

## Executive Director Report



Yoshio Uetsuki, Executive Director

Dear Friends,

We thank you very much for your heartfelt cooperation with our JPMA activities during last year.

This annual report is summarized with reviewing about events of last year and supports of related industries and people. Since the year of 2020th was fully influenced by COVID-19, we had very hard time never experienced before. Many countries are still fighting with COVID-19 disaster, so their early recoveries from such difficulties are most expected. And we do hope they would move to a new stage performing a new normal or a new working standard upon coping with COVID-19 disaster.

Also in the year of 2020 a very great turning point was showed due to very important progresses for raising new actions corresponding to Industrial tides such as Automobile Electrification, and Carbon Neutral.

<2020 Topics>

The New Year Party and Award Ceremony were stopped reluctantly, and General Meeting normally to be held in May was held as on-papers.

JPMA prizes were commenced in 1979 with New Product and Distinguished Contribution Prizes, and counted 42th in 2020. The New Product Prizes were awarded to 3 Designed Products, one Production Developing product,

and 2 Encouragement Prizes. Distinguished Contribution Prizes are for persons contributed for strengthening the foundation of PM industry, but nobody was applied this year. Environmental Prizes were awarded to PORITE CORPORATION for the best CO<sub>2</sub> emitting amount reduction rate, and FUKUI SINTER CO., LTD. for the best industrial waste reduction rate. JPMA members are making continuous efforts for reducing CO<sub>2</sub> emitting amounts and industrial wastes under the Environmental Protection Campaign Logo Mark enacted by JPMA.

During 2020, the whole JPMA assemblies such as Meeting or Seminar were held online.

JPMA members had planned to participate in the WORLD PM2020 Montreal organized by MPIF in June to interchange with overseas PM Organizations, but the congress itself was regrettably stopped, accordingly the plan was not realized.

And the board meeting of APMA (Asian Powder Metallurgy Association) had also been planned to be held at Montreal at same time of the World PM2020, however it was changed to held on papers, where APMA President Chu chaired the meeting including 6 territories of Taiwan, Korea, China, India, Thailand and Japan, and 9 associations. They discussed the APMA Office to be transferred from Japan to Taiwan. Ms. Emily D Tsai (PORITE TAIWAN CO., LTD.) inaugurated New Officer. Then, whole events related with Asian PM Industries, APMA Meeting Planning, APMA's supports for World PM Meeting and so on should be managed by APMA President Chu and Taiwan Office.

<Japanese PM Products in 2020>

The Japanese Economy has been heavily influenced by COVID-19, and the actual GDP Growth rate became minus 4.8%. For the April

to June period, the growth rate was the worst, and for the July to September, and October to December periods, continuously recovered, but at the end of year, the economy activity normalization pace slow down under the influence by the third wave of COVID-19.

Under such economic environment, the locally produced quantity of Automobile Industries as Main Industries was 8.07 million, that was significantly reduced by 16,7% than last year. The locally sold cars were 4.6 million, that was minus 11.5% than last year, with showing 2 years continuously reduction.

The PM machine part production whose over 90% is used in automobile industries was 68.7 kilo tons, which was about 20.3% less in comparison with last year in conjunction with the automobile production, and its production amount was 96.4 billion Yen, minus 19.1% than last year.

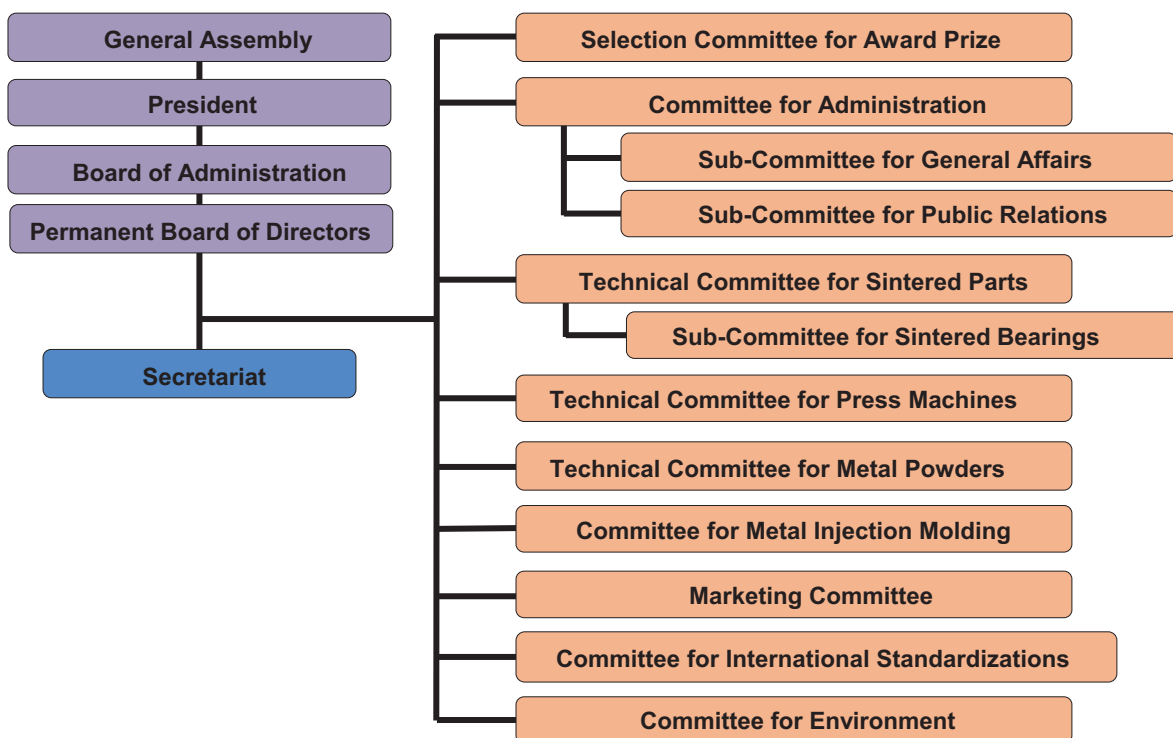
On the other hand, the bearings production increased 9.6% in weight than last year, because of the increased needs for 5G (5th Generation Mobile Communication System) related production and personal computer and home appliance related products in order to countermeasure against COVID-19.

JPMA's activities of promoting relationship among PM enterprises with supporting their efforts to make realistic products, PM technology progress, human resource development and relationship with overseas PM industries should be continuously progressed and widened.

Taking this opportunity, I would like to express my sincere thanks to all of APMA, EPMA and MPIF for your supports and cooperation to JPMA.

Hoping your heartfelt supports extended for our activities to progress the JPMA in the future.

## Organization of JPMA



## Board Members

### President

Mr. Nobuhiro Hashimoto

President

Sumitomo Electric Industries, Ltd.



### Executive Director

Mr. Yoshio Uetsuki

Japan Powder Metallurgy Association

### Permanent Board Members

Mr. Fumio Tsurumaki

DIAMET CORPORATION

Mr. Yoichi Inoue

FINE SINTER CO., LTD.

Mr. Shigeo Aoki

PORITE CORPORATION

Mr. Hiroyasu Narukawa

KOBE STEEL, LTD.

Mr. Syuzo Sonoda

FUKUDA METAL FOIL & POWDER CO., LTD.

Mr. Carl-Gustav Eklund

Höganäs Japan K.K.

### Board Members

Mr. Junichi Takahashi

IWAKI DIECAST Co., Ltd.

Mr. Akihiro Matsunaga

NTN Advanced Materials Corporation

Mr. Takashi Suzuki

NAPAC CO., LTD.

Mr. Masayoshi Nishimura

FUKUI SINTER CO., LTD.

Mr. Soichiro Nakai

JFE Steel Corporation

Mr. Yoshiaki Mori

Daido Steel Co., Ltd.

Mr. Atsushi Nagano

Dowa Electronics Materials Co., Ltd.

Mr. Jiro Bando

Nippon Atomized Metal Powders Corporation

Mr. Katsuhiko Nomura

Mitsubishi Materials Techno Corporation

## Auditor

□ Mr. Yuichi Miyagawa

Mitsubishi Materials Techno Corporation

□ Mr. Yasushi Mori

Nippon Atomized Metal Powders Corporation

## JPMA Secretariat

□ Mr. Yusuke Watanuki (Manager)

General Assembly, Technical Committees, Events, Web, Publication

□ Ms. Tokie Sakamoto (Supervisor)

Accountant and General affairs

□ Ms. Aoi Yamanaka (Supervisor)

Statistics, Events, General affairs, Web

## Activities of Committees

### Selection Committee

#### for Award Prize

Number of Committee Members: 14 persons



**Chairman: Mr. Yoichi Inoue**

(FINE SINTER CO., LTD.)

**New Chairman**

\*Selection Committee for JPMA Award (Development Prize)



Process Development

Soft Magnetic Composites for reactors in HEV that secures magnetic flux density and reduces iron loss

Sumitomo Electric Industries, Ltd.

### Committee for Administration

Number of Committee Members: 20 persons

#### Sub-Committee for General Affairs

Number of Committee Members: 7 persons



**Chairman: Mr. Takeshi Tsurumi**

(DIAMET CORPORATION)

**New Chairman**

\*Publication of the report "Analysis of investigation results of sintered parts demand structure 2019" in June.

\*Edition of the Brochure "2019 JPMA Annual Report (English)" in May and "2019 JPMA Annual Report (Japanese)" in July.

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- \*Planning and operating of the PR meeting “JPMA Awards Special Session” at JSPM Fall Meeting in October
  - \*Planning and operating of “23th Metal Powder and Equipment PR Meeting” and “38th Case Studies on Improving Production Efficiency Online Meeting” in November.
  - \*Planning and operating of “PM information Exchange Online Meeting”.
  - \*Planning of "New Project Committee"
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## Sub-Committee

### for Public Relations

Number of Committee Members: 8 persons



**Chairman: Mr. Chihiro Takata**  
(Sumitomo Electric Industries, Ltd.)  
New Chairman

- \*Planning and operating of “8th Human resources development online seminar” in September.
  - \*Publication of JPMA News “Funmatsu Yakin” (No401-404).
  - \*Planning of "PM Education Basic Course"
- 

## Technical Committee

### for Sintered Parts

Number of Committee Members: 8 persons



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

- \*Discussion of the matter for ISO/TC119 and SC3.
  - \*Deliberation of Measurement of surface roughness.
  - \*Deliberation of JIS Z 2500 revision.
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## Sub-Committee

### for Sintered Bearings

Number of Committee Members: 3 persons



**Chairman: Mr. Tomonori Yamashita**  
(NTN Advanced Materials Corporation)  
New Chairman

- \*Deliberation of standardization of the full filling rate.
  - \*Deliberation of update of Bearings Website.
  - \*Deliberation of JIS Z 2500 revision.
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## Technical Committee

### for Press Machines

Number of Committee Members: 6 persons



**Chairman: Mr. Junitiro Muto**  
(KOHTAKI PRECISION MACHINE CO., LTD.)  
New Chairman

- \*Exchange on Information for defect cases of Press.
  - \*Exchange on Information for newfangled Press Machines.
  - \*Deliberation of JIS Z 2500 revision.
- 

## Technical Committee

### for Metal Powders

Number of Committee Members: 13 persons



**Chairman: Mr. Tetsuya Sawayama**  
(KOBE STEEL, LTD.)  
New Chairman

- \*Discussion of matters for ISO/TC119/SC2.
  - \*Revise of JIS Z 2502, 2503, 2504, 2508 and 2509 standard.
  - \*Deliberation of filling property for Metal powders
  - \*Introduction of topics about "Metal Powder" by the Committee members and exchange of views mutually.
  - \*Deliberation of JIS Z 2500 and 2510 revision.
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## Committee for

### Metal Injection Molding

Number of Committee Members: 13 persons



**Chairman: Dr. Hideki Nakayama**  
(CASTEM CO., LTD.)  
Commission from 2018

- \*Investigation of the Japanese MIM market.
  - \*Planning of "MIM Education Basic Course"
  - \*Deliberation of JIS Z 2500 and 2551 revision.
  - \*Information Exchange meeting of MIM and Additive Manufacturing (BJT)
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## Marketing Committee

Number of Committee Members: 13 persons



**Chairman: Mr. Yukiaki Miyamoto**  
(DIAMET CORPORATION)  
New Chairman

\*Deliberation of update of the P/M Roadmap.

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## Committee for International Standardizations

Number of Committee Members: 6 persons



**Chairman: Mr. Noboru Shimada**  
(PORITE CORPORATION)  
Commission from 2017

\*Discussion of related matters for TC119, SC2, SC3, SC5.

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## Committee for Environment

Number of Committee Members: 4 persons



**Chairman: Mr. Kazunori Hattori**  
(SUMITOMO ELECTRIC  
SINTERED ALLOY LTD.)  
Commission from 2018

\*Investigation of 2019 follow-up survey for "Voluntary Action Plan for Environment of PM Industry".

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

\*Selection of the "Environment Awards".

\*Discussion of public relations for the Environment

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## JPMA Events and International Communications

### 20, January Cancellation

Gathering of 2020 New Year Greeting and Ceremony of Awarding Various Honors in 2019.

### 13, March Cancellation

Joint Meeting by the three technical committees

### 13, March Cancellation

The 16th PM Information Exchange Meeting.

### 18, May Written Resolution

2020 JPMA General Assembly.

The 2020 Activity Plans and Budget of JPMA.

### 11, June Cancellation

Tour of Committee for Administration.

### 23-25, June Cancellation

ISO/TC119 Meeting at West Conshohocken, PA, USA.

### 27, June - 1, July Cancellation

WORLD PM2020 Montreal

### 29, June Written Resolution

12th APMA Board Meeting

### 28, August Written Resolution

13th APMA Board Meeting

### 25, September Online

8th Human resources development seminar.

### 8, October Cancellation

Tour of Technical Committee for Sintered Parts.

### 22, October Written Resolution

2020 JPMA Fall General Assembly.

Announcement of 2020 JPMA Awards.

### 27, October Online

JPMA Special Session at the JSPM Fall Meeting.

### 20, November Online

The 38th Case Studies of Production Efficiency Improvement Meeting and the 23th Metal Powder and Equipment PR Meeting.

## JPMA Publications

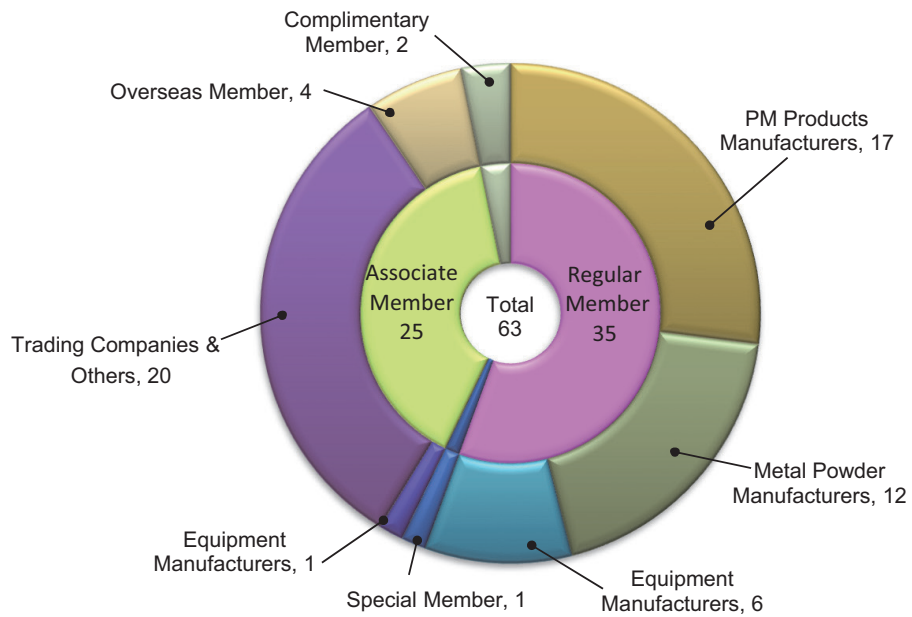
The 41th Investigation Collection Results of Sintered Parts Demand Structure.

JPMA Report, 2019 (English and Japanese).

JPMA News "Funmatsu Yakin" (No401-404).



## JPMA Membership



## 2020 New Members

### Associate Member

TOYOTSU TEKKOU HANBAI CORPORATION



豊通鉄鋼販売株式会社

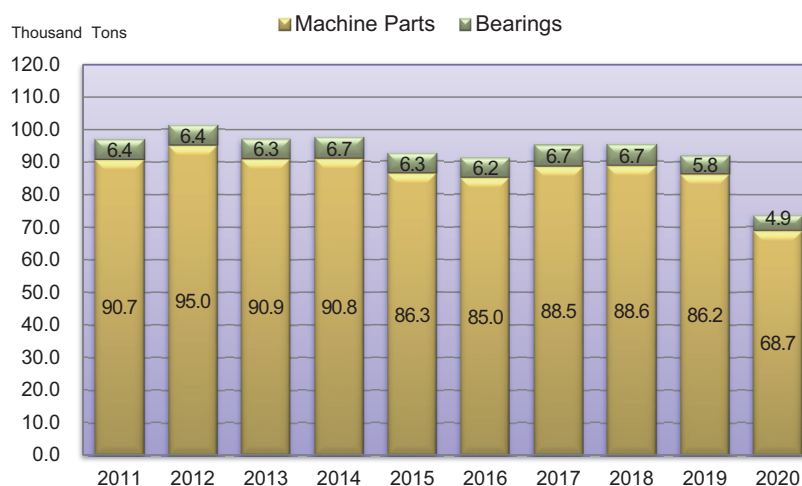
## Statistics of Japan

### Production of PM Products in Japan

Fig1 shows the production volume change of Machine Parts and Bearings for the period from 2011 through 2020.

In 2020, Machine Parts volume was 68,668 ton, 20.3% decrease from the previous year. Bearings volume was 4,925 ton, 15.4% decrease from the previous year. As the other products, Friction Materials volume was 583 ton, 14.8% decrease from the previous year. Electric Contacts volume was 68 ton, 64.3% increase 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 2011 through 2020.

In 2020, Machine Parts Production volume for Vehicles was 64,894 ton, 20.4% decrease from the previous year.

In the field of Transportation Machine, Industrial Machine and Electric Machine, demands of almost all users showed sharp decrease because of COVID-19. But there are some use that was recovered quickly. In the Transportation Machine, that is main user of P/M, Automobile Parts for environmental counterplan like EV and HEV were increased. In the field of Industrial Machine, some parts for health were increased because of special demand.

Production volume of Bearings for Vehicles was 3,126 ton, 17.2% decrease from the previous year.

Same as Machine Parts, production amount of Bearings were decreased because of COVID-19 and production transfer to foreign countries. Some Electric products and parts for Information Equipment were increased because of big demand increase, but that influence did not cover the whole decrease.

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

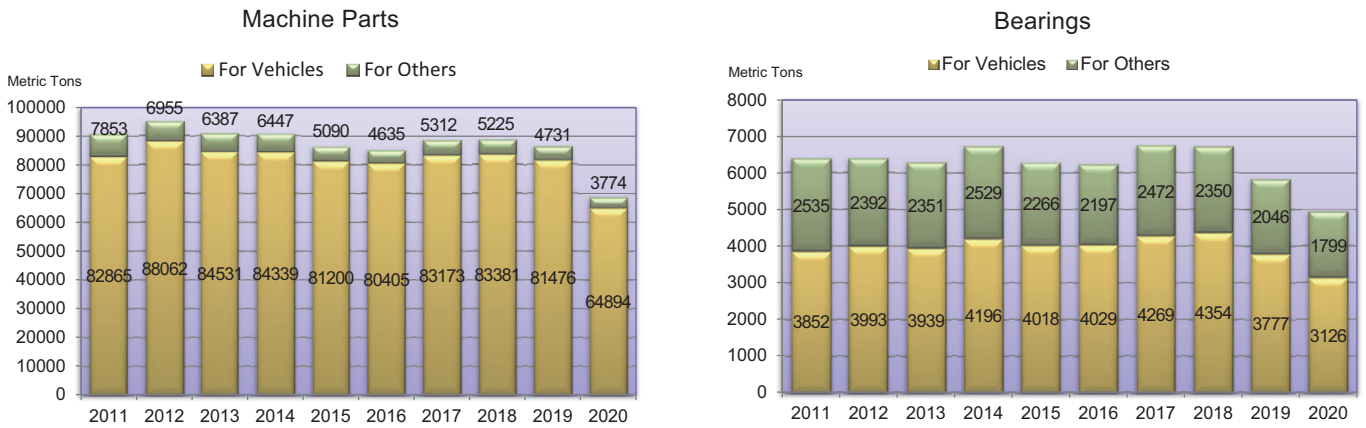


Fig3 shows the use breakdown of Machine Parts and Bearings in vehicle in 2019 based on the demand structure survey by JPMA.

Fig3. Breakdown of Machine Parts and Bearings for Vehicles (2019) (Source: JPMA)

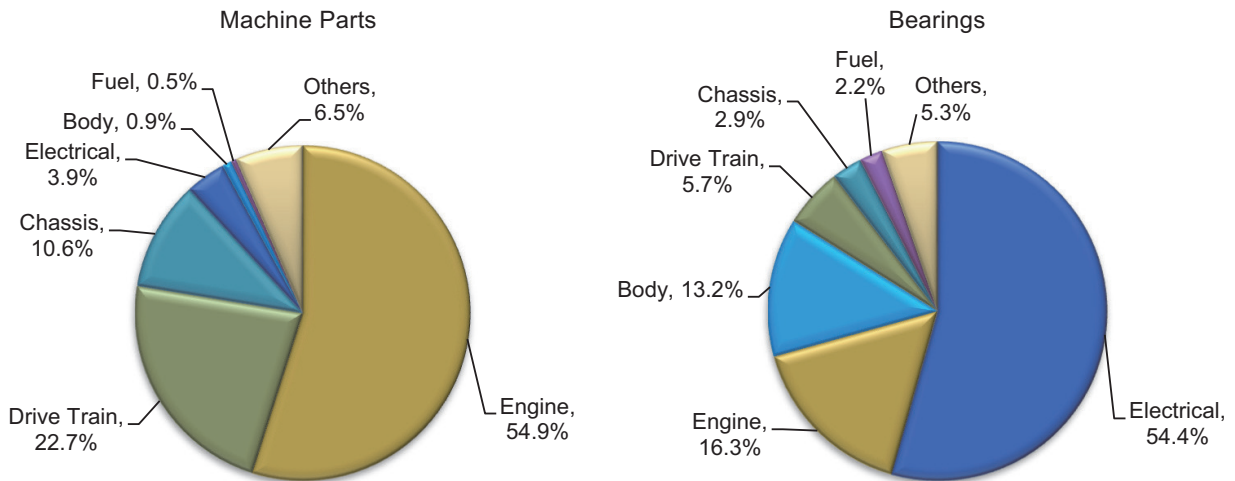


Fig4 shows the weight of sintered parts calculated for one car and the car production in Japan for the period from 2010 through 2019.

The weight of sintered parts calculated for one car in 2019 was 8.6kg in Japan, 17.7kg in U.S. and 8.4kg in Europe.

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

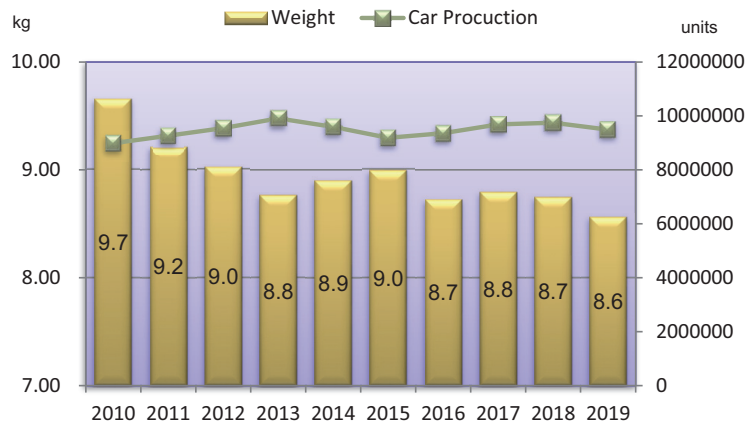
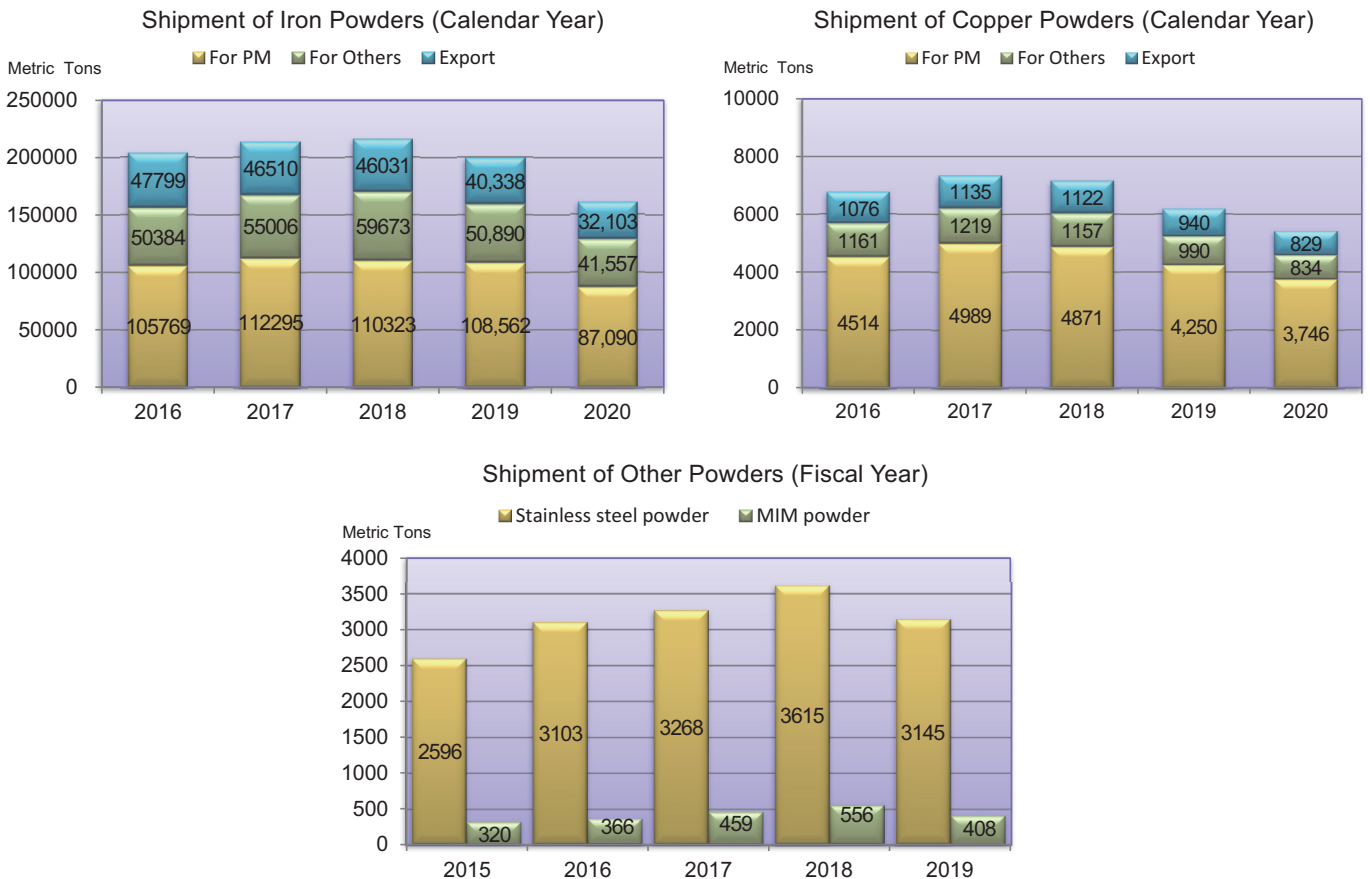


Fig5 shows the Shipment of Iron and Copper Powders for the period from 2016 through 2020 and Shipment of Other Powders for the period from 2015 through 2019.

By the demand decrease of Machine Parts and bearings, the production of all powders were decreased. Especially the decrease of MIM powder were remarkable. This is because users of MIM are various field and compared with the quick demand recovery by Transportation Machine, the demand for Medical Appliance, Electric and Industrial Machine are delayed.

Fig.5 Shipment of Metal Powders (Source JPMA)

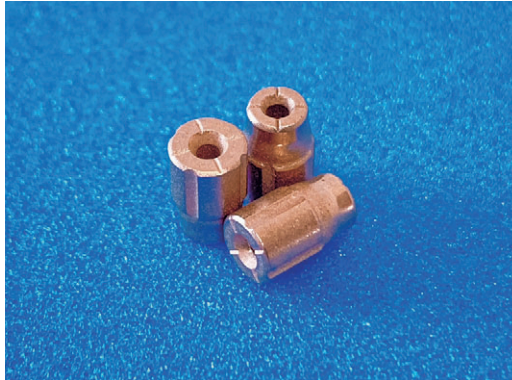


## Awards

### Development Prize

#### New Design

Sintering of bearings for automotive LED headlight cooling fans



PORITE CORPORATION

Cost-down by using shape molding for the curved groove of parking lock part



FINE SINTER CO., LTD.

Sintered part for motorcycle transmission

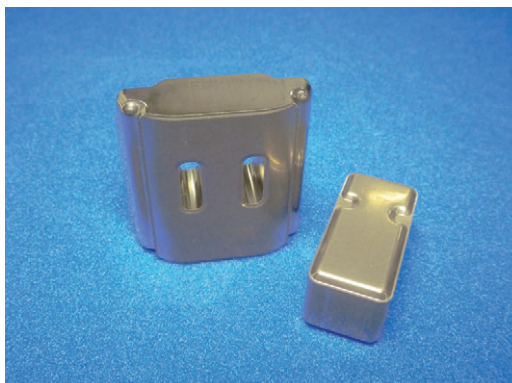


DIAMET CORPORATION



### Process Development

Soft Magnetic Composites for reactors in HEV that secures magnetic flux density and reduces iron loss



Sumitomo Electric Industries, Ltd.

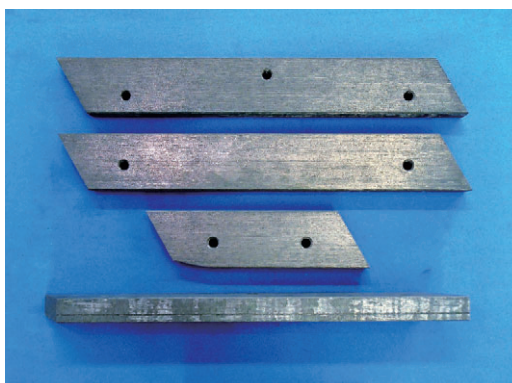
### Effort Prize

Development of Bearings for Refrigerator Evaporator and Condenser cooling fans



PORITE CORPORATION

Development of lower cost C/C composite metalized carbon contact strip



FINE SINTER Co., LTD.



## Prize for Distinguished Service of the Committee Activities

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Mr. Motonobu Isaka

Fomer DIAMET CORPORATION

2014-2020

Chairman and Member of Committee for Administration

Chairman and Member of Sub-Committee for General Affairs

Member of Sub-Committee for Public Relations

Chairman and Member of Committee for Environment

Member of Selection Committee for Award Prize



Mr. Yoshiro Arami

FUKUDAMETALFOIL & POWDER CO., LTD.

2004-2020

Member of Technical Committee for Metal Powders

Member of Selection Committee for Award Prize

Member of Committee for JIS Draft



Mr. Satoshi Kondo

Höganäs Japan K.K.

2001-2020

Member of Marketing Committee



Mr. Toshihiro Minami

Höganäs Japan K.K.

2004-2020

Chairman of Sub-Committee for Metal Powders

Member of Committee for Administration

Member of Sub-Committee for General Affairs

Member of Sub-Committee for Public Relations

Member of PM2012 Steering Committee



## Recognition of Superior Employees

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2020 prizewinner numbered 10 persons

(7 member companies)

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## Environment Prize

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Reduction of CO<sub>2</sub> basic unit

PORITE CORPORATION

Kumagaya Plant

(Saitama Prefecture, Japan)



Reduction for total waste basic unit

FUKUI SINTER CO., LTD.

Fukushima Plant

(Fukushima Prefecture, Japan)



## 2020 APMA Activities

### The 12th APMA Board Meeting (A meeting in writing of the Board of Directors)

1. Date : June 29, 2020
2. Chairman : APMA President Mr. C.L. Chu
3. Participants : Voting rights are held by one director in each country (See list below.).
4. Agenda & Conclusions :
  - (1) Proposed Resolution 1 Transfer of secretariat to Taiwan  
→Transfer of secretariat to Taiwan was approved.
  - (2) Proposed Resolution 2 Revision of AMPA Bylaws  
→Revision of AMPA Bylaws was approved.
  - (3) Proposed Resolution 3 Website updating and management  
→The APMA website will be renewed and managed in Taiwan.
  - (4) Proposed Resolution 4 2019 Finance Report  
→2019 Finance and 2020 Budget was approved.
  - (5) Proposed Resolution 5 2020 Membership fee  
→No membership Fee for 2020 was approved.

Association	APMA Board of Directors	Name	Positon
APMA	○	Mr. C.L. Chu	President
		Mr. Yoshio Uetsuki	Secretariat
		Ms. Emily D Tsai	Next Secretariat
CPMA	○	Mr. Zhang Shaoming	President
		Prof. Han Wei	Secretary General
CPMS		Prof. Baiyun Huang	President
		Mr. Yong Liu	Secretary General
JPMA	○	Mr. Nobuhiro Hashimoto	President
		Mr. Yoshio Uetsuki	Executive Director
JSPM		Prof. Kazuyoshi Yoshimura	President
		Ms. Yoko Inoue	Director, Secretary General
KPMA	○	Mr. Kun Jin Lee	President
		Mr. Joon Park	Secretary General
KPMI		Dr. Sung-Tag Oh	President
		Ms. Yeon Ho Kim	Manager
PMAI	○	Mr. Aniket Gore	President
		Mr. K.S. Samant	Director
TPMA	○	Dr. Sea-Fue Wang	President
		Dr. Ming-Wei Wu	Secretary General
ThaiPMA	○	Mr. Pramote Eiangkhunchorn	President
		Mr. Boon Teeraprawatekul	Secretary General

Secretary General of APMA : Yoshio Uetsuki (Japan)

### The 13th APMA Board Meeting (A meeting in writing of the Board of Directors)

1. Date : August 28, 2020
2. Chairman : APMA President Mr. C.L. Chu
3. Participants : The same member of 12th APMA board meeting
4. Agenda & Conclusions :
  - (1) Proposed Resolution 1 Share the annual fees of GPMD with JPMA in 2020  
and EPMA, MPIF from 2021.  
→JPMA agreed in 2020 to bear part of the sponsorship. From next year, the three major associations (EPMA, MPIF and APMA) will coordinate the average fees.
  - (2) Proposed Resolution 2 Cancel the APMA conference of 2021.  
→ Cancel the APMA conference of 2021(KPMI) was approved.
  - (3) Proposed Resolution 3 Continue to pay annual fees from 2021.  
→APMA's annual membership fee was approved to resume from 2021.

Secretary General of APMA : Emily D Tsai (Taiwan)

## PM Production in Asia

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

(Metric Tons)

AREA		2018	2019	2020	20/19(%)
Japan	Iron-base	92,283	89,239	71,467	80.1
	Copper-base	3,026	2,776	2,126	76.6
	Total	95,309	92,015	73,593	80.0
China	Iron-base	168,876	162,612	164,619	101.2
	Copper-base	14,831	10,780	11,268	104.5
	Total	183,707	173,392	175,887	101.4
Korea	*Iron-base	65,858	64,531	59,799	92.7
	Copper-base	639	673	689	102.4
	Total	66,497	65,204	60,488	92.8
Taiwan	Iron-base	34,800	30,630	30,700	100.2
	Copper-base	2,040	2,060	1,980	96.1
	Total	36,840	32,690	32,680	100.0
India	Iron-base	36,000	40,000	33,000	82.5
	Copper-base	8,900	10,200	7,500	73.5
	Total	44,900	50,200	40,500	80.7
Malaysia	Iron-base	3,970	3,920	3,063	78.1
	Copper-base	95	115	111	96.5
	Total	4,065	4,035	3,174	78.7
Singapore	Iron-base	1,655	1,442	1,105	76.6
	Copper-base	314	384	313	81.5
	Total	1,969	1,826	1,418	77.7
Thailand	Iron-base	19,771	18,434	13,132	71.2
	Copper-base	67	76	53	69.7
	Total	19,838	18,510	13,185	71.2
Indonesia	Iron-base	6,778	6,588	4,543	69.0
	Copper-base	104	111	62	55.9
	Total	6,882	6,699	4,605	68.7
Total	Iron-base	429,991	417,396	381,428	91.4
	Copper-base	30,016	27,175	24,102	88.7
	Total	460,007	444,571	405,530	91.2

\*Included "Others"

## Application Field Ratio of PM Production (2020) (%)

AREA	For Transportation Machines	For Industrial Machines	For Electrical Machines	For Others
Japan	93.9	4.0	1.6	0.5
China	56.0	1.0	28.0	15.0
Korea	95.7	0.0	2.0	2.3
Taiwan	42	26	8	24
India	82.0	6.0	8.0	4.0
Malaysia	65.9	3.6	30.4	0.2
Singapore	49.6	3.4	46.9	0.1
Thailand	92.2	3.4	4.4	0.0
Indonesia	100.0	0.0	0.0	0.0