

## Executive Director Report



Takashi Saito, Executive Director

Dear Friends:

Your successive cooperation with our JPMA would be much appreciated.

In April of last year, the JPMA 60<sup>th</sup> anniversary was celebrated by men and women of broad ages PM related people with reviewing delightfully the JPMA history and enjoying the party.

In October, JPMA delegation joined the World PM 2016 held at Hamburg, Germany.

At the opening ceremony, an opening greeting were addressed by APMA/JPMA President Mr. Isamu Kikuchi.

In the afternoon of the second day of the Conference, the annually held APMA Board Meeting was held there with the representatives of India, China, Japan, Korea, and Taiwan, and they reported about preparing conditions for APMA 2017 and World PM 2018, and general PM conditions of each member country, and discussed about APMA financial condition and 2017 budget. The APMA Board Meeting of 2019 is decided to be held at the site of APMA 2019 in India.

After the APMA Board Meeting, Tripartite Meeting of Europe, North America and Japan was held, and they announced about PM condition of each area. Chinese representatives were invited to the meeting at its beginning, and reported and communicated about the preparing condition for the World PM2018 Beijing. At the third day lunch time, the World PM Conference Button was conveyed from Germany to China at a hall, where Chinese representative provided

World PM2018 promotion performances. Conference participants enjoyed a traditional Chinese pugilism boxing and traditional music together with Tsingtao beer.

Though rainy days continued, the Conference tour was organized to German historical and cultural places such as dating back to Hanseatic League that provided us with very valuable knowledges. We would like to express sincere thanks to EPMA members for their nice arrangement through this space.

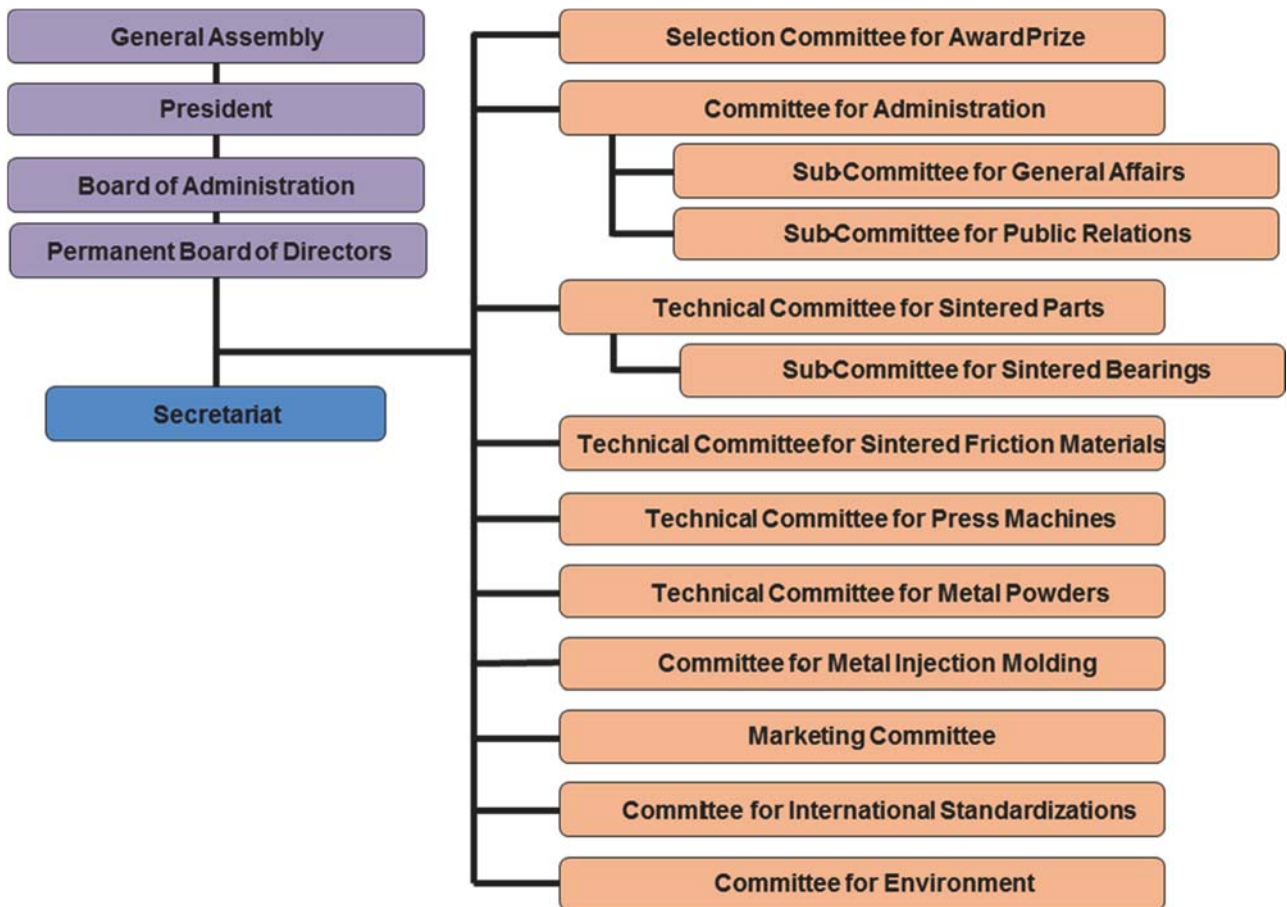
Now, in comparison with a decrease of 0.8% over last year of locally produced quantity of automobiles which are main PM product consumer, the decrease for the same period of locally produced weight of PM machine parts and bearings was 1.5%, that is substantially influenced by the decrease of automobile products.

As for the Japanese economy in 2016, in spite of introducing Negative Interest to the Market, consumer spending was sluggish, and export industries including automobile products went down along with stronger Yen progressing. However, the condition of strong Yen changed to weak Yen/ strong Dollar since the Republican President of the United States won the Presidential Election in November. Together with this result, prices of Japanese stock of export industries leading enterprises raised up, which provided not a little benefit to local economies.

Under those market surroundings, the JPMA is positively working for unifying standards, standardization or coping with environmental technologies. These continuous activities would result very well in PM product progress and PM industries promotion, we believe.

Finally, please access the English version of JPMA web site (<http://www.jpma.gr.jp/>), that provides the newest information about our activities and JPMA awarded products of every fiscal year.

## Organization of JPMA



## Board Members

### President

Mr. Isamu Kikuchi

Chairman

PORITE CORPORATION



### Executive Director

Mr. Takashi Saito

Japan Powder Metallurgy Association

### Permanent Board Members

□ Mr. Tetsuya Hayashi

SUMITOMO ELECTRIC INDUSTRIES LTD.

□ Mutsumi Yasutake

DIAMET CORPORATION

□ Mr. Takuya Hirano

Hitachi Chemical Co., Ltd.

□ Mr. Yoichi Inoue

FINE SINTER CO., LTD.

□ Mr. Shinichi Kondo

KOBE STEEL, LTD.

□ Mr. Carl-Gustav Eklund

Höganäs Japan K.K.

### Board Members

□ Mr. Junichi Takahashi

IWAKI DIECAST Co., Ltd.

□ Mr. Mikio Fujihara

Tungaloy Corporation

□ Mr. Hiroshi Takahashi

Tokai Carbon Co., Ltd.

□ Mr. Masayoshi Nishimura

Fukuisinter Co., Ltd.

□ Mr. Akihiko Hamano

JFE Steel Corporation

□ Mr. Hajime Takahashi

Daido Steel Co., Ltd.

□ Mr. Atsushi Nagano

Dowa Electronics Materials Co., Ltd.

□ Mr. Masanori Kishima

Nippon Atomized Metal Powders Corporation

□ Mr. Syuzo Sonoda

FUKUDA METAL FOIL & POWDER CO., LTD.

□ Mr. Masanori Uchida

Mitsubishi Materials Techno Corporation

### Auditor

□ Mr. Masaaki Matsumoto

Tungaloy Corporation

□ Mr. Toshiharu Takahashi

Dowa Electronics Materials Co., Ltd..

### JPMA Secretariat

□ Mr. Yusuke Watanuki (Manager)

General Assembly, Committees, Events, Web, Publication

□ Ms. Aoi Yamanaka (Staff)

Statistics, Events and General affairs

□ Ms. Tokie Sakamoto (Staff)

Accountant and General affairs

## Activities of Committees

### Selection Committee for Award Prize

Number of Committee Members: 14 persons



**Chairman: Mr. Tetsuya Hayashi**  
(SUMITOMO ELECTRIC INDUSTRIES LTD.)

**New Chairman**

\*Selection Committee for JPMA Award (Development Prize)



New Design

Development of Hybrid magnetic material reactor core for booster.

NTN Advanced Materials Corporation

### Committee for Administration

Number of Committee Members: 22 persons

#### Sub-Committee for General Affairs

Number of Committee Members: 7 persons



**Chairman: Mr. Kazunori Kato**  
(FINE SINTER CO., LTD.)

**New Chairman**

\*Planning and operating of the PR meeting “JPMA Awards Special Session” at JSPM Spring Meeting in May

\*Planning and operating of “the tour of Committee for Administration”.

\*Publication of the report “Analysis of investigation results of sintered parts demand structure 2015” in June.

\*Edition of the Brochure “2015 JPMA Annual Report (English)” and “2015 JPMA Annual Report (Japanese)” in May and July.

\*Planning and operating of “19th Metal Powder and Equipment PR Meeting” and “34th Case Studies on Improving Production Efficiency Meeting in November.

\*Planning and operating of “PM information Exchange Meeting”.

### Sub-Committee for Public Relations

Number of Committee Members: 8 persons



**Chairman: Mr. Sanpei Seki**  
(PORITE CORPORATION)

**New Chairman**

\*Planning of operating of “4th Human resources development seminar”.

\*Publication of JPMA News “Funmatsu Yakin” (No385-388).

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## Technical Committee for Sintered Parts

Number of Committee Members: 9 persons



**Chairman: Mr. Atsushi Okuma**  
(PORITE CORPORATION)

**New Chairman**

- \*Discussion of the matter for ISO/TC119 and SC3.
  - \*Deliberation of update of the JPMA Standard.
  - \*Planning and operating of “Joint Meeting by three technical committees”.
  - \*Planning and operating of the Plant tour for new markets.
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## Sub-Committee for Sintered Bearings

Number of Committee Members: 3 persons



**Chairman: Mr. Yoshinari Ishii**  
(DIAMET CORPORATION)

**Commission from 2014**

- \*Deliberation of standardization of the PV value.
  - \*Inter laboratory test of the PV value.
  - \*Update of Bearings Website.
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## Technical Committee for Sintered Friction Materials

Number of Committee Members: 3 persons



**Chairman: Mr. Yoshihisa Ueda**  
(FINE SINTER CO., LTD.)

**Commission from 2010**

- \*Exchange of Information for Friction Material.
  - \*Planning and operating of “Opinion Exchange Meeting among Young Workers of Sintered Friction Materials Companies”.
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## Technical Committee for Press Machines

Number of Committee Members: 6 persons



**Chairman: Mr. Hideo Sato**  
(Mitsubishi Materials Techno Corporation)

**New Chairman**

- \*Exchange of Information for defect case of Press.
  - \*Exchange of Information for newfangled Press machine.
  - \*Planning and operating of “Joint Meeting by three technical committees”.
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## Technical Committee for Metal Powders

Number of Committee Members: 15 persons



**Chairman: Mr. Akio Sonobe**  
(JFE Steel Corporation)  
Commission from 2010

- \*Discussion of Matter for ISO/TC119/SC2.
  - \*Introduction of topics about “Metal Powder” by Committee members and exchange of views.
  - \*Planning and operating of “Joint Meeting by three technical committees”.
  - \*Verification of measurement difference of Laser diffraction methods.
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## Committee for Metal Injection Molding

Number of Committee Members: 11 persons



**Chairman: Mr. Junichi Takahashi**  
(IWAKI DIECAST CO., LTD.)  
Commission from 2014

- \*Investigation of the Japanese MIM market.
  - \*Planning and operating of MIM PR seminar.
  - \*Planning and operating of “MIM Lecture Meeting for Users” and “Opinion Exchange Meeting among Young Workers of MIM Companies”.
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## Marketing Committee

Number of Committee Members: 14 persons



**Chairman: Mr. Kiyotaka Inoue**  
(SUMITOMO ELECTRIC INDUSTRIES LTD.)  
New Chairman

- \*Introduction of topics by Committee Members and exchange of views.
  - \*Introduction of Information Gathering of User Market and Other Market.
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## Committee for International Standardizations

Number of Committee Members: 7 persons



**Chairman: Mr. Tetsuya Sawayama**  
(KOBE STEEL, LTD.)  
Commission from 2012

- \*Attendance of 2016 ISO/TC119 Meeting in Berlin, Germany.
  - \*Discussion of related matters for TC119, SC2 and SC3.
  - \*Confirmation of update status in MPIF Standard.
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## Committee for Environment

Number of Committee Members: 5 persons



**Chairman: Mr. Motonobu Isaka**  
(DIAMET CORPORATION)

Commission from 2014

\*Investigation of 2015 follow-up survey for “Voluntary Action Plan for Environment of PM Industry”.

\*Introduction of Case Study of “CO<sub>2</sub> Emissions Reduction”, “Waste Product Reduction” and “KANKYO HIYARI”.

\*Establish of the “Environment Awards”.

## JPMA Events and International Communications

### 13, January

Gathering of 2016 New Year Greeting and Ceremony of Awarding Various Honors in 2015.

### 18, March

The 11th PM Information Exchange Meeting.

### 20, April

Tour of Technical Committee for Sintered Parts. IHI Corporation.

### 27, April

The 60th Anniversary party.

### 19, May

2016 JPMA General Assembly.  
The 2016 Activity Plans and Budget of JPMA.

### 24, May

JPMA Special Session at the JSMP Spring Meeting.

### 16, June

Tour of Committee for Administration.  
Kirin Brewery Company, Limited Toride Plant and Shibamura-syouyu Co., Ltd..

### 24, June

11th MIM Seminar.

### 1, July

4th Human resources development seminar.

### 22, July

The 2nd Opinion Exchange Meeting among Young Workers of Sintered Friction Materials.

### 15-16, September

The 7th Opinion Exchange Meeting among Young Workers of MIM Companies.

### 9-13, October

World PM2016 Congress & Exhibition in Hamburg.

### 11, October

APMA, 8th Board Meeting.  
EPMA/MPIF/JPMA Meeting.

### 20, October

2016 JPMA Fall General Assembly.  
Announcement of 2015 JPMA Awards.

### 17, November

The 34th Case Studies of Production Efficiency Improvement Meeting and the 19th Metal Powder and Equipment PR Meeting.

## JPMA Publications

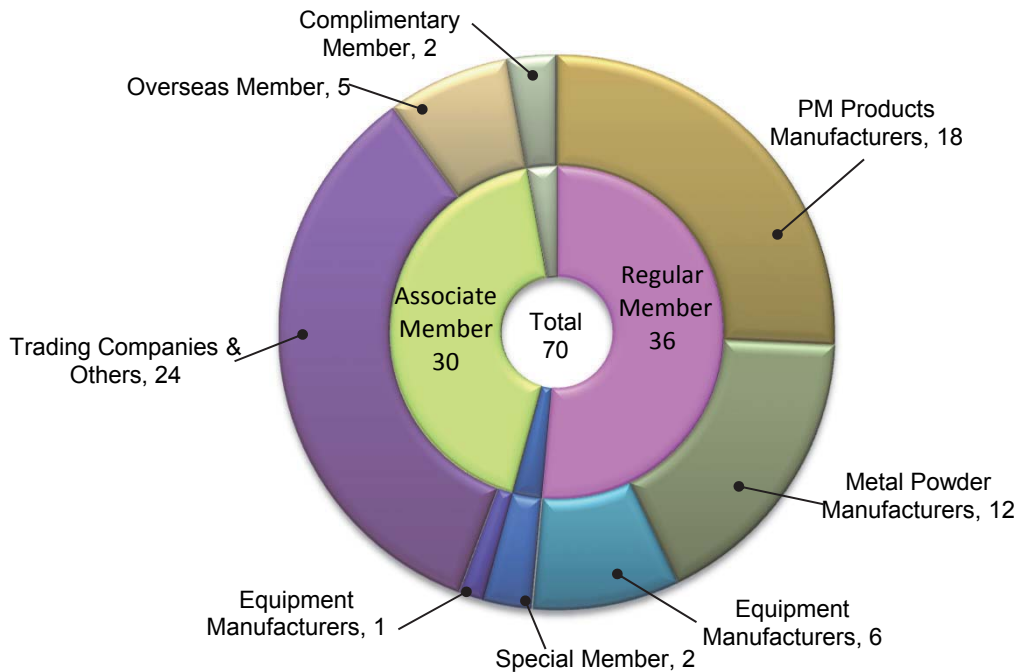
JPMA 60th Anniversary “Funmatsu Yakin Rokuju-yu-nen (60-year history of JPMA)”.

The 37th Investigation Collection Results of Sintered Parts Demand Structure.

JPMA Report, 2015 (English and Japanese).

JPMA News “Funmatsu Yakin” (No385-388).

## JPMA Membership



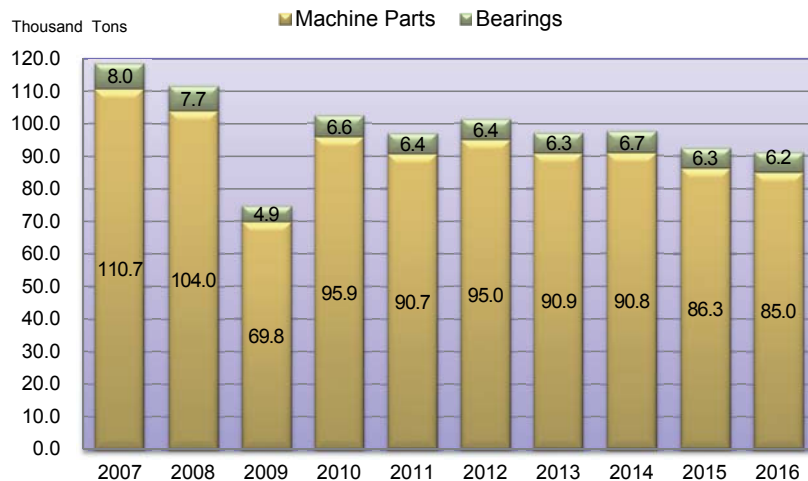
## Statistics of Japan

### Production of PM Products in Japan

Fig1 shows the production volume change of Machine Parts and Bearings for the period from 2007 through 2016.

In 2016, Machine Parts volume was 85,040 ton, 2.4% decrease from the previous year. Bearings volume was 6,227 ton, 0.9% decrease from the previous year. As the other products, Friction Materials volume was 596 ton, 9.7% decrease from the previous year. Electric Contacts volume was 65 ton, 12.2% decrease from the previous year.

Fig1. Production of Machine Parts and Bearings (Calendar Year) (Source: METI)





## Machine Parts and Bearings

Fig2 shows the analysis of demand for Machine parts and Bearings for the period from 2007 through 2016.

In 2016, Machine Parts Production volume for Vehicles was 80,405 ton, 1.0% decrease from the previous year.

The domestic production volume of vehicles (automobiles, including motor cycles), vehicles is the major market of sintered parts, also decreased by 1.0%, which is almost linked to the decrease of the Machine Parts' production volume. In 2016, there was production decline due to temporary shutdown by vehicle manufacturers because of the Kumamoto earthquake, camouflage affair of fuel consumption rate data by some automobile manufacturers, etc., but Machine Parts' production picked up in the latter half of the year, resulting in a slight decrease in production volume.

In 2017, we have a view that the Machine Parts' production volume will be flat or decreasing slightly since the domestic market of vehicles is concerned to have a trend of shrinking and the trend of overseas production does not change.

On the other hand, regarding the overseas exports, although foreign countries still seem to be under political and economic uncertainties, it is expected to grow generally.

Production volume of Bearings for Vehicles was 4,029 ton, 0.2% increase from the previous year.

Fig2. Analysis of Demand for Machine Parts and Bearings (Calendar Year) (Source: METI)

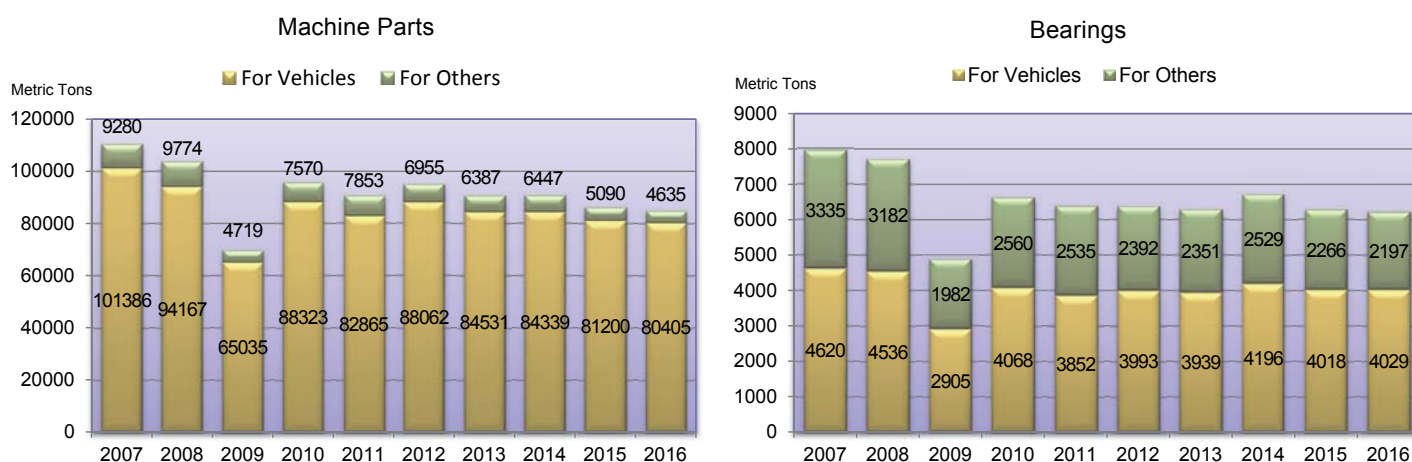


Fig3 shows the use breakdown of Machine parts and Bearings in vehicle in 2015 based on the demand structure survey by JPMA.

54.4% of Machine parts were for engine use, the groups of sintered parts adopted in our market are the same as before. And although there is no remarkable evolution of innovative technology, we strive to ensure reliability by establishing process technology furthermore that guarantees product quality while simultaneously achieving the energy conservation and cutting cost in process.

Fig3. Breakdown of Machine Parts and Bearings for Vehicles (2015) (Source: JPMA)

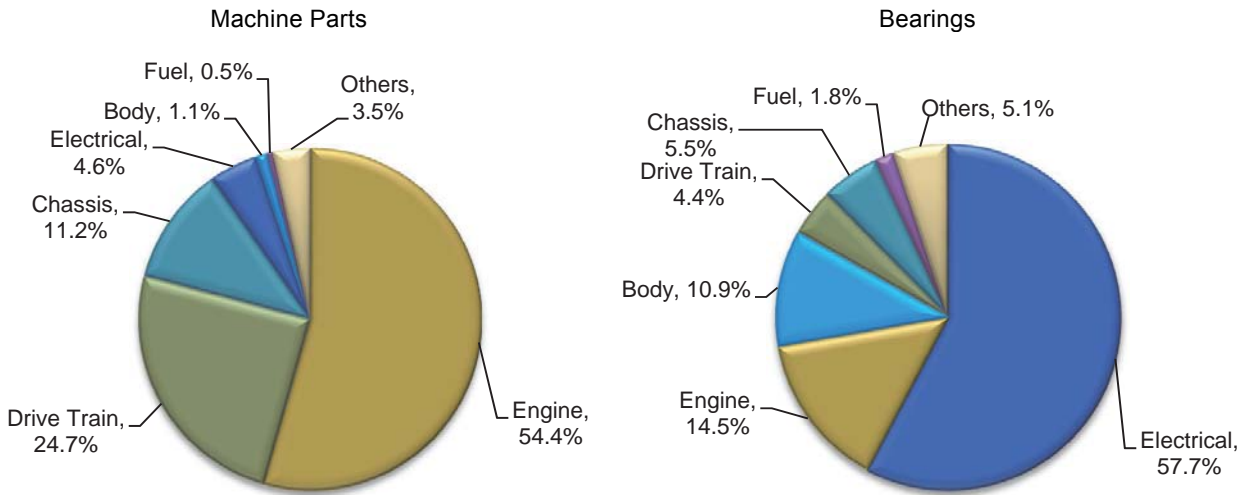


Fig4 shows the weight of sintered parts calculated for one car and the car production in Japan for the period from 2006 through 2015.

The weight of sintered parts calculated for one car in 2015 was 9.0kg in Japan, 20.3kg in U.S. and 9.5kg in Europe.

Fig4. Weight for sintered parts used for one motor car (Source JPMA and JAMA)

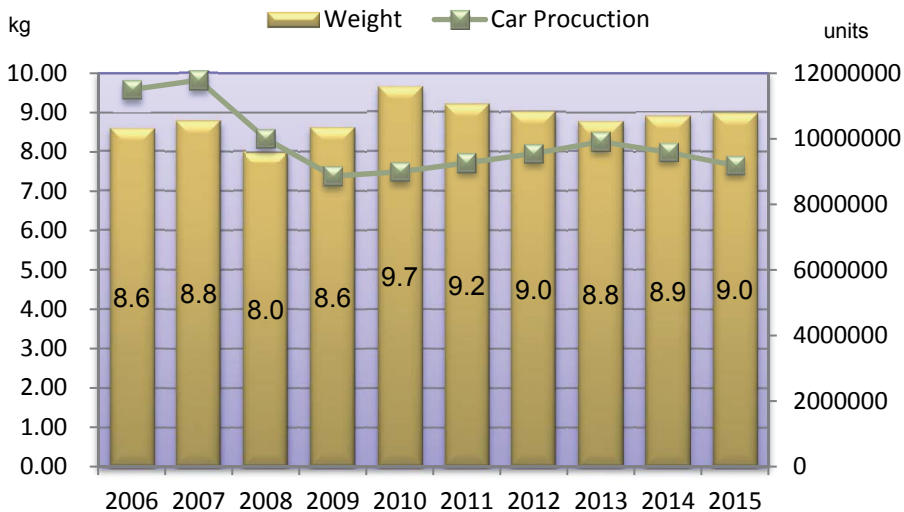
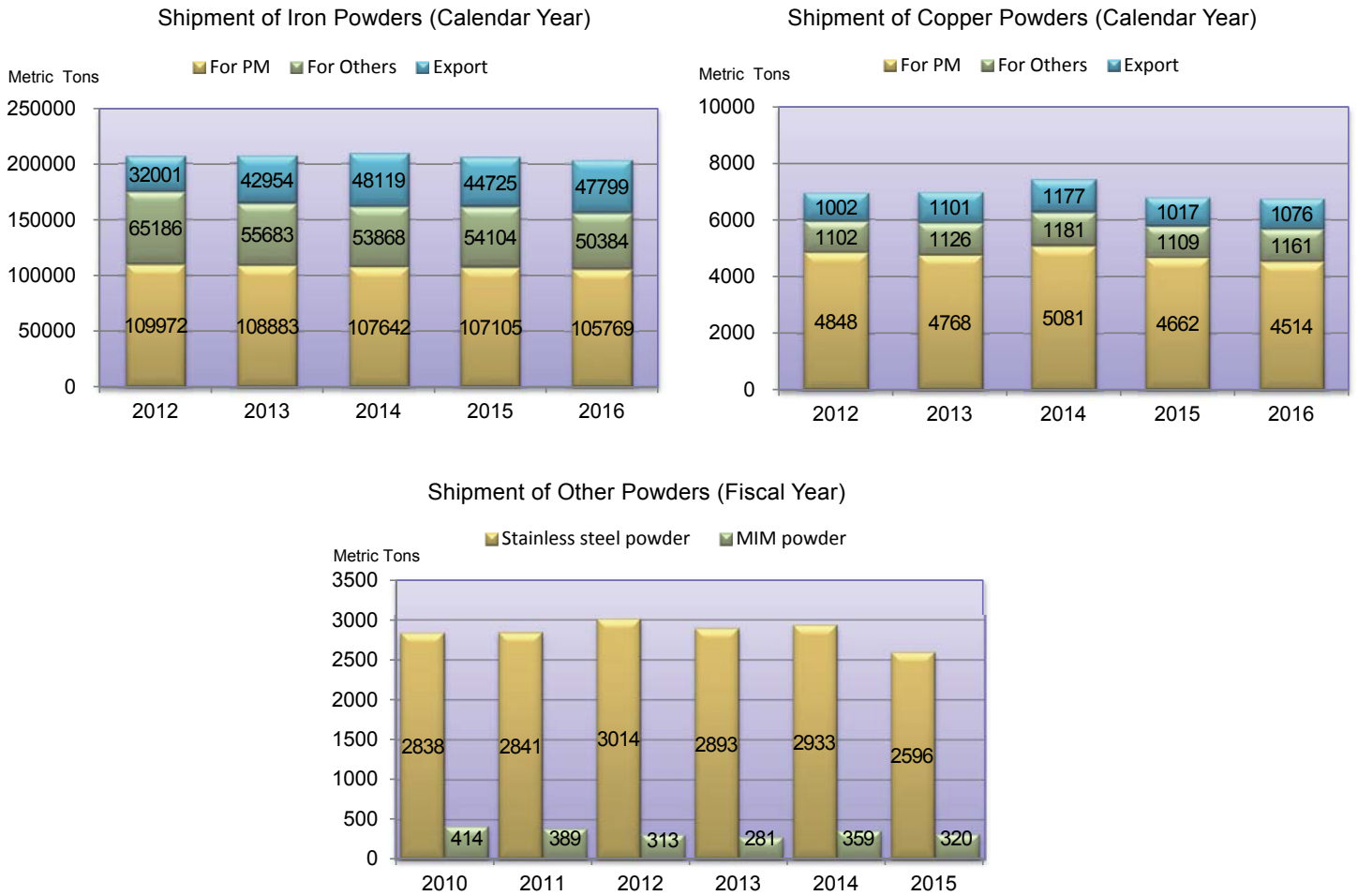


Fig5 shows Shipment of Metal Powders.

Fig.5 Shipment of Metal Powders (Source JPMA)



## 60th Anniversary

JPMA was established in April 1956, and we held 60th anniversary ceremony in Tokyo with 213 participants, April 27, 2016. Ministry of Economy Trade and Industry (METI) and related associations, JSPM, current and graduate member of JPMA, and news media participated the ceremony.

In a speech at the ceremony, Mr. Mamoru Moritani, President of JPMA, talked about 60years history of JPMA, domestic and international PM situation for these 10 years, how JPMA works for keeping and developing world top runner PM quality, how JPMA works for developing PM human resources in a future.

Also, Mr. Tsuyoshi Tohyama Director of METI, Mr. Jun Sakai President of JSPM spoke congratulatory address

In addition, Prof. Ryuzo Watanabe, Advisor of JPMA & Honorary Professor of Tohoku University, received special commendation for his long contribution to PM industry.



Ceremony



Ceremony speech Mr. Moritani (Chairman)



Special commendation Prof. Watanabe



Make a toast Mr. Sugiyama (Former Chairman)



Party



Closing Speech Mr. & Mrs. Kikuchi  
(Permanent Board Member)

## Awards

### Personal Prize

Mr. Mamoru Moritani

Former SUMITOMO ELECTRIC INDUSTRIES, LTD.

2012-2016

Chairman of JPMA

Board Member of JPMA

Co-Chairman of APMA2015 Organizing Committee



### Development Prize

A New Design

A-1

Sintered bearing with dimple on inner diameter for high efficiency motor



Porite Corporation

A-2

Development of Multi layer Sintered Bearing



NTN Advanced Materials Corporation



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**A-3**

Development of Hybrid magnetic material reactor core for booster



NTN Advanced Materials Corporation

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**B New Materials****B-1**

Anti-adhesive wear properties improved matrix-toughened seat, valve material



FINE SINTER CO., LTD. / TOYOTA MOTOR CORPORATION

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**C Process Development****C-1**

VVT parts manufacturing-line which realized the simultaneous green machining of holes and grooves, attaching two-dimensional bar code.



SUMITOMO ELECTRIC INDUSTRIES, LTD.

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## F Effort Prize

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F-1

Development of the multistage complicated shape side plate, laser quenched on the non-consecutive surface



SUMITOMO ELECTRIC INDUSTRIES, LTD.

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## Prize for Distinguish Service of the Committee Activities

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Mr. Masayuki Ikegawa

Former FINE SINTER CO., LTD.

2006-2015

Chairman and Member of Technical Committee

for Sintered Parts

Member of Committee for International Standardizations

Member of Selection Committee for Award Prize



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Mr. Koji Yamamoto

General Manager

Nippon Atomized Metal Powders Corporation

2000-2016

Member of Technical Committee for Metal Powders

Member of Selection Committee for Award Prize



## Recognition of Superior Employees

2016 prizewinner numbered 18 persons  
(13 member companies)



## Environment Prize

Reduction of CO<sub>2</sub> basic unit  
Hitachi Chemical Co., Ltd.  
Matsudo Works, Matsudo site



Reduction for total waste basic unit  
Porite Corporation  
Kumagaya Plant



## 2016 APMA Activities

### The 8th Board Meeting

Date: Tuesday 11 October 2016 10:00 - 12:00

Venue : Hall 13 Convention Center Hamburg (CCH)

Participants :

#### APMA Board Member

President	Isamu Kikuchi (JPMA, Japan)
Director	Chiu-Lung Chu (TPMA, Taiwan)
Director	N. Gopinath (PMAI, India)
Auditor	Akira Kawasaki (JSPM, Japan)
Secretariat	Takashi Saito (JPMA, Japan)

#### Attendant of APMA Members Association

CPMA(China)	Li Puming	Vice President
	Han Wei	Secretary General
	Yang Yu	Vice Secretary General
CPMS(China)	Xiang Xiong	Director
	Yong Yu	Secretary General
JPMA(Japan)	Isamu Kikuchi	President
	Takashi Saito	Executive Director
	Yusuke Watanuki	Manager
	Kazunori Kato	Chairman of General Affairs Committee
	Sanpei Seki	Chairman of Public Relations Committee
JSPM(Japan)	Akira Kawasaki	President
	Yoko Inoue	Secretary General
KPMA(Korea)	Sung Hwan An	Vice Chairman
	Seung Chul Song	Secretary General
KPMI(Korea)	Ji Soon Kim	President
	Jai Sung Lee	Director
PMAI(India)	N.Gopinath	President
TPMA(Taiwan)	Chiu Lung Chu	President
	Huei Long Lee	Director
	K.S.Hwang	Director

#### Conclusions

- \*2015 Finance and 2016 Budget was approved
- \*2017 Member Fee was approved
- \*Introduction of the APMA2017 Taiwan preparations situation
- \*Introduction of the World PM2018 Beijing preparations situation
- \*Next APMA Conference was decided to be held in India

## PM Production in Asia

PM Production (Source JPMA, PMAI, KPMI, TPMA and CMPMA)

(Metric Tons)

AREA		2014	2015	2016	16/15(%)
Japan	Iron-base	93,594	89,123	88,145	98.9
	Copper-base	3,984	3,449	3,121	90.5
	Total	97,578	92,572	91,266	98.6
China	Iron-base	166,865	146,153	156,525	107.1
	Copper-base	12,173	12,457	12,669	101.7
	Total	179,038	158,610	169,194	106.7
Korea	*Iron-base	67,881	67,617	64,086	94.8
	Copper-base	632	640	633	98.9
	Total	68,513	68,257	64,719	94.8
Taiwan	Iron-base	30,000	30,680	30,000	97.8
	Copper-base	2,000	2,100	2,000	95.2
	Total	32,000	32,780	32,000	97.6
India	Iron-base	37,000	30,500	30,000	98.4
	Copper-base	12,100	10,000	6,000	60.0
	Total	49,100	40,500	36,000	88.9
Malaysia	Iron-base	4,963	4,186	3,810	91.0
	Copper-base	213	136	116	85.3
	Total	5,176	4,322	3,926	90.8
Singapore	Iron-base	1,420	1,452	1,486	102.3
	Copper-base	600	498	438	87.9
	Total	2,020	1,950	1,924	98.7
Thailand	Iron-base	14,748	16,074	17,141	106.6
	Copper-base	7	7	8	114.3
	Total	14,755	16,081	17,149	106.6
Indonesia	Iron-base	2,959	3,992	5,444	136.4
	Copper-base	45	83	68	81.9
	Total	3,004	4,075	5,512	135.3
Total	Iron-base	419,430	389,777	396,637	101.8
	Copper-base	31,754	29,370	25,053	85.3
	Total	451,184	419,147	421,690	100.6

\*Included "Others"

## Application Field Ratio of PM Production (2016) (%)

AREA	For Transportation Machines	For Industrial Machines	For Electrical Machines	For Others
Japan	94	4	1	1
China	65	2	22	11
Korea	93	0	4	3
Taiwan	50	23	7	20
India	80	5	8	7
Malaysia	56	2	42	0
Singapore	54	4	42	0
Thailand	92	1	7	0
Indonesia	100	0	0	0