

Executive Director Report



Yoshio Uetsuki, Executive Director

Dear Friends,

Thank you very much for your kind cooperation with our JPMA activities in the last year.

At the beginning I would like introduce myself, my name is Yoshio Uetsuki assumed the JMPA Executive Director at July, 2019. I have made this annual report with thinking your continuous cooperation and reviewing events occurred during 2019. In the last year, Japanese PM industries may be said to have faced a turning point that their production turned to decrease than before in conjunction of car industries as PM's main user, that also faced reduction of production after 3 year favorable production.

<Topics of 2019>

The New Year Party was held in January, when various commendations were awarded. The PM Grand Prizes after a lapse of ten years were awarded to FINE SINTERCO., LTD. and TOYOTA MOTOR CORPORATION. The distinguished contribution prize was awarded to Mr. Isamu Kikuchi of PORITE CO., LTD for his contribution to strengthen PM industry foundation during long years including JPMA Presidency and APMA Presidency, and to Takashi Saito for his service as the executive Director of JPMA.

The Environmental Prizes were awarded to PORITE CO., LTD. HEAD OFFICE FACTORY,

for the biggest reduction rate of emitted CO₂, and NAPAC CO., LTD. for the biggest reduction rate of industrial wastes. In order to promote the Environmental Protection, the JPMA enacted the Environmental Protection Campaign Logo Mark, and accordingly is continuously progressing the Environmental Protection activities for reduction of CO₂ and industrial wastes.

In February, a JPMA mission consisted by 14 members under the chief of Mr. Sonoda, JPMA Permanent Director participated in the APMA2019 Pune, India. Then, APMA Directors Meeting chaired by APMA President Mr. C. L. Chu was attended by 9 parties from 6 districts of China, India, Japan, Korea, Taiwan and Thailand.

The Conference Tour arranged by PMAI was held at Mercedes-Benz factory, which was of wonderful experience.

The conference of APMA2019 Pune impressed us so much with their arrangement of papers and their smooth conference administration. Taking this opportunity, we would like to thank you very much, PMAI President Mr. Aniket Gore, Former President Mr. Gopinath N. and PMAI members for their services such as sincere hospitality, nice Indian meals, and pleasant entertainments.

In December, four MIM makers joint-exhibited their products at the 6th high functional metal exhibition at Makuhari Messe with JPMA's support and the Technical Seminar about MIM held there was a great success with full of audiences.

“2019 Japanese PM production”

The Japanese economy became dull in response to the declining world economy and also due to low level of plant investigations, a sluggish exportation of important industrial products,

and heavy damages by several typhoons. Under these economic circumstances, the main industrial Automobile products were 9.68 million resulting 0.5% less than of 2018, according to Japanese Automobile Industries Association Statistics. The number of locally sold automobiles in the last year was more than 5million, but it was 1.5% less than the previous result after 3 years increasing.

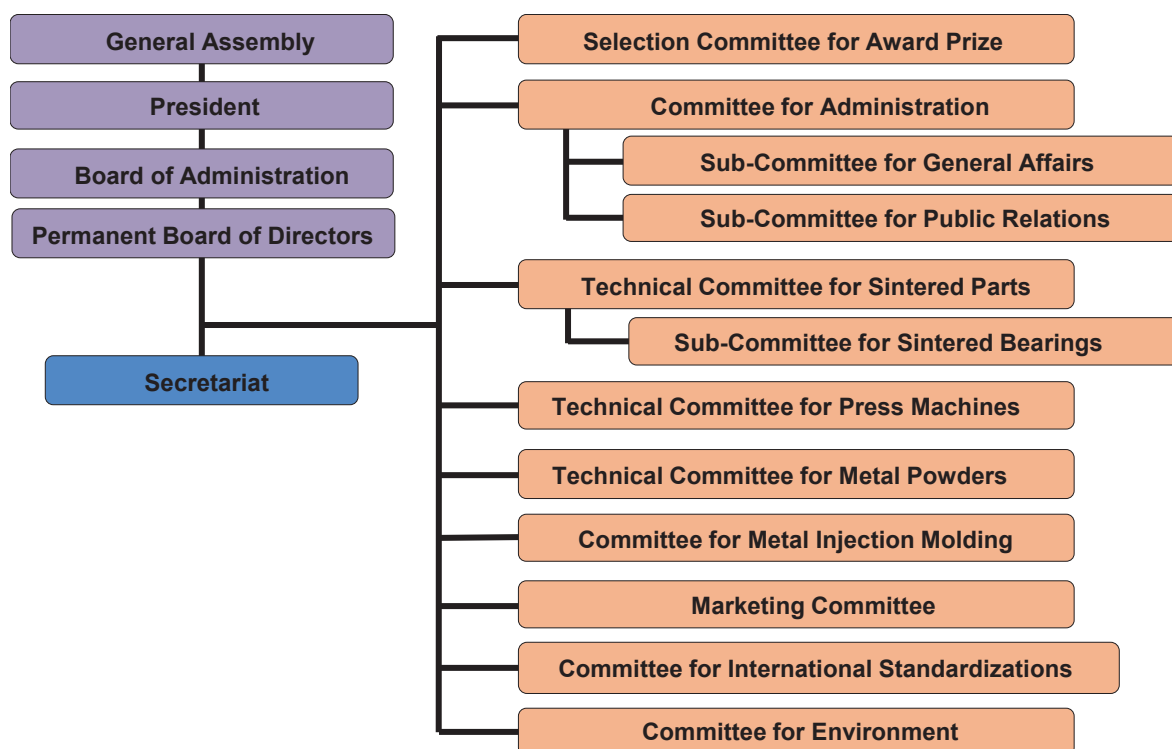
The PM machine parts production whose over 90% is used in automobile industries was 86.2 kilo tons, which is about 2.7% less at comparison

of previous year.

JPMA will continue progressing and widening activities to promote relationship among PM enterprises for supporting their efforts to make realistic products, PM technology progress, human resource development and relationship with overseas PM industries.

Taking this opportunity, I would like to express my sincere thanks to all of JPMA, JSPM, APMA, EPMA and MPIF. Hoping your heartfelt supports to extend for JPMA activities in the future.

Organization of JPMA



Board Members

President

□Mr. Yoichi Inoue

President

FINE SINTER CO., LTD.



Executive Director

□Mr. Yoshio Uetsuki

Japan Powder Metallurgy Association

Permanent Board Members

□Mr. Nobuhiro Hashimoto

SUMITOMO ELECTRIC INDUSTRIES LTD.

□Mr. Fumio Tsurumaki

DIAMET CORPORATION

□Dr. Shigeki Katogi

Hitachi Chemical Co., Ltd.

□Mr. Shigeo Aoki

PORITE CORPORATION

□Mr. Ryosuke Horie

JFE Steel Corporation

□Mr. Syuzo Sonoda

FUKUDA METAL FOIL & POWDER CO., LTD.

Board Members

□Mr. Junichi Takahashi

IWAKI DIECAST Co., Ltd.

□Mr. Masayoshi Nishimura

Fukuisinter Co., Ltd.

□Mr. Hiroyasu Narukawa

KOBE STEEL, LTD.

□Mr. Hirotaka Yoshinaga

Daido Steel Co., Ltd.

□Mr. Atsushi Nagano

Dowa Electronics Materials Co., Ltd.

□Mr. Michifumi Watanabe

Nippon Atomized Metal Powders Corporation

□Mr. Carl-Gustav Eklund

Höganäs Japan K.K.

□Mr. Katsuhiko Nomura

Mitsubishi Materials Techno Corporation

Auditor

□Mr. Toshiharu Takahashi

Dowa Electronics Materials Co., Ltd.

□Mr. Yuichi Miyagawa

Mitsubishi Materials Techno 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. Fumio Tsurumaki
(DIAMET CORPORATION)
New Chairman

*Selection Committee for JPMA Award (Development Prize)



GRAND PRIX
Sintering of disconnect parts
FINE SINTER Co., LTD.
TOYOTA MOTOR CORPORATION

Committee for Administration

Number of Committee Members: 20 persons

Sub-Committee for General Affairs

Number of Committee Members: 7 persons



Chairman: Mr. Motonobu Isaka
(DIAMET CORPORATION)
Commission from 2018

*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 2018” in June.

*Edition of the Brochure “2018 JPMA Annual Report (English)” in May and “2018 JPMA Annual Report (Japanese)” in July.

*Planning and operating of “22th Metal Powder and Equipment PR Meeting” and “37th Case Studies on Improving Production Efficiency Meeting” in November.

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

*Support of the APMA2019 Pune.

Sub-Committee

for Public Relations

Number of Committee Members: 8 persons



Chairman: Mr. Kazunori Kato
(FINE SHINTER CO., LTD.)
Commission from 2018

*Planning of operating of “7th Human resources development seminar”.

*Publication of JPMA News “Funmatsu Yakin” (No397-400).

Technical Committee

for Sintered Parts

Number of Committee Members: 9 persons



Chairman: Mr. Toru Moriya
(FINE SHINTER CO., LTD.)
Commission from 2018

*Discussion of the matter for ISO/TC119 and SC3.

*Deliberation of Measurement of surface roughness.

*Planning and operating of the Plant tour for new markets.

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.

*Deliberation of the appropriate inter laboratory tests of the PV value.

*Deliberation of update of Bearings Website.

Technical Committee

for Press Machines

Number of Committee Members: 6 persons



Chairman: Mr. Hideo Sato
(Mitsubishi Materials Techno Corporation)
Commission from 2016

- *Exchange on Information for defect cases of Press.
 - *Exchange on Information for newfangled Press Machines.
 - *Planning and operating of “Joint Meeting by the three technical committees”.
-

Technical Committee

for Metal Powders

Number of Committee Members: 15 persons



Chairman: Mr. Masashi Fujinaga
(JFE Steel Corporation)
Commission from 2016

- *Discussion of matters for ISO/TC119/SC2.
 - *Revise of JPMA standard.
 - *Introduction of topics about “Metal Powder” by the Committee members and exchange of views mutually.
 - *Planning and operating of “Joint Meeting by the three technical committees”.
-

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 and operating of MIM PR (6th Highly-functional Metal EXPO).
 - *Planning and operating of “MIM Lecture Meeting for Users” and “Opinion Exchange Meeting among Young Workers of MIM Companies”.
 - *Deliberation of standardization of MIM – Specifications.
-

Marketing Committee

Number of Committee Members: 14 persons



Chairman: Mr. Toshihiko Nagata
(SUMITOMO ELECTRIC
SINTERED ALLOY LTD.)
Commission from 2017

*Deliberation of update of the P/M Roadmap.

Committee for International Standardizations

Number of Committee Members: 7 persons



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

*Attendance of 2019 ISO/TC119 Meeting in Stockholm, Sweden.

*Discussion of related matters for TC119/WG2, WG3, SC2 and SC3.

Committee for Environment

Number of Committee Members: 5 persons



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

*Investigation of 2018 follow-up survey for “Voluntary Action Plan for Environment of PM Industry”.

*Introduction of Case Studies of “CO₂ Emissions Reduction”, “Waste Product Reduction” and “KANKYO HIYARI”.

*Selection of the “Environment Awards”.

*Discussion of public relations of the Environment Logo Mark.

JPMA Events and International Communications

21, January

Gathering of 2019 New Year Greeting and Ceremony of Awarding Various Honors in 2018.

15, February

Joint Meeting by the three technical committees

19-21, February

5th International Conference on Powder Metallurgy in Asia (APMA2019 Pune)

20, February

APMA 11th Board Meeting

15, March

The 14th PM Information Exchange Meeting.

27, May

2019 JPMA General Assembly.

The 2019 Activity Plans and Budget of JPMA.

4, June

JPMA Special Session at the JSPM Spring Meeting.

13, June

Tour of Committee for Administration.

SUWADA Blacksmith Works, Inc.

TOJIRO CO., Ltd.

5, July

7th Human resources development seminar.

29, August

Meeting of APMA secretariat (TAIWAN)

10-11, October

ISO/TC119 Meeting at Stockholm, Sweden

24, October

2019 JPMA Fall General Assembly.

Announcement of 2019 JPMA Awards.

14-15, November

Tour of Technical Committee for Sintered Parts.

Kyushu University, Kumamoto University

22, November

The 37th Case Studies of Production Efficiency Improvement Meeting and the 22th Metal Powder and Equipment PR Meeting.

4-6, November

6th Highly-functional Metal EXPO.

MIM PR Seminar.

JPMA Publications

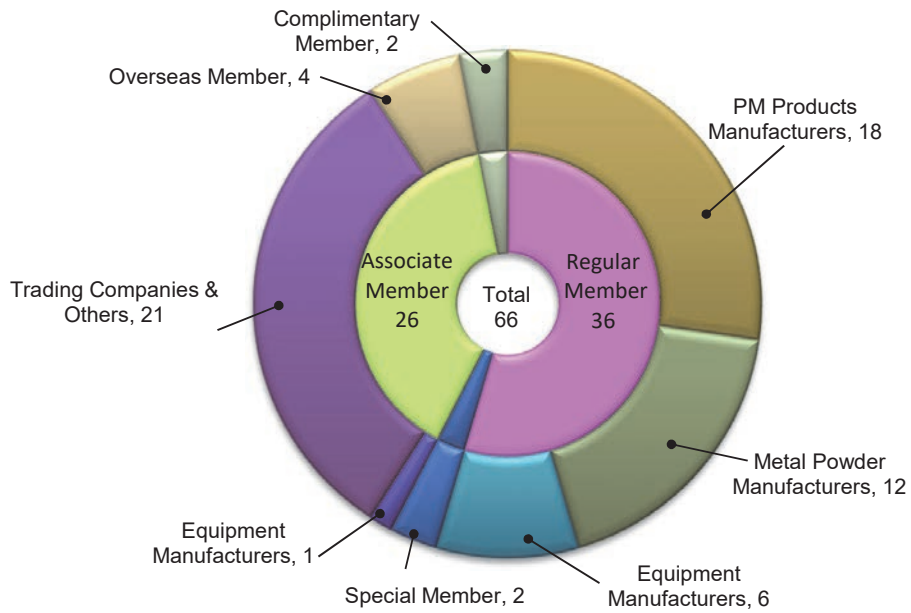
JPMA Standard "Determination of oxygen content by reduction methods – Part4: Total oxygen by reduction-extraction".

The 40th Investigation Collection Results of Sintered Parts Demand Structure.

JPMA Report, 2018 (English and Japanese).

JPMA News "Funmatsu Yakin" (No397-400).

JPMA Membership



2019 New Members

Regular Member

atect corporation



Associate Member

Mitsubishi Corporation Technos



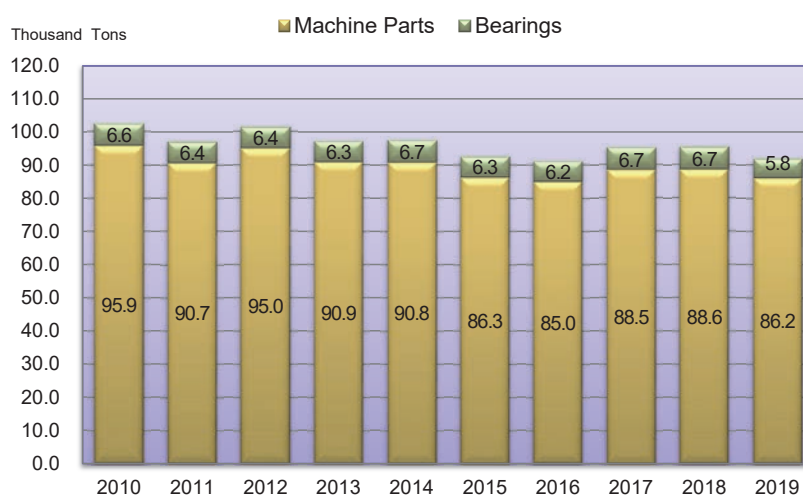
Statistics of Japan

Production of PM Products in Japan

Fig1 shows the production volume change of Machine Parts and Bearings for the period from 2010 through 2019.

In 2019, Machine Parts volume was 86,194 ton, 2.7% decrease from the previous year. Bearings volume was 5,822 ton, 13.2% decrease from the previous year. As the other products, Friction Materials volume was 683 ton, 11.9% decrease from the previous year. Electric Contacts volume was 41 ton, 37.0 % 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 2010 through 2019.

In 2019, Machine Parts Production volume for Vehicles was 81,463 ton, 2.3% decrease from the previous year.

The production amount of Vehicle parts, that is the main user of P/M in Japan, was good condition until the first half of the year, after the second half of the year, because of the trade friction between big countries and the depression of the rising nations, the export was decreased. In Japan, because of the consumption tax increase, nature disaster and the production increase in foreign countries owned by Japanese companies, the production amount was decreased.

Production volume of Bearings for Vehicles was 3,776 ton, 13.3% decrease from the previous year.

Because of the miniaturize of the motor for the transport machine and the decrease of foreign demands, same as Machine Parts, the production amount of Bearings was decreased. In future, the trend of miniaturize and the production increase by the spot in foreign countries are expected. The development to satisfy the customer demands like high accuracy and high efficiency is demanded for Bearing manufacturers.

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

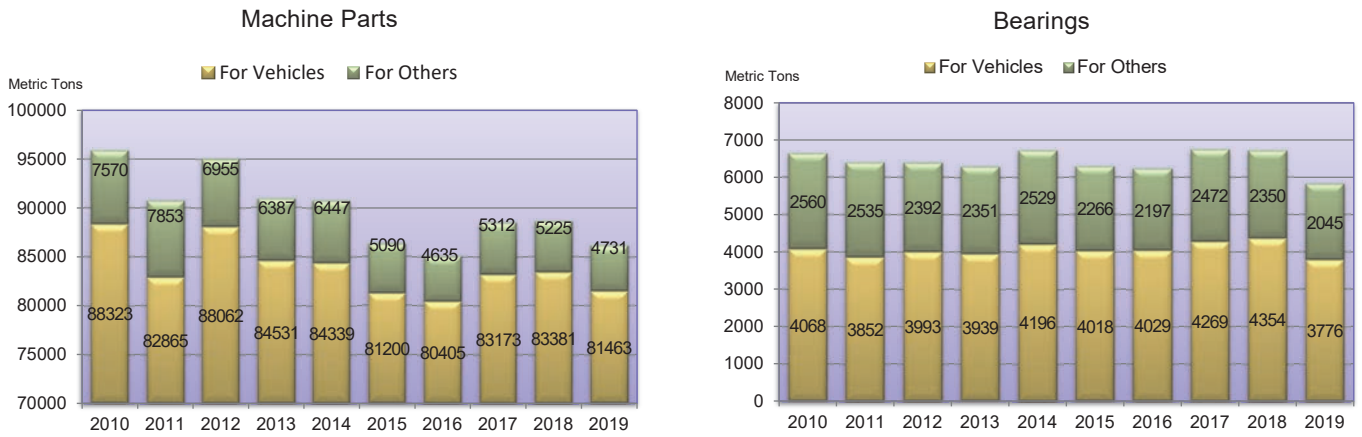


Fig3 shows the use breakdown of Machine Parts and Bearings in vehicle in 2018 based on the demand structure survey by JPMA.

Fig3. Breakdown of Machine Parts and Bearings for Vehicles (2018) (Source: JPMA)

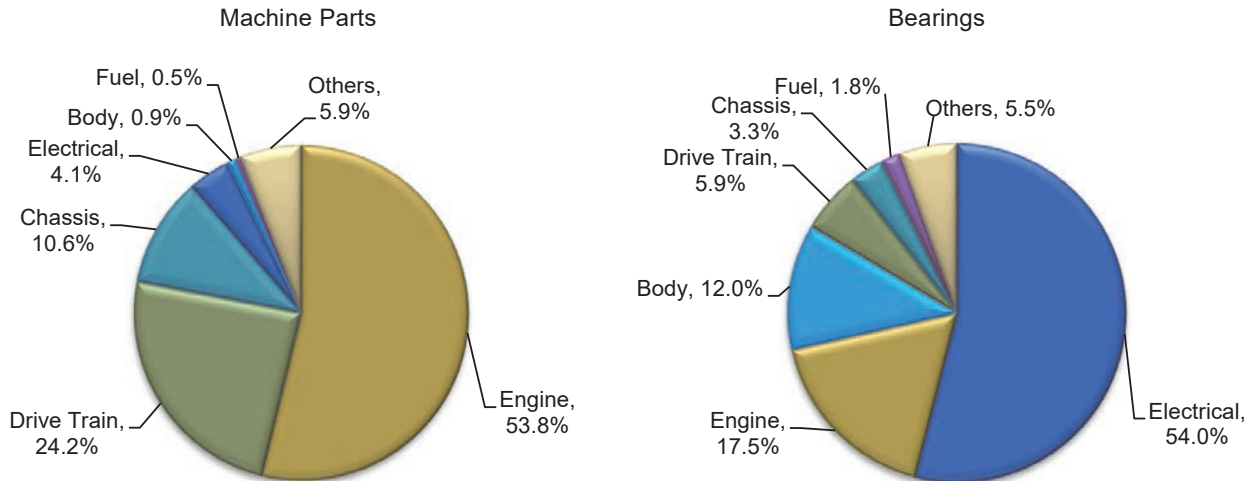


Fig4 shows the weight of sintered parts calculated for one car and the car production in Japan for the period from 2009 through 2018.

The weight of sintered parts calculated for one car in 2018 was 8.7kg in Japan, 19.5kg in U.S. and 8.5kg in Europe.

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

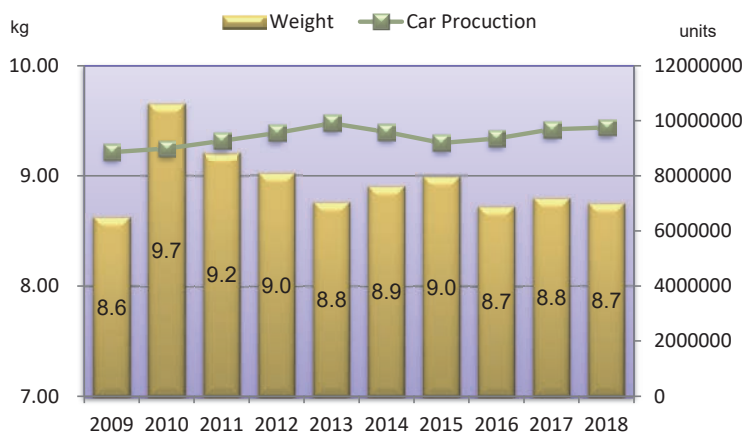
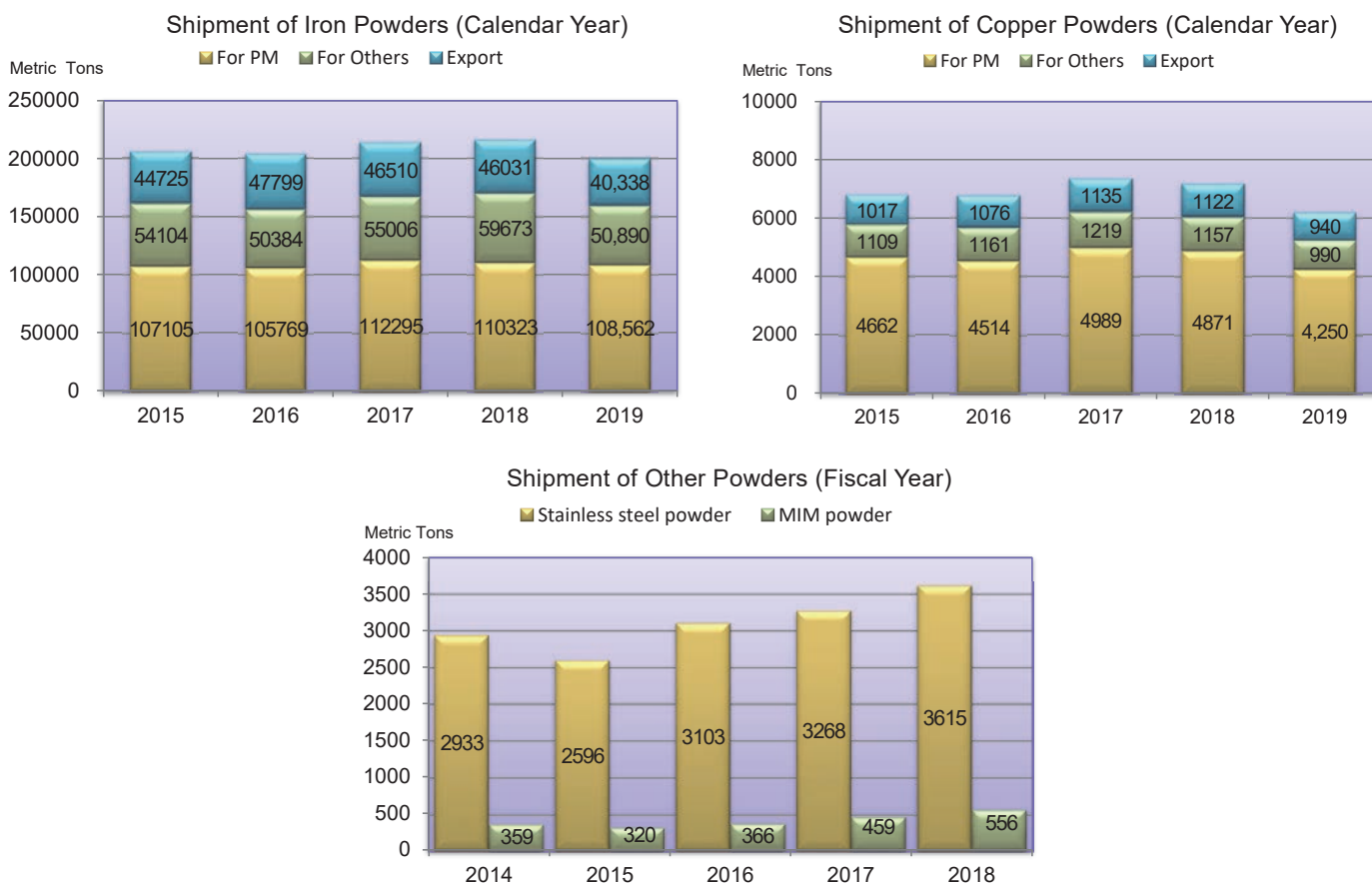


Fig5 shows the Shipment of Iron and Copper Powders for the period from 2015 through 2019 and Shipment of Other Powders for the period from 2014 through 2018.

There is no big change between the shipment constitution of Iron Powder and Copper Powder, but the shipment of Stainless steel powder was expanded because of the use expansion for heat-resisting and anti-oxidation products.

Because the many use field of MIM products are existing in Japan, use trend is different for each use field, MIM powder demand will increase in future over all.

Fig.5 Shipment of Metal Powders (Source JPMA)



Awards

Personal Prize

Mr. Isamu Kikuchi

Supreme Advisor of PORITE CORPORATION

1963-2019

Chairman of JPMA

Chairman of APMA

Board Member of JPMA

Chairman of Selection Committee for Award Prize

Member of PM2012 Organizing Committee



Mr. Takashi Saito

Former Executive Director of JPMA

2014-2019

Executive Director of JPMA

Secretariat of APMA



Development Prize

GRAND PRIX

Sintering of disconnect parts



FINE SINTER CO., LTD.
TOYOTA MOTOR CORPORATION

New Design

Sintered brake lining for new high-speed railroad vehicles



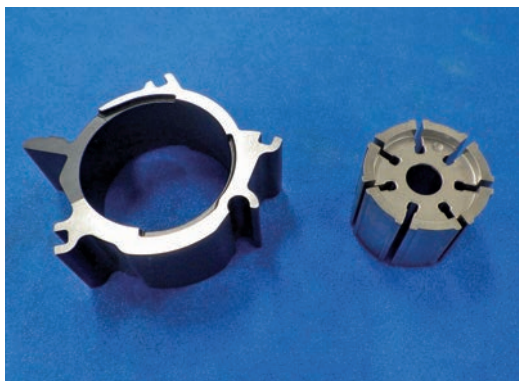
FINE SINTER CO., LTD.

Development of Double teeth Sprockets with the application of Green machining



SUMITOMO ELECTRIC INDUSTRIES, LTD.

Development of the parts for the variable displacement oil pump



DIAMET CORPORATION

Development of Lightweight iron-based Sintered Carriers that can replace Aluminum products



SUMITOMO ELECTRIC INDUSTRIES, LTD.

Development of Sinter Hardened 4WD Cam Parts with High Bending Fatigue Strength



SUMITOMO ELECTRIC INDUSTRIES, LTD.

Development of sintered oil-impregnated bearings for Electric Parking Brake (EPB)



DIAMET CORPORATION

New Powder

Premixed iron powder with machinability improvement effect in wide range of cutting condition



Prize winning product and its chips

JFE Steel Corporation

Effort Prize

Development of Niobium-added Stainless steel Sintered material for Desensitization



SUMITOMO ELECTRIC INDUSTRIES, LTD.

Cost-down by using MIM (Metal Injection Molding) for industrial collaborative robots



FINE SINTER CO., LTD.

Prize for Distinguished Service of the Committee Activities

Mr. Masaaki Matsumoto

Tungaloy Corporation

2000-2019

Board Member

Auditor

Chairman and Member of Technical Committee
for Sintered Friction Materials

Member of Committee for Administration

Member of Sub-Committee for Public Relations

Member of Committee for 60th Anniversary Edit



Recognition of Superior Employees

2019 prizewinner numbered 18 persons

(13 member companies)



Environment Prize

Reduction of CO₂ basic unit

NAPAC Co., Ltd.

Headquarter and Plant

(Nagano Prefecture, Japan)



Reduction for total waste basic unit

PORITE COPORATION

Headquarter and Plant

(Saitama Prefecture, Japan)



2019 APMA Activities

The 11th Board Meeting

Date : Wednesday 20 February 2019 17:00 - 18:15

Venue : Meeting Room 1st Floor, JW Marriott Hotel, Sanapati Bapat Rd.. Pune, India

Participants :

APMA Board Member

President	Chiu-Lung Chu (TPMA, Taiwan)
Director	Aniket Gore (PMAI, India)
Secretariat	Takashi Saito (JPMA, Japan)

Attendant of APMA Members Association

CPMA(China)	Xiangji Kong (Deputy Secretary General)
JPMA(Japan)	Motonobu Isaka (Chairman of Committee for Administration) Yoshio Uetsuki (Member of Committee for Administration) Kazunori Kato (Member of Committee for Administration) Aoi Yamanaka (Secretary)
JSPM(Japan)	Yoko Inoue (Director, Secretary General)
KPMA(Korea)	Joon Park (Secretary General)
KPMI(Korea)	Hyoung Seop Kim (President) Chang Kyu Rhee (Former President), Jai Sung Lee (Former President)
PMAI(India)	N.Gopinath (Former President) Deepak Grover (Vice President), NB Dhukey (Vice President) P. Ramakrishnan (Advisor)
TPMA(Taiwan)	Sea Fue Wang (President) Ming Wei Wu (Secretary General)
ThaiPMA(Thailand)	Boon Teeraprawatekul (Secretary General)

Conclusions

- *Decided topics exchange method for each association
- *2018 Finance and 2019 Budget was approved
- *Report of APMA2021 Korea
- *Report of Next WORLD PM2024 Japan

APMA2019 Pune, India Review

By the sponsorship of Powder Metallurgy Association of India (PMAI), APMA2019 was held at JW Marriot hotel in Pune, India, 3 days from February 19, 2019 through February 21.

This is the first time held in India for APMA meeting. The meeting was held from the registration at February18. The opening ceremony, presentation of market trend of Asia and India and the invitation lectures were held at February 19, and the invitation lectures and the paper publications were enforced

at February 20. About 450 people attended mainly from Asian area. Including the exhibition, all paper publications and meetings were performed at JW Marriot Hotel.

The paper publications were performed from the afternoon of February 20 through February21, at 6 meeting rooms. Total 135 paper publications (132 oral presentation and 3 poster presentation) were performed.

PM Production in Asia

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

(Metric Tons)

AREA		2017	2018	2019	19/18(%)
Japan	Iron-base	92,166	92,283	89,239	96.7
	Copper-base	3,059	3,026	2,776	91.7
	Total	95,225	95,309	92,015	96.5
China	Iron-base	169,636	168,876	162,612	96.3
	Copper-base	15,535	14,831	10,780	72.7
	Total	185,171	183,707	173,392	94.4
Korea	*Iron-base	68,917	65,858	64,531	98.0
	Copper-base	435	639	673	105.3
	Total	69,352	66,497	65,204	98.1
Taiwan	Iron-base	32,637	34,800	30,630	88.0
	Copper-base	2,070	2,040	2,060	101.0
	Total	34,707	36,840	32,690	88.7
India	Iron-base	33,600	36,000	40,000	111.1
	Copper-base	7,200	8,900	10,200	114.6
	Total	40,800	44,900	50,200	111.8
Malaysia	Iron-base	3,744	3,970	3,920	98.7
	Copper-base	85	95	115	121.1
	Total	3,829	4,065	4,035	99.3
Singapore	Iron-base	1,542	1,655	1,442	87.1
	Copper-base	404	314	384	122.3
	Total	1,946	1,969	1,826	92.7
Thailand	Iron-base	16,498	19,771	18,434	93.2
	Copper-base	66	67	76	113.4
	Total	16,564	19,838	18,510	93.3
Indonesia	Iron-base	6,134	6,778	6,588	97.2
	Copper-base	96	104	111	106.7
	Total	6,230	6,882	6,699	97.3
Total	Iron-base	424,874	429,991	417,396	97.1
	Copper-base	28,950	30,016	27,175	90.5
	Total	453,824	460,007	444,571	96.6

*Included "Others"

Application Field Ratio of PM Production (2019) (%)

AREA	For Transportation Machines	For Industrial Machines	For Electrical Machines	For Others
Japan	94.2	4.0	1.4	0.4
China	57.0	1.0	28.0	14.0
Korea	95.9	0.0	2.3	1.8
Taiwan	44	26	8	22
India	80.0	7.0	8.0	5.0
Malaysia	67.8	1.7	30.2	0.2
Singapore	47.5	3.3	49.1	0.1
Thailand	92.8	3.6	3.6	0.0
Indonesia	100.0	0.0	0.0	0.0