



April 2021

2021 Newsletter

Asian Powder Metallurgy Association

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Thailand Thai PMA



Chu, Chiu-Lung

President

Asia Powder

Metallurgy Association

The impact of the new coronavirus is far beyond our prediction and understanding. After a year of hard work, although countries have begun to introduce a vaccine, the mutation and infection rate of the virus are still not known. We have to speed up our pace and work together to tide over the difficulties.

I am very happy to see that APMA members are still committed to exchanges and information sharing in PM as usual. In August of 2020, we started to cooperate with MPIF and EPMA to establish a database about PM and update it regularly (<https://www.epma.com/members-directory> or <https://my.mpif.org/MPIF/directory>). Users can

learn much more about technical information through this platform. In the future, we will also assist in the integration of corporate information to make the usefulness of PM wider and deeper.

In addition, Taiwan Powder and Powder Metallurgy Association will be celebrating the 40th anniversary this year, and the association has begun various preparations for celebration. The celebration meeting will be scheduled for Oct. 15 and 16, 2021. It is hoped that the epidemic will slow down by then, business activities resume, and I can meet you in Taiwan to reminisce about the past!



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JPMA Activity of 2020



On January 20, 2020, we held a New Year greeting party at Inter Continental Tokyo Bay. A total of about 200 people participated, including guests from the Ministry of Economy,

Trade and Industry, Japan Society of Powder and Powder Metallurgy, related organizations, seniors and members, and award winners who attended the JPMA Awards Ceremony. After that, with the expansion of Covid-19, all events and seminars were held on the Web. 16th PM Information Exchange Meeting(Mar.)

- 2021 JPMA General Assembly(May)
- JPMA Special Session at the JSPM Spring Meeting(Jun.)
- 9th Human resources development seminar(Jul.)
- 39th Case Studies of Production Efficiency Improvement Meeting and the 24th Metal Powder and Equipment PR Meeting(Nov.)



Ceremony of Awarding Various Honors(Recognition of Superior Employees)(Jan.)



2020 New Year Greeting Party(Jan.)



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Ceremony of Awarding Various Honors (JPMA Award, Development prize Grand Prix Finesinter & TOYOTA MOTOR CORPORATION)(Jan.)



Ceremony of Awarding Various Honors (Industry Achievement Award, Mr. Isamu Kikuch)(Jan.)



JSPM Activity of 2020

Our activities in 2020 were severely restricted by COVID-19 like any other associations. Most activities have changed from real to virtual.

Annual Meeting

We hold the Spring Meeting and the Autumn Meeting every year. Last spring meeting was scheduled to hold in Waseda University in May. Unfortunately, it had been cancelled it by COVID-19.

In the autumn meeting case, an online meeting was held in October from 27th to 29th. The number of presentations is 159. The methods of presentation are the on-demand video presentation, the on-demand slide presentation, and the presentation only with the abstract pdf.

On-demand presentations may have some troubles. They may be captured, copied by recording, downloaded, and so on, in cases of the on-demand videos and slides. Although various prevention functions are added, these captures cannot be completely prevented. We only relied on the morals of the participants. Participants have some good opinions. They can watch videos and slides at their own pace. They can use their time effectively. Some people said that they can see the materials on the PC better than the actual venue screen. But it was difficult to make the Q&A between the presenter and the participant.

Power Metallurgy Seminar

Every year, we hold "Powder Metallurgy Seminar". It is consisted of "Introduction", "Basic", and "Application". There contain 4 lectures, respectively.

In 2019, we held 3 seminars in the real venue. However, due to the covid-19 in 2020, all these three seminars were held in a hybrid form, with participants selecting to be in the venue or to attend in an on-line form. So, we prepared 2 ways to attend the seminar through the web or at the real venue, in so called hybrid way. More than half of the participants attended through the web. We received the questions from both participants in the venue and on line. Q & A in the seminar have been done very smoothly. We expect the participants had deep understandings of powder metallurgy.

Journal of the Japan Society of Power and Powder Metallurgy

We published the monthly journal, volume 67. The 66 papers were published in our journal in 2020. Some following special issues were planned, "Control and Manipulation of Microstructure in Magnetic Materials for Functional Devices", "New Development of Powder Processing under External Fields", "High-performance Electronic Components and Materials for Smart Society", "Additive Manufacturing 3D Printing Technology and HIP/CIP", and "Progress of Engineering and Research for Future Development of Hard Materials". Journal

of JSPM is published on the official website of J-STAGE (<https://www.jstage.jst.go.jp/browse/jjspm>). Everyone can read all the abstracts and references. However, only our members can read all the PDF files of the papers using ID and PW within 6 months after publications.



The screenshot shows the website for the 2020 Autumn Meeting of the Japan Society of Powder and Powder Metallurgy. The page includes a navigation menu on the left, a main content area with a banner for the meeting, and a search bar on the right. The banner text reads: "2020年度秋季大会 (第126回講演大会)" and "Autumn Meeting of the Japan Society of Powder and Powder Metallurgy, 2020". Below the banner, it states: "Date: October 27 (Tue) - October 29 (Thu), 2020" and "Venue: Kyoto University, Centermain Hall, School of Medicine". A notice indicates that the meeting has been changed to an online holding due to COVID-19. The page also lists important dates for presentation application and abstract submission.



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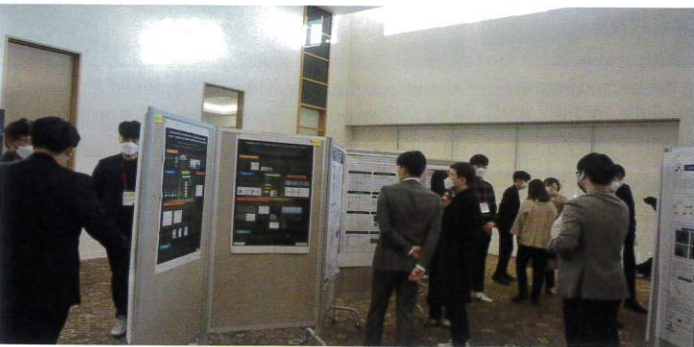
2020 Activites

A 16th ISNNM-2020 (International Symposium on Nano and Novel Materials) was held at Phoenix Jeju in Jeju from November 3 to 6. The ISNNM-2020 is an International Conference organized by KPMI(Korean Powder Metallurgy Institute). It was first started in Korea in 2007 and is held every 2 years. A 16th ISNNM-2020 was organized by KPMI and co-hosted by TU Wien, Austria and Institute of Metallurgy & Materials Science, Poland. The event was originally scheduled to take place in TU Wien, Austria in early July 2020, but was canceled in Austria due to global pandemic of Covid-19. So, the event was canceled in Austria. The 16th ISNNM-2020 was held Incorporating with the 54th Conference of Korean Powder Metallurgy Institute from November 3 to 6, 2020 at Jeju, Korea.

16th International Symposium on Novel and Nano Materials

Incorporating the Fall Conference of Korean Powder Metallurgy Institute

Period : Phoenix Jeju, Korea
Venue : 3-6 November, 2020



New President



Name : Prof. Yong-Ho Choa
e-mail : choa15@hanyang.ac.kr

2021 Activites

Korean Powder Metallurgy Institute Spring Conference

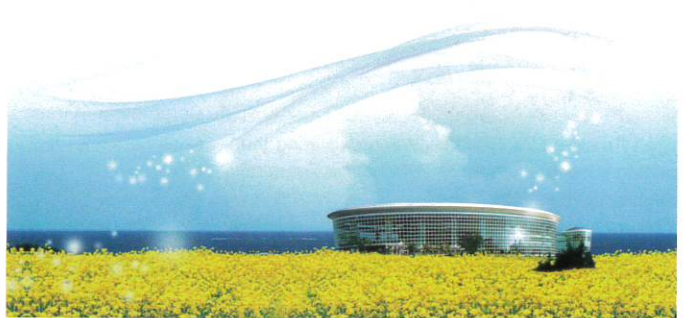
Period : 1-2 April, 2021
Venue : Yeosu Expo Convention Center, Yeosu , Korea



3rd International Symposium on Innovation in Materials Processing

Incorporating the Fall Conference of Korean Powder Metallurgy Institute

Period : ICC Jeju, Korea
Venue : 2-5 November 2021



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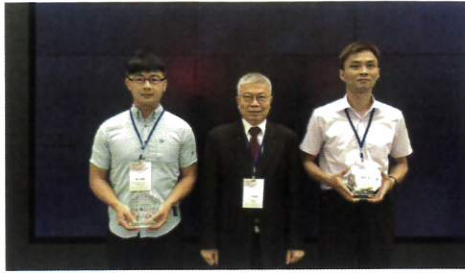


Events of the Taiwan Powder Metallurgy Association (TPMA)

In 2020, the TPMA annual general membership meeting was held on September 3rd at the Industrial Technology Research Institute in Hsinchu. Several awards, including the Outstanding Paper Award, Excellent Staff Award, Innovation Award, and Association Scholarships, were awarded at the annual meeting. Two keynote speakers were invited to present their significant talks. The first keynote speech, entitled "The Effects of Global Supply Chain Restructuring on the Key Industries Strategy in Taiwan—Taking Metal Products as an Example", was presented by Dr. Ko-Hsiung Lien, Director of the Research Division VIII at the Taiwan Institute of Economic Research. The second keynote speech, entitled "Solar Applied Materials Technology Corporation—Green Supply Chain Localization", was presented by Dr. Chien-Yung Ma, Chairman of the Solar Applied Materials Technology Corporation.

The TPMA board members visited the Solar Applied Materials Technology Corporation on November 17th, and a board meeting was held in a conference room there. Furthermore, TPMA and the Industrial Technology Research Institute co-organized three seminars in 2020. The three seminars were "Workshop on Intelligent Platforms for Powder Metallurgy Processes", "Seminar on Advanced Aluminum Alloy Composite Powders and Application Technology", and "Workshop on PM Digital Additive Manufacturing Technology Platforms".

In 2021, TPMA will hold the 40th anniversary and annual general membership meeting in October. A cross-strait PM conference will also be held in October.



TPMA President Dr. Sea-Fue Wang presented the Excellent Staff Award



TPMA Vice President Mr. Chun-Chung Shaw presented the Innovation Award



Dr. Ko-Hsiung Lien presenting the first keynote speech, "The Effects of Global Supply Chain Restructuring on the Key Industries Strategy in Taiwan—Taking Metal Products as an Example"



Dr. Chien-Yung Ma presenting the second keynote speech, "Solar Applied Materials Technology Corporation—Green Supply Chain Localization"



TPMA board members visiting the Solar Applied Materials Technology Corporation



TPMA board meeting at the Solar Applied Materials Technology Corporation



Attendees of the Workshop on Intelligent Platforms for Powder Metallurgy Processes



Attendees of the Seminar on Advanced Aluminum Alloy Composite Powders and Application Technology



TPMA President Dr. Sea-Fue Wang delivering the opening speech at the 2020 TPMA annual general membership meeting



APMA President Mr. Chiu-Lung Chu addressing at the 2020 TPMA annual general membership meeting



Venue of the 2020 TPMA annual general membership meeting



Attendees of the Workshop on PM Digital Additive Manufacturing Technology Platforms



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Powder Metallurgy Short Course-20 (PMSC20) 26-29 September 2020

In Virtual Mode: Platform used: Google Meet

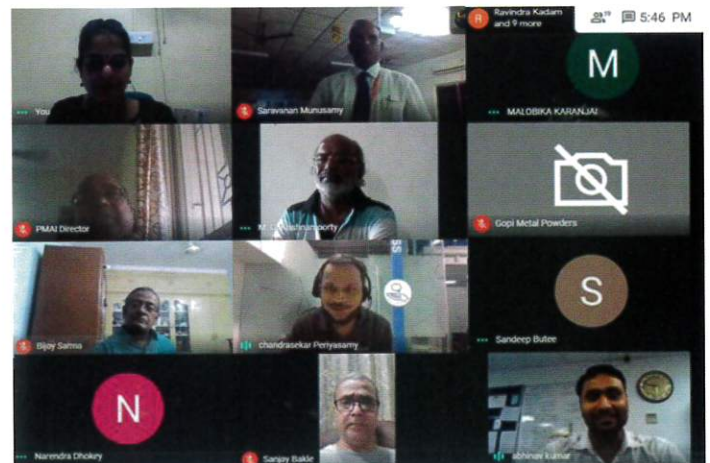
A four-day short-term course on powder metallurgy "Powder Metallurgy Short Course-20 (PMSC20)" took place from 26-29 September 2020 in the virtual mode and governed through Department of Metallurgy and Materials Science, College of Engineering Pune Campus. The program was organized by PMAI in collaboration with Department of Metallurgy & Materials Science College of Engineering Pune. Dr. S.P.Butee, Co-Convenor and HoD Metallurgical Engineering COEP welcomed the participants and

briefed about workshop. He also introduced various activities and happenings of the department to the people present in the inauguration. Mr Aniket Gore, President, Powder Metallurgy Association of India gave introduction about PMAI and the activities housed under the flagship. Dr. Vaishali Poddar gave instructions for online mode of communication during PMSC 20 and later Dr. S.P.Butee proposed vote of thanks. Invited talks covered various aspects of powder metallurgical technology. The multiple invited talks were delivered by eminent speakers and covered various powder metallurgy and its application related topics as tabulated in Table 1.

Table 1: Topics of the invited talks covered by various speakers at PMSC 20.

Sr. No.	Topic	Name of the Speaker
1	Overview of Powder Metallurgy and Particulate Materials Technology	N.L.Chandrachud, Consultant
2	High Density, High Performance PM Materials Processing	N.L.Chandrachud, Consultant
3	Thermal Methods of Powder Production for PM	Dr. T . Mahata, BARC
4	Mechanical and Solution Methods of Powder Production for PM	Dr. K. Murli Gopal, Novoken Innovations
5	PM Porous Materials	Dr. K. Murli Gopal, Novoken Innovations
6	Manufacturing Techniques for Commercial Iron Powders	M. Nipanikar, Hogan India
7	Powder Characterization	Prof.P.Ramakrishnan, Emeritus Professor, IITB
8	Maintaining Quality in PM Manufacturing	Rajendra Sethiya, GKN
9	Design and fabrication of Tooling for PM	Sanjay Rastogi, Consultant
10	Furnaces for sintering & heat treatment	N. Gopinath, Fluidtherm
11	Metal Injection Molding	Prof Parag Bhargava, IIT B
12	Consolidation of Powders:Binders, Lubricants & Sintering Aids	Dr. Syam Babu, BARC
13	Sintering of Some Commercial Ceramics	Dr. Rama Mohan Tallapragada, BARC
14	Fabrication / Shaping Methods for Advanced Ceramics and Composites	Dr. Deep Prakash, BARC
15	PM parts Heat Treatment	Dr. N.B. Dhokey, CoEP
16	Thermal Consolidation of Powders– Sintering Fundamentals	Dr. N.B. Dhokey, CoEP
17	Powder metallurgy of Bulk Metallic glass Composites	Dr.Bhaskar Majumdar, DMRL
18	Bond Matrices in Diamond Cutting Tools	Dr. Vivek Singal, Sharp Diamond
19	Friction Materials	Dr. Malobika Karanjai, ARCI
20	Biomaterials	Dr. Malobika Karanjai, ARCI
21	Tungsten Alloys in Defence and Aerospace Industry	Mr. Bijoy Sarma, Consultant
22	Overview of PM Standards	Dr. V. S. Poddar, COEP

Each session comprised of dedicated discussions, challenges and opportunities in powder metal lurgy technology development. Overall there were about 17 participants attended this course which were drawn from diverse industries viz. Heavy Alloy Penetrator Project, Trichy, Godrej & Boyce Mfg. Co. Ltd., Federal Mogul, Tenneco, Yogeshwar Engineering, Danfoss Power Solution India Pvt. Ltd., Sintercom India Limited, Aloft Specialities, Sarda Metal Powders, PP Patel and Company. The course feedback was collected from all the participants and the overall rating for the course came out to be 4.1 out of 5. Few suggestions were given by the participants to further improve the course effectiveness viz. case studies related to PM to be discussed in more details, elaborate information on basic set up needs of PM related functioning, and information about tolerancing practices in case of as sintered components having different geometries. Also, based on the courses taught, online examinations in between the talks were conducted and participants had responded very well to this.



Snap of the valedictory function which took place on 29 September 2020.



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Academic Activities from CPMS

The activity of 2020

The Symposium on Microstructure Characterization and Research of Advanced Materials, held by State Key Laboratory of Powder Metallurgy in Central South University and Thermo Fisher Scientific, aimed to promote communications and cooperation among experts and scholars and further improve their skills on microstructure characterization and novel material design. The ongoing and future frontier development of advanced material characterization techniques, such as imaging, spectroscopy and in-situ methods were profoundly discussed during the symposium. This symposium invited famous experts in microstructure characterization and material research fields to give keynote talks as well as Thermo Fisher Scientific company to show its new products and development on techniques.



The new activities scheduled in 2021

No.	Category	Conference Name	Scale(Number of people)	Conference Date	Host City	Main Content
1	Domestic academic exchange	The Sixth Conference on special powder metallurgy and composite material preparation / processing	> 300	2021/11	To be determined	In the conference, the developments and achievements of the special Powder Metallurgy and composite materials will be presented and discussed, the advanced production processing will be summed, some typical living cases will be presented and compared. It aims to improve the production and processing of nonferrous metal and composite materials.
2	Domestic academic exchange	2021 national powder metallurgy conference and 2021 coastal powder metallurgy technology seminar	> 1000	2021/7-2021/8	Changsha, Hunan	This conference aims to help the communication and cooperation between researchers working on Powder Metallurgy, and promote the future development of Powder Metallurgy industry in China.



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2020 Powder Metallurgy Technology and Applications (Guangzhou) Forum



The 2020 East China Powder Metallurgy Technology Exchange Meeting



2nd South China International Summit on Technology and Application of Injection Molding and Additive Manufacturing

New activity scheduled in 2021 of CPMA

1. 10th Anniversary of the CPMA
2. 1st Formnext + PM South China
3. 2021 Powder Metallurgy Technology and Applications Forum
4. The 2021 East China Powder Metallurgy Technology Exchange Meeting
5. The 14th Int'l Exhibition for Powder Metallurgy, Cemented Carbides and Advanced Ceramics
6. 3rd South China International Summit on Technology and Application of Injection Molding and Additive Manufacturing
7. Release of 2020 Powder Metallurgy Blue Paper
8. Seminar on big data and standards of Powder Metallurgy



Update Situation

- Due to COVID-19, ThaiPMA decided to postpone the physical event in 2020.
- However, we are still working on our main purpose to promote PM industry in Thailand.

Activities 2020-1 PM School Training at end-user

- On 15 April 2020
- At Toyota Daihatsu Engineering and Manufacturing
- On site training and in-situ teleconference
- Totally 10 participants from TDEM
- Mr. Bhanu, and Mr. Tharanon as the Speaker from ThaiPMA



PM Training-Photos

Activities 2020-2 Online PM School

- From 18-19 June 2020
- Teleconference to company site (Thai carbon and graphite – TCG) due to Covid-19 incident.
- Totally 25 participants from TCG participate this training
- Mr. Tharanon and Ms. Palida as the speaker from ThaiPMA.



PM Training(Teleconference)-Photos

Activities 2020-3 In-house PM School

- On 23 and 30 June 2020
- On-site training at Sumitomo Electric Sintered Component (T)
- Totally 30 participants join the training
- Mr. Tharanon and Ms. Palida as the speaker from ThaiPMA



PM Training-Photos

Activities 2020-4 Metallography Training at End-user

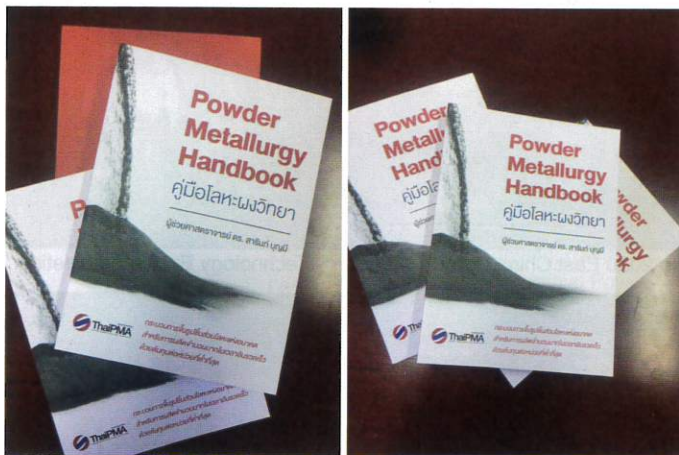
- On 22 and 25 September 2020
- At Toyota Daihatsu Engineering and Manufacturing (TDEM)
- On-site training with metallography training with TDEM lab equipment
- 4 participants join the training.



Metallography Training-Photos

Activities 2020-5 PM Handbook in Thai language

- Published the PM Handbook from Asst. Dr. Sarum at Suranaree University of Technology (SUT).
- The team of three people including Dr. Sarum, Mr. Bhanu, and Mr. Tharanon were selected as the editor from ThaiPMA.
- The 400-page handbook was published on November 2020.
- Now available at Book store.



Powder Metallurgy Handbook: Photos

Planned Activities 2021

- Create online learning material for PM School
- 3 x in-house PM School at PM companies (upon request).
- 1 x Metallography School
- ThaiPMA AM/PM Award
- 3 x Board meeting for member



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