



Indian Machine Tool
Manufacturers' Association



ANNUAL REPORT 2019 - 2020

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Executive Committee 2019 - 2020

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Indradev Babu

Managing Director
UCAM Private Limited

VICE PRESIDENT

Ravi Raghavan

Managing Director
Bharat Fritz Werner Limited

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Director
Alex Machine Tools Private Limited

Kabir Bhogilal

CXO
Batliboi Limited

D. Srihari

Director
CADEM Technologies Private Limited

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Gedee Weiler Private Limited

S. Girish Kumar

Managing Director
HMT Machine Tools Limited

B.C. Rao

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Kennametal India Limited

K. Soundhar Rajhan

Director - Operations
Lakshmi Machine Works Limited

Sandeep Sirur

Managing Director
Miven Mayfran Conveyors Private Limited

Nikhil Agrawal

Managing Director
Nagel Special Machines Private Limited

Dr. P. Radhakrishnan

Advisor
PSG Industrial Institute

Rajendra S. Rajamane

Managing Director
Rajamane Industries Private Limited

Vijay Pratap Singh

Country Business Head - Motion Control
Siemens Limited

CO-OPTED MEMBERS

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Executive Director
Ashok Manufacturing Company
Private Limited

Nirmal Bhogilal

Chairman
Batliboi Limited

Vikram R. Sirur

Executive Chairman
Miven Mayfran Conveyors
Private Limited



Executive Committee 2019 - 2020

PAST PRESIDENTS

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Managing Director
Ace Manufacturing Systems Limited

P.G. Jadeja

Chairman & Managing Director
Jyoti CNC Automation Limited

L. Krishnan

Managing Director
TaeguTec India Private Limited

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Lokesh Machines Limited

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R. Srinivasan

Widia India Limited*

Jamshyd N. Godrej

Chairman & Managing Director
Godrej & Boyce Manufacturing Company Limited

(* Companies represented by Past Presidents during their tenure of Presidency)

INVITEES

S. Jagtar Singh

President
Association of Ludhiana Machine Tool Industries

Praful Shende

Chief Sales & Marketing Officer
Bharat Fritz Werner Limited

Mohini Kelkar

Director
Grind Master Machines Private Limited

Vivek Nigam

Executive Vice President &
Business Head - Machine Building Division
ISGEC Heavy Engineering Limited

Raghava Badhya T.V.

President
Makino India Private Limited

Yogin Chhaniara

President
Machine Tools Manufacturers
Association (MTMA) - Rajkot

SECRETARY, DIRECTOR GENERAL & CEO

V. Anbu

Foreword



Navigating in Times of Crises

It is my pleasure to present the Annual Report and Audited Statement of Accounts of Indian Machine Tool Manufacturers' Association (IMTMA) for the year 2019 - 2020. As you read this report, you will see how IMTMA has moved forward in so many directions using its experiences and network to serve the machine tool and manufacturing industries, while working with the union and state governments.

Restarting Business

Our country, like much of the world, is experiencing the serious impact of the Covid-19 pandemic, which is causing distress, disrupting our way of life, work and relationships and has opened up questions about the future of an advanced, increasingly technological and global society.

It is clear that, above all else, the priority is to save lives and make progress in the fight against the pandemic. We will not tire in highlighting the work of healthcare professionals and many other industries for their commitment and solidarity. In line with its social commitment, IMTMA has provided support to the Government of Karnataka by providing Bangalore International Exhibition Centre (BIEC) infrastructure to the government for housing migrant labourers and also, establishing Covid Care Centre at BIEC by Bruhat Bengaluru Mahanagara Palike (BBMP).

Every effort must be made and all resources must be used to overcome the serious effects of the pandemic on businesses and employment, with very worrying forecasts for a country whose productive fabric is largely made up of MSMEs and the self-employed. Without economic recovery, there will be no social normality and adequate levels of inclusion and

well-being cannot be guaranteed.

IMTMA will form part of the reactivation with the desire to be, more than ever, take care of industry issues and be an 'enabler' and support our Machine Tool Industry in every way possible, to overcome the situation.

Favourable Stimulus Packages

I am happy to pen down that realizing the gravity of the situation, the Government of India announced a series of stimulus packages reaffirming its commitment to macro-economic stability, prudent fiscal management and promotion of indigenous manufacturing.

It is also heartening to note that approximately 2 lakh MSMEs are likely to benefit from the ₹ 20,000 crores subordinate debt for stressed MSMEs. Other measures such as ₹ 50,000 crore equity infusion for MSMEs through Fund of Funds with a corpus of ₹ 10,000 crores, revision of investment limit upwards, elimination of the distinction between manufacturing and service sector, disallowing of global tenders up to ₹ 200 crores in government purchases will help MSMEs increase their business volumes. Tax reductions by 25% of the existing rates for tax deducted at source and tax collected at source will release liquidity of ₹ 50,000 crores which is expected to boost consumption. It is also heartening to note that in order to ease cash flows government agencies will partially release bank guarantees to the extent contracts are completed.

These are vital steps to spur manufacturing growth and offer significant opportunities for the capital goods sector and machine tool industry which have presence of a large number of MSMEs. However, I believe that the momentum set by this economic package will help industries to pick themselves up from the economic slowdown and coronavirus outbreak that they were battling with.

The machine tool industry now needs to intensify its R&D initiatives and manufacture products that user industries are looking for and which can also be sold globally. Vibrant manufacturing is vital for the country's growth and the measures announced in the economic package will provide much-needed liquidity for industries, promote local manufacturing, spur demand and help them steer away from uncertainties.

Indian Machine Tool Industry

Machine tool Production for 2019-20 is estimated to be around ₹ 6,150 crores. Consumption was around



₹ 15,670 crores. I am pleased to mention that the Indian machine tool industry is ranked 7th in Consumption and 12th in Production, globally, as per Gardner's 'World Machine Tool Survey 2019'.

Leadership will be playing a vital role in steering the manufacturing industry out from this downturn. Industries however need to adapt to the changing order keeping in mind the big picture, especially what'll pay off in the medium and long-term. Industries need to venture into new areas that were hitherto left unexplored and make the best use of technology for product and process innovations. In simple terms, it wouldn't be sufficient to master the art of survival but also to sustain and aim at expanding horizons.

While government is stressing on a self-reliant India, machine tool industry needs to continue working with new and emerging sectors such as healthcare and medical equipment, infrastructure, aerospace, defence, food processing, agricultural machinery and equipment, textile machinery, railways, power, electronics, and others. We saw the progress made in terms of technology and product development by many industries during the Covid-19 outbreak and lockdown, which helped the country to overcome the difficulty of importing equipment from overseas. Now the country is ready to cater not just to the domestic market but also export. It's time for the industry to manufacture products and solutions where we find the demand besides serving the existing sectors.

IMTMA has also highlighted to the Government, the important role of 'Trade Fairs' as one of the main levers for the much needed economic and social recovery.

Association Initiatives

IMTMA put forth various suggestions and policy measures to the Government of India such as ramping up expenditures on government projects, fast-tracking financial support for MSMEs, support for R&D and technology development and introduction of risk-sharing contract development order by public procurement entities. All these will help the industries in generating demand, reducing the operating cost, providing cash and liquidity and creating innovations in the ecosystem.

Simultaneously, IMTMA has also been engaging with its member companies by keeping them abreast of the various government initiatives, created a help desk for various stakeholders, published the best practices followed by different companies, and put up a resources page which provides an insight into the health and economic response to the pandemic. All this information was compiled into newsletter which

were shared with member companies and industry stakeholders, periodically.

Training

The training programmes by IMTMA is a sincere effort towards knowledge upgradation and skill development in the manufacturing industry. The prevailing pandemic has put the economy and industry in a spin of its kind that we haven't experienced before. During the lockdown period announced by the government, IMTMA organized a series of webinars and instructor led 'live' online programmes to enable industry professionals, faculty and students from institutions to learn remotely to enhance knowledge and upgrade their skills. IMTMA delivered 135 instructor led 'live' online programmes and webinars from April to July 2020. These programmes were well received with a participation of around 8,400 industry professionals, faculty members and engineering students.

Overall, IMTMA delivered over 19,663 person-days of training during 2019 - 2020 through 199 short-term and long-term training programmes at its technology centres in Bengaluru, Pune and Gurugram. These centres impart training in various aspects of manufacturing including in technologies connected to Industry 4.0, additive manufacturing, automation and robotics, design aspects, and so on. Participating in these courses make the fresh engineers industry ready and employable and also enables working engineers to gain more knowledge on the latest technologies used on shopfloors.

IMTMA Technology Centre in Bengaluru has set up a model smart factory where CNC turning centre, CNC machining centre, Digital height gauge and CMM machines are digitally connected and monitored in real-time. Increased use of automation means that there's a requirement of engineers with adequate training in all aspects of industrial automation, and to facilitate this IMTMA has set up a training facility in its premises. Engineers are trained with hands on approach in all the elements of industrial automation, covering hydraulics, pneumatics, sensors, PLCs, VFD and robotics. During IMTEX FORMING 2020, a live demo of Industry 4.0 implementation was conducted at IMTMA Technology Centre to give exhibition participants a glimpse of technologies available for implementation.

Mega Events

IMTMA has been continuing with its endeavours to keep up with the changing requirements of the industry. To champion the cause of productivity in

manufacturing industry, IMTMA organized the 13th edition of the National Productivity Summit (NPS 2019) at BIEC in Bengaluru from 20 - 21 August 2019. The summit featured pre-event plant visits, keynote addresses, case study presentations, panel discussion and productivity championship awards, and was an excellent platform for knowledge sharing.

Development and proliferation of automation, robotics, artificial intelligence, machine learning and control solutions are presenting significant opportunities for the manufacturing industry. These were intensely discussed during the 'Symposium on Smart Automation 2019' held at BIEC on 21 November 2019. With India embarking on a new phase in manufacturing, the Symposium was an important event for the industry to focus on technology and adding depth in their manufacturing processes through automation.

Coinciding with IMTEX FORMING 2020 & Tooltech 2020, IMTMA organized the International Seminar on Forming Technology (ISFT) 2020 on 22 January 2020 at BIEC, Bengaluru. ISFT 2020 helped participants gain insights into the latest developments in metal forming technologies such as laser technology, future of bending automation, innovative CMT processes, next-generation stamping technology, production solution for high strength aluminium, additive applications in the aerospace industry, etc.

Trade Fairs

The Association made an impactful start to 2020 by organizing IMTEX FORMING 2020 & Tooltech 2020 in January 2020 in BIEC, Bengaluru. The exhibition recorded a footfall of 47,944 visitors which was a 33% increase compared to the previous edition. Visitors connected with the latest innovations in 3D printing and Industry 4.0, exhibited in dedicated arenas.

Many parallel events organized during the flagship exhibition also attracted good number of visitors. International Buyer-Seller Meet organized by IMTMA and EEPC India attracted delegates from 8 countries. Jagruti, an initiative to create awareness among budding engineers on latest technologies saw participation from 10 institutions across India including IIT. IMTMA continued the 'Eco Design' awards to promote sustainable lifecycle exhibitions that balance quality, environment and economies with compliance to health and safety obligations. Students from 25 institutions participated in the inter-college Quiz Contest on manufacturing technologies. IMTMA setup IMTEX TV on its campus for live coverage of IMTEX FORMING & Tooltech 2020. Panel discussions, CEO talk, Tech talk, etc. were featured live. The i2

Academia Pavilion, the Industry – Institution linkages platform at IMTEX exhibitions, featured participation from 52 institutions.

Regional Expos

IMTMA organized the third edition of the Delhi Machine Tool Expo (DMTX 2019) from 8 - 11 August 2019 at India Exposition Mart Limited, Greater Noida. The show unveiled the latest manufacturing technologies and solutions that would enable OEMs and SMEs to leverage and balance their manufacturing capabilities. DMTX 2019 attracted a footfall of 6,000 visitors and 49 trade delegations from various industry sectors.

With the same aim and enthusiasm, IMTMA organized the first-ever Chennai Machine Tool Expo (CMTX 2019) at Chennai Trade Centre in Chennai from 26 - 29 September 2019. The show attracted a footfall of around 5,000 visitors and showcased state-of-the-art technologies focusing on manufacturing solutions for metal-working industries based in Tamil Nadu and South India.

IMTMA - Naoroji Pirojsha Godrej International Exhibition and Conference Complex

-Bangalore International Exhibition Centre (BIEC)

BIEC's newly-built exhibition hall (Hall 5) was certified 'Gold' under the Indian Green Building Council's New Green Building Rating System. The award was a crowning achievement for BIEC's efforts in ushering a green building environment in India.

BIEC is represented on the Board of UFI - the Global association of the exhibition industry as well as at Indian Exhibition Industry Association (IEIA).

BIEC extended its support to Global Exhibitions Day 2020 to propagate the importance of exhibitions for the development of various industries in the wake of the Covid-19 crises. BIEC pledged itself to commit to green practices and encourage eco-friendly and zero waste exhibitions and events in its endeavour to protect the environment.

Key Initiatives

IMTMA's 'Vision Conclave' was held in November 2019, wherein the Association set the agenda for the growth of machine tool industry. Focus points of the agenda being Indian machine tool industry to primarily focus on increasing exports in the medium to long-term, increasing revenue substantially from the non-auto sector, developing globally competitive products and solutions, building operational excellence through digitalisation and developing people strength. These mission themes are gaining momentum and



importance amid Covid pandemic. The primary objective has not altered but strategies and planning are always dynamic and may change based on the situations.

The manufacturing industry received a major fillip in developing indigenous technologies when IIT-Madras launched the Advanced Manufacturing Technology Development Centre (AMTDC) which is offering solutions for developing advanced technologies in the capital goods manufacturing sector with the collaboration of industrial partners. AMTDC is a unique model where an industry association (IMTMA) leverages the support of an existing academic institution (academic / research facilities of IIT, Madras) and government (financial support from the Department of Heavy Industry (DHI) to establish a much-needed facility for R&D and new product development. The initial 11 projects (all connected to machine tools and related areas) only establish that such projects can be taken up successfully by our industry. The machine tool industry needs to come forward to take up more such projects to develop new capabilities and new products to strengthen the product range and offerings of the industry.

Advanced Machine Tool Testing Facility (AMTTF) acts as a 'single point window' dedicated facility to provide testing and development support to engineering and machine tool industries. It is equipped with the latest state-of-the-art equipment and facilities to test machine tools, accessories and other engineering products to establish their performance and reliability as per international standards.

Tumakuru Machine Tool Park (TMTP) at Vasanthanarasapura Industrial Area, close to Bengaluru set up by the Government of Karnataka with support from Dept. of Heavy Industry, Government of India is expected to make the domestic capital goods and machine tools sectors globally competitive. Indian companies by using these services and facilities can enhance their potential and growth by several notches.

Future Thrust

After more than two-months of coronavirus-induced lockdown, India opened up its industries with new SOPs and guidelines as issued by the Ministry of Home Affairs, Government of India. The Union Government identified 12 sectors where India could become self-reliant, these include food processing, electronics, industrial machinery, furniture, leather, auto parts, textiles and ventilators which can provide opportunities apart from new user segments, especially, agriculture machinery, medical equipment, defence, and other emerging sectors. Businesses need to expand their horizons

through partnerships and explore new sectors for growth.

Industries now need to focus on getting their demand back, particularly focussing on meeting market / customer requirements and what sells to keep the production occupied for sustenance primarily and getting growth back in the coming quarters. Foreign funds flow has started rolling in a reasonable level which is a positive indicator for the manufacturing industry and shows that investors are confident of the Indian economy.

The manufacturing industry is perhaps gaining some momentum with recent upticks in the purchase of two-wheelers that could create demand for the machine tool industry. Green shoots are probably visible on the horizon with statistics from Centre for Monitoring Indian Economy (CMIE) indicating a significant drop in unemployment rates in rural areas with MGNREGA showing positive results. India now has capacities for manufacturing PPEs and ventilators and will probably be exporting these in the near future. All these are definite signs that economy of India is on the recovery path.

The demand will surge once the economy revives fully and with India being looked upon as the next destination for investments in the Asia-Pacific region this is quite probable. We need favourable policies nevertheless to bring the best results in the next few years. This would indirectly generate employment, increase exports and make India stronger in terms of technology and innovations in the long run. India can find new markets for its products in the next few years.

Industry need to put in greater effort on new product development as well as innovation in products as well as processes. It is essential to create a roadmap and strategy for survival and growth of our industry. At the same time, 'People' focus is a must. 'Leadership' plays a very crucial role and effective leadership in these challenging times is absolutely necessary for an organization and its people, and requires physical, psychological and emotional fortitude. I am sure industry leaders take cognisance of these aspects and make efforts and convert these into action points.

I would like to conclude by reiterating that IMTMA will continue to project the machine tool industry as a key enabler of the Make in India initiative and continue with its role of uplifting the industry to greater heights.



Indradev Babu
President

Annual General Meeting

73rd Annual General Meeting

12 September 2019: Bangalore International Exhibition Centre, Bengaluru

Indian Machine Tool Manufacturers' Association (IMTMA) held its 73rd Annual General Meeting (AGM) on 12 September 2019 at Bangalore International Exhibition Centre (BIEC), Bengaluru. At the Executive Committee meeting, following the AGM, the new Executive Committee of IMTMA for the year 2019 - 2020 was formed.



Mr. Indradev Babu, Managing Director, UCAM Private Limited was elected as President of IMTMA. He succeeded Mr. P. Ramadas, Managing Director, Ace Manufacturing Systems Limited. Mr. Ravi Raghavan, Managing Director, Bharat FritzWerner Limited was elected as Vice President of IMTMA.

Prior to the AGM, in his welcome speech, Mr. P. Ramadas, the outgoing President, said that economic downturns and recessions hit every industry sector at some point of time and are often cyclical. He added that machine tool industry needs to do more R&D and innovations and explore new domains. Giving a broad overview of IMTMA activities for the year 2018-19, Mr. Ramadas, said that his two years as President of IMTMA was a great learning, challenging as well as rewarding experience. He said that he was able to meet the challenges due to the proactive assistance from IMTMA Executive Committee, Membership and enduring guidance and contribution of Past Presidents. Mr. Ramadas also thanked IMTMA Secretarial team for the support. A special session was held coinciding with the AGM in which Mr. Kamal Bali, President and Managing Director, Volvo Group India, was the 'Guest of Honour'.



Delivering his special address Mr. Kamal Bali, President and Managing Director, Volvo Group India spoke about the current economic downturn as well as opportunities in store for the manufacturing industry. He said that industry should move from the earlier definition of VUCA (Volatility, Uncertainty, Complexity and Ambiguity) towards a new definition of VUCA, i.e. (Vision, Understanding, Clarity and Agility).



Mr. C. P. Rangachar, Managing Director, Yuken India Limited in his vote of thanks said that Mr. Ramadas had a very productive term and recognised his contribution to industry and the Association. He also took the opportunity to welcome incoming office bearers and urged the new Executive Committee to devote time for the Association's activities.

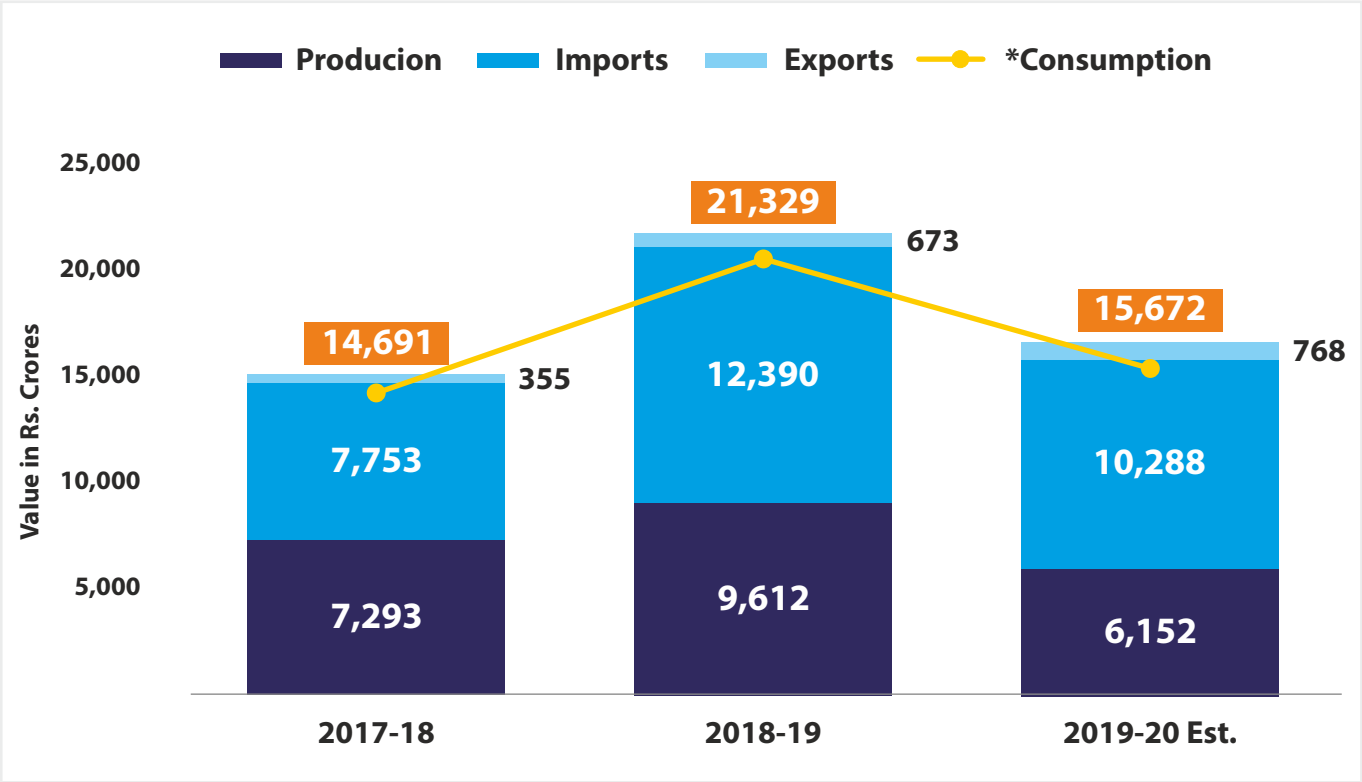
Trends in Indian Machine Tool Industry

As per the latest 'World Machine Tool Survey' by Gardner Publications, India occupies 12th rank in Production and 7th rank in Consumption of machine tools globally in 2019.

Indian Machine Tool Production is estimated to have reached ₹ 6,150 crores in 2019 -20 and Consumption of machine tools is estimated to have reached ₹15,670 crores. Production is estimated to have declined by around 36% Y/Y in 2019-20 and Consumption is estimated to have declined by around 27% Y/Y in 2019 - 20.

Indian Machine Tool Industry 2017-18 to 2019-20

All Values in ₹ Crores



Association Initiatives

Policy Advocacy

With several meetings with the union government ministries, financial year 2019 - 2020 was a significant one for IMTMA. IMTMA submitted a comprehensive note on steps needed to transform capital goods as part of 100 days agenda of the Government of India. It also submitted its recommendations, on the Draft "Industrial Policy 2019", to the Department of Heavy Industry (DHI), Department of Commerce, Department for Promotion of Industry & Internal Trade (DPIIT) as well as to the Industry Associations, Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce & Industry (FICCI).

The outbreak of the novel coronavirus (Covid-19) pandemic brought industries to a standstill as the country-wide lockdown was announced by the Government of India in March 2020. During the lockdown period, IMTMA worked closely with the union and state governments to mitigate the difficulties faced by the machine tool industry.

IMTMA put up various suggestions including ramping up expenditures on government projects fast-tracking financial support for MSMEs, faster refunding of income tax and GST to improve cash flow, which will provide liquidity and help in managing the operating cost of the industry.

The efforts bore fruit when the Government of India announced the first tranche of economic package in May 2020. The growth tonic for MSMEs such as collateral free automatic loan for upto ₹ 3 lakh crores, covering borrowers with up to ₹ 25 crores outstanding and ₹ 100 crores turnover, will enable them to meet operational expenses. The loans come with a 4 year tenor with moratorium of 12 months on principal repayment. The interest to be capped at 100% credit guarantee covers to banks and NBFCs on principal and interest can be availed till October 31, 2020 and will enable 45 lakh units to resume business activities and safeguard jobs.

Approximately, 2 lakh MSMEs are likely to benefit from the ₹ 20,000 crores subordinate debt for stressed MSMEs. Other measures such as ₹ 50,000 crore equity infusion for MSMEs through Fund of Funds with corpus of ₹ 10,000 crores, revision of investment limit upwards, elimination of distinction between manufacturing and service sector, disallowing of

global tenders in government purchases of upto ₹ 200 crores will help MSMEs increase their business. Tax reductions by 25% of the existing rates for tax deducted at source and tax collected at source will release liquidity of ₹ 50,000 crores which is expected to boost consumption.

IMTMA has created separate Covid related newsletter to disseminate information to membership and other stakeholders. The association also conducted a series of webinars during the lockdown period to apprise member companies on the stimulus measures announced by the government.

Association Initiatives

Vision 2022: 16th Conclave for CEOs and UDAAN

14 - 16 November 2019: Taj Swarna Hotel, Amritsar



Vision 2022, the 16th Conclave for CEOs and UDAAN members was held from November 14 - 16, 2019 at Taj Swarna Hotel, Amritsar. The Conclave featured discussions and deliberations on strategic actions mainly focusing on future growth. Deliberations covered manufacturing vision, the current position of

Indian machine tool industry, potential and new avenues for growth, strategic growth through techno-excellence along with a roadmap to digitised enterprise, current challenges and future prospects of automotive sector, green manufacturing, etc.

Vision 2022 Conclave gave a set of broad directions, through challenges, for enabling growth and competitiveness of the Indian machine tool industry, which include:

- Export led growth with commitment, local presence and deeper understanding of the customer needs in target markets.
- A greater need to explore opportunities in non-auto sectors such as medical equipment, electronics, aerospace, defence, and others.
- Agricultural sector to be explored as a diversification opportunity, more for 'forming industries'.
- Adopting green manufacturing will make business sense for the future.
- A need to fill the technological gaps to improve on exports as well as strengthen domestic market.



IMTMA Vision 2022 statement was unveiled at the Conclave:

We will be among the Top 8 machine tool building nations by 2022, leveraging world-class R&D, infrastructure, systems and people, delivering innovative solutions and services to create value for customers.

Association Initiatives

Green Manufacturing Cell



IMTMA's 'Green Manufacturing Cell' (GMC) was set up in June 2018 to enable member companies in their quest to become world-class green manufacturing companies and enable them manufacturing machine tools as green products.

IMTMA sees green manufacturing as prevention of pollution, means of conserving energy and water, utilization of renewable energy, material conservation and saving natural resources through innovations and development of new knowledge that will reduce or eliminate the generation of hazardous substances while manufacturing products. Towards this, IMTMA 'GMC' conducts trainings, seminars, and expressed support member companies achieve certification from CII-GBC Green Co.

Six Sigma Cluster



Lean and Sigma is one of the widely adopted and appreciated approach for continuous improvement

and problem solving, regardless of sector, size and complexity of the business. Organizations have acknowledged the significant contribution of this approach to their business growth and sustainability. As part of its initiative to improve the operational excellence of its member organizations, IMTMA in partnership with CII - Institute of Quality has created the IMTMA - Six Sigma Cluster in Indian machine tool industry. An awareness programme on Six Sigma was organized on 8 May 2019 at IMTMA. The initiative is expected to improve key business processes and provide value to stakeholders, identify bottlenecks and constraints, and resolve them, identify different types of waste and eliminate or reduce it, nurture managerial and leadership ability through six sigma approach, etc.

Association Initiatives

Advanced Machine Tool Testing Facility (AMTTF)



AMTTF is a joint project of the Indian machine tool industry and the Department of Industrial Policy and Promotion, Government of India. AMTTF serves the industry by testing the machine tools and engineering equipment, to qualify the performance, as per relevant Indian and international standards. So far AMTTF has carried out more than 250 testing assignments, serving more than 45 customers in providing technical assistance in problem solving and trouble-shooting

through systematic approach. AMTTF has submitted a proposal to the Government of India, for expanding / upgrading the existing testing equipment at AMTTF facility, to meet the advances in test protocol, new international standards, testing equipment and support software for testing and evaluation, for not only for machine tools but other Capital Goods and industrial machinery, in general.

Advanced Manufacturing Technology Development Centre (AMTDC)



Advanced Manufacturing Technology Development Centre (AMTDC) was formally inaugurated on 30 August 2019 at IIT Madras Research Park, Chennai by Dr. A. R. Sihag, Secretary, Department of Heavy Industry (DHI), Ministry of Heavy Industries & Public Enterprises, Government of India in the presence of Prof. Bhaskar Ramamurthi, Director IIT-Madras and Chairman, AMTDC, Mr. P. Ramadas, President, IMTMA, and other dignitaries.

Funded by DHI, AMTDC is working on various technology developmental projects including,

1. Orbital Motion Abrasive Cutting
2. Direct Drive Abrasive Cutting
3. 5-axis Multi-Tasking Machining Centre
4. Hydrostatic Systems for Machine Tools
5. Automation of Grinding Process Intelligence
6. Low Cost Machine Tending Robot
7. Electric Drives for Machine Tools
8. Thermal Compensation Strategy for CNC Lathe
9. Multi Station Robotic Grinder and Polisher
10. Ultra-Precision Micro Machining Centre
11. 5-axis Universal Machining Centre



Association Initiatives

CSR Initiative - Plastic Waste Management Campaign



IMTMA has been undertaking several CSR initiatives. 'Shramdaan' activities as part of 'Swachhata Hi Seva', a plastic waste management campaign, was conducted



on 150th birth anniversary of Mahatma Gandhi on 2 October 2019 at IMTMA Centre - BIEC, as part of 'Swachh Bharat' Mission.

IMTMA Regional Council (North)

Meeting on 8 August 2019: Greater Noida



The 38th meeting of IMTMA Regional Council (North) was held at India Expo Centre in Noida. Mr. Vivek Nigam chaired the meeting. Indradev Babu, the then Vice President of IMTMA spoke about the business conditions and stressed on the need to be cost-competitive and adopt lean manufacturing. Ludhiana-based members urged IMTMA to suggest some vocational training that could be of immense benefit to the regional industry.

Meeting on 22 February 2020: Ludhiana



The 39th meeting of IMTMA Regional Council (North) was held at Mach Auto Expo 2020 in Ludhiana. Members discussed the growth of exhibitions in recent years. Members were informed about the Government schemes for MSME on the 'Common Facility Centre' under 'Department of Heavy Industry, Government of India where 80% of the total investment is funded by the government and balance 20% from industry contribution.

Association Initiatives

IMTMA Regional Council (West)

Meeting on 19 July 2019: Pune



A meeting of IMTMA Regional Council (West) was held at Fibro India Precision Products Private Limited, Chakan, Pune, along with a visit to Fibro's manufacturing facilities. During the meeting the machine tool industry scenario was discussed along with a decision by the participating members to look for new opportunities for business in aerospace, defence, railways etc. Following the meeting, members visited Volkswagen India's Chakan factory.

Meeting on 17 January 2020: Pune



A meeting of IMTMA Regional Council (West) was conducted at IMTMA Technology Centre, Pune. Mrs. Mohini Kelkar chaired the meeting and IMTMA members held interactive discussions with Larsen & Toubro's defence division to understand business opportunities and qualitative requirements.

IMTMA Regional Council (South)

Meeting on 28 August 2019: Bengaluru



A meeting of IMTMA Regional Council (South) was held at Bangalore International Exhibition Centre in Bengaluru. Mr. P.J. Mohanram made a presentation on IMTMA's Policy Initiatives and members interacted on the current industry status and actions needed to gear up to the challenge to meet customer expectations.

Meeting on 14 March 2020: Bengaluru



A meeting of IMTMA Regional Council (South) was held in Bharat Fritz Werner Limited in Bengaluru. Coinciding with the meeting, a visit to Smart Automated Factory was organized. A presentation on "Overview of IMTMA Vision Conclave" was made for information of members.

Trade Fairs

Delhi Machine Tool Expo 2019

8 - 11 August 2019: India Exposition Mart Limited, Greater Noida



IMTMA organized the third edition of Delhi Machine Tool Expo (DMTX 2019) at India Exposition Mart Limited, Greater Noida. The exhibition was inaugurated by Shri. Arvind Ganpat Sawant, Hon'ble Minister for Heavy Industries and Public Enterprises, Govt. of India, in the presence of Smt. Sukriti Likhi, IAS, Joint Secretary, DHI, Mr. P. Ramadas, President - IMTMA, Mr. Indradev Babu, Vice President - IMTMA and Mr. V. Anbu, Director General and CEO of IMTMA and other dignitaries

The show unveiled the latest manufacturing technologies and solutions that would enable original equipment manufacturers and small and medium enterprises to leverage and enhance their manufacturing capabilities. The expo had presence of 122 exhibitors from 6 countries: China, Germany, India, Japan, Taiwan and USA.

Chennai Machine Tool Expo 2019

26 - 29 September 2019: Chennai Trade Centre, Chennai



IMTMA organized the first edition of Chennai Machine Tool Expo (CMTX 2019) at Chennai Trade Centre in Chennai. The exhibition was inaugurated by Mr. Srivats Ram, Managing Director, Wheels India Limited, Past President of ACMA and Governing Board Member of Advanced Manufacturing Technology Development Centre, presided over by Mr. Indradev Babu, President, IMTMA and Mr. Anbu, Director General & CEO, IMTMA. The expo showcased state-of-the-art technologies focusing on manufacturing solutions for metalworking industries based in Tamil Nadu and South India. The expo had a presence of exhibitors from 5 countries: Japan, Korea, Singapore, USA and India.

Trade Fairs



IMTEX FORMING 2020 & Tooltech 2020

23 - 28 January 2020: BIEC, Bengaluru



INAUGURATION

The 6th edition of Asia's largest exhibition on metal forming, IMTEX FORMING 2020 & Tooltech 2020, organized by Indian Machine Tool Manufacturers' Association (IMTMA) was held from 23rd to 28th January 2020 at Bangalore International Exhibition Centre, Bengaluru.

The exhibition was inaugurated on 23rd January 2020 by Mr. Kamal Bali, President and Managing Director, Volvo Group, Mr. Ram Venkataramani, Immediate Past President, Automotive Component Manufacturers Association of India (ACMA) and presided over by Mr. Jamshyd N. Godrej, Chairman - Exhibitions, IMTMA, Mr. Indradev Babu, President, IMTMA and Mr. V. Anbu, Director General & CEO, IMTMA.

Overall, 605 exhibitors from 26 countries participated to get the best out of 'IMTEX FORMING 2020 & Tooltech 2020'. The feedback from the exhibitors was impressive and they were satisfied with the business orders and enquiries generated at the show.



Visitors connected with latest innovations in 3D printing and Industry 4.0, exhibited in dedicated arenas.

IMTMA has undertaken several initiatives to enhance the exhibitor and visitor experiences which received positive responses. IMTEX FORMING & Tooltech 2020 recorded a footfall of 47,944 visitors which was a 33% increase compared to the previous edition.



Trade Fairs

IMTEX FORMING & TOOLTECH 2020: KEY FACTS & FIGURES

Number of Exhibitors

605 companies

Indian companies: 353 | International companies: 252

Number of Visitors

47,944 (33% increase from the last edition in 2018)

701 Cities from 29 States and Union Territories 40 Countries

Exhibiting Countries

26 Countries: Austria, Belgium, China, Colombia, Czech Republic, Finland, France, Germany, Greece, India, Italy, Japan, Korea, Malaysia, Netherlands, Poland, Seychelles, Singapore, Spain, Switzerland, Taiwan, Thailand, Turkey, Ukraine, United Kingdom, and United States of America

Country Group Pavilions

China, Germany, Japan, and Taiwan

Exhibition Space

33,000 square metres

Machines on Display

500+

International Associations



Partner Associations / Institutions



International Buyer-Seller Meet

Delegates from Egypt, France, Guatemala, Kenya, Russian Federation, Sri Lanka, United Arab Emirates, and Uzbekistan participated in the buyer-seller meet resulting in exploring business possibilities

Manufacturing Quiz Contest

The inter-college quiz contest on manufacturing technologies for mechanical engineering students had 118 students contesting from 25 institutions

Jagruti IMTMA - Youth Programme

An initiative to create awareness among budding engineers about the latest technologies and trends in the manufacturing industry. Students from 9 colleges across India were shortlisted

International Seminar on Forming Technology

ISFT 2020 was a great success with 250 delegates from 112 companies attending the event

i2 Academia Pavilion

52 Institutions

- 15 Bangalore based institutions including Acharya Institute, CMR University, Amrita College of Engineering, ACS college of Engineering, BMS College of Engineering
- 37 institutions across India including IIT - Bombay, Vishwakarma University, NMAM, Central Tool Room, PDPM, IIITDM, Walchand College of Engineering, Acharya Institute of Technology, and many more

Live Demo of Industry 4.0

200+ participants

Eco Design Awards

Aimed at promoting sustainable lifecycle practices in exhibitions 63 companies competed for the awards

Orders Booked

Rs. 559 Crores

Enquiries Generated

Rs. 4,984 Crores

Industry Delegations

158 delegations from sectors such as automotive, defence, railways, aerospace, power, white and brown goods, medical devices, and many more.
Delegations: Automotive Component Manufacturers Association of India (ACMA) | Bajaj Auto Ltd | Bharat Heavy Electricals Limited (BHEL) | Confederation of Indian Industry (CII) | Government Tool Room & Training Centre | Hindustan Aeronautics Limited (HAL) | India Government Mint | Indo German Tool Room | Indo Japanese Chamber of Commerce & Industry | Integral Coach Factory | Karnataka Small Scale Industries Association (KSSIA) | Ordnance Factory Board (OFB) | Mahindra and Mahindra | Mahindra Aerospace | Manufacturers' Association Satara (MAS) | Mazagon Dock Shipbuilders Ltd. | Ministry of Commerce, Govt. of India | Ministry of Micro, Small & Medium Enterprises Govt. of India | Rail Wheel Factory | Robert Bosch Engineering | Tata Motors Ltd | Tata Sikorsky Aerospace Limited | Thyssenkrupp Aerospace India Pvt Ltd. | Titan Company Limited | Tractors And Farm Equipment Ltd (TAFE) | TTK Prestige Limited | TVS Motor Co. Ltd. | U.R. Rao Satellite Centre | Volvo Group India | Wipro Aerospace | Yamaha Motor India, and others.

Trade Fairs

PARALLEL EVENTS

International Seminar on Forming Technology

“Shaping the future of Manufacturing”

- International Seminar on Forming Technology (ISFT) held on 23 January, 2020 was a great success with 250 delegates from 112 companies attending the event.
- Spread over 3 concurrent sessions and 6 technology tracks, experts from Austria, Belgium, Germany, Sweden, Holland, UK, USA, Switzerland, Italy, and India facilitated sessions at the seminar.
- Speakers presented on metal forming technologies such as Laser Technology, Future of Bending Automation, Innovative CMT Processes, Next Generation Stamping Technology, Production Solutions for High Strength Aluminium, Additive Applications in Aerospace Industry, to name a few.



International Buyer-Seller Meet

- International Buyer-Seller Meet was organized by IMTMA and EEPC India on 24th and 25th January 2020
- 15 delegates from 8 Countries: Egypt, France, Guatemala, Kenya, Russian Federation, Sri Lanka, United Arab Emirates, and Uzbekistan participated in the International Buyer-Seller Meet.

Jagruti

- Jagruti, a programme to familiarize engineering students with manufacturing industry was organized by IMTMA with the help of UDAAN members on 24th and 25th January 2020.
- 20 students from 10 institutions participated in the programme and learnt about several aspects of the manufacturing industry.



Live Industry 4.0 Demonstration

- IMTMA organised a live demonstration of Industry 4.0 at IMTMA Technology Centre.
- Participants were able to see a model smart factory, digitally connected CNC turning machine, CNC machining, coordinate measuring machines, real-time machine monitoring through data acquisition devices and CNC controls, etc.

Trade Fairs

PARALLEL EVENTS

Making Indian Exhibitions 'Green'

With the aim to promote sustainable lifecycle practices in exhibitions that balance quality, environment, and economies with compliance to health and safety obligations, IMTMA has constituted the 'ECO DESIGN' Awards at IMTEX Exhibitions.

The concept was well appreciated by the participants and has brought in a paradigm shift in the thought process of the exhibitors, stall designers and the industry fraternity.



IMTEXTV

IMTMA setup IMTEX TV on its campus for live coverage of IMTEX FORMING & Tooltech 2020. Panel discussions, CEO talk, Tech talk, etc. were featured live.

i2 Academia Pavilion

The i2 Academia Pavilion concurrently with IMTEX FORMING 2020 & Tooltech 2020 had a tremendous response with participation from 52 institutions comprising prestigious engineering colleges and premier institutions such as IITs presenting their R&D projects which were useful for the manufacturing industry.



Mega Events

National Productivity Summit 2019

20 - 21 August 2019: Bangalore International Exhibition Centre, Bengaluru



The 13th edition of National Productivity Summit 2019 was held from 20-21 August 2019 at BIEC, Bengaluru. The summit featured plant visits, keynote addresses, case study presentations, panel discussion and productivity championship awards. The event attracted over 300 delegates from 130 companies.

The summit was inaugurated by Mr. Bhaskar Bhat, Managing Director, Titan Company Limited. He spoke on 'Impact of Productivity on India's Manufacturing Competitiveness'.

Mr. T.V. Mohandas Pai, Chairman, Manipal Global Education Services, addressed the delegates at the 'Special Session for CEO's' on 'Winning in the Digital World'.



National Productivity Summit 2019 featured 3 keynote speakers:

- 'Adopting modern manufacturing technology to enhance productivity' by Mr. G. Parthipan, CEO, Rane TRW Steering Systems

- 'Innovation as a powerful tool to enhance productivity' by Dr. Babu Padmanabhan, Managing Director and Chief Knowledge Officer, Steer Engineering
- 'Thriving in the era of disruption - How organizations stay afloat' by Mr. Sandeep Kumar Maini, Chairman, Maini Group

IMTMA-ACE Micromatic Productivity Championship Awards 2019:

Over 150 case studies were received for IMTMA-ACE Micromatic Productivity Championship Awards 2019. The summit also featured case study presentations from 3 SMEs: Gala Precision Engineering, Khutale Engineering and UCAM Pvt. Ltd.

- Mahindra & Mahindra Ltd., won the first prize for 'Reduction of specific Carbon footprint by using Waste to Wealth, TPM and Industry 4.0 concept in utility management area'. Bosch Limited won the second prize for 'Innovative approach using Mould flow analysis for productivity improvement in Common Rail Pump Housing'. Godrej & Boyce Mfg. Co. Ltd., won the third prize for 'Use of Industry 4.0 in manufacturing for resource utilisation and reducing conversion cost' and Khutale Engineering won the SME Productivity Award 2019 for 'Learn and Green approach for layout planning'.

Mega Events

Symposium on Smart Automation 2019

21 November 2019: Bangalore International Exhibition Centre, Bengaluru



IMTMA organized “Symposium on Smart Automation 2019” on 21st November 2019 at Bangalore International Exhibition Centre (BIEC), Bengaluru. The Symposium featured presentations and discussions on various facets of automation with case studies and panel discussion. Over 300 delegates from around 125 companies participated in the Symposium.

Inaugurating the Symposium, Mr. Easwaran Subramanian, Partner, Deloitte Touche Tohmatsu India LLP, delivered a keynote address on “An overview of Smart Automation in the Indian Context”. Symposium had two concurrent tracks Viz. The Robotics & Automation, and Digitalisation, followed by a panel discussion on ‘Overcoming Obstacles in the Journey to Smart Automation’.



IMTMA organized technical tours for delegates to witness how automation projects are being implemented and translated into action on the shop floors of leading manufacturing companies, a day

before the Symposium on 20 November 2019. Delegates visited Sansera Engineering, SKF India, TVS Motor Company and Titan Engineering and Automation Limited.

Mega Events

International Seminar on Forming Technology (ISFT) 2020

22 January 2020: Bangalore International Exhibition Centre, Bengaluru



IMTMA organized the International Seminar on Forming Technology (ISFT) in conjunction with 'IMTEX FORMING 2020 & Tooltech 2020', on 22 January 2020, at BIEC, Bengaluru.

Speakers presented latest developments in metal forming technologies such as Laser Technology, Future of Bending Automation, Innovative CMT Processes, Next Generation Stamping Technology, Production Solutions for High Strength Aluminium, Additive Applications in Aerospace Industry, to name a few. Dr. Asim Tewari, Mr. G.K. Devarajulu Chair Professor, Department of Mechanical Engineering, IIT-Bombay, delivered the keynote address on "Aggressive Lightweighting through Use of Composites". Over 250 delegates from 112 companies attended the event. Spread over 3 concurrent sessions and 6 technology tracks, experts from Austria, Belgium, Germany, Sweden, Holland, UK, USA, Switzerland, Italy and India facilitated sessions at the seminar.



International Events

EMO 2019

16 - 21 September 2019: Hannover, Germany



IMTMA participated in the 22nd edition of EMO, the world's largest metalworking show organized by VDW in Hannover from 16 - 21 September 2019. For the first time, EMO had the largest participation from 36 Indian Companies (21 Members and 15 Non-Members). Indian Exhibitors participated to get the best out of EMO Hannover 2019. IMTMA office bearers visited various member companies and held meetings and participated in various events at EMO 2019.

Metalex 2019

10 - 12 October 2019, Ho Chi Minh City, Vietnam

20 - 23 November 2019, Bangkok International Trade & Exhibition Centre, Thailand



IMTMA participated in the 13th edition of Metalex organized by Reed Tradex and EIFEC, at Ho Chi Minh City in Vietnam, from 10 - 12 October 2019 at Saigon Exhibition & Convention Center. IMTMA also participated in the 33rd edition of METALEX 2019 organized from 20 - 23 November 2019 at Bangkok International Trade and Exhibition Centre (BITEC), in partnership with German Machine Tool Builders' Association (VDW). IMTMA participated in these exhibitions with an information booth, with the objective of enhancing the brand image of Indian Machine Tool industry, establishing key contacts with dealers / distributors of Indian machine tools to explore business opportunities for Indian machine tools.

Calendar of Events - 2019 - 2020

July 2019

1 Jul - 23 Aug	Design of CNC Machine - Mechanical - Pune
3 - 4	Selection and Sizing of Electric Motors - Bengaluru
12	Additive Manufacturing / 3D Printing Technologies - Gurugram
15 - 19	Hands on Training in Programming and Operation of CNC Machining Centers - Basic - Pune
16 - 17	Design of Gauges - Bengaluru
18 - 19	Design of Workholding and Fixturing - Gurugram
18 - 19	Forging Die Design - Practical Approach (Hot Forging) - Coimbatore
19 - 20	Finishing of Edges - Burr Management - Pune
22 Jul - 3 Aug	Internship Program for Electrical & Electronics Engineering Students
22 - 26	Basics of Mechanical Design - Bengaluru
22 - 26	Machine Design Advance - Gurugram
22 Jul - 31 Aug	Control System Design for Machine Automation - Bengaluru
23 - 24	Effective Maintenance towards zero down time-Electrical and Electronics aspects of CNC Machines - Bengaluru
23 - 24	Troubleshooting of Casting Defects - Pune
25 - 26	Understanding and implementing of risk assessment through FMEA - Bengaluru
25 - 26	Fundamentals of Painting and Coating Technologies - Pune
25 - 26	Cost & Cycle Time Reduction in CNC Machining - Gurugram
29 - 31	Maintenance and Troubleshooting of Hydraulics and Pneumatics Systems - Bengaluru
30	Interviewing Skills: The key to build Brand and Attract Talent - Bengaluru
30 - 31	Selection & Application of Tooling for CNC Machining Centre - Pune

August 2019

4 - 8	Design of Fixture - Bengaluru
6 - 7	Geometric Dimensioning & Tolerancing in Design through Manufacturing - Bengaluru
8 - 9	Metal Casting Technology Processes, DFM, Quality and Cost Considerations - Bengaluru
8 - 9	Smart Automation - A Key Driver to Smart Manufacturing - Pune
8 - 11	Delhi Machine Tool Expo 2019 - Greater Noida
9	Surface Finish- Measurement & Improvement - Gurugram
12 - 16	Design of Fixture - Pune
12 Aug - 10 Oct	Machine Tool Design - Mechanical - Batch 23 - Bengaluru
19	Energy Conservation / Energy Saving in Manufacturing - Pune
20 - 21	National Productivity Summit 2019 - Bengaluru
22 - 23	IDR Approach for trouble shooting Sheet Metal Parts - Gurugram
23 - 24	Fundamentals of Heat Treatment Processes - Pune



Calendar of Events - 2019 - 2020

August 2019

26 - 30	Design of Fixture - Specialization - Pune
26 - 30	Design of Spindle - Gurugram
27 - 28	Improving Process Capability - Pune
29 - 30	Assembly, Welding & Inspection Fixtures - Design and Manufacturing - Pune
30	AMTDC Inauguration - Chennai

September 2019

3 Sep - 31 Oct	Machine Tool Design - Metal Cutting SPM - Bengaluru
9 - 10	GD&T per ISO standards (Customized - Goodrich Aerospace) - Pune
10	Design and Processing of Plastic Parts - Bengaluru
16 - 17	Maintenance, Troubleshooting and Innovation of Hydraulics and Pneumatics - Pune
16 Sep - 30 Oct	Control System Design for Machine Automation - Pune
19	Geometric Dimensioning & Tolerancing - Advanced - Bengaluru
20	Artificial Intelligence & Machine Learning for Manufacturing Industry - Pune
23 - 25	Reliability Engineering - Concept, Calculations, Techniques and Tools - Pune
25	Cleaning of Machined Components - Bengaluru
26 - 27	Applied Metallurgy for Engineering Industry - Pune
26 - 29	Chennai Machine Tool Expo 2019 - Chennai

October 2019

3 - 4	Manufacturing Excellence through SPC and Problem Solving Tools - Bengaluru
10 - 11	Cost and Cycle Time Reduction in CNC Machining - Pune
15 - 16	Design of Workholding and Fixturing - Gurugram
16	Surface Finish - Measurement and Improvement - Pune
17 - 18	Good Practices for Manufacturing Cost Reduction - Bengaluru
18 - 19	Geometric Dimensioning & Tolerancing in Design through Manufacturing - Gurugram
21 - 25	Advanced CNC Programming : CNC Machining Centre - Bengaluru
21 Oct - 6 Dec	Control System Design for Machine Automation - Bengaluru
22 - 23	Tolerance Stack-Up Analysis - Pune
23 - 24	Spindle Maintenance for Metal Cutting and Industrial Machinery - Bengaluru

November 2019

4 - 8	Training on Hydraulic System Design for Machineries - Bengaluru
4 Nov - 28 Dec	Machine Tool Design – Mechanical - Bengaluru
7 - 8	Finance for Sales and Marketing Professionals - Bengaluru
11 - 14	Advanced Programming for CNC Machining Centres - Pune

Calendar of Events - 2019 - 2020

November 2019

11 - 15	Hands on training in PLC Programming and Networking - Bengaluru
13 - 14	Gear Design - A Practical Approach - Bengaluru
14 - 16	Vision 2022 Conclave - Amritsar
18 Nov - 11 Jan	Machine Tool Design - Metal Cutting SPM - Pune
19	Honing-Tools, Process and Applications - Bengaluru
21	Symposium on Smart Automation - Bengaluru
26 - 27	Geometric Dimensioning and Tolerancing in Design through Manufacturing - Bengaluru
26 - 27	Machining Aerospace Materials- Challenges and Solutions - Pune

December 2019

9 - 13	Hands-on training in Operation of Co-ordinate Measuring Machines (CMMs) - Bengaluru
9 Dec - 18 Jan	Product Optimization through Finite Element Method - Bengaluru
12 - 13	Burr Management in Machining - Gurugram
13 - 14	Gear Metrology and Measuring Methods - Bengaluru
16 - 17	Electric Mobility : Technology, Process and Business Opportunity - Pune
16 - 20	Hands on Training in Programming & Operation of CNC Machining Centres - Bengaluru
16 - 27	Internship on Design & Integration of Manufacturing - Bengaluru
19 - 20	Design of Workholding & Fixturing - Bengaluru
19 - 20	Advanced Purchase and Procurement Practices to Enhance Competitiveness - Bengaluru
19 - 20	Geometric Dimensioning & Tolerancing - Advanced - Pune
23 - 24	Design of Gauges - Pune
27 - 31	Design of Gearbox - Pune

Calendar of Events - 2020 - 2021

January 2020

7 - 8	Painting and Coating Technology - What, Why and How? - Bengaluru
8	Automated Productivity Measurement (OEE) - Pune
9 - 10	Design of Workholding & Fixturing - Pune
9 - 10	Geometric Dimensioning and Tolerancing in Design through Manufacturing - Bengaluru
10 - 11	Trouble Shooting of Casting Defects - Bengaluru
13 - 14	Sheet Metal Forming - Primer Course - Gurugram
16 - 17	Measurement Systems Analysis (MSA) - Pune
21	CE Marking for Export Markets: Conformity Requirements across the Globe - Bengaluru



Calendar of Events - 2020 - 2021

January 2020

22	International Seminar on Forming Technology 2020 - Bengaluru
23 - 28	IMTEX FORMING 2020 & Tooltech 2020 - Bengaluru
27 - 28	Defects Analysis of Paint & Powder Coating Applications - Pune
29	Daily Work Management - Pune
30 - 31	Understanding & Implementing of Risk Assessment through FMEA - Gurugram

February 2020

6 - 7	Heat Treatment - Metallurgy and Processes - Bengaluru
6 - 7	Building Lean Culture through Value Stream Mapping (VSM) - Bengaluru
10	TRIZ: Shortcut to Innovative Solutions - Pune
10 - 13	Gear Manufacturing Processes - Bengaluru
10 - 14	Hands on Training in Programming & Operation of CNC Turning Centre - Pune
17 - 18	Electric Motors: Application, Selection, Sizing and Optimization - Pune
17 - 21	Hands on Training in Programming & Operation of CNC Turning Centre - Pune
17 - 21	Design of Hydraulic Systems for Machineries - Bengaluru
19 - 20	How to become an effective FMEA Practitioner as per combined AIAG & VDA Version - Bengaluru
25 - 26	Cost of Quality & How to Reduce Cost of Poor Quality (COPQ) - Bengaluru

March 2020

10 - 11	Geometric Dimensioning and Tolerancing in Design through Manufacturing - Bengaluru
12 - 13	Practical Approach Towards Implementing Industry 4.0 in Manufacturing - Bengaluru

April 2020

20	Application of Robots in Manufacturing Automation
21	Implementing Industry 4.0 in India
22	Overview of Heat Treatment Processes and Metallurgy
24 - 25	Geometric Dimensioning & Tolerancing in Design through Manufacturing
27	TRIZ: Shortcut to Innovative Solutions
28	Overview of Heat Treatment Processes and Metallurgy
29	Implementing Industry 4.0 in India
30	Artificial Intelligence and Machine Learning for Manufacturing Industries

May 2020

1	Overview of Surface Heat Treatment Processes
2	Overview of Additive Manufacturing

Calendar of Events - 2020 - 2021

May 2020

9	LM Guideways - Types, Applications and Selection
9	Metallurgy for Non Metallurgists - Ferrous Materials
9	Limits, Fits and Tolerances - A Practical Approach
11	Surface Roughness Measurement and Validation
12	How to Improve OEE and Achieve Manufacturing Excellence
12	Metal Casting Technology - Processes and Quality Considerations
16	Machine Tool Testing and Accuracy Measurement of CNC Machine Tools
16	Best Practices for Manufacturing Cost Reduction
20	VFD and its Industry Applications
20	What is new in Latest Edition of FMEA as per AIAG & VDA?
21	Fundamentals of Machining Fixtures - A practical approach
23	Finite Element Methods (FEM) for structural design - How, What and Why?
23	Quick changeover techniques in Discrete Manufacturing
24	Understanding and Implementing GD&T - Essential Fundamentals (MMC, LMC, Rule1, Rule2, RFS, Bonus tolerance, etc.)
27	Six Sigma Approach for Breakthrough Results
28	Basics of Process Capability (CP, CPK, CM)
29	Building Lean Culture through Value Stream Mapping
30	Cleaning of Machined Parts - Need, Process, Do's and Don'ts
30	Pfmea - Process Failure Mode and Effects Analysis
31	Understanding and Implementing GD&T - Form, Orientation, Location, Profile and Run Out Tolerances

June 2020

3	Sensors for Industrial Automation - Types, Selection and Applications
4	Induction Hardening
5	Selection of Motors for Industrial Applications
6	Anti-Friction Bearings - Types, Selection and Applications
6	World Class Manufacturing - What, Why and How; Tools and Techniques
7	Machine Tool Spindles - Design Approach
9 - 10	Effective Maintenance towards Zero Down Time (ZDT) - Electrical aspects of CNC Machines
10 - 20	Industry Internship on Manufacturing of DRILL JIG for Gear Pump Housing
11	Inventory Control - A Tool for Competitiveness
12	Advanced Technologies in Metrology
13	Cost Effective & Collaborative Automation - Need of the hour for Industry
13	How to reduce Cost of Poor Quality (COPQ)
14	Servo Technology for Industrial Motion Control

Technology & Training

IMTMA Technology Centres are closely associated with skill development initiatives. IMTMA delivered over 19,663 person days of training during 2019 - 2020 through 199 short-term and long-term training programmes at its Technology Centres in Bengaluru,

Pune and Gurugram. IMTMA training programmes comprise short-term and long-term training programmes for fresh engineers and industry professionals as well as Productivity Institute and Design Institute courses.

Short-term Training Programmes

Troubleshooting of Casting Defects

23 - 24 July 2019: Pune



IMTMA conducted a two-day training programme to enable participants understand the various casting processes, casting defects and its remedies, DFM requirements of casting in part design to avoid casting defects and understand the importance of casting



simulation. The programme focused on sand casting, shell moulded casting, investment casting, various casting effects and remedies, importance of casting simulation in troubleshooting of defects, etc.

Fundamentals of Fine Blanking and Recent Trends

22 August 2019: Chennai

Automotive world is constantly exploring possibilities of producing complex sheet metal parts with more precision, less cost and higher productivity. Fine blanking is perfect recipe for the same. Fundamental knowledge of fine blanking is very important to design engineers and component buyers. Once they understand process capabilities, they can adopt this technology to develop new parts with more functional capabilities. Keeping this in view, IMTMA organized a one day programme in Chennai to enable participants understand the principles of fine blanking, raw material selection, tool design, importance of tool coating, new trends in fine blanking, etc.

Good Practices for Manufacturing Cost Reduction

17 - 18 October 2019: Bengaluru

IMTMA organized a two day programme to enable participants learn more on the cost of manufacturing and cost reduction strategies. Participants learnt more on right strategies, practices, and tools, to reduce cost of manufacturing to improve profitability.

Technology & Training

Finance for Sales and Marketing Professionals

7 - 8 November 2019: Bengaluru

IMTMA conducted a two-day training programme for sales and marketing professionals that focused on providing an insight into sales accounting, internal control concepts, gross profit and gross margin, discounts and effect on profit, fixed and variable costs and effect on profit, etc. The programme threw light on importance of finance to sales persons, working capital management, business cycle and cash flow, sales accounting, checks and balances, etc.

How to become an effective FMEA Practitioner

19 - 20 February 2020: Bengaluru

Failure Mode & Effects Analysis (FMEA) is an essential ingredient of reliability engineering and is a very powerful and effective technique used for improvement in the methodology used for design, assembly, materials engineering, servicing etc., for a diverse range of products and processes. IMTMA organized a two-day training programme that focused on the concept of FMEA as a risk management and preventive quality assurance technique, carry out Design FMEA and Process FMEA in industries, the linkage between PFMEA and DFMEA etc., and as per combined AIAG & VDA Version.

Electric Mobility

16 - 17 December 2019: Pune



E - Mobility is the biggest disruption of this century in terms of business opportunity, growth profiling and venturing into a vertically integrated organic growth opportunity which will directly impact 8-10% of global GDP and overall nearly 20% with similar opportunity of employment generation.

Keeping this in view, IMTMA organized a two-day seminar to unravel completely the electric mobility technology in great detail right from design concept, manufacturing process, vehicle architecture, energy storage system, electric drivetrain, control and operation, market size, growth opportunity, right strategy, vehicle assembly, various opportunity for component and sub-system development.

Technology & Training

Design Institute

Advance Networking and PLC Programming

23 - 27 September 2019: Bengaluru



PLCs are being used in every process and manufacturing industries. IMTMA conducted this course on Advance Networking and PLC Programming to explain trainees more about wiring, designing and programming a PLC as well as finding the usage of various means of standardization of the programming structure.

Internship on Design & Integration of Manufacturing

16 - 27 December 2019: Pune



IMTMA organized a two-week internship training programme on design and manufacturing of Jig for gear box pump housing at IMTMA Technology Centre in Pune. The programme deepened students' understanding of industry best practices on product manufacturing from design to assembly which enhances the technical competency and employment quotient. The programme was an enabler for reaching excellence and gain growth in their career opportunities in manufacturing industries.

Activities of BIEC

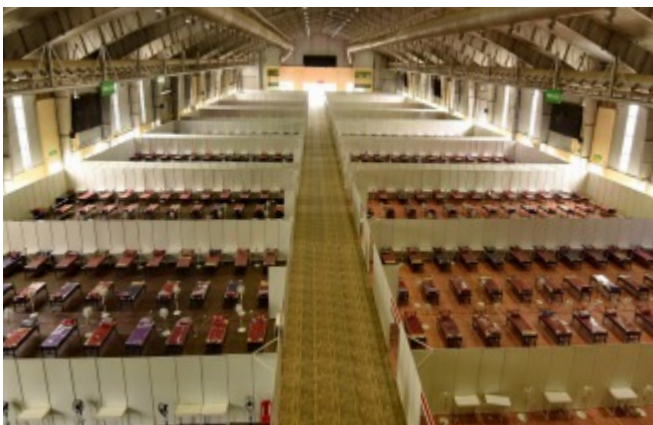
Hall 5 awarded 'Gold Rating' by IGBC



Bangalore International Exhibition Centre's Exhibition Hall (Hall 5) has been certified 'Gold' under the Indian Green Building Council's New Green Building Rating System. The award was a crowning achievement for

BIEC's efforts in ushering a green building environment in India. With this Gold certification, BIEC has set a benchmark in the exhibition industry in maintaining green norms.

BIEC extends support during Covid-19 crisis



Extraordinary times call for extraordinary measures, the outbreak of Covid-19 presents big challenges to lives and livelihoods. BIEC is standing firm with the Government in its decision to contain the spread of the pandemic by lending out its venue during this crisis.

Bangalore International Exhibition Centre was utilized by the Bruhat Bengaluru Mahanagara Palike (BBMP) to house migrants during the lockdown period.

BIEC exhibition halls have been converted into a Covid Care Centre by BBMP for asymptomatic patients.

New Products Developed by Members in 2019 - 2020

ACE MANUFACTURING SYSTEMS LIMITED

1. Fastest Drill Tap Center Machine - Offers high productivity with less chip to chip time and high speed tapping capability.
2. New Compact Precision VMC Machine - Compact Machining Center suitable for Drilling, Tapping & Milling Applications of small components.

A.T. CONSULTANTS PRIVATE LIMITED

1. Fully Automatic CNC Hi-Tech Billet Radiusing and Facing Machine; with Automatic Material Handling System.
2. Indigenous Design of High speed pilger Mill for SS and Seamless Tube Plants.

ATUL MACHINE TOOLS

1. Design and development of Moving Column Hydraulic, PLC Surface Grinding Machine, Size 750 X 300MM [Model - ORPLC]

BATLIBOI LIMITED

1. High Precision Turning Centre - This machine comes with cartridge type spindle with 3+2 high precision angular contact bearings. [Model - Sprint 16TC ZX]
2. Vertical Machining Centre - Chetak series model is purely designed to suit for high speed, high production metal cutting industries [Model - Chetak 60 MC]
3. Vertical Machining Centre - This model is ideally suited for medium to heavy component machining [Model - Chetak 130 MC]

CHENNAI METCO PRIVATE LIMITED

1. Refractory Cutting Machine: for sectioning refractories used by steel mills.
2. Robotic Grinder Polisher: For High Level of Polishing

ELECTRONICA MECHATRONIC SYSTEMS (I) PRIVATE LIMITED

1. Design and development of Video Measuring Machine which combines the advantages of a video measuring machine and a conventional horizontal profile projector [Model - InspecNeo].

ELSCINT INDIA PRIVATE LIMITED

1. Pipette Feeding, Stacking and Packing Machine
2. Automation for loading & Unloading of Engine Valves for Laser Welding
3. Double outlet Elevator Feeder
4. Feeding & Orientation of Forged Part along with bulk loading.

New Products Developed by Members in 2019 - 2020

FENWICK AND RAVI

1. Developed a product, three different models, for Quick & Easy, Effortless, Lifting of Weight (Job) with Power and Precision [Model – EagleTON0.1, EagleTON0.25 and EagleTON0.5].

IND-SPHINX PRECISION LIMITED

1. High Precision Tapered Thread whirler for Medical Implants machining
2. High Precision Drills for Hard Parts (Up to 60 HRC)
3. High Precision range of End mills for Super Alloys
4. Special Design End mill for Platinum application
5. Chip Breaker Drills for Pen Tips manufacturing

ISGEC HEAVY ENGINEERING LIMITED

1. 1000T Hydraulic Hot Stamping Press.
2. 2000T Hydraulic Super Compaction System.

SCHENCK ROTEC INDIA LIMITED

1. Rack Based Vibration Controller is a Multi-Channel Vibration Monitoring System for Motors, Fans, Turbines and Pumps [Model - VM 4040]
2. Dynamometer Controller for measuring Torque, Speed, Power, SFC of Engines, Motors and Generators [Model - DCS 4000]
3. Semi-Automatic Dynamic Balancing Machine with Axial Drilling Arrangement [Model - H10BK]
4. Semi-Automatic Armature Balancing Machine for motors.

TAEGUTEC INDIA PRIVATE LIMITED

The extensive range of high-performance, high-productivity SFEEDTEC solutions.

1. TURNSFEED - has capability to machine in two directions, tool enables turning at ultrahigh feed rates with low to moderate depths. Tool holders come with the provision for supplying pointed coolant to cutting zone thus improving tool life and chip evacuation efficiency.
2. MILLSFEED - Effectively addresses applications with many options of indexable-insert end mills covering dia. range 6 mm - 14 mm. The unique insert design enables light, moderate and high feed milling.
3. DRILLSFEED - Effectively uses many unique features of Drill Rush and tops it with self-centering 3 flute geometry. The triple cutting of the inserts imply high productivity in addition to excellent hole accuracy.
4. WNKU 07 - Six-Corner Double Sided D2Mill 90 degree family with a positive helical cutting edge that reduces force and vibrations, offering longer tool life and improved productivity.
5. SNMU 10 - Eight-Corner 88deg Approach Face Milling Solution for Small to Medium Spindle Power Machines.
6. SNMU 12 - Face Milling solution suitable for semi-finish to rough face milling on materials like Die Steel, Carbon Steel, Alloy Steel, SG Iron and exotic materials. Maximum depth of cut with SNMU 12 is 6 mm, and can be used for both left and right hand face milling applications.
7. DDG - A versatile grooving-turning solution with excellent chip control, suitable for steel, stainless steel & superalloys, Cast Iron and SG Iron applications.



New Members Enrolled during 2019 - 2020

[As on June 30, 2020]

BLUM NOVOTEST MEASURING & TESTING TECHNOLOGY PRIVATE LIMITED

No. 06 (Old No. 107), 1st Main Road, 2nd Floor, Widia Layout, Attigupe, Bangalore - 560040, Karnataka

(Distributor - Measuring Components and Measuring Machines)

CRAFTSMAN AUTOMATION LIMITED

123/4, Sangothipalayam Road, Arasur Post, Coimbatore - 641407, Tamil Nadu

(Manufacturer - Milling, Drilling, Grinding, Boring Machines and SPMs. (Other products are Gauging and Inspection Machines & Material Handling, etc.)

INFINITY UPTIME INDIA PRIVATE LIMITED

Office No. 2,3,4, First Floor, Akshay Complex, ITI Road Aundh, Pune - 411007, Maharashtra

(Manufacturer - IOT Solution provider, Electric motors, Generators and Control apparatus.)

KTA SPINDLE TOOLINGS

246/9 Hinjewadi Phase II, Near Swaraj Petrol Pump, Pune - 411057, Maharashtra

(Manufacturer - Tool Holders)

PATANKAR INDUSTRIES

36/1/1, Behind Peppermint Wadgaon (K), Sinhgad Road, Pune - 411041, Maharashtra

(Manufacturer - Led Arm Light, Led Spot Light, Led CNC Lamp, Led Tier Lamp, Led Hand Lamp, Led Bench Light, Led Coldstorage Lamp / DOC Light)

BRISK TECH ENGINEERS

#3, 14th Cross, 2nd Main, Bhyraveshwara Industrial Estate, Andrahalli Main Road, Hegganahalli, Vishwaneedam Post, Bangalore - 560091, Karnataka

(Manufacturer - CNC Polygon Turning Machine, Turning Centres, Polygon Lathe & Double ended Conveyor pipe Boring Machine)

DIFACTO ROBOTICS & AUTOMATION PRIVATE LIMITED

A151, A152, 3rd Cross, 1st Stage, Peenya Industrial Area, Bangalore - 560058, Karnataka

(Manufacturer - Jigs & Fixtures, Machines & Mechanical Appliances having individual functions)

JENOPTIK INDIA PRIVATE LIMITED

No.18, 1st Crsoss, 17th Main, HAL 2nd Stage, Indiranagar, Bangalore - 560038, Karnataka

(Distributor - Measuring or Checking Instruments, Appliances and Machines & Profile Projectors)

LEONI CABLE SOLUTIONS INDIA PRIVATE LIMITED

Indospace Rohan Industrial Park, Gat No. 428, Village Mahalunge, Off Chakan Talegaon Road, Taluka, Khed, Pune - 410501, Maharashtra

(Manufacturer - Optical Fibres Cables, Cable System and Wires and Control Cables.)

RAJESH MACHINES (INDIA) LLP.

New Nehru Nagar Main Road, 2- Kailashpatti Society, Plot No.7, Dhebar Road (South) Atika Industrial Area, Rajkot - 360002, Gujarat

(Manufacturer - Power Press, Hydraulic Press, Cross shaft Press Single point, Double action press, Shearing Machine, Press Brake Machine, Rolling Machine)

New Members Enrolled during 2019 - 2020

[As on June 30, 2020]

ROTODYNE FLUID TECHNIC

#24, Udupa Garden, S. M Road, 4th Cross,
Jalahalli West, Bangalore - 560015, Karnataka

(Manufacturer - Hydraulic Motors, Rotary Joints,
Rotary Actuators & Rotary Distributors Valves and
Rotary Cylinders.)

SANPAR MICROFILTERS PRIVATE LIMITED

#5, 2nd Cross, KSSIDC Industrial Estate, Bommasandra
II Stage, Bangalore - 560099, Karnataka

(Manufacturer - Microfilters, Dry Air for Machine
Tools, Moisture Separators etc.)

STRATEGI AUTOMATION SOLUTIONS PRIVATE LIMITED

No. 25/B, Doddanakundi Industrial Estate,
Whitefield Road, Behind Graphite India,
Bangalore - 560048, Karnataka

(Manufacturer - Machine Tending Robots for CNC
Lathes)

ULTRAMAX HYDROJET PRIVATE LIMITED

Plot No. AC 31/4A, 6th Main Road,
SIDCO Industrial Estate, Thirumudivakkam,
Chennai - 600044, Tamil Nadu

(Manufacturer - Cleaning Machine, Component
Cleaning, Degreasing Machines)

WELDOR CNC MACHINES

Rajkot-Gondal National Highway, Survey No. 240,
Veraval (sharpar), Rajkot - 360024, Gujarat

(Manufacturer - CNC Hydraulic Press Brake, CNC
Turret Punch Press, CNC Laser Cutting Machine)

S & T MACHINE TOOLS PRIVATE LIMITED

No. 20 Vasanth Nagar, Trichy Road, Singanallur,
Coimbatore - 641005, Tamil Nadu

(Distributor - Esteam Brand: Lathe Machine, Brand
Milling Machine, Brand Hydraulic Swing Beam
Shearing, Brand Hydraulic Press Brake, etc)

SCHAEFFLER INDIA LIMITED

15th Floor, Amar Sadanand Tech Park,
Plot 3, Survey 105/3, 140/1, Baner,
Pune - 411045, Maharashtra

(Manufacturer - Ball or Roller Bearings)

SUPERSLIDES & BALLSCREWS CO. INDIA PRIVATE LIMITED

Superslides House, A-774, TTC Industrial Area, MIDC,
Fire Brigade Lane, Off. Thane-Belapur Road,
Koparkhairne, Navi Mumbai - 400701, Maharashtra

(Distributor - Linear Guideways, Ballscrews, Actuators,
Precision Lock nuts)

UNIVERSAL ABRASIVES

Plot No. 3507, Road-G, GIDC Phase III, Dared,
Jamnagar - 361004, Gujarat

(Manufacturer - Resin Bonded Diamond Grinding
Wheels)

YG-1 INDUSTRIES INDIA PRIVATE LIMITED

Plot No. 2C, Gate No. 2, Obadenahalli, KIADB
Industrial Area Phase-III Doddaballapur,
Bangalore - 561203, Karnataka

(Distributor - End Mills, Drills, Taps Insert,
Insert Holders Tool Holders, Special Tools)

Total Membership of IMTMA as on June 30, 2020: 468 members.



IMTMA Initiatives



Media Coverage





Indian Machine Tool Manufacturers' Association
www.imtma.in

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12/5, D-1 Block, MIDC, Chinchwad,
Pune - 411 019, Maharashtra (India).
T: +91 70660 30531 / 532
E: imtma.pune@imtma.in

Regional Office (North)

Plot No. 249 F, Udyog Vihar Sector - 18,
Gurgaon - 122 015, Haryana (India).
T: +91 124 4014101 F: +91 124 4014108
E: imtma.ggn@imtma.in