Gain Exposure at the IMA's Annual Magnesium Conference

Make plans now to exhibit at and/or sponsor the International Magnesium Association's 73rd Annual World Magnesium Conference. Reach a focused and qualified audience of magnesium industry professionals who are looking for equipment, services and answers to questions.

The IMA 2016 Annual Conference will feature a superior technical program focused on innovations and advances in the magnesium industry - and your company should be there. At the conference, delegates come prepared to ask questions, discuss problems and present challenges, so exhibitor personnel must be technically astute to take full advantage of this opportunity.

The IMA Expo gives you the chance to:
- Reach a global audience in one convenient place
- Showcase your technical know-how, innovations and products
- Demonstrate your company's commitment to the industry
- Generate awareness for your company's capabilities.

Exhibit space is limited... so don't delay! Space is assigned on a "first come, first served" basis so reserve your spot today!

Sponsorships are also an excellent way to promote your company and be identified as a proud supporter of the International Magnesium Association and the industry. Companies can take advantage of the opportunity to reach top industry executives by sponsoring the 2016 Annual Magnesium Conference. Be the focal point of the energy and excitement in Vancouver at an event that consistently delivers value to delegates. This year, we have four levels of Full Conference Sponsorship and two levels of Individual Event Sponsorship opportunities available.

The 2016 Annual Conference will be held at A. Roma Lifestyle Hotel, in beautiful Rome, Italy, May 15-17, 2016. Click here for more details on exhibiting and sponsoring at the IMA's 2016 Annual Magnesium Conference.

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2016 World Magnesium Conference - Call for Awards

Each year IMA honours industry professionals by presenting awards in several categories to those who have demonstrated excellence in the use of magnesium or for exemplifying the industry's commitment of environmental responsibility. Judged by a panel of peers, the IMA Awards for Excellence and the Environmental Responsibility Award are wonderful opportunities for participants in the magnesium industry to showcase outstanding magnesium products and innovative manufacturing technologies, as well recognizing those that have gone above and beyond in reducing the industry's carbon footprint.

In its 50th consecutive year, these awards provide international, industry wide recognition for the accomplishments of the magnesium industry's best and brightest.

In 2015 the Awards of Excellence competition was open to all companies demonstrating outstanding examples of magnesium's use, as well as magnesium products and manufacturing technologies in three categories: Design, Process, and Application. The Design Category includes subcategories for Cast and Wrought Products and the competition seeks unique, novel and creative designs and product developments. The winning entries in this category demonstrate design and engineering that is a significant advance over current practice. The Design Award in the subcategory for Cast - Automotive was awarded to Georg Fischer, GmbH & Co., KG for the third year in a row! Their work in this category has significantly impacted the industry in this market.

The Environmental Responsibility Award is based on the achieved and documented reduction of carbon dioxide equivalents (CO2eq), and is intended to include all aspects of the magnesium industry from primary production through to end-user industries. The IMA Awards of Excellence highlight how the magnesium industry is continually working to improve the manufacturing process and companies that provide innovative and improved products made from lightweight magnesium. In 2015 the award was presented to Magnesium Elektron CZ, for their Innovative Solution for CO2 emissions and Waste Reduction in a Mg scrap recycling plant which resulted in a significant environmental improvement in the magnesium scrap recycling process in the Czech Republic over the past 5 years.

IMA believes that the best way to encourage advancement and change is to recognize those that are leading the way. IMA looks forward to seeing what amazing work has been done this year. The 2016 Awards of Excellence and the 2016 Environmental Responsibility Award will be presented at the IMA's 73rd Annual World Magnesium Conference. The Conference takes place in Vancouver, Canada, May 15-17, 2015. To nominate someone or for information please visit the Awards section of IMA's website, or contact info@intmag.org.

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Reserve Your Room Now!

IMA’s 73rd Annual Magnesium Conference will be held at A. Roma Lifestyle Hotel in beautiful Rome, Italy. A block of rooms is being held until February 12, 2016 for the special rate of €140.00/night, single or double, plus tax. After this date, group rates can no longer be guaranteed and rooms will be available on a space-available basis at the standard rate. Please click here to reserve your room today!

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IMA's 2016 Call for Abstracts

The IMA's Annual Conference is the premier international magnesium industry conference highlighting technological advances, innovative applications, and emerging developments in the global marketplace. This valuable conference will provide magnesium industry professionals with the latest information and advances on
magnesium processes, applications, technology and environmental concerns.

Be among the best and the brightest in the industry - share your expertise and knowledge by presenting a paper at the IMA Conference. You'll be helping to advance the industry and have an unparalleled opportunity to address magnesium professionals, industry leaders, and decision-makers, who seek cutting-edge information and problem-solving resources.

The IMA Program Committee is pleased to invite abstracts of no more than 150 words for a proposed presentation. Abstracts are invited from practitioners and researchers from in and around the magnesium extrusion industry.

**How to Submit**
Abstracts can be submitted in electronic format through the IMA online Abstract Collection Portal at [www.imaworldconference.org](http://www.imaworldconference.org).

Abstracts are due no later than December 18, 2015.

For complete details, download the [Call for Abstracts](http://www.imaworldconference.org) or go to [www.imaworldconference.org](http://www.imaworldconference.org) and choose "For Authors".

The official language of the Conference will be English. ALL abstracts and final selected manuscripts need to be submitted in English.

Click [here](http://www.imaworldconference.org) to submit your paper via the online portal.

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**GALM Series**

**Automotive Lightweight Interiors: Cost Effective Material Application & Design Congress**
27-28 January 2016 - Munich, Germany

The Automotive Lightweight Interiors Congress has been engineered to inform the industry of the opportunities for light weighting within the interior specifically, looking at key components such as seating, NVH content and electronics. This is the only event to focus specifically on lightweighting strategies for automotive interiors.

Key speakers include BMW, Maserati, McLaren & Lamborghini

IMA members are entitled to an exclusive 15% Discount. [Register Now](http://www.imaworldconference.org) & Use Promo Code: GIMI15

**Modeling, Simulation and Crash Testing Of Automotive Lightweight Materials Summit**
January 26-27, Detroit, Michigan

The 1st GALM summit on Modeling, Simulation and Crash Testing Of Automotive Lightweight Materials will come to Detroit, Michigan on 26-27 January 2016 and bring with it 20+ case studies from OEMs, software developers and material experts.

Covering the most important areas from cost efficiency and accuracy in modelling aluminum and composite properties to predicting lightweight material life-cycles and accurate crash simulation, experts at the top of their fields assess the best practices for accurately and efficiently modeling and simulating lightweight materials.

Speakers include: Ford, Toyota, Honda, General Motors, Renault and Tesla & more.

IMA members are entitled to an exclusive 15% Discount. [Register Now](http://www.imaworldconference.org) & Use Promo Code: CIMI15

**Speaker Preview Interview:**
GALM interviewed Steven Sheng, Formability Engineer, General Motors and Prof Xinran Xiao, from Michigan State University, who are speaking at the Modeling, Simulation and Crash Testing of Automotive Lightweight Materials Congress.

"To increase the use of composites in crash critical structures, we have to be able to predict the crash-worthiness of the structure as we do for metal parts. Good material models, robust and accurate safety simulations are critical to vehicle lightweighting," said Mr. Sheng. Read the complete interview [here](http://www.imaworldconference.org).

Find additional GALM Pre-Conference Interviews:
Honda Discusses Multi-Material Joint Simulation for Lightweight Material Manufacture
Ford Discusses How Deep Orange 5 Will Redefine Automotive Interiors
Maserati’s Discussion on Weight Reduction Strategies for Interiors

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**November CRM Alliance/ EU Policy Newsletter**

- ARGUS European Light Metals 2015
- Demand Side Innovation Conference
- CRM Alliance up - date

**ARGUS European Light Metals 2015**
The ARGUS European light metals conference brought together traders, producers and consumers involved with light metals such as aluminium, magnesium, silicon metals and manganese to address the impact of these market developments, and the broader influence of the aluminium alloy industry.

The conference took place on 3-4 November in Duesseldorf, Germany. I had the honour to speak as President of the CRM Alliance and focused on the following topics:

- "Essential" alloying elements for Al alloys
- Critical Raw Material Assessment in the EU
- Advocacy of critical materials by the CRM Alliance
Q: Mg recycling?
A: Covers/boxes for batteries are obvious solutions. At the moment it is not possible to say if Mg can be used inside batteries.

Q: What are the prospects of primary Mg production outside China?
A: Several projects ongoing such as Nevada Clean/ScanMag and SilMag both in Norway. The Iran plant and ESAN (Turkey), both Pidgeon plants, have just opened. The key to success is power cost. You have to be able to compete with the Chinese.

Q: New developments in the Mg industry?
A: Twin roll casting for Mg has been developed for commercial Mg sheet production (POSCO). Magna is using a new sheet alloy produced by MEL.

Q: Any prospects for Mg in electric vehicles?
A: Covers/boxes for batteries are obvious solutions. At the moment it is not possible to say if Mg can be used inside batteries.

Q: Mg in Smart phones?
A: Samsung is launching its new smartphone 7S with a pressed Mg sheet cover.

Q: Other interesting development in Korea?
A: Big R&D programs backed by the government. Korea will be an interesting area in the near future.

Q: Mg recycling?
The mold clamping forces of the hot-chamber "CXMG" series of the company are 4 types, 60 ton, 150 ton, 350 ton and 600 ton. Enabling long-time and high-cycle bringing the people interested in resin to the attention of magnesium die-casting.

Hishinuma Machinery Co., Ltd. displayed their die-cast products made by their magnesium hot-chamber machines for the first time at "Materials for Lightweight and High-strength Exhibition N-Plus" held at Tokyo Big Site on 30th Sept. to 2nd Oct. They set up a booth at the exhibition in which people related to resin gather, and aim at Hishinuma Machinery appeals the fascination of magnesium but it must be several thousand yen per meter, a little higher than copper wires.

oxygen-free copper are purchased as the rod-form from outer companies, and these rods are drawn to fine wire before twisting. The detail of the price will be considered, used amount of magnesium, but the amount of copper is kept this high level to keep conductivity. The cable is produced at their main plant. Pure magnesium and has been accumulated for long year. The component ratio of this wire is 20% magnesium and 80% copper in area ratio. The vibration damping property increases as the fine magnesium wire with 6 oxygen-free copper wires. The company succeeded in setting the materials concentrically by applying their wire twisting technology which This wire has clad structure of pure magnesium (99.99%) as the center conductor with oxygen-free copper as the covering material. The wire is produced by twisting one -sound of speaker clear and high definition. Magnesium’s excellent vibration damping property depresses the vibration of the cable that is a cause of noise. Japan Fine Steel Co., Ltd., a special-wire manufacture, will put magnesium cable for loudspeakers into commercial use within this year. Using this cable makes the wires from a participant company and the surface treatment is carried out by another participant company. The price of "Assist Suit AWN-03" is in "The research group of magnesium business commercialization at Hamamatsu area" hosted by Hamamatsu Agency for Innovation. The company purchases welding and it lightens the load by operating the motors at the waist when a luggage is transported. The weight of the suit being 6 kg, it can reduce the load by 15 kg.


Shinba Iron Works Corporation which produces mufflers for two-wheeled vehicles at Kakegawa City started mass-producing of frames for power assist devices used at job sites of commodity distributions and constructions by using of magnesium processing.

Their frames were applied to "Assist Suit AWN-03" produced by ActiveLink Co., Ltd., manufacturer for power assist devices at Nara City. It is used by putting on the body and it lightens the load by operating the motors at the waist when a luggage is transported. The weight of the suit being 6 kg, it can reduce the load by 15 kg.

"We do consistently from the design and the development to the mass-production within the company", said the president of Shinba Iron Works. The company is involved in "The research group of magnesium business commercialization at Hamamatsu area" hosted by Hamamatsu Agency for Innovation. The company purchases welding wires from a participant company and the surface treatment is carried out by another participant company. The price of "Assist Suit AWN-03" is about 1 million yen, and the company aims at the sales of 1,000 machines per year.

Japan Fine Steel puts magnesium cable for loudspeaker into commercial use (Source: "Rare Metal News", 24th Oct., 2015)

Japan Fine Steel Co., Ltd., a special-wire manufacture, will put magnesium cable for loudspeakers into commercial use within this year. Using this cable makes the sound of speaker clear and high definition. Magnesium’s excellent vibration damping property depresses the vibration of the cable that is a cause of noise.

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Hishinuma Machinery appeals the fascination of magnesium (Source: "Die-cast Shinbun", 30th Oct., 2015)

Hishinuma Machinery Co., Ltd. displayed their die-cast products made by their magnesium hot-chamber machines for the first time at "Materials for Lightweight and High-strength Exhibition N-Plus" held at Tokyo Big Site on 30th Sept. to 2nd Oct. They set up a booth at the exhibition in which people related to resin gather, and aim at bringing the people interesting in resin to the attention of magnesium die-casting. The mold clamping forces of the hot-chamber "CXMG" series of the company are 4 types, 60 ton, 150 ton, 350 ton and 600 ton. Enabling long-time and high-cycle...
The average price of magnesium alloy was 305.7 yen per kg (19.2 yen per kg, 5.9% decreased month-to-month basis) because the price of them from China was 300.1 yen per kg.

The average import price of magnesium metal, which hovered around 260 yen per kg, increased 6.7 yen per kg (2.5% increased) in September compared with August.

As for the die-casting alloy, the import from Israel was 19.7 tons for the first time in half year. Magnesium alloys for casting was 6.8 tons (14.5% decreased).

Based on Import/Export Statistics of September 2015, magnesium metal import was 2,290.3 tons (13.8% decreased from the same month the year before), magnesium alloy import was 1,794.0 tons (20.7% decreased), high purity magnesium 4.2 tons, 485.3 tons of die-casting alloys (25.7% increased). As for the die-casting alloy, the import from Israel was 19.7 tons for the first time in half year. Magnesium alloys for casting was 6.8 tons (14.5% decreased).

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The company succeeded in industrial production of magnesium hydride for the first time in the world. High purity "Mag Hydrogen" (hydrogen derived from magnesium hydride) with maximum 12.5% purity can be supplied by hydriding the magnesium hydride. It is not only light weight, but also chemically stable.

High purity hydrogen can be safely and economically stocked, transported and supplied because of its tablet or powder shape. The purity is 92%.

When you want to generate hydrogen, it is enough just to pour water or acid. It is applicable to hydrogen water, bath additives and hot-spring bath additives as consumer use. And, they are developing new use for hair dressing and beauty with cooperative firms. It is possible to use them in batch type reactors, electric generation by magnesium hydride, small transport planes, and storing and transporting of hydrogen as industrial use.

This magnesium battery can generate so large volume of electricity that it can supply electricity for 72 hours which is assumed to be required time for restoration of lifeline. In addition to supplying electricity to vending machines, it enables using PCs, mobile phones, TVs, and it can be used as the infrastructure for lights, information and communications which is needed for disaster areas. The sides of this air battery are 1.2m long, 0.3m width and 0.3m height. The magnesium battery on "Piana" was developed by New Japan Battery Development Co., Ltd (Nakayoku-ku, Kyoto). The main power source is 2 LiB with 50Ah, 72V. The driving distance is 120km. Maximum speed is 75km/h. They will be launched in 2017.

It is regarded that the electric vehicle mounting magnesium battery is in experimental stage, but if this vehicle is put to practical use, it will be the world's first vehicle. STYLE-D is an entrepreneurial venture established in March of this year.

Asahi Soft Drinks supply vending machines with magnesium air battery for emergency

(From: "Nikkei Shinbun", 14th Nov., "Light Metal Tsushin", 17th Nov., 2015)

Asahi Soft Drinks Co., Ltd. will supply vending machines with magnesium air battery for emergency for the first time in the world. The company has been participating in "magnesium air battery development project" conducted by Tatsumi Central Management Lab. Co., Ltd (Tokyo) and Recyclable Energy Tohoku (Miyagi), and the machines will be supplied for emergency. This project is to secure electricity in case of emergency from the vending machines with magnesium air battery placed in evacuation site. They will place 100 machines at main evacuation sites such as schools and hospitals in Fukushima prefecture from January 2016, and will make a study on placing them at the designated evacuation sites outside of Fukushima prefecture after 2017.

This magnesium air battery placed in evacuation site. They will place 100 machines at main evacuation sites such as schools and hospitals in Fukushima prefecture from January 2016, and will make a study on placing them at the designated evacuation sites outside of Fukushima prefecture after 2017.

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The latest information of PCs

(From: "Mainavi News", 15th and 29th Oct., 2015)

Japan HP announced the new model "HP EliteBook Folio 1020 Bang & Olufsen Limited Edition" and "HP EliteBook 725 G3 Notebook PC" as the business note PC for companies.

The machine presents upscale texture and secures reliable toughness by applying aluminum and magnesium alloy to the body.

Dell announced the new 13.3 type mobile note PC "XPS 13" and 15.6 type note PC "XPS 15". These PCs pursue the smallness of horizontal and vertical sizes and the attractiveness among many note PCs of which the thinness is the selling point. Machined aluminum is used to top and bottom case of "XPS 13" and "XPS 15". They achieve the thinness, the toughness and the attractiveness by using composite material including carbon fiber to the upper body and by using magnesium to the inner frame.

Domestic Magnesium Market - September 2015

(From: September issue of Import/Export Statistics (customs clearance basis) of METI - Compiled by The Japan Magnesium Association)

Import

Based on Import/Export Statistics of September 2015, magnesium metal import was 2,290.3 tons (13.8% decreased from the same month the year before), magnesium powder 409.7 tons (62.2% increased), and other products 135.1 tons (10.0% decreased). Metal and the other products decreased and powder increased on a year-to-year basis.

The metal category consisted of 1,794.0 tons of pure magnesium (20.7% decreased), high purity magnesium 4.2 tons, 485.3 tons of die-casting alloys (25.7% increased). As for the die-casting alloy, the import from Israel was 19.7 tons for the first time in half year. Magnesium alloys for casting was 6.8 tons (14.5% decreased).

The average import price of magnesium metal, which hovered around 260 yen per kg, increased 6.7 yen per kg (2.5% increased) in September compared with August.

The average price of magnesium alloy was 305.7 yen per kg (19.2 yen per kg, 5.9% decreased month-to-month basis) because the price of them from China was 300.1 yen per kg.
Mr. Xu Jinxiang made report entitled accelerating adaptation to the new normal, plotting new industry positioning, seizing new opportunities of made-in-China 2025 program and Internet, change the idea, accelerate the development of industry and technology, improve the traditional production management and business model, actively expand magnesium consumption, and promote the quality and efficiency of the industry. He said MIIT will do effective job in five aspects to promote the development of magnesium industry as follows.

Firstly, MIIT will continue to be in conjunction with the relevant departments and CMA to implement in-depth study on specific policies and measures for steady growth, and reflect the real economy demands in terms of the financial, tax, electricity, new materials, export tax rate, and market withdrawal policy.

Secondly, MIIT will strengthen policy guidance. MIIT is compiling the 13th five year development plan for nonferrous metals industry and relevant new materials including magnesium. In the planning, MIIT continues to select as a support point the continuous and semi continuous smelting magnesium, magnesium alloy deep processing, and magnesium application. MIIT will promote and guide the upgrade of magnesium industry, and, at the same time, timely revise the standard conditions of magnesium industry.

Thirdly, we will speed up technological progress. MIIT will continue to work with the relevant departments to continue, through various funds, provide support for technological transformation, industrial restructuring & upgrading, clean production of magnesium smelting, high performance magnesium alloy and deep processing. MIIT also encourages domestic enterprises to strengthen international cooperation and to increase the introduction and application of international advanced magnesium processing technology.

Fourthly, we will pay high attention to the integration among intelligent equipment, production process automation and management information. Magnesium industry should improve the quality and stability of magnesium products, and reduce operational costs. At the same time, magnesium industry should make full use of Internet to guide magnesium production enterprises through e-commerce, big data and cloud platform to build a high efficiency and energy saving magnesium materials research and development design platform, fully respond to the downstream user's personalized needs, and promote the transformation from production manufacturing to service-oriented manufacturing.

Fifthly, MIIT will actively encourage the application of magnesium materials. Through the use of the characteristics of magnesium metal, MIIT will map out a clear positioning of magnesium application priority areas, focus on high-end applications for cars and electric bicycles. At the same time, magnesium industry should improve the service awareness of material application, and provide support for the development of downstream users.

Mr. Zuo Tieyong, during the conference, made a keynote report, and excited the participants with his full- feeling speech. He said that 5 academicians 15 years ago wrote to the central government for supporting magnesium industry, and now, Mr. Shi passed away, while other 3 academicians are aged 90 on average, and he is the youngest, but at 80 years old. For the coming 13th five-year period, he is willing to lead several academicians and once again write to the Central government, and to have interview with several ministers, for purpose of setting up light alloy lightweight alliance of auto industry. He said that magnesium industry should develop toward deep processing of high added value and large-scale applications, rather than rely on publishing paper, but rely on industrialization and scale. The demand for magnesium by automotive industry is vast potential, which is a great opportunity for the development of magnesium industry.

Mr. Xu Jinxiang made report entitled accelerating adaptation to the new normal, plotting new industry positioning, seizing new historical opportunity and creating a powerful nation dream of magnesium industry. He pointed out that we should build innovative achievement conversion mechanism, actively promote the industrialization of magnesium industry innovation, vigorously develop a mixed ownership economy, optimize industry and capital structure, form the joint body with the management foundation of industry chain operation in the whole industry, in order to maximize the market benefit as the ultimate strategic goal of common interests, and fundamentally strengthen China's magnesium industry with overall competitiveness and influence.

The conference also initiated two seminars, one for new technology and new equipment, and other for magnesium alloy processing and application.

Operational cost can be reduced further by updating smelting technology of primary magnesium
On October 21st, Dr. Xiao Yang, director of Zhengzhou Light Metal Research Institute, ChinAlco, was invited, during the 18th annual conference of CMA, to make report entitled “thinking about the development of China's magnesium industry”.

One important point of his report is that operational cost of smelting magnesium process, by the update, has great potential for reduction.

He said the energy consumption has been reduced from 111 in 2000 to the current 4t of coal per ton of primary magnesium. However, the cost of magnesium smelting can be lower than the current level through technical update and large operational scale, and drawn near to the level of the steel production.
At present, the production process of aluminum smelting is complex with lengthy process, and low grade alumina ore also needs to concentrate, per ton of primary aluminum will consume 2t of alunina, 0.5t of pre-baked graphite anode, 30kg of fluoride and 14000KW of electricity. On the other hand, the production process of magnesium smelting process is much shorter and the theoretical energy consumption is lower as compared with that of aluminum smelting.

If the magnesium smelting technology, as iron is reduced through blast furnace, can go through one step method, then the calcination of magnesite MgCO3 forms MgO+CO2, and, by coke thermal reduction, MgO+C will give Mg+CO2. Supposing the raw materials are fed through side loading in blast furnace structure, slag is discharged from the lower part of furnace, and magnesium crystallizes from the upper part, then single furnace can yield several tons (even dozen tons) of magnesium, and the cost of magnesium smelting will continue to close to that of steel.

With the update of magnesium smelting technology and equipment, magnesium smelting will realize more automation and intelligence process. Benefiting from effective process method, the capacity of magnesium producers will develop from 100kt to 500kt, and even to 1000kt annually, which will cut down production cost and make it close to the operation cost of steel production.

The development of the new type two-step method, for new vertical tank, may bring about over 100kt of capacity for one plant, with energy consumption at 2.5t of standard coal, labor productivity at over 100t per person annually, and smelting cost lower to 10000 RMB yuan.

If one-step method is successful as steel production from blast furnace, optimistically it is possible for 100kt-plus-capacity magnetism producer to reduce operational cost to 5000-8000 RMB yuan.

Dr Xiao believes that the new technology will greatly reduce the cost of primary magnesium, make magnesium more competitive as compared with other materials in application. The key for large application of magnesium lies in reducing operational cost.

Shaanxi held magnesium industry development seminar
On October 30th, the seminar for the development of magnesium industry was held in Xian. Mr. Lichunlin, vice mayor Yulin city, attended the forum.

During the seminar, Professor Dan Zhiwei, from Xi'an Jiao Tong University, delivered report on the status quo and measures of China's magnesium industry, and Professor Zhang Shaojun, from Zhengzhou University, introduced the new technology in magnesium relevant. Mr. Lichunlin also addressed the seminar.

The participants views on the development of magnesium industry, analyzed the existing problems and difficulties, and put forward some suggestions. Both Fugu Tianyu Magnesium Alloy and Yulin Tianlong Magnesium respectively, on the upgrade project of primary magnesium process, signed agreement with Xi'an Jiaotong University. Mr. Cao Guorui, CEO of Fugu Tianyu Magnesium, attended the signing ceremony.

Research team from No.9 hospital affiliated to Shanghai Jiaotong University promotes magnesium-containing antibacterial stent for clinical application
Recently, bacterial inhibition potential of 3D rapid-prototyped magnesium-based porous composite scaffolds-an in vitro efficacy study was published in Nature's magazine, Scientific Reports. The article is authored by experts from No. hospital affiliated to Shanghai Jiaotong University, Key Laboratory of Orthopedics Implantation of Shanghai City and Shenzhen Institute of Advanced Technology. Its first co-authors are Dr. Marui, from Department of Orthopedics, No. 9 Hospital, Shanghai Jiaotong University, and Dr. Lai Yuxiao, Shenzhen Institute of Advanced Technology

The authors, by low temperature and fast 3D forming technology, synthesized new type multi-porous and magnesium-containing stent with the substrate of PLGA and TCP. Through the content change of magnesium, they prepared three stents, i.e., PLGA/TCP/5%Mg (PT5M), PLGA/TCP/10%Mg (PT10M) and PLGA/TCP/15%Mg (PT15M).

In vitro studies show such stents, as compared with common porous stent (PLGA/TCP, PT), have significantly inhibited the adhesion and biofilm formation of Staphylococcus aureus, in which PT10M and PT10M inhibit the biofilm formation significantly stronger than PT5M. Further study of its antibacterial mechanism found that the degradation of magnesium-containing stent can enhance pH, Mg2+ concentration and osmotic pressure in local micro tissue, and the increase of pH value may be the main reason for the antibacterial activity of magnesium-containing stent. The research results provide important theoretical basis for the further clinical research on the clinical transformation of magnesium-containing antibacterial stents.

Research has been financed by the National Natural Science Foundation of China (51361130034) and the EU No. 7 framework research project (n NMP3-SL-2013-604517)

110-120kg type magnesium ingot production goes through operation by Fugu Taida Coal & Chemical
On October 12th, Fugu Taida Coal & Chemical put on stream 110-120kg type magnesium ingot production line.

Mr. Gao, sale manager, said "we have just rolled out of 110-120kg type magnesium ingot as expected. Some time ago, we carried out inspection study in Shanxi and Ningxia upon the independent research and development design. Unlike artificial pouring, out method not only saves time and effort, but also is more efficient for customers' need". He said 110-120kg shaped magnesium ingot can find more export as oversea demand is higher. Based on original 7.5kg-type magnesium ingot, we diversify our product mix. Later, we will, upon customers' orders, organize related production, and we expect 110-120kg type ingot to hit 600t of monthly output."

At the same time, the company currently puts in order 100g and 300g ingot molds, their pouring stage also will realize mechanization.

Fugu Taida Coal & Chemical, founded in December, 2007, has 9 production lines: 600kt/a of coke, 2 x 25000kVA ferrosilicon furnace, 20kt of magnesium, 2 x 25MW waste gas-driven power plants, 1200kt of washing coal, 10000 reduction pots, 250kt of lime kiln, 4X25500kva calcium carbide furnace, and 50 min. of unburned bricks. Its product portfolio includes coke, tar, gas, ferrosilicon, magnesium, electric power, coal, reduction pot, lime, calcium carbide and unburned brick.

Magnesium alloy research seminar opened in Wanfeng Auto
On October 12, magnesium alloy research industrial application seminar, hosted by Zhejiang Provincial Human Resources and Social Security Bureau and undertaken by Wanfeng Auto Holding, was kicked off in Wanfeng Square.

Li Yu, Dean of Wanfeng Research Institute, made report entitled the application of magnesium alloy in automobile, and Zhang Xuxia, director of Wanfeng Technology Department, addressed the application of robot in die casting segment.

industry professionals and representatives from Daimler, BMW, Haima Automobile, Geely Automobile, China Automotive Technology and Research Center, China Aviation Science and Industry Group, Shanghai Volkswagen, China FAW, China Shipbuilding Heavy Industry, and Ford Motor attended the seminar. They exchanged view of points as for the future development of magnesium alloy industry.

Wanfeng Auto, responding positively to the policy for preferential attention to professional and technical personnel, builds platform for industry experts, representatives, business executives and technical personnel, where they, around magnesium alloy and its industrial application, put forward suggestion and promote the rapid application of magnesium alloy.

Xiaomi self-balancing robot will enters market on November 3, 2015
On October 19, Xiaomi announced the company, together with ecological chain enterprise Ninebot, launched next generation robot, No.9 9 balance robot. It is the first product by Ninebot after Ninebot successfully acquired Segway in April 2015. Unlike the similar robots worth of several thousand RMB yuan, No.9 balance robot, following one and half year's customized design for Xiaomi, is only 1999 RMB yuan, which is 1/4 of and even lower than the similar product in price.
No. 9 robot, with high performance, runs at a speed of up to 16km/h, and lets operators feel the driving experience of as 4 times speed as walkers go. Equipped with two direct drive motors, its total output power hits up to 700 watts, but instantaneous power can exceed 2000 Watts, which is almost a power of electric motorcycles. Under typical test environment, it can run about 22km upon charge. Innovative Leanster control, unlike common robots by two hands and feet, can analyze the leg movement and then control direction, so it runs with more relaxation and stability.

No. 9 robot only weighs 12.8kg. From various materials, it adopts magnesium alloy as body, and, based on strength design and verification of aircrafts, select 0.6kg-weight magnesium alloy frame which can withstand up to 600kg of load while the robot itself can support 85kg of weight.

Ninebot & Segway has 16 years of experience in developing balancing robots, with over 400 patents, which brings about superior safety for customers.

Currently, Segway I2 se is priced at 78000 yuan, Ninebot-E at 14900 yuan, and 500-1000W two-wheeled robot at 8519 yuan at average in Jingdong internet shop, but No.9 robot only costs 1999 RMB yuan. This will allow more young people to have the opportunity to experience the fun of balancing robots. This product will be in sale, from November 3, in Xiaomi's website.

Yizumi's Thixomolding Machine Passes Expert-level Technical Evaluation

On October 15, China Plastics Machinery Industry Association (CPMIA) organized an evaluation committee with well-known experts in domestic machinery industry and semi-solid magnesium alloy to conduct new product appraisal for UN650MGII thixomolding machine developed by Yizumi. The expert committee addressed high marks on the technical content of the whole project and agreed that the technology, indicators and performance of related equipment had met the advanced level of similar products in the world.

Based on on-site assessment and inspecting the site for project development and prototype manufacturing, the committee, hearing the report on the project implementation, and carefully reviewing relevant information and technical documents submitted for the evaluation, announced that Yizumi's thixomolding machine passed the technical evaluation and suggested Yizumi to further develop relevant production line to meet market demand.

**Output of primary magnesium by September 2015**

<table>
<thead>
<tr>
<th>Region</th>
<th>August</th>
<th>September</th>
<th>Jan.-Sept.</th>
<th>Jan.-Sept. % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaanxi</td>
<td>34.1</td>
<td>29.9</td>
<td>275.2</td>
<td>-3.78</td>
</tr>
<tr>
<td>Shanxi</td>
<td>13.5</td>
<td>13.1</td>
<td>152.4</td>
<td>-14.51</td>
</tr>
<tr>
<td>Ningxia</td>
<td>17.5</td>
<td>17.6</td>
<td>83.8</td>
<td>17.89</td>
</tr>
<tr>
<td>Xinjiang</td>
<td>3.3</td>
<td>2.8</td>
<td>25.5</td>
<td>-20.76</td>
</tr>
<tr>
<td>Henan</td>
<td>2.5</td>
<td>3.7</td>
<td>30.7</td>
<td>-14.92</td>
</tr>
<tr>
<td>Qinghai</td>
<td>3</td>
<td>2.9</td>
<td>12.3</td>
<td>58.01</td>
</tr>
<tr>
<td>Sichuan</td>
<td>0.4</td>
<td>0.4</td>
<td>3.5</td>
<td>-8.2</td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>1.8</td>
<td>1.3</td>
<td>9.5</td>
<td>149.6</td>
</tr>
<tr>
<td>Liaoning</td>
<td>0.7</td>
<td>0.7</td>
<td>4.7</td>
<td>-32.42</td>
</tr>
<tr>
<td>Jilin</td>
<td>-</td>
<td>0.3</td>
<td>0.6</td>
<td>-87.01</td>
</tr>
<tr>
<td>Total</td>
<td>73.8</td>
<td>71.6</td>
<td>598.2</td>
<td>-5.16</td>
</tr>
</tbody>
</table>

**Exports of Magnesium Products closed September in China (Unit: t)**

<table>
<thead>
<tr>
<th>Month</th>
<th>Magnesium Unwrought (min. 99.8%)</th>
<th>Other Magnesium and Alloy Unwrought</th>
<th>Waste and Scrap</th>
<th>Magnesium raspings/turings/granules according to size &amp; powders</th>
<th>Magnesium Wrought</th>
<th>Magnesium Articles</th>
<th>Monthly Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>22710.5</td>
<td>9921.8</td>
<td>304.3</td>
<td>8681.3</td>
<td>186</td>
<td>544.8</td>
<td>42348.7</td>
</tr>
<tr>
<td>February</td>
<td>16121.9</td>
<td>8309.7</td>
<td>107.2</td>
<td>7885.7</td>
<td>405.5</td>
<td>452.2</td>
<td>33282.2</td>
</tr>
<tr>
<td>March</td>
<td>16046.9</td>
<td>8809.4</td>
<td>147.1</td>
<td>6315.1</td>
<td>197.5</td>
<td>387.8</td>
<td>31904.3</td>
</tr>
<tr>
<td>April</td>
<td>19652.5</td>
<td>9830.7</td>
<td>107.4</td>
<td>7799.3</td>
<td>438.5</td>
<td>446.1</td>
<td>38274.5</td>
</tr>
<tr>
<td>May</td>
<td>17992.7</td>
<td>9677.8</td>
<td>187.8</td>
<td>5220.2</td>
<td>329.7</td>
<td>456.9</td>
<td>33864.9</td>
</tr>
</tbody>
</table>

A thixomolding machine is equipment that processes the magnesium alloy chips, the raw materials fed and sheared by the rotating screw and heated by the barrel, into semi-solid slurry. In industrialized countries, semi-solid magnesium alloy processing technology (thixomolding technology) has been mature and applied to mass production mainly in the fields of automotive, electronics, aerospace, etc. "UN650MGII thixomolding machine is a combination of Yizumi's technical strength in thixomolding and the cutting-edge technology in the world. Through systematic study of the thixomolding process technology, times of technical improvements and experiments and mastery of the secret of meeting the temperature requirements of producing magnesium alloy slurry, the trial manufacturing of the sample thixomolding machine was completed. This machine can produce complex magnesium alloy products that have high precision and good surface quality. The maximum injection speed of UN650MGII is up to 5m/s, which is the same with the Japanese counterpart; and it takes only 12ms for the machine to accelerate from zero to 5m/s. Technical performance of UN650MGII goes on parallel with Japan's and even reaches world's advanced level.
Sunlight Metal collects and publishes daily ingot quotation and FOB price from key magnesium production regions objectively, independently and systematically. Being taken into account the viewpoints from both supplier and consumers, Sunlight Metal price, rationally reflecting the change in market, is the most authoritative in domestic magnesium sector. For more detail and inquiry, pls. contact us at info@chinamagnesium.net

**Member News**

- GF sells real estate in Meyrin, Switzerland
- MassChallenge Boston expansion to Switzerland
- 2015 November - New Product Line with Increased Operation Spectrum for Cathodic Corrosion Protection
- Exclusive Distribution Agreement Between Chengxing and CellMark Chemicals

**Industry News**

- The ductility of magnesium explained
- Research report covers the global metal magnesium sales 2015 market
- Nevada Clean Magnesium Announces Bench Scale Pilot Furnace Fabrication Update
- Discovery of corrosion-resistant "stainless magnesium" to enable lightweight vehicles
- Automotive Magnesium Alloy Market: Industry Analysis and Forecast to 2020
- Australian researchers discover alloy that could open doors to stainless magnesium mass production
- 2 Natick companies receive Dept. of Energy grants
- MGX Minerals Reports Mobilization for Bulk Sample at Driftwood Creek Magnesium Project Now Underway
- MAGNESIUM FROM SEAWATER
- GM testing magnesium metal for lighter cars

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