

# TMS 2018

147<sup>th</sup> Annual Meeting & Exhibition

## 32<sup>ND</sup> EXHIBITION

LOCATED IN THE PHOENIX CONVENTION CENTER, HALL CD

### EXHIBIT HOURS

#### Monday, March 12

11:00 a.m. to 7:30 p.m.

*Lunch in the Exhibit Hall from 1:00 p.m. to 2:30 p.m.*

*Exhibit Opening Reception from 6:00 p.m. to 7:30 p.m.*

#### Tuesday, March 13

11:00 a.m. to 7:30 p.m.

*Lunch in the Exhibit Hall from 11:30 a.m. to 1:30 p.m.*

*Exhibit Hall Happy Hour from 6:00 p.m. to 7:30 p.m.*

#### Wednesday, March 14

10:00 a.m. to 2:00 p.m.

*Lunch in the Exhibit Hall from 11:30 a.m. to 1:30 p.m.*



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CURRENT AS OF FEBRUARY 5.

Download the mobile app for most current list.

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**ENTRANCE**

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**2018 EXHIBIT DIRECTORY**



## CONFERENCE SPONSORS

### CONFERENCE BAG SPONSOR



## ENERGOPROM GROUP

ENERGOPROM Group is a company consolidating Russia's key carbon manufacturers. The Group's plants manufacture graphite electrodes, carbon electrodes and cathode blocks, special graphites. The main consumers are Russian and foreign companies in the steel, aluminum, ferroalloy, silicon, chemical, and engineering industries.

### LIGHT METALS KEYNOTE SPONSORS



STAS Inc. is a Canadian based company specialized in the development, fabrication and commercialisation of process equipment for the aluminum industry designed to improve productivity and the quality of molten aluminum. Our clients include aluminum producers, primary and secondary smelters, rolling mills and aluminum extruders. The company has been in business for more than 25 years and has clients on all continents. STAS employs more than 160 persons and has agents all around the globe.



Your machines and maintenance, our concern. Your main concern is output and quality. Your machines should perform in order to keep your plant running and reach the required output levels. Our machines are designed to perform in the hot smelter environment with high magnetic fields and in the secondary aluminum industry where space is often an issue.

### MATERIALS BOWL SPONSOR



Your global supplier for materials™

Goodfellow supplies small quantities of metals, alloys, ceramics and polymers to meet the research, development & specialist product requirements of science industry worldwide. The company offers two distinct services: The first meets the needs of those customers who require small quantities of our standard catalog products for immediate shipment. The second is for those who require larger quantities or further processing of the company's standard products.

### MOBILE APP SPONSOR



## Anton Paar

TriTec, formerly CSM Instruments and now part of Anton Paar, offers a wide range of instruments and testing services for surface mechanical properties characterization, including: Hardness Testers, Scratch Testers & Tribometers. 3D-imaging options are available with the ConScan or AFM objective.

### REGISTRATION BAG INSERT SPONSOR



Thermo-Calc: a powerful tool for thermodynamic and phase equilibria calculations. Add-on modules for simulations of diffusion controlled transformations and precipitation kinetics. Databases available for steels, Ni-superalloys, Al, Ti, Mg and Cu alloys, HEAs, precious metals and other materials.

### TMS2018 NEWS DAILY SPONSOR



FRITSCH, internationally respected German manufacturer of application-oriented laboratory instruments. Our instruments are used worldwide for particle size reduction, sample preparation, materials science, product development, and particle analysis for fast paced industrial process monitoring and critical applications in QA, QC, and R&D. Particle sizes from nano range on up.



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Springer is a leading global scientific, technical and medical portfolio, providing researchers in academia, scientific institutions and corporate R&D departments with quality content through innovative information, products and services.





## COMPANY DESCRIPTIONS

### ABB INC.

**BOOTH #317**

Building on more than 45 years of experience in analytical instrumentation, ABB has established itself as a worldwide leader in inclusion and hydrogen measurements in liquid aluminum. The company offers a complete range of analytical solutions to the aluminum industry: AISCAN™ hydrogen analyzer, LiMCA inclusion analyzer, Prefil®-Footprinter melt cleanliness analyzer, PoDFA inclusion identification and quantification analysis. ABB also offers metallographic analysis service for its customers.

### ADVALUE TECHNOLOGY LLC

**BOOTH #212**

AdValue Technology specializes in areas of Alumina, Fused Quartz, Sapphire and Zirconia. Products range from Alumina and Silicon Dioxide Powders, Crucibles, Tubes & Rods, Plates & Discs, Sample Pans, UV Cuvettes, Quartz Wool, Ceramic Membranes, and Cerium Polishing Powders. We strive to be your valuable partner in Material Science!

### ADVANCED DYNAMICS CORP., LTD

**BOOTH #400**

For over almost five decades, Advanced Dynamics (ADCL) has supplied our global customer base with state-of-the-art material handling systems for carbon plants and cast houses. Our handling technology includes fully automated or semi-automated equipment for aluminum and primary metals sectors. ADCL is a one-stop shop for your material handling needs including mechanical and controls engineering, fabrication, assembly, test and commissioning. Whether you need a new system or upgrades to existing systems or simply individual pieces of equipment, we can help improve your company's productivity. Remember "When it's critical to your operations, it's an Advanced Dynamics mission" when you think of ADCL for your next project.

### ALMEX USA

**BOOTH #420**

Almex provides our customers with "furnace to finish solutions" through our innovative line of products, which include billet and slab casting systems, DC casting machines, Melting and Homogenization Furnaces, degassing + purification systems, automated process control software, and testing + inspecting instruments. We are fully dedicated to bringing wholesome casthouse solutions in wallet-friendly ways to each of our customers, and we do so without compromising safety, quality, or performance.

### ALTEK, LLC

**BOOTH #404**

ALTEK is a technology-based company with specialist expertise and experience in the design, manufacture and installation of aluminium dross and scrap processing systems. Our engineers have, between them, over 200 years of international experience in developing and refining solutions to dross and scrap recycling. They are a unique skill resource for our worldwide customers.

### ALUMINIUM TIMES

**BOOTH #515**

### ANTON PAAR USA

**BOOTH #201**

TriTec, formerly CSM Instruments and now part of Anton Paar, offers a wide range of instruments and testing services for surface mechanical properties characterization, including: Hardness Testers, Scratch Testers & Tribometers. 3D-imaging options are available with the ConScan or AFM objective.

### BLUEQUARTZ SOFTWARE

**BOOTH #204**

BlueQuartz Software specializes in microstructure-oriented computational tools and services for MSE. Our tools are distributed via the DREAM.3D analysis platform. DREAM.3D is built around SIMPL, a general spatiotemporal information management and analysis library. BlueQuartz employs both software engineers, and MSE experts, to quickly and efficiently bring advanced computational tools to engineers and researchers. Let us be the software developers for your materials analysis needs.

### BRUKER CORP

**BOOTH #313**

Bruker offers high end solutions for the analysis or comprehensive phase quantification of raw materials, minerals and raw earth. Offering advanced solutions to reliably support geologists and prospectors on locating and analyzing deposits. Bruker's instruments can be found at an altitude of 4,000 meters or in deserts. Also, Bruker's analytical solutions enable the development, production and refinement of metals at highest quality standards.

### CERAMICS EXPO USA

**BOOTH #521**

Ceramics Expo brings together manufacturers and engineers from across the medical, automotive, electronics, aerospace and defense, and energy sectors to source new materials and technologies, network with like-minded professionals, and discuss the challenges and opportunities in the ceramic industry. Now in its fourth year, Ceramics Expo will once again host more than 300 leading global manufacturers and suppliers from across the supply chain and feature a two track conference with 60+ speakers.

### CLAUDIUS PETERS

**BOOTH #200**

Since its founding in 1906, Claudius Peters has become one of the world's most respected engineering houses and an innovative world leader. Its German engineering excellence continues to set benchmarks for the design, manufacture and commissioning of materials handling and processing systems for the gypsum, cement, coal, alumina, steel and other bulk-handling industries. From conception and installation through to commissioning and after-sales support, Claudius Peters provides world-class service to the world's biggest bulk materials producers. The Claudius Peters Group GmbH is headquartered in Buxtehude near Hamburg, Germany, with regional offices in the Americas, Asia and Europe.



## COMPUTHERM LLC

**BOOTH #318**

CompuTherm LLC, established in 1996, is a leading developer of CALPHAD-based modeling tools in the framework of ICME. Coupling the software and thermodynamic/mobility databases developed at CompuTherm, advanced materials can be developed by design. Many new features and improved functionalities are included in the newly released Pandat2018. Pandat Demo version can be downloaded from <http://www.compuTherm.com>. Live binary phase diagrams are available at iPandat (<http://ipandat.compuTherm.com>).

## EAG LABORATORIES

**BOOTH #505**

EAG Laboratories is the global leader in materials characterization for the advanced materials supply chain. We specialize in the determination of material identity, composition, purity, contaminant levels and crystal structure using advanced analytical techniques. We can manage highly complex analytical projects and help you meet your goals quickly and confidently. Ask EAG We Know How.

## EBSD ANALYTICAL

**BOOTH #205**

EBSD Analytical offers complete micro-structural analysis services for scientists and researchers worldwide. With over 21 years experience preparing and analyzing thousands of samples, we are confident we can meet your analysis needs. Our specialties include EBSD, EDS and sample preparation. Turn around times are quick, accurate, and the highest quality results are guaranteed. On-site training is also available to make sure you are getting the most out of your EBSD system.

## EDAX INC.

**BOOTH #302**

EDAX is a leading provider of innovative materials characterization systems encompassing Energy Dispersive Spectrometry, Wavelength Dispersive Spectrometry, Electron Backscatter Diffraction and X-ray Fluorescence. EDAX develops the best results for elemental and/or structural analysis.

## ELSEVIER

**BOOTH #121**

Materials Today is dedicated to the creation and sharing of materials science knowledge and experience. Supported by Elsevier, we publish high impact peer-reviewed journals, organize conferences, broadcast webinars and more. Our journals provide authors and readers with comprehensive coverage across materials science, spanning ground breaking discoveries to highly specialized research; offering exceptional diversity, high quality peer review, rapid publication, and maximum visibility.

## ENERGOPROM GROUP

**BOOTH #421**

ENERGOPROM Group is a company consolidating Russia's key carbon manufacturers: NovoCherkassk, Novosibirsk and Chelyabinsk Electrode Plants, Doncarb Graphite. The Group's plants manufacture graphite electrodes, carbon electrodes and cathode blocks, special graphites. The main consumers are Russian and foreign companies in the steel, aluminum, ferroalloy, silicon, chemical, and engineering industries. The Group ranks among the world's top five manufacturers of carbon and graphite products.

## FEMTOTOOLS

**BOOTH #321**

FemtoTools is a manufacturer of nano-mechanical testing instruments for applications in metallurgy and soft materials. The instruments cover a wide range of characterization techniques such as nanoindentation, micro-tensile / compression testing, dynamic mechanical analysis and fatigue testing.

## FISCHER TECHNOLOGY, INC.

**BOOTH #100**

High demands of today's surfaces and coatings that are engineered to be hard, thin or visco-elastic require correspondingly powerful measurement tools to characterize their Mechanical Properties. Fischer's Nanoindentation Testers primary focus has been on reduced measuring time and higher throughput while producing extremely accurate hardness, modulus, and creep measurements. Fischer's Scratch Testers are used to characterize scratch resistance and adhesion of coatings.

## FIVES

**BOOTH #300**

Fives designs and supplies process Equipment, and manages complete installations in the 3 key sectors of aluminium: - Reduction: Gas Treatment Centers, Pot Tending Machines and Pot Equipment. - Carbon: Green Anode Plant, Firing Systems & Fume Treatment Centers for anode baking furnaces, Furnace Tending Assemblies, Anode Handling & Storage, Bath Processing Units and Anode Rodding Shops - Casthouse: Melting, Holding and Heat Treatment furnaces, and EPC solutions for secondary aluminium plants.

## FRITSCH MILLING AND SIZING

**BOOTH #203**

FRITSCH is an internationally respected German manufacturer of application-oriented laboratory instruments. Our instruments are used worldwide for particle size reduction, sample preparation, materials science, product development, and particle analysis for fast paced industrial process monitoring and critical applications in QA, QC, and R&D. Particle sizes from nano range on up. FRITSCH, founded 1920 as an independent family business. 100+ global employees with a new USA HQ in North Carolina.



## COMPANY DESCRIPTIONS

### **GATEWAY FOR ACCELERATED INNOVATION IN NUCLEAR (GAIN) BOOTH #216**

DOE-NE launched GAIN to make national laboratory state-of-the-art research and development infrastructure, technical and regulatory expertise, and financial support available to the nuclear industry to optimize development of advanced nuclear energy technologies toward commercial readiness. GAIN's vision for 2030 is that the U.S. nuclear industry is equipped to lead the world in deployment of innovative nuclear technologies to supply urgently needed clean energy both domestically and globally.

### **GAUTSCHI ENGINEERING GMBH BOOTH #502**

EBNER, Gautschi and HPI - The most innovative and competitive full-solution provider. Offering a wide range of furnaces facilities, upstream and downstream auxiliary units, project management and service to the metal industry.

### **GILLESPIE • POWERS, INC. BOOTH #403**

Gillespie & Powers, Inc. has over 80 years of experience in design, supply, and maintenance of high temperature furnaces. The knowledge we have derived from years of experience in the building and maintenance of these furnaces has given us much insight as to the modes of failure. This has allowed us to advance our product designs and work with customers to modify their equipment or design new equipment to increase production, decrease energy consumption, and reduce maintenance costs.

### **GLAMA MASCHINENBAU GMBH BOOTH #306**

GLAMA has designed and built heavy-duty Equipment for Aluminium pot rooms, cast houses and anode rodding shops throughout the world for more than 50 years. The following type of equipment is available: - Anode Changing Vehicles - Anode Pallet Transporters - Butt Cleaning Manipulators - Coil Lift Trucks - Furnace Charging Machines - Furnace Tending Machines - Hammer Crustbreakers - Ladle Charging Trucks - Molten Metal Carriers - Tapping Trucks. More details: [www.glama.de](http://www.glama.de)

### **GNA ALUTECH BOOTH #402**

GNA specialises in the design and construction of furnaces, machinery and process control systems for the aluminium industries. Its high-performance melting and holding furnaces are in operation around the world. GNA provides complete furnaces and machinery for aluminium billet casting and homogenising systems. GNA has sales offices in Canada, Brazil and Taiwan and has been serving the world's aluminium industries for more than 30 years.

### **THE GOLD MACHINE BOOTH #113**

### **GOODFELLOW CORPORATION BOOTH #412**

Goodfellow supplies small quantities of metals, alloys, ceramics and polymers to meet the research, development & specialist product requirements of science industry worldwide. The company offers two distinct services: The first meets the needs of those customers who require small quantities of our standard catalog products for immediate shipment. The second is for those who require larger quantities or further processing of the company's standard products.

### **GRANTA DESIGN BOOTH #208**

Granta began in 1994 at Cambridge University, where we maintain strong links. We offer resources and support for teaching materials or related topics across the full range of disciplines in engineering, science, and design. We also help coordinate a series of annual Materials Education Symposia. Granta also helps hundreds of engineering enterprises develop and apply material intelligence, making better materials decisions, saving time and money, and reducing risk as they optimize their products.

### **HAARSLEV INDUSTRIES PRESS TECHNOLOGY GMBH & CO. KG BOOTH #319**

Haarslev Industries Press Technology, Service and Sales of Wear and Spare Parts Components for Anode Paste Mixers for the Aluminium Industry. Haarslev Industries Press Technology is manufacturer of high class equipment and spare parts for various industries with wear intensive products and therefore the leading expert for various surface protection methods and wear protection materials. We are certified according to DIN ISO 9001 and our internal processes guarantee that we supply stable high quality according to international norms and regulations. The high requirements for special wear protected surfaces for the production of anode paste were the driving force of Haarslev Industries to further develop existing wear protection materials and application methods to extend life time and reduce production costs. All of our wear and spare parts for the Aluminium Industry are manufactured in Germany in our own manufacturing facilities to guarantee a high quality level and a long life time.

### **HENCON B.V. BOOTH #517**

YOUR MACHINES AND MAINTENANCE, OUR CONCERN Your main concern is output and quality. Your machines should perform in order to keep your plant running and reach the required output levels. Our machines are designed to perform in the hot smelter environment with high magnetic fields and in the secondary aluminium industry where space is often an issue. Service and maintenance support are the additional major focus points to lower costs and increase the availability of your assets.





**HITACHI HIGH TECHNOLOGIES AMERICA, INC. BOOTH #117**

Hitachi High Technologies America provides technologically advanced imaging solutions for the materials science, biological research, academic research, and industrial manufacturing sectors. Our innovative and reliability-proven instrumentation includes SEM, analytical and biological TEM, STEM, FIB, Ion Milling instrumentation, Atomic Force and Scanning Probe microscopes, tabletop microscopes, microanalysis sample prep systems, and tools for mineral/ elemental identification.

**HYCAST AS BOOTH #417**

Hycast was established in 1990 by Hydro Aluminium as a spin off from Hydro R&D. Hycast provides One Stop Shop for complete casthouse solutions for competitive processes and quality end-products.

**ICE PUBLISHING BOOTH #218**

ICE Publishing, established in 1836, is a leading provider of information for academics, researchers and practitioners worldwide in the fields of civil engineering, construction and materials science.

**INTERNATIONAL ALUMINIUM JOURNAL BOOTH #217**

International ALUMINIUM Journal deals with all facets of aluminium's value chain from the production via its processing through to recycling. The publication is thus of particular interest to smelters and remelters, semis producers, foundries, fabricators and converters, metal traders, semis stock holders and research facilities. International ALUMINIUM Journal is distributed worldwide.

**KEYSIGHT TECHNOLOGIES BOOTH #309**

Keysight Technologies, the winner of 2017 UNESCO Medal for Nanotechnologies Contributions, provides a wide range of high-performance nanoscale measurement solutions for research, industry and education - including atomic force microscopy, nanoindentation and scanning electron microscopy. The applications cover most research fields including Chemistry, Materials Science, Chemical Engineering, Life Sciences, Semiconductors, Failure Analysis, etc. For more information: [www.keysight.com/find/nano](http://www.keysight.com/find/nano)



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## COMPANY DESCRIPTIONS

### LIGHT METAL AGE

**BOOTH #303**

Light Metal Age (LMA) magazine has a 75-year legacy in the aluminum and magnesium industries. Available bimonthly in both print and digital format, LMA covers the entire light metals value chain, from primary production to extrusion, rolling, and associated downstream fabrication and finishing.

### LOS ALAMOS NATIONAL LABORATORY

**BOOTH #108**

### MASCHINENFABRIK GUSTAV EIRICH GMBH & CO KG

**BOOTH #301**

EIRICH is a leading German supplier of paste preparation equipment for the production of prebake anodes, Soederberg, graphite electrodes, cathodes, metallurgy and carbon & graphite specialties. Our key products are the continuously operated EIRICH Mixing Cascade (EMC®) and the EIRICH Intensive Remixer-Cooler for anode paste preparation as well as the batchwise operated EIRICH integrated preparation system for various applications in the carbon sector.

### MDPI AG

**BOOTH #322**

MDPI (Multidisciplinary Digital Publishing Institute) is an academic open-access publisher with headquarters in Basel, Switzerland. Additional offices are located in Beijing and Wuhan (China), Barcelona (Spain) as well as in Belgrade (Serbia). MDPI publishes 187 diverse peer-reviewed, scientific, open access, electronic journals, including Materials (Impact Factor 2.654), Coatings (Impact Factor 2.175) and Metals (Impact Factor 1.984), etc.

### MECHATHERM INTERNATIONAL LTD

**BOOTH #406**

Mechatherm International Ltd is a world leading company of industrial engineering experts specializing in the design, supply and commissioning of furnaces and cast-house equipment for the global aluminum industry. Mechatherm is a UK based company that has a recognized brand across aluminum cast-houses worldwide. Mechatherm also have a fast growing reference list in the USA and have completed some major projects with world recognized aluminum producers over the last few years.

### METALLURGY AND MATERIALS SOCIETY OF CIM

**BOOTH #512**

The Metallurgy & Materials Society of CIM is a world class Canadian organization serving members & society involved in the research, development and application of the science and technologies for the environmentally responsible extraction, fabrication, utilization and recycling of metals/materials. We achieve this mission by organizing world class conferences that attract leaders in the field, producing high quality publications, and among others building a vibrant and diverse organization.

### MICRO MATERIALS LTD

**BOOTH #101**

Micro Materials Ltd (MML) was established in 1988 and has pioneered nanomechanical test instrumentation. Measurements can be done at temperatures up to 1000°C, in liquids and under vacuum conditions. Of particular interest is the range of tribological measurements that can be done over a wide load range, including nano-scratch, nano-impact and nano-fretting. Details from: Krish Narain, Sales Director info@micromaterials.co.uk Tel +44 (0)1978 261615 or visit <https://www.micromaterials.co.uk>

### MICROTRAC

**BOOTH #418**

Microtrac, a pioneer in particle characterization, strives to provide the world with innovative, reliable and repeatable instruments that deliver insight and solutions. Our instruments provide particle sizing, zeta potential and image analysis of complex materials.

### MOMENTUM PRESS

**BOOTH #514**

Momentum Press is the leader in providing concise knowledge and expertise in ALL major engineering disciplines. We focus on core values that will always ensure the essential fundamentals as well as new innovative trends in engineering; quality, worldwide authorship; customer-driven purchasing options and easy to buy electronic content; comprehensive, themed collections in all major areas of engineering; and creative partnerships. We have the book and eBooks for any and all course adoption needs.

### MTI CORP

**BOOTH #500**

MTI Corporation has been providing a total solution for materials research labs since 1995. MTI provides laboratory R&D equipment including alloy melting, casting, annealing, sectioning, polishing, mixing machines, high temperature muffle and tube furnaces, pressing machines, film coaters, high vacuum systems, high pressure furnaces, RTP furnaces, hydrogen furnaces, as well as compact XRD/XRF for Metallographic analysis and equipment for High Throughput & Productivity.

### MTS SYSTEMS CORP

**BOOTH #503**

Advanced metals, alloys, polymers and composites require exhaustive mechanical characterization before they are used to improve cars, planes, medical devices and consumer products. MTS provides the leading-edge technology to complete complex multiaxial fatigue studies at elevated temperatures, and solutions for more simple tension/compression applications. Visit Booth #503 to see material characterization solutions for challenges created by lightweighting and additive manufacturing initiatives.



## NANOMECHANICS, INC.

**BOOTH #222**

Nanomechanics, Incorporated provides in-situ SEM and vacuum environment tools for measuring the mechanical properties of materials at the micro/nano scale. Our products in the InSEM line of mechanical properties microprobes, offer high resolution and exceptional dynamic range. As the inventors of the nanoindenter, our staff is well positioned to provide products, consulting services, training, and contract laboratory testing in nano indentation, scratch and wear testing, pillar compression, micro & nano-scale tensile testing, and other characterization techniques.

## NANOSCIENCE INSTRUMENTS

**BOOTH #507**

Nanoscience Instruments and Nanoscience Analytical: specializing in the highest-quality equipment for surface and material analysis. Our dedicated staff will guide your selection to the right tools for your research needs. We also provide material characterization and analytical services; offering fast turn-around time at low rates. We specialize in analytical techniques such as: SEM, Nanoindentation, Micro-tensile/ Compression Testing, Dynamic Mechanical Analysis and Fatigue Testing. Visit us at TMS Booth #507.

## NANOVEA INC.

**BOOTH #413**

Firmly aligned with our vision, Nanovea aims to simplify advanced measurement technologies to stimulate materials engineering for the common good. Ease of use, advanced automation and the dedication to superior accuracy are the driving forces behind its full range of precision instruments. As a Trusted Quality Manufacturer, our Profilometers, Mechanical Testers & Tribometers can be found internationally in distinguished educational and industrial organizations.

## NETZSCH INSTRUMENTS NA LLC

**BOOTH #501**

Thermal analysis & thermal properties measurement instruments, calorimeters, and contract testing services; Featuring the new DSC 214 Polyma, engineered for polymer analysis from the ground up with specially-designed furnace and sensor combination for fastest heating & cooling, new Concavus crucibles and unique sample-cutting tool. New instruments for Battery Calorimetry - introducing R&D 100 Award-winning IBC 284 Isothermal Battery Calorimeter for Large Format Li-Ion Batteries with and new MMC Nexus calorimeter module for characterization of coin-cells. Top-loading TGA and STA (DSC-TGA) with no hang-down wires, optimized for ease-of-use and for coupling to FTIR, MS, and GC-MS. Also offering DMA, TMA, Dilatometers, and DEA (Dielectric Analyzer for in-situ cure monitoring). We will also feature the new LFA 467 HyperFlash Light Flash Analyzer for measurement of thermal diffusivity and thermal conductivity.

## NKM NOELL GMBH

**BOOTH #305**

REEL, with its companies NKM Noell, REEL Alesa and COH, is the leading independent equipment supplier of special cranes and complex handling solutions for Primary Aluminum Smelters. For more than 70 years on the market through its constitutive companies, with more than 1'000 cranes in operation worldwide, REEL companies develop their mission for the Primary Aluminium Smelters: be a global supplier of handling systems, process equipment and solutions that delivers total efficiency.

## NUCLEAR SCIENCE USER FACILITIES

**BOOTH #213**

Nuclear energy is a clean and affordable energy source that reduces greenhouse gas emissions and supports a secure domestic energy portfolio. Research is needed to understand how radiation environments affect existing and proposed new reactor materials over time. Nuclear Science User Facilities merges the national nuclear research infrastructure with intellectual capital to pair the best ideas with the needed capability. NSUF provides no-cost access to specialized instrumentation and expertise to carry out experiments that could not be done in individual laboratories. Nuclear Science User Facilities and its partners represent a prototype laboratory for the future. This unique model utilizes a distributed partnership with each facility bringing exceptional capabilities to the relationship including reactors, beamlines, state-of-the-art instruments, hot cells and most importantly, expert mentors.

## OSEIR LTD

**BOOTH #102**

Oseir Ltd. has been specializing since 1999 in particle diagnostics using custom SprayWatch cameras and HiWatch camera & laser units and proprietary image processing software to extract any significant data in all thermal spray processes as well as other processes where solid particles, liquid droplets and/or bubbles are present.

## OUTOTEC LTD.

**BOOTH #312**

Outotec develops and provides technology solutions for the sustainable use of Earth's natural resources. As the global leader in minerals and metals processing technology, Outotec has developed several breakthrough technologies. Outotec serves the light metals industries including the provision of cutting-edge alumina refineries and aluminum smelters. Outotec has over 50 years experience helping customers worldwide in both segments of the aluminum process to reach their goals.

## PACE TECHNOLOGIES

**BOOTH #105**

Pace Technologies is excited to be taking part in the 2018 TMS meetings and exhibition. Pace Technologies is a leading manufacturer of metallographic equipment and consumable supplies. We encourage you to come by our booth to see how Pace Technologies can help make your sample preparation process both more efficient and cost effective.





# COMPANY DESCRIPTIONS

## **PARK SYSTEMS**

**BOOTH #408**

Park Systems is a world leading manufacturer of atomic force microscopy (AFM) systems with a complete range of products for researchers and industry engineers in biological science, materials research, semiconductor, and storage industries. Park's AFM provides the highest data accuracy, superior productivity, and lowest operating cost. See our Park NX10 and Park NX20, the premiere choices for nanotechnology research, at [www.parkafm.com](http://www.parkafm.com).

## **POLARONYX, INC.**

**BOOTH #207**

PolarOnyx has developed the world's first Additive Manufacturing (AM) and Subtractive Manufacturing (SM) system (Tungsten-LAM) for refractory materials such as Tungsten. With its innovation is femtosecond fiber lasers and AM/SM processes, this machine is capable of melting materials with high melting temperatures (>4000C) and high thermal conductivities, and fabricating complex structures. Both industrial grade and research grade systems are available to meet customers' needs.

## **PRECIMETER**

**BOOTH #221**

The Precimeter Group is continuously growing, developing new solutions and serving customers in the molten metal industry. With more than 25 years of experience within the industry and with the highest level of knowledge about molten metal level control - Precimeter is the brand that can be trusted to deliver the solutions you need.

## **PROTO**

**BOOTH #320**

PROTO is a leading manufacturer of X-ray diffraction systems. Our product line includes residual stress & retained austenite measurement systems, Laue single-crystal orientation, X-ray tubes, custom XRD systems, and powder diffractometers. Our systems are made to the highest standards ensuring you always get the most accurate data. Measurement services are also available through ISO 17025 laboratories in the United States and Canada. Tel: 1-734-946-0974 Web: <http://www.protoxrd.com>

## **ROYER**

**BOOTH #219**

Since 1934, ROYER designs, manufactures and sells work boots and shoes, with utmost quality in mind. Working closely with industries, we develop innovative products with unique designs. Our boots provide maximum comfort and optimal safety while respecting the highest quality standards. They are designed by our experts to meet the specific needs of different industries. Disciplined, hardworking, stubborn, we are determined to produce in North-America work boots and shoes that surpass all others.

## **SANDIA NATIONAL LABORATORIES BOOTH #103**

Sandia National Laboratories is the nation's premier science and engineering lab for national security and technology innovation, with teams of specialists focused on cutting-edge work in a broad array of areas. Some of the main reasons we love our jobs: - Challenging work with amazing impact that contributes to security, peace, and freedom worldwide - Extraordinary co-workers - Some of the best tools, equipment, and research facilities in the world - Career advancement and enrichment opportunities - Flexible schedules, generous vacations, excellent medical and other benefits, competitive 401k, learning opportunities, relocation assistance and amenities aimed at creating a solid work/life balance. World-changing technologies. Life-changing careers. Learn more about Sandia at: [www.sandia.gov/careers](http://www.sandia.gov/careers)

## **SECO/WARWICK CORP.**

**BOOTH #215**

SECO/WARWICK manufactures complete custom-engineered furnaces and systems for the aluminum industry, for primary and secondary production applications plus downstream processes for finished and semi-finished products. Industries include aerospace, automotive, architectural, chemical processing, marine, defense, telecommunications and electronics.

## **SENTE SOFTWARE LTD.**

**BOOTH #414**

Developers of JMatPro®, a powerful, extensively validated simulation software for calculating wide range of materials properties and behavior for multi-components alloys based upon chemical composition input, with data exports to casting, forming, forging and heat treatment simulation packages.

## **SHANDONG HWPENG PRECISION MACHINERY CO., LTD.**

**BOOTH #511**

Professional Chinese manufacturer and industry leader of preheating, kneading and cooling system and equipment applied to production of graphite electrodes, prebaked anodes, cathodes, carbon paste, nuclear graphite, aerospace graphite, high strength graphite, carbon electrodes and other carbon materials. Excellent performance, outstanding efficiency, energy-saving and environmental protection. We warmly welcome domestic and overseas friends to visit our factory!

## **SHENYANG ALUMINUM AND MAGNESIUM STUDY AND RESEARCH INSTITUTE CO. LTD.**

**BOOTH #109**





**SHENZHEN SUMMIT LEVITATION METALLURGICAL S&T CO., LTD** **BOOTH #508**

Shenzhen Summit Levitation Metallurgical S&T Co., Ltd is specialized in manufacturing Vacuum Cold Crucible Induction Levitation Melting Equipment in China, takes national leading and international advanced level. Business Range: (1) Vacuum Cold Crucible Induction Levitation Melting Furnace (melting capacity 0.05-100kg, melting temperature 1800-over 3100. (2) Material Processing: Sputtering Target, Refractory/Precious/Reactive metals, High purity metals, Special alloys, etc. (3) Technical Service.

**SOFTWARE FOR CHEMISTRY & MATERIALS** **BOOTH #523**

Predict and understand material properties with our excellent computational chemistry software. Whether you research nanoparticles, organic electronics, batteries, 2D electronic materials, photovoltaics or other materials, modeling will guide experiments and advance your research. SCM scientists are passionate about making computational chemistry work for you. An excellent graphical interface ensures easy set up and analysis of electronic structure and reactive molecular dynamic simulations.

**SOUTHWIRE SCR TECHNOLOGIES** **BOOTH #104**

Southwire operates continuous casting lines for both Copper and Aluminum rod and the SCR Technologies division provides equipment for continuous cast rod systems and technology. SCR aluminum systems range in capacity from 2.5 to 15 metric tons/hour of EC aluminum and alloyed aluminum rod. SCR Technologies has developed a patented state of the art ultrasonic degasser that solves multiple challenges across a spectrum of aluminum casting industries. This ultrasonic degasser marketed under the brand name Ultra-D™ degasser produces the highest quality of aluminum without the use of any corrosive chemicals. The Ultra-D degasser can be easily integrated into the die casting, foundry, continuous cast and billet casting market segments.

**STAS** **BOOTH #304**

STAS Inc. is a Canadian based company specialized in the development, fabrication and commercialisation of process equipment for the aluminium industry designed to improve productivity and the quality of molten aluminium. Our clients include aluminium producers, primary and secondary smelters, rolling mills and aluminium extruders. The company has been in business for more than 25 years and has clients on all continents. STAS employs more than 160 persons and has agents all around the globe.

**SYNTON-MDP** **BOOTH #206**

Synton-MDP is a manufacturer of diamond stylus for microtechnical instruments. Most of the diamond tips are used in metrological equipment (surface finish, profile, form, nano-indentation, hardness, scratch and other characteristics).

**TA INSTRUMENTS** **BOOTH #504**

TA Instruments provides technology for thermal analysis, rheology, microcalorimetry, dilatometry & thermal conductivity measurements. We provide instrumentation for materials characterization for polymers, biomaterials, paints and coatings, metals, ceramics & more. Visit to learn about our newest range of products for traditional & optical dilatometry, plus a complete lineup of tools for thermal conductivity & thermal diffusivity by heat flow meters, guarded hot places & the laser flash method.

**TAYLOR & FRANCIS GROUP** **BOOTH #509**

Take your research skills to the next level with Taylor & Francis Group, leading publisher of quality peer-reviewed journals in Materials Science. Visit our booth for top performing journals in Physical Metallurgy, Composites, Ceramics, Biomaterials, Electronic Materials and Nanomaterials. Talk to us about being a Taylor & Francis author, and come pick up complimentary journal sample copies.

**TECHMO CAR** **BOOTH #316**

Techmo is an Italian independent company producing purpose designed special mobile and stationary equipment for the aluminium and non ferrous metals industry such as: Tapping Vehicles, Anode Transporters, Crucible Transporters and Tilters, Alumina/ AlF3 Feeding Vehicles, Furnace Charging Vehicles and Furnace Tending Vehicles, Multipurpose Anode Changers and Crust Breakers, Crucible Cleaning Machines, the Crucible Tilting stations and the Anode Butts Cleaning Stations.

**TEKNA** **BOOTH #107**

Tekna is the world leader in induction plasma technology. For over 25 years, Tekna has specialized in the development of integrated plasma systems for nanoparticle synthesis, plasma sprayed coatings, and other powder metallurgy applications, such as spheroidization and plasma atomization. These processes are used in laboratory R&D environment as well as in industrial-scale processes.

**TENOVA INC.** **BOOTH #506**

Tenova Inc., a multi-business unit Tenova company, based in Pittsburgh, Pa., is a worldwide leader in the design and supply of loose carbonaceous material calciners based on rotary hearth technology. These furnaces are used for the processing of petroleum coke, coal, formed coke briquettes and various other carbon based products. We also provide advanced aluminum processing furnaces for a variety of applications as well as a complete range of technical services.



## COMPANY DESCRIPTIONS

### TESLA, INC

**BOOTH #416**

Tesla is accelerating the world's transition to sustainable energy. We design, manufacture, sell and service the world's best solar technology, energy storage systems, and electric vehicles, providing customers the opportunity to generate, store and consume energy entirely sustainably. Visit our website to learn more and apply: [tesla.com/careers](https://tesla.com/careers)

### THERMO FISHER SCIENTIFIC

**BOOTH #209**

Innovative materials hold the key to improving safety, fuel efficiency, and productivity. Thermo Fisher Scientific supplies innovative solutions for materials science research, combining SEMs, TEMs, and DualBeam™ FIB-SEMs with advanced software suites to take customers from questions to usable data by combining high-resolution imaging with physical, elemental, chemical, and electrical analysis across scales and modes—through the broadest sample types.

### THERMO-CALC SOFTWARE

**BOOTH #401**

Software for computational thermodynamics and diffusion simulations for multicomponent systems. Thermo-Calc: a powerful tool for thermodynamic and phase equilibria calculations. DICTRA: add-on module for accurate simulations of diffusion controlled transformations. TC-PRISMA: add-on module for predictions of precipitation kinetics. Databases available for steels, Ni-superalloys Al, Ti, Mg and Cu alloys, HEAs, precious metals and other materials. Software Development Kits also available.

### UES

**BOOTH #202**

RoboMet.3D® is a fully automated, serial sectioning system that generates two-dimensional data for three-dimensional reconstruction. With sectioning rates up to 100 times faster than manual sectioning, Robo-Met.3D collects data in a matter of hours, not months. Robo-Met.3D enables more time for data analysis and characterization and ensures repeatable and accurate data is collected in an efficient and cost-effective manner. UES, Inc. is an innovative science and technology company that provides its industry and government customers with superior research and development expertise. We create products and services from our technology breakthroughs and successfully commercialize them.

### ZEISS MICROSCOPY, LLC

**BOOTH #407**

As the world's only manufacturer of light, X-ray and electron/ion microscopes, ZEISS offers tailor-made microscope systems for industry, materials research and academia.