

## IMA News

Below are articles and summaries of magnesium related stories. IMA Member companies are asked to distribute the IMA News to their employees. IMA member company employees wishing to receive the monthly IMA News issues should send their email addresses to the IMA World Headquarters. We appreciate all member company press releases and announcements for inclusion in the monthly IMA News issues. Please send your news to [info@intlomag.org](mailto:info@intlomag.org).

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### IMA 72nd Annual World Magnesium Conference Call for Awards Open!

The International Magnesium Association annually honors several organizations through its awards program. The IMA awards program features the Awards of Excellence and Environmental Responsibility Award.

Award entries can be submitted electronically through our online portal. Click [here](#) for details on submitting your award and to submit online.

#### **Award Submission Deadline: February 27, 2015.**

Submissions received after the deadline may not be considered.

The award entry portal will be open from December 3, 2014 through February 27, 2015.

Winning entries will be recognized during the IMA's 72nd Annual World Magnesium Conference, May 17-19, 2015 in Vancouver, Canada. Winners will receive plaques and have their entry prominently displayed throughout the entire Conference.

Please support the IMA Awards program by entering your own company's award nomination or by inviting your colleagues to submit an entry.

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### IMA 72nd Annual World Magnesium Conference Call for Papers Deadline Extended!

**You're Invited** to submit a 150-word abstract for a proposed presentation at IMA's 72nd Annual World Magnesium Conference, the premier international magnesium industry conference. This conference highlights technological advances, innovative applications, and emerging developments in the global marketplace. The event attracts delegates from all aspects of the Magnesium industry. You will have unparalleled opportunity to address magnesium professionals, industry leaders, and decision-makers who seek cutting-edge technical information, problem-solving resources and current industry updates.

The IMA has extended the deadline for the [2015 Call for Papers](#) to **Friday, December 31, 2014!** This is your opportunity to help shape the content of the 72nd Annual Magnesium World Conference program and to elevate the presence of your company within the magnesium community.

We welcome your offer to present on most any relevant topic for which you or your firm has suitable expertise. Please help support the [Call For Papers](#) by suggesting a topic and/or a speaker, whether yourself or a colleague. Please help us promote the Call For Papers!

Click [here](#) to download the Call For Papers Form.

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

#### **Program Committee Selection Process Timetable:**

December 31, 2014 Extended Deadline for abstract submissions  
January 2015 Selection of papers and Notification of authors  
February 27, 2015 Manuscripts due  
May 17-19, 2015 Annual World Conference in Vancouver, Canada

#### **Submit abstracts via email by December 31, 2014 to [info@intlomag.org](mailto:info@intlomag.org).**

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### The IMA is featuring a new section called "SPOT LIGHT"

In the last issue of the IMA Association News a new section called "Spot Light" was featured. This new addition to our newsletter gives members of the International Magnesium Association an opportunity to highlight their company.

Our first featured IMA member company was AMACOR which is owned by the newly elected IMA President, Jan Guy. Click [here](#) to read more about Jan and her personal journey in the magnesium business on page 4 of the July IMA News.

If you and your company would like to be featured in next month's IMA News issue, please send a write-up to IMA Headquarters, attention Amanda Kasik ([afortman@tso.net](mailto:afortman@tso.net)).

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## Global Automotive Lightweight Materials Asia 2015

The IMA has been invited to partner with [Global Automotive Lightweight Materials Asia 2015](#) that takes place March 26 - 27, 2015 in Shanghai, China.

GALM Asia returns for a second year to Shanghai on 26-27 March. It is Asia's most practical, applications focused lightweight vehicle conference: enabling OEMs to make informed decisions on lightweight strategy. The global automotive industry is pioneering new lightweight vehicles that were previously commercially unthinkable due to material and manufacturing technology cost restraints. Using ground breaking, **multi-material joining and forming technology**, commercially focused implementation strategies and cost effective high strength steel, aluminium, magnesium and composite supply channels, certain OEMs from the US, Europe and Asia are **rapidly driving the industry forward into a fuel efficient, reduced-CO2 future**. Key OEMs including **Changan Automobile, Geely, Great Wall Motors, FAW-Volkswagen** & more will deliver the very latest case studies to demonstrate the most up to date advances in light weighting.

IMA Members can join this exclusive event as GALM brings together OEMs, Material Suppliers and Tier 1s to assess current capabilities and future strategies being developed to drive the development of low cost, high volume lightweight vehicles on a global platform.

As an IMA Member, you can claim a 15% discount on registration using the following discount code at checkout: **GALMAIMA**. Click [here](#) to register for the conference.

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# Mg 2015

**The 10th International Conference on Magnesium Alloys and Their Applications**

October 11-16, 2015 Ramada Plaza Jeju Hotel, Jeju, Korea

## 10th International Conference on Magnesium Alloys and Their Applications (Mg 2015)

The IMA has also partnered with the [10th International Conference on Magnesium Alloys and Their Applications \(Mg 2015\)](#), which will take place from 11 through 16 October 2015 in Jeju, Korea.

The aim of the forthcoming conference is two-fold. One is to provide opportunities for various researchers and engineers worldwide to present their pioneering works and to share their ideas in the field of magnesium alloys and their applications. During this conference, significant advancements in all aspects of research, development and applications will be covered and discussed in presentations together with plenary and invited talks. The other is to enhance the relationship among member societies and make a meeting place for friends inseparable due to common objectives of research, development and application and the possibility is given for further co-work resulting in mutual achievements.

Jeju, the venue of Mg 2015 is a beautiful volcanic resort island. Each year, more than 6.5 million people visit Jeju to enjoy exotic natural beauties, local culture and various leisure activities. As the Chair of Mg 2015, we have no doubt that this conference will prove to be a memorable experience for you both on personal and professional grounds. Click [here](#) for more information and to register for the conference.

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## November Magnesium Review from Metal-Pages

The US market has started to wobble as demand remains lacklustre and is unlikely to improve for the remainder of the final quarter of the year. Spot buying has ground to a halt over the past several weeks after a brief pick up in October and trade sources expect volumes to remain in the doldrums as consumers rundown inventories for year-end accounting purposes.

Pure magnesium in the US, however, remains somewhat supported by a lingering lack of available metal near-by due to a reduction in imports from countries like Russia and Kazakhstan this year, while a shortage of aluminium scrap forced some consumers to switch into other alloying materials like magnesium recently. "There's a general malaise in the market. This time of year is usually quiet anyway because of the Thanksgiving and Christmas holidays," said one trade source.

Although the near-term outlook is weaker, underlying volumes for magnesium remain robust, due primarily to the aluminium alloying sector that continues to be boosted by the automotive industry, while volumes into the extrusions industry are firm amid a pick up in construction. "The spot market has been dead for a while as I think most people are done for the fourth quarter. We're also in a quieter time of the year," said another trader. "But overall I would say the market is still strong, mainly because of the auto side. I also don't think there's huge amounts of material out there."

In November, last minute offers for pure magnesium from Russian shook up US magnesium negotiations for 2015 as suppliers scrambled for the reminding contract business. The unexpected move by Russian suppliers comes as they struggle to sell into the domestic market due to reports of some consumers switching into Chinese magnesium next year, a weaker ruble and lingering issues selling into the Ukraine. "There's still a little bit of contract business out here. I think those people who waited to sign got better deals," said the first trader.

Magnesium is primarily used as an alloy with aluminium, accounting for some 45pc of total world consumption. Another 35pc is consumed in magnesium alloys in structural metals, about 13pc in steel making, with the rest used in electro-chemical and other sectors.

The European magnesium spot market in the past couple of weeks has retreated due to cheaper offer prices from China, the key supplier to Europe. "A lot of it has been Chinese suppliers trying to book some profits before the end of the calendar year, clearing their stocks and accepting lower numbers," one dealer told Metal-Pages.

Longer term, most of the bigger aluminium makers, such as Norsk Hydro, Novelis and Alcoa, are covered for magnesium intake through the next quarter. However, annual deals have yet to be seen due to the shaky recovery in the US economy, and persistent low growth in the euro zone, dealers said.

Consumers of minor metal raw materials such as the steel and aluminium industries have been cautioned due to slower underlying consumption in areas such as construction and cars. Steelmakers and aluminium makers are keen to not hold undue levels of inventories against a backdrop of uncertainty in demand and wider political worries such as the Middle East and Ukraine.

The relatively stable euro has been factored in to magnesium trading in Europe in recent weeks, sources said, with the single European currency fairly steady against the dollar at \$1.25 in the past few weeks.

Dealers in Europe said they expect a relatively stable magnesium market through the rest of this month and in the early weeks of January. However, there may be more Chinese exporters trying to sell material ahead of the New Year celebrations in China on 19 February. Chinese suppliers are usually keen to get some cashflow on their books ahead of that time to pay bonuses and have some holiday money. China dominates world primary magnesium metal production, with the country's production exceeding 730,000t in 2012, equivalent to above 75pc of total supply. The dollar currently fetches some RMB6.15.

The magnesium market in China has bottomed out after four months of stock pressure and thin buying interest from aluminium, powder and alloy industries. Producers have been liquidating stocks in recent months and cut production to in a bid to support the market. The export market is quiet but business is expected to improve in the coming weeks as overseas buyers usually place orders before the Christmas holidays. China's production of magnesium reached 720,971t in the first ten months of 2014, up 9.34pc compared with the same period of 2013, according to the China Non-Ferrous Metals Industry Association (CNIA). Total exports of magnesium metal, powder and alloy between January and October were 357,500t, up 5.76pc against the same period last year, but lower than the increase in production.

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**JMA August Magnesium Newsletter Japan**  
**Vol 24. Covering the news for September 2014**  
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**News in Japan**

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MACRW Co., Ltd. established the small-lot mail order website of magnesium welding materials

**Domestic Magnesium Market - September, 2014**

**News in Japan**

**Japan Science and Technology Agency (JST) adopted 26 subjects including rapidly quenched magnesium**

*(Source: Japan Metal Bulletin 30th Sep., 2014)*

JST recently announced that they determined principal investigators on "Innovative Structure Materials" for 2014 in the Strategic Innovation Promotion Program (SIP). They received 68 applications this time, and adopted 26 subjects including "Development of cellulose nano-fiber-reinforced resins" (Furukawa Electric) and "Development of production key technology of the rapidly quenched magnesium alloy aiming at applying to aircrafts" (Magnesium Research Center, Kumamoto University).

The program "Innovative Structural Materials" develops innovative materials which are strong, light, and heat-resistant, and after that, it will aim at practical use of energy conversion and improvement of use efficiency as well as at practical application to transport machinery such as airplanes and to industrial equipment such as electric generation.

The period of the R&D is up to five years. In terms of the annual expenses, for a growth pole strategy type is hundreds of millions of yen, and for an individual R&D is around 30 million yen.

**Mitsui Kinzoku Die-Casting Technology Co., Ltd. focuses on high thermal conductive products --- mass production of heat sinks by a new alloy**

*(Source: Die-cast Shimbun 30th Sep., 2014)*

Mitsui Kinzoku Die-Casting Technology Co., Ltd., established on 1st July due to the demerge from the die-casting business of Mitsui Mining & Smelting Co., Ltd., focuses more energy on the development of high thermal conductive die-casting products.

To meet rapidly growing needs for weight saving and high heat radiation property in electrical components of automobiles, the company will develop the products by applying an aluminum and magnesium die-casting alloy.

Whereas the fin parts of the current heat sinks for automobile LED head lamps, which is required high heat radiation property, has 1.5 millimeters thick and 45 millimeters high, the company aims to have 60 millimeters in height.

They will make a prototype, and plan to fix the condition of mass production within this year. The background is that higher heat radiation property of the heat sinks is remarkably required due to increased heat quantity as increasing performance of LEDs. They will make efforts in developing high thermal conductive products made of the original magnesium alloy, AM-C. ACM522 has twice as much thermal conductivity as AZ91D and this is approximately equal to ADC12. It has been applied to many oil-pans and others. Compared to this, AM-C has 1.2 times as much thermal conductivity as ADC12, and it has been experimentally applied to heat sinks for automobile LEDs.

**Hashiba International Inc. maintains steady production of trial products in precision gypsum casting**

*(Source: Rare Metal News 1st Oct., 2014)*

Hashiba International Inc., the precision gypsum casting company, handles trial products and small-lot products made of magnesium alloys.

As for making samples, sand casting is widespread method, however, its quality is thought to be poorer than die casting due to its coarse sands. Since the company uses fine powder, the gypsum cast products have finely finished skin, and the quality is approximately equal to die-casting. Customers are able to simulate the shape and the thermal conductivity by gypsum cast trial products before the mass production by die-casting. Recently their sales of the products for medical equipment do well.

Regarding die casting process, pretests before the mass production are very important because it is very expensive to remanufacture or to modify the dies when defects are found. The initial cost of their gypsum casting is approximately one-tenth of the die-casting, and quick delivery within 2 or 3 weeks is available. This is contributing to risk reduction at starting of mass productions and to cost reduction in developments.

**MACRW Co., Ltd. established the small-lot mail order website of magnesium welding materials**

*(Value-Press 3rd Oct., 2014)*

MACRW Co., Ltd. developed the small-lot mail order website [MAGNEYA](#) for magnesium welding materials and started service on 1st October. MAGNEYA will display the products, accept orders from the listed products, and sell a part of them, in Japan Magnesium Exhibition (included in Manufacturing Matching Japan) held at Tokyo Big Sight from Wednesday, October 15th to Friday, October 17th, 2014 and Tokyo International Industry Exhibition 2014 held at the same place from Wednesday, November 19th to Friday, November 21st, 2014.

MAGNEYA handles "the welding trial set" containing pipes, round bars, and welding rods in addition to welding rods such as "AZ31 $\bar{1}$ 1.6mm X 10m, priced at 3,000 yen excluding tax and shipping charge". Though magnesium has been applied to various uses including mobile devices which needs light weight, the expansion rate is very low from the welding viewpoint. One of the reason is that obtaining welding rods is difficult. To meet the voices for easy availability of welding rods, MAGNEYA has taken drastic action to reduce the lot size and the price. Furthermore, by the collaboration with the Kyobashi factory which has an advantage in making websites, MAGNEYA provides information about magnesium and manufacturing-related animations in this website in order to familiarize magnesium, and plans to sell 500 sets a year.

**Domestic Magnesium Market - August, 2014**

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

**Import**

Based on Import/Export Statistics of August 2014, magnesium metal import was 2,348.8 tons (1.5% decrease from the same month the year before), magnesium powder

401.2 tons (58.2% increase) and other products 228.4 tons (831.1% increase). The import of metal category on a year-to-year comparison showed negative values for two consecutive months because the pure magnesium, which had continued to be in good shape for this year, showed down. But, since powder category showed stable restoration and the large amount of products of miscellaneous category were imported from China, the total amount of import in August became 2,898.5 tons (10.9% increase). The breakdown of the metal category was that the pure magnesium was 1,813tons (4.8% decrease on a year-to-year basis), die-casting use was 531.9tons (12.1% increase), casting alloy was 3.8tons (30.7% decrease). The pure magnesium showed the sense of stagnation, and large fluctuations in each month have been recognized in die-casting alloy category, so it is yet to indicate stable growth.

In August, the average import price of pure magnesium was 256.1 yen per kg, which was below the price level 260 yen/kg which has been maintained until then, and it was decrease of 6.6 yen per kg, 2.5% decrease from the month before. For comparison, the price from China was 253.7 yen per kg.

As for the import price of magnesium alloys, it declined to 297.8 yen per kg, 21.0 yen lower than the month before, and became below the price level 300 yen per kg, because alloys thought to be recycled were imported from Thailand.

The total imports of January-August 2014 consisted of 20,637.2 tons of magnesium metal (10.4% increase vs. the same period the year before), 2,949.6 tons of magnesium powder (0.5% increase), and 1,547.8 tons of other products (992.5% increase). The total was 25,134.6 tons (15.5% increase vs. the same period the year before) and indicated favorable recovery in each category.

#### Export

In August 2014, 19.4 tons of magnesium alloys (N.A. % vs. the same period the year before), 2.0 tons of magnesium powder (455.6% increase), and 0.2 ton of other products (96.6% decrease) were exported. In the other products, the export to China was 0.04 tons being at a low level.

The total exports of January-August 2014 consisted of 296.7 tons of pure magnesium and magnesium metal/alloys (12.3% increase vs. the same period the year before), 6.3 tons of magnesium powder (165.8% increase), and 18.5 tons of magnesium products (28.9% decrease).

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## November China Magnesium Industry and Market Bulletin

### We deeply mourned for Mr. Shi Changxu

Mr. Shi Changxu, China's renowned materials scientist, strategic scientist, and national supreme science and technology award winner, died of illness in Beijing on Nov. 10, 2014, at the age of 96. Mr. Shi Changxu, former deputy director of National Natural Science Fund Committee, former deputy director of China Academy of Engineering, senior academician of both China Academy of Sciences and China Academy of Engineering, and honorary director of Institute of Metal Research, also served as honorary adviser of China Magnesium Association.



On the morning of Nov.16, Mr. Shi Changxu's farewell ceremony was held in Beijing. President Xi Jinping, Premier Li Keqiang and other state leaders sent messages of condolence with wreaths.

China Magnesium Association(CMA) sent a wreath. CMA's former president Mr.Wu Xiuming, former vice president and secretary general Mr.Meng Shukun, Sunlight Metal's GM Mr.Chunming and director of National Engineering Research Center for Magnesium Alloy Mr.Pan Fusheng made special trip to the scene, on behalf of magnesium industry, made the last farewell to Mr.Shi Changxu, and recall the in-detail care and support Mr.Shi Changxu did in decade to magnesium industry.

The passing away of Mr. Shi Changxu made science and technology workers and partners from magnesium industry very painful. As we all know, Mr.Shi Changxu very cared about and supported the development and R & D of magnesium industry for nearly 10 years. He also served as honorary adviser Of China Magnesium Association, China Nonferrous Metal Industry Association. Very often he participated in the activities of magnesium industry and made instructions and guidance. In 2000, he, with other 4 academicians, applied the Ministry of Science and technology for the development of magnesium by listing magnesium industry as important project of science and technology in the national 10th five year plan, then in 11th and 12th five year plans. In 2002, he made inscription on the initiation of China Magnesium Association, and put forward, from a strategically

advantageous position, the conclusion that vigorously developing magnesium material is an important guarantee of sustainable development. In Apr. 2004, he specifically wrote preface for the "China Development Forum on Magnesium", put forward that magnesium will become the focus of material development in twenty-first Century, personally attended the forum and made report. In Jan. 2012, he wrote the preface for China magnesium industry progress chiefly edited by Mr. Meng Shukun, and hoped government departments and science and technology personnels should pay more attention to the magnesium, which made magnesium industry more prosperous.

Mr. Shi Changxu, from the perspective as materials expert, made scientific judgment on advantages and potential development of magnesium material. Through his influence and appeal in China's scientific community, he supported and promoted the substantive development of magnesium material R & D and industrialization. Today, the master is gone, let us revisit his knowledge and perspective on magnesium material, on China's magnesium industry guidelines and expectations for the future. Let us hold the industrial oasis in face of difficulty and challenge, overcome a variety of obstacles, carry out integrated innovation, and make magnesium material and magnesium industry more benefits to society, mankind, environment and the future. (Contributed by Mr.Dongchunming)

### A visit to the magnesium integration project by Qinghai Salt Lake Industry Group

(Contributed by Mr.Dongchunming, chief editor of CMIMB and GM of Sunlight Metal)



On Nov.13-14, we made a special trip to Qinghai and visited the magnesium integration project drawn domestic and international attention and carried out by Qinghai Salt Lake Industry Group. We inquired the overall planning and construction progress of the project, researched into the advantages and influence on global magnesium pattern. We learned that 100kt/a of primary magnesium facility will come into trial operation in H2(2015), and expected that year 2016 will see large quantities of raw magnesium into the global market. Here we share some of its information and pictures.

The project is an important part of comprehensive utilization of sodium and magnesium resources for Qinghai Saline Lake Industry. It, based on the Chaerhan Saline Lake and relying on the rich mineral resources in Qaidam Basin, develops magnesium as the core and, at the same time, potassium resource, employs chlorine as the precondition, with coal as the support and natural gas as the auxiliary, and builds the circular economy chain in the Saline Lake area with prominent theme and feature. The project will realize the integrated development of salt chemical, coal-based chemical, natural gas chemical, and nonferrous metal smelting industries. Among them, magnesium facility, using as raw material the brine generated from potash production process in Salt Lake Industry, employs advanced electrolysis technology from Hydro (Norway), makes anhydrous magnesium chloride with brine dehydration under hydrogen chloride atmosphere, and then transfer magnesium chloride into magnesium through electrolytic process.

Overall project, with total investment at 60 bln. yuan, covers 400kt/a of magnesium, 2000kt/a of soda ash, 2800kt/a of methanol, 2400kt/a of coke, 2800kt/a of MTO olefin, 400kt/a of polypropylene, 2000kt/a of PVC, and 100kt/a of calcium chloride, with auxiliary heating supply center.



Currently, the early start-up projects, attracting 27.8 bln. yuan of investment, include 100kt/a of magnesium, 1000kt/a of methanol, 1000kt/a of MTO olefin, 160kt/a of polypropylene, 800kt/a of PVC, 1000kt/a of soda ash, 2400kt/a of coke, 800kt/a of calcium carbide, and 100kt/a of calcium chloride, with supporting 2400T/H+320MW heating supply center.



View of primary magnesium workshop

According to the managerial persons from Saline Lake Magnesium, magnesium integration project started construction in Jul. 2011. By now, 23 bln. yuan has been invested, and 12 facilities have been fully started, while 4 facilities (coal washing, coking, soda ash and heat supply center) have gone into test run, with 110KV station also entering the trial operation. Concurrently, methanol facility comes into debugging progress, and under construction are magnesium, calcium carbide, PVC, MTO and other projects. Among them, brine dehydration workshop will soon conclude its civil construction, brine purification workshop is under trial test, and electrolytic workshop will, by the end of this year, see the completion of all equipment installation. Will come on stream the relevant project by H2(2015).



Electrolytic Workshop

From the beginning of year 2016, we expect large quantities of magnesium from Salt Lake Industry, the coming largest magnesium producer worldwide, will enter the domestic and foreign markets. With the construction and operation of the follow-up No.2 and No.3 phase projects, Qinghai Salt Lake Industry, possibly increasing its magnesium output up to 400kt/a in 5 years, will have a huge impact on the pattern of global magnesium industry.

The magnesium project has unique advantages, with a high planning point, new industry model, large scale and sustainability. It is a giant rising from magnesium industry, and represents the future direction of magnesium development. According to the introduction of enterprises and scene explanation, its advantage can be summarized into five aspects:

Firstly, magnesium resource in Salt Lake is unique with abundance. The use of waste liquid brine from potash fertilizer production is of waste use, conducive to environmental protection, and also makes the lowest cost of raw material.



Secondly, it combines other resources, including coal, coking coal, natural gas and limestone with magnesium, along with abundant energy advantages and convenient transportation conditions.

Thirdly, it is a perfect integration of industrial chain, closely linked with typical circular economy and comprehensive utilization of resources and, realizes energy multi-level utilization, improves the resource efficiency, and reduces the negative impact on the environment.

Fourthly, because the project, through electrolytic process, mainly adopts clean energy, including hydropower, thermal power, photovoltaic power and natural gas, the production of magnesium gives off lower carbon emission, estimated at less than 6.5 kg per kilogram of magnesium, significantly lower as for Pidgeon level. This will help reduce the carbon footprint of magnesium materials, and in the good position in LCA and lightweight.

Five, the direct cost of magnesium and its final products is relatively low, and the cost of raw materials affected by external factors is small with strong controllability. Its higher automation, higher than existing plants, only employs 650 persons for 100kt/a of capacity, indicating higher labor productivity. With the expansion completion of phase 2 and phase 3 projects, scale benefit of magnesium production will gradually appear. We believe its operating costs will be gradually reduced, and the coming advantage will be further demonstrated.



Casting Workshop

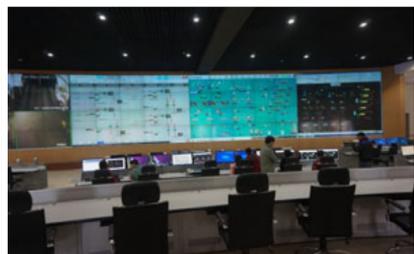
We learned that Salt Lake Magnesium Industry signed cooperation agreement with Magontec. As a global leading manufacturer of magnesium alloy, Magontec will invest 1.1 bln. USD to construct 2 magnesium alloy lines just next to the electrolytic line, and

directly makes magnesium alloy using magnesium electrolyte, with capacity 56kt/a, which will greatly improve the Magontec's supply capacity of magnesium alloy, reduce the carbon emissions of Magontec's products. Magontec's magnesium alloy facility locates in the same building as Salt Lake Magnesium Industry's magnesium ingot casting line. By now the factory infrastructure has been basically completed.

We feel at the scene that the project is of large scale, and 12 facilities, at the same time, are under construction. The 7.8 square kilometers building site is busy everywhere, with shuttling vehicles, netting pipelines and a large number of well-placed raw materials and goods. According to the introduction, the whole project attracts 22 design institutes and more than 60 construction companies. At its busiest time, there are more than 20000 workers on the site. It can be imagined that, because of extensive industrial chain, complex process and difficult construction, Salt Lake Group has paid a great effort on this project. Large investment indicates huge pressure, challenge and more expectations. They, through the careful organization and strict management, continue to promote the implementation of the project and strives for its early completion.



Dehydration Facility



Control Center



Facility on Stream



Chaerhan Lake

In any case, a large magnesium producer, either from global or from domestic view point, is on the way toward us quickly, and soon makes its high-profile debut. It, along with most of enterprises in the magnesium industry, will also accept the market test. The competitive pattern of magnesium industry will once again have the new changes in the near future. Each participant will really feel the effects of this upcoming time on magnesium industry and market, and face the new competition environment.

However, the magnesium industry will keep moving forward. Let's honor and bless all persons who make their unremitting efforts and struggle for magnesium industry!

#### Guangzhou Magnesium, with Solomo, promotes integral wheel bicycle of magnesium alloy

Guangzhou Magnesium is a professional and high-tech enterprise that makes bicycle hub out of magnesium alloy. The company, according to the light weight, high strength, shock absorption and noise reduction characteristics of magnesium alloy, focuses on promoting the magnesium alloy application in civil products.

The company integrates alloy product development, mold design & manufacturing with die casting, alloy extrusion, deep processing and marketing, and boasts professional design, production and processing team. Its integral wheel of magnesium alloy passed through SGS and CE certifications, with a number of patents.

In recent years Guangzhou Magnesium develops rapidly. In just a few years, it cooperates with a number of well-known brands of bicycle producers including Permanent, Phoenix, Xi Desheng, Eagle, Langtu and Qinlida. Against the background of an increasingly competitive market, magnesium alloy integral wheel stands out with fashion personality, beautiful appearance and green environmental protection, and becomes the new favor of market. In Sep.2014, Guangzhou Magnesium reached a cooperation agreement with the international well-known brand Solomo Bicycle. Solomo now also see the trend of sports apparatus for magnesium alloy, and both parts will, based on the advantage of magnesium alloy, jointly develop integrated bicycle wheel project.

### **National high-tech industrial base in Wansheng, Chongqing, takes shape**

National high-tech industrial base in Wansheng, Chongqing, comes into shape:

Firstly, it expands to the area of 3.3 square kilometers, with full water, electricity, gas, road and other infrastructure. Secondly, 5 enterprises settle in the base, including Shengmei Magnesium and Boao Magnesium; Output value of magnesium industry in the first three quarters reached 0.21bn.yuan, a CAGR of 55.6%, and tax income 7.59 mln.yuan, a CAGR of 211%. Thirdly, it establishes the first primary magnesium and alloy recycling line, with 1.5kt/a of primary magnesium in southwest China, performs IWAY standard, and passes the ISO/TS 16949 quality management system certification. Fourthly, it sets up Magnesium Industry Design Center, with coming Magnesium Industry Museum, and creates the industrial chain of R & D, production, testing and sale. Fifthly, it, with the platform from both Chongqing University and Chongqing Institute of Science & Technology, carries out R & D of national magnesium alloy technology program. By now, it prepares ten standards including the safety standard on magnesium alloy die-casting production, and standard on 3C products, and applies 10-plus patents including heat treatment process of increasing magnesium alloy strength and plastic property.

### **National Cheng Kung University (NCKU) successfully develops new generation of magnesium battery**

Prof. Hong Feiyi, Prof. Lv Chuansheng and Prof. Chen Lihui from School of Materials Science and Engineering, Tainan National Cheng Kung University (NCKU), along other researchers, have, over the years, been committed to the magnesium battery. Recently they develop a new generation of magnesium battery, a breakthrough to solve such problem of lithium battery as slow charging and small storage capacity. In the future, the new battery is expected to replace the traditional lithium battery. Prof. Hong Feiyi says that the new magnesium battery, with safety, stability, high efficiency, high capacity, environmental protection and low cost, can also work normally even in extreme conditions.

The research team adopt controlled reduction mechanism, overcome the shortcomings of high active magnesium, greatly improve the security and stability of magnesium battery, i.e. the vehicle installed magnesium battery will not have the risk of explosion even in the event of collision. They, through some manufacturing technology, strengthen the interaction of current within magnesium cell and replace the anode material of battery. So the capacity of new generation of magnesium battery substantially increases up to 8 to 12 times as many as traditional lithium battery, while charge discharge efficiency is enhanced by 5 times. With the electric bicycle for example, traditional lithium-ion batteries, from zero to full charge time, at least spends 3 hours, but only 36 minutes for the new magnesium battery.

Negative electrode, within traditional lithium battery, is made out of graphite carbon from distilled petroleum, and the process of oil production and refining is also more energy consumption. Electrode of new magnesium battery is natural wood charcoal and bamboo charcoal material through nano crystalline process, so the new battery performs higher in environmental protection.

In addition, lithium battery, usually, is not of normal work in the condition under 15 degrees, but the new magnesium battery can work normally within -30 to +50°C degree. One technology partner, entrusted by NCKU, successfully commercializes the production of new battery with monthly output at about 5t. The new invention, at present, has applied for a patent in Taiwan.

### **Shaanxi Magnesium Technology Innovation & Strategic Alliance was formally unveiled in Shenmu**

Recently, Shaanxi Magnesium Technology Innovation & Strategic Alliance, including 28 members, was formally established in Shenmu. It is mainly initiated by Shenmu Dongfeng Magnesium, along with Yulin Productivity Promotion Center, Chongqing University, Northwestern Polytechnical University, Northwest Institute for Non-ferrous Metal Research, Yulin College, Fugu Magnesium Industry Group, and Hengsheng Magnesium. It is also the third major technical innovation alliance, following Shaanxi 3D Printing Technology Innovation Alliance, and Shaanxi Cloud Computing Technology Innovation & Strategy Alliance.

Shaanxi has 51 magnesium smelting enterprises, 50 of which locate in Yulin. In 2013, output of magnesium was 343.3kt, accounting for 45% of national total, or 37% of global total. Magnesium industry in Shaanxi, for many years, ranks top in terms of the number of enterprises, production capacity, actual output, market share and export, with ever growing trend.

The Alliance will aim to develop environmental-friendly magnesium smelting and alloy processing industry, build a cooperative and technological innovation platform for magnesium and magnesium alloy, accelerate the construction of technology innovation system, guide and support innovation elements in magnesium industry, and enhance the efficient and sustainable development of magnesium industry in Shaanxi.

### **Yunhai Special Metals plans to full acquire Yangzhou Ruisile Composite Metal**

Yunhai Special Metals announced on Nov.12 evening that the company plans to fully acquire Yangzhou Ruisile Composite Metal.

Upon the completion of transfer, Yunhai Special Metals will, according to related articles, pay 5 mln. Yuan of capital. Yangzhou Ruisile Composite Metal, which runs well so far, mainly engages in the production, processing, installation and sale for aluminum alloy profile, mold, aluminum alloy motor casing and accessories, aluminium alloy door, window, building doors and windows and curtain wall

Yunhai Special Metals said, by fully acquiring Yangzhou Ruisile Composite Metal, an aluminum alloy extrusion producer, Yunhai Special Metals can develop toward deep processing, and improve its overall profitability.

After the completion of acquisition, Yangzhou Ruisile Composite Metal will become a wholly-owned subsidiary of Yunhai Special Metals.

### **Output of primary magnesium by Oct. hit 721kt, up 9.34% y-on-y**

Data from China Nonferrous Metal Industry Association show that output of primary magnesium by Oct. 2014 hit 721kt, up 9.34% y-on-y.

Of which Shaanxi contributed 330.2kt, up 13.91%; Shanxi 208.2kt, up 1.85%; Ningxia 78.5kt, down 14.47%; Xinjiang 35kt, up 75.86%; Henan 37.5kt, up 10.94%; Jilin 4.9kt, down 30.74%; Sichuan 4.3kt, up 88.32%; Inner Mongolia 4.5kt, down 50.56%; Qinghai 10kt, up 667.48%, and Liaoning 8kt, up 32.5%.

As shown above, output of primary magnesium from Jan. to Oct. maintained up trend, especially in Shaanxi, followed by Xinjiang, Henan, Sichuan, Inner Mongolia, Qinghai and Liaoning but these regions take few market share as for magnesium output.

### **Primary magnesium price plunged into lowest level**

Entering the fourth quarter, primary magnesium prices went down all the way in China. Magnesium ingot fell from 14350 yuan /t in late Sep. to 13200 yuan/t in late Oct., down 8%. Concurrently, its FOB price declined from 2460USD/t to 2400USD/t. Now, domestic ingot price plunged to the lowest since July 2006, and returned the level as 8 years ago. The market prevails over more pessimistic sentiment.

Although magnesium price hit 8 years' lowest, the cost for water, electricity and labor is far higher than 8 years ago. As a result, magnesium enterprises run into a loss in a serious situation. Such a situation comes from many factors including fund shortage and overcapacity against depressive economy. Magnesium industry, in the background of macro-economy along with financial risk and debt risk from long-term excessive investment, is difficult to run well. Other industries, which, closely related to magnesium industry, include steel, aluminum and titanium sectors, all encounter austere challenge. The road ahead is, to large extent, full of frustrations. All participants should deeply understand the situation and make their plans.

Because magnesium price plunges down, magnesium plants are in a loss, but, given large stock in both plants and markets, magnesium price is maybe difficult to further decline, and we believe Dec. 2014 will see stable price.

A magnesium factory manager said, "We adhere to run factories, only aiming to maintain enterprise cash flow and a continuous chain of funds, but where is profit? Even it is fortune if there are enterprises that can produce and sell magnesium ingot. It is lucky because customer can buy magnesium, but we hope they don't bargain again. Otherwise, if a few factories, due to serious losses, are forced to stop production, the customer may be hard to buy magnesium! "

Mr. Dong Chunming, a senior researcher on magnesium industry, believes that, given more than 60% of magnesium production mainly concentrates in both Fugu and Shenmu, Shaanxi Province, market supply will meet some risks, because producers in these region all employ semi coke gas as fuel and may further cut down their production, against difficult sale in semi coke and shrinking magnesium price.

However, from another perspective, magnesium prices continued to remain at low levels. Perhaps, this is a new starting point to expand the application of magnesium. How to take advantage of the opportunity and promote the integration of magnesium application, is a urgent issue that lies ahead of industry organizations and industry chain participants. At the moment, we need to take effective and practical effect (Contributed by Mr.Dong Chunming).

**Export of magnesium product in Oct.2014**

Data from China Customs show export of magnesium product in Oct. ended at 31.92kt, down 10% m-to-m. As for the past 10 months, only Feb. saw export at 22kt, while other 8 months each exceeded that in Oct.

The export from Jan.to Oct. hit 357.5kt, up 5.76% y-on-y, but H3(2014) saw further shrinkage in growth rate, especially in Oct. as indicated in the following table.

From Jan. to Oct., export of magnesium ingot ended at 184.6kt, up 5.95%. Of which, magnesium alloy at 88.8kt, up 7.02%; powder at 72.6kt, up 1.74%; magnesium wrought at 3.2kt, down 15.51%; and magnesium article at 5.8kt, up 18.645.

As shown above, magnesium export, from Jan. to Oct., generally maintained uptrend, but further shrinkage in growth rate.

**Export of magnesium products closed in October in China (Unit: t)**

Item	Magnesium unwrought (min.99.8%)	Other magnesium and alloy unwrought	Waste and scrap	Magnesium raspings/turnings/granules according to size & powders	Magnesium wrought	Magnesium articles	Monthly total
HS code	81041100	81041900	81042000	81043000	81049010	81049020	
Jan.	21732	12595.3	242.4	9304.7	490.1	476.2	44840.7
Feb.	11844.3	5898.5	209.7	3911	209.8	393.9	22467.2
Mar.	24607.2	9323.1	447.8	8858.7	512	389.5	44138.3
Apr.	20023.5	8624	147.9	9074.5	319.8	643.2	38833
May	16793.5	9041.1	433.7	7373.1	190.3	963.2	34740.9
Jun	16949.8	10150.8	286.4	7278.9	234.2	619.5	35519.7
Jul	18445.9	9232	289.9	6862.9	196.9	507.8	35535.5
Aug.	17975.3	8024.9	113.8	6918.4	373.2	632.5	340378
Sept.	19593.69	8249.17	0	6720.33	329.1	592.53	35484.81
Oct.	16676.4	7655	327	6333.8	362.8	560.9	31916.8
<b>Total</b>	<b>184587.7</b>	<b>88794</b>	<b>2499.6</b>	<b>72636.3</b>	<b>2318</b>	<b>5779.1</b>	<b>357514.8</b>

**Magnesium ingot price by Sunlight Metal (unit: yuan/t)**

	Fugu	Wenxi	Taiyuan	Ningxia	FOB(Tianjin) USD/t
Aug.2	14500-14600	14800-14900	14700-14800	14700-14900	2490/2560
Aug.9	14500-14600	14800-14900	14700-14800	14700-14900	2490/2560
Aug.16	14350-14450	14650-14750	14550-14650	14550-14750	2480/2550
Aug.23	14350-14450	14650-14750	14550-14650	14550-14750	2480/2550
Aug.30	14350-14450	14650-14750	14550-14650	14550-14750	2480/2550
Sept.6	14350-14450	14650-14750	14550-14650	14550-14750	2480/2550
Sept. 13	14350-14450	14650-14750	14550-14650	14550-14750	2480/2580
Sept. 20	14350-14450	14650-14750	14550-14650	14550-14750	2480/2580
Sept. 27	14350-14400	14650-14700	14550-14600	14550-14700	1460-2530
Oct. 4	14350-14400	14650-14700	14550-14600	14550-14700	2460/2530
Oct. 11	14300-14400	14600-14700	14500-14600	14500-14700	2460/2530
Oct. 18	14250-14350	14550-14650	14450-14550	14450-14650	2450/2520
Oct. 25	14100-14200	14400-14500	14300-14400	14300-14500	2430/2480
Nov. 1	14000-14100	14300-14400	14200-14300	14200-14400	2430/2480
Nov. 8	13900-14000	14200-14300	14100-14200	14100-14300	2430/2460
Nov. 15	13600-13700	13900-14000	13800-13900	13800-14000	2420/2450
Nov. 22	13300-13500	13600-13800	13500-13700	13500-13800	2420/2450
Nov. 28	13200-13400	13500-13700	13400-13600	13500-13700	2400/2430

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 5 years running. For more detail and inquiry, pls. contact us at [info@chinamagnesium.net](mailto:info@chinamagnesium.net)

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