Indian Machine Tool
Manufacturers' Association

ANNUAL REPORT

2020 - 2021

www.imtma.in

Contents

Executive Committee 2020 - 2021

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Indradev Babu
Managing Director
UCAM Private Limited

Vice President

Ravi Raghavan
Managing Director
Bharat Fritz Werner Limited

Members

Madhavi Chandrashekar
Executive Director, Business Development
Ace Designers Limited

Chandrashekar Bharathi
Managing Director
AceMicromatic Manufacturing Intelligence Technologies Private Limited

Nisha Lobo
Director
Alex Machine Tools Private Limited

Kabir Bhogilal
CXO, Corporate Strategy
Batliboi Limited

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President & CEO
FANUC India Private Limited

G. D. Rajkumar
Director
Gedee Weiler Private Limited

K. Soundhar Rajhan
Director – Operations
Lakshmi Machine Works Limited

Nikhil Agrawal
Managing Director
Nagel Special Machines Private Limited

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Advisor
PSG Industrial Institute

Rajendra S. Rajamane
Managing Director
Rajamane Industries Private Limited

Rajesh Mandlik
Managing Director
Setco Spindles India Private Limited

Vijay Pratap Singh
Country Business Unit Head-Motion Control
Siemens Limited

S. Sundariya
Unit Head
Wendt (India) Limited

Co-opted Members

Achal Nath
Executive Director
Ashok Manufacturing Company Private Limited

Vikram Sirur
Executive Chairman
Miven Mayfran Conveyors Private Limited

Executive Committee 2020 - 2021

Past Presidents

P. Ramadas
Managing Director
Ace Manufacturing Systems Limited

P.G. Jadeja
Chairman & Managing Director
Jyoti CNC Automation Limited

L. Krishnan
Managing Director
TaeguTec India Private Limited

M. Lokeswara Rao
Managing Director
Lokesh Machines Limited

N.K. Dhand
Chairman
Micromatic Grinding Technologies Limited

C.P. Rangachar
Managing Director
Yuken India Limited

V.S. Goindi
Chairman
Parishudh Machines Private Limited

Shrinivas G. Shirgurkar
Managing Director
Ace Designers Limited

C.R. Swaminathan
PSG Industrial Institutions*

Shailesh R. Sheth
Simtools Limited*

S.N. Mishra
Bharat Fritz Werner Limited*

Nirmal Bhogilal
Chairman, Batliboi Limited

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

Dr. Nagahanumaiah
Director
Central Manufacturing Technology Institute

Yogin Chhaniara
President
Machine Tool Manufacturers' Association, Rajkot

Mohini Kelkar
Director
Grind Master Machines Private Limited

Vivek Nigam
Business Head
ISGEC Heavy Engineering Limited

Dr. Ramesh Babu N
Professor & Head of the Dept.
of Mechanical Engineering
Indian Institute of Technology Madras

T.V. Raghava Badhya
President
Makino India Private Limited

Secretary, Director General & CEO

V. Anbu

Foreword

Pinning Hopes for a Revival

It is my pleasure to present the Annual Report and Audited Statement of Accounts of the Indian Machine Tool Manufacturers' Association (IMTMA) for the year 2020 - 2021. As members access this report, they will find how IMTMA worked closely with the government as well as numerous stakeholders to keep the machine tool and manufacturing industries engaged in what was an extremely challenging year.

Restarting Businesses

Perhaps this is the time for us to recall the challenges that we underwent when the Covid pandemic hit the world last year and disrupted the normal life. Things did not stay the same and began changing as we came back strongly. The pandemic also taught us to be strong, resilient and be ever prepared for any eventualities that may arise in future.

The second wave of coronavirus in India has undoubtedly been very stressful for businesses as it came at a time when the manufacturing industry, particularly auto and general engineering industry was returning to normalcy. Industries were resilient and took safety measures to manage their businesses.

Although the threat of a third wave is looming large with the discovery of Delta and some other variants of the virus, administration, by and large, seems to be better prepared this time with some solid action plans to tackle emergencies. The government is also working towards inoculating people to reduce susceptibility to coronavirus so that we can move towards relative normality.

Since it will take some time for travel restrictions to be fully eased, we can anticipate some disruptions in the supply chain, logistics, cash flow as well as financial stress, at least for some more time.

Although all these developments may have caught many of us off-guard, we need to be prepared as it will take some time for the pandemic to vanish from the country's landscape. The longer it takes, the deeper will be the distress for manufacturing industry including the machine tool industry.

Government Initiatives

Government of India, has been playing its part by giving impetus to capital expenditure in the budget, and creating a new path for medium to long-term growth. The capex budget was raised sharply from ₹4.12 lakh crore to ₹5.54 lakh crore, a record increase of 34.5% over the last financial year. Also, in order to help business activities pick up, no new taxes have been imposed, which may help industries in the long run.

Larger outlays in various sectors of manufacturing and a corporate tax which is the lowest in the world for setting up new manufacturing units are growth drivers of economy and in supporting these, the union budget of 2021-22 made a fair effort to ignite investment-led growth. The increase in budget outlay for railways, power, infrastructure, and the like is expected to trigger demand for capital goods and machine tools. The new growth sectors identified by the government with PLI incentives are also expected to spur the demand for machine tools. As an industry we must always remain alert to avail these opportunities.

Last year, the Government of India had launched the Emergency Credit Line Guarantee Scheme to provide ₹3 lakh crore of unsecured loans to MSMEs to mitigate the distress caused by coronavirus induced lockdown. Recently, the Government increased the limit to ₹4.5 lakh crore, which will boost confidence among manufacturers in an industry that is dominated by MSMEs.

Furthermore, Reserve Bank of India's one-time loan recast for companies under stress due to Covid

outbreak is expected to benefit MSMEs that are under financial stress besides helping their cash flow situation. Spotlight will be on leadership as to how effectively they optimize resources and to formulate a strategy to address customers in these sectors.

Indian Machine Tool Industry

The machine tool industry needs to eye a bigger space in sectors that look promising including defence, electronics, aerospace, medical equipment, power industry, railways, and so on, while continuing to work closely with automobile and auto component sectors. The industry also needs to intensify its R&D initiatives and manufacture products that user industries are looking for and which can also be sold globally.

Machine tool Production for 2020 - 21 is estimated to be around ₹6,602 crores. Consumption was around ₹12,036 crores. I am pleased to mention that the Indian machine tool industry is ranked 7th in Consumption and 13th in Production, globally, as per Gardner's 'World Machine Tool Survey 2020'.

Consumption of machine tools is expected to grow by around 8-10%, driven by infrastructure spending, investments in emerging and champion sectors (such as cellular and electronics, aerospace, defence, railways, medical equipment, power, textile, among others).

Association Initiatives

The last one year has been again a challenging one as we could not meet in-person, hold any physical exhibitions, meetings and conferences. However, this didn't dampen our spirits of connecting with each other on digital platforms. We were able to conduct regular business with the aid of technology. IMTMA Committee meetings were held on digital platform which made it possible for members to participate from across the country and also, provided an opportunity for us to listen to Invited Speakers from key industries to join and share their views / ideas with the machine tool industry fraternity.

IMTMA actively participated in various meetings and interactions with union government ministries as well as industry forums in furtherance of its policy and government advocacy initiatives during the year 2020 - 2021.

The Association put forth various suggestions and policy measures for demand creation, technology, exports of machine tools and advocated for the continuation of the "Scheme for Enhancement of Competitiveness in Capital Goods Sector" besides other support measures. IMTMA has periodically interacted with the Department of Heavy Industry (DHI), various ministries and the NITI Aayog in this process.

Champion Sectors

IMTMA conducted 'Desktop Research' on some of the champion sectors such as electronics, railways, medical devices, agriculture, furniture, earthmoving, defence and aerospace, etc. to find newer business opportunities for its member companies. We also formed dedicated taskforces to formulate a strategy to address customers in these sectors.

IMTMA Clusters for Micro & Small Members

Our industry is dominated by MSMEs which necessitates collaborative work for sustainable goals. In this direction, IMTMA has constituted Clusters for micro and small enterprises (MSEs). The objective is to enable our MSEs to discuss and work together for mutual benefit, so as to continually learn, mature and grow into competitive enterprises. IMTMA Cluster in Pune, "COBIZ'" - 'Collaborative Business' comprising of members from Pune region was formed in February 2021. IMTMA Cluster in Northern Region - "SAHAYOG" - 'Collaboration for Success' was formed in July 2021 which comprises of members from National Capital Region of Delhi as well as from Punjab.

Other Key Initiatives

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 the information is compiled regularly into newsletters which are shared with member companies and industry stakeholders, periodically.

Earlier this year, in collaboration with the Government of Karnataka, IMTMA organized a webinar on "Opportunities for Global machine tool companies in Karnataka" and invited industries to set up manufacturing plants at Tumakuru Machine Tool Park (TMTP), Tumakuru. We expect more companies to set up industries in the region, which

will bode well for machine tool industry development.

IMTMA has taken up with the Government of India for making certain changes in "Public Procurement (Preference to Make in India), Order 2017" which is being considered by the government.

Another new initiative of IMTMA is on the topic of 'Build Quality' of machine tools. The Association is launching a comprehensive programme on 'Build Quality' for the Indian machine tool industry to enable manufacturers design and develop products that meet customer expectations and customer delight.

IMTMA will form part of the reactivation with the desire to more than ever take care of industry issues and be an 'enabler' in supporting the machine tool industry in every possible way, to overcome difficulties.

Training

IMTMA has been at the forefront of skill development through various initiatives such as Design institute, Productivity Institute, Finishing School, etc. for the benefit of machine tool and manufacturing industries and has carved a niche for itself in training and skilling people for manufacturing industries.

In sync with the demands of the time, IMTMA shifted many of its classroom programmes to the online / digital platform. Knowledge sharing webinars and instructor-led online training programmes were organized in addition to the classroom trainings, and today, we have a rich blend of both the physical and the digital training programmes. This has helped us to break geographical barriers and reach out to a large number of participants from various regions.

IMTMA also has full-fledged e-learning portal, accessible round-the-clock for self-paced learning of technical subjects related to manufacturing technology. E-learning courses are available on key topics including GD&T, FMEA, etc. enabling learning at flexible timings.

During the year 2020 - 2021, IMTMA conducted a total of 335 programmes, inclusive of 220 training programmes and 89 webinars for students and industry professionals. Despite the pandemic, the Association conducted 26 physical training programmes including courses initiated by Productivity and Design Institutes. While 3,556 delegates attended the online training programmes, a record 12,042 delegates attended the webinars. Overall, IMTMA delivered 2,873 person-days of training during 2020 - 2021 through its training programmes. The programmes helped students as well as industry professionals to enhance knowledge and upgrade their skills.

Mega Events

IMTMA has been continuing with its endeavours to keep up with the changing requirements of the manufacturing industry. To champion the cause of productivity in manufacturing industry, IMTMA organized the 14th edition of the National Productivity Summit (NPS 2020) on 18 – 19 December 2020, as a virtual event. This edition of the summit witnessed a record participation of about 2,000 delegates from 250 companies, across a wide cross section of the manufacturing industry.

Leading manufacturing companies such as Bharat Heavy Electricals Limited (BHEL), Brakes India, Dynamatic-Oldland Aerospace, Faiveley Transport Rail Technologies India, Hero MotoCorp, Indo MIM, Mahindra & Mahindra, Tata Hitachi Construction Machinery, TVS Motor Company, Yuken India, Adler Mediequip and Khutale Engineering presented their case studies over the course of two days.

It is pertinent to mention that the Machine Tool Industry Summit which provides a forum to the entire machine tool industry to network, collate ideas and set forth a process of organized thinking, analysis and deliberations was scheduled to be held in 2020 as per the event calendar. However, the Machine Tool Industry Summit could not be held due to pandemic situation. I am sure the industry is looking forward for IMTMA to organize the next edition of the Summit once the new dates are identified.

IMTMA is organizing the 5th edition of 'Symposium on Automation & Robotics' on 17 - 18 September 2021 as a virtual event. The Association will also organize 15th edition of the National Productivity Summit (NPS 2021) on virtual platform on 10 - 11 December 2021.

Trade Fairs

IMTMA launched IMTEX Connect on digital platform from 21 - 27 January 2021. The use of digital platform has been a boon for businesses as when they were not able to meet in person, they

could connect digitally to achieve their goals and conduct business. IMTEX Connect 2021 was a medium for the manufacturing industry to digitally explore all the technologies that will be on display when the show is organized in-person. The digital exhibition featured 94 exhibitors, 5 international associations and 4 partner associations and attracted 7,365 visitors from 45 countries. Besides the many B2B meetings, the event also featured 11 technical sessions.

IMTMA has rescheduled IMTEX, the International Machine Tool and Manufacturing Technology Exhibition. The combined 'IMTEX, IMTEX FORMING, Tooltech & Digital Manufacturing 2022' would be held at Bangalore International Exhibition Centre (BIEC) in Bengaluru from January 20 - 26, 2022. 'IMTEX, IMTEX FORMING, Tooltech & Digital Manufacturing 2022' will showcase a wide range of metal cutting and metal forming solutions. The International Machine Tool and Manufacturing Technology Exhibition will feature a broad spectrum of technologies in manufacturing.

Concurrent exhibition, Tooltech will showcase parts, accessories and systems for machine tools and manufacturing technology while Digital Manufacturing will focus on additive manufacturing, and evolutionary Industry 4.0. The leading global machine tool and manufacturing technology show will attract leading industry think-tank and industry influencers from a wide spectrum of industries in India and overseas.

IMTMA - Naoroji Pirojsha Godrej International Exhibition and Conference Complex - Bangalore International Exhibition Centre (BIEC)

The outbreak of the Covid-19 pandemic led to the rescheduling of many exhibitions and events that were scheduled to be held at the venue during the year. BIEC supported the Government of Karnataka in its endeavour to address Covid situation by providing its venue. Bruhat Bengaluru Mahanagara Palike (BBMP) used BIEC exhibition halls to house migrants during the initial lockdown period and later as Covid Care Centre for treating asymptomatic patients. BIEC also hosted the Unacademy Unoffsite 5.0 on 10th December 2020 which was held in hybrid mode at BIEC.

With BIEC being given permission to organize exhibitions and events albeit with Covid protocols, more and more shows are once again expected to restart at the venue.

Future Thrust

It is expected that once the pandemic gets over, India will re-emerge as a prime destination for manufacturing in Asia. Machine tool sector is also expected to become thoroughly competitive. Technology tie-ups with global machine tool companies can create opportunities for Indian companies to develop their business in overseas markets.

I would like to reiterate that IMTMA will continue to project the machine tool industry as a key enabler of the 'Make in India' and 'Atmanirbhar Bharat' initiatives and continue with its role of uplifting the industry to greater heights.

Adieu

I would like to record that the two years of my Presidency in IMTMA has been an extremely challenging one, given the outbreak of the pandemic and several lockdowns that affected the industry business adversely.

Certainly, all the achievements of the Association have been a gratifying experience for me. This was made possible by the proactive involvement of IMTMA's Executive Committee and Membership, as well as the enduring guidance and contribution of all the Past Presidents.

I extend my special thanks to the IMTMA secretariat led by V. Anbu for their unstinted support during my tenure. As I lay down the office of President at the forthcoming Annual General Meeting, I commit my whole-hearted support to my successor and the new Executive Committee.

As a note of conclusion, I am sure that the deep commitment and earnest endeavour of the Association and its Membership, and the Executive Committee will lead IMTMA to greater achievements in the coming years.

Indradev Babu
President

Annual General Meeting

74th Annual General Meeting

30 September, 2020: Digital Platform

Indian Machine Tool Manufacturers' Association (IMTMA) held its 74th Annual General Meeting (AGM) on 30 September 2020. The AGM was held on digital platform due to the Covid-19 pandemic situation. At the Executive Committee following the AGM, Mr. Indradev Babu was re-elected as President for a second term. Mr. Ravi Raghavan was re-elected as Vice President for a second term. The new Executive Committee of IMTMA for the year 2020 - 2021 was also formed.

Prior to the AGM, in his welcome address, Mr. Indradev Babu said, "There are signs of improvements in the health of manufacturing with agriculture sector and rural consumption emerging as bright spots. The key is to build a confident and self-reliant manufacturing industry that can take centre stage in global manufacturing."

Giving a broad overview of IMTMA activities, Mr. Indradev Babu, said, "People focus is a must. Leadership plays a very crucial role in these challenging times. I am sure industry leaders will take cognizance of these aspects and make efforts and convert these into action points."

At a panel discussion on Creating Impactful Businesses, Mr. R. Srinivasan, Past President - IMTMA, Mr. Shrihari Udupa, Co-founder, Agora Analytics and Mr. R. Mukund, Founder Director, Sabre Skilling co-authors of the book Above and Beyond: How to Build Impactful Businesses Where Everybody Wins! talked about the purpose and culture to build an impactful organization.

Delivering the Vote of Thanks at the AGM, Mr. L. Krishnan, Past President – IMTMA said, "The unprecedented lockdown imposed by the Government, perhaps, was also an opportunity, to explore the virtual mode of communication and being in touch, not only for industry and businesses, but for people, in general in all walks of life."

He also took the opportunity to welcome incoming Office Bearers and urged the new Executive Committee to devote time for the Association's activities.

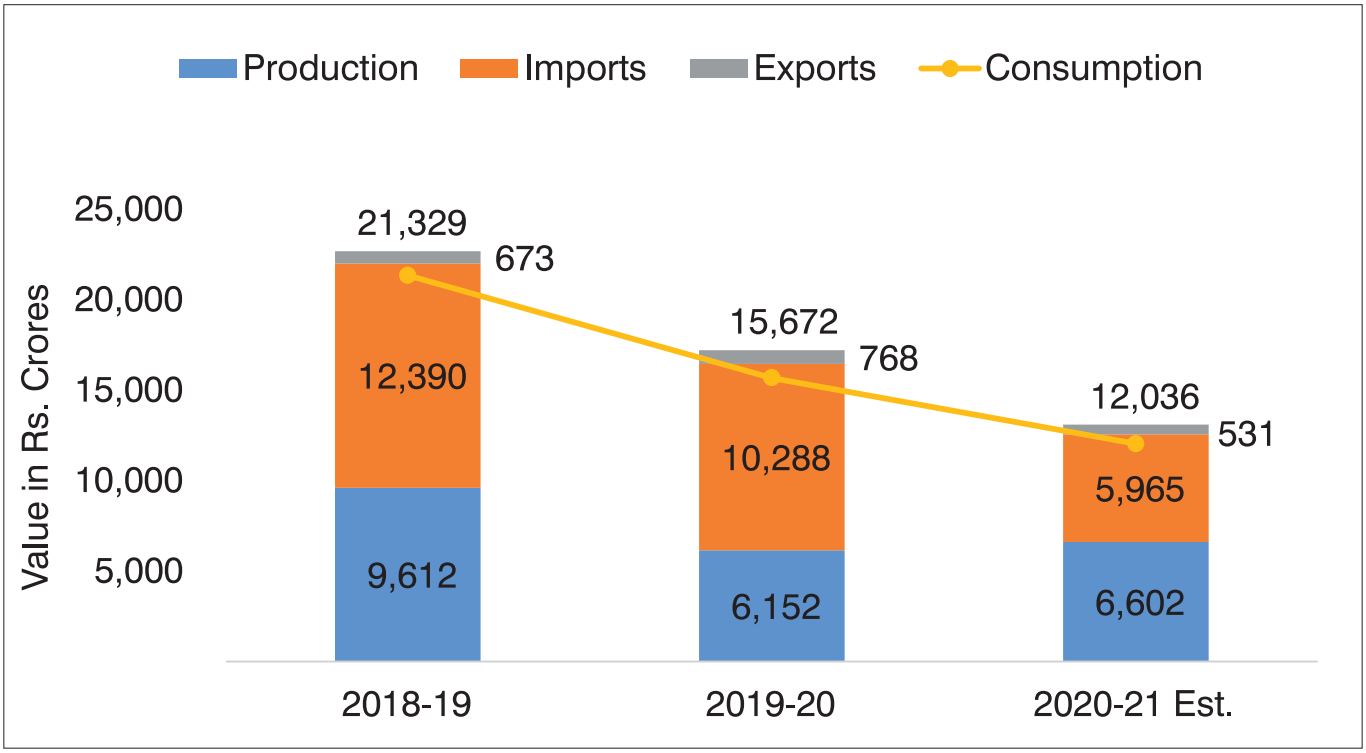
Trends in Indian Machine Tool Industry

As per the latest 'World Machine Tool Survey' by Gardner Intelligence, India occupies 13th rank in production and 7th rank in consumption of machine tools globally in 2020.

Indian machine tool production is estimated to have reached ₹6,602 crores in 2020 -21 and consumption of machine tools is estimated to have reached ₹12,036 crores. Production is estimated to have increased by around 7 % Y/Y in 2020-21 and consumption is estimated to have declined by around 23% Y/Y in 2020–21.

Indian Machine Tool Industry 2018-19 to 2020-21

All Values in ₹ Crores



Association Initiatives

Policy Advocacy

With several meetings with the union government ministries as well as industry forums, financial year 2020 - 2021 was a significant one for IMTMA.

IMTMA participated in a session on Capital Goods for Atmanirbhar Bharat, chaired by union ministers. The Association gave its inputs for demand creation, technology, exports for machine tools and advocated for continuation of the 'Scheme for Enhancement of Competitiveness in Capital Goods Sector' and other support measures. IMTMA also participated in the apex committee meeting of the Ministry of Heavy Industries (MHI).

Office-bearers of IMTMA interacted with railway officials and proposed visits to railway manufacturing units to capture, study and address their requirements.

Industrial visits to railway manufacturing units in south and north, toy manufacturing unit, and earth moving machinery manufacturing divisions were organised. Virtual meetings were held to connect machine tool builders and customers.

The Association also took up issues connected with the need to modify tender terms for Public Procurement to enable greater domestic participation. IMTMA also suggested changes to the Capital Goods Skill Council (CGSC) for conducting labour market survey in capital goods industries.

During the period, it also formulated various focused committees for policy advocacy, export promotion, industry-institution outreach, for strengthening interaction with ministry, association bodies, networking with dealers and customers, and for strengthening academic collaboration.

IMTMA conducted research on electronics, railways, medical devices, railways, agriculture, furniture, earthmoving, aerospace and defence to find new business opportunities for its member companies. To formulate a strategy and address customers specific sectoral need, dedicated taskforces were formed.

In order to encourage local and foreign companies to set up manufacturing plants at Tumakuru Machine Tool Park (TMTP), Tumakuru, IMTMA in collaboration with Government of Karnataka organized a webinar on “Opportunities for Global Machine Tool Companies in Karnataka” and invite them to TMTP.

The Association participated in meetings organized by the International Centre for Automotive Technology (ICAT) on e-platform for developing machine tool technologies for auto sector and in organizing a digital survey to know the needs of industries.

IMTMA has submitted to the government to recognize machine tool industry as a 'stressed sector' for availing Emergency Credit Line Guarantee Scheme (ECLGS).

The Association approached Small Industries Development Bank of India (SIDBI) for inclusion of micro and small machine tool OEMs in the category of machinery purchase under the Speed / Speed Plus scheme of MSME.

IMTMA met senior officials from NITI Aayog for advocating key policy interventions sought from the government for machine tool industry's growth and development. IMTMA also submitted its comprehensive response towards CII Demand Aggregator Study to CII National Committee on Capital Goods and Engineering.

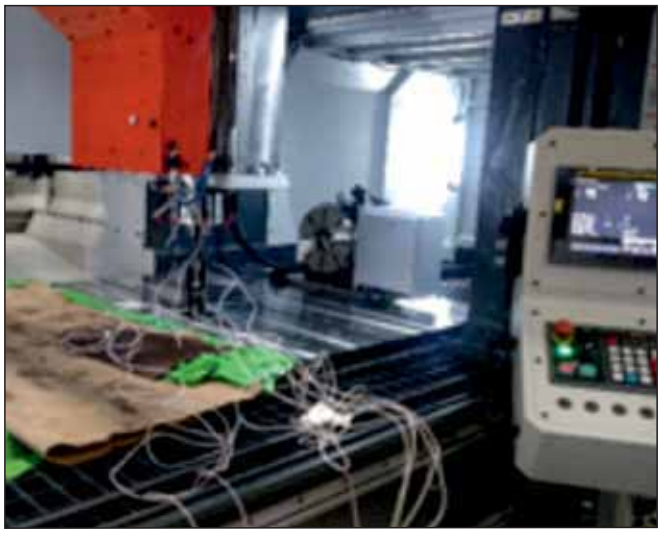
Additionally, IMTMA has actively advocated for indigenization and Atmanirbhar Bharat for:

- Developing high technology machines and systems for futuristic needs of strategic sectors such as creation of a model of risk sharing development contract between industries and public procurement agencies.
- Continuation of government support for R&D in advanced machine tools, manufacturing technologies and mother technologies for technological self-reliance.
- Establishment of Brand India Technology Centres in high growth potential overseas markets for export promotion.
- National mission mode approach for the development of mother technologies for machine tools such as ballscrews, guideway, laser related development, drives, control system, etc.

Association Initiatives

Advanced Machine Tool Testing Facility (AMTTF)

Testing - Trouble Shooting - Problem Solving



Advanced Machine Tool Testing Facility (AMTTF) is a public-private-partnership initiative by the Department of Industrial Policy and Promotion, (now Department for Promotion of Industry and Internal Trade) Government of India, Central Manufacturing Technology Institute, and the Indian machine tool industry. AMTTF serves the machine tool and manufacturing industries by testing the machine tools and equipments, as per Indian and international standards. The special testing and investigation assignments carried out by AMTTF include root cause analysis for chatter, surface roughness, static and thermal study, vibration and dynamic stability and mode shapes. AMTTF has provided safety certification of CNC machines and woodworking machines as per relevant standards.

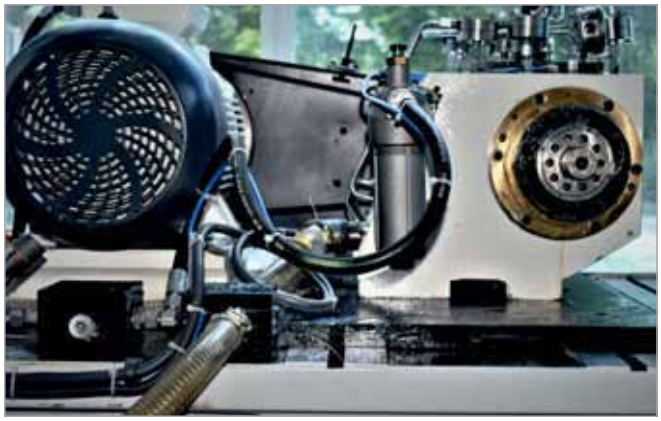
Apart from periodic testing, calibration and vibration monitoring activities, AMTTF delivered greater value by investigating machine tool performance for enhancement and throughput. AMTTF has carried out about 250 assignments serving more than 60 customers.

Association Initiatives

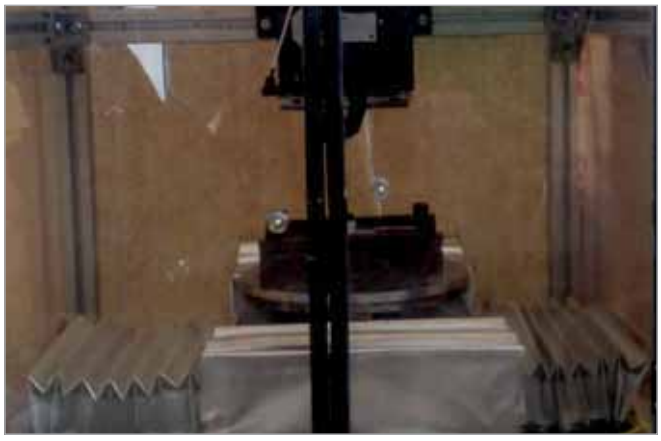
Advanced Manufacturing Technology Development Centre (AMTDC)

Advanced Manufacturing Technology Development Centre (AMTDC) is a Centre of Excellence for machine tools and production technology set up by IIT-Madras in 2016 as a not-for-profit registered society under the Department of Heavy Industry's Scheme for "Enhancement of Competitiveness of Indian Capital Goods Sector" in collaboration with 6 industrial partners.

Over the last 5 years, AMTDC has developed first-time technologies such as automation of grinding process intelligence and technologies developed as import substitutes such as 5-axis multi-tasking machine, 5-axis universal machining centre with rotary hydrostatic table, 5-axis micromachining centre, 6-axis articulated robots, hydrostatic slideways and spindle systems for machine tools, etc.



The centre is also developing and promoting Technology Innovation Platform called "knowledge integration for technology enrichment – kite" (https://kite.iitm.ac.in) - a platform for innovation and technology development that connects various stakeholders like academia, industry, students, entrepreneurs, engineers, researchers, R&D institutes, government labs and departments to foster crowd sourcing of ideas, connection of resources, skill development and knowledge enrichment.



Association Initiatives

IMTMA Cluster Initiative

Pune MSME Cluster

COBIZ
(An IMTMA Initiative)

An IMTMA - Pune MSME Cluster Initiative, 'COBIZ' was inaugurated in Pune on 3 February 2021. The objective of the initiative is to enable small groups of IMTMA on SME members to discuss and work together for mutual benefit and continually learn, nurture and grow into competitive companies.
A total of 14 IMTMA member companies are part of this cluster. eleven meetings have been conducted (7 in virtual mode, 3 in-person and 1 in hybrid mode). Sessions on effective digital marketing, registration and use of government e-marketplace, succession planning, working beyond boundaries, etc. have been conducted.

Mr. Rajesh Mandlik is heading the initiative as 'Mentor' of IMTMA MSME clusters.

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 manufacture machine tools as green products. IMTMA sees green manufacturing as prevention of pollution and means of conserving energy and water, utilization of renewable energy, material conservation, etc. Towards this, IMTMA conducts trainings, seminars, and expressed support from member companies to achieve certification from CII-GBC Green Co. This year ACE Manufacturing Systems (AMS) Limited received the GreenCo Gold Award.

Association Initiatives

IMTMA Regional Council (North)

Meeting on 20 December 2020: Digital Platform

The 41st meeting of IMTMA Regional Council (North) was held online. The 'Terms of 'ToR' was unanimously approved. It was further decided that the Regional Council will focus on the following areas:

- Identify needs of the members in the region, and schedule various programmes, events, and other activities, to meet those specific requirements.
- Focus on key competitiveness factors like design, technology, innovation, etc. in the machine tool industry through focused programmes and other initiatives
- Strengthen membership base and enhance membership services in the region
- Promote brand image of the Indian machine tool industry, through various regional programmes and initiatives

A discussion on the status of the industry performance was also held along with an online CEO's poll on market situation.

Meeting on 17 March 2021: Digital Platform

The 42nd meeting of IMTMA Regional Council (North) was held through video conference. A session by Mr. Shishir Bharadwaj of Quality Council of India, New Delhi, on the concepts of 'Zero Effect & Defect', an initiative of Quality Council of India (QCI), was organised for the members. Mr. Vivek Nigam chaired the meeting. Mr. Kapil Dhand, Managing Director, Micromatic Grinding Technologies Private Limited, co-chaired the session.

IMTMA Regional Council (West)

Meeting on 15 July 2020: Digital Platform

A meeting of the Regional Council (West) was held online. Members shared their views on the current issues like delay in deliveries, payments from customer end, price reduction requests from customers, etc. The possibility to have interaction with ACMA members was also explored.
The meeting featured a session on Best Practices in Supply Chain Management for Survival and Growth.

Meeting on 21 August 2020: Digital Platform

A meeting of the Regional Council (West) was held online. Members discussed the machine tool industry data and scenario. The meeting featured a session on HR Practices to Tackle Covid Induced Situation.

Meeting on 11 December 2020: Digital Platform

A meeting of the Regional Council (West) was held online. Following the Regional Council meeting, a session on HR - A Strategic Partner in the Business was held on 12 January 2021. Proposed initiatives areas of the Council included:

- Sessions for members, for example, branding, HR practices, finance, cash flow management, MSME schemes, digital marketing, etc.
- Have better connect with institutes /academia/engineering colleges.
- Expand activities of IMTMA in other cities and geographical areas, for example, Nashik, Kolhapur, Aurangabad and Gujrat.
- Mrs. Mohini Kelkar was the chairperson and Mr. Rajesh Mandlik was the co-chaired the session.

Association Initiatives

Special Session on MSME Schemes on 19 February 2021: Digital Platform

A special session on MSME Schemes for IMTMA member companies was held online to make members aware of the revised classification of MSMEs, the various finance schemes which could be availed, technology upgradation and quality certification schemes, marketing promotion schemes, and so on. Entrepreneurship and skill development programs, etc. were also covered.

Meeting on 8 May 2021: Digital Platform

A meeting of IMTMA Regional Council (West) was held online. The main agenda of the meeting was "Sharing of Challenges in Managing Business Operations and Solutions adopted by Members in Current Situation." A dipstick survey was conducted to understand the expectations of western region members.

Meeting on 22 June 2021: Digital Platform

IMTMA members explored the possibility of arranging presentations on solutions offered in shopfloor automation and electrical vehicle components to ACMA members. It was also decided to organize CEO connect sessions in collaboration with academia / engineering colleges in Aurangabad and Pune. Further it was decided to conduct sessions for members on aspects such as Branding, HR practices, Finance, Cash flow management, and sharing of best practices by members.

Coinciding with this meeting, an interactive meeting with the Dean R&D and team of professors of IIT-Bombay was organized to explore the possibility of joint working in R&D. Sixteen IMTMA member companies and 7 IIT faculty members attended the meeting.

IMTMA Regional Council (South)

Meeting on 28 November 2020: Digital Platform

A meeting of the Regional Council (South) was held online. Mr. Rajendra Rajamane chaired the meeting. A presentation on "IMTMA activities & Key Processes" was made by IMTMA secretariat. Members were briefed about various task forces of IMTMA such as agricultural machinery, woodworking / furniture / toys sector, medical devices / equipment, electronics, construction equipment, and were requested to actively participate.

Meeting on 27 February 2021: Digital Platform

A meeting of the Regional Council (South) was held online. Coinciding with the meeting, a Special Session on "Digital Marketing" was organised via digital platform. Roadmap for 2021-22 was discussed.

To organize sessions on:

- Lean Management
- Structuring of sales force and sales processes
- Six-Thinking-Hats.

The Session on "Digital Marketing trends for manufacturing industry: Marketing 4.0" was attended by 44 members.

Meeting on 29 May 2021: Digital Platform

First meeting of IMTMA Regional Council (South) for FY 2021-22 was held on 29 May 2021. Coinciding with the meeting, a Special Session on "Lean Management in Machine Tool Manufacturing" was organised via digital platform, which was well appreciated by members.

Salient points of the meeting:

- Members discussed on the current industry status vis-à-vis order booking, supply chain, material availability, and manpower issues, and so on.
- Members proposed that IMTMA could consider organising long term training programmes on Sales and Marketing, for the machine tool industry professionals.
- Chairman proposed that members could consider providing 2-3 months internship to a few engineering students, in order to train them and be industry ready.

Association Initiatives

CSR Initiatives of IMTMA

Summer Camp (Agastya Foundation): Digital Platform

IMTMA has been undertaking several CSR initiatives. As part of this IMTMA sponsored Agastya Foundation for online digital summer camp and explore play learn activity, special programmes and teachers' training. Between June and December 2020, the foundation conducted 729 sessions which was attended by 64,624 students. Special programmes were done on World Yoga Day, Doctor's Day, World Population Day, Independence Day, Engineers Day, and so on. Thirty teachers of class V to class VII grade were provided training at the Government Higher Primary School, Hanchepura and Bommanahalli, Bengaluru.

Redevelopment of Toilet Block at Government School, Madanayakanahalli

IMTMA renovated basic infrastructure facility at Government Primary School at Madanayakanahalli in Bengaluru, which will serve approximately 650 students. The Association took the initiative of renovating and constructing a new toilet block for the students and school staff to fulfil its role as a socially responsible organisation. The toilet blocks have been built as per the sanitation standards prescribed by National Building Code.

Trade Fairs

IMTEX Connect 2021

21 - 27 January 2021: Digital Platform

IMTMA organized its first digital exhibition "IMTEX Connect 2021" from 21 - 27 January 2021 on the digital platform. The show drew an encouraging response from exhibition industry stakeholders from across the world, featuring 94 exhibitors and 7,365 visitors from 45 countries. The feedback from exhibitors was impressive and many were satisfied with the business enquiries and networking that they were able to do on the digital platform. User industries connected with the latest innovations at B2B lounges.

Key Facts and Figures

Exhibition Days	7 (21st - 27th January 2021)
Number of Exhibitors	94
Number of Visitors	7365
Number of Countries (Visitors)	45
5 International Associations	• Advance Manufacturing Technologies (AFM), Spain • The Association for Manufacturing Technology (AMT), USA • Japan Machine Tool Builders' Association (JMTBA) • Korea Machine Tool Manufacturers Association (KOMMA) • UCIMU-Sistemi Per Produrre (UCIMU), Italy
4 Partners	• DHI (Department of Heavy Industry) • Advanced Machine Tool Testing Facility (AMTTF) • Advanced Manufacturing Technology Development Centre (AMTDC) • Tumakuru Machine Tool Park (TMTP)

Trade Fairs

Key Facts and Figures

11 Technical Sessions	• TRIZ - An approach for Systematic Innovation • OEE - A simple tool for improving productivity" • Metal 3D Printing - Technology of near future • Best Practices for Manufacturing Cost Reduction • Work holding and Fixturing Systems for Productivity Improvement in CNC Machines • Industry 4.0 - Indian context • Achieve cost reduction in manufacturing by implementing GD&T • How to achieve Zero Down time in CNC machines? • Data Analytics in manufacturing • CNC Machine Tool Testing and Accuracy Measurement • Light-Weighting of Automobiles

Mega Events

National Productivity Summit 2020

18 - 19 December 2020: Virtual Event

The 14th edition of National Productivity Summit (NPS 2020) was held virtually from 18-19 December 2020. The summit highlighted productivity advancements in manufacturing industry and also featured experts deliberating upon effective ways in addressing production bottlenecks to boost productivity.

The National Productivity Summit provides a platform for companies to showcase best productivity improvement projects in manufacturing, those which have excelled in superior performance through sustained improvements in manufacturing efficiency.

The summit through its insightful keynotes and live case study presentations has emphasised the need to embrace an integrated approach to increase manufacturing productivity and prepare people, processes and technology as part of this journey of productivity excellence.

This edition of the summit witnessed a record participation of about 2,000 delegates from 250 companies, across a wide cross-section of the manufacturing industry.

Dr. Gregory Watson, Chairman, Business Excellence Solutions, Finland, and Mr. Vipin Sondhi, Managing Director & CEO, Ashok Leyland Ltd. delivered keynote addresses. Dr. Watson spoke on “Managing Breakthrough Change for Productivity and Profit” and Mr. Sondhi spoke on “Innovation to drive Productivity in Indian manufacturing”.

Leading manufacturing companies such as Bharat Heavy Electricals Limited (BHEL), Brakes India, Dynamatic-Oldland Aerospace, Faiveley Transport Rail Technologies India, Hero MotoCorp, Indo MIM, Mahindra & Mahindra, Tata Hitachi Construction Machinery, TVS Motor Company, Yuken India, Adler Mediequip and Khutale Engineering presented their case studies at the Summit.

Mega Events

IMTMA-ACE Micromatic Productivity Championship Awards 2020

- First Prize was awarded to INDO-MIM Pvt. Ltd. for their case study presentation on "Automation & Robotics, a case study on reducing manual intervention to boost productivity in MIM (Metal Injection Molding)".
- Second Prize was awarded to TVS Motor Company for their case study presentation on "Cobots on Fly inspection; a case study of I 4.0 implementation for quality and productivity".
- Third Prize was awarded to Mahindra & Mahindra, Automotive division for their case study presentation on "Foundry core making productivity improvement through Innovative yet Frugal solution".

SME Productivity Championship Award 2020 was won by Adler Mediequip for their case study presentation on "Low-Cost Automation in RASP teeth punching process".

Technology & Training

IMTMA TECHNOLOGY CENTRES

IMTMA Technology Centres are closely associated with skill development initiatives. During the financial year 2020 - 2021, IMTMA conducted a total of 335 programmes, inclusive of 220 training programmes and 89 webinars for students and industry professionals. Despite the pandemic, the Association conducted 26 physical training programmes including courses initiated by Productivity and Design Institutes.

While 3,556 delegates attended the online training programmes, a record 12,042 delegates attended the webinars, and 2,873 delegates attended the physical training programmes at IMTMA technology centres.

eLearn

Access – Anybody, Anytime, Anywhere

IMTMA's e-learning programs are simplified, relevant, organized & instructive, and presented in a dynamic and understandable manner. Videos, animations, diagrams and graphs are used intuitively for presenting moving parts, physical

reactions, flowcharts, technical drawings or on how to assemble a piece of equipment. Our expert learning professionals have hand-picked useful topics to keep the learning process current and continuously improving. About 75 Hours of learning contents, developed by industry experts are available in our E-learning portal.

The eLearning courses from IMTMA cover topics such as Geometric Dimensioning and Tolerancing (GD&T), Failure Mode and Effects Analysis (FMEA), Overall Equipment Effectiveness (OEE), Selection, Assembly and Trouble Shooting of Linear Motion Guideways, Selection, Assembly and Trouble Shooting of Ball Screws, Fundamentals of Painting and Coating applications, Heat Treatment - Metallurgy and Processes (HTMP), Arc Welding Processes (ArcWP), Advanced Welding Processes (AWP), and Gear Manufacturing.

Short-term Training Programmes

How to become an effective FMEA Practitioner as per combined AIAG & VDA Version

15 - 16 July 2020: Online

We often read about numerous high-profile examples of product recalls. Such recalls happen due to poorly designed products and / processes. These failures are discussed with manufacturers, service providers and suppliers and are being depicted as incapable of providing a safe product. Failure Mode and Effects Analysis, or FMEA, is a

methodology aimed at allowing organizations to anticipate failure during the design / manufacturing stage by identifying all of the possible failures in a design or manufacturing process. FMEA is one of many tools used to discover failure at its earliest possible point in product or process design. To explore this more IMTMA organized a two-day interactive training programme introducing participants to FMEA Concepts as per new AIAG & VDA Hand book for FMEA, benefits of FMEA, risk analysis, etc.

Technology & Training

Essentials of VDA 6.3 implementation

17 October 2020: Online

VDA 6.3 (Verband der Automobilindustrie) defines a process based audit standard for evaluating and improving controls in a manufacturing organisation's new product introduction and manufacturing process. In the present day race to outbeat others, TTM (time to market) has become very short. Hence, the demand for adhering to the standard has increased. IMTMA organized a one-day training programme on the Essentials of VDA6.3 implementation. The training programme focused on project management, implementation of product / process development, customer service, supplier development, etc.

Defect-free Sand Castings through Right Part and Process Design

3 - 4 December 2020: Online

Sand casting technique is the most cost-effective and design flexible in foundry. Innovative and well-planned management of sand is essential for maintaining quality of the product and process. Success of getting defect free sand casting depends on gating and riser design and other process control in the foundry. Defect in casting also can be prevented by applying DFM techniques for casting and effective use of simulation. Knowledge on all these topic is must for foundry engineer, casting design engineer and supplier quality engineers. Keeping this in view, IMTMA organized a webinar which focused on providing participants with information on sand casting process, sand casting defects and remedies, gating design from first principle, casting simulation, etc.

First Time Right Product Manufacturing through Error Free CAD Drawings

5 - 9 January 2021: Online

Manufacturing drawing is an official document in manufacturing of any part or product as it communicates complete manufacturing information through graphical symbols from a design engineer. It is very important for any engineer to interpret in line with the designer's intent even without his presence anywhere across the globe. Drawing communicates all information intended by the designer to facilitate manufacturing like part geometry, size, dimensional and geometrical tolerances, surface finish, material, heat treatment and surface treatment. IMTMA organized a five day intensive online training program to impart knowledge on 3D CAD, systematic way of making of drawings, knowhow on tolerances, GD & T for designers, etc.

HR Excellence Certification Program

8 January - 20 February 2021: Online

In its effort to strengthen its offering to the manufacturing industries and to enable the executives and leaders to manage effectively, IMTMA did a certification course for the HR community and also emerging leaders within the organisations. The programme had HR function

planning, managing diverse workforce and decision making, talent acquisition, employee development, employee engagement, welfare and motivation, etc. as its key focus areas.

Metal 3D Printing - Technology of Near Future

18 - 19 February 2021: Online

Metal Additive Manufacturing is migrating from research labs and premium complex non mass production items towards becoming an alternative technique for regular manufacturing. Its scalability, economics and feasibility is transforming very rapidly and a whole ecosystem for Simulation & Design for Additive Manufacturing on one hand and diverse application opportunities using different materials with configurable properties on-

demand on the other hand. In order to present latest update on this Technology of near future now, IMTMA organized an online training that gave an overview of metal additive manufacturing, new skills required for additive manufacturing and its ecosystem, simulation of metal additive manufacturing, etc.

Business planning and Budgeting for sustained profitability through Good manufacturing practices

13 March 2021

Business planning and budgeting are critical to the success & sustainability of a business. In the current Covid situation, where markets are under stress, it is all the more important to have a clear system of tracking the business and take appropriate actions to enhance Business Performance. Companies having a robust system to manage their business are often preferred in the Global Market thereby holding an edge over competition. Keeping this in view IMTMA organized an online training program that focused on business plans, budgeting and its importance, profitability and operational performance, and handling business in a post-Covid scenario.

Advanced Concepts of GD&T

10 - 12 May 2021: Online

The Geometric Dimensioning and Tolerancing systems have been getting evolved over the last 20 plus years continuously. Thorough understanding is a must across the design, manufacturing and quality personnel for implementing GD&T and realizing the true benefits in terms of interchangeability, reduced cost, reduced re work, simplified inspection and gauging, etc. Keeping this in view, IMTMA organized a two-days training

programme on application and interpretation of GD&T interlaced with interesting real life examples which the participants from various industries were able to identify with.

How to achieve breakthrough results through Six Sigma methodology

11 - 12 May 2021: Online

Over the last 30 years, Six Sigma methodology have proven its utility to all the organizations who have learned and practiced with religious sincerity. It has given huge benefits to all the practicing organizations in terms of improved market penetration, customer delight, better business process performance, breakthrough results, and

reduced cost of doing business and contributed to increasing revenues and profitability significantly. It creates an infrastructure and culture to drive improvements and sustain improvements over a long period of time. To throw more light on achieving breakthrough results through six sigma methodology, IMTMA organized an online training programme. The training programme covered the financial and non-financial benefits of six sigma, FAQs on six sigma, critical success factors, along with few case studies.

Technology & Training

Mechanical Design Validation and Testing (MDVT) for Electrical, Electronic and Electro-mechanical Systems

25 - 26 May 2021: Online

Design validation tests are performed to validate a product's design; as for design specifications, internal design or external standards, customer requirements, and product regulatory compliance testing. To throw more light on these aspects, IMTMA organized an online training on test cases and related stress parameters, which need careful considerations during mechanical design validation testing. The training also focused on how changes in temperature test a product's real life exposure, how exposure to various levels of humidity affects product performance, higher elevations can create harmful stress on sealed components or product packaging, etc.

Artificial Intelligence and Machine Learning for Manufacturing Industries

3 June 2021: Online

While there is a lot of push for Industry 4.0, industries in India fail to see a tangible justification for reinvesting in it since data automation and live dashboards by themselves do not seem to lead to significant business advantage. It is only when the analysed data is subjected to artificial intelligence and bring in machine learning that the real unseen potential of improving organization's competitive edge comes about. IMTMA organized an online training on artificial intelligence and machine learning for manufacturing industries. The training focused on providing participants with knowledge on how does artificial intelligence work, deep learning and neural networks, artificial intelligence for dealing with vagaries of human behaviour, industrial applications for artificial intelligence and machine learning, etc.

Technology & Training

Customized Training Programme

Training Programme for Women in Electronics Manufacturing

8 March - 12 April 2021: Bengaluru

IMTMA in association with Tata Electronics and SkillSonics trained a batch of 30 female students at its office in Bengaluru. Successful candidates who underwent the training were recruited by Tata Electronics for its manufacturing unit in Hosur. This was a unique and special initiative to train the young female workforce who hail from various rural and semi-urban areas of Tamil Nadu. The training which started from March 8, which was celebrated as International Women's Day, concluded on April 12, on a positive note. All students who underwent training at IMTMA availed knowledge as well as hands-on practice on technical and soft skills in manufacturing using CNC machines.

Design Institute

Manufacturing of Drill Jig for Gear Pump Housing (Design - Manufacturing - Assembly)

6 - 18 July 2020: Online

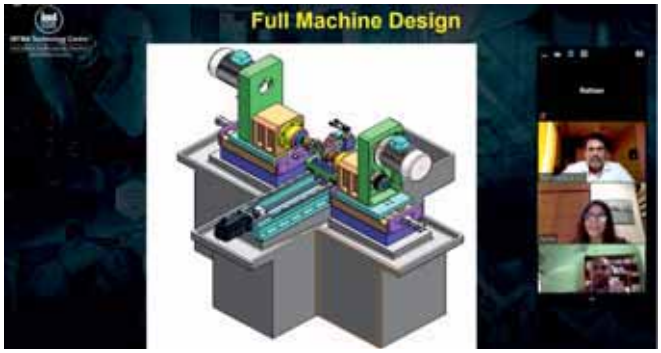
Deepening student's understanding of industry best practices on product manufacturing from design to assembly will enhance their technical competencies and employability quotient. Considering the challenges that manufacturing industries face during pandemic and other times, IMTMA conducted a virtual industry internship programme.

A real time industry project with Live Demo on Designing and manufacturing of Drill Jig was carried out. The two weeks' programme focused on enhancing students' problem solving skills, conceptualization of product, manufacturing process, increasing the knowhow on types of machines and tools, CNC programming, assembly process, etc.

Design of Special Purpose Machine - An Experience of Machine Tool Design

17 August - 10 October 2020: Online

To ensure that pandemic wouldn't be a roadblock for upskilling, IMTMA conducted a virtual long-term programme to enable participants to learn the industry design skills from the safety of their premises. The course was structured from Design fundamentals to final machine tool design and had an ensemble line of participants, some of them from overseas such as Dubai and USA. Managing Directors from member and non-member companies as well as IIT professors and students attended the programme.



Calendar of Events - 2020 - 2021

July 2020

Knowledge Sharing Webinars	
4	Welding Simulation can make Crash, Durability and Fatigue more Predictive
11	Plant Maintenance-Electrical aspects
17	Reduce Cost & Enhance Productivity through Metalworking Fluid (MWF) Optimization
18	Overview of Gear Manufacturing
25	Occupational Health &Safety(OH&S)Management System - ISO45001
Online Training Programmes	
1	Artificial Intelligence and Machine Learning for Manufacturing Industries
3	CNC Programming & Operation of Turning Centre
3	Cost and Cycle Time reduction in CNC Machining - Turning applications
3	Cost and Cycle time reduction - CNC Milling applications
6 - 18	Manufacturing of DRILL JIG for Gear Pump Housing (Design - Manufacturing - Assembly)
8	Engineering Materials and their selection - Key to Successful Design
9	Interviewing Skills - Key to build Brand and Attract Talent
8	Engineering Materials and their selection - Key to Successful Design
9	Interviewing Skills - Key to build Brand and Attract Talent
10 - 11	Essentials of Process Planning for Machined Parts
11	Cost and Cycle Time reduction in CNC Machining – Milling applications for Tungaloy India
11	TPM – The foundation for Manufacturing Excellence
12	Limits, Fits and Tolerances - A Practical Approach
13 - 25	Industry Internship on Manufacturing of DRILL JIG for Gear Pump Housing (Design - Manufacturing - Assembly)
14	Metal 3D Printing - Technology of near future
15 - 16	How to become an effective FMEA Practitioner as per combined AIAG & VDA Version
17	Dimensional Measurements - An Experience of Shop floor on Metrology
17	Cost Effective & Collaborative Automation - Need of the hour for Industry
17 - 18	Concepts & Applications of Measurement Systems Analysis (MSA) as per AIAG, 4th Edition
18 - 19	Geometric Dimensioning & Tolerancing in Design through Manufacturing
21	Troubleshooting of Casting Defects

Calendar of Events - 2020 - 2021

July 2020

22 - 23	Liquid Painting Technology - Industrial and Automotive Applications
23	Problem Solving Tools for Securing our Present and Future
24	Cost Effective & Collaborative Automation - Need of the hour for Industry
24	Problem Solving Tools for Securing our Present and Future
25	Gear Metrology and Measurement Methods
25	Electrical Switch Gears and Applications - Maintenance Perspective
27 - 31	Basics of Mechanical Design
27	Drafting Standards and Manufacturing Drawings - Industry Perspective
27 Jul - 7 Aug	'SolidWorks & Industrial Manufacturing Drawings and become a Certified SolidWorks Professional (CSWP)'
28	Limits, Fits and Tolerances - Practical Approach
28 - 29	Machining Aerospace Materials - Challenges and Solutions
29	Selection and Industrial Application of Mechanical Power Transmitting System
29	Dimensional Measurements - An Experience of Shop floor on Metrology
30	CE Marking for Export Market - Gateway to Global Market
31	Engineering Materials and Heat treatment – Machine Designer Perspective
31	Implementing ISO 45001 - Occupational Health and Safety (OH&S)
31	Programming & Operation of CMM Machine - A Shop floor Practice

August 2020

Knowledge Sharing Seminars	
1	Awareness of ZED certification scheme
8	Formability and Material Savings for Sheet Metal Parts
19	New, Clean and Cost Effective Technology in Heat treatment - Polymer Quenching
21	Rotary Swaging & Axial Forming – Innovative Technology for Tomorrow
28	Best Practices in Supply Chain Management for Survival and Growth
Online Training Programmes	
1 - 2	LM Guideways and Ball Screws - Types, Applications and Selection
4	Workholding and Fixturing Systems for Productivity Improvement in CNC Machines
10	Cold Forging Technology - Process, DFM and Quality Considerations
7	Tube Forming - Equipment, Process, Applications and Latest Trends

Calendar of Events - 2020 - 2021

August 2020

8	Implementing Zero Defect and Zero Effect (ZED) in Manufacturing
10	Cold Forging Technology - Process, DFM and Quality Considerations
11 - 12	Gear Design - Spur and Helical Gears
13 - 14	Care for Machine Tool Spindles - Systematic Approach for Spindle Maintenance
17 Aug - 10 Oct	"Design of Special Purpose Machine - An Experience of Machine Tool Design"
18 - 19	Geometric Dimensioning & Tolerancing in Design through Manufacturing
20 - 21	Towards Zero Defects in Welding Applications
21	Programming & Operation of CNC Machining Centre
24 - 27	FDP - Recent Trend In Cutting Tool Technology and Force Measurement Using Matlab
25 - 26	Powder Coating Technology - Process, Applications, Defects Analysis and Prevention
25 - 29	Hydraulic System Development for Industrial Applications – A Practical Approach
27 - 28	Selection of Cutting Tools for CNC Machining Centre Applications (Milling and Hole Making Operations)
29	SMED (Single Minute Exchange of Dies) for Quick Change over

September 2020

Knowledge Sharing Webinars	
16	Post-Covid Scenario: Motivating Workforce and Creating Cohesive Teams for Collaboration, Contribution and Growth
19	Breakthrough KAIZENS with Zero Point Clamping Systems
25	3D Printing - The Slow Revolution
30	Enhanced Productivity with Modelling and Simulation of Machinery Components
Customized Training Programmes	
3 - 11	Technical Training Service: Customized Training Module for SKODA AUTO Volkswagen India Private Limited - Machine Shop
14 - 18	Technical Training Service: Customized Training Module for SKODA AUTO Volkswagen India Private Limited - Machine Shop
21 - 28	Technical Training Service: Customized Training Module for SKODA AUTO Volkswagen India Private Limited - Machine Shop
Online Training Programmes	
1 - 2	Implementing SPC, a Game Changer for Cost Reduction
3	Latest Trends and Applications in Fine Blanking Technology

Calendar of Events - 2020 - 2021

September 2020

4	Manufacturing Automation using Robots
7 - 12	Building Blocks of Automation and Configuring Solutions - A Practical Approach
8	Principles and Tools of Toyota Production System
9	Advanced Technologies in Metrology
10 - 11	Best Practices in Supply Chain Management for Survival and Growth
11 - 12	Process and Die Design - Hot Forging Applications
14 – 25	Industry Internship Training on Metal Additive Manufacturing - CAD to Print
15 - 16	Advanced Concepts in GD&T
17 - 18	Understanding TPM and Roadmap for Implementation of TPM
19	How to Reduce Energy Cost in Manufacturing - A Need of the Hour
21 - 22	Heat Treatment - Metallurgy and Processes
21 - 26	Design of Stamping Dies for Automotive Sheet Metal Parts
23 - 24	Anti-Friction Bearings - Selection, Applications and Condition Monitoring Aspects
25 - 26	Design of Experiments (DOE) for Problem Solving
29 - 30	IDR approach to troubleshoot component defects in a Press Shop

October 2020

Knowledge Sharing Webinars	
6	HRD Series: Organisation Communication - Strategies & Challenges
7	Are you ready for Digital Transformation?
16	Reduce Machine Noise with Acoustics Simulation
27	HRD Series: Performance Appraisal & Career Management
29	Importance of Product Optimization and Finite Element Method in Industry
31	Advanced Die Changing Technology to Enhance Press Shop Productivity
Online Training Programmes	
1	Best Practices for Manufacturing Cost Reduction
5 - 10	Building Blocks of Automation and Configuring Solutions - A Practical Approach
6 - 7	Design and processing techniques for Sheet metal parts
7 - 8	Machining Aerospace Materials Challenges and Solutions for Tungaloy India
8 - 9	Implementing SPC, a Game Changer for Cost Reduction
8 - 9	Implementing SPC, a Game Changer for Cost Reduction
10 - 11	Fundamentals of Tolerance Stack-up Analysis

Calendar of Events - 2020 - 2021

October 2020

12 - 23	"SolidWorks & Industrial Manufacturing Drawings and become a Certified SOLIDWORKS Professional (CSWP)"
13 - 14	Implementing Industry 4.0 in Indian Context
13 - 17	Design of Gearbox – Industrial Machinery
14 - 15	Machining Aerospace Materials Challenges and Solutions for Tungaloy India
17	Essentials of VDA 6.3 implementation
19 - 23	Design of Fixtures – Specialization in Machining / Welding / Assembly / Inspection
21 - 23	CNC Programming - Turning Centres
22 - 23	Design and Processing Techniques for Plastic Parts
27 - 28	Surface Plating and Protection Technology
28	Hot Forging Technology - Processes, DFM, Quality and Cost Considerations
28 - 30	CNC Programming - Machining Centres
29 - 30	Design For Manufacturing and Assembly (DFMA) - Essential Fundamentals
29 - 30	Light-Weighting of Automobiles
29 - 30	Design of Experiments (DOE) for Problem Solving

November 2020

Knowledge Sharing Webinars	
6	3D Printing! Beyond Prototyping and High Performance Applications
24	Increase your productivity and ROI with iFusion - India's First Metal 3D Printer
27	Experience 3D Printing, Live from Stratasys India Applications Centre
Online Training Programmes	
3 - 4	Essentials of Process Planning for Machined Parts
3 - 4	Advanced Heat Treatment
5 - 6	How to achieve breakthrough results through Six sigma methodology
5 - 6	Primer course on Sheet metal forming
9 - 10	Stamping Technology for Maruti Suzuki
9 - 13	FEA / FEM using ANSYS - A practical approach with Hands-on training
10 - 11	Cost and Cycle time reduction in CNC Machining applications
12 - 13	Geometric Dimensioning & Tolerancing (GD&T) in Design through Manufacturing
20 - 21	Die design and manufacturing for Maruti Suzuki

Calendar of Events - 2020 - 2021

November 2020

23 - 25	Design for Manufacturing and Assembly (DFMA) for Emerson India
23 Nov - 5 Dec	Industry Internship on “Industrial Automation Solution Through Fluid Sim, Codesys and Ciros - A Modular Production Approach”
23 Nov - 5 Dec	Industrial Internship on CNC Milling Programming with Mastercam
24	Surface Roughness Measurement and Validation
24 - 25	Forging Technology for Maruti Suzuki
24 Nov - 1 Jan	System Testing - IMTMA Training
25	Limits, Fits and Tolerances - A Practical Approach
26 - 27	Gear Manufacturing - Hobbing and Shaping Processes
26 - 28	A Practical approach towards Cost reduction – Quality, Cost & Delivery improvement
28	TRIZ: Shortcut to Innovative Solutions
30 Nov - 4 Dec	Effective Maintenance towards Zero Down Time (ZDT) - Electrical aspects of CNC Machines
30 Nov - 23 Jan	Hands On Training on Machine Tool Design – CNC GPM (Online & Offline)

December 2020

Mega Events	
18-19	**National Productivity Summit 2020**

Knowledge Sharing Webinar	
23	Reverse Engineering and 3D Inspection with ARTEC 3D Scanners
Online Training Programmes	
3 - 4	Defect-free Sand Castings through Right Part and Process design
4	Lean Daily Management System
5	Data Analytics in Manufacturing
7	Sales Process and Major Roles of a Sales Engineer
7 - 12	Effective Sales and Marketing of Machine Tools and Accessories (Six Modules)
7 - 14	Reliability Engineering - Concept, calculations ,techniques and tools
8	Soft Skills for Sales and Marketing Professionals
9	Value-Based Selling Approach
9 - 10	Defects Analysis and Troubleshooting of Die Cast (PDC) Parts
10	CNC Technology & Applications
10 - 12	Integration, Maintenance & Troubleshooting of Hydraulics & Pneumatics Systems

Calendar of Events - 2020 - 2021

December 2020

11	Fundamentals of SPC
12	Commercial Aspects for Sales and Marketing Engineers
15 - 16	Design for Target Cost through Value Engineering
15 - 16	Industrial Sensors for Concurrent Process Control
17	8D Problem Solving Methodology
17 - 19	Integration, Maintenance & Troubleshooting of Hydraulics & Pneumatics Systems
21 - 22	Defects Analysis and Troubleshooting in Painting Applications
21 - 22	Stamping technology for Maruti Suzuki
22 - 23	Fundamentals of Product Quality Planning (APQP) & Implementation of the Production Part Approval Process (PPAP)
23 - 24	Industrial Applications of Composites and their Manufacturing
23 - 24	Gear manufacturing and metrology for Maruti Suzuki
29 - 30	Enhancing Productivity in Grinding Operations
Finishing School	
14 Dec-12 Jan 21	Finishing School in Production Engineering
Customized Training Programmes	
14 - 31	Technical Training Service: Customized Training Module for ŠKODA AUTO Volkswagen India Private Limited - Machine Shop (5.5 Days)
29 - 30	Technical Training Service for ŠKODA AUTO Volkswagen India Private Limited

January 2021

Trade Fairs	
21-27	**IMTEX Connect 2021**
Online Training Programmes	
5	How to Improve OEE and Achieve Manufacturing Excellence
5 - 9	First Time Right Product Manufacturing through Error Free CAD Drawings
6 - 9	Advanced Programming for CNC Machining Centres
8	8D Problem Solving Methodology
8 Jan - 20 Feb	HR Excellence Certification Program
11 - 12	Engineering materials and failure analysis for Maruti Suzuki
12	How to reduce set up time in CNC machining centres?
13	Gear Metrology and Measurement Methods
18 - 22	Mechatronics – Fundamentals and Core concepts

Calendar of Events - 2020 - 2021

January 2021

19	Fundamentals of Mechanical Systems - Kinematics and Selection of Mechanical Elements
19 - 20	Care for Machine Tool Spindles - Systematic Approach for Spindle Maintenance
19 - 23	Fundamentals of Injection Mould Design
20	Introduction to PLC – Hardware and Programming
20 - 22	Hands-on training in PLC Programming and Networking
21	Introduction to Basics Of CNC System – Architecture, Motors, Drives, Encoders And Troubleshooting
21 - 22	IDR Approach to Troubleshoot Component Defects in a Press Shop
21 - 30	Motor controls for electric vehicles for Easy Technologies
22	Hydraulics & Pneumatics – Introduction and Troubleshooting
23	CE Marking - Compliance requirement for export markets (North America, Europe & GCC)
27	Nesting efficiency for Alstom India
27 - 28	Forging technology for Maruti Suzuki
28 - 29	Geometric Dimensioning & Tolerancing (GD&T) in Design through Manufacturing
28 - 29	Servo Technology for Industrial Motion Control
Customized Training Programme	
1 - 2	Technical Training Service for ŠKODA AUTO Volkswagen India Private Limited
Classroom Training Programmes	
20 - 22	Hands-on training in PLC Programming and Networking
28 - 30	Hands-on Training Program in Robot Programming & Operation
In-house Training Programme	
27 - 28	Program on Cutting tool selection for LMW

February 2021

Knowledge Sharing Webinars	
12	How you can save 80% cost and 50% time on casting patterns, jigs & fixtures and small-batch manufacturing with high-speed polymer 3Dprinting
17	ESPRIT CAM for Multi-tasking Machines
17	Maximize your Multi-tasking Machines productivity using ESPRIT CAM
Online Training Programmes	
2 - 3	Electric Motors: Application, Selection, Sizing and Optimisation
3 - 5	Measurement System Analysis
3 - 15	SolidWorks & Industrial Manufacturing Drawings and become a Certified SOLIDWORKS Professional (CSWP)

Calendar of Events - 2020 - 2021

February 2021

4 - 5	Calibration of Dimensional Measuring instruments and Evaluation of Measurement uncertainties
4 - 5	Sheet metal forming technology - Maruti
8	Laser cutting for Alstom
8 - 12	Design of Fixtures for Machining Applications - A practical approach
9 - 10	Metallurgy for Non Metallurgists - Ferrous Materials
11	Bending machines for Alstom
11 - 12	How to reduce Cost of Poor Quality (COPQ)
15	Industry 4.0 for Alstom India
15 - 17	Basics of CNC Programming - Machining Centres
15 - 19	Fundamentals of Die Design for Pressure Die-Cast (PDC) Parts
16 - 20	Fundamentals of Injection Mould Design
18 - 19	Metal 3D Printing - Technology of near future
22 - 24	Advanced Concepts of GD&T
23 - 26	Become an Expert Trainer - Training of Trainers
24	3D Printing for Alstom India
24 - 25	Design of Experiments (DOE) for Problem Solving
25 - 26	Defects Analysis and Troubleshooting of Injection Moulded Plastic Parts
Short-term Training Programmes	
1 - 5	Hands-on training in Programming & Operation of CNC Machining Centres
24 - 25	Design of Workholding & Fixturing – Pune
Finishing School	
15 Feb - 31 Mar	Finishing School in Production Engineering

March 2021

Knowledge Sharing Webinars	
12	Mould Tooling with CATIA V5
17	Maximize your Multi-tasking Machines productivity using ESPRIT CAM
19	Role of Additive Manufacturing in Industry 4.0
23	Near Net Shape (NNS) Manufacturing
26	Rapid Tooling - Bridging the Gap between Prototyping and Production with Additive Manufacturing
Online Training Programmes	
2 - 4	Best Practices for Manufacturing Cost Reduction

Calendar of Events - 2020 - 2021

March 2021

4 - 5	Plant Maintenance - Electrical aspects
9 - 10	How to become an effective FMEA Practitioner as per combined AIAG & VDA Version
9 - 10	Heat Treatment - Metallurgy and Processes
9 - 13	Fundamentals of Press Tool Design
11 - 12	Gain Competitive Advantage through Best Practices in Supply Chain
13	Business planning and Budgeting for sustained profitability through Good manufacturing practices
15 - 17	Fundamentals of Tolerance Stack-up Analysis
15 - 19	Fundamentals of Die Design for Pressure Die-Cast (PDC)
18 - 19	Fundamentals of Product Quality Planning (APQP) & Implementation of the Production Part Approval Process (PPAP)
18 - 19	Powder Coating Technology - Process, Applications, Defects Analysis and Prevention
18 - 19	Cold Forging Technology - Process, DFM and Quality Considerations
19	Manufacturing engineering management for Alstom
25 - 26	How to become an effective FMEA Practitioner as per combined AIAG & VDA Version
25 - 26	Defects Analysis and Troubleshooting of Moulded Parts
30 - 31	Mechanical primary parts and manufacturing for Alstom India
Customized Training Programme	
8 March - 10 April	Soft skills & Technical skills for 30 days for participants from SkillSonics
Short-term Training Programme	
17 - 19	Maintenance and Troubleshooting of Hydraulics and Pneumatics systems

April 2021

Knowledge Sharing Webinars	
6	3D Innovation and Customization with Artec Handheld 3D Scanners
27	Industrial Safety
29	Overview of Engineering Materials
30	Digital Transformation with Windchill PLM for Manufacturing Industry
Online Training Programmes	
1 - 2	How to Create Invoice from Gurugram Location

Calendar of Events - 2020 - 2021

April 2021

8 - 9	Geometric Dimensioning & Tolerancing (GD&T) in Design through Manufacturing
9	8D Problem Solving Methodology
14 - 16	CNC Programming - Turning Centres
15 - 16	Selection of Cutting Tools for CNC Machining Centre Applications (Milling and Hole Making Operations)
15 - 16	Calibration of Dimensional Measuring instruments and Evaluation of Measurement uncertainties
19 - 20	Electrical Engineering Fundamentals for Non-Electrical Engineers
19 - 20	Surface Plating and Protection Technology
22 - 23	World Class Manufacturing - What, Why and How; Tools and Techniques
22 - 23	LM Guideways and Ball Screws - Types, Applications and Selection
26 - 27	Cost and Cycle time reduction in CNC Machining applications
26 - 30	Design of Gearbox - Industrial Machinery
28 - 29	Advanced Heat treatment
30 April - 3 May	Antifriction Bearings - Selection, Applications and Evaluating Bearing Life

May 2021

Knowledge Sharing Webinars	
4	MDVT (Mechanical Design Validation & Testing)
5	Benefits of Six Sigma
7	Core Tools of Quality
11	Grinding - An important metal finishing process
13	Machining Aerospace Materials (Conducted in association with AASSC)
18	Benefits of using Artificial Intelligence & Machine Learning in Manufacturing
20	How to harness the Power of Servo Technology
25	Industrial Applications of Composites
Online Training Programmes	
4 - 5	Industrial Safety - Shop floor perspective
4 - 5	Implementing SPC, a Game Changer for Cost Reduction
6 - 7	Engineering Materials and their selection - Key to Successful Design
7 - 8	Design of Fixtures - Machining Applications
7 - 11	Reliability Engineering - Concept, Calculations, Techniques and Tools
10 - 12	Advanced Concepts of GD&T

Calendar of Events - 2020 - 2021

May 2021

11 - 12	How to Achieve Breakthrough Results through Six Sigma Methodology
13	CE Marking for Export Markets - Europe, North America & GCC countries
18 - 19	Design and Processing of Plastic Parts - DFMA Approach
18 - 19	Industrial Safety - Shop Floor Perspective
19 - 29	SolidWorks & Industrial Manufacturing Drawings and become a Certified SOLIDWORKS Professional (CSWP)
20 - 21	Defect Analysis and Trouble-shooting of Casting Defects
24 - 28	Core Tools of Quality - APQP,FMEA,MSA,SPC,PPAP
24 - 28	Effective Maintenance Towards Zero Down Time (ZDT) - Electrical Aspects of CNC Machines
25 - 26	Enhancing Productivity in Grinding Operations
25 - 26	Mechanical Design Validation and Testing (MDVT) for Electrical, Electronic and Electro-mechanical systems
27 - 28	Machining Aerospace Materials - Challenges and Solutions
28 - 29	Defects Analysis and Troubleshooting in Painting & Coating Applications
31 May - 11 June	CNC Programming for CNC Milling Center & Master CAM

June 2021

Knowledge Sharing Webinars	
3	Simulation driven designs for Industrial Machinery
4	Process improvement with reduced NC programming time
23	Designing Die casting Dies for “First Shot Success”
26	In-Finite to Finite - Analysis of Structures (FEA / FEM)
30	CMM - A Tool for Modern Measurement Requirement
Online Training Programmes	
2	How to Improve OEE and Achieve Manufacturing Excellence
3	Artificial Intelligence and Machine Learning for Manufacturing Industries
7 - 11	Reliability Engineering - Concept, Calculations, Techniques and Tools
8 - 9	Design and processing of PDC Die cast parts - DFMA approach
8 - 9	Geometric Dimensioning & Tolerancing (GD&T) in Design through Manufacturing
10 - 11	Servo Technology for Industrial Motion Control
14 - 18	Mechatronics - Fundamentals and Core concepts
14 - 18	Design of Fixtures - Specialization in Machining / Welding / Assembly / Inspection

Calendar of Events - 2020 - 2021

June 2021

15 - 16	Hot Forging Technology - Processes, DFM, Quality and Cost Considerations
17 - 18	Metallurgy for Non Metallurgists - Ferrous Materials
21 - 25	Fundamentals of Injection Mould Design
22 - 23	Improving Energy Efficiency at Plant Level
24 - 25	Design of Experiments (DOE) for Problem Solving
28 - 29	Gear Manufacturing - Hobbing and Shaping Processes
28 - 29	Industrial applications of Composites and their Manufacturing
30	TRIZ: Shortcut to Innovative Solutions

Activities of BIEC

The outbreak of Covid pandemic in India and across the globe adversely affected the exhibition industry. Government of India gave green signal to host exhibitions from October 15, 2020 onwards, however, within a few months Karnataka again underwent lockdown from April 2021 to June 2021.

The Unacademy Unoffsite 5.0 was held on 10 December 2020 in hybrid format with the company's core staff participating from BIEC.

With BIEC being given permission to organize exhibitions and events albeit with Covid protocols, shows are once again expected to restart at the venue.

New Products Developed by Members in 2020 - 2021

ATUL MACHINE TOOLS

1. Column Movement Type Surface Grinding Machine Size: 750 X 300MM and 1000 X 300MM

DUTCH TECH TOOLS PRIVATE LIMITED

1. A new series of High Performance Endmills [Model - SUPERNOX SERIES]

ELSCINT INDIA PRIVATE LIMITED

1. Feeding & Marking of valve on N95 Facemasks
2. Mechanical Tablet dispensing feeder
3. Scrubber Automation for packaging of scrubbers
4. Kit Packing machine

FENWICK AND RAVI

1. A sophisticated high precision complete automatic 3-Ply Non-Woven Surgical Face Mask Manufacturing Machine [Model – MASKSMM 120 / MASKPROSMM120].

GRIND MASTER MACHINES PRIVATE LIMITED

1. Strip Grinding & Polishing Machine for Coil/Strip Polishing, Descaling, Cleaning Machine for Hardened/ tempered steel & Carbon steel [Model - CGP-450]
2. Heavy Duty superfinishing and Polishing Machine for Hydraulic Pistons, Rods and Tubes [Model - Nanofinish SMP3000/5000]

IND-SPHINX PRECISION LIMITED

1. INDrill : NexGen Ultra mICRO and mICRO Drills for universal applications, Ø0.015 – 3.00mm
2. INDrill Plus : High Performance mICRO Drills Ø0.10 – 3.00mm
3. INDrill Cool : High Precision Coolant Hole Deep Hole Drills with l/d : 5d, 10d, 15d, 20d, 25d and 30d
4. Customised High Precision Tools for high speed machining of Mobile Bodies.
5. CVD-Diamond Coated PCB Routers, Drills and Specials for NexGen Printed Circuit Boards

MILACRON INDIA PRIVATE LIMITED

1. Injection Molding Machines [Model - Q Series 150 Mono Sandwich, Cincinnati 1300 & 2000, Q Series PET 110, 150, 180, 230 & 280, Q Series 2K 180, 280, 350 & 450, Q Series 150 & 180, Hydron CPVC 100, 150, 200, 250, 300, 350 & 450, Hydron PVC 150, 200, 250, 300 & 350 and N Series 80, 150 & 200]
2. Extrusion Machines [Model - SM125]

UCAM PRIVATE LIMITED

1. DDR – Direct Drive Rotary Table - New Launch
2. Torque Motor for medical industry – Ventilator Application to fight COVID pandemic
3. Nimble Machines: Spiral Bevel Generator

New Members Enrolled during 2020 - 2021

As on June 30, 2021

AMACE SOLUTIONS PRIVATE LIMITED
467, 469, 12th Cross, 4th Phase
Peenya Industrial Area,
Bangalore - 560058, Karnataka
(Manufacturer - Other machine tools for working metal without removing metal)

BARANI HYDRAULICS INDIA PRIVATE LIMITED
1043/1, 1044/1
Kurumbapalyam Main Road, Kalapatti,
Coimbatore - 641048, Tamil Nadu
(Manufacturer - Hydraulic presses)

D.M ENGINEERING COMPANY
41-A, Textile colony,
Industrial Area A,
Ludhiana - 141 003, Punjab
(Manufacturer - Machine tool accessories, Tool Holders, Measuring tools etc.)

ETHEREAL MACHINES PRIVATE LIMITED
No. 202, 12th Main, Peenya 3rd Phase
Lakshmidevi Nagar,, Peenya Industrial Area,
Bangalore - 560058, Karnataka
(Manufacturer - Machining centres, unit construction machines (5 axis CNC Machines & Löw cost 3D Printers)

IYALIA ENGINEERING SOLUTIONS INDIA PRIVATE LIMITED
Door No. 2/3, 40, R.V Nagar, S F No.4/2, 282
Kurudampalayam, Narasimahanaikampalayam Post, Coimbatore - 641031, Tamil Nadu
(Manufacturer - Dual Head automatic Tapping Machine, Slug separator for shearing machines, Duplex Boring machine, Rotary Filters, Drilling machine.)

SHREE MAGNETS PRIVATE LIMITED
81, Sodepur-Barasat Road, Muragacha
P.O. Jugbria, P.S. Ghola,
Kolkata - 700100, West Bengal
(Manufacturer - Machine Tools for Drilling & Parts and accessories)

SUAYUD MACHINE TOOLS PRIVATE LIMITED
Karihobanahalli, No.51/2, 10th Main Road,
1st Cross Thigalarapalya Main Road, Near Peenya 2nd Stage, Vishwaneedam Post
Bangalore - 560058, Karnataka
(Manufacturer - Vertical CNC Machining Center)

WITMANS ADVANCED FLUIDS PRIVATE LIMITED
205 Kalpataru Plaza Chincholi Bandar Road,
Ranbaug S V Road NR Sarvodaya CLG Malad,
Mumbai - 400064, Maharashtra
(Manufacturer - Industrial Lubricants)

Total membership of IMTMA as on June 30, 2021: 462 members

IMTMA Initiatives

IMTEX

IMTEX FORMING

Tooltech

DIGITAL MANUFACTURING
International Exhibition on Industry 4.0 & Additive Manufacturing

Productivity Summit

IMTMA-ACE MICROMATIC Productivity Championship Awards

MACHINE TOOL INDUSTRY SUMMIT

International Seminar on Forming Technology

AMTTF
ADVANCED MACHINE TOOL TESTING FACILITY

DESIGN INSTITUTE
Machine Tool Design Powered by Technovation

MODERN MANUFACTURING INDIA

Udaan
Emerging Leaders
Expanding Horizons

IMTMA AERODEF GROUP

BIEC Bangalore International Exhibition Centre

VISION

INTERNATIONAL SEMINAR ON MACHINING TECHNOLOGIES

IMTMA Technology Centre
PRODUCTIVITY INSTITUTE

IMTMA - Institute Innovation Collaboration iiic

MACHINE TOOL EXPO

WELDEXPO
Exhibition for Welding, Cutting & Joining

METROLOGY EXPO
Exhibition for Testing Instrument, Metrology and Equipment

Media Coverage

Glimpses

Notes

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Indian Machine Tool
Manufacturers' Association

www.imtma.in

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