



POWDER METALLURGY ASSOCIATION OF INDIA

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Editorial

It is a pleasure to submit our first newsletter for 2022.

We share hereunder:

- The list of proposed activities for PMAI for the period April 2022 - March 2023.
- A detailed report on the International Conference on Powder Metallurgy PM22. This was the first ever conference held in digital mode, and it was very well received.
- Notice for Annual General Body Meeting of the Powder Metallurgy Association of India, held on 28 May 2022.
- A summary of activities from PMAI during the year 2020 - 2022.

P. Ramakrishnan

Proposed Activities by PMAI

- Short Course on Introduction to Powder Metallurgy (PMSC) – September 2022
- PM Plant Safety and Quality Assurance – October 2022
- Heat Treatment of PM Parts – November 2022
- PM Course on Design of Dies and Tooling – December 2022
- International PM Conference and Exhibition – February 2023

NEWSLETTER

International Conference on Powder Metallurgy 2022 – PM 22 held in virtual mode on 18th - 20th April 2022

(www.pmai.in)

The Powder Metallurgy Association of India (PMAI) had organized a three-day International Conference on Powder Metallurgy 2022 (PMAI-PM22) in virtual mode on 18th – 20th April 2022. The conference was sponsored by DORST (Title Sponsor) and other esteemed Platinum sponsors like ARCI, DR. FRITSCH, Fluidtherm, Haili, Höganäs, IMP, Malvern Panalytical, Makin Metal Powders, Pometon, Porite, Rio Tinto, SACMI, Singhal Sintered, SLM and TATA Steel. In all three days put together, there were more than 300 plus delegates actively participated in this grand event.

Dr. Malobika Karanjai, Co-Convener PM22, welcomed all the dignitaries present online for the international conference. She highlighted this conference as a great opportunity for the powder metallurgy (PM) professionals from Industry, Academia and Research centres to engage in exchange of ideas in the field of PM. Aniket Gore, President – PMAI, introduced PMAI

and the international conference, PM22, and accentuated that the conference will eventually lay a roadmap endowed with guidelines to all concerned for betterment of the PM domain. N.B. Dhokey, Convener PM22 summarised the overall event broad perspective and highlighted the participation from across the globe on broad themes viz. Industrial PM technology for Auto, Powder injection Molding; Additive manufacturing; Hard and Diamond Cuttings Tools; Development of Metal and Alloys for Emerging Applications and Technical Ceramics and Composites.

The Chief Guest for the inauguration of PM22, Sunil Murlidharan, Höganäs India addressed on the corporate reflections and business strategy to cater the needs of Industry 4.0 through PM. The virtual inauguration was also witnessed by the Guest of Honour, Vikram Merchant, Country Head, RioTinto India. He highlighted the PM technology in global perspective.



Virtual Inauguration of International Conference PM22 on 18th April 2022.

In the presence of all the dignitaries, the international conference PM22 Souvenir was released which comprised of extended abstracts of all the invited and contributory talks on plethora of topics related to PM. The inaugural program was ended with Vote of thanks.



Cover page showing release of digital Souvenir of PM22

The conference had an exciting line-up of speakers which included global industry leaders, researchers, and academia. It comprised of 6 plenary lectures, 3 memorial lectures, 29 invited talks and 118 contributory papers. On the inaugural day, i.e., on 18th April 2022 all the plenary lectures were conducted. The plenary and memorial lecture speakers were bestowed with memento from PMAI Association. The invited speakers were also presented with the appreciation letter from the PM22 organizing committee. The wide spectrum of PM22 international conference presentations was covered by hosting six parallel sessions for two consecutive days, i.e., 19th – 20th April 2022. The Digital Backbone of the Conference was ably managed by a Team from College of Engineering

Pune headed by Dr. Vaishali Poddar (Conference Secretariat) and assisted by Swapnil Sable etc.

In addition to this, the selected peer reviewed manuscripts were recommended to various journals subscribed such as Materials Today: Proceedings by Elsevier, Powder Metallurgy Journal by Taylor and Francis and Transaction of Powder Metallurgy Association of India.

Plenary speakers: Dr. Tata Narasinga Rao (ARCI India), Dr. Volker Uhlenwinkel (IWT Germany), Prof. Luis Guerra Rosa (University of Lisbon, Portugal), Dr. Raghavan Gopalan (ARCI India), Dr. Ola Litström (Höganäs AB, Sweden), Prof. Rajendra Bordia (Clemson University, South Carolina)

Memorial Speakers: R. H. Tamhankar Memorial lecture – Dr.T. K. Nandy (DMRL India),

P. R. Roy Memorial lecture – Dr Dinesh Srivastava (NFC India); Shri S. L. N. Acharyulu Memorial lecture – Prof. Anish Upadhyaya (IIT Kanpur, India)

Invited Speakers: Dr Bharat Panigrahi (IIT Hyderabad), Dr Deep Prakash (DAE Delhi), Dr Lokesh C. Pathak (NML Jamshedpur), Dr Malobika Karanjai (ARCI Hyderabad), Dr N.B. Dhokey (COEP PUNE), Dr R. Vijay (ARCI Hyderabad), Dr S. Suryakumar (IIT Hyderabad), Dr Sourabh Nene (IIT Jodhpur), Dr Umesh Mhatre (Surface Modification Technologies), Dr Deepak Kumar Pattanayak (CSIR-CECRI Tamil Nadu), Dr Ebel Thomas (HEREON GERMANY), Ignacio Diez Alonso (Altair, UK), Joao Rezende (FACTSAGE), Joydip Joardar (ARCI Hyderabad), Krishanu Biswas (IIT Kanpur), Prof. Luis Llanes (UPC, Barcelona, Spain), Mahesh Nipani (Höganäs India), Dr Mayur Vaidya (IIT Hyderabad), Dr N. Subba Reddy (Gyeongsang National University, Jinju, South Korea), Dr Ravi Bollina (LechtechmtIHyd), Dr Sabyasachi Roy (ANTS Ceramics), Dr Sandeep Butte (COEP, Pune), Dr Sarika Phadke (KPIT Pune), Dr. Srinivas Rao Bakshi (IIT Madras), Dr V C Srivastava (NML Jamshedpur), Vaishali Poddar (COEP, Pune), Vincent Paris (Rio Tinto), Vivek Singal (Consultant)

Chairperson and Co-Chairperson for various sessions:

Press and Sinter: Session Chairperson: MaobikaKaranjai (ARCI, Hyderabad), Dr. Murli Gopal (Novoken Innovations), Dr. T.K. Nandy (DMRL Hyderabad); **Powder Injection Moulding:** Session Chairperson: Dr N B (College of Engineering Pune), Dr. Madhu Ranjan (CoEP); **Additive Manufacturing:** Session Chairperson: Deepak K. Pattanayak (CSIR-CECRI), Pradyut Sengupta (CSIR-IMMT), S. Surya Kumar (IIT Hyderabad), SastrilIndrakanti (RGKUT, Basar), AjitPanigrahi (CSIR-IMMT), Saurabh Nene (IIT Jodhpur), Maobika Karanjai (ARCI, Hyderabad); **Hard Metals:** Session Chairperson: Vivek Singal (Consultant), Dr. Madhu Ranjan (College of Engineering Pune); **Development of Materials and Alloys for Emerging Applications:** Session Chairperson: Bharat B. Panigrahi (IIT

Hyderabad), Prof. Srinivasa Rao Bakshi (IIT Madras), Dr. Manish Patel (DMRL Hyderabad), Dr. Sheela Singh (SRM University, Vijayvada), Suresh Kumar Garlapati (IIT Hyderabad), Koteswararao V. Rajulapati, (University of Hyderabad), Mayur Vaidya (IIT Hyderabad), Ravi Bollina (Leach Tech Materials), Korla Rajesh (IIT Hyderabad), Atul Deshpande (IIT Hyderabad); **Technical Ceramics and Composites:** Session Chairperson: Sandeep Butee (College of Engineering Pune), R. K. Goyal (MNIT Jaipur), Ajit Kulkarni (IIT Bombay), Amit Sinha (BARC Mumbai), Praveen Kumar (DRDO-ARDE Pune), Sunil Rane (C-MET Pune), KGK Warriar (Anna University).

Also, the inputs and appreciations were shared by the core PMAI committee and the session chairpersons. The program ended with vote of thanks by Convener Dr N B Dhokey.



Feedback session during the valedictory function of the International Conference PM22 on 20th April 2022



POWDER METALLURGY ASSOCIATION OF INDIA

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14th April 2022

NOTICE

A notice is hereby given that the Annual General Body Meeting of the Powder Metallurgy Association of India will be held on Saturday the 28th May 2022, 17.30 hrs in hall A3, 2nd Floor, PYC Hindu Gymkhana, 244, Bhandarkar Rd, Pune, Maharashtra 411004, to transact the following business.

Detailed program is given. Members are requested to make it convenient to attend.

A line of confirmation of attending the meeting may be sent by mail to director@pmai.in on or before 20th May 2022 for logistic arrangements.

AGENDA

- 1) To read and confirm the minutes of the last AGM held on 18th February 2020 at Hotel The Lalit, Mumbai.
- 2) To read and adopt the Annual Report for the year 2020-22 and audited statements for the year 2020-21. Account statement for year 2021-22
- 3) To consider activities for the year 22-23.
- 4) To appoint Auditor for the year 2022-23
- 5) To elect the members of the Governing Council for the term 2022-2024
- 6) Any other item with the permission of the chair

Dr. Deep Prakash
(Hon General Secretary)

If there is no quorum for the meeting up to 17.30hrs. The meeting shall be adjourned and the adjourned meeting will be held at the same place on the same day at 18.00hrs.

In the adjourned meeting the business on the agenda will be transacted irrespective of the quorum.



Activities of Powder Metallurgy Association of India (PMAI) during the year 2020-22

Dear Members of PMAI,

It is a pleasure and honor for me to submit a report on the activities of our dear association, Powder Metallurgy Association of India, PMAI. However, just after the last AGM which was held on 18th February 2020, the whole world has gone through an unprecedented situation of Covid-19 pandemic, and it took a little more than two years, still the situation has not come back to old normal. In those tough and testing times, PMAI activities were severely affected, however, with brave and untiring efforts of our members, we could pull through some of the regular features like PMSC.

You all will be pleased to know that during the last couple of years PMAI has forwarded its agenda of promotion, encouragement and development of powder metallurgy and particulate materials. A summary of the activities in this regard is as follows:

Governing Council Meetings:

In order to discuss and deliberate on various activities, the GC has adapted meeting online. The GC meetings were held on: 16th May 2020, 15th August 2020, 26th January 2021, 27th March 2021, 5th June 2021, 8th August 2021, 14th November 2021 and 14th April 2022 in virtual mode.

International Conference PM-20:



The International Conference & Exhibition on Powder Metallurgy and Particulate Materials (PM-20), concurrent with the 46th Annual Technical Meeting of PMAI was held at Hotel The Lalit, Mumbai, from 19th – 21st February, 2020. Prof. T. R. Rama Mohan and Mr. Bijoy Sarma were Convenor and Co-Convenor of the Conference, respectively. The conference was attended by more than 100 delegates and over 70 presentations were made.





The conference had 65 technical presentations spread over three days. Keynote lectures, Memorial Lectures and Contributory lectures were spread over 7 plenary and 9 parallel sessions and covered various aspects and recent advances in Magnets, Additive Manufacturing, Powders, Consolidation, Sintering, Energy Conversion, Powder Components, Parts, Equipment etc. In addition, recent researches on metal and ceramic powders, processes, composites, characterization techniques and applications etc. were presented in parallel technical sessions.



The Trade Exhibition was participated by 22 exhibitors - Ametek Instruments, Biometal Bearing Ltd., Dorst Technologies GmbH, Fluidtherm Technology Pvt. Ltd., Hexagon Products Development Pvt. Ltd., Höganäs India Pvt. Ltd., Innomet Powders, Kobelco Trading India Pvt. Ltd., Newmet, Ningbo Huizong Powder Machinery Making Co. Ltd., Poly MIM, Pometon India, PVA Industrial Vacuum Systems GmbH, Rio Tinto Metal Powders, Sacmi Imola, Singhal Sintered, SLM Metal, Specialty Sintered Products, Tesscorn Nano science, Xitij Technomep and Yangzhou Haili Precision Machinery. In addition, PMAI showcased its activities in one stall.

The conference was supported by 14 sponsors - Dorst Technologies GmbH, Fluidtherm Technology Pvt. Ltd., Höganäs India Pvt. Ltd., Makin Metal Powders, Ningbo Huizong Powder Machinery Making Co. Ltd., Pometon Powder, Porite, Rio Tinto Metal Powders, Singhal Sintered Pvt. Ltd., SLM Metal (P) Ltd., Specialty Sintered Products Pvt. Ltd., Star Sintered Products, Xitij and Haili Press.

Memorial lectures:

As a tradition, every year during the conference, PMAI hosts memorial lectures delivered by prominent persons in the PM and related fields to commemorate R. V. Tamhankar, P.R. Roy and S.L. N. Acharyulu, who were members and eminent leaders in the field of Powder Metallurgy. In PM-20, these memorial lectures were delivered by:

- Tamhankar Memorial Lecture: "Advances in Processing of High Temperature Materials at MIDHANI" by S. K. Jha, Director (Production & Marketing), MIDHANI, Hyderabad, India
- P.R. Roy Memorial Lecture: "Plutonium Metallurgy in India", U. Basak, IAEA (Retired)
- S L N Acharyulu Memorial Lecture : "Exciting Journey of a Metallurgist through Nanocrystalline Materials using Particulate Technologies", B. S. Murty, Director, IIT Hyderabad

Powder Metallurgy Short Courses (PMSC-20 and PMSC-21):

Due to unprecedented Covid-19 pandemic, it was not possible to organize PMSC like every year, however, the courses in years 2020 and 2021 were organized in virtual online mode.

International Conference PM-22 (Virtual Mode):

International Conference PM-22 was conducted online, in virtual mode. Prof. N. B. Dhokey and Dr. Malobika Karanjai were Convenor and Co-Convenor of the conference. The conference was organized across different time-zones to facilitate speakers. There were total 118 papers.

PMAI Office Activities:

PMAI continued to maintain office at Mumbai. Mr. K. S. Samant, with assistance from his team has been responsible for the running of PMAI office and taking care of all communications, finance and publications. His contributions are duly acknowledged.

Sad Demise:

PMAI announces with grief loss of prominent members of community, as well as those who supported PMAI activities whole heartedly:

1. B. Srinu
2. Prof. G. S. Upadhyaya
3. Mr. Manohar Parrikar
4. Prof. T. R. Rama Mohan
5. Dr. S. Banerjee
6. G. Padmanabhan
7. S. R. Sundaram

We pray to God for keeping the departed souls in eternal peace and may God grant the strength to family members to bear the loss.

On behalf of the members of the Powder Metallurgy Association, The General Secretary would like to thank the sponsors, exhibitors and advertisers for promoting the activities of PMAI.

The General Secretary would like to put on record gratitude to the Governing council members in particular and the members of PMAI for supporting all the events and activities.

Dr. Deep Prakash
Honorary General Secretary

New Governing Council of PMAI Year 2022-24



Aniket Gore
N.B.Dhokey
Sandeep Fatangare
Rajendra Sethiya
Niranjan Narkhede
Prakash Khole
Mahesh Nipanikar
Malobika Karanjai
Deepak Kumar Pattanayak

President
Vice President
Vice President
Vice President
Vice President
General Secretary
Treasurer
Joint Secretary
Joint Secretary



Akshay Patil	Member
Amit Sinha	Member
Anish Upadhyaya	Member
Bharat Panigrahi	Member
Deepak Nimbalkar	Member
Deepak Grover	Co Opted Member
ISR Sastry	Member
Joydip Joardar	Member
Kaustubh Kambale	Member
Mahesh Dhoka	Member
Mahesh Kamble	Member

Manpreet Sachdeva	Member
Nilesh Gawande	Member
N.L.Chandrachud	Co Opted Member
Piyush Agarwal	Member
Rajesh Mirani	Member
Sandeep Butee	Member
Sanjay Rastogi	Member
Sridhar Rajagopalan	Co Opted Member
Vaishali Poddar	Member
Vikas Chandra Srivastava	Member