldwide including Russia. Equipment

includes in-line metal treatment systems: LARS, D.C. Casting Machines, CASTRIGHT II billet and slab tooling, Melting and Homogenization furnaces, custom made cast-house laboratory equipment and most importantly Casting Practices for a wide range of Alloys and sizes. Our equipment is sold with written guaranty for metallurgical quality and operational cost savings. We also carry a large inventory of ready to ship slab and billet molds. Largest billet tooling size is 41.5" (1054 mm) diameter.

## Altech and Partners #1111

Reykjavik, Iceland  
[www.altech.is/](http://www.altech.is/)

ALTECH has been supplying machines, robots and computer systems to the aluminium industry since 1987.

ALTECH will specially present at TMS 2003 in San Diego:

- Equipment and Systems for the Industry - Innovative for improved environment, efficiency and economy.
- ALTRACK - Anode and Rod Tracking and Quality Control System.
- ANODE RODDING SHOP: Turn-key Roding Shops, Automatic Stub Straightening Machines - eliminate cowboy effect, Stub Protection System - automatic collarplacing and filling with paste, Stub Equalizing - milling for a better mating with the anode, Semi Automatic Casting Machines - precision assembling of anode and rod, Electric Heaters - Heating of ladles, crucibles, stubs and anode holes.
- CAST HOUSE: Metal Skimmers for cleaner metal and better working conditions, Billet coding and tracking.
- POTROOMS: Electric Siphon Tube Heaters.

## Aluminium Times

#1121  
Shaveham-by-Sea, United Kingdom  
[www.mmc.dircon.co.uk/](http://www.mmc.dircon.co.uk/)

Aluminium Times distributes by mail 4,000 copies to Europe and the Middle East to specifiers of plant, equipment and consumables in the primary, secondary, rolling and extruders sectors of the aluminium industry. Further copies are distributed by attendance with a stand at the major exhibitions such as Essen, Metef, TMS and Chicago.

Aluminium Times publishes the Primary Smelter Map of the World and Rolling Mill Map of Europe.

The publishers, Modern Media Communications Ltd also publish Cast Metal Times and Diecasting Times.

## Aluminium International Today

# 615  
Redhill Surrey, United Kingdom  
[www.aluminiumtoday.co.uk](http://www.aluminiumtoday.co.uk)

ALUMINIUM INTERNATIONAL TODAY is THE international English language journal dedicated exclusively to the aluminium production and process industries.

Its professionalism and dedication to the industry make it the high profile leader in the field. First published in 1989, this highly respected journal has always been at the forefront and still remains the one to read; with over 35,000 readers, it is "The Professionals' Choice".

Circulated in over 80 countries worldwide, ALUMINIUM INTERNATIONAL TODAY offers an erudite and authoritative mix of the latest and best in business, technical and commercial information - industry news, contracts, events, specialist technical and market-oriented features and product reviews.

## ALUMINIUM International Journal

#606  
Isernhagen, Germany  
[www.giesel.de](http://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.

## American Pulverizer /Hustler Conveyor

# 933  
St Louis, Missouri  
[www.ampulverizer.com](http://www.ampulverizer.com)

AMERICAN PULVERIZER COMPANY/HUSTLER CONVEYOR COMPANY has been manufacturing heavy-duty reduction equipment for the aluminium recycling industry since 1908 and has supplied some of the most sophisticated and cost effective solutions for

the cleaning and preparation of all types of aluminum materials.

We have sold approximately 9,000 units since 1908 and have supplied complete shredding systems to companies in Japan, Korea, Brazil, Venezuela, Mexico, Canada, Hungary, Italy, England, Czechoslovakia and Israel.

Our outside vendors are chosen with careful diligence and we make sure that they adhere to our specifications as far as quality, service and reliability.

For more information, please visit our website at: [www.ampulverizer.com](http://www.ampulverizer.com)

## Anter Corporation

#323

Pittsburgh, Pennsylvania  
[www.anter.com/](http://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 C to 2800 C.

A number of instruments are specifically designed for the aluminum industry and are in world-wide use, such as: unitherm 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 Foerdertechnik

GmbH

#317

Rheinberg, Germany  
[www.aumund.com](http://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

- Scrap handling
- Cooling conveyors in inert atmosphere
- Conveying and cooling in foundries
- Conveying, storing, blending or coal, iron ore, limestone

**B**

## B&P Process Equipment and Systems LLC

#301

Saginaw, Michigan  
[www.bpprocess.com](http://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 material, plastics, industrial chemicals, and for chemical separation. We have supplied batch and continuous anode and cathode paste mixers to the aluminum industry since 1903. 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/solids separation.

**Please see our display ad,  
page 5.**

## BDH Industries

#422

Chicoutimi, Quebec, Canada  
[www.bdhtech.com](http://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.

## BHA Group, Inc

#804

Kansas City, Missouri  
[www.bha.com](http://www.bha.com)

BHA Group, Inc. is a leading worldwide supplier of replacement parts and services for air pollution control equipment. BHA offers a wide range of innovative products, including Pulse Pleat® Pleated Filter Elements, BHA-TEX® expanded PTFE membrane filters, and CPM® Particulate Detection Systems. Serving more than 50 industry groups across six continents, BHA is known globally for its quality products and troubleshooting expertise. With more than 25 years experience in the air pollution control business, there isn't a problem or situation that we haven't seen. Call your BHA representative at 1-800-821-2222 or visit our website at [www.bha.com](http://www.bha.com).

## Bloom Engineering Co.

#608

Pittsburgh, Pennsylvania  
[www.bloomeng.com](http://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

#1221

Fountain Valley, California  
[www.doall.com/bimetal.htm](http://www.doall.com/bimetal.htm)

## Boreal Laser

#1111

Spruce Grove, Alberta, Canada  
[www.boreal-laser.com/](http://www.boreal-laser.com/)

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.

## **Borgestad Fabrikker AS**

#728

Porsgrunn, Norway

Borgestad Fabrikker AS founded in 1887, started as brickworks but grew rapidly into a producer of quality refractories. In 1996, Höganäs Bjuf, with more than 200 years experience of manufacturing refractory bricks, became a part of Borgestad. Today Borgestad is truly international, exporting over half its production and is the largest supplier of non-basic refractories to furnace and kiln related industries.

Products that ensure long life and maximum performance are only one part of the Borgestad commitment to customer satisfaction. Projecting, project control, contracting, installation, repair and maintenance are services we offer to ensure that your furnaces run smoothly with down-time periods kept at a minimum.

## **Brochot SA**

#635

Tremblay FRANCE

[www.brochot.fr](http://www.brochot.fr)

The BROCHOT company designs, manufactures, carries out the installation, provides after sales services, provides spare parts of special machines and complete plants for the primary aluminium and magnesium industries. With its three departments, Brochot -Syprim - Berger, BROCHOT proposes the full range of equipment necessary for aluminium smelters:

### **BROCHOT**

- Electric pot ramming machines
- Ingot casting & stacking lines
- Dross handling equipment (Ekumax)

### **SYPRIM**

- Anode cooling
- Anode handling and storage
- Anode rodding shop

### **BERGER**

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

Come to our booth #635 and find out more on our latest developments and discuss innovative solutions to your equipment.

## **Buehler Ltd.**

#822

Lake Bluff, Illinois

[www.Buehler.com](http://www.Buehler.com)

BUEHLER, Ltd., of Lake Bluff, Illinois, introduces the ISOMET® 5000 Linear Precision Saw and the OMNIMET® Modular Imaging System. The ISOMET 5000 is an automatic linear feed saw with sampling positioning to 2 µm, LCD, touch pad controls, programmability, automatic serial sectioning, and speeds of 200-5000 rpm. The OMNIMET Modular Imaging System is modular system designed to fit your digital imaging needs and budget. Initially select between basic Image Capture and Report, Archiving, Simple Push Button Imaging, or Fully Flexible Image Analysis. Upgrade later as your needs or applications change. See us at Booth #822 and at [www.Buehler.com](http://www.Buehler.com).



## **C & L Development/ Northwest China Advanced Materials Co Ltd**

#830

Saratoga, California

Manufacture and supply powder, sheet, strip foil, wire, bar and tube of rare metal materials. The materials and products include precious metals and salts, catalysts, metal clad materials, rare earth salts and metals, tungsten, molybdenum, titanium, tantalum, niobium and zirconium. Strong in R&D, sales office in California and abroad. Four manufacturing plants have their own specialists available to any specific industry requirements.

## **C.A. PICARD International**

#829

[www.picard.com](http://www.picard.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.

## **CMI Novacast Inc**

#321

Elk Grove, Illinois

[www.cminovacast.com](http://www.cminovacast.com)

CMI Novacast is the producer of the electromagnetic pump for non-turbulent transfer of molten aluminum and zinc.

CMI Novacast produces two pumps, the PG-300 and the PG-450, for different applications. The PG-300 electromagnetic pump is used mainly for gravity filling of molding lines, die cast or tilt pour machines. The PG-450 pump is utilized in precision, non-turbulent, low pressure filling of sand molds, semi or permanent molds and shot sleeves.

## **CSA—Cambridge Scientific**

### **Abstracts**

#719

Bethesda, Maryland

[www.csa.com/](http://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 5.0, 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.

## **Canadian Overhead Handling**

#834

Mississauga, Ontario, Canada

[www.coh.ca](http://www.coh.ca)

COH specializes in building custom overhead cranes for the most demanding conditions. The exhibit will feature video, photos and literature on some of our installations including powerhouse cranes, automotive (frame handling, frame turnover and body marriage), aluminum industry (automatic anode stacking, hot metal, ingot handling and pot shell transporting), steel mill, transfer cars, automatic bulk handling for the cement industry and aircraft maintenance teleplatforms.

**Please see our display ad,  
page 31.**

## **Clayburn Industries Ltd**

#529

British Columbia, Canada

[www.clayburngroup.com](http://www.clayburngroup.com)

Clayburn Industries Ltd. is a privately owned company, in business since 1905. From our head office location in Abbotsford, British Columbia, Canada, we manage the sales and services of Refractory supply, distribution, engineer-

ing and installation throughout Canada, USA and for export.

Clayburn operates manufacturing plants in Abbotsford, BC, and Medicine Hat, Alberta, Canada. We also own and operate a plant in Xianyang, Shaanxi Province, China, under the name of Xianyang - Clayburn Refractory Co. Ltd.

Clayburn's sales and services include the supply and installation of a full range of monolithic products including, dense and insulating castables, plastics and gunnite-shotcrete materials. We also offer insulating and dense refractory brick, including high Alumina and Basic products for a broad range of applications.

Information and personal contacts can be made at our booth, number 529, at the TMS 2003 annual meeting in San Diego.

## Cometals

#711

Fort Lee, New Jersey  
[www.commercialmetals.com/  
cometals.asp](http://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

#516

Madison, Wisconsin  
[www.computherm.com](http://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.

## Corus Ceramics

### Research Centre

#429

Imuiden, The Netherlands  
[www.ceramics-research.com](http://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 steel-making 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.

**D**

## Davy Process Technology (Switzerland) AG

#522

Hohenrainstrasse 10, CH-4133 Pratteln -  
Switzerland  
[www.davyprotech.com](http://www.davyprotech.com)

Davy Process Technology (Switzerland) AG or DPT 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 tonne/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 com-

plete 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

#1213

Frankfurt, Germany  
[www.dgm.de](http://www.dgm.de)

## Dross Engineering

#318

Alfreton, Derbyshire, United Kingdom  
[www.dross-engineering.com](http://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**

## ECL Company

#1118

Ronchin, France  
[www.ecl.fr/](http://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.**

#322

Mahwah, New Jersey

[www.edax.com/](http://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.

**Please see our display ad,  
page 22.**

## **Eirich Machines, Inc.**

#511

Gurnee, Illinois

[www.eirichusa.com](http://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.

## **Elsevier Science**

#1023

New York, New York

[www.elsevier.com](http://www.elsevier.com)

The Journal of Light Metals (JLM) is a refereed archival journal to be published by Elsevier Science, which serves both the academic and industrial sectors by providing an enhanced web compo-

nent as well as four printed issues per year. The journal publishes original work, which advances the knowledge base of light metals in the domains of processing, microstructure development and resultant properties and performance.

JLM gives light metals researchers access to the world's light metals research in one comprehensive website. The web component consists of additional abstracts and full text links, patents, proceedings and relevant review papers from other journals. Visit the stand for a demonstration of this site and your free sample copy.

Also available on the stand are free copies of Materials Today, Elsevier Science's leading magazine for the materials community. Sign up today! Elsevier Science, the world's largest publisher of scientific, technical and medical journals, is part of Reed Elsevier plc, a leading provider of information to the scientific, legal and business communities.

## **F**

### **FATA Hunter Inc**

#530

Riverside, California

[www.fatahunter.com](http://www.fatahunter.com)

FATA Hunter Inc (a member of FATA Group of Torino, Italy) is a leading global engineering company specializing in the design and supply of equipment for the production of aluminum and steel flat rolled products. FATA Hunter product lines include Complete Plants, Continuous Casters, Cold Mills, Foil Mills and Foil Separators for Aluminum and Continuous Coil Coating Lines and Tension Leveling Lines for Aluminum and Steel.

FATA Hunter will be showing their new Optiflow® metal feed system for Aluminum Continuous Casters. The Optiflow® systems features such advancements as a new ceramic fiber feed tip, variable tip width adjustment system, flow distribution system and orifice control system.

### **Fenn Manufacturing**

#709

Newington, Connecticut

[www.fennmfg.com](http://www.fennmfg.com)

Established in 1900, Fenn Manufacturing Company has been supplying the metals industry with high quality machinery for over 100 years. As we expand our capabilities into light metals, engineered materials and other new applications, our focus remains on you, the customer, and your demanding process requirements. With decades of engineering and machine-building expe-

rience with Strip Rolling Mills, Wire Flattening and Shaping Equipment, Wire and Tube Drawing Machinery, Drawbenches, Swaging Machines and Impact Cutoff Equipment, Fenn Manufacturing Company is uniquely positioned to provide you with the metal forming solution that best fits your needs.

## **F L Smidt Group**

#733

Bethlehem, PA

[www.ffeminerals.com](http://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 2003 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<sub>2</sub> 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.

## **G**

### **GE Betz**

#700

Trevese, Pennsylvania

[www.gebetz.com](http://www.gebetz.com)

BetzDearborn 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.gebetz.com](http://www.gebetz.com)



## **Glama Maschinenbau GmbH** #605

Gladbeck, Germany  
[www.glama.de](http://www.glama.de)

GLAMA has designed and built heavy-duty Mobile Equipment for Aluminium pot rooms, cast houses and anode roding 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

## **GNA alutech, inc.**

#311

9495 Trans-Canada Hwy, St-Laurent, QC  
H4S 1V3, Canada  
Phone: (514) 956-1776; Fax:  
(514)956-0286  
[www.gna.ca](http://www.gna.ca)

GNA Alutech Inc. is a supplier of furnaces and related material handling systems to the aluminum industry. Innovative engineering capability and process knowledge make GNA a superior quality supplier of casthouse furnaces and systems equipment for both primary and secondary producers. GNA also has strong capabilities in cathode and anode assembly systems with several installations in the carbon sector of modern aluminum smelters.

## **Gouda Vuurvast N.V.**

#509

Gouda, Netherlands  
[www.goudarefractories.com](http://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.

## **Granta Design Ltd**

#505

Cambridge, United Kingdom  
[www.grantadesign.com](http://www.grantadesign.com)

Granta Design are the developers of the Cambridge Engineering Selector (CES) software, based on the materials selection methodology of Professor Mike Ashby of Cambridge University. CES is the natural software tool to accompany courses on material and process selection for both materials engineering and materials science. The latest version, CES4 EduPack is a complete teaching resource, including not only software but also books, lecture slides and notes, problems and exercises. CES is used by nearly 400 Universities worldwide in a wide variety of materials-oriented courses.

## **Graphite Engineering & Sales**

#701

Greenville, Michigan  
[www.graphite-eng.com](http://www.graphite-eng.com)

Graphite Engineering & Sales 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 #701 to discuss your graphite requirements.



## **HMR Group**

#1114

Husnes, Norway  
[www.hmr.no](http://www.hmr.no)

For 45 years HMR Group of 8 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.

For more information regarding

- Potroom vehicles and equipment
- Pot construction and start-up, including potshell, superstructure, busbars, flexibles, anode studs, hangers and collectors

Make sure that you participate in our presentation "New Generation of Tapping Vehicles" at Products, Applications and Services Showcase session.

## **Hauck Manufacturing Co.**

#810

Lebanon, Pennsylvania  
[www.hauckburner.com/](http://www.hauckburner.com/)

Hauck Manufacturing Company designs, builds, and markets a wide range of combustion products. Hauck burners, blowers, and controls products are key components in industrial heat processing equipment used by most industries utilizing thermal energy. In business for over a century, Hauck has earned an outstanding reputation for its products and the loyalty of customers nationally and in world markets.

## **Hencon B.V.**

#828

Ulf, The Netherlands  
[www.hencon.nl/](http://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 program covers the complete range for potroom (Söderberg and prebaked) and for the casthouse, 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 2003 Exhibition, Hencon will be present at booth no. 828, where the products of the delivery program will be shown.

Specific new developments are:

- Combined Furnace Charging / Skimming Machine
- Compact Hot Metal Transport and Tilting Vehicle
- New type Multipurpose Vacuum Cleaner H-3000

## **Heraeus Electro-Nite Co.**

#1117

Philadelphia, Pennsylvania

[www.electro-nite.heraeus.com/](http://www.electro-nite.heraeus.com/)

Heraeus Electro-Nite Co., the market leader in molten metal sensor technology, will be introducing the 9 Box Control strategy, which provides a total system for a more efficient pot 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 will be exhibited which enables multiple Cry-O-Therm measurements to be taken on the shop floor with ease. Digilance IV AI, will also be on show to demonstrate the latest technology for bath temperature / CVD measurement, combined with latest data logging / IR download capabilities.

## **Hertwich Engineering**

#932

Braunau, Austria

[www.hertwich.com](http://www.hertwich.com)

Based in Braunau, Austria and having an office in USA, this supplier of equipment to the aluminum industry will be showcasing their entire line of products. This will include: fully automatic in-line and stand alone ultrasonic inspection stations, continuous homogenizing and cooling systems ranging from 8,000 tpy up to 160,000 tpy, fully automatic billet sawing and stamping plants, briquetting

presses, fully automated billet and log stacking systems complete with bundle manipulation. Newly introduced equipment will include ingot casting lines (water free), contaminated scrap melting furnaces, rotary tilting furnaces and complete compact remelt operations for the processing of extrusion scrap into fully homogenized extrusion billet.

## **Hitachi High Tech America**

#533

Pleasanton, California

[www.hitachi-hhta.com](http://www.hitachi-hhta.com)

Hitachi High Technologies America, a global leader serving the needs of manufacturing companies and operations, provides a wide array of advanced electron microscopes. Our product line-up includes Scanning Electron Microscopes (SEM), Transmission Electron Microscopes (TEM), Variable Pressure SEM (VP SEM), Field Emission SEM (FE SEM) and Focused Ion Beam Systems (FIB). Renowned scientists in R&D and manufacturing facilities around the world use Hitachi electron microscopes for applications in the biological, materials, pharmaceutical, life sciences and semiconductor industries. Our customers can expect more experience, reliability and customer support when choosing Hitachi Electron Microscopes.

## **Holton Machinery Ltd**

#923

Phone: +44 (0) 1202 581 881

Fax: +44 (0) 1202 581 789

E-mail: [sales@holton-conform.com](mailto:sales@holton-conform.com)

Albany house, Elliott Road, West Howe, Bournemouth, Dorset, BH11 8JH, England  
[www.holton-conform.com](http://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.

## **Hönnun**

#1111

Reykjavik, Iceland

[www.honnun.is](http://www.honnun.is)

Hönnun hf is an independent engineering consulting company in Iceland. Main fields of specialization are civil, structural, environmental and mechanical engineering and project management. Hönnun hf 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 hf 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 hf has definitely been the lead local firm for environmental preparations (EIA), technical preparations and construction.

## **Hysitron, Inc.**

#705

Minneapolis, Minnesota

[www.hysitron.com/](http://www.hysitron.com/)

Hysitron is a leading manufacturer of nanomechanical test instruments for advanced materials characterization. Tests include hardness, fracture toughness, elastic modulus, friction, wear and scratch resistance of bulk materials, coatings, ultra-thin films, nanostructures (MEMS) and nanocomposites. The TriboScope® interfaced to a commercial AFM, or the TriboIndenter® with SPM mode imaging, allow pre and post indentation in-situ imaging and positioning with nanometer resolution. Advanced features such as Acoustic Emission, Full Automation, Stiffness Mapping and Dynamic Stiffness Measurement are available. Sample testing and contract analysis are offered at our USA headquarters.

## **I** **INDUSTRI-TEKNIK Bengt Fridh AB** #1111

Arlöv, Sweden  
[www.industri-teknikbf.se](http://www.industri-teknikbf.se)

Aluminium Preheating System, APS For the primary aluminium industry we manufacture an 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.

## **Industrial Heating Magazine** #431

Pittsburgh, Pennsylvania  
[www.industrialheating.com](http://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 25,000 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** #715

Phone: 0049-6033-9696-0  
Fax: 0049-6033-9696-9  
E-mail: [dmaiwald@innovatherm.de](mailto:dmaiwald@innovatherm.de)  
Butzbach Germany  
[www.innovatherm.de/](http://www.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. Innovatherm continues and improves the former Leisenberg technology for firing and control systems for anode baking furnaces.

## **International Magnesium Association**

#630  
McLean Virginia  
[www.intlmag.org](http://www.intlmag.org)

The International Magnesium Association (IMA) is the global voice of the metal magnesium industry. IMA is a trade association for magnesium's primary producers, recyclers, foundries, fabricators, end-users and suppliers. IMA's leadership provides the global industry with services and information through its World Conference, seminars, sponsored research and publications. Founded in 1943, IMA's mission is to enhance magnesium's position in material selection and promote innovative applications of the metal. Today's use of magnesium provides numerous options and benefits to manufacturers and consumers.

## **J**

## **J.T. Thorpe & Son Inc** #931

La Mirada, CA  
[www.jtthorpe.com/](http://www.jtthorpe.com/)

J.T. Thorpe & Son, Inc., established in 1906, is an Engineering, Procurement and Construction Company specializing in refractory and acid resistant construction. We execute over \$60M in volume per year. We are financially strong and capable of handling small to very large projects. Our company has an extensive amount of refractory experience in the United States, Asia, Europe, South America, Mexico, Canada and elsewhere, specializing in Metals, Petro-Chemical, Incineration, Cement and Power. We employ Mechanical, Ceramic, Chemical, Metallurgical and Civil Engineers as designers and project managers along with our complete CAD capability.

## **Jayne Industries, Inc.** #1029

Stoney Creek, Ontario, Canada  
[www.jayneindustries.com](http://www.jayneindustries.com)

Jayne Industries manufactures the complete line of stainless steel V anchors, c clips, studs and threaded products for refractory and ceramic fiber linings. Jayne has provided products & services to the Aluminum, and other Non Ferrous and Ferrous Industries for over 30 years.

Hexmesh and accessories as well as Jayne large volume Refractory Pan & Paddle mixers are manufactured at our Stoney Creek, Ontario Canada facility.

Jayne also supplies cast alloy castings and Fibercon stainless steel fibers for Refractories.

Visit our booth #1029 to further discuss your anchor and hardware requirements.

## **JOM**

### **The official publication of TMS and the 2003 TMS Meeting and Exhibit #808**

Warrendale, PA  
[www.tms.org/pubs/journals/JOM/jom.html](http://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.

## **Jünger+Gräter GmbH Feuerfestbau**

#521  
Schwetzingen, Germany  
[www.jg-feuerfestbau.de](http://www.jg-feuerfestbau.de)

Jünger+Gräter GmbH Feuerfestbau provides you with integral concepts for refractory constructions. In addition to consulting, engineering, material procurement, job site logistic, installation and customer support in refractory constructions, we also offer expertise in related services such as steel construction, system optimization, maintenance operations and supervision.

- Consulting and Engineering - we take our engineering expertise and integrate it into your project, by placing great emphasis on quality, efficiency and investment security
- Material Management - high-quality solutions are guaranteed through best practice material selection, in-house laboratory and modern testing facilities
- Expertise in Job Site Logistic and Installation - our experience with tight deadlines and planning of installation periods - is trusted world-wide
- Quality and Environmental Protection—our Quality Management System has been awarded the certification of DIN EN ISO 9001 as the first German firm in refractory construction.

**K****KB Alloys, Inc.**

#614

Reading, Pennsylvania

[www.kballoys.com](http://www.kballoys.com)

KBAlloys, Inc. and Anglo Blackwells Ltd. produce Aluminum-Based Master Alloys including TIBOR<sup>®</sup>, TITAL<sup>®</sup>, AND TICAR<sup>®</sup> grain refiners, binary hardeners and special purpose alloys, including BORAL<sup>®</sup>, Strontium-aluminum, strontium-boron (STROBOR<sup>®</sup>) and beryllium-aluminum. The master alloys are available in a variety of convenient to use forms including coiled rod, cut rod, ingot and KORRECT BAR<sup>®</sup>. With the use of statistical process control, KBAlloys 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.

This traditional quality system is now even stronger with certification of all our facilities to ISO 9002 standard by the British Standard Institute. If consistency in product performance is important to your success, selecting KBAlloys 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](http://www.kballoys.com).

**KBM Affilips B.V.**

#423

Phone: +31 412 681311; Fax: +31 412 635594 E-mail: [info@kbmaffilips.com](mailto:info@kbmaffilips.com)  
Oss, The Netherlands  
[www.kbmaffilips.com](http://www.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, AlB, 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 (& com-

plex FeNiMg), additives for super alloy production as well as Pb and Zn master alloys.

For further information please visit our booth 423 or contact our office.

**KHD Aluminium Technology GmbH—an OUTOKUMPU Technology Company**

# 821

Cologne, Germany

[www.outokumpu.com/metallurgy/aluminium.htm](http://www.outokumpu.com/metallurgy/aluminium.htm)

KHD Aluminium Technology GmbH specializes in plant and equipment for the production of carbon anodes and electrodes required in the primary aluminium and other metals industries.

For the primary aluminium industry, KHD Aluminium Technology GmbH supplies and installs:

- Green anode plants
- Anode vibrocompactors and anode cooling systems
- Butt crushing systems
- Bath treatment plants
- Anode rodding shops

KHD Aluminium Technology GmbH is the world-leading supplier of vibrocompactors for forming of green anodes, cathode blocks and electrodes, with more than eighty units supplied to the aluminium and carbon products industries.

**Kabert Industries**

#1018

Phone: (630) 833-2115;

Fax (630) 833-9298

Villa Park, Illinois

[www.kabert.com](http://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**

#300

Geelong, VIC, Australia

[www.kempe.com.au](http://www.kempe.com.au)

Kempe International is a leading global engineering service-based company providing turnkey facilities, specialized equipment, engineering and processes, consulting and maintenance support services to the aluminium smelting industry.

Kempe's services can be offered independently or as a package and include:

- Engineering Studies
- Engineering Design & Project Management
- Manufacturing
- Equipment Supply
- Turnkey Project Work
- Site Project & Shutdown Coordination
- Maintenance Engineering
- Fluid Power Supply & Services

Our commitment to customer service is supported by an ever growing in-house branch network on a global basis.

Our clients include smelters in Australia, New Zealand, U.S.A., Brazil, South Africa, Mozambique, India and Dubai.

**L****Laeis Bucher GmbH**

# 521

Trier, Germany

[www.laeis-bucher.com/](http://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 1 850 °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.

## LOI, Inc.

#428

Canonsburg, Pennsylvania  
[www.loi.de/en/indexsa.html](http://www.loi.de/en/indexsa.html)

LOI, Inc. features the Twin-Chamber melting furnace, for melting contaminated aluminum scrap without using salt. This process is based on low-temperature carbonization and subsequent incineration of the contaminants, making it an environmentally compatible solution.

### Heat Treatment

Heat treatment systems for structural Al parts (wheels, cylinder heads, axle guides, etc.) for continuous and non-continuous operation, for the following processes:

- Solution annealing
- Quenching
- Artificial aging

### Aluminum Melting

Delivery of complete systems for melting/recycling of various Al materials and scrap, including flue gas purification, metal circulation using electromagnetic pumping, and charging equipment.

### Design and manufacture of:

- Round, top charge, melting furnaces
- Tilting, holding furnaces
- Twin-chamber melting furnace for contaminated scrap

**Please see our display ad, page 16.**

## L P Royer Inc

#1034

Lac-Drolet, Quebec, Canada  
[www.lproyer.com/](http://www.lproyer.com/)

Design and manufacturing of specialized safety footwear, who protect against molten metal infiltration, metal-working industry, chemical, electrical.

## LECO Corporation

#507

St. Joseph, Michigan  
[www.leco.com](http://www.leco.com)

LECO is a leading manufacturer/supplier of analytical instrumentation and metallographic equipment used for materials characterization. We'll discuss products in booth #329 at the 2003 TMS Exhibition (March 2-6 in San Diego):

- Carbon/Sulfur Determinators (CS600—NEW autoloader and autocleaner)
- Nitrogen/Oxygen/Hydrogen Determinators (TCH600—NEW autoloader and autocleaner)
- Glow Discharge Optical Emission Spectrometers (GDS500A)
- Sectioning Machines (select NEW MSX/PT-Series models)
- Grinding/Polishing Equipment (SS-1000, SS-2000)
- Mounting Presses
- Microindentation and Macro-Vickers Hardness Testing Systems (LM, LV-Series, and NEW LCR-500 Rockwell®-Type Load Cell Hardness Testing System)
- Video Measuring Systems (Confident2™)
- Microscopes/Metallographs (NEW Olympus® GX-Series and NEW LX-31)
- Image Analysis/Management (IA32 and PAX-it™—featuring the NEW PAX-cam™)

For more information, contact:

LECO Corporation  
3000 Lakeview Ave  
St. Joseph, MI 49085-2396  
Phone: (800) 292-6141  
Fax: (269) 982-8977  
[www.leco.com](http://www.leco.com)  
email: [info@leco.com](mailto:info@leco.com)

LECO is a registered trademark of LECO Corporation.

## Light Metal Age

#518

San Francisco, California  
[www.lightmetallage.com](http://www.lightmetallage.com)

For 60 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 Selcom

#515

Partille, Sweden  
[www.lmint.com](http://www.lmint.com)

LaserPour® Molten Metal Level Control Solutions

The LaserPour® Aluminum Level Control Systems from LMI Selcom are high-speed, closed-loop control systems that automatically and precisely regulate the level of molten metal in a mold, launder, headbox or tundish.

Using real-time level measurements, the systems control the metal level from start-up through the filling stage to finished casting. Metal flow from the tilting or stationary furnace is also controlled to assure accurate and consistent fill rate to the desired level.

LMI Selcom's products for aluminum level control provides automatic, easy-to-use, reliable and virtually maintenance-free solutions and they offer proven benefits to the customer.

**Please see our display ad, page 12.**

## Los Alamos National Laboratory

#1123

Los Alamos, New Mexico  
<http://www.lanl.gov/mst/>

LOS ALAMOS NATIONAL LABORATORY supports a wide range of programs, including nuclear weapons stockpile stewardship, stockpile support, non-nuclear defense, energy, environment, industrial competitiveness, and strategic research. We integrate state-of-the-art capabilities in materials synthesis, fabrication, characterization, processing, and modeling to help solve technical problems critical to national and global security. Our staff includes metallurgists, analytical and organic chemists, physicists, materials scientists, and engineers.

## Lurgi Metallurgie GmbH—an OUTOKUMPU Technology Company

#821

Oberursel, Germany  
[www.outokumpu.com/metallurgy/lurgi.htm](http://www.outokumpu.com/metallurgy/lurgi.htm)

**M****M Brashem**  
#617

Tacoma, Washington  
[www.mbigraphite.com](http://www.mbigraphite.com)

M. Brashem Inc. is a distributor of Cathode Blocks, Carbon Sidewall Blocks, Graphite Sidewall Blocks, Carbon Electrodes and Graphite Electrodes.

M. Brashem Inc has supplied materials to the metallurgical industry for 20 years. We provide customers materials that have been proven to help lower production costs. Please visit us at booth 617 so we can discuss how we can help lower your costs.

**MagChem, Inc.**  
#1216

Boucherville, Quebec, Canada  
[www.magchem.com/](http://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.

**Magnesium Coating Corporation**

#704  
Madison, Wisconsin  
[www.magnesiumcoating.com](http://www.magnesiumcoating.com)

The Magnesium Coating Corporation is a division of a group of specialist surface engineering companies founded in 1898, employing over 150 staff in Europe and the USA.

MCC is based in the USA and is in the business of supplying world class unique hard tough coatings using the Keronite 3000 process. Keronite 3000 is a conversion process that can produce a hard ceramic surface layer on most anodic alloys, primarily Magnesium (Keronite 3000M), but also Aluminium and Titanium, and in principle on Beryllium and Zinc. If you desire to use the metals of the 21st Century, then we are the designers essential tribology tool and the production planners friend.

**Manganese Metal Company**  
#1220

P.O. Box 323, 1200 Nelspruit, South Africa  
Tel: +27-13-759-4600  
Fax: +27-13-752-7657  
e-mail: [keith.saffy@bhpbilliton.com](mailto:keith.saffy@bhpbilliton.com)  
[www.mmc.co.za](http://www.mmc.co.za)

Manganese Metal Company (MMC) has been a major supplier of manganese metal for hardener alloying of aluminum for over 40 years. MMC is the world's largest producer of electrolytic manganese, the only producer of completely SELENIUM-FREE manganese and also the only producer of manganese metal outside China since early 2001. MMC is certified under the ISO9000 and ISO14000 standards.

Selenium-free, dedusted manganese powder is supplied to numerous aluminum producers for powder injection alloying. Flux-free manganese-aluminum briquettes are also supplied. Pure manganese flakes are also available. Different grades, different packaging options and technical support are offered to meet the individual needs of our customers, not only in aluminum, but also in the steel, chemical and electronics industries.

You are invited to visit our booth to view our product range and for discussions on issues such as selenium technology in manganese manufacture, dissolution rate of manganese, environmental compliance in the manganese industry, environmental legislation regarding aluminum processing, behavior of selenium in aluminum cast houses, etc.

**Master Alloys Co.**  
#419

Munster, Indiana  
[www.wabashalloys.com/](http://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.

**Menardi**  
#831

Trenton, South Carolina  
[www.menardifilters.com](http://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 change-outs, 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 Dust-Gauge™, a particulate flow monitor. Phone: 803-663-6551.

**Metal Bulletin LLC**  
#535

London, United Kingdom  
[www.metalbulletin.com](http://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 interna-

tionally 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.

## Metallurg Aluminium # 913

[www.metallurgicaluminium.com](http://www.metallurgicaluminium.com)

Rotherham – UK  
Newfield, NJ – USA  
São João Del Rei – Brazil  
Rjukan – Norway  
Munguia – Spain

Metallurg Aluminium combines the strengths of its five members, London & Scandinavian Metallurgical Co Limited (LSM), Shieldalloy Metallurgical Corporation (SMC), Companhia Industrial Fluminense (CIF), Hydrelko AS and Bostlan S.A. to innovatively meet the highest quality requirements of the aluminium industry.

With its five manufacturing facilities, located in the UK, USA, Brazil, Norway and Spain, its professional worldwide sales force and global distribution network, Metallurg Aluminium offers the aluminium industry the highest level of service in the supply of aluminium grain refiners, master alloys and hardeners.

Our wide range of compacted powder products includes Chrome, Copper, Iron, Manganese, Nickel and Titanium in our ALTAB™ products and briquettes.

We continuously provide innovative products aimed at reducing costs in the casthouse. Recent innovations include TICAI 315™ grain refining rod, 8% Boron Al (8BAI™) rod & Castcut™, 15% SrAl Quick-Sol Bar™, Strobloy™, TIBAlloy™ and ALTAB™ 100% Ti.

Consistently high quality is secured through statistical process control and rigorous quality assurance programs. All Group members are registered to one or more of the following quality standards: ISO 9001 or ISO 9002.

We invite you to visit the Metallurg Aluminium booth for the latest information on our products and services and how they can be used in your applications to improve yields and lower costs.

## Metallurgical Society of CIM #628

Montreal Canada  
[www.metsoc.org](http://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, pro-

vides 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 628.

## Metaullics Systems Co. LP #807

Solon, Ohio  
[www.metaullics.com](http://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

## Mid-Mountain Materials #721

Phone: 1-800-382-2208  
Seattle, Washington  
[www.mid-mountain.com](http://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 #831

Sewickley, Pennsylvania  
[www.mikropul.com](http://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, South America and the United Kingdom. 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.**

#421

Lockport, New York  
[www.milward.com](http://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 # 421 to discuss your special needs.

## **MINTEQ International, Inc.**

#528

Slippery Rock, Pennsylvania  
[www.mineralstech.com](http://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 San Diego for a STARFLOW demonstration!

## **Mobiquiq Industries, Ltd.**

#306

E-mail: [sales@megaquip.com](mailto:sales@megaquip.com)  
Delta, British Columbia, Canada  
[www.mobiquiq.com/](http://www.mobiquiq.com/)

MOBIQUIQ 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 - MOBIQUIQ-part of your team!!!!

## **Moltech**

#729

Carouge, Geneva, Switzerland  
**Products for Aluminum Cells**

In over twenty years of research, the MOLTECH Group has developed products and processes for aluminum electrowinning, including TINOR Aluminum-wettable Protective Cathode Coating, OPANOR Anode Oxidation Protection and EXCELNOR Side Wall Oxidation Protection, which have been tested extensively in laboratories and commercial Cells and are now available for commercial use.

The ultimate goal of MOLTECH research is the development of the NOVANOR non-carbon non-consumable anode to replace carbon anodes, thereby improving Cell performance, reducing pollution in their fabrication and use, and in residue disposal.

NOVANOR anode laboratory test results are very promising and pilot scale tests are now in process. MOLTECH invites everyone to visit its stand at TMS, which will feature innovative MOLTECH products including NOVANOR.

## **Molten Metal Equipment**

### **Innovations**

#835

Middlefield, Ohio  
[www.info@mmei-inc.com](http://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](http://www.mmei-inc.com).

## **MTI Corporation**

#514

Richmond, California  
[www.mticrystal.com](http://www.mticrystal.com)

MTI Corporation was established in 1994 by a group of materials scientist from Massachusetts Institute of Technology, USA with a view to use their technical knowledge and expertise towards manufacturing difficult and special electronic and optical materials, e.g. single crystal of oxides, epi grade substrates, non-linear crystals, nano ceramic powders etc.

We manufacture state of art crystal/metal processing equipment, including diamond blade cutting saw, diamond wire cutting saw, polishing & grinding machine, at the most competitive price.

## **Murlin Chemical, Inc.**

#919

West Conshohocken, Pennsylvania  
[www.murlinchemical.com](http://www.murlinchemical.com)

Murlin Chemical, Inc. manufactures both natural and synthetic bone ash at its plant in West Conshohocken, PA, USA. These products are supplied to the world wide non-ferrous metals industry.

Aluminum Grade Natural Bone Ash is accepted by the Aluminum Industry as the premier release agent. Application of bone ash to a mold, a refractory trough, a surface, or a tool, which will be exposed to molten aluminum provides a consistent barrier against attack by the molten metal. Quick release of a casting or any solid metal, which may cling to the exposed surface, is a major benefit.

Plan to visit us at booth 919 to learn more about the advantages gained by using bone ash in your foundry.

You may contact us any time at

(phone) 610-825-1165,

(fax) 610-825-8659,

e-mail at [general@murlinchemical.com](mailto:general@murlinchemical.com)

or visit our web page at

[www.murlinchemical.com](http://www.murlinchemical.com).



# N

## National Research Council Canada/Aluminum Technology Center

#417

Chicoutimi, Quebec, Canada  
[www.imi.nrc.ca](http://www.imi.nrc.ca)

The goal of the Aluminium Technology Center (ATC) of the National Research Council Canada is to provide industry with technical support and expertise to help in developing value-added aluminium-based products and services. It combines research and development activities for leading-edge aluminium-based materials manufacturing technology, as well as process simulation and instrumentation used in the transformation of aluminium into finished and semi-finished products.

## National Institute of Standards & Technology/ATP

#1219

Gaithersburg, Maryland  
[www.atp.nist.gov/](http://www.atp.nist.gov/)

## NKM/Noell

#832

Mississauga, Ontario, Canada  
[www.coh.ca](http://www.coh.ca)

## NORSMELT

#820

Montreal, Quebec, Canada  
[www.norsmelt.com](http://www.norsmelt.com)

NORSMELT is the exclusive marketing agency to promote Noranda Inc.'s proprietary copper smelting technology known as the Noranda Smelting Process. Norsmelt is jointly operated by H.G.Engineering Ltd. and Noranda Inc.

NORSMELT is headed by Dr. Cameron Harris who is located in H.G. Engineering's Montreal office.

Proprietary technologies available include

- Noranda Process Reactor
- Noranda Continuous Converter
- Optical Tuyere Pyrometer
- Gaspé Tuyere Puncher
- Concentrate Injection Systems

The Noranda Reactor Process is a leading smelting technology due to its low capital and operating cost combined with unsurpassed flexibility and robustness.

## North American Manufacturing Company

#1015

Cleveland, Ohio  
[www.namfg.com](http://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 where applicable.

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

# O

## Opsis, Inc

#600

San Marcos, California  
[www.opsis.se](http://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 SO<sub>2</sub>, NO<sub>2</sub> and O<sub>3</sub>.

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.

**Please see our display ad,  
page 19.**

## Outokumpu Aluminium Technology

#821

[www.outokumpu.fi/metallurgy/  
aluminium.htm](http://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](mailto:aluminum.technology@outokumpu.com)

**Please see our display ad  
on the inside back cover.**

# P

## Parker Hannifin

#1020

Ulricehamn, Sweden  
[www.parker.com](http://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, electromechanical components, and seals required in motion-control systems.

Parker's experience in the aluminum 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.

## **Pechiney Group**

#813

Mamaroneck, New York

[www.pechiney.com](http://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.

## **POLYTEC PI**

#1031

Auburn, Massachusetts

[www.polytecpi.com](http://www.polytecpi.com)

LSV 5000 Laser Doppler Velocimeter  
Noncontact Speed and Length  
Measuring System

Polytec PI will display its latest LSV 5000 Laser Doppler Velocimeter for noncontact measurements of speed and length. The LSV systems measures forward/reverse speeds, as well as, zero speed with repeatability of +/- 0.02% and will track true speed even during high process accelerations or decelerations. It also offers real time length measurements for verifying total coil length, integrating into cut-to-length applications or verifying cut length products. In addition, the rugged sensor is designed to survive the hostile environments in applications such as mass flow, elongation, cast speed, cut to length, length verification and more.

## **Port of Longview**

#534

Phone: (360) 425-3305

Longview, Washington

[www.portoflongview.com](http://www.portoflongview.com)

Port of Longview is a deep water port authority with full-service bulk and breakbulk terminal facilities and a 300-acre industrial park on the Columbia River.

Port Facilities: The Port of Longview's import and export terminal facilities on

the Columbia River in Washington state are capable of handling your bulk and breakbulk moves to and from the Pacific Northwest. Longview specializes in bulk handling with an emphasis on chemicals, minerals and fertilizers and breakbulk commodities such as steel.

Industrial Park: The Port's 300-acre industrial park is a great site for expanding iron, aluminum and steel manufacturers and processors requiring excellent transportation connections. Dual rail service and tax advantages in General Purpose Foreign Trade Zone #120 offer companies a competitive edge.

Contact: For more information, stop by our booth #534 or call (360) 425-3305.

## **Precimeter, Inc.**

#1111

Gothenberg, Sweden

[www.precimeter.com/](http://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.

## **Premelt Systems Inc**

#818

North Canton, Ohio

[www.premelt.com](http://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 #818.

## **Process Engineering**

### **Resources Inc**

#921

Salt Lake City Utah

[www.processing.com](http://www.processing.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

## **Pyrotek Inc.**

#401

Spokane, Washington

[www.pyrotek-inc.com](http://www.pyrotek-inc.com)

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. [getinfo@pyrotek-inc.com](mailto:getinfo@pyrotek-inc.com); Pyrotek Inc., 9503 E. Montgomery, Spokane, WA 99206 USA

## R

### **R&D Carbon, Ltd.**

# 521

Sierre, Switzerland

[www.rd-carbon.com/](http://www.rd-carbon.com/)

R&D Carbon Ltd. serves the petroleum coke, pitch and aluminum industries.

- Research and Development: Basic research is carried out to better understand relationships between raw material properties and process parameters.
- Technical Services: Raw material evaluations for anodes, cathodes, and other carbon products are performed in bench or pilot plant scale. Technology audits and in-plant process optimizations are carried out at customer's plants.
- Laboratory Test Equipment: Easily operated and reliable test instruments have set worldwide standards for testing carbon products.
- Bake Furnace Process Control: Our integrated bake furnace firing and process control system guarantees high productivity, low energy consumption and consistent anode quality.
- Training: Special training courses in the basics of anode manufacture are offered in our training center or at customer's location.
- Engineering: Feasibility studies and basic engineering of carbon plants (coke calciner, anode plant) are offered. In cooperation with leading engineering companies our patented anode technology is marketed worldwide.

### **Rafhönnun**

#1111

Reykjavik, Iceland

[www.rafhonnun.is](http://www.rafhonnun.is)

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.

### **RAG Trading GmbH**

# 521

Rellinghauser 1-11, 45128 Essen,

Germany

[www.rag-trading.de](http://www.rag-trading.de)

RAG Trading belongs to the international mining and technology group RAG Aktiengesellschaft, a 15 billion company

RAG Trading is a worldwide known partner of metallurgy and power generation.

Currently the range of offers include

- Metallurgical coke for integrated steel mills and foundries
- Coking coal for cokerries for steel mills
- Recarburizers for steel mills and foundries
- Anthracite for steel mills (e.g. sintering)
- Low ash coal for silicon- and ferro-silicon industry

The unique carbon expertise of RAG Trading includes

- Sourcing of raw materials utilizing synergies with our mining and trading network
- Upgrading of carbon specialty materials including cleaning, washing, screening and calcining
- Marketing

Based on this RAG Trading is going to expand in the aluminum industry by offering carbon anodes for the aluminum electrolysis.

Aluminum producers will benefit from the various synergies RAG Trading offer on:

- Carbon expertise
- Sourcing of anode grade petcoke and pitch
- Financial strength of RAG group

### **Resco Products**

#307

Pittsburgh, Pennsylvania

[www.rescoproducts.com](http://www.rescoproducts.com)

### **Rex Roto Corporation**

#1105

Fowlerville, Michigan

[www.rexroto.com](http://www.rexroto.com)

Rex Roto Corporation is a leading worldwide supplier of refractory for the light metals industry. Our products and services include:

- Pyroform refractory for hot-top billet casting systems and ingot distribution pans
- High Performance Metal Delivery Systems from furnace to casting station
- Electric heaters for launder systems and filter bowls
- Thimbles, inserts, joint and patch compounds and other consumables

Rex Roto Corporation has a team of Engineers, Designers, and Metallurgists to aid in the complete design of your Metal Delivery System. Come visit us in Booth #1105 to discuss your application.

### **Riedhammer GmbH**

#706

Nuremberg, Germany

[www.riedhammer.de](http://www.riedhammer.de)

Baking furnaces and related equipment.

### **Rigaku**

#417

The Woodlands, Texas

[www.rigakumsc.com/](http://www.rigakumsc.com/)

Rigaku provides the world's most complete line of x-ray diffraction and fluorescence instruments, including: desktop and laboratory powder diffractometers, high resolution thin film diffractometers, x-ray reflectometers, small-angle scattering systems, rotating-anode generators; sequential and simultaneous x-ray spectrometers. In addition to instruments, Rigaku also provides contract services. We put X-rays to work the world over.

### **Robin Industries**

#315

Avon Cedex, France

[www.robinindustries.com](http://www.robinindustries.com)

**S****Saint Gobain Industrial Ceramics****#814**Worcester, Massachusetts-USA  
[www.refractories.saint-gobain.com](http://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 2003 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: 508-795-4081, or 508.795.2173; FAX:508.795.5011).

**Please see our display ad, page 30.**

**Selee Corporation****#801**Hendersonville, North Carolina  
[www.selee.com](http://www.selee.com)

SELEE Corporation is the premier supplier of ceramic foam filters, advanced ceramic products and services for use in the metals industries. SELEE has maintained market and technical leadership by developing strong partnerships with customers. These partnerships allow customers to share SELEE resources to satisfy their quality and profitability goals.

SELEE Corporation is the only ceramic foam filter and refractories supplier in the world to achieve ISO 9001,

QS-9000 and Ford Q1 quality certifications. This means SELEE Corporation will deliver to you on time the best quality products in the industry.

A partnership with SELEE provides our customers access to these resources:

- Commitment to Innovative New Products
- Advance Engineered Filter Bowls, Preheat Systems and Refractories
- Applications Engineering Team
- Fully Equipped Metallurgical Lab
- Dedicated Customer Service Team
- Global Direct Sales Force and Distribution Network
- R&D Pilot Plant Facility for:
- Rapid Prototyping
- Innovative New Product Development
- TQM Programs that Provide:
- Continuous Improvement
- Full Product Certification
- Self Directed Work Teams
- On-site Customer Training Programs

**Sermas Industrie****#418**Saint Quentin Sur Isere, France  
[www.sermas.com](http://www.sermas.com)

SERMAS INDUSTRIE is a customer-oriented company specialized in design, construction and commissioning of machines for the aluminium industry.

Complete sawing systems for slabs, T-bars and billets including:

- Band Saw (cut rate up to 20000 sq. in/min)
- Chips suction system and compacting press
- Handling equipment (downenders, conveyors, stop positioner, crops evacuation, etc.)
- Packaging equipment (scale, stamping, ink marking stacking, strapping, etc.)

Typical output:

- One cut T-bar every 57 seconds
- One slab (cut at both ends) every 8 minutes
- Ladle skimming and cleaning machines
- Cathodes sealing system
- Anode machines (cooling tunnel, handling system and rodding show equipment)

Your contact at SERMAS: Jean-Christophe Garcin; Phone: +334 7607 4242; Fax: +334 7693 6776; Email: [jc.garcin@sermas.com](mailto:jc.garcin@sermas.com)

**Services Lavigne & Baril Inc****#303**Deschambault, Quebec, Canada  
[www.gr-lavignebaril.com](http://www.gr-lavignebaril.com)**SETARAM****#1128**Caluire, France  
[www.setaram.com](http://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.****#1028**Toll Free 1-800-863-7733  
Kellogg, Idaho  
[www.silverneedle.net](http://www.silverneedle.net)

With 22 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.****#928**Charlotte, NC  
[www.skamol.com](http://www.skamol.com)[skamolamericas@skamol.dk](mailto: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 insu-

lation 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.

## **SMV—Sunnhordland Mek. Verksted AS**

#1111

Skaanevik, Norway

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.

## **Solios Carbone**

#621

Givors, France

[www.solios.com](http://www.solios.com)

Solios Carbone adds a strong value added to managing turnkey projects such as Green Anode Plant, Bath Processing, SPL and Carbon Butts Processing and Pitch Processing. Having mastered its own processes and specialized equipment, Solios Carbone adds a real know-how in managing the interfaces, diversifying supply sources, and providing operating knowledge of distributed control systems.

Solios Carbone has also developed a host of exclusive equipment for dry material preparation, paste preparation, anode forming and treatment of waste. With each experience, this arsenal is enhanced and its performance is improved.

## **Solios Environnement Inc**

#621

St Germain en Laye, France

Montreal, Québec, Canada

[www.solios.com](http://www.solios.com)

With an exclusive full line of equipment, Solios Environment guarantees you an environmentally sound performance in the long run.

Solios Environment has developed the capture and treatment technology to allow you to face your increased capac-

ity in production without any impact on the environment

One of the main objectives of our engineers is to significantly improve the quality of air in your production areas. Over the last decades, considerable progress has been made on the quality of air emitted to the atmosphere. Tomorrow, the air that we breathe on sites, including in the most sensitive production areas, should be as clean as the air outside.

## **Solios Thermal**

#621

Wombourne, Wolverhampton, England

[www.solios.com](http://www.solios.com)

Solios Thermal is offering some of the most technically advanced furnaces available: Melting and holding furnaces, Coil and foil annealing furnaces and homogenising furnaces.

We also offers a complete range of advanced control systems, tailored to suit your individual requirements with the resultant optimisation of your performance.

Solios Thermal designs, manufactures and installs DC casting machines which incorporates elements of both proprietary and customer-based components of casting technology.

Solios Thermal has also developed the IDEX, scrap decoating system for recycling aluminium.

## **STAS**

#410

Chicoutimi, Quebec, Canada

[www.stas-unigec.com](http://www.stas-unigec.com)

LA SOCIÉTÉ DES TECHNOLOGIES DE L'ALUMINIUM S.T.A.S. LTÉE

STAS is a dynamic and entrepreneurial company specializing in the commercialization of new technologically advanced equipment. Industry sectors include aluminium and mines serving a global market place on a custom-made basis through the service of representatives in the Americas, Europe, Asia, Australia and Africa.

STAS is located in Quebec, Canada. World-class R&D facilities provide a continuing flow of new equipment to be commercialized; they include the Alcan R&D Centre, the Noranda Technological Centre and the Hydro-Québec Research Centre at Shawinigan.

STAS is a recognized leader in its innovative abilities to develop and fabricate sophisticated equipment which lower costs for its customers as well as improving quality - using the latest in programmable automation controls. Examples include compact degassing equipment, rotary injectors, dross coolers, filters, crucible cleaners, automatic guidance systems, etc.

## **Stellar Canada Inc**

#732

Hamilton, Ontario, Canada

[www.whetstone-ceramics.com/](http://www.whetstone-ceramics.com/)

Whetstone Technology, along with its marketing partners, Stellar Canada Inc. and Whetstone-Mexico are exhibiting three exciting refractory product families. Ceramite®, FIBERStone and Spectrum 2000. Ceramite® is a highly wear resistant material suitable for hot or cold applications. FIBERStone is a state of the art refractory fiber reinforced ceramic composite. Spectrum 2000 is a unique lightweight material for molten aluminum processing. All of these products are manufactured as precast shapes at three North American operations. Specific applications, photos and case histories in aluminum, zinc and copper industries will be on display.

## **Stellar Materials, Inc.**

#935

Northville, Michigan

[www.stlr.com/](http://www.stlr.com/)

Thermbond is a unique refractory technology with features and benefits unavailable in traditional refractories. Thermbond is completely and naturally non-wetting to aluminum. Thermbond bonds permanently to other refractories so existing linings may be veneered and repaired rather than replaced.

Thermbond may be cast, troweled, gunned, hot-gunned, pumped, or rammed for permanent repairs or new installations.

## **Struers Inc**

#1021

Westlake, Ohio

[www.struers.com](http://www.struers.com)

Struers products cover the entire range of metallographic preparation equipment and consumables for cross-sectional analysis of all materials—from simple, manual machines to sophisticated preparation solutions. Since 1943, Struers has led the way in introducing equipment and consumables that ensure more efficient sample preparation. Products on display include our newest cut-off machine, mounting press, a brand new grinder/polisher system, as well as variety of our newest and most comprehensive consumable products. Struers offers the best solutions to meet all your laboratory needs. Stop by our booth to discuss our latest advances.

## **SUB (Slovakke strojirnl)**

#1111

Uhersky Brod CZECH REPUBLIC

[www.sub.cz](http://www.sub.cz)

SUB, 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.

**T**

## **Techint Technologies**

# 628

Coraopolis Pennsylvania

[www.techint.com/](http://www.techint.com/)

Techint Technologies designs and supplies a wide range of furnaces for ferrous and non ferrous heat treating, coal and coke calcining, and carbon electrode baking. Designs include batch and continuous roller hearth furnaces, rotary hearth furnaces, tip up furnaces, box furnaces, batch and continuous vacuum furnaces, as well as atmosphere generators and level 2 supervisory controls. For non ferrous processing, Techint Technologies offers state of the art continuous floating furnaces, as well as other furnaces for reheating, melting, homogenizing, and annealing. Techint also provides rotary hearth calciners for coal and petroleum coke, and rotary hearth and car bottom furnaces for carbon electrode baking.

## **Technical Weighing Services**

#532

Griffith, Indiana

[www.techweigh.com](http://www.techweigh.com)

Technical Weighing Services designs, builds and distributes material handling equipment such as hoppers/conveyors, storage tanks; weighing load cells and systems for all weighing applications; mill roll force load cells and control systems; repair of all load cells such as ABB/Kelk/BLH; strip tension measurement load cells and control systems. TWS clientele are primarily steel and aluminum customers.

In our booth we will display models of a ladle weigh system, digital weight

instruments and a load cell diagnostic system. Also available will be information on other products such as alloy additive systems, scrap weighing and blending, slab/billet/bloom weigh system, coil weighing, and other material handling and weighing systems.

**Please see our display ad, page 61.**

## **Techmo Car s.p.a.**

#714

Limena, Padova, Italy

[www.techmo.it](http://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, taylor-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**

#501

Augusta, Georgia

[www.thermalceramics.com](http://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<sup>®</sup>Albond<sup>®</sup>, Alcast<sup>®</sup>, Kaocrete<sup>®</sup> and Kaolite<sup>®</sup> Castables
- K<sup>®</sup> and JM<sup>™</sup> Insulating Firebrick and Mortars
- TR-19<sup>®</sup>/TR-20<sup>®</sup> Structural Board Insulation
- Kaowool<sup>®</sup> Blanket/Strip/Bulk Ceramic Fibers
- Kaowool<sup>®</sup> and RPC<sup>®</sup> Boards and Shapes
- BTU-Block<sup>™</sup> Microporous Insulation
- Kaowool<sup>®</sup> Paper and Felts
- Pyro-Bloc<sup>®</sup> Weld-On and Veneering Modules
- Superwool<sup>®</sup> 607<sup>®</sup> and Superwool 607<sup>®</sup> MAX<sup>™</sup>

Two papers on our new aluminum non-wetting castables and the Superwool non-RCF insulation products will be presented at the conference in the Products, Applications and Services Showcase on March 5 at 9:30am and 9:50am in Room 5A.

## **Thermal Systems America**

#404

Canastota, New York

[www.thermalsystemsamerica.com](http://www.thermalsystemsamerica.com)

Thermal Systems America is a company looking for visionaries. We believe that brick is old-fashioned and a much better alternative is an engineered big block furnace lining. We build refractory systems with no tooling charges. TSA manufactures customized refractory systems for aluminum melting, degassing, filtering, and launders optimized for your specific needs. TSA chooses the best material for each application using the full range of refractory products offered by our many refractory materials suppliers. We believe that it is the total package that makes it work. Steelwork, insulation and refractory must work seamlessly together. Visit us at our booth, and our website. We encourage you to learn more about the TSA Advantage.

## **Thermatex/Wahl Corp.**

#1033

Fremont, Ohio

[www.wahlref.com](http://www.wahlref.com)

Wahl Refractories, Inc, a division of Thermatex Wahl Corporation, will be promoting their full range of high technology monolithic products in bulk and precast form products during the TMS 2003 Annual Meeting Exhibition. Special focus will be made on SIFCA<sup>®</sup> and the unique "Big Block" concept for aluminum furnace linings.

SIFCA<sup>®</sup> is used very successfully in the critical areas of most furnace designs such as door areas and tapholes and is a proprietary product with a range of ceramic matrix composites in its third generation of development and use.

The unique "Big Block" concept for aluminum furnace linings offers advantages of:

- Superior properties of precast blocks that are produced under close quality control
- Fast turn-around time, which can be achieved during construction by having components on site ready for installation.
- Improved furnace overall performance from quality modules
- Ease of repair to any section when this eventually becomes necessary

We look forward to offering our problem solving capabilities to visitors to our booth during the TMS Exhibition.

## Thermcon Ovens B.V.

#1122

Geldermalsen, The Netherlands  
[www.thermcon.com](http://www.thermcon.com)

Thermcon Ovens B.V. is a leading specialist in the design and delivery of aluminium casthouse equipment such as charging machines, melting furnaces, holding furnaces, metal filter boxes, d.c. casting machines and homogenizing/cooling facilities. State of the art aluminium scrap recycling facilities capable of handling contaminated aluminium scrap in full compliance with the latest very strict European legislation, are supplied to the recycling industry. These recycling facilities have time after time proven to meet or exceed the most stringent environmental regulations in the world.

Revamping and modernization of existing equipment is also undertaken.

Thermcon also undertakes the design and implementation of computer control systems at machine level, level 2 as well as the connection to plant wide computer networks.

All equipment is custom designed and exactly tailored to the requirements of the customer.

## ThermoARL

#632

Dearborn, Michigan  
[www.thermoarl.com](http://www.thermoarl.com)

For over 60 years, Thermo ARL has been a leading innovator in analytical instrumentation. Thermo ARL manufactures sequential and simultaneous X-Ray fluorescence (XRF) instrumentation featuring: low cost low power WDXRF, integrated XRD, fast gearless goniometer, small footprint and large X-Y sample changer. Thermo ARL also manufactures X-Ray diffraction that is capable of addressing a broad range of industrial and research applications such as polycrystalline phase identification, crystallinity, crystallographic assay including texture measurement, residual stress and thin film analyses. Thermo ARL's current product offering includes a series of optical emission (OE) spectrometers known for precision, accuracy and reliability. Both XRF and OE spectrometers are available as fully automated laboratories.

## Thermo-Calc Software

#1131

Stockholm, Sweden  
[www.thermocalc.com](http://www.thermocalc.com)

Software For Materials Science

Thermo-Calc Software provides powerful software tools for thermodynamic calculations and simulation of phase transformations. Many companies use our software for materials and process development. The Thermo-Calc Software is a flexible tool for calculating phase diagrams and thermodynamic properties. Thermo-Calc was recently made available also in a user-friendly windows version, TCW2. The DICTRA Software is a unique simulation tool for Diffusion Controlled Transformations in multicomponent systems. The company also provides programming interfaces to access Thermo-Calc functionality from user-written applications. On display in our booth are products like TCC version P and the TC- MATLAB® Toolbox.

## Thorpe Technologies, Inc

#601

Whittier, California  
[www.thorpetech.com](http://www.thorpetech.com)  
[sales@thorpetech.com](mailto: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 86 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.

## Tube-Mac Industries

#1019

Butler, Pennsylvania  
[www.tube-mac.com](http://www.tube-mac.com)

Supply and design of hydraulic lubrication piping systems for mill equipment. Unique system utilizes non-welded flanges and bending techniques to install a clean, leak-free pipe system. SAE flanges, resilient pipe supports and high pressure ball valves are a few of the components utilized in the Tube-Mac system.

**U**

## UES Software, Inc.

#1129

Annapolis, Maryland  
[www.ues-software.com/](http://www.ues-software.com/)

UES Software Inc is a dynamic leader in providing material process simulation and design software. The software packages being displayed increase productivity, cut costs, improve quality performance, and control environmental hazards.

Demonstrations of the powerful thermo-chemical software for predicting phase behavior and properties, kinetic software for solving and modeling chemical reactions, and material specific databases for modeling processes will be available. Also being presented will be ProCAST®, an invaluable tool throughout the world, used to simulate the behavior of industrial casting applications.

**Please see our display ad on the inside front cover.**

## United States Dept. of Energy/ FreedomCAR and Vehicle Technologies

#531

Alexandria, Virginia  
[www.cartech.doe.gov/](http://www.cartech.doe.gov/)

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

#1207

Washington, DC  
[www.oit.doe.gov](http://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.

#1001

Spokane, Washington  
[info@wagstaff.com](mailto:info@wagstaff.com)  
[www.wagstaff.com](http://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 its 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

#732

Hamilton, Ontario, Canada  
[www.whetstone-ceramics.com/](http://www.whetstone-ceramics.com/)

Whetstone Technology, along with its marketing partners, Stellar Canada Inc. and Whetstone-Mexico are exhibiting three exciting refractory product families. Ceramite®, FIBERStone and Spectrum 2000. Ceramite® is a highly wear resistant material suitable for hot or cold applications. FIBERStone is a state of the art refractory fiber reinforced ceramic composite. Spectrum 2000 is a unique lightweight material for molten aluminum processing. All of these products are manufactured as precast shapes at three North American operations. Specific applications, photos and case histories in aluminum, zinc and copper industries will be on display.

### Wienalco

#929

Velsen-Noord, The Netherlands  
[www.wienalco.com](http://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.

#602

Florida, New York  
Phone: (845) 651-600  
Fax: (845) 651-0441  
E-mail [sales@zircarceramics.com](mailto:sales@zircarceramics.com)  
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For more than a dozen years, ZIRCAR has been synonymous with high quality, soft castertips for use in the continuous casting of thin aluminum strip. We are now introducing several new high quality castertip products for use on just about every type of twin roll thin strip caster being used today. ZIRCAR Castertips are combinations of shot free fiber and inorganic binders and are used in the production of pinhole free foil. Castertip Type ASQ is our soft tip. Type ECO-27B is a medium density tip. Castertip Type NKO is a high density, hard tip. All of these tip products are also produced in NON RCF compositions as well. Many other ZIRCAR Casthouse products are also available.

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