Dear Friends:

Your successive cooperation with our JPMA would be much appreciated.

In April of last year, the JPMA 60th 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 website (http://www.jpma.or.jp/), that provides the newest information about our activities and JPMA awarded products of every fiscal year.
### 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

*Selection Committee for JPMA Award (Development Prize)

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

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.
*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).
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.

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.

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 asd operating of “Opinion Exchange Meeting among Young Workers of Sintered Friction Materials Companies”.

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”.

Chairman:: Mr.. Atssuuhihii  OOkkuummaa
((PORITE CORPORATION))
New Chairman

Chairman:: Mr.. YYoossaannyaarii  IIsshhii
((DDIIAAMMEETT CCOORRPPOORRAATTIIOONN))
Commission from 2014

Chairman:: Mr.. YYoossiihhiissaa  UUeedda
((FFIINNEE SSIINNTTEERR CCOO..,, LTTDD..))
Commission from 2010

Chairman:: Mr.. HHiiddeeoo  SSaattoo
((Mitsubishi Materials Techno Corporation))
New Chairman

Chairman:: Mr.. YYoossiihhiissaa  UUeedda
((FFIINNEE SSIINNTTEERR CCOO..,, LTTDD..))
Commission from 2010

Chairman:: Mr.. HHiiddeeoo  SSaattoo
((Mitsubishi Materials Techno Corporation))
New Chairman
Technical Committee for Metal Powders
Number of Committee Members: 15 persons

*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.

Committee for Metal Injection Molding
Number of Committee Members: 11 persons

*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”.

Marketing Committee
Number of Committee Members: 14 persons

*Introduction of topics by Committee Members and exchange of views.

Committee for International Standardizations
Number of Committee Members: 7 persons

*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.
Committee for Environment
Number of Committee Members: 5 persons

Chairman: Mr. Motonobu Isaka
(DIAMET CORPORATION)
Commission from 2014

*Introduction of Case Study of “CO₂ Emissions Reduction”, “Waste Product Reduction” and “KANKYO HIYARI”.
*Establish of the “Environment Awards”.

JPMA Events and International Communications

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>18, March</td>
<td>The 11th PM Information Exchange Meeting.</td>
</tr>
<tr>
<td>20, April</td>
<td>Tour of Technical Committee for Sintered Parts. IHI Corporation.</td>
</tr>
<tr>
<td>27, April</td>
<td>The 60th Anniversary party.</td>
</tr>
<tr>
<td>19, May</td>
<td>2016 JPMA General Assembly. The 2016 Activity Plans and Budget of JPMA.</td>
</tr>
<tr>
<td>24, May</td>
<td>JPMA Special Session at the JSPM Spring Meeting.</td>
</tr>
<tr>
<td>16, June</td>
<td>Tour of Committee for Administration. Kirin Brewery Company, Limited Toride Plant and Shibanuma-syoyu Co., Ltd..</td>
</tr>
<tr>
<td>24, June</td>
<td>11th MIM Seminar.</td>
</tr>
<tr>
<td>1, July</td>
<td>4th Human resources development seminar.</td>
</tr>
<tr>
<td>22, July</td>
<td>The 2nd Opinion Exchange Meeting among Young Workers of Sintered Friction Materials.</td>
</tr>
<tr>
<td>15-16, September</td>
<td>The 7th Opinion Exchange Meeting among Young Workers of MIM Companies.</td>
</tr>
<tr>
<td>9-13, October</td>
<td>World PM2016 Congress &amp; Exhibition in Hamburg.</td>
</tr>
<tr>
<td>11, October</td>
<td>APMA, 8th Board Meeting. EPMA/MPIF/JPMA Meeting.</td>
</tr>
<tr>
<td>20, October</td>
<td>2016 JPMA Fall General Assembly. Announcement of 2015 JPMA Awards.</td>
</tr>
<tr>
<td>17, November</td>
<td>The 34th Case Studies of Production Efficiency Improvement Meeting and the 19th Metal Powder and Equipment PR Meeting.</td>
</tr>
</tbody>
</table>

JPMA Publications

JPMA 60th Anniversary “Funmatsu Yakin Rokuju-nen (60-year history of JPMA)”.
The 37th Investigation Collection Results of Sintered Parts Demand Structure.
JPMA News “Funmatsu Yakin” (No385-388).
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.
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)](Source: JPMA and JAMA)
Fig5 shows Shipment of Metal Powders.

**Fig.5 Shipment of Metal Powders (Source JPMA)**

**Shipment of Iron Powders (Calendar Year)**

<table>
<thead>
<tr>
<th>Year</th>
<th>For PM</th>
<th>For Others</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>32001</td>
<td>65186</td>
<td>109972</td>
</tr>
<tr>
<td>2013</td>
<td>42954</td>
<td>55683</td>
<td>108883</td>
</tr>
<tr>
<td>2014</td>
<td>48119</td>
<td>53868</td>
<td>107642</td>
</tr>
<tr>
<td>2015</td>
<td>44725</td>
<td>54104</td>
<td>107105</td>
</tr>
<tr>
<td>2016</td>
<td>47799</td>
<td>50384</td>
<td>105769</td>
</tr>
</tbody>
</table>

**Shipment of Copper Powders (Calendar Year)**

<table>
<thead>
<tr>
<th>Year</th>
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<th>For Others</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1002</td>
<td>1102</td>
<td>4848</td>
</tr>
<tr>
<td>2013</td>
<td>1101</td>
<td>1126</td>
<td>4768</td>
</tr>
<tr>
<td>2014</td>
<td>1177</td>
<td>1181</td>
<td>5081</td>
</tr>
<tr>
<td>2015</td>
<td>1017</td>
<td>1109</td>
<td>4662</td>
</tr>
<tr>
<td>2016</td>
<td>1076</td>
<td>1161</td>
<td>4514</td>
</tr>
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</table>

**Shipment of Other Powders (Fiscal Year)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Stainless steel powder</th>
<th>MIM powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2838</td>
<td>414</td>
</tr>
<tr>
<td>2011</td>
<td>2841</td>
<td>389</td>
</tr>
<tr>
<td>2012</td>
<td>3014</td>
<td>313</td>
</tr>
<tr>
<td>2013</td>
<td>2893</td>
<td>281</td>
</tr>
<tr>
<td>2014</td>
<td>2933</td>
<td>359</td>
</tr>
<tr>
<td>2015</td>
<td>2596</td>
<td>320</td>
</tr>
</tbody>
</table>
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 60 years 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.
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
A-3
Development of Hybrid magnetic material reactor core for booster

B New Materials
B-1
Anti-adhesive wear properties improved matrix-toughened seat, valve material

C Process Development
C-1
VVT parts manufacturing-line which realized the simultaneous green machining of holes and grooves, attaching two-dimensional bar code.
F Effort Prize

F-1

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

SUMITOMO ELECTRIC INDUSTRIES, LTD.

Prize for Distinguish Service of the Committee Activities

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

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 CO₂ basic unit
Hitachi Chemical Co., Ltd.
Matsudo Works, Matsudo site

Reduction for total waste basic unit
Porite Corporation
Kumagaya Plant
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)

<table>
<thead>
<tr>
<th>AREA</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>16/15(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>93,594</td>
<td>3,984</td>
<td>97,578</td>
<td>166,865</td>
</tr>
<tr>
<td>China</td>
<td>89,123</td>
<td>3,449</td>
<td>92,572</td>
<td>146,153</td>
</tr>
<tr>
<td>Korea</td>
<td>88,145</td>
<td>3,121</td>
<td>91,266</td>
<td>156,525</td>
</tr>
<tr>
<td>Taiwan</td>
<td>98.9</td>
<td>90.5</td>
<td>98.6</td>
<td>107.1</td>
</tr>
<tr>
<td>India</td>
<td>94.8</td>
<td>98.9</td>
<td>96.6</td>
<td>106.6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3,121</td>
<td>3,121</td>
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</tr>
<tr>
<td>Singapore</td>
<td>14,748</td>
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<td>14,748</td>
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<tr>
<td>Thailand</td>
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</tr>
<tr>
<td>Indonesia</td>
<td>17,141</td>
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<tr>
<td>Total</td>
<td>419,430</td>
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*Included “Others”*
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<tr>
<th>AREA</th>
<th>For Transportation Machines</th>
<th>For Industrial Machines</th>
<th>For Electrical Machines</th>
<th>For Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>94</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>China</td>
<td>65</td>
<td>2</td>
<td>22</td>
<td>11</td>
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<tr>
<td>Korea</td>
<td>93</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Taiwan</td>
<td>50</td>
<td>23</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>India</td>
<td>80</td>
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<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>56</td>
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<td>Singapore</td>
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<td>0</td>
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<td>Thailand</td>
<td>92</td>
<td>1</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
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