



1999 TMS Annual Meeting Exhibition

San Diego Convention Center
San Diego, California
March 1-3, 1999

Pre-Show Report

*Previewing products and services for over 150 companies
taking part in the upcoming TMS Exhibition*

Includes:

Equipment and Services Index

Alphabetical Listing of Exhibitors

Exhibition Floorplan

View complete meeting details along with current updates to this document
in TMS OnLine at <http://www.tms.org/Meetings/Annual-99/AnnMtg99home.html>

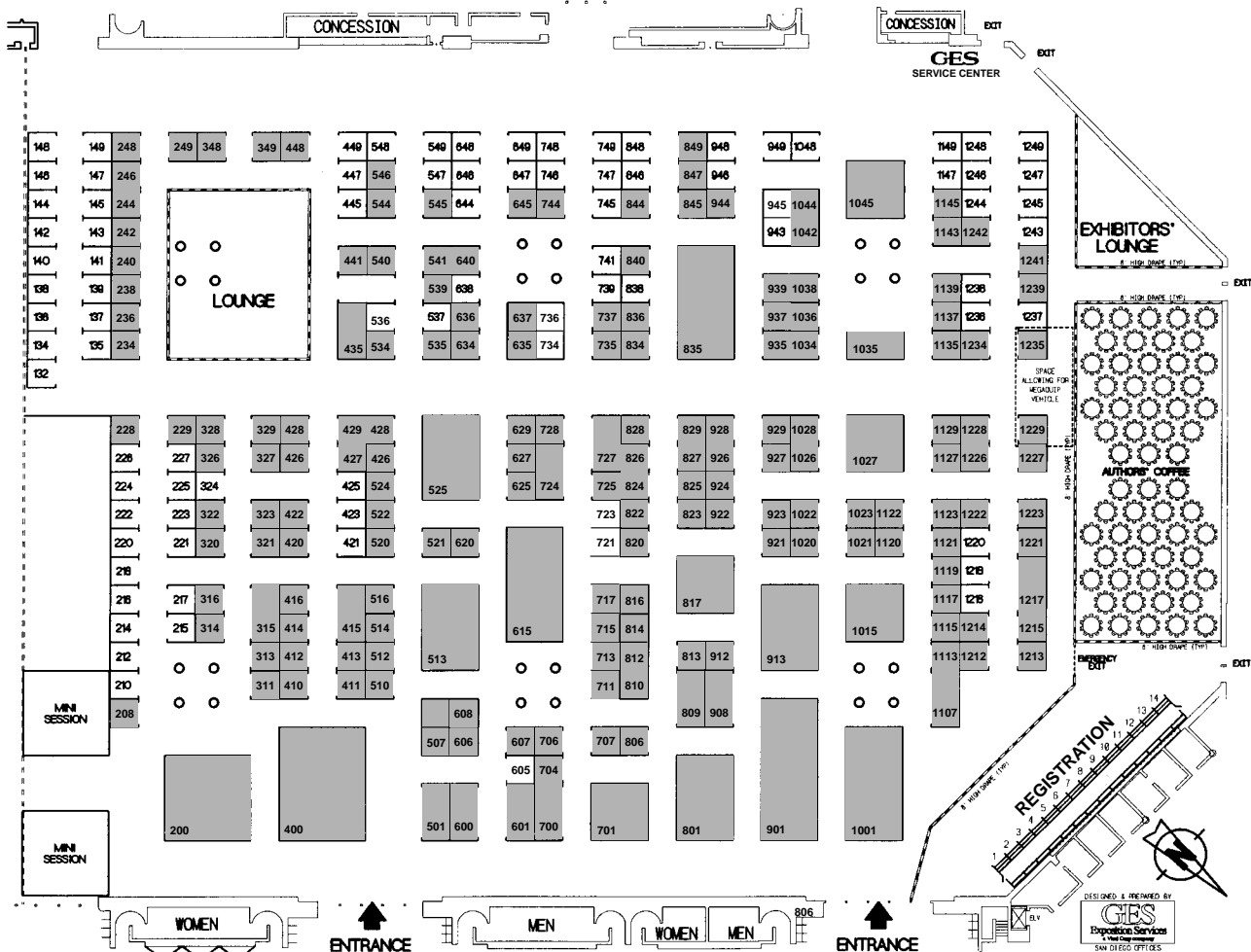
FLOORPLAN

TMS Annual Meeting Exhibition

MARCH 1-3, 1999

ALL BOOTHS 10'X10' UNLESS OTHERWISE NOTED - TOTAL 265 BOOTHS

ALL AISLES 10'-0" UNLESS NOTED OTHERWISE



SAN DIEGO CONVENTION CENTER HALLS A, B1

- Sold
- Available Space

EXHIBITION SCHEDULE OF EVENTS

SHOW HOURS:

Monday 1 March 1999	2:00 PM - 7:00 PM
Tuesday 2 March 1999	10:00 AM - 5:30 PM
Wednesday 3 March 1999	10:00 AM - 3:00 PM

Grand Opening Reception/Beach Party

Monday March 1, 1999 5:00 - 6:30 PM

Enjoy complimentary hors d'oeuvres, music and cocktails while touring the show floor at the Grand Opening Reception

Exhibits Only/Lunch Concessions

Tuesday and Wednesday
March 2 and 3 11:30 AM - 1:30 PM

Visit the expanded Lounge Area on the show floor

Complimentary Snack

Tuesday 2 March
Wednesday 3 March
Conference registrants receive a coupon redeemable on the show floor for a complimentary treat.

SHOW INFORMATION: *For an exhibition prospectus or space reservation, contact:*

Cindy A. Wilson, TMS Marketing Services,
420 Commonwealth Drive
Warrendale PA 15086
Telephone: 724/776-9000, ext 231
Fax: 724/776-3770
Email: wilson@tms.org

or view the complete exhibition prospectus on TMS OnLine at:
<http://www.tms.org/Meetings/Annual-99/exhibit/prospectus.html>

EXHIBITOR LIST

<u>COMPANY</u>	<u>BOOTH #</u>	<u>COMPANY</u>	<u>BOOTH #</u>	<u>COMPANY</u>	<u>BOOTH #</u>
3T-True Temp Technologies	1228	Hatch Associates	725 (3 sp)	Natl Center for Manufactng	
ABB Industrie AG	514	Hencon B.V.	327, 329	Sciences	242,244
Advanced Dynamics Corp Ltd.	923	Heraeus Electro-Nite Co	1121, 1123	National Refractories & Minerals	510
AEA Technology Engrg Svcs Inc	320	High Performance Refractories/ Saint Gobain Industrial Ceramics .	834 (2 sp)	NKM	329
AGA Gas Inc	420, 422	HILCO	725	North American Manufacturing	724, 726
Air Products & Chemicals	234	Hi-Scope Systems Company	929	North American Refractories Co.	1213, 1215
AISCO Systems, Inc.	1035, 1134	Holcan Constructions P/L	535	Opsis Inc	1212
Alan Worswick Ltd	1122	Holton Conform	1034	Parker-Hannifin	249, 348
Alcan International Ltd	827, 829	Hoogovens Technical Services	349, 448	Pechiney Corporation	501, 503
Aleastur	540	Horiba Instruments Inc.	228	Permotech Inc.	525 (4 sp)
Almeq Norway AS	507, 509	Hosokawa MikroPul	814	Plibrico	1135, 1137
Almex USA Inc	208	Hotwork Corp.	715	A.W. Plume Ltd	711
Altech Ltd	1226	Hydelko North America	711	Precision Inc.	921
Alu-Cut International	635	Hydro Aluminium Hycast a.s.	835 (8 sp)	Premelt Systems	810
Aluminium Today	824	Hysitron Inc	1028	Premier Refractories Inc	1042, 1044
Alusuisse	704	Indentation Technology	246, 248	Princeton Gamma Tech Inc	928
Applied Research Laboratories	326	Industrial Heating Magazine	1239	Procedair Industries	1115
Asbury Fluxmaster of Utah Inc	314	IPI—Industrial Products Intl	1117	Procon	737
ATAN Sistemas de Automacao	200 (9 sp)	Jayne Industries Inc.	520	Pryor Giggey Co.	1242
B & P Process Equip & Systems .	1127, 1129	Jervis B Webb Co.	435, 437	Pyrotek Inc.	400 (12 sp)
BetzDearborn	1021, 1023	Kabert Industries	328	R&D Carbon Ltd.	516
BHA Group Inc	620	Kaiser Aluminum	817 (4 sp)	Rex Roto Corp	1015 (4 sp)
Biothermica International Inc	1022	KB Alloys Inc	600, 602	Royal Tractor Company	640
Blasch Precision Ceramics	229	KBM Affilips B.V.	416	Scharf-Westfalia GmbH	1222
Bloom Engineering	1119	Kempe International	845 (3 sp)	Seco/Warwick	922, 924
BNZ Materials Inc	521	KHD Humboldt Wedag AG	236	Selee Corporation	1001 (8 sp)
Bomem, Inc.	826, 828	Kvaerner Buss CPS AG	840	Sentech Corporation	1027 (4 sp)
Borgestad Fabrikker	820, 822	Leco Corporation	522	Sermas AS	816
Brochot SCS	927	Lem Dynamp Inc.	1120	Shieldalloy Metallurgical Corp	625, 627
BWE Ltd	844	Light Metal Age	939	Shiva Technologies	316
Carl Aug Picard GmbH & Co. Kg	629	LMI Selcom, Inc.	311, 313	Silver Needle Inc	645, 744
Casthouse Technology	529	LOI Inc	539, 541	Skamol A/S	411, 413
Christy Refractories Co	321	Loma Machine Mfg. Co.	410	STAS	823, 825
Clemex Technologies Inc	1026	London & Scandinavian Metallurgical	625, 627	Stellar Materials	429
Consolidated Ceramic Products	908, 910	Maerz-Gautschi Ltd	935, 937	Stordy Combustion Engineering	441
Ebner Furnace	512	Mag-Chem Inc	813	Techmo Car & Engineering	809, 811
Edison Welding Institute	728	Master Alloys Co.	412	Terry Fluid Controls	534
Eirich Machines Inc	735	Maxon Corporation	926	Texsem Labs	322
Elkem ASA-Materials	713	McAllister Mills, Inc.	526, 528	Thermal Ceramics & Thermic Refractories	913 (6 sp)
Elsevier Science	545	Mechatherm International Ltd	637	Thermal Systems America	607, 706
Erico Products Inc	1109, 1111	Media Cybernetics, L.P.	1020	Thermcon Ovens BV	428
ESM Software	323	Megaquip Industries Ltd	1229, 1231	Thermprocess 99/Messe Dusseldorf	1241
Exploranium	944	Metal Bulletin	1139	Thorpe Technologies	701 (4 sp)
FCB	1113	Metallurgical Society Of CIM	1234	U S Dept of Energy/Office of Industrial Technologies	1221, 1223
Fireline Inc	427	Metaullics Systems Co. L.P.	513 (6 sp)	Unifrax-Fibers Division	601 (2 sp)
Fosbel	717	Milward Alloys	414	VAW Aluminium Technology	240
FOSECO, Inc.	615 (8 sp)	Moeller Communication GmbH	238	Vesuvius Foundry Group	1036, 1038
Gillespie & Powers	912	Moltech	1217, 1219	Wagstaff Inc	901 (10 sp)
Glama Maschinenbau GmbH	634, 636	Molten Metal Equip Innovations	1227	Wahl Refractories	315, 317
GOUDA VUURVAST N.V.	524	Murlin Chemical Inc	707	Western Industrial Ceramics	700, 702
Groupe Refraco Inc	711, 713	Nalco Chemical Co	801 (6 sp)	Zircar Products	544, 546
Hamilton Research & Technology	806			ZYP Coatings Inc	1214
Hamon/Research Cottrell	1143, 1145				
Harbison Walker Refractories Co	415, 417				

COMPANY PROFILES

A

ABB INDUSTRIE AG

#514
Zurich, Switzerland

ADVANCED DYNAMIC CORPORATION LTD.

#923
St Bruno, Quebec, Canada

Advanced Dynamics Corp. Ltd. designs and manufactures custom materials handling systems for primary aluminum smelters and secondary aluminum products producers.

Primary Producers

- Carbon anode handling equipment for both green and baked anodes, rodding room and ring furnace maintenance equipment.
- Aluminum ingot sawing and identification equipment for round logs, T ingots and sheet ingots.

- Aluminum ingot handling systems including downenders, billet stacking systems, transfer cars and rotary turntables.

- Aluminum casting equipment including sow casting carousels and crucible tilters.

Secondary Producers

- Coil handling equipment including turnstiles, powered transfer cars, wrapping systems and upenders.

- Tube handling cooling systems for drawbench automation, extrusion handling systems including pullers and flying cutoff saws.

Integrated Control Systems

- Computer linked PLC controls with panelview access screens, program-mable identification by pin of character stamp, ink jet or bar code.

Please call us at your convenience to discuss your equipment requirements and visit us at booth #923 at the 1999 TMS show.

AEA TECHNOLOGY ENGINEERING SVCS INC

#320
Pittsburgh, Pennsylvania

Materials and Chemical Process Assessment (MCPA)

AEA Technology has for many years had an extensive capability in both experimental and computational thermochemistry and kinetics. These skills have been applied to studying the detailed chemistry of a diverse range of processes for many customers, leading to improvements in process design and optimization, safety and environmental impact. Since 1992, these areas of chemical kinetics and

thermodynamics have been integrated in a single product area, Materials and Chemical Process Assessment (MCPA).

MCPA brings together software, databases, consultancy, and experimental services and applies them to industrial problems associated with the kinetics and energetics of chemical processes and/or the determination of the concentrations and identities of species generated in processes. These processes can be studied for a wide range of materials, including metal alloys, ceramics, glasses, slags, aqueous solutions and vapor and aqueous phases either alone or in combination. Clearly, the scope of such studies is very wide and consequently MCPA has benefited a large number of customers in a broad range of industry sectors.

AGA GAS, INC.

#420, 422
Cleveland, Ohio

AIR PRODUCTS & CHEMICALS

#234 <http://www.airproducts.com/>
Allentown, Pennsylvania



Air Products and Chemicals, Inc. is a leading worldwide supplier of industrial gases and related metals industry technology. At TMS Exhibition '99, the company will feature its broad range of products and services that help customers increase their productivity and meet mounting environmental challenges. Air Products will highlight its EZ-Fire™ Oxygen Combustion Systems for rotary, reverb, and sweat furnaces that enable customers to increase productivity, reduce melting costs, and reduce particulate carryover to furnace baghouse systems. In operation at over 40 customer locations, the systems are easy to install and require minimal capital investment. Also, Air Products' liquid and gaseous nitrogen technologies to benefit aluminum extruders are featured. The company will also showcase its overall industrial gas supply capabilities, ranging from on-site generation to cylinder supply, as well as ongoing applications and engineering support.

AISCO SYSTEMS, INC.

#1035, 1134
Burlington, Ontario, Canada



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 #1035/1134 at the 1999 TMS Show.



300 Tonne Combination Butt & Thimble Press

ALAN WORSWICK (ENGINEERING) LTD.

#1122 <http://www.worswick.com>
Blackburn, England



Alan Worswick (Engineering) Ltd. was formed in 1960 and initially specialized solely in the design and manufacture of rotary - ingot casting machines.

Progressing from this, they moved into the field of automatic ingot handling with the conveyors, cooling baths, and ingot stacking machines to provide a complete, automated ingot production system.

As time passed, they received many enquiries and subsequent orders for specialized machines for the non-ferrous metal industry including billet stackers, anode producing machines, block/sow casters, lead dross removal machines, and automated gravity die casting machines, in fact, equipment to produce everything from zinc balls to aluminium engine blocks.

To date, Worswick has built more than 300 casters and 100 stackers and would be pleased to discuss your requirements at the 1999 TMS Annual Meeting & Exhibition at San Diego, at our Booth No. 1122.

ALCAN INTERNATIONAL LTD.

#827, 829
Montreal, Quebec, Canada

ALEASTUR

#540
Aviles, Asturias Spain

ALMEQ NORWAY AS

#507, 509
Langhus, Norway

ALMEX USA INC.

#208
Long Beach, California

Almex USA, Inc. specializes in the design and supply of Aluminum Cast House Equipment. Almex's products are:

- I) LARST[™]: Liquid Aluminum Refining System
- II) CASTRIGHT[™]: Vertical D.C. Casting Machine
- III) PERMEA[™]: D.C. Billet Tooling

Almex's 21st Century Cast House Technologies provide unique, Metallurgically superior aero-defense grade cast metal quality at faster returns on investment.

ALTECH LTD.

#1226
Reykjavik, Iceland



Altech provides engineering services involving feasibility studies, technical specifications and lay-out drawings for modification of anode rodding shops for aluminium smelters.

Altech also manufactures various innovative products and systems for improved environment, efficiency and economy, such as:

- Collar Mounting Machine
- Collar Filling Machine
- Stub Straightening Machine
- Graphite Coating
- Graphite Drying
- Casting Machine for Rod/Anode Sealing
- Rod Clamping Unit
- Electrical Ladle Heater
- Metal Skimming System

ALUCUT INTERNATIONAL

#635
Katy, Texas

ALUMINIUM TODAY

#824
Redhill, Surrey, England

ALUSUISSE

#704
Zurich, Switzerland

APPLIED RESEARCH LABORATORIES

#326
Dearborn, Michigan

For over 60 years, Applied Research Laboratories (ARL) has been a leading innovator in analytical instrumentation. ARL's current product offering includes a series of optical emission (OE) spectrometers known for precision, accuracy and reliability. In addition, ARL manufactures sequential and simultaneous X-Ray fluorescence (XRF) instrumentation featuring: integrated XRD, fast gearless goniometer, small footprint and large X - Y sample changer. Both XRF and OE spectrometers are available as fully automated laboratories.

ASBURY FLUXMASTER OF UTAH, INC.

#314 <http://www.asbury.com>
Rodeo, California



Founded 1895

Asbury Fluxmaster, a division of Asbury Carbons, produces and markets a line of high quality consumable foundry materials. These materials include a wide range of aluminum fluxes, titanium products, degassers, coatings, and injection fluxes.

Asbury Fluxmaster was added in 16 years ago as a division to our 100+ year old parent company to expand our historic strength into the non-ferrous metals market.

Asbury Fluxmaster offers customers the benefits of a professional, knowledgeable staff, a proven line of products, custom packaging options, and quality customer service. Asbury Fluxmaster products are marketed and sold in the United States through our network of Territory Managers and distributors. Fluxmaster also has international agents and sales in over 20 countries.

Asbury Fluxmaster is QS9000 certified.

Call Asbury or stop by booth #314 to give our professional staff the opportunity to impress you.

Our telephone number is (510)799-3636 and our fax is (510) 799-7460 or visit our web page at <http://www.asbury.com>.

ATAN SISTEMAS DE AUTOMACAO

#200 (9 sp)
Belo Horizonte, Minas Gerais, BRAZIL

ATAN is today the largest Engineering Automation Company in Brazil.

ATAN built in 10 years a solid reputation as an automation solution provider in several industrial segments: aluminium, mining, cement, steel, ports, and food and beverage automation.

We will present SCORE, a complete solution for POT LINE automation, and TOP SCORE, a JAVA data collection module that exports production data to Intranet or Internet.

TOP SCORE's main idea is to make information available to management levels using a regular browser like Netscape or Internet Explorer. The user situated in any part of the organization can mine the data, format tables and graphs, and print it in a desktop computer.

Today SCORE controls more than 1,900 pot cells and 500,000 tons of primary aluminium per year all over the world.

B&P PROCESS EQUIPMENT AND SYSTEMS

#1127, 1129
Saginaw, Michigan

B&P Process Equipment and Systems, Inc. (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 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 we offered the polykneader, which is a continuous carbon paste mixer. Today, our batch mixers and polykneaders are used worldwide in the production of carbon paste. B&P also offers a complete line of continuous pusher centrifuges for liquid/solids separation.



BETZ DEARBORN WATER MANAGEMENT GROUP

#1021, 1023
Trevose, Pennsylvania



BetzDearborn Water Management Group markets engineered water treatment programs that use customized products and value-added services in solving problems associated with boilers, cooling towers, and influent and effluent systems in a wide variety of industries, commercial establishments, and institutional facilities. Hundreds of BetzDearborn researchers simulate the operation of a water system, troubleshoot, and isolate problems in one of the largest water research facilities in the world.

BHA GROUP, INC

#620 <http://www.bhagroup.com>
Kansas City, Missouri



BHA Group, Inc. is the global leader in air pollution control replacement parts and services for baghouses, electrostatic precipitators, and evaporative gas conditioning equipment. The BHA philosophy of problem solving and innovative product design have positioned the company as the world's leading single source supplier for air filtration parts, engineering systems, and troubleshooting services. All of BHA's manufacturing facilities in the U.S. are ISO 9001 or 9002 registered, ensuring custom-

ers that BHA's quality systems meet or exceed standards accepted worldwide. BHA is committed to helping its customers understand their APC equipment and the products that optimize its performance.

BIO THERMICA INTERNATIONAL INC.

#1022 <http://www.biothermica.com>
Montreal, Quebec, Canada



Biothermica is a technology corporation specialized in the development, design engineering and construction of turn-key projects related to thermal treatment of gas and waste. The BiotoxÆ system is a regenerative thermal oxidation process developed by Biothermica. It represents nine years of research and development in volatile (VOC) and condensable (COC) organic compound treatment produced by industries. BiotoxÆ treats emissions containing VOC, COC and HAP from the anode preparation process (Eirich mixer). The Biotox® installation, in operation since July 1997, in a primary aluminum plant in Canada shows a destruction efficiency of 99.9% with minimal energy input due to high heat recovery ratio and allows the plant to augment their anode production and quality.

BLASCH PRECISION CERAMICS

#229
Albany, New York

Founded in 1979, BLASCH PRECISION CERAMICS manufactures complex refractory shapes via a patented injection molding process. Parts manufactured using this proprietary process have unique qualities that offer distinct advantages such as precise tolerances without machining

(0.5%), excellent thermal shock resistance, controlled porosity, sub-particle distribution control, and outstanding resistance to spalling, erosion, and metal penetration.

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

A dedicated staff of engineers is always available to develop materials and design parts that satisfy specific customer needs. We welcome you to visit us at booth 229.

BLOOM ENGINEERING CO., INC.

#1119 <http://www.bloomeng.com>
Pittsburgh, Pennsylvania

Bloom Engineering Company, Inc. designs and manufactures burners, controls and combustion equipment for the aluminum, other non-

ferrous and ferrous industries.

Representatives from Bloom will be available to discuss Bloom's complete burner line including Fuel Energy, high intensity and regenerative burners as well as their application to various furnaces used in the industry. Featured at the show will be Bloom's recently introduced LumiFlame and Regenerative HTR (Flat Profile Flame) burners. Measured NOx values from Bloom's complete line of Ultra Low NOx regenerative and conventional burners are the lowest in the industry.

BNZ MATERIALS, INC.

#521 <http://www.bnzmaterals.com>
Littleton, Colorado



BNZ Materials, Inc. consists of two businesses which are appropriate to the metals industry. The Zelenople, Pennsylvania plant manufactures/markets Insulating Firebrick and complementary refractory products such as mortars, aggregates, castables and calcium silicate block. Insulating Firebrick are used in a variety of applications in the metals industry, from carbon baking furnaces to melting and holding furnaces.

The Billerica, Massachusetts plant manufactures a line of calcium silicate boards under the MariniteÆ trademark. They are machined into various parts for conveying, containing, and forming aluminum, lead, zinc, tin and other non-ferrous metals. These parts include spouts, floats, launders, distribution plates, head boxes, baffles, headers, tips, rings, distribution boxes, stoppers, basins, snouts, orifice plates, hot top and ingot mold liners as well as parts in the metal handling and casting systems of many casting machines.

BOMEM INC.

826, 828
Québec, Canada



Bomem offers advanced analytical instruments for the characterization of aluminum melts.

Three different inclusion measurement techniques are available:

- LiMCA II for in-line inclusion counting and sizing in the range of 20 to 300 micrometers.
- PoDFA for off-line quantitative and qualitative inclusion characterization, providing the total inclusion content, broken down by types of particles.
- Prefil®-Footprinter for at-line inclusion quantification. It records the filtration rate curve during a standardized filtration test and compares it with pre-programmed information that enables you to see the quality of the liquid metal.



Hydrogen measurement with three different models of the ALSCAN™ analyzer are available:

- ALSCAN™ C for Casthouses
- ALSCAN™ F for Foundries
- ALSCAN™ CM for Continuous Monitoring

BORGESTAD FABRIKKER

#820, 822
Porsgrunn, Norway

BROCHOT SCS

#927
Tremblay en France, France



BROCHOT company has 30 years experience in the design and manufacturing of special equipment for the primary aluminium industry. With its 3 departments, Brochot - Syprim - Berger, BROCHOT proposes the full range of equipment necessary for aluminium smelters :

- Brochot:** electric pot ramming machine ingot casting & stacking lines dross handling equipment (Ekumax)
- Syprim:** anode cooling anode handling & storage anode rodding shop
- Berger:** special vehicles for anode and molten metal transport ; furnace charging and tending vehicles.

Come to our booth # 927 and find out more on our latest developments and discuss innovative solutions to your equipment.

BWE LTD.

#844
Ashford, Kent, England

The latest advances in Conform and

Conklad technology will be on show including several examples of bi-metallic products recently developed at BWE's new research and development centre. The range of wire and cable produced offering unique advantages when manufactured with BWE's Conform/Conklad system continues to grow... from rectangular wire requiring no cleaning or annealing before covering in insulation, to fibre optic cables which can be made in very long lengths (theoretically infinite but typically 10-15 km). Also on show will be examples of aluminium extrusions including the aluminium sheathing of flexible cores (CATV, fibre optics etc), the aluminium sheathing of solid cores (steel wire, steel tubes etc), aluminium tubes, strips and sections.

C

CASTHOUSE TECHNOLOGY

#529
Guelph, Ontario Canada

Cast House Technology specializes in hot metal handling and metal treatment systems. In particular in-line trough degassing equipment, and pulsed water cooling technology for controlling butt distortion in heavy sheet ingot. Featured at the TMS Exhibition are the Cast House Submerged Jet Trough Degassing Reactor and the Cast House Pulsing Valve.

CHRISTY REFRACTORIES CO.

#321
<http://www.ceramics.com/christy/refract.html>
St. Louis, Missouri

CLEMEX TECHNOLOGIES, INC.

#1026 <http://www.clemex.com>
Longueuil, Quebec, Canada



Photo Caption: Manage and view thumbnails of your images in Clemex R'Kive Explorer

Clemex Technologies, Inc. is a leading de-

veloper and marketer of image analysis and management systems for use in quality control and R&D labs. The company offers a family of turnkey systems and application specific software modules designed to facilitate quantitative microscopy. Through highly intuitive and automated integrated systems, Clemex Technologies gives labs a greater competitive advantage by dramatically improving archaic image analysis and archiving processes. At the heart of each system is Clemex Vision - a robust, all-purpose image analysis software application.

Clemex will be exhibiting its Clemex Impak system along with Clemex R'Kive - a scientific image archiving and management package.

CONSOLIDATED CERAMIC PRODUCTS, INC.

#908, 910 <http://www.ceramics.com/ccp>
Blanchester, Ohio

PICK UP LOGO FROM
98 PRESHOW REPORT, PAGE A4
(NOVEMBER 1997 JOM)

For 40 years, Consolidated Ceramic Products has been of service to the aluminum industries worldwide. An innovative manufacturer and marketer of ceramic based products, it maintains operations in Cincinnati, Ohio and Sheffield, England with distribution points around the world.

CCPI products and services for temperature measurement, chemical modification and physical transport of molten aluminum include:

- Ceramic coated alloyed cast iron thermocouple protection tubes.
- Mineral insulated and plasma beaded, ceramic insulated thermocouple elements.
- ACCUTIP Dipping thermocouples.
- Ceramic coated fluxing pipe, available with gas diffusing media.
- Ceramic coated alloyed cast iron riser stalk tubes.
- Vacuum formed fiber tapout cones with matching cast iron plugs.
- Radiant and immersion heaters and replacement elements.
- Thermal profiling services for aluminum melting, holding and heat treating furnaces.
- High technology SIALON thermocouple protection tubes, level sensors, riser stalk tubes, heater tubes, and special shapes.
- Aluminum Titanate riser stalk tubes, sprues and break rings.
- Custom cast iron castings such as transfer troughs, air and water cooled pig

- molds, flow devices, and crust plungers.
- Impellers, shafts, rotors, nozzles, baffles and pre-cast liners for degassing and filtration systems.

Consolidated Ceramic's team of sales, marketing and technical personnel provides unparalleled service to the aluminum industry; we invite you to come and meet us.

E

EBNER FURNACES, INC.

#512
Wadsworth, Ohio

Ebner Furnaces, Inc. and Ebner Industrieofenbau will display the latest technology related to high performance furnaces for the aluminum industry. Of particular importance are the roller-hearth furnace for solution heat treating aluminum plate and pusher type furnace for reheating and homogenizing aluminum ingots. Ebner also supplies equipment for solution heat treating and aging of aluminum castings and extrusions and batch type annealing ovens for aluminum strip coils and aluminum foil.

EDISON WELDING INSTITUTE

#728 <http://ewi.ewi.org/>
Columbus, Ohio

EIRICH MACHINES

#735 <http://www.eirich.de>
Gurnee, Illinois



Eirich Machines, Inc. of Gurnee, Illinois, is a manufacturer of mixing and pelletizing equipment for the ceramic, metallurgical and other industries.

The famous Eirich Intensive Mixer, well known for the excellent mix quality it produces, its energy efficiency and its durability, can be configured for batch or continuous operation. It is available in a variety of different sizes from lab mixers to large capacity production units suitable for most industrial requirements.

Eirich also offers disc pelletizers and mix/pelletizers for the manufacture of granules made from dry solids only or sludge with dust. The mix/pelletizer combines both the mixing and the pelletizing processes within the same piece of equipment thus saving space and reducing the initial investment.

Supporting equipment includes a wide variety of metering, weighing, conveying and discharging systems, as well as superior control and process data technology for fully automated processes.

ELKEM ASA-MATERIALS

#713
Kristiansand, Norway

ELSEVIER SCIENCE

#545 <http://www.elsevier.nl>
New York, New York

ERICO, INC.

#1109, 1111
Solon, Ohio

CADWELD connections are available for large and complex welds of aluminum to aluminum, copper to copper and copper to steel for industrial applications and assure the current-carrying capacity of the connection is equal to or greater than the conductor's. They can be made to any size or shape of conductor and produce a permanent molecular bond. Used in many types of manufacturing facilities, CADWELD connections can be made in a highly magnetic environment.

ESM SOFTWARE

#323
Hamilton, Ohio



ESM Software will exhibit a large collection of materials science software covering materials properties, thermochemistry, crystallography, and materials processing. Products include version 3.0 of TAPP, a database of thermophysical properties of pure compounds; MAPP, a database of properties of engineering alloys and polymers; ChemSage and HSC Chemistry for calculation of complex phase equilibria; IceNine phase diagram drawing software; metal and ceramic phase diagram CD-ROMs; and crystallography databases and crystal drawing software; Most of the software packages can be previewed at <http://www.esm-software.com> and <http://www.materialize.com>.

EXPLORANIUM

#944
Rio Rancho, New Mexico

F

FCB

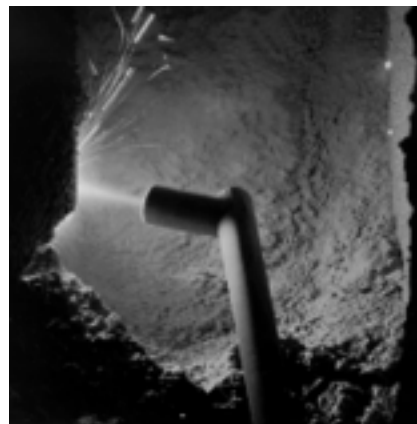
#1113
Givors Cedex, FRANCE

FIRELINE INC.

#427
Youngstown, Ohio

FOSBEL

#717 <http://www.fosbel.com>
Berea, Ohio



Aluminum furnace repair without shutdown

Fosbel has developed a high alumina material exclusively for the repair and maintenance of aluminum furnace refractories. The Fosbel Ceramic Welding process exothermically fuses repair material to the hot refractory while the furnace continues to operate. This process creates a long lasting, durable bond between the weld mass and the substrate giving extraordinarily long life to the repair areas.

Whether used as a repair method or as preventative maintenance to extend the furnace campaign life, Fosbel Ceramic Welding is a fast and effective way to keep your furnace in operation without costly downtime.

FOSBEL INC

640 N Rocky River Drive
Berea, Ohio 44017 USA
Telephone: (1) 440 891 0892
TeleFax: (1) 440 891 0899
<http://www.fosbel.com>

FOSECO, INC.

#615 (8 sp)
Cleveland, Ohio

FOSECO, INC. manufactures products and provides services for casting aluminum throughout the world. Foseco's recent purchase of the SNIF® business from Praxair, Inc. enables Foseco to bring a full line of products for in line processing of molten aluminum to our customers. SNIF degassing equipment and technology is recognized as the world's market leader.

FOSECO'S TILITE® grain refiner is widely used for foundry ingot. FOSECO'S FILTRETREX®, a sintered, phosphate-free composition, is a premium ceramic foam filter offering new advantages to our customers. Through a worldwide distributor agreement with Metallurgics, Inc.,

FOSECO offers molten metal processing equipment such as pumps and the Metallurgical Cartridge Filter, a high-efficiency bonded particulate filter for critical aluminum applications. Premium refractory materials for molten aluminum filtration and casting are supplied by FOSECO as well. FOSECO can provide engineering and metallurgical services for molten aluminum processing as required by our customers.

FOSECO is committed to helping improve the business performance of our customers.

G

GILLESPIE & POWERS, INC

#912
St. Louis, Missouri

GLAMA MASCHINENBAU GmbH

#634, 636
Gladbeck, GERMANY



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

- Anode Changing Vehicles
- Hammer Crustbreakers
- Tapping Trucks
- Anode Pallet Haulers
- Furnace Charging Machines
- Furnace Tending Machines
- Mobile Flash Gas Refiners
- Ladle Charging Trucks
- Molten Metal Carriers
- Butt Cleaning Manipulators
- Coil Lift Trucks

GLAMA's experience of many years of producing machines with a unique combination of advanced control and rugged, reliable construction is evident in the several hundred machines now in service. GLAMA equipment withstands the heat, dust, vibration and battering of heavy industry while delivering precise handling performance.

The GLAMA booth no. 634 & 636 at the TMS Exhibition will feature the latest developments: new Molten Metal Carrier for liquid Magnesium and a brand new generation of Anode Pallet Haulers (see photographs).



GROUP REFRACO INC.

#711, 713
Chicoutimi, Quebec Canada

H

HAMILTON RESEARCH & TECHNOLOGY

#806
Calcutta, WB, India

Hamilton Research & Technology (HART) a high technology company, in association with Indian and European Aluminum Reduction Specialists, offers fully distributed Process Control Systems to aluminum producers.

HART's systems based on microprocessor/DSP technology, have evolved in sophistication and user friendliness. HART's software experts refine user interface to icon based screen obviating the need for computer literacy.

HART has supplied to HINDALCO, one of the lowest cost and most profit making aluminum producer, a network of pot controllers connected to a supervisory computer system with fibre optic backbone. The system successfully controls nearly 1100 pots. HART has also supplied Heating & Regulation System for Carbon Anode Baking Plants of NALCO, the largest aluminum company under Government of India.

HART has an impressive customer list which includes end users like aluminum smelters, steel/cement plants, railway & defense departments, and OEMs like switchgear manufacturers and networking companies spread over North America, CIS, South Africa and Asia.

HAMON/RESEARCH - COTTRELL

#1143, 1145
Branchburg, New Jersey

Research-Cottrell is the exclusive worldwide licensee for Alcoa's A-398 and A-446 fluidized

bed dry scrubbing technologies. The technologies—the basis for the new MACT rules—provide state-of-the-art emission control and fluoride recovery from both primary aluminum potline and bake oven applications. A-398 systems are currently installed on more than 20 smelters (56 potlines) worldwide, treating over 20 million cfm of potroom gases from both prebake and Soderburg-type reduction cells. The A-398 and A-446 technologies routinely achieve greater than 99.9% fluoride removal efficiencies. In addition to controlling fluorides and particulate, the A-446 scrubbing process significantly reduces hydrocarbons (Tars, POM, B(a)P) and SO₂ emissions from bakeoven furnaces, without a separate spray cooling chamber. Alcoa's proven fluid bed scrubber systems and Research-Cottrell's vast air pollution control experience in fabric filter, electrostatic precipitator, wet and dry scrubber, and VOC-removal technologies, combine to allow Research-Cottrell to offer the "Best" technologies at a competitive price.

HARBISON WALKER REFRACTORIES CO.

#415, 417
Pittsburgh, Pennsylvania



HATCH ASSOCIATES LTD.

#725 (3 sp)
Mississauga, Ontario, Canada



Hatch/Galletta/Hilco provides professional engineering and MES software implementation services to the aluminum and non ferrous industry for:

- primary smelting and carbon plants
- casting and heat treatment
- rolling and fabrication
- recycling and environmental projects

HENCON B.V.

#327, 329
Gendringen, The Netherlands



Backed by more than 40 years experience, Hencon Holland is a main and worldwide supplier in the field of special Mobile Equipment for the aluminum industry.

The delivery program covers the complete range for potroom (Soederberg and prebaked) and for the casthouse.

Potroom equipment:

- Anode Pallet Transporters
- Ladle Transport and Tilting Vehicles
- Tapping Trucks
- Vacuum Cleaners
- Vacuum Systems
- Alumina Feeders
- Anode Covering Vehicles
- Anode Briquette Feeders
- Crust Breakers
- Bath Cleaning Machines
- Combined Feeding Trucks
- Anode Changing Machines
- Rack Raising Trucks
- Spading Machines
- Pot Skimming Vehicles

Casthouse equipment:

- Furnace Skimming and Cleaning Machines
- Furnace Charging Machines
- Ladle Transporters
- Sideloaders

Recent developments, like a new design of Crustbreaker and Cavity Cleaner will be shown at the TMS Exhibition.

HERAEUS ELECTRO-NITE COMPANY

#1121, 1123
Philadelphia, Pennsylvania

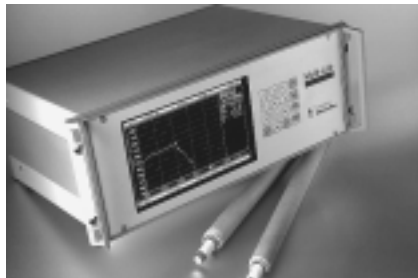
Heraeus Electro-Nite Co., the world's largest developer and producer of sensors for the molten metal industry, will be exhibiting several recently developed sensors for the primary aluminum smelter.

The Cry-O-Therm™ "Superheat" sensor has been developed to provide the potline with an almost instantaneous reading of the bath and liquidus temperatures. It is being shown that direct measurements of the liquidus temperature in industrial cells by the Cry-O-Therm probe is clearly advantageous compared to the alternative methods for determining the liquidus temperature.

The Positherm-AL® Type "S" disposable thermocouple and DT-280 digital temperature

measuring system provide the potroom operator with a faster, more accurate, and more reliable temperature of the cryolite bath. The companion datalogger allows the operator to store the information collected over the course of the day and download it directly into the computer at the end of his shift.

Stop by the HEN booth to learn more about our new sensors for the primary aluminum smelter.



HIGH PERFORMANCE REFRACTORIES / SAINT GOBAIN INDUSTRIAL CERAMICS

#834 (2 SP)
Worcester, Massachusetts

Norton provides refractories for many primary metal containment and/or critical contact applications.

Norton refractory products for the aluminum industry include reduction cell sidewall bricks and blocks, reverberatory furnace ramp & floor bricks, other high-erosion components, mortars, ramming cements, dry vibration cements and low-moisture castables. Norton also supplies refractories for critical areas in filter systems, molten metal pumps, troughs and heat exchangers.

Norton refractory 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.

The major strengths of material expertise, forming techniques, application experience, and statistical process control result in high quality bonded and monolithic silicon carbide, alumina, and mullite refractory products for a wide variety of applications.

HILCO

#725
Earth City, Missouri

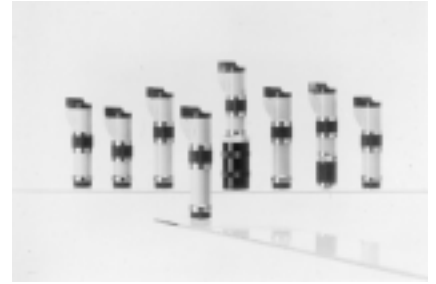


HI-SCOPE SYSTEMS COMPANY

#929 <http://www.hirox.com>
Closter, New Jersey

Hi-SCOPE Systems Company
(A Subsidiary of WIN SYSTEMS OF AMERICA CORP.)

Hi-Scope Systems Company manufactures a wide range of lenses optimized for video microscopy. The 3-D Hi-Scope System is a light video microscope inspection system. Unique concept called Rotational Microscopy allows viewing of microscopic samples 3-Dimensionally. Superior resolution and great depth of field. 2-D or 3-D measurement. Video ready to color printer, VCR and PC. Magnification range from 1X to 2500X. The most advanced system for QC and R&D. You can contact us at 1-877-HISCOPE; E-Mail: hiscopesys@aol.com, or on our Web Site: <http://www.hirox.com>.



HOLCAN CONSTRUCTIONS PTY LTD.

#535
Queensland, Australia

*PICK UP LOGO FROM
98 PRESHOW, PAGE A6
(1997 NOVEMBER JOM)*

The Holcan Welding System offers an alternative to hand, friction or flat butt welding of anode rod stubs and adds a degree of automation at a low capital cost.

Our system will outperform manual welding methods by up to 60%.

Simplistic design and proven reliability allows for in-house maintenance to be carried out on all pieces of equipment therefore eliminating the need for technical assistance from outside sources.

HOLTON/CONFORM

#1034
West Howe, Bournemouth, United Kingdom
Holton Conform produces machines and complete lines for the continuous extrusion of nonferrous metals. At TMS '99, Holton is pre-

senting this technology and its applications for manufacturing aluminum solids, tubes and sheathing/cladding operations.

Grain Refining Rod:

Holton's technology is used to manufacture aluminum grain refining rod. The coiled rod has no discontinuities, a homogenous distribution of grain refining elements and a bright finish.

Solid Conductors:

Holton Conform extrudes solid aluminum conductors including sector shapes.

Round and Multiport Tubing:

Holton Conform is capable of direct extrusion of heat transfer tubing with consistent mechanical properties, no perforations and no surface lubricants.

Reprocessing Scrap:

Holton has developed technology to accept granulated aluminum, including process scrap, converting it directly into products such as steel deoxidizing rod without melting.

Sheathing of Cable Cores:

Holton's sheathing lines extrude seamless aluminum tubes around cable cores including fibre optics units (OPGW) and coaxial RF cables (CATV).

Cladding:

Holton's lines are used for the continuous aluminum cladding of steel wires and aluminum stabilizing of superconductor cable cores.



**HOLTON
CONFORM**

Holton Conform and its customers are supported around the world by its parent company, Outokumpu.

HORIBA INSTRUMENTS

#228

Irvine, California

Horiba Instruments manufactures a broad line of analytical instrumentation used for environmental monitoring and testing for research and QC laboratory applications.

Horiba will be exhibiting its full line of particle characterization instruments, including:

1. Light Scattering Particle Size Analyzers with a range of 0.02 to 2000 microns with an optional dry powder feeder and autosampler.
2. Surface Area Analyzers with automatic calibration and zeroing for maximum repeatability and accuracy.
3. Centrifugal Sedimentation Particle Size Analyzers with a range of 0.03 to 300 microns for fast and economical sedimentation analyses.
4. Gas Pycnometers for measuring true density/volume of particles.

HOSOKAWA MIKROPUL

#814 <http://www.hosokawamicron.com>
Summit, New Jersey



HOTWORK CORPORATION

#715

Lexington, Kentucky

Refractory Dryouts and Heatups

Since our inception in 1965, Hotwork Corp. is highly trained and experienced technicians have serviced over 10,000 job sites in all continents. Our reputation for performing refractory dryouts and heatups of furnaces is second to none.

Hotwork Corp. is the pioneer of the convective heating process, which simplifies refractory dryouts and heatups. With our help, you get into production more smoothly.

The application has been particularly beneficial for the aluminum industry where we introduced the concept in 1974. We were able to reduce the heatup from the traditional fourteen (14) days to an average of four (4) days or less. That was almost 1,000 furnaces ago.

Need professionals to bring your furnace on stream? Contact:

Hotwork Corp.
223 Gold Rush Road
Lexington KY 40503
Tel: 606/276-1570
Fax: 606/276-1583
E-Mail: hotwork@worldnet.att.net

HYDELKO NORTH AMERICA

#711

Marietta, Ohio



Hydelko was founded in 1990 and has quickly grown to become an established quality supplier of aluminum grain refiners and master alloys to the world-wide market. The manufacturing plant at Rjukan, Norway is dedicated to the production of high quality products. Hydelko's state-of-the-art manufacturing technology generates products with high grain refining efficiency and a high degree of metal cleanliness.

Consistently high quality is secured through statistical process control and rigorous quality assurance in compliance with the requirement of ISO 9001 standards.

Hydelko's considerable expertise and technical competence form a solid basis for innovation, product development and customer support.

Please visit us at our exhibition booth number 711.

HYDRO ALUMINUM HYCAST

#835 (8 spaces)

Sundalsåra, Norway

HYSITRON, INC.

#1028

Minneapolis, Minnesota

In 1995, Hysitron, Inc. introduced to the global community an instrument specifically designed for precise nanomechanical activity at the atomic level. The ability to touch the atomic surface, and then exactly control the force in which you move in dimensions, one atomic level at a time, offering tremendous new opportunities of investigation of new materials.

Hysitron, Inc. manufactures nano-mechanical testing instruments especially tailored for the measurement of hardness, elastic modulus, friction, scratch, and wear of thin films. The TriboScope (registered) offers the materials scientist the unique ability to perform quantitative nanoindentation and nanoscratch testing with in situ atomic force microscopy imaging.

INDENTATION TECHNOLOGY

#246, 248

Spokane, Washington

INDUSTRIAL HEATING MAGAZINE

#1239

<http://www.industrialheating.com>

Pittsburgh, Pennsylvania

IPI (INDUSTRIAL PRODUCTS INTERNATIONAL)

#1117

Englewood, Colorado

IPI will feature its line of Q-Bloc ceramic shapes in the form of downspouts, nozzles, control rods, ladles, casting tips, troughs, filter bowls, and riser tubes used in the molten metals processing industry. Complimentary products include Q-Bloc NR non-respirable fiber products for use to 2000F, calcium silicate boards and machined parts. Also featured will be a line of vacuum formed fiber products.

IPI not only offers products but also assistance in designing and installing your casting system.

JAYNE INDUSTRIES INC

#520

Stoney Creek, Ontario, Canada

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 #520 to further discuss your anchor and hardware requirements.

JERVIS B. WEBB WORLDWIDE COMPANY

#435, 437 <http://www.jerviswebb.com>
Farmington Hills, Michigan

Jervis B. Webb Company

MATERIAL HANDLING SYSTEMS INTEGRATORS



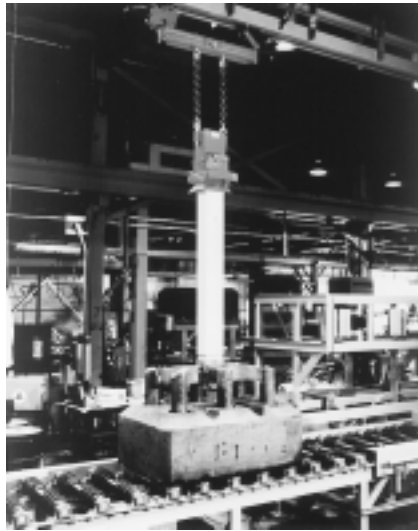
Jervis B. Webb Company is a recognized leader in the field of engineered material handling systems and equipment. Our high-volume bulk conveyors bring mined ores from the mine-mouth to the aluminum refinery, using overland transport belt conveyors, automatic ship loaders and unloaders, bucket elevators, and screw conveyors.

In the smelting plant, our full line of power and free conveyors and integrated material handling products are computer controlled to efficiently automate rod/anode assembly, and green or baked anode operations.

Our product line includes:

- automated guided vehicles;
- power and free conveyors;
- roller and heavy-duty chain conveyors, automated storage and retrieval systems;
- and custom designed automation equipment for butt removal and anode or slab handling.

From raw materials handling and transport . . . to anode, molten metal, and cast ingot handling . . . to automated storage of work-in-process and finished product . . . The Jervis B. Webb Company has over 40 years of material handling and control experience in the Aluminum Industry.



Heavy duty roller conveyor transports anode blocks through this custom designed casting station, where the blocks are mated to the rods. Overhead power and free conveyors will transport the rodded anodes to the alumina spray station.



Overhead power and free conveyors feed this automated casting station as anode blocks are mated with rods.

KB ALLOYS, INC.

#600, 602

Reading, Pennsylvania

Since its founding in 1950 as the Kawecki Chemical Company, the name KB Alloys has been synonymous with innovation and leadership in the aluminum master alloy industry. Many of today's industry standards—metallurgical grain refiners, including TIBOR®, TITAL® and TICAR®, waffle ingot and rod, along with countless chemistry advances—number among

KB Alloys' "industry-firsts."

TIBOR®, TICAR® and TITAL® master alloys are used for grain refinement to deter cracking in the ingots when casting and to improve casting speeds. BORAL® master alloy is used to improve conductivity, beryllium to minimize magnesium burn off, and strontium to modify the silicon phase in foundry alloys. Hardener alloys are used to improve mechanical and physical properties. MULTIPLEX® alloys provide an effective method for simultaneous introduction of multiple alloying elements. Alloys are available in a variety of forms—ingot, bar, buttons, flake and coiled and cut rod—each designed to increase throughput, uniformity and better predictability as compared to pure elements or salts.

KBM/AFFILIPS

#416

Oss, The Netherlands

KHD HUMBOLDT WEDAG AG

#236

Cologne, Germany



KHD Humboldt Wedag AG has its main fields of activities in the design and construction of plants for the base materials industries, such as cement production, minerals processing, coal preparation and aluminium smelting.

For the aluminium industry, KHD Humboldt Wedag AG designs, supplies and installs

- bauxite crushing and grinding systems
- green anode plants
- anode handling systems
- rodding plants
- butts crushing plants
- pot line equipment

and is the world-leading supplier of vibrating compactors for forming of green anodes, cathode blocks and electrodes, with more than seventy units supplied to the aluminium and carbon products industries.

KABERT INDUSTRIES, INC.

#328

Villa Park, Illinois

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 at our plant in Lynn, Indiana. Plain, leno and twill weave cloth styles are woven to specification. Three, four or six strand yarn costs are available.

Also at our Lynn facility, the cloth is cut and

sewn into a variety of mini channel bags, trough socks and many other shapes. Other products available include gaskets, vacuum formed shapes, and ceramic foam filters.

KAISER/CELTROL® III

#817 (4 sp)
Mead, Washington

Proven Automated Process Control for Aluminum Reduction Cells

Kaiser Aluminum & Chemical Corporation has a 50-year history of technological innovation, and of providing aluminum reduction technology and related technical services to aluminum companies worldwide. Kaiser supplies automated process control systems for reduction cells in existing smelters with either prebake or Soderberg cell technology. This system, trademarked CELTROL®, has been installed in 14 smelters worldwide and controls about 7000 reduction cells.

This system provides operating personnel with highly detailed information for immediate use at the reduction cell, and provides process personnel with a vast amount of historical data on each cell for trending and analysis purposes.

Please visit the Kaiser booth and discover what CELTROL® can do for you.

KEMPE INTERNATIONAL

#845 (3 sp)
Geelong, VIC, Australia

Kempe International provides specialized equipment, complete turnkey facilities, engineering consulting, and maintenance support to the aluminum smelting industry.

Kempe design and manufacture an extensive range of proprietary equipment and have license agreements with Alcoa, Comalco and Capral for other equipment, technology and systems. The equipment we can provide includes:

- Paste Plant & Green Anode Storage
- Green Anode Cooling Systems
- Green Anode Conveying & Handling Equipment
- Baking Furnace & Baked Anode Storage
- Baked Anode Conveying & Handling Equipment
- Anode Block Cleaning Machines
- Stub Hole Cleaning Machines
- Rodding Shop
- Load/Unload Stations
- Pallet Tipping Stations
- Hot & Cold Butt Cleaning Machines
- Combination Stripping Presses
- Cast Iron Pouring Stations
- P&F Conveyor Systems
- Rod Straightening Presses
- Stub Analyzing Stations
- Stub Straightening Machines
- Stub Repair Facilities
- Materials Handling
- Hot Bath Cooling Systems
- Bath Processing Facilities

- Carbon Recycling Facilities
- Potrooms
- Crustbreakers & Feeders
- Anode Clamps
- Casthouse
- Crucible Cleaning Machines
- Tapping Pipe Cleaning Machines
- Bent Tapping Pipe Cleaning Machines
- Siphon Pipe Cleaning Machines

KVAERNER BUSS CPS AG

#840
Pratteln, Switzerland

KVAERNER BUSS A.G., Switzerland is the leading supplier of Anode-Paste production lines. In view of the present situation at the world primary aluminum market it is very obvious that new ideas and methods are required for improving the cost benefits.

Small things can be important and can make or break the business. Consequently, BUSS A.G. has introduced the Inline BUSS-Tandem system for mixing and kneading of the paste for prebaked anodes, also the improved production of Soederberg-paste with the dry-process. Do not waste your cast, contact us at our booth. We are pleased to negotiate with any interested party the tailor-made possibilities for improving the production of anode paste, either with existing or new installation. Our knowledge is your cost benefit.

L

LECO CORPORATION

#522 <http://www.lecousa.com>
St Joseph, Michigan

LEM DYNAMP

#1120
Grove City, Ohio

LEM

The Metals Industries are particularly interested in High Current Measurement and Management Information Systems. These give the manager accurate reports of AC to DC Energy Conversion, Current efficiency and Production Energy efficiency. At the heart of these systems are 0.1% accurate, high current (4ka to 500ka) transducers.

Other instruments of interest are portable units for measuring anode or cathode currents and safety related models include rectifier protection systems and the RDCMS family of power supply current distribution monitors.

LEM is a global supplier of Current and Voltage Transducers, Instruments, Probes, Power Semiconductor Testers, as well as Power Network Analyzers.

LIGHT METAL AGE

#939 <http://www.lightmetalage.com>
San Francisco, California

For over 56 years, Light Metal Age magazine has covered primary production and semi-fabrication of light metals, primarily Aluminum and associated non-ferrous industries throughout the world. Circulation goes to smelters, rolling mills, extrusion plants, sheet rod and wire mills, foundries and die casting, anodizing, roll coating, coil coating and forging operations.

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

LMI SELCOM, INC.

311, 313 <http://www.lmint.com>
Southfield, Michigan

LMI Selcom

MEASUREMENT & CONTROL



Information of LMI Selcom's (formerly Selcom) expanded capabilities and line of over 40 non-contact industrial laser sensors will be available. A new laser sensor for molten aluminum level measurement featuring a new optical system and new detector that further enhances performance will be introduced. Also available is information on LMI Selcom's three standard LaserPour Aluminum Systems for aluminum foundries. Systems include a launder level control system, a mold level control system and a tundish level control system. Sensors and LaserPour systems will be highlighted on a new CD-Rom shown and available at the booth. A reference list listing some of the more than 200 non-contact sensors placed in the industry and aluminum LaserPour Systems on order or in operation worldwide will also be offered.

The LaserPour® Aluminum Level Control Systems from Selcom are high-speed, closed-loop control systems which automatically and precisely regulate the level of molten metal in a mold, headbox or tundish during the entire casting process. Using real-time laser level measurement, the systems control the metal level from start-up through the filling stage to finished casting. Metal flow from the furnace can also be controlled to assure a fast and consistent fill rate to the desired level within a very high degree of accuracy.

While Selcom's products for aluminum level control are designed to provide automatic, easy-to-use, reliable and virtually maintenance-free solutions, the final measurement of success is always based on how it benefits the customers. In this regard, our experience has been entirely positive.

LOI, INC.

#539, 541
Canonsburg, Pennsylvania

Schmitz + Apelt LOI is well known throughout the world as a major supplier to the aluminum industry with a wide product range.

Aluminum Melting and Casting:

Delivery of complete plants for melting/recycling of various Al materials and scraps, including flue gas purification, metal treatment, charging and casting equipment.

Design and manufacture of:

- crucible furnaces
- auto ladles for gravity and die-casting
- hearth- and dry-hearth melting furnaces, stationary or tiltable
- rotary drum-type melting furnaces
- twin-chamber melting furnaces for the recycling of various scraps without salt
- casting conveyor, air-/water-cooled
- stacking equipment for ingots
- also delivery of complete stacking, marking, weighing and strapping lines.

Heat Treatment

Heat treatment plants for structural aluminum parts (wheels, cylinder heads, axle guides, etc.) for the continuous and non-continuous operation, for the process steps below:

- Solution annealing
- Quenching
- Artificial aging

Artificial aging plants for extruded aluminum sections or profiles, pressing-tool pre-heating plants, with automatic tool transport used in press shops for extruded profiles.

LOMA MACHINE MANUFACTURING, INC.

#410
New Rochelle, New York



The state of the art billet casting operation has been designed and built by LOMA Machine of New York. The picture shows one of the LOMA "Easycast" installation at the end of a cast, with the overhead crane removing five

logs from the pit. Our "Easycast" Hot Top System of aluminum was developed for the production of aluminum alloy extrusion billets. The unit is based on a closed Mold System patented, and simultaneous casting as many as over 100 multiple strands can be cast in one set-up. Less than 1 percent of the metal is lost in the form of "gate" on top of the billet, which is a great improvement compared to the scrap loss involved in conventionally cast billet.

Contact Loma by Fax at 914/636-0344
Visit us at Booth #410

LONDON & SCANDINAVIAN METALLURGICAL CO LTD.

#625, 627
London, England

London & Scandinavian Metallurgical and Shieldalloy Metallurgical Corporation provide grain refiners, master alloys, and hardeners to the aluminum industry. Our latest developments, TiCAI 315* grain refining rod and Ti-C-Al systems, are being used in many different applications. Stop by our booth for the latest information and how it can be used in your application.

LVE

#539, 541 (LOI)
Essen, Germany



CMMS - Charging and Melting Management System

CMMS is a computer system providing optimized charging and melting procedures for aluminium casthouses.

The Charging Control Procedure calculates optimized charge combinations according to the target alloys and lowest input material costs. CMMS can be extended by a charge and equipment tracking system.

The Melting Control Procedure achieves the reduction of melting time, dross and energy costs by CMMS - Charging and Melting Management System

Please visit us at the LOI booth number 539.

M

MAERZ-GAUTSCHI INDUSTRIAL FURNACES LTD.

#935, 937
Tagerwilen, Switzerland

Maerz-Gautschi - Offers a full line of equipment for the secondary non-ferrous smelter. From custom designed furnaces to turnkey melt and cast shops, Maerz-Gautschi provides the technology and experience to deliver quality, low cost production including melting furnaces, holding and casting furnaces, casting machines and material handling equipment.

MAG-CHEM INC.

#813
<http://206.47.179.3/fr/magnus/default.htm>
Boucherville, Quebec, Canada

MASTER ALLOYS COMPANY

#412
Munster, Indiana

PICKUP FROM 98 PRESHOW,
PAGE A9
(NOV. 1997 JOM)

Master Alloys will be exhibiting its popular 100% canned hardeners. The canned hardener is 100% element in a pre-weighed, moisture-proof aluminum can. The element is not released into the aluminum until it is under the melt which negates any oxidation and results in very high recoveries.

This unique way to alloy aluminum has many advantages over other forms of hardeners. Besides being pre-weighed and moisture proof as stated above, the product is easy to store; reduces inventory; easy to use; fast dissolution; high recoveries; free from contamination; and guaranteed composition.

In addition to the can hardeners, Master Alloys supplies grain refiners and specialty alloys to the aluminum industry.

MAXON CORPORATION

#926
Muncie, Illinois

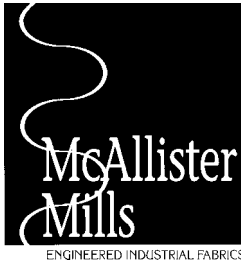
Maxon's OXY-THERM® LE Burners produce the lowest emission levels of any oxygen/fuel burner, with NOx levels up to 70% lower than conventional oxy-gas and up to 50% lower than conventional oxy-oil.

The OXY-THERM® LE is compatible with any oxygen generation system. A high turndown ratio on both gas and oil firing systems means optimum versatility. The non-lifting flame design produces increased volume and luminosity. Built-in Oxy Gas Pilot is also available.

Maxon can also build your oxygen/fuel pipe trains and control skids to complete the OXY-THERM® LE combustion package.

McALLISTER MILLS CO.

#526, 528
Independence, Virginia



Come visit us at the TMS Annual Meeting, in San Diego! We are anxious to show the newest applications, including the ones for the Aluminum Industry, that our Maxsil CF6-2000 Ceramic Free, Needled Blanket is being used. This product may be your solution for a 100% Shot-Free, Non-Respirable and Ceramic Free Environment.

As a manufacturer of High Temperature Textiles, we will also have on display our complete line of Fiberglass Fabrics, Coated Fiberglass Fabrics, Fiberglass Tapes, Fiberglass and Quartz Sewing Threads as well as our 2000 F Resistant Silica Fabric, Bulk Fiber, Molten Metal Filters and Needled Blanket.

MECHATHERM INTERNATIONAL

#637
Kingswinford West Midlands
United Kingdom



Mechatherm is a privately owned company, formed in 1973, specializing in supplying furnaces and associated handling gear for aluminium melting, casting, extrusion and general heat treatment. Considerable success has also been forthcoming in extrusion furnaces for pre-heating brass and copper billets.

Mechatherm have recently formed a technology agreement with another U.K. company Jesse Brough Metals which enables them now to offer complete plants for the recycling of aluminium drosses and contaminated aluminium scraps. Mechatherm are happy to consider tendering for turnkey new plants, upgrading existing plant or partial supply of equipment and are collaborating with Alu-Cut International Inc. (Stand #505) for the manufacture of equipment in the U.S.

The company operates a Quality System complying with BS-EN-ISO9001:1994 and has been approved by Lloyds Register Quality Assurance Limited.

Mechatherm will have available literature showing its product range and will be displaying photographs, posters and videos of installations.

MEDIA CYBERNETICS

#1020 <http://www.mediacy.com>
Silver Spring, Maryland



Image-Pro Plus includes powerful metrology tools for industrial testing and inspection. These tools will greatly enhance and increase productivity by automating many of the imaging functions used in research and industrial facilities. The comprehensive measurement toolkit lets users easily acquire an image of an object, define features in the sample, and automatically take measurements on selected features such as best-fit arc, best-fit circle, and best-fit line. Often used measurement routines can be recorded in a macro for future playback. The new Caliper Tool can automatically locate edges along straight or irregular lines and circles. The Materials-Pro Analyzer Plug-In Module is also available for additional materials analysis functions.

MEGAQUIP INDUSTRIES LTD.

#1229, 1231 <http://www.megaquip.com/>
Delta, British Columbia, Canada

The following is a sampling of Megaquip's vehicle types.

- Anode Effect Preventer
- Anode & Cathode Transporter
- Crucible Transporter
- Deck Plate Sweeper
- Fluoride Feeder
- Gas Skirt Handler
- Ore Feeder
- Ore Truck
- Tamper/Spader
- Pantograph Type Crustbreaker
- Side Loaders
- Studhauler
- Wheel Type Crustbreaker

Vehicle designs for:

- Horizontal Stud Cells
- Vertical Stud Cells
- Mobile Work Platforms

We will custom design any vehicle!

METAL BULLETIN

#1139 <http://www.metalbulletin.co.uk>
New York, New York

For more than 80 years, Metal Bulletin has been reaching metals producers, semi-fabricators, traders, end users, recyclers and capital equipment suppliers in more than 100 countries. Metal Bulletin and its sister publication,

Metal Bulletin Monthly, are more widely known and respected in the international metals markets than any other metals publications. In addition to MB and MBM, Metal Bulletin plc. Publishes numerous directories, and databooks for every segment of the ferrous and nonferrous metals industries. Metal Bulletin also arranges metals conferences throughout the world and provides an on-line metals information service (Metalnet).

METALLURGICAL SOCIETY OF CIM

#1234 <http://www.cim.org/metsoc/>
Montreal, Quebec, Canada

METAULLICS SYSTEMS

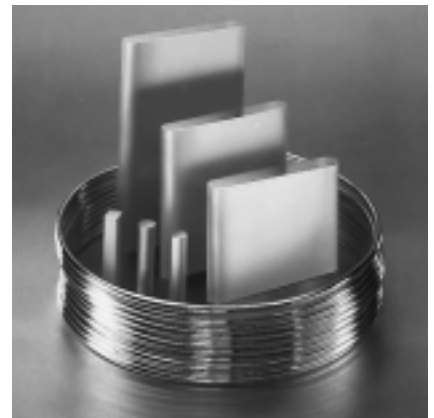
#513 (6 SP) <http://www.metallics.com>
Solon, Ohio



Metallics Systems is a leading supplier of equipment for handling and processing non-ferrous molten metals. Metallics manufactures a complete line of molten metal pumps for circulating and degassing aluminum in reverberatory furnaces and transfer pumps for controlled, safe metal transfer. Metallics is a leader in the field of re-usable molten metal filters, machined oxidation resistant graphite, and scrap submergence systems. Metallics' state-of-the-art L-Series pumps will be displayed during the 1999 Exhibition. Metallics will also display its revolutionary Low Turbulence Scrap Submergence (LOTUSS)[®] melting system. Featured will be Metallics' new Trough Tube Filter (TTF)[™] which offers a unique combination of filtration efficiency, low capital and operating costs, ease of installation, and operator friendliness.

MILWARD ALLOYS, INC.

#414
Lockport, New York



Milward Alloys, Inc. is a manufacturer of copper and aluminum based master alloys which lades, skimmers; Boron Nitride Releasecoat for low-draft, high-drag areas in permanent molds.

include a variety of high quality grain refiners, modifiers, hardeners and degassifiers. In conjunction with our affiliate KBM/Affilips, from The Netherlands, we offer unique products such as 15% Strontium rod and Titanium Carbon grain refining rod. You are invited to attend our technical presentation on the use of Titanium Carbon as a grain refiner which will be presented during this show.

MOELLER COMMUNICATION GMBH

#238

Bonn, Germany

MOLTECH

#1217, 1219

Carouge, Geneva, Switzerland



MOLTECH

MOLTECH 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, INC.

#1227

Middlefield, Ohio



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, new products and upgrading of our existing equipment. 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 as well as continued field support

Contact us at: Telephone: 440-632-9119
Internet: HYPERLINK <http://www.mmei-inc.com> www.mmei-inc.com

In Europe Contact: Pascal Gerken Europe S.A. Telephone: 32 87 39 49 00 E-Mail: pascal.gerken@skynet.be

MURLIN CHEMICAL INC.

#707

West Conshohocken, Pennsylvania

Murlin Chemical, Inc. supplies bone ash to the world wide non-ferrous metal industry. Established in 1978, Murlin Chemical manufactures natural bone ash and synthetic bone ash at its plant in West Conshohocken, Pennsylvania, USA.

Bone ash is accepted by the non-ferrous metal industry as the premier release agent. Application of bone ash to a mold, surface, or tool exposed to molten metal, provides a consistent barrier against attack by the molten metal as well as quick, easy release of a casting.

Plan to visit booth 707 to learn more about the advantages of bone ash.

You may contact us anytime at (phone) 610-825-1165, (fax) 610-825-8659 or e-mail at murlincm@ix.netcom.com.

N

NKM

#329

Rotterdam, Holland

NKM and the Aluminium Industry

NKM products have found their way around the world since 1933. Ore transport installations exported to Beire, floating cranes to India and Turkey, custom designed loading- and transport installations to New Zealand, India, Hong Kong and Portugal, salt reclaimers to the United States, concrete loaders to Venezuela and since 1963 specially designed cranes and machines for aluminium reduction plants. Hundreds of these cranes and machines have now been installed worldwide.

Over the years, NKM has constantly upgraded and improved its equipment for the aluminium industry. Besides crane transfer systems NKM supplies the aluminium industry with cathode cranes, baking furnace cranes, pot tending cranes, jacking frames, anode stacking cranes, crucible cleaning machines, pipe cleaning machines, pre-heaters and refractory heaters, billet handling cranes and casthouse cranes. See us at booth 1309, Mr. Frits Felkers and Mr. Cees Langeveld. Or phone or fax NKM in Holland: tel. +31 10 4873462 fax +31 10 4873478

N.V. GOUDA VUURVAST

#524

Gouda, Netherlands

N.V. Gouda Vuurvast manufactures, supplies and installs high quality refractory materials for close to one century. With production facilities in the Netherlands, N.V. Gouda Vuurvast does supply all major industries throughout the world. The integrated approach of refractory-research, engineering, production and installation (supervision) is unique and enables N.V. Gouda Vuurvast to guarantee high performance refractory applications. Worldwide supply, flexibility, and long-standing experience make N.V. Gouda Vuurvast your reliable partner for all refractory applications.

In the aluminium industry, N.V. Gouda Vuurvast is world-famous for its AK 46 S refractory brick used in Carbon Bake Furnaces of all major designs and its AK 85 range of refractory bricks suitable for all types and designs of holding and melting furnaces.

NALCO CHEMICAL CO.

#801 (6 SP)

Naperville, Illinois

NATIONAL CENTER FOR MANUFACTURING SCIENCES

#242, 244

Ann Arbor, Michigan

Since the National Cooperative Research Act was passed in 1984, numerous organizations have been formed to take advantage of pre-competitive collaborative research and development among competing laboratories and companies. In the more than fifteen years since the law passed, initial investment in this new experiment in manufacturing R&D has grown tremendously. At the same time, companies accustomed to "drawing down" public funds for manufacturing research are realizing that they are in a better position to drive the research, deploy the results and protect their intellectual property rights by funding research initiatives themselves—in collaboration with others who are also willing to pool talent and share risks.

The National Center for Manufacturing Sciences is widely regarded as the premier model for collaborative research and development. NCMS is backed by some 200 corporate members and a successful 12-year track record in the formation and management of large, complex, multi-company manufacturing R&D programs. Since its formation, NCMS has launched hundreds of programs, leveraged the resources of more than 1,000 companies, negotiated some 30 cooperative agreements between government and industry partners, and returned to industry approximately \$2 billion. NCMS's for-profit subsidiary, Technologies Research Corporation, offers complementary avenues for companies wishing to pursue co-

operative research without relying on government funds.

NATIONAL REFRACTORIES & MINERALS CORP.

#510
Columbiana, Ohio

The National Refractories exhibit will highlight applications of EZ³ and FUSiO₂N. EZ³ products expand the uses of the company's well known EZ Cast product line. FUSiO₂N products are National's line of fused silica preformed shapes, foam blocks, castables, and cement.

EZ³ castables are a family of products designed to offer three options for installation; pouring, gunning, and pumping. The unique materials can be installed by mixing and pouring into place without vibration. They can be mixed and pumped some distance to a form. Best of all, they can now be gunned with standard swing-valve pumping equipment.

FUSiO₂N preformed shapes are pure fused silica. A unique production process allows National to be very cost competitive while offering customized materials and shapes to meet customers needs.

NORTH AMERICAN MANUFACTURING

#724, 726
Cleveland, Ohio

NORTH AMERICAN REFRACTORIES COMPANY

#1213, 1215
Mifflinburg, Pennsylvania

O

OPSIS INC.

#1212
San Marcos, California

UV DOAS and FTIR monitoring instrumentation for open path ambient and in-situ process/continuous emission monitoring applications. Capabilities include criteria pollutants, HAPS as well as process emissions. All systems feature dynamic calibration capability and simple hardware configurations. The ambient system in an EPA approved equivalent for SO₂, NO₂, and O₃.

P

PARKER-HANNIFIN

#249, 348
Des Plaines, Illinois

PECHINEY GROUP

#501, 503
Mamaroneck, NY

PECHINEY

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

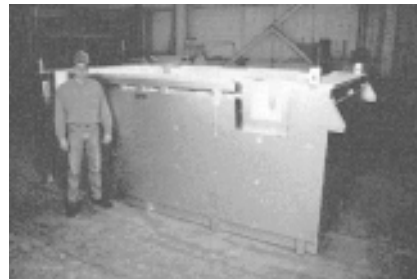
The Aluminium Pechiney Technology has always been very innovative and has set many records, particularly for power consumption, cathode performances and environmental protection (more than 2800 AP 18 cells and 2,000 AP-30 cells are operated around the world).

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.

PERMATECH, INC.

#525 (4 SP) <http://www.permatech.net>
Graham, North Carolina

PERMATECH®



Permatech designs, engineers, and manufactures precision precast, prefired, refractory parts and assemblies for the aluminum casting industry. The major focus of our business is directed toward molten metal transportation, filtration, and casting. We specialize in precision tight tolerance parts, thimbles, ceramic foam filter bowls, large metal treatment boxes, troughs, and specialty materials including

unique castables and superior insulating products such as non-wetting moldable and foam insulation.

Large precast, prefired, refractory boxes and assemblies will be the major focus of our display. Our highlighted products and services will be as follows:

- Low Density LD 75 transition plates, no in-service shrinkage
- Large precast boxes and degassing system assemblies
- Application specific innovative castable products
- Drache Cerapor ceramic foam filters
- Precast, prefired, refractory casting table tops and troughing
- Molten Metal System Assemblies; including filter bowls, troughing, and large box units
- Specific precast ceramic parts, unique designs for specific customer applications

Please visit with us and discuss your application at our Booth # 525 during the 1999 TMS Annual Meeting. (ISO 9001 Registered).

CARL AUG PICARD GMBH & CO.

#629
Remscheid, Germany

Picard is an international company with subsidiaries in Germany, England, USA and Hong Kong.

For more than 120 years, Picard is well known as manufacturer of Wear Parts for various industries. One of the main production ranges of the company is the production of Wear Parts for Anode-paste-mixers like Liners/wearing Plates, Kneading Teeth, and Screws Flights / Paddle Screws. These Wear Parts can be offered in two executions:

- a) Standard - Execution
- b) Special High-wear-resistant Execution

The Standard Execution is a hard-faced execution to achieve good and long service-time.

The High-wear-resistant Execution guarantees an extraordinary long time and wear-resistance which is caused by hardfacing and coating a tungsten-carbide material.

Besides the new parts, C.A. Picard offers an economical and favorable re-conditioning service which either can be arranged in your plant or our works.

Are you interested? Please take the chance to ask our specialists during the TMS Show or contact us directly:

C.A. Picard GmbH & Co. KG
Hasteraue 9, D-42857 Remscheid
P.O. Box 140440, D 42825 Remscheid
Phone ++49/2191/893-136
Fax ++49/2191/893/223

PLIBRICO
#1135, 1137
Chicago, Illinois



Plibrico Company is a manufacturer and installer of monolithic refractories. Plibrico's product line is composed of a wide range of plastics, castables, and maintenance materials suitable for just about any refractory application. Not only can Plibrico offer a variety of materials, we can install these materials utilizing various methods, such as our patented HyRate and Mini-HyRate plastic gunning, pumping, Plishot, gunning, etc. Please stop by our booth and discuss how the Plibrico representative in your area can successfully solve your refractory applications.

A.W. PLUME Ltd.
#711
Twickenham, England

Founded in 1968—A.W. PLUME LTD are the oldest established company worldwide, specializing in the design and manufacture of low pressure casting machines and systems—the most efficient method of high quality complex aluminum casting production.

In addition, PLUME manufactures a full range of electric, gas and oil fired refractory and crucible furnaces for the aluminum industry.

Visit our stand for visual photographic and video display of equipment and sample castings of the company products.

PRECISION INC.
#921
Sisterville, West Virginia

THE PRIMARY ALUMINUM INDUSTRY'S MOST REMARKABLE SUPPLIER

Precision, Inc. is a 40-year old supplier of quality goods and services to the primary aluminum smelting industry.

- Electrical Bus
- Copper Fabrication
- Aluminum Fabrication
- Steel Fabrication
- Design
- Material Handling & Logistics Support

PREMELT SYSTEMS
#810
Kalamazoo, Michigan

PREMELT is the foremost supplier of total metal scrap cleaning and processing systems

worldwide. PREMELT'S patented, innovative metal processing equipment and techniques result in unprecedented operational efficiencies and cost reductions. Annual metal cost savings of 10% or more are common in most PREMELT Systems. Engineering and supplying light metal scrap processing, cleaning, drying and furnace charging systems for the metals industry since 1981.

PREMIER REFRATORIES AND CHEMICALS, INC.

#1042, 1044
Clayton, Missouri



Premier Refractories, a leader in Monolithic Refractories for the Aluminum Industry, offers a complete line of products including Castables, Plastics, Mortars and Ceramic Fibers

Featured Products:

- Alugard - Non Wetting Refractories for Aluminum Contact
- BluRam Plastic - The Original Mullite Based Plastic
- Monomax - A Monolithic Ceramic Fiber Product
- TruForm - Custom Engineered Refractory Shapes

PRINCETON GAMMA TECH., INC.

#928 <http://www.pgt.com>
Princeton, New Jersey

PROCEDAIR INDUSTRIES

#1115
Montreal, Quebec, Canada

PROCON ENGINEERING AS

#737
Asker, Norway

Continuous weighing and dosing equipment for Carbon Paste plants is a Procon Engineering speciality. Our equipment has proved accurate and reliable with minimum maintenance. Even the finest of fractions are controlled accurately by Procon feeders.

Major anode and paste producers in Europe are using Procon systems, and are reporting better mixing stability and a lower baked reject rate after installing Procon Weighers.

Procon Engineering supplies components or turn key delivery, using in-house resources for all disciplines.

Procon Engineering is a part of the Norwegian ProSafe group. A company with 1600 employees.

PROCON ENGINEERING AS
Blakstadmarka 26, P.O. box 168

1371 Asker, Norway
Telefon +47 66 76 07 50
Telefax +47 66 90 23 53

PRYOR GIGGEY CO.

#1242
Chehalis, Washington



Pryor Giggey celebrates its 51st anniversary in 1999. We have been providing refractory products to the industry with unparalleled customer service and refractory innovation throughout our history. We have a long customer list of satisfied customers in the aluminum and copper producing industries and continue to strive for better performance and lower refractory cost to the customer. We are the exclusive licensee of Lafarge Refractaire Monolithiques for North America, which provides us with the state of the art in monolithic technology for solving customer demands in problem applications and severe service conditions. We are the first producer to offer true self flow technology and to provide successful veneer repairs. When you have a problem application and want the first team to help solve your refractory needs, give us a call at 1-800-4-HOTROX (800-446-8769) or stop by our booth at the TMS exhibition, #1242.

PYROTEK, INC.

#400 (12 SP)
Spokane, Washington

Pyrotek



Floats, pins, transition ring and caster tip section.

Pyrotek offers aluminium producers a complete range of materials for applications in carbon bake, pot rooms, and casting areas. At TMS in San Diego, California, Pyrotek will exhibit high-tech ceramics, casting tips for strip casters, and many other products special for aluminium operations. Of particular interest will be an exhibit of the latest Alpur degassing equipment with fully sealed reaction chambers to reduce oxidation and increase the life of graphite parts.

For more information contact Pyrotek, E

9503 Montgomery Ave, Spokane, WA 99206, USA. Phone: 509-926-6212 or Fax: 509-927-2408.

R

R&D CARBON LTD

#516
Zurich, Switzerland

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 optimisation 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: An 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 centre or at customer's location.

Engineering: A new process for green anode manufacturing allows the reduction in investment and operating cost. In cooperation with leading engineering companies our patented anode technology is marketed worldwide.

REX ROTO CORPORATION

#1015 (4 SP)
Fowlerville, Michigan

PICKUP PHOTO FROM
98 PRESHOW, PAGE A12
(NOV 1997 JOM)

Here is an opportunity you won't get very often. A place to go for help that has forty years of experience. The largest company of its kind in the country. A staff of experienced and knowledgeable people, two plant locations plus corporate offices with research and development capabilities. All of this designed and dedicated to helping you solve your problems, the problems of heat containment, specialty refractories and superior results in performance. Our recommendations are based on experience and experimentation and not just guess work.

Our programs provide extensive engineering and design services and if we haven't done it before we will find a way to do it this time.

Have a good day by making Rex Roto Corporation your refractory division and the problem solvers for your refractory needs.

ROYAL TRACTOR COMPANY

#640
New Century, Kansas

S

SCHARF WESTFALIA GmbH

#1222
Lunen, Germany



Scharf Westfalia designs, develops, manufactures, and supplies turn key plants and systems as well as components for the Aluminium Industry.

The Aluminium division is responsible, amongst others, for state-of-the-art turn key Anode Rodding Shops, Anode Handling and Storage, as well as Butt and Bath Treatment Plants for the Aluminium Industry.

Our activities cover the following disciplines:

- Planning
- Design
- Engineering
- Manufacture
- Logistic
- Training
- Assembly
- Commissioning
- Maintenance
- Project Management

The following systems are presenting our main product line:

Turn key plants for:

- Anode Rodding Shops
- Cleaning and handling of bath and butt material
- Baked and green anode handling and storage systems
- Cooling tunnel for anode butts and bath material
- Crucible cleaning
- Fully automated transport System for green and baked anodes
- Anode traverse beam for the handling of anodes in the electrolyte cell

SECO/WARWICK

#922, 924 <http://www.seco-warwick.cm>
Meadville, Pennsylvania



SECO/WARWICK produces Custom Engineered Heat Processing Furnaces and Systems for heat processing non-ferrous metals. We want to be your single source for furnace systems, beginning with initial support services, continuing through manufacturing, installation,

furnace start-up and personnel training. Focused Project Teams concentrate on specific specialty areas:

- Aluminum Braze Team - Controlled atmosphere brazing using a non-corrosive flux process for appliances and automotive heat exchangers: radiators, condensers, oil coolers, evaporators, heaters and charge air coolers.
- Aluminum Process Team - Heat treat furnaces for annealing, homogenizing, preheating and aging of aluminum.
- Molten Metal Team - Melting furnaces for non-ferrous metals including melting sows, solids and scrap, cleaning molten metal before casting, die casting, aluminum recycling and magnesium recycling.
- Solution Heat Treat Team - Aluminum solution heat treating furnaces for castings, forgings, extrusions, aeronautical applications and billet preheating.

SECO/WARWICK is ISO 9001 Certified for Quality.

SELEE CORPORATION

#1001 (8 SP)
Hendersonville, NC

SELEE Corporation is the premier manufacturer of ceramic foam filters for use in the ferrous and non-ferrous metals industries as well as innovative refractory and preheat systems and a growing line of specialty products.

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.

SELEE has maintained the market and technical leadership for the ceramic foam industry by developing strong partnerships with customers. These partnerships allow customers to share SELEE resources to solve all types of problems.

SELEE resources include:

- Full Range of Ceramic Foam Filters
- Innovative New Products
- Custom Refractories, Bowls, Burners
- Specialty Consumables
- Fully Equipped Metallurgical Lab
- A Team of Applications Engineers
- A Dedicated Customer Service Department
- Nationwide Direct Sales Force
- R&D Pilot Plant Facility for Partnership Developments
- TQM Programs that Provide:
- Continuous Improvement
- Full Product Certification
- Self-Directed Work Teams
- On-Site Customer Training Programs

SENTECH CORPORATION

#1027 (4 sp)
Tempe, Arizona

SERMAS AS

#816
Saint Quentin Sur Isere, France

SHIELDALLOY METALLURGICAL CORP.

#625, 627
Newfield, New Jersey

Shieldalloy Metallurgical Corporation provide grain refiners, master alloys, and hardeners to the aluminum industry. Our latest developments, TiAl 315™ grain refining rod and Ti-C-Al systems, are being used in many different applications. Stop by our booth for the latest information and how it can be used in your application.

SHIVA TECHNOLOGIES, INC.

#316
Cicero, New York

Shiva Technologies is an independent commercial laboratory which specializes in the analysis of metals and alloys for their elemental constituents. Analysis of major, minor, trace, and ultratrace elements is available. Analytical techniques used include Glow Discharge Mass Spectrometry, Glow Discharge Atomic Absorption, Leco, Wet Chemical Determinations, Inductively Coupled Plasma / Mass Spectrometry, Flame Atomic Absorption, and others. Shiva maintains analytical facilities in New York, California, France, and India. All our facilities specialize in offering high quality services with rapid turnaround. Services from India include extensive Wet Chemical techniques and are extremely cost effective. Our New York, California, and France laboratories are all ISO 9002 Registered, and India is currently in preparation to be audited to the same criteria.

SILVER NEEDLE, INC.

#645, 744
Kellogg, Idaho

WE KNOW WHO SIGNS OUR
PAY CHECKS—OUR CUSTOMERS—WE
WANT TO WORK FOR YOU

Our company started in a foundry: 12 years working and producing safe yet comfortable clothing. We listen because we know the frustrations of not being understood, of wearing clothing that doesn't fit, rubs, scratches and confines. Give us the opportunity to work for you and see if Silver Needle can make a difference.

SKAMOL

#411, 413
Nykobing Mors, DENMARK

Skamol - High Temperature Insulation

Skamol is one of the world's leading manufacturers and suppliers of thermal insulation to the aluminium industry. We offer a wide range of thermal insulating products for service temperature up to 1150(C) (2102(F)). The Skamol product range includes Moler insulating bricks, Perlite insulating bricks and blocks, Calcium Silicate block insulation, insulating bricks and slabs based on Vermiculite, special shapes, insulating mortars, castables and aggregates.

Furthermore, in co-operation with Norwegian Elkem Carbon Skamol markets two types of ramming pastes based on Electrically Calcined Anthracite (ECA). The development of these cold ramming pastes is an important improvement of the conventional lining concept, reducing emissions of hazardous tar and PAH (polyaromatic hydrocarbons) to a minimum and increasing pot life and profitability.

We look forward to seeing you at our booth.

For further information contact one of our offices:

- Skamol a/s, Denmark, tel.: +45 9772 1533, fax: +45 9772 4975
- Skamol UK, tel.: +44 (1206) 302 330, fax: +44 (1206) 304 576
- Skamol, Inc., N.Y., USA, tel.: +1 (716) 831 8682, fax: +1 (716) 831 8687
- Technotherm GmbH, Germany, tel.: +49 2131 10 640, fax: +49 2131 106464

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

#823, 825 <http://www.stas-unigec.com>
Chicoutimi, Quebec, Canada

STAS, incorporated in 1989, is a young, dynamic and entrepreneurial company of approximately 100 employees specialising in the commercialisation of new technologically advanced equipment originating in R & D laboratories. Industry sectors include aluminium and mines serving a global market place.

STAS is a recognised leader in its innovative abilities to develop and fabricate sophisticated equipment to improve quality, reduce pollution and lower costs, using the latest in programmable automation systems. Examples include dross coolers, filters, degassing equipment, rotary injectors, crucible cleaning machines, automatic guidance systems, etc.

STAS holds licences from Alcan, Noranda and others.

STAS is located in the heart of QuÉbec, Canada, where more than 2,000,000 tonnes of aluminium alloys are produced in the most technologically advanced plants in the world. World-class R & D facilities located in QuÉbec provide a continuing flow of new equipment to be commercialized; they include the Alcan R&D Centre, the Noranda Technological Centre, the Centre de recherche industrielle QuÉbec, the

National Research Centre.



STELLAR MATERIALS, INC.

#429
Northville, Michigan

Thermbond is a unique new refractory material with features and benefits unavailable in traditional refractories. Thermbond is completely and naturally non-wetting to aluminum—with no additives to burn out. Thermbond bonds permanently to other refractories. Existing linings may be veneered and repaired with Thermbond. Thermbond may be cast, troweled, gunned or hot-gunned for permanent repairs or new linings.

T

TECHMO CAR & ENGINEERING

#809, 811
Limena, Padova, Italy

Since its foundation in 1961, Techmo Car's objective has always been to improve work conditions in the aluminium industry. Techmo Car was one of the first companies to study and introduce high-technology equipment and machinery into aluminium plants, with the double aim of a higher productivity and better, safer work conditions.

Production Range:

- Anode Changers: Standard and Multipurpose changing trucks, Pot-tending module.
- Breakers: Hammer and Wheel crust breakers, Spent pot lining breaker truck, Dustop long life hydraulic hammer.
- Casthouse: Scraps loader truck, Molten metal tapping truck, Molten metal ladle transporter, Furnace skimming and cleaning vehicle.
- Cleaners: Anode cavity cleaner, Baked anode cleaning station, Ladle cleaning station, Butt cleaning station, Vacuum Cleaner.
- Feeders: Alumina, Aluminium fluoride and crushed bath feeding trucks, Soederberg paste feeding truck, Anode covering truck, Point feeders.
- Miscellaneous: Full mechanization of stud pulling/resetting, Spading truck, Anode transporter truck, Anode lifting beam, Soederberg anode point cutter.

TERRY FLUID CONTROLS

#534

Blackburn, Victoria, Australia

Terry Fluid Controls, a Tyco International Company, manufactures and markets electrically insulated heavy duty pneumatic cylinders for use in the aluminium smelting industry. Their unique patented technology provides users with advantages in seal and bearing design while reducing air consumption.

Terry cylinders push the boundaries by extending cylinder life up to five years on crust breaker service! They achieve this by use of innovative design, unique materials and a wealth of application experience. The Terrycom Æ economy valve system when fitted to a terry cylinder gives the user the lowest air consumption available, saving up to 50% of plant air.

TEXSEM LABORATORIES

#322

<http://www.oim.com/>

Provo, Utah

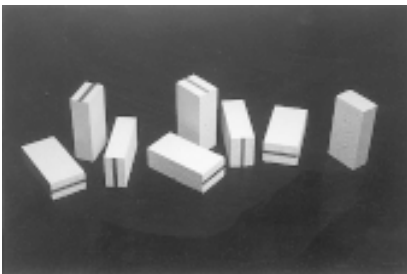
THERMAL CERAMICS & THERMIC REFRACTORIES

#913 (6 sp)

Augusta, Georgia



Thermal Ceramics manufactures a complete line of refractory bulk fibers, each offering its own unique combination of properties.



Lightweight Thermal Ceramics Insulating Firebrick

THERMAL SYSTEMS AMERICA

#607, 706

Canastota, New York



Thermal Systems America, the industry leader of engineering solution based refractory products, invites TMS attendees to visit our booth. We've been busy expanding and integrating our plant and processes so that we can improve upon our industry leading turn-around times, customer specific products, and lower product costs without sacrificing quality.

Come introduce yourself to Boomer Æ, TSA's new virtual engineer and guide for our interactive CD-ROM. Take one back to the office and see tomorrow's solutions today.

Thermal Systems America, leading the way into the new millennium.

THERMCON OVENS BV

#428

Geldermalsen, The Netherlands

Melting and holding furnaces for aluminium designed and built by Thermcon are in wide spread use with major aluminium producers around the world. In recent years D.C. casting machines and homogenizing furnaces have been added to the delivery program making Thermcon an all-round supplier for turn key casthouse packages. Recycling of aluminium scrap has been a priority with Thermcon for many years already, hence the development of side well furnaces with integrated incinerators, enclosed charging systems and delacquering and preheating installations in operation with clients such as V.A.W., Daiki in Japan.

Thermcon will give an update on the latest furnace technology available and developments underway to meet the requirements of the future, both with respect to improved economics and compliance with environmental regulations.

THERMPROCESS 99/MESSE DUSSELDORF, INC.

#1241

Chicago, Illinois

Messe Dusseldorf, Inc. will be presenting information on THERMPROCESS 99, International Exhibition for Industrial Furnaces and

Thermic Production Processes. THERMPROCESS 99 is scheduled to be held June 9-15, 1999 at the Fairgrounds in Düsseldorf, Germany.

Exhibits at THERMPROCESS will showcase the following products: industrial furnaces, heat treatment plants and thermal processes; components and equipment for industrial furnaces; metallic engineering materials; and services related to the industrial furnace industry.

THERMPROCESS will be held in conjunction with four other related shows: GEOSPECTRA, International Trade Fair for Geotechnology and Applied Earth Sciences; GIFA, International Foundry Trade Fair, METEC, International Exhibition for Metallurgical Technology and Equipment; and MINETIME, World Mining Technology Exhibition.

Together, these shows are expected to attract 100,000 trade visitors to Düsseldorf.

3T TRUE TEMPERATURE TECHNOLOGIES

#1228

Misgav, Israel

3T specializes in the remote measurement of target temperatures using unique pyrometers. These pyrometers can be used to measure the target surface temperatures of liquid and solid metals including aluminum and steel in extrusion, heat treatment, forging and rolling processes.

3T's unique pyrometers can measure target surface temperatures through smoke, dust and water vapor as well as measure the temperature of targets with variable emissivity. The Company's technology offers greater accuracy resulting in increased productivity and improved quality that translates into cost savings.

In addition, 3T can meet the specialized needs of individual customers.

THORPE TECHNOLOGIES

#701 (4 SP)

Whittier, California

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
- Sidewall 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 with a branch office serving the eastern United States located in Gulf Shores, AL; Tel: (334) 968- 6211.

U

UNIFRAX CORPORATION-FIBERS DIVISION

#601 (2 SP)
Niagara Falls, New York

Unifrax Corporation is one of the leading producers of high performance, heat-management materials used by many industries in a diverse group of applications.

Unifrax is committed to solving industrial insulating problems and providing exceptional value to its customers. This commitment is evident in the company's investment in advanced process technology, its state-of-the-art manufacturing facilities, its extensive research and development activities, and its continual focus on quality in the broad range of products and services it offers.

Fiberfrax insulating products are available in more than 50 product forms. They have traditionally been used in heat vessels in the production and processing of ferrous and non-ferrous metals, industrial chemicals, petroleum products, power generation, and ceramic, glass, and other industries employing process temperatures up to 3000 degrees Fahrenheit (1650 degrees Celsius).

Unifrax will exhibit Insulfrax Specialty Glass Fiber at the upcoming TMS show in San Diego. Insulfrax Specialty Glass Fiber is an evolutionary breakthrough in insulating materials, resulting in a product with a wide range of applications in the primary metals and metals processing industries and possessing superior thermal and mechanical properties.

U.S. DEPARTMENT OF ENERGY

#1221, 1223
Washington, DC



V

VAW ALUMINUM-TECHNOLOGIE GmbH

#240
Bonn, Germany



VAW Aluminum Technologie GmbH (VAW-ATG), a subsidiary of VAW Aluminum AG, is specialized in tailor-made modernization projects for aluminum smelters. The core competencies of VAW-ATG comprise process modeling, process control and data acquisition/data processing, aluminum and carbon technology, casthouse technology and technical engineering.

The improved version of our **Electrolysis Automation System ELAS 2** will be presented. Owing to its new design and improved functions, this process control system for aluminum reduction cells comes in a much smaller, more compact housing and is easier to integrate into existing automation environments. ELAS 2 incorporates a central windows-oriented information system which allows the easy retrieval of all relevant process and production data. The whole range of VAW-ATG's process control know-how will be presented, including training and simulation tools.

VESUVIUS FOUNDRY GROUP

#1036, 1038
Buffalo, New York

W

WAGSTAFF, INC.

#901 (10 SP) <http://www.wagstaff.com>
Spokane, Washington

Wagstaff, Inc. develops, designs, and manufactures direct chill casting equipment for the worldwide aluminum industry. Known for industry breakthroughs in ingot and billet casting systems, as well as automation systems, Wagstaff continues to bring new ideas and equipment to the marketplace.

The Wagstaff **AirSlip Air Casting Process** is known the world over for producing billet that sets the standard for quality. Over 500 Wagstaff **Hot Top Billet** casting systems are in operation around the world.

The Wagstaff **LHC Low Head Composite Process** is revolutionizing ingot casting. Ingots produced with the LHC process have many advantages including dramatic reduction in ingot scalping requirements.

Wagstaff **AutoCast Automated Casting Control Systems** represents Wagstaff's commitment to advance DC casting process control.

Over fifty three years of solid business

growth, ISO 9001 certification, and continuing research and development all add up to Wagstaff's commitment to quality and continuous improvement.

Call or E-mail for more information (509)922-1404 or E-mail to info@wagstaff.com.

WAHL REFRACTORIES, INC.

#315, 317 <http://www.wahlref.com>
Fremont, Ohio

WESTERN INDUSTRIAL CERAMICS

#700, 702 <http://www.wicinc.com>
Tualatin, Oregon

Z

ZIRCAR PRODUCTS

#544, 546 <http://www.zircar.com>
Florida, New York

Now celebrating 25 years as manufacturer and international marketer of high performance thermal, electrical and structural insulation materials ZIRCAR produces several products that bring significant utility to the molten metal applications they serve. Included is a range of shot free ceramic bonded castertips for continuous casting of aluminum strip. These products help promote consistent startup, uniform strip production and long casting runs. In addition to castertip materials ZIRCAR's high strength reinforced alumina matrix Refractory Sheet Products provide the aluminum industry extended reliable service life. RS products are used in applications such as structural members in induction melting equipment, electrical insulation in high power electrical equipment and as back up insulation to high-density refractories.

ZYP COATINGS INC.

#1214
Oak Ridge, Tennessee

ZYP® Coatings, Inc., the premier manufacturer of paintable boron nitride coatings, introduces three coatings providing superior nonwetting with Wagstaff Billett Casters—Tableguard, Transition Plate Coating, and Ring-Seal.

Tableguard (easy-to-see, BLUE-COLORED) greatly extends casting-table refractory life, gives inclusion-free pours, stops dross buildup, and allows easy removal of mispours. Transition Plate Coating (water-based or new solvent-based for calcium silicate boards) gives ultra-smooth surfaces. Ring-Seal gives total nonwetting, sealing transition-plate/graphite-ring joints.

Other highlights—Boron Nitride Lubricoat (WHITE or new BLUE-COLORED) for troughs, launders, runners; Boron Nitride Hardcoat for ladles, skimmers; Boron Nitride Releasecoat for low-draft, high-draft areas in permanent molds.

EQUIPMENT AND SERVICES INDEX

Air Pollution Control Equipment

BHA Group
Biothermica International Inc.
Hamon/Research Cottrell
Opsis Inc.

Aluminum Industry Wear Parts

High Performance Refractories /Saint
Gobain Industrial Ceramics
Permatech, Inc.
Thermal Systems America

Aluminum Processors

Fosbel Inc.
Hydelko
Loma Machine Mfg., Co., Inc.

Aluminum Producers

ALCOA
AEA Technology Engineering Svcs Inc
Pechiney Corporation

Aluminum Production & Technology Equipment

Advanced Dynamics Corp. Ltd.
Aisco Systems Inc.
Almeq Norway AS
Bomem Inc.
Consolidated Ceramic Products
Fosbel Inc.
Glama
High Performance Refractories /Saint
Gobain Industrial Ceramics
High Temperature Systems
Holcan Constructions
Hydelko
IPI Industrial Products International Inc
Jayne Industries Inc.
Jervis B. Webb Company
Kaiser Aluminum & Chemical Corp
KHD Humboldt Wedag AG
Klockner-Moeller GmbH
Kvaerner Buss
Lem DyNamp
LMI Selcom
LOI, Inc.
Megaquip Industries Ltd
Murlin Chemical, Inc.
Pechiney Corporation
Permatech Inc
Pyrotek Inc
Rex Roto
STAS Ltd
Techmo Car S.p.A.
Terry Fluid Controls
Thermal Systems America
Thermcon Ovens B.V.
VAW Aluminium Technologie GmbH

Aluminum Refining Systems

Aisco Systems Inc.
Almex USA Inc.
Asbury Fluxmaster

Foseco
Hycast A.S.
Lem DynAmp
Master Alloys Co.
Pyrotek Inc
STAS Ltd

Anode Rod Stub Welding

Holcan Constructions Pty Ltd

Automation/Computer Simulation

Advanced Dynamics Corp
AISCO Systems Inc
ATAN Sistemas de Automacao
Buehler Ltd
Brochot
Jervis B. Webb Company
Kaiser Aluminum & Chemical Co
LMI Selcom
LOI, Inc.
Loma Machine Mfg., Co., Inc.
LVE
Media Cybernetics
Sentech
STAS
VAW Aluminium Technologie GmbH
Wagstaff Inc

Bauxite Crushing & Grinding

FCB
KHD Humboldt Wedag AG
Pechiney

Carbon Paste Production & Equipment

B&P Process Equipment & Systems
Biothermica International Inc.
Eirich Machines
KHD Humboldt Wedag AG
Kvaerner Buss
Pechiney

Carbon Technology and Supplies

Brochot
Eirich Machines
Jervis B. Webb Company
Kvaerner Buss
LVE
KHD Humboldt Wedag AG
Pechiney
VAW Aluminium Technologie GmbH

Casting

Advanced Dynamics Corp. Ltd.
Alan Worswick (Eng.) Ltd.
Aisco Systems Inc.
Almex USA Inc.
Asbury Fluxmaster
Bomem Inc.
Brochot
Consolidated Ceramic Products
Kabert Industries
Loma Machine Mfg., Co., Inc.
Maerz-Gautschi

Master Alloys Co.
Murlin Chemical, Inc.
Pechiney
A.W. Plume Ltd.
Rex Roto
VAW Aluminium Technologie GmbH
Wagstaff Inc

Chemicals and Additives

AEA Technology Engineering Svcs Inc
Asbury Fluxmaster
Lem DynAmp
Master Alloys Co
Murlin Chemical Inc
Shieldalloy Metallurgical Corp

Combustion Technology

AEA Technology Engineering Svcs Inc
Air Products & Chemicals
Biothermica International Inc.
Bloom Engineering Co., Inc.
Consolidated Ceramic Products
Maerz-Gautschi

Computer Software

ATAN Sistemas de Automacao
LOI, Inc.
LVE
Media Cybernetics
Pechiney
Sentech
TexSem Laboratories, Inc.

Degassing

Almex USA Inc.
Asbury Fluxmaster
Cast House Technology
Consolidated Ceramic Products
Foseco
Metallics Systems Co. L.P.
Pechiney
Permatech, Inc.
Selee Coporation
STAS

Dross Handling Equipment

Brochot
Glama
Plibrico Company
STAS

Energy Services

Consolidated Ceramic Products

Engineering and Consulting Services

Advanced Dynamics Corp. Ltd.
Aisco Systems Inc.
Almeq Norway a/s
ATAN Sistemas de Automacao
Brochot
Hatch Associates
Hencon B.V.
Jervis B. Webb Company

Nalco Chemical
Pechiney
Procon
Rex Roto
Techmo Car S.p.A.
VAW Aluminium Technologie GmbH

Filtration

BHA Group
Foseco
Kabert Industries
Metallics Systems Co. L.P.
Pechiney
Permatech, Inc.
Pyrotek Inc
Rex Roto
Selee Corporation
STAS

Furnaces

Fosbel Inc.
Jayne Industries Inc.
LOI, Inc.
Maerz-Gautschi
Permatech, Inc.
Plibrico Company
A.W. Plume Ltd.
SECO/Warwick Corp.
Thorpe Technologies

Graphite

Metallics Systems Co. L.P.
Pyrotek Inc
Wagstaff Inc

Image Analysis

Clemex Technologies

Industrial Gases

Air Products & Chemicals
Opsis Inc.

Instrumentation

Applied Research Laboratory
ATAN Sistemas de Automacao
Bomem Inc.
Clemex Technologies
Consolidated Ceramic Products
Horiba Instruments
LemDynAmp
LMI Selcom
Princeton Gamma Tech Inc
Sentech Corporation

Lubricants

Foseco
Master Alloys
KB Alloys
Milward Alloys
Shieldalloy Metallurgical Corp

Master Alloys

Aleastur
Asbury Fluxmaster
Hydelko
KB Alloys, Inc.
Master Alloys Co.
Milward Alloys Inc.
Shieldalloy/London & Scandanavian

Material Handling

Advanced Dynamics Corp. Ltd.
Aisco Systems Inc.
Alan Worswick (Eng.) Ltd.
Almeq Norway a/s
BHA Group
Glama
Jervis B. Webb
Loma Machine Mfg., Co., Inc.
Murlin Chemical, Inc.

Material Information

AEA Technology Engineering Svcs Inc
ESM Software
Media Cybernetics
Sermas
TexSem Laboratories, Inc.

Measurement/Testing and Analysis

Applied Research Laboratory
Bomem Inc.
Consolidated Ceramic Products
HI-Scope Systems Company
LMI Selcom
Media Cybernetics
TexSem Laboratories, Inc.

Microscopy

Clemex Technologies
HI-Scope Systems Company
Media Cybernetics
Princeton Gamma Tech Inc
TexSem Laboratories, Inc.

Publishers

Aluminium Today
Elsevier Science Publishers
Industrial Heating
Light Metal Age
Metal Bulletin

Raw Materials Products/Services

Hydelko

Recycling/Scrap Processing

Almeq Norway a/s
Almex USA Inc.
Asbury Fluxmaster

Brochot
Consolidated Ceramic Products
Eirich Machines
KHD Humboldt Wedag AG
LOI, Inc.
LVE
Metallics Systems Co. L.P.
Scharf Westfalia GmbH
Thorpe Technologies

Refractory and Insulating Products

BNZ Materials, Inc.
Consolidated Ceramic Products
Fosbel Inc.
Foseco
High Performance Refractories/Saint-Gobain
Industrial Ceramics, Inc.
Jayne Industries Inc.
Kabert Industries
Maerz-Gautschi Ltd.
Murlin Chemical, Inc.
N.V. Gouda Vuurvast
Permatech, Inc.
Plibrico Company
Premier Refractories
Rex Roto Corporation
Selee Corporation
SKAMOL a/s
Thermal Systems America
Zircar Products Inc.

Service Contracts

BHA Group
Consolidated Ceramic Products
Fosbel Inc.
Hotwork Corp

Water Treatment

BetzDearborn
NALCO

OTHER:

Aluminum Quality

Bomem Inc.

Grain Refiners Hardeners

Shieldalloy/London & Scandanavian

Image Analysis

Clemex Technologies

Ingot & Sow Casting Handling & Stacking

Alan Worswick (Eng.) Ltd.

Process Equipment

Eirich Machines

Supervisory Control and Optimizing System

LVE