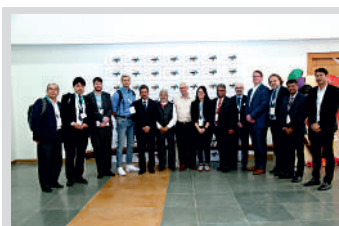




Indian Machine Tool
Manufacturers' Association

ANNUAL REPORT 2018-2019



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Executive Committee 2018 - 2019

President

P. Ramadas

Managing Director
Ace Manufacturing Systems Limited

Vice President

Indradev Babu

Managing Director
UCAM Private Limited

Members

Chandrashekar Bharathi

Managing Director
Ace Micromatic Manufacturing Intelligence
Technologies Private Limited

Kabir Bhogilal

Vice President - Corporate Strategy
Batliboi Limited

Ravi Raghavan

Managing Director
Bharat Fritz Werner Limited

D. Srihari

Director
CADEM Technologies Private Limited

Sonali Kulkarni

President & CEO
FANUC India Private Limited

G.D. Rajkumar

Director
Gedee Weiler Private Limited

B.M. Shivashankar

Principal Consultant (T&O)
HMT Machine Tools Limited

B.C. Rao

Managing Director
Kennametal India Limited

K. Soundhar Rajhan

Director - Operations
Lakshmi Machine Works 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

Business Head - Motion Control
Siemens Limited

S. Sundariya

Business Head
Wendt (India) Limited

Co-Opted Members

Achal Nath

Executive Director
Ashok Manufacturing Company Private Limited

Vikram R. Sirur

Executive Chairman
Miven Mayfran Conveyors Private Limited



Executive Committee 2018 - 2019

Past Presidents

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

Madhavi Chandrashekar

Chairperson - 'UDAAN' and
Executive Director - Business Development
Ace Designers Limited

S. Jagtar Singh

President
Association of Ludhiana Machine Tool Industries

Praful Shende

Chairman - IMTMA Regional Council (South) and
Chief Sales & Marketing Officer
Bharat Fritz Werner Limited

Mohini Kelkar

Chairperson - IMTMA Regional Council (West) and
Director - Sales & Marketing
Grind Master Machines Private Limited

Vivek Nigam

Chairman - IMTMA Regional Council (North) and
Executive Vice President &
Business Head - Machine Building Division
ISGEC Heavy Engineering Limited

Raju Bhandari

President
Machine Tools Manufacturers Association - Rajkot

T.V. Raghava Badhya

President
Makino India Private Limited

Secretary, Director General & CEO

V. Anbu

Foreword



Moving in the Right Direction

I feel privileged to present the Annual Report and Audited Statement of Accounts of Indian Machine Tool Manufacturers' Association (IMTMA) for the year 2018 - 2019. The Association has continued to guide its member companies to prepare for the challenges and opportunities that lie ahead. I am pleased to highlight in this Annual Report, some of our achievements during the last one year.

Charting the Growth Pattern

The year 2019 - 2020 is bringing in a lot of renewed hopes for India. The country has elected a new government led by Prime Minister Narendra Modi for the second term which sets it on a path for aspirational and inclusive growth. In one of his first meetings with Central Government Secretaries since the formation of the Government, the Prime Minister stressed the need for taking decisions to make India a \$5 trillion economy by the year 2024 with manufacturing sector contributing around \$1 trillion towards it.

I am also happy to inform that India recorded a 23 positions jump in World Bank's 'Ease of Doing Business' Report against its rank of 100 in 2017. The country is placed on 77th rank among 190 countries which were assessed by the World Bank. The Reserve Bank of India cut repo rate by 25bps to 5.75 per cent from 6 per cent which is encouraging for borrowers. Banks are expected to pass on the benefits of the rate cut to consumers so that they have more money in their hands to spend.

Finding favourable Prospects for Manufacturing

The Government of India announced policies for enhancing manufacturing sector's health. It released the draft National Policy on Electronics (NPE) which has envisaged creation of a US\$ 400 billion electronics manufacturing industry in the country by 2025. It exempted 35 machine parts from basic customs duty to boost mobile handset production. Government of India is also in the process of bringing a new industrial policy that envisions development of a globally competitive Indian industry.

Budget 2019 has extended the lower 25% corporate tax to include companies with turnover of up to Rs.400 Crores. Under Mid-Term Review of Foreign Trade Policy (2015-20), the Government of India increased export incentives available to labour intensive MSME sectors by 2% . As more than 90% of Indian machine tool units are in the MSME sector and the government's move is expected to benefit them, the machine tool industry expects uptick in its orders.

Moreover, the Ministry of Defence, Government of India has approved the "Strategic Partnership" model which will enable private companies to tie up with foreign players for manufacturing submarines, fighter jets, helicopters and armoured vehicles. All these are aimed at making India an attractive hub for foreign investments in the manufacturing sector and fostering its long-term development.

Indian machine tool industry predominantly supports and supplies to the Automotive and Auto component industry. While demand from automobile and auto component sectors will keep rolling, disruptions in these industries shall open up avenues and opportunities in sunrise sectors.

The Association has been working with the Central and State Governments for providing support for the growth of the machine tool industry in the country.

Machine Tool Industry

Indian machine tool industry grew at around 30% in 2018-19. Machine tool Production for 2018-19 is estimated to be around Rs. 9,600 Crores. Consumption was around Rs. 21,000 Crores.

I am pleased to mention that Indian machine tool industry has moved up by one notch in both



Foreword

Consumption and Production in the global list of machine tool producing and consuming countries as against last year. As per the latest Gardner's 'World Machine Tool Survey', India is ranked 7th in Consumption and 9th in Production, globally.

As we move on, investing in R&D will help resolve the anomalies and enhance the industry's market share. Innovations fostered through artificial intelligence, internet of things, additive manufacturing, and automation are expected to impact the machine tool market in India positively. With reduced manual interventions, engineers would be able to get the best from machines that they deploy on factory shop-floors.

The Government of Karnataka is developing Tumakuru Machine Tool Park (TMTP) - an integrated machine tool park with state-of-the-art industrial infrastructure coupled with an eco-friendly layout at Vasanthanarasapura Industrial Area, near Tumakuru with support from the Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, Government of India to attract investments in machine tool sector. IMTMA is playing an enabling role in the project. The machine tool park offers a unique opportunity for machine tool units to create an ecosystem which is expected to spur the development and synergic growth for the industry.

Association Initiatives

Training

Over 200 short-term and long-term training programmes were held during 2018 - 2019 at IMTMA Technology Centres in Bengaluru, Pune and Gurugram. IMTMA Technology Centres step in to impart training in various aspects of manufacturing for young engineers, in order to make them industry ready and employable. The short-term and long-term courses conducted at the Technology Centres have helped in reskilling the workforce. These efforts enabled IMTMA to record over 19,000 person-days of training and support the Indian manufacturing industry in skill development / upgradation. IMTMA Technology Centre in Bengaluru has set up Industry 4.0, for training and demonstration.

Mega Events

Our Association has been continuing with its endeavours to keep up with the changing requirements of the industry. To champion the cause of

productivity in metalworking industry, IMTMA organized the 12th edition of 'National Productivity Summit' from 24 – 25 August 2018 in Chennai. The Summit showcased best productivity practices in metalworking 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 machine tool industry. These were discussed during the 'Symposium on Appropriate Automation' in the Indian Context held in Pune on 23rd November 2018. Industry experts from renowned companies gave an insight into the real-time application and benefits of automation.

Coinciding with IMTEX 2019 & Tooltech 2019 exhibition, IMTMA organized 8th 'International Seminar on Machining Technologies' on 23rd January 2019 in Bengaluru. The Seminar enabled participants to explore new strategies and trends in metalworking and exposed them to a new range of value-added machining solutions in metal cutting.

Trade Fairs

IMTEX 2019 & Tooltech 2019

The Association made an impactful start to 2019 by organizing IMTEX 2019 & Tooltech 2019 in January 2019 in BIEC, Bengaluru, being the 50th year of IMTEX. The exhibition attracted over 91,000 visitors and showcased contemporary technologies such as additive manufacturing and evolutionary Industry 4.0. 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. Many domestic and foreign visitors sourced machines for their production units.

Celebrating the Golden Jubilee of IMTEX, IMTMA released two coffee table books: '*More Power to the Industry*' – the journey of 50 Years of IMTEX and '*Art as a Tool*' for Inspiration – a compilation of art and paintings at IMTMA offices. It also felicitated the Past Presidents of IMTMA as well as the Godrej family for their contributions to IMTEX. IMTMA also hosted an International General Managers Meet which provided an apt platform for international machine tool

Foreword

associations' fraternity to exchange ideas, share knowledge and network.

For the first time, IMTMA instituted Eco Design Award at IMTEX 2019 & Tooltech 2019 to promote sustainable life cycle practices in exhibitions and for using eco-friendly materials in stall construction by exhibitors. Six companies were conferred with awards in various categories.

IMTMA's flagship exhibition - IMTEX, was conferred with an Award for achieving an outstanding position as the leading trade show and for playing a key role in nation building at 9th IEIA Open Seminar 2019 held in June 2019.

In March 2019, IMTEX exhibition won four Awards including the first prize for "Leading Show on Tools and Machinery" at the Exhibition Excellence Awards 2019 organized by Exhibition Showcase.

Regional Expos

IMTMA organized the second edition of the Pune Machine Tool Expo 2018 (PMTX 2018) from 27 - 30 September 2018 in Pune. The show attracted a footfall of around 11,000 visitors. The expo gave impetus to our idea that regional machine tool shows are the way forward to address the requirements of original equipment manufacturers as well as component manufacturers in Tier II and Tier III cities. With the same aim and enthusiasm, the Association is organizing Delhi Machine Tool Expo 2019 (DMTX 2019) and Chennai Machine Tool Expo 2019 (CMTX 2019).

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

With addition of another Exhibition Hall (Hall 5) of 17,500 sq. m., Bangalore International Exhibition Centre (BIEC) now has 5 Exhibition Halls with a gross area of 77,200 sq. m. BIEC is now one of the largest Exhibition and Conference facility in the country.

Infrastructure around BIEC has been developing significantly. To ease traffic congestion a grade separator has been provided in front of BIEC. Work on the Namma Metro extension from Nagasandra Metro station to BIEC is progressing.

BIEC extended its support to Global Exhibitions Day (GED 2019) to propagate the importance of exhibitions

for development of various industries across sectors. 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.

Future Thrust

India is fast emerging as a destination of choice for manufacturing. Machine tool sector is expected to become more competitive. Technology tie-ups with global machine tool companies can create opportunities for Indian companies to develop their business overseas. I would like to reiterate that the Association 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.

Adieu

I would like to state that the two years of my Presidency have been an enriching experience. This was made possible due to the proactive assistance of IMTMA's Executive Committee and Membership, and enduring guidance and contribution of all the Past Presidents. I especially extend my thanks to 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 to 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, the Executive Committee will lead IMTMA to greater achievements in the coming years.



P. Ramadas
President

Annual General Meeting

72nd Annual General Meeting

5 September 2018: Bangalore International Exhibition Centre, Bengaluru

Indian Machine Tool Manufacturers' Association (IMTMA) held its 72nd Annual General Meeting (AGM) on 5 September 2018 at Bangalore International Exhibition Centre (BIEC), Bengaluru. At the Executive Committee meeting, following the AGM, new Executive Committee of IMTMA for the year 2018 - 2019 was formed.



Prior to the AGM, a presentation on Digital Manufacturing which threw light on some of the key aspects of Industry 4.0 and other related technologies such as internet of things, artificial intelligence, machine learning, etc. was made by Dr. Nitin Bhate, CMO & Digital Leader, GE South Asia.

Delivering his annual address at the AGM, IMTMA President, Mr. P. Ramadas, briefly spoke about the positive signs emerging in Indian economy and the Government of India's impetus to manufacturing. Mr. Ramadas said that the Indian machine tool industry registered an impressive growth of around 26% in production and around 27% in consumption during FY 2017-18. Indian machine industry is expected to grow further in the coming years. He also touched upon some of the developments happening in Indian manufacturing industry with many Indian and foreign companies setting up their manufacturing units in the country.



He said that manufacturing industry needs to tap into the various opportunities that are rising in the defence and aerospace as well as other sunrise sectors.

Mr. Ramadas thanked Members, Past Presidents, and Executive Committee of IMTMA for providing guidance and support in all major endeavours of the Association during his tenure. He then took up the statutory agenda of the Association which was unanimously approved by a voice vote. The Annual General Meeting concluded with a vote of thanks.

Trends in Indian Machine Tool Industry

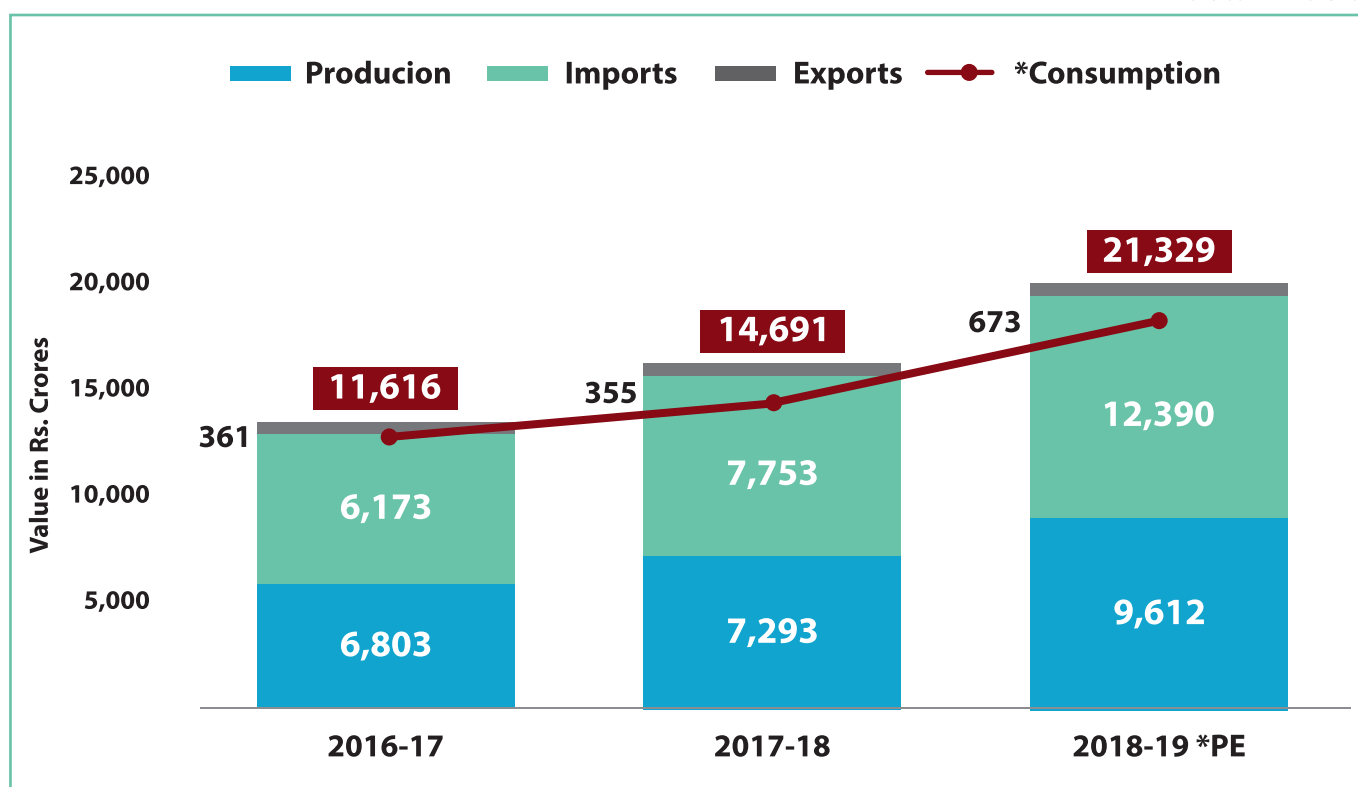
As per the latest 'World Machine Tool Survey' by Gardner's publication, India occupies 9th rank in production and 7th rank in consumption of machine tools globally.

Indian machine tool production is estimated to have reached Rs. 9,612 crores in 2018-19 and consumption of machine tools is estimated to have reached Rs. 21,329 crores in 2018-19. Production is estimated to have grown by around 32% Y/Y in 2018-19 and consumption is estimated to have grown by around 45% Y/Y in 2018-19.

It is estimated that the industry may register a marginal growth in 2019-20 despite the current economic slowdown in the Automotive and Auto component industry as well as the global headwinds.

Indian Machine Tool Industry 2016-17 to 2018-19

All Values in ₹ Crores



Source: IMTMA

Notes: *PE: Provisional Estimates

Calendar of Events - 2018

July 2018

25 Jun - 24 Jul	Electrical & Electronics Design for Machineries - Bengaluru
3 - 4	Forging Die Design - A Practical approach (Hot Forging) - Bengaluru
5 - 6	Selection, Assembly and Trouble Shooting of LM Guide ways and Ball Screws for Industrial Machinery - Bengaluru
9 Jul - 4 Aug	Finishing School in Production Engineering - Bengaluru
10 - 11	Fundamentals of Painting and Coating Technologies - Pune
10 - 11	Additive Manufacturing and 3D Printing Technologies - Bengaluru
10 - 14	CNC Programming & Operation of Machining Centres - Basic - Pune
12 - 13	Metal Casting technology- Processes, DFM, quality and cost considerations - Bengaluru
12 - 13	Cost & Cycle Time Reduction in CNC Machining - Gurugram
17 - 18	ASME GDTP Senior Level - Bengaluru
17 - 18	Defects Analysis and Troubleshooting of Injection Moulded Components - Pune
17 - 18	Basics of Sheet Metal Forming Technology for Non-Automotive Industries - Pune
19 - 20	Cost of Quality & How to Reduce COPQ - Pune
19 - 20	Design of Gauges - Bengaluru
23 - 25	Effective Marketing of Machine Tools & Accessories - Pune
26 - 27	Machining Aerospace Materials - Challenges and Solutions - Bengaluru
26 - 27	Improving CNC part quality including accuracy of CNC machines - Pune
26 - 27	Design of Workholding & Fixturing – Gurugram
31 Jul - 1 Aug	Defects Analysis and Troubleshooting of Injection Moulded Components - Pune

August 2018

6 Aug - 29 Sep	Machine Tool Design - Mechanical (Batch 17) - Bengaluru
6 - 11	Hands-on training in Spindle Assembly & Maintenance - Bengaluru
6 - 11	Hydraulic System Design for Machineries - Bengaluru
7 - 8	Effective Maintenance Towards Zero Down Time - Electrical & Electronic Aspects of CNC Machines - Bengaluru
8	Energy Conservation/Energy Saving in Manufacturing - Pune
8 - 10	Geometric Dimensioning & Tolerancing (GD&T) in Design through Manufacturing - Bengaluru
9 - 10	Assembly, Welding and Inspection Fixtures-Design and Manufacturing - Pune
10 - 11	Gear Metrology and Measuring Methods - Gurugram
13 - 14	Calibration of Dimensional Measuring Instruments and Evaluation of Uncertainty - Bengaluru
16 - 17	Induction Hardening and other surface heat treatment processes - Bengaluru
20 - 21	Manufacturing Automation using Robots - Bengaluru
20 - 23	Advanced CNC Programming for Machining Centres - Pune

Calendar of Events - 2018

August 2018

21 - 22	Heat Treatment Processes in Metalworking - Pune
23 - 24	Maintenance & Trouble Shooting of Presses - Pune
24 - 25	National Productivity Summit 2018 - Chennai
28 - 29	Selection & Sizing of Electric Motors - Bengaluru
28 - 29	Automation Project Implementation in Manufacturing - Pune
29 - 30	IDR Approach for trouble shooting Sheet Metal Parts - Gurugram

September 2018

3 - 8	Design of Fixture - Specialization - Bengaluru
4 - 5	Metallurgy for Non Metallurgists - Bengaluru
5	Annual General Meeting - Bengaluru
6 - 7	Fundamentals of Advanced Product Quality Planning (APQP) & Implementation of the Production Part Approval Process - Bengaluru
6 - 7	Cost & Cycle Time Reduction in CNC Machining - Chennai
6 - 7	Failure Mode & Effects Analysis (FMEA) - Pune
10 - 11	Design and Processing of Plastic parts - Bengaluru
11 - 12	Additive Manufacturing- Metal & Plastics - Pune
18 - 19	Manufacturing of Composite Materials - Bengaluru
19 - 20	Towards Zero Defects in Welding Technology - Gurugram
21	Cleaning of Machined Components - Bengaluru
21	Inspection of Sheet Metal Formed Components - Pune
25 - 26	Geometric Dimensioning & Tolerancing - Advanced - Bengaluru
25 - 26	Selection & Application of Tooling for CNC Machining Applications - Pune
25 - 29	Design of Gearbox - Industrial Machinery - Pune
27	Implementing Industry 4.0 in Indian Context - Gurugram
27 - 28	Manufacturing excellence through SPC and Seven Quality Tools - Pune
27 - 30	Pune Machine Tool Expo 2018 - Pune

October 2018

3 Oct - 30 Nov	Machine Tool Design - Mechanical - Pune
3 - 4	Measurement Uncertainty in Testing & Calibration with Advance Technique of Decision Rules with Associated Risk by means of Statistical Calculations - Pune
4 - 5	Manufacturing Excellence through SPC and Problem Solving Tools - Bengaluru
5 - 9	Design of Machining Fixture for CNC and VMC - Bengaluru

Calendar of Events - 2018

October 2018

9 - 11	ASME Training on Geometric Dimensioning & Tolerancing in design through manufacturing - Bengaluru
9 - 12	Advanced Programming for CNC Machining Centres - Bengaluru
10 - 12	Effective Sales and Marketing of Machine Tools & Accessories - Bengaluru
11 - 12	Design for Manufacturing and Assembly - Pune
22 - 24	Tolerance Stack-Up Analysis - Pune
22 - 26	Robot Operation and Programming - Bengaluru
25 - 26	Advanced Purchase and Procurement Practices to enhance Competitiveness - Bengaluru
25 - 26	Selection, Assembly and Troubleshooting of L M Guideways and Ball Screws for Industrial Machinery - Bengaluru
29 - 30	Fundamentals of Cold Forging Technology - Bengaluru
29 - 31	Gear Manufacturing Processes - Pune

November 2018

1 - 2	Enabling Industrial Automation - Role of PLC, VFD & Servo - Pune
12 Nov - 8 Dec	Finishing School in Production Engineering - Bengaluru
12 Nov - 7 Jan	Machine Tool Design - Mechanical - Bengaluru
14 - 16	Hands on Training in PLC Programming and Networking - Bengaluru
15 - 16	An Update on Additive Manufacturing - Pune
15 - 16	Heat Treatment Processes in Metal Working - Gurugram
22 - 23	Gear Design - A Practical Approach - Bengaluru
23	Symposium on Appropriate Automation in Indian Context - Pune
26	Applications of LASER in manufacturing - Pune
27 - 28	Fundamentals of Painting and Coating Technologies - Bengaluru
27 - 28	Sheet Metal Forming - Primer Course - Pune
28 - 29	Cost of Quality & How to Reduce COPQ - Gurugram
29 - 30	Energy Conservation / Energy Saving in Manufacturing - Bengaluru

December 2018

3 - 4	Metal casting technology- processes, DFM, quality and cost considerations - Pune
3 - 7	Hands-on Training in Programming & Operation of CNC Machining Centres - Pune
5 - 7	Maintenance and Trouble Shooting of Hydraulics & Pneumatics Systems - Bengaluru
5 - 7	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Pune
6 - 7	Design of Workholding & Fixturing - Bengaluru
6 - 7	Burr Management in Machining - Gurugram

Calendar of Events - 2018

December 2018

10 - 12	Sheet Metal Dies - Tryout and Proving - Pune
10 - 14	Hands on training in Programming & Operation of CNC Machining Centres - Bengaluru
10 Dec - 7 Jan	Finishing School in Production Engineering - Pune
13	Challenges and Solutions in Thread cutting - Pune
13 - 14	Implementing Automation Projects in Manufacturing - Bengaluru
17 - 19	Gear Manufacturing Processes - Pune
17 - 21	Hands-on training in Co-ordinate Measuring Machines (CMMs) – Bengaluru
21	Application of laser in Manufacturing - Gurugram
27 - 28	Sheet Metal Forming - Advanced (Hydroforming, TWB, Hot Forming) - Bengaluru

Calendar of Events - 2019

January 2019

3 - 4	Geometric Dimensioning & Tolerancing (GD&T) in Design through Manufacturing - Coimbatore
7 Jan – 5 Feb	Finishing School in Production Engineering - Bengaluru
8 - 9	Design of Workholding & Fixturing - Pune
8 - 9	Building Lean Culture through Value Stream Mapping - Bengaluru
8 - 12	Design of Metrology Fixture for CNC and VMC - Bengaluru
9	Surface Finish- Measurement & Improvement - Gurugram
9 - 10	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Pune
10	Additive Manufacturing/ 3D Printing Technologies - Gurugram
10 - 11	Heat Treatment Process in Metalworking - Bengaluru
10 - 11	Defects Analysis of Paint & Powder Coating Applications - Pune
15 - 16	Induction Hardening and Other Surface Heat Treatment Processes - Pune
15 - 18	Advanced Programming for CNC Machining Centres - Pune
17	Automated productivity measurement - Pune
17	CE marking for export markets - Bengaluru
18 - 19	Towards Zero Defects in Welding Technology - Bengaluru
22 - 23	Selection & Sizing of Electric Motors - Pune
23	International Seminar on Machining Technologies - Bengaluru
24 - 30	IMTEX 2019 & Tooltech 2019 - Bengaluru

Calendar of Events - 2019

February 2019

11 Feb - 6 Apr	Machine Tool Design – Mechanical - Bengaluru
11 - 13	IDR Approach to Trouble Shoot Component Defects in a Press Shop - Pune
14 - 15	Tolerance Stack-up Analysis - Gurugram
14 - 16	Gear Manufacturing Process - Bengaluru
18 - 19	Burr Management in Machining - Bengaluru
18 - 23	Design of Fixture - Specialization (Machining / Welding / Assembly / Inspection) - Gurugram
18 Feb - 16 Mar	Foundation Course in Industrial Automation - Bengaluru
20 - 22	Reliability Engineering – Concept, Calculation, Techniques and Tools - Bengaluru
21 - 22	Metallurgy for Non-Metallurgist - Pune
22 - 23	Advanced Product Quality Planning and Control Plan - Gurugram
25 - 26	Noise, Vibration and Harshness (NVH) consideration in Design and Maintenance - Bengaluru
26 - 27	Effective Maintenance towards Zero down time-Electrical Aspects of CNC Machines - Pune
26 - 27	Forging Technology - Processes, DFM, Quality and Cost considerations - Bengaluru
28 Feb - 1 Mar	Manufacturing Automation using Robots - Pune

March 2019

4 - 8	Hands-on Training in Operation of Co-ordinate Measuring Machines (CMM) - Pune
4 Mar - 2 Apr	Electrical and Electronics Design for Machineries - Bengaluru
5 - 6	Finite Element Methods (FEM) for Structural Design-How and Why? - Bengaluru
7 - 8	Cost of Quality & How to Reduce COPQ - Bengaluru
8 - 9	Sheet Metal Forming - Primer Course - Gurugram
12 - 13	Defects Analysis and Trouble Shooting of Injection Moulded - Bengaluru
13 - 15	Basics of Robot Operation and Programming - Bengaluru
14	Calibration of CNC Metal-cutting Machine Tools - Gurugram
15	Automated Productivity Measurement - Gurugram

April 2019

4 - 5	Metal Casting Technology – Processes, DFM, Quality and Cost Considerations - Gurugram
8 - 12	Hands-on Training in Programming & Operation of CNC Turning Centres - Pune
9 - 10	Failure Mode & Effects Analysis - Pune
10 Apr - 8 Jun	Machine Tool Design - Mechanical - Batch 21 - Bengaluru

Calendar of Events - 2019

April 2019

11 - 12	Improve OEE and achieve Manufacturing Excellence - Bengaluru
11 - 12	Advanced Technologies in Sheet Forming - Pune
11 - 13	Design of Fixture for Aluminium Casting - Bengaluru
15 - 16	Servo Technology for Intelligent and High Speed Motion Control - Bengaluru
15 - 16	Managing CAPEX - Pune
17 - 18	Gear Metrology and Measuring Methods - Bengaluru
18	Implementing Industry 4.0 in Manufacturing - Pune
22 Apr - 20 May	Finishing School in Production Engineering - Pune
22 Apr - 20 May	Finishing School in Production Engineering - Bengaluru
23 - 24	Automation Project Implementation - Key Drivers to Smart Manufacturing - Gurugram
24 - 26	Maintenance and Trouble Shooting of Hydraulics & Pneumatic Systems - Bengaluru
25 - 26	Advanced Heat Treatment Processes in Metalworking - Bengaluru
25 - 26	Fundamentals of Painting and Coating Technologies - Gurugram
25 - 27	Geometric Dimensioning and Tolerancing (GD&T) in Design through Manufacturing - Pune
29 - 30	Design for Manufacturing and Assembly - Bengaluru
30	Cleaning of Machined Components - Pune

May 2019

3 - 4	Design of Fixture – Specialization (Machining / Welding / Assembly / Inspection) - Bengaluru
6 - 10	Hands-on training in Operation of Co-ordinate Measuring Machines (CMMs) - Bengaluru
7 - 8	Design of Workholding & Fixturing - Pune
8 - 10	Hands on Training in PLC Programming and Networking - Bengaluru
9 - 10	Cost and Cycle Time Reduction in CNC Machining - Pune
9 - 10	Servo Technology for Intelligent and High Speed Motion Control - Gurugram
13 - 14	Gear Design - A Practical Approach - Pune
13 May - 15 Jun	Foundation Course in Industrial Automation - Bengaluru
15	Surface Finish - Measurement and Improvement - Bengaluru
16 - 17	Tolerance Stack-Up Analysis - Bengaluru
21 - 22	Geometric Dimensioning & Tolerancing - Advanced - Pune
21 - 24	Advanced Programming for CNC Machining Centres - Bengaluru
21 - 25	Hands-on training in Operation of Co-ordinate Measuring Machines (CMMs) - Pune
23 - 24	IDR Approach to Trouble Shoot Component Defects in a Press Shop - Chennai
23 - 24	Defects and Analysis of Painting and Coating Applications - Bengaluru
23 - 24	Fundamentals of Cold Forging / Cold Extrusion Technology - Pune

Calendar of Events - 2019

May 2019

23 - 24	Induction Hardening and other surface Heat Treatment processes - Gurugram
27 - 31	'Hands on training in programming & Operation of CNC Machining Centres-Basic' - Pune
28 - 29	Manufacturing Excellence through SPC and Problem Solving Tools - Pune
29 - 30	Improving Process Capability - Bengaluru
30 - 31	Sheet Metal Forming - Primer Course - Pune

June 2019

10 - 14	Hands on training in programming & Operation of CNC Machining Centres – Basic - Bengaluru
11 - 12	Metallurgy for Non-Metallurgists - Bengaluru
11 - 12	Additive Manufacturing / 3D Printing Technologies - Gurugram
11 - 12	Towards Zero Defects in Welding Applications - Pune
13	CE Marking - Compliance requirements - Pune
13 - 14	Design for Manufacturing and Assembly - Gurugram
17 - 18	Managing Business Excellence - Pune
18	Calibration of CNC Metal Cutting Machine Tools - Bengaluru
19 - 21	ASME Geometric Dimensioning & Tolerancing for GDTP Technologist Level certification - Bengaluru
20 - 21	Fundamentals of Advanced Product Quality Planning (APQP) & Implementation of the Production Part Approval Process - Pune
20 - 22	Gear Manufacturing Processes - Gurugram
	Hands-on Training in Dimensional Metrology - Pune
24 - 28	Hands on training in Robot Programming - Bengaluru
25 - 26	Selection, Assembly and Trouble Shooting of L M Guideways and Ball Screws - Bengaluru

Association Initiatives

Policy Advocacy

Financial year 2018 - 2019 was a significant one on the policy front. IMTMA was able to ward-off an attempt to exempt customs duty on several segments of metalworking machine tools, for promoting the manufacture of electronic equipment, specifically mobile instruments. That notwithstanding, it is incumbent upon our industry to support greater indigenisation of electronic equipment manufacturing in the country – by partnering with such equipment manufacturers to develop home-grown customised manufacturing solutions for them.

The Association in partnership with Department of Heavy Industry (DHI), Government of India, compiled an exhaustive list of metalworking machine tools along with 'local content' for notification under the "Public Procurement (Preference to Make in India), Order 2017"

(PPO 2017). IMTMA is hopeful that by the end of the year 2019, DHI would be able to notify the same, for better business prospects for indigenous manufacturers in public procurement orders for machine tools and related equipment.

IMTMA has also been effectively impressing upon the need for parity in public procurement tender terms in public procurement orders, more specifically in defence and railways. Office bearers of IMTMA also interacted with NITI Aayog; Office of the Principal Scientific Adviser to Government of India; DHI; Department of Commerce; Department of Industrial Policy & Promotion; Ministry of Micro, Small & Medium Enterprises; as well as with various wings of Government of Karnataka specifically for furtherance of our apex initiative – Tumakuru Machine Tool Park.

Vision 2022 - Regional Conclave for MSMEs of Machine Tools & Value Chain

To percolate the Indian Machine Tool Industry's 'Vision' and 'Mission' to the MSMEs of the industry, IMTMA organised a 'Vision' deployment workshop, 'Vision 2022 - Regional Conclave for MSMEs of Machine Tools & Value Chain', on 16 and 17 November 2018 in Bengaluru. The key objective of this Regional Conclave was to bring the entire value chain of the industry on the same page of thought and action vis-à-vis "Vision 2022" strategy.

The two-day unique initiative attended by members from the southern region focused on key 'VISION architecture', 'SWOT' analysis, 'strategic marketing, product and market segmentation', 'key marketing initiatives for MSMEs', options and action plans for "make", supply-chain management for "buy", 'operation planning - the PDCA way', and 'leveraging human capital through delegation and empowerment'. The key highlight of the Regional Conclave was imparting techniques and methodologies and handholding MSME members to develop their individual "in-company action plans".

IMTMA Green Manufacturing Cell

IMTMA set up a Green Manufacturing Cell (GMC) in June 2018 to help its member companies in their quest to become world class green manufacturing companies and enable them manufacture machine tools as green products. Six companies, Ace Designers Limited, Ace Manufacturing Systems Limited, Kennametal India Limited, UCAM Private Limited, Wendt India Limited, and Yuken India Limited, have registered under this programme. IMTMA sees green manufacturing as prevention of pollution, means of conserving energy & 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. IMTMA GMC conducts trainings, seminars, and supports companies achieve Green Co certification from CII-GBC Green Co.

Association Initiatives

IMTMA 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 IMTMA - Six Sigma Cluster in Indian machine tool industry. 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.



Advanced Machine Tool Testing Facility (AMTTF)

AMTTF is a joint project of machine tool industry and the Department of Industrial Policy and Promotion, Govt. of India. AMTTF has carried out several assignments for machine tool industry and has also rendered services to the automotive and other non-machine tool organizations. AMTTF has now positioned itself as a unique agency providing testing, troubleshooting and problem solving services to the manufacturing industry.



Advanced Manufacturing Technology Development Centre (AMTDC)

AMTDC is a Centre of Excellence on Machine Tools and Production Technology supported by the Department of Heavy Industry (DHI), Ministry of Heavy Industries & Public Enterprises, Government of India in collaboration with IMTMA under the scheme "Enhancement of Competitiveness in Indian Capital Goods Sector." AMTDC has supported the development of new machine tools and technologies with support from the Department of Heavy Industry. AMTDC has set up its own centre in IIT-Madras Research Park. Machines developed under the DHI scheme are installed at this centre and are available to industries for technology applications.

CSR Initiative - Launch of Mobile Science Lab



IMTMA has been undertaking several CSR initiatives. The association undertakes CSR activities such as developing the school infrastructure, train the drivers on safe driving skills, etc. IMTMA in partnership with Agastya International Foundation launched a Mobile Science Lab at BIEC, Bengaluru on 25th July 2018. IMTMA sponsored this project as part of its CSR initiative. MSL van is an innovative step towards attaining mobility, sparking curiosity, nurturing creativity and building confidence among the children studying in rural schools.

Association Initiatives

IMTMA Regional Council (North)

Meeting on 26 July 2018: Lalru

The 35th meeting of IMTMA Regional Council (North) was held at JCBL, Lalru. Members discussed on the key suggestions made by JCBL to the Indian machine tool industry, i.e. the need for automation solutions in manufacturing technologies, issues with respect to tolerances and inconsistency in manual welding of structures, and the need to eliminate welding, etc. Webee Social made a presentation on Digital Social Marketing.

Meeting on 14 December 2018: Yamuna Nagar

The 36th meeting of IMTMA Regional Council (North) was held at ISGEC Heavy Engineering Limited in Yamuna Nagar. Members discussed on few areas demonstrated by ISGEC during IMTMA delegation visit to ISGEC. Chairman discussed the issues raised by the members during the 35th Regional Council North Meeting in JCBL, Lalru on 26 July 2018.



Meeting on 14 June 2019: Ghaziabad

The 37th meeting of IMTMA Regional Council (North) was held at Micromatic Grinding Technologies, Ghaziabad. Members discussed on few areas demonstrated by Micromatic Grinding Technologies Limited (MGTL) during IMTMA delegation visit to MGTL. Regional Council (North) members also visited Ghaziabad Precision Products Limited. A comprehensive presentation on IMTMA Design Institute along with new initiative on Green Manufacturing Cell was made to the members.

IMTMA Regional Council (West)

Meeting on 12 July 2018: Powai

A meeting of IMTMA Regional Council (West) took place at IIT Bombay. An interactive meeting and a visit to IIT was organized prior to the regional council meeting. The Dean and Associate Dean, R&D, IIT, interacted with the Regional Council West (RCW) members. Various departments of IIT made presentations. RCW members visited IIT machine tool lab, mechanical engineering lab, 3D printing lab, laser application lab, etc. Members also discussed the need for focused factory visits to customer factories in tier 2 and tier 3 cities.



Association Initiatives



Meeting on 12 October 2018: Pune

A meeting of IMTMA Regional Council (West) was held at Hotel Kyraid, Pune. It was a review meeting of the IIT, Bombay visit and what transpired. Members were briefed on 'VISION 2022' - Regional Conclave for MSMEs of Machine Tools & Value Chain to be held in November 2018. Members were also informed about the Tumakuru Machine Tool Park and membership reward point's redemption scheme. Participants also discussed the possibilities to conduct meetings in specific industrial areas to increase participation from members from the area.

Meeting on 28 December 2018: Pune

A meeting of IMTMA Regional Council (West) took place on 28 December 2018 in Pune, members discussed regarding Vision 2022, Tumakuru Machine Tool Park, machine tool industry data, DHI scheme and AMTDC. Members also suggested the idea of having a larger venue at Pune to accommodate more exhibitors and share information on green machine guidelines, etc.



IMTMA Regional Council (South)

Meeting on 24 October 2018: Bengaluru

A meeting of IMTMA Regional Council (South) was held on 24 October 2018 at Central Manufacturing Technology Institute in Bengaluru. IMTMA Regional Council (South) members visited the facilities of CMTI - Nano Manufacturing Technology Centre (NMTC), Bengaluru as well as Advanced Machine Tool Testing Facility.



Trade Fairs



27 September - 30 September 2018

Auto Cluster Exhibition Center, Pune



Indian Machine Tool Manufacturers' Association (IMTMA) organized the second edition of the Pune Machine Tool Expo 2018 from 27 - 30 September 2018 at Auto Cluster Exhibition Centre in Pune. The show served as a platform to demonstrate the latest manufacturing technologies. The expo covered both metal cutting and metal forming technologies including automation and robotics, tooling systems, CAD/CAM and other technologies, which are essential for today's manufacturing.



With more than 85 exhibitors, the machine tool exhibition attracted over 9,500 visitors and more than 75 trade delegations from various industry sectors such as auto component, automobiles, capital goods, dies and tool, defence and aerospace. The expo attracted impressive number of delegates and visitors from the Tier II and Tier III cities such as Aurangabad, Nagpur, Kolhapur, Mumbai, Satara, Ahmednagar, Nasik besides the neighbouring states of Gujarat and Madhya Pradesh.

Visitors from Germany and Poland attended the event, while latest technologies from countries such as Germany, US, UK, China, Switzerland, Spain, Japan, France and Italy were also on display.



Trade Fairs



19th Indian Metal-Cutting Machine Tool Exhibition with International participation

Concurrent Show



21st International Exhibition of Cutting Tools, Tooling Systems, Machine Tool Accessories, Metrology & CAD / CAM

24 - 30 January 2019, BIEC, Bengaluru, India

Indian Machine Tool Manufacturers' Association (IMTMA) celebrated 50 years' of its flagship IMTEX exhibition as it organized the 19th edition of IMTEX (IMTEX 2019) and 21st edition of Tooltech (Tooltech 2019) at Bangalore International Exhibition Centre (BIEC) from 24 - 30 January 2019 in Bengaluru.

The exhibition attracted over 91,000 visitors over a span of 7 days. Spread across 6 halls in an exhibition space of 80,000 square metres, 'IMTEX 2019 & Tooltech 2019' showcased technologies such as Additive Manufacturing and Industry 4.0 which are vital for moving manufacturing industry forward. IMTEX 2019 & Tooltech 2019 featured participation from 1222 exhibitors. Overall, 26 countries participated. Seven countries: China, Germany, Korea, Spain, Taiwan, UK, and USA had group pavilions.



The show at a glance

The exhibition was inaugurated on 24 January 2019 by Shri H.D. Kumaraswamy, Chief Minister of Karnataka, while Shri R.V. Deshpande, Minister of Revenue, Government of Karnataka, Shri K.J. George, Minister of Large & Medium Scale Industries, Government of Karnataka, Mr. Vikram Kirloskar, Vice President, Confederation of Indian Industry, and Mr. Ram Venkataramani, President, Automotive Component Manufacturers Association of India also presided over the inauguration. Mr. Jamshyd N. Godrej, Chairman, Exhibitions - IMTMA, Mr. P. Ramadas, President, IMTMA, Mr. Indradev Babu, Vice President, IMTMA, and Mr. V. Anbu, Director General & CEO, IMTMA, were also present at the inauguration.

Trade Fairs

Special Pavilions and Seminars @ IMTEX 2019 & Tooltech 2019

Factory of the **FUTURE** An Expo on Industry 4.0

Factory of the Future (Industry 4.0)

The special pavilion as well as a seminar on Industry 4.0 was held during IMTEX 2019 & Tooltech 2019.

The seminar held on 25th January, 2019 presented a global and Indian outlook of Industry 4.0 offering a holistic understanding of the importance of IT infrastructure, data security and internet of things.



Additive Manufacturing

The special pavilion as well as a seminar on this subject was held during IMTEX 2019 & Tooltech 2019.

Additive Manufacturing seminar was held on 26th and 28th January 2019.



Live Demo of Industry 4.0

To give the exhibition participants a clear roadmap on which technologies to adopt to benefit their organizations and how to implement them, IMTMA organized a live demo of a smart factory at its Technology Centre.

Trade Fairs



Reminiscing 50 years of IMTEX

Experience Zone

To commemorate IMTEX 50 years' journey, IMTMA set up an Experience Zone adjacent to Hall 4 in BIEC. The Experience Zone showcased vintage machines from a bygone era, pictures and a short film on IMTEX 50 years' journey.



Golden Jubilee Celebrations

IMTEX completed a milestone of 50 years. A special event was organized to celebrate and honour those who played a visionary role and provided exemplary support in this journey of IMTMA and IMTEX.



The IMTEX story - A rendezvous with luminous minds behind the brand



Felicitation of Godrej Family Members

Trade Fairs

Felicitation of Past Presidents of IMTMA



Mr. G.A.R. Shaikh - 1982 to 1985



Mr. Jamshyd N. Godrej - 1985 to 1987



Mr. R. Srinivasan - 1987 to 1989



Mr. Shailesh Sheth - 1993 to 1996



Mr. Bir D. Singh - 1998 to 2000



Mr. S.G. Shirgurkar - 2000 to 2002



Mr. V. S. Goindi - 2002 to 2004



Mr. C. P. Rangachar - 2004 to 2006



Mr. N. K. Dhand - 2006 to 2009



Mr. M. Lokeswara Rao - 2009 to 2011



Mr. Vikram R. Sirur - 2011 to 2013



Mr. L. Krishnan - 2013 to 2015



Mr. P. G. Jadeja - 2015 to 2017

Trade Fairs

Release of Coffee Table Books



Celebrating the Golden Jubilee of IMTEX, IMTMA released two coffee table books. The book '*More Power to the Industry*' – the journey of 50 Years of IMTEX captures the ethos of IMTEX and traces its growth over a time frame of 50 years since 1969. The book '*Art as a Tool for Inspiration*' is a compilation of art and paintings at IMTMA offices.

New Initiatives

Foreign Media Presence

- A group of 9 journalists from various countries were invited to IMTEX 2019 & Tooltech 2019.
- The objective of the visit was to acquaint them with Indian machine tool and manufacturing industries and broadcast the opportunities in India and overseas.
- The foreign media journalists interacted with officials of IMTMA.



International General Managers Meet

- IMTMA hosted the first International General Managers' meeting coinciding with IMTEX 2019 & Tooltech 2019.
- The meeting provided an apt platform for international machine tool industry associations fraternity to exchange ideas, share knowledge and network.

Trade Fairs

Eco Design Awards

- Eco design Award was initiated to “Promote sustainable life cycle practices in exhibitions.
- Six companies were conferred with awards in various categories.
- Ace Micromatic Group, Dynascan Inspection Systems Company, ETA Technology, Manar Tools, Taegu Tec India, and THK India were conferred with awards.



IMTEX TV

- For the first time, IMTMA set up IMTEX TV that live telecasted the events across the venue.
- Panel discussions, CEO talk, News of the day, Tech Talk etc., were telecasted throughout the event.

Parallel Events

International Buyer Seller Meet

- International Buyer Seller Meet was organized by IMTMA and Engineering Export Promotion Council.
- 48 international buyers from 13 countries such as Czech Republic, Russia, Indonesia, Iran, Italy, Mexico, South Africa, Ukraine and Vietnam, amongst others, participated at this Meet.



i2 Academia Pavilion

- A record 50 institutions (including IITs) participated in the i2 Academia Pavilion, during IMTEX 2019 & Tooltech 2019.

Trade Fairs



Jagruti

- The 12th edition of “JAGRUTI – IMTMA Youth Programme” witnessed participation of students from renowned engineering colleges across the country.
- The two day initiative was an attempt to create awareness about the latest developments in the manufacturing industry.

Quiz Contest

- The inter-college Quiz contest on manufacturing technology held during IMTEX 2019 & Tooltech 2019, facilitated the students to understand, get acquainted with latest technologies emerging in manufacturing industry, and make them competitive.



Safe Driver Workshop

- As part of its CSR activity, IMTMA conducted a Safe Driver workshop to inculcate best practices among drivers for driving on the roads and follow traffic regulations, during IMTEX 2019 & Tooltech 2019.
- Around 500 drivers participated in this event.

Trade Fairs

Glimpses



A view of Exhibition Hall 5



Inauguration of Exhibition Hall 5



Mr. Rajendra Jain, Managing Director, ITL Industries Ltd., Indore was honoured with IMTMA - Premier Outstanding Entrepreneur Award in memory of Vinod Doshi



Planting of saplings to mark 50 years of IMTEX



A view of visitors at IMTEX 2019 & Tooltech 2019



IMTEX 2019 & Tooltech 2019 attracted a large number of visitors from various industry sectors

Trade Fairs



Inside view of the halls during the exhibition



Live machines on display



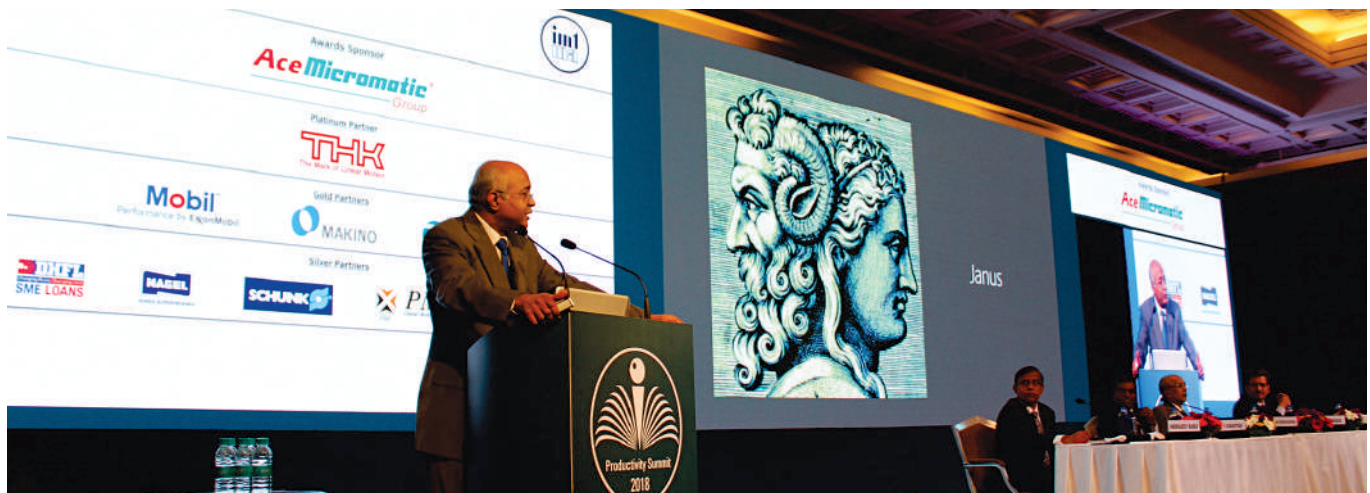
Large number of visitors at IMTEX 2019

Mega Events

National Productivity Summit 2018

24 - 25 August 2018: ITC Grand Chola, Chennai

Indian Machine Tool Manufacturers' Association (IMTMA) organized the twelfth edition of National Productivity Summit 2018 in Chennai.



The theme of the summit was "Showcasing Competitiveness in Manufacturing." The summit was inaugurated by Mr. M.M. Murugappan, Executive Chairman, Murugappa Group and Dr. V. Sumantran, Chairman, Celeris Technologies. Mr. P. Ramadas, President, IMTMA, Mr. Indradev Babu, Vice President, IMTMA and Mr. V. Anbu, Director General & CEO, IMTMA, also shared the dais.

The summit featured keynote presentations by Mr. A.K. Taneja, Managing Director & CEO, Shriram Pistons & Rings on 'Manufacturing Competitiveness - A 360° perspective'; Mr. V.N. Vijayaraghavan, Managing Director, IM Gears, on 'Driving Growth through Productivity'; Mr. Kiran Sundara Raman, Vice President & Head, Digital Products and Solutions, Robert Bosch Engineering & Business Solutions, on 'IoT Implementation in Indian Manufacturing - The Way Forward'; and Mr. Abhay Dixit, Senior General Manager, Mahindra & Mahindra, Farm Equipment Sector, on 'Innovative Ways of Improving Paint Shop Productivity with Positive Impact on Sustainability'.

Plant visits were arranged a day prior to the summit to Royal Enfield, Rane Madras, Brakes India, UCAL Fuel Systems, Bonfiglioli Transmission and Super Auto Forge, which enabled the delegates to witness best practices in manufacturing and productivity improvements on the shopfloor. The summit featured case study presentations on productivity



improvement projects from various companies such as Bajaj Auto - Akurdi, Hero MotoCorp - Haridwar, L&T MHPS Turbine Generators - Surat, L&T MHPS Boilers - Surat, Mahindra & Mahindra, Foundry Division - Kandivali, Toyota Kirloskar Auto Parts - Bengaluru, and TVS Motor Company - Hosur, all of which contested for the IMTMA-ACE MICROMATIC Productivity Championship Awards 2018.

Mega Events



Toyota Kirloskar Auto Parts was awarded first prize for its case study presentation on 'Productivity Improvement in Transmission Lines'. Mahindra & Mahindra and L&T MHPS Turbine Generators bagged the second and third prizes respectively. Distinct

Productivity Solutions, Bengaluru was conferred with SME Productivity Award 2018 for its case study on 'Productivity Approach as a Tool for Price Sensitive Critical Component Manufacturing'.

Symposium on Appropriate Automation in Indian Context

23 November 2018: Hotel Westin, Pune



To help Indian manufacturing companies understand the application and benefits of Automation in their production processes, Indian Machine Tool Manufacturers' Association (IMTMA) organized a Symposium on 'Appropriate Automation in Indian Context'. The global manufacturing landscape is undergoing a massive transition and getting highly automated and IT-enabled. To come at par with its global peers and achieve its aim to being the preferred manufacturing hub, it is highly crucial for India to embrace automation that comprises Industry 4.0

technologies and Industrial Internet of Things.

Industry experts from renowned companies including Robert Bosch Engineering & Business Solutions, Ace Micromatic Group, Fanuc India, Grind Master Machines, Pepperl + Fuchs (India), Titan Engineering & Automation Limited, Schuler India, Schunk Intec India and Universal Robots addressed various aspects of automation relevant to Indian context. The symposium also comprised plant visits, technical presentations, application case studies, interactive sessions and panel discussion.

Mega Events

Factory tours to leading companies such as Bosch Chassis Systems India, Volkswagen India, Bajaj Auto and Mahindra Heavy Engines were organized a day before the symposium, providing a unique opportunity to closely witness how automation projects get implemented. IMTMA has been promoting absorption of technologies among the tier II and tier III manufacturers which make up the large mass in India and the symposium provided a unique opportunity for the manufacturing industry to scale up their activities.



International Seminar on Machining Technologies

23 January 2019: BIEC, Bengaluru



Indian Machine Tool Manufacturers' Association (IMTMA) organized the International Seminar on Machining Technologies (ISMT) in conjunction with IMTEX 2019 & Tooltech 2019. The theme of the seminar was "Powering Manufacturing Growth and Competitiveness". The seminar had parallel concurrent sessions on Machining & Tools, Large Parts Manufacturing, Additive Manufacturing, Emerging Trends / R&D, and Automation.

IMTMA has been continuously evaluating the status of the metal-cutting industry in India by organizing international seminars to bring to the fore emerging trends in machining technologies and examining its future scope.

Eighth in the series, this International Seminar was inaugurated by Mr. Tim Shinbara, Vice President, Technology, The Association for Manufacturing Technology (AMT), USA, Mr. P. Ramadas, President, IMTMA, Mr. Indradev Babu, Vice President, IMTMA and Mr. V. Anbu, Director General and CEO,

IMTMA also shared the dais.

At the inaugural session, Mr. Tim Shinbara delivered his keynote address on "Transformative Technologies": The Impact to Machining, Services and Business Models'.

Experts from Austria, Germany, Japan, Singapore, Switzerland, United Kingdom, United States of America, and India facilitated the sessions. The seminar was attended by around 350 delegates from 125 companies across industry sectors such as automotive, aerospace, defence, railway establishments, consumer durables, general engineering, machine tools, capital goods industries, and so on.

The seminar provided users and manufacturers of metal-cutting machine tools with latest solutions that would enhance productivity and provide superior finish to machined components.

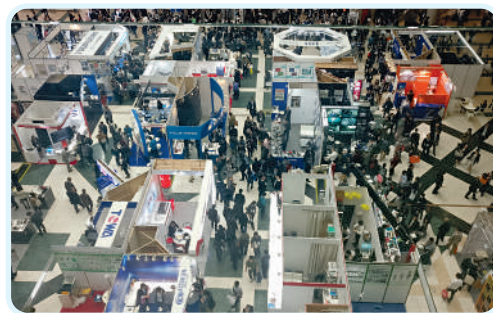
Participation in International Events



IMTS 2018

10 - 15 September 2018: McCormick Place, Chicago, IL, USA

The 32nd edition of International Manufacturing Technology Show (IMTS 2018) organized by the Association for Manufacturing Technology was held from 10 - 15 September 2018 at McCormick Place, Chicago, IL, USA. IMTMA held meetings with international associations to promote IMTEX and other IMTMA activities and organized a press conference to promote 50 years of IMTEX.



JIMTOF 2018

1 - 6 November 2018: Tokyo Big Sight (Tokyo International Exhibition Center), Japan

The 29th edition of Japan International Machine Tool Fair (JIMTOF 2018) organized by Japan Machine Tool Builders' Association was held at Tokyo Big Sight (Tokyo International Exhibition Center) from 1st to 6th November 2018. JIMTOF is one of Asia's largest exhibitions on machine tools and related equipment and showcased a wide range of machine tools in metal cutting and metal forming. IMTMA participated in the exhibition.



Metalex 2018

21 - 24 November 2018: Bangkok International Trade & Exhibition Centre, Bangkok, Thailand

The 32nd edition of Metalex was organized by Reed Tradex Co. Ltd. at Bangkok International Trade & Exhibition Centre, Bangkok from 21 - 24 November 2018. The exhibition featured over 900 exhibitors with 9 country pavilions. IMTMA participated in the exhibition to promote IMTMA brands and showcase information on Indian machine tool industry through the Association's stall at the exhibition.

Manufacturing Indonesia 2018

5 - 8 December 2018: Jakarta International Expo, Indonesia

Manufacturing Indonesia is the largest international exhibition of manufacturing technologies and services in Indonesia. IMTMA participated in the show organized in Indonesia from 5 - 8 December 2018 to promote IMTMA brands and showcase information on Indian machine tool industry and promote IMTMA's regional Delhi and Chennai machine tool expos scheduled in 2019.

TIMTOS 2019

4 - 9 March 2019: Taipei Nangang Exhibition Center, Taipei

The 27th edition of TIMTOS, was jointly organized by Taiwan External Trade Development Council and Taiwan Association of Machinery Industry from 4th to 9th March 2019 at Taipei Nangang Exhibition Center. The theme of the exhibition was "Industry 4.0 & Smart Manufacturing". IMTMA participated in the exhibition to promote IMTMA brands and the Indian machine tool industry.

Technology & Training

IMTMA Technology Centres are closely associated in skill development initiatives. IMTMA delivered over 19,000 person - days of training during 2018-2019 through 202 short-term and long-term training programmes at its Technology Centres in Bengaluru, Pune and Gurugram.

IMTMA Technology Centre

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

Basics of Sheet Metal Forming Technology for Non-Automotive Industries

17 - 18 July 2018: Pune

Sheet metal forming plays a crucial role in a variety of product segments, particularly automobiles and auto components. To spread more awareness on the range of metal forming equipment and technologies, evolution of automation, grades of sheet material and their applications, IMTMA organized a two day programme at its Technology Centre in Pune. The training focused on basics of cutting, bending and forming operations, deep draw and reverse deep draw, press brake and CNC punch press, roll forming, stretch forming, spinning, and so on.

Metal Casting technology- Processes, DFM, Quality and Cost Considerations

12 - 13 July 2018: Bengaluru | 20 - 21 December 2018: Pune

Knowledge of metal casting is important to design engineers and casting buyers. Design engineers have to decide on the type of casting process to be adopted to manufacture the part and also to incorporate DFM requirements of casting without compromising his design intent. Buyers have to identify right foundry and negotiate with them to get competitive price. To share this knowledge, IMTMA Technology Centres in Bengaluru as well as Pune organized a two day training programme which focused on important casting processes such as sand casting, shell moulded casting, investment casting, and centrifugal casting, squeeze casting, etc.

Induction Hardening and Other Surface Heat Treatment Processes

16 - 17 August 2018: Bengaluru

Most engineering and automotive parts be it drive line or engine or structural members need to have adequate strength and durability to perform their respective functions. At the same time, these parts need to be cost effective. To achieve these twin objective the components are subjected to surface strengthening treatments.

Most commonly used surface strengthening treatments are case carburising and Induction hardening. To help engineers thoroughly understand these concepts, IMTMA organized a two day training programme at Bengaluru and Pune.



Technology & Training

Selection and Sizing of Electric Motors

28 - 29 August 2019: Bengaluru

To benefit engineers and personnel involved in design, production, procurement, and maintenance functions of all manufacturing industries and engineers from machine tool industries, automobile and ancillary industries, aerospace, defence and railway units, etc. IMTMA conducted this training programme. The programme focused on imparting training in electric motor basics, motor sizing, AC motor selection, servo motor selection, stepper motor selection, etc.

Metallurgy for Non Metallurgists

4 - 5 September 2018: Bengaluru

Metallurgy is a branch of material science that focus on the physical and chemical behaviour of metallic elements and its alloys. Knowledge of metallurgy is important for any design and production engineers. Design of any part generally based on strength, which comes from alloy composition and metallurgical structure. It is not just enough if design engineer select right alloy but also have to specify metallurgical requirements to achieve required properties. Production engineers have to understand the metallurgical requirements and develop process to achieve that. Hence awareness of metallurgy play an important role in today's engineering world. IMTMA organized two day programme to help engineer to understand the basics of ferrous and nonferrous metallurgy, Alloys and its classification, etc.

Productivity Institute

Advanced Purchase and Procurement Practices to enhance Competitiveness

25 - 26 October 2018: Bengaluru

There are 4Cs every Indian industries are facing namely, complexity, competition, compliance and competitiveness. With competition from global players, Indian companies need to make conscious and sustained efforts to remain cost effective to survive in the market.

A two day interactive programme on 'Advanced Purchase Practices' for those who are dealing with suppliers was conducted at IMTMA Technology Centre in Bengaluru. The programme focused on various



elements of purchase practices proven well in automotive industries which can be applied in non-automotive industries as well.

Technology & Training

Forging Technology - Processes, DFM, Quality and Cost considerations

26 - 27 February 2019: Bengaluru

IMTMA organized a two day training programme on forging which finds its use in various industries and has several applications using different metals and alloys. The programme mainly focused on application of forging, metallurgy of forging, different processes and equipment, design considerations, quality considerations, cost considerations, and so on.



Building Lean Culture through Value Stream Mapping

12 - 13 February 2019: Bengaluru

To help engineers to understand the evolution of lean, lean principles, lean philosophy, Identification and Value added and non value added process and Value Stream mapping, IMTMA organized a two day training programme at IMTMA Technology Centre in Bengaluru. The programme primarily focused on lean starter and lingo, kaizen, history of lean manufacturing and the need for change, waste identification and elimination techniques, value stream mapping, etc.



eLearning

IMTMA initiated the eLearning programme as part of its efforts to disseminate knowledge and skill training on all aspects of manufacturing technology. The eLearn program brings knowledge to the desk through packaged training modules on various topics which can be accessed at any time. These are prepared by experts with specialized knowledge and deep experience in the topic of training. Courses in this initiative include Geometric Dimensioning & Tolerancing, Failure Mode & Effects Analysis, Overall Equipment Effectiveness, Painting & Coating, Linear Motion Guideways, and Ball Screws. More information on the programme can be accessed at <https://www.imtmaelearn.in/>.



Technology & Training

Foundation Course in Industrial Automation

IMTMA organized an award function for the First Batch of Foundation Course in Industrial Automation at its Technology Centre at Bangalore International Exhibition Centre (BIEC) in Bengaluru on 20 March 2019. Mr. Rashmikanth Joshi, Managing Director, Festo India delivered the keynote address. Office bearers from IMTMA presided over the event. IMTMA through its Technology Centres in Bengaluru, Pune and Gurugram impart training for young engineers who graduate from various colleges. The training imparted by industry experts makes them industry ready and employable.

IMTMA conducted a Foundation Course in Industrial Automation from 18 February 2019 to 20 March 2019.



Fourteen students from various organisations underwent training at IMTMA and were awarded certificates.

Interactive Session with Productivity Champions on Best Practices in Manufacturing



A one-day interactive session was conducted at IMTMA Technology Centre in Pune and Bangalore to give engineers an understanding on productivity improvement in diverse areas such as material substitution, machine shop, and foundry. Participants were also briefed by Productivity Champions on quantum jump in productivity and cost savings, on thinking out of the box, and competing in National Productivity Summits.

Technology & Training

Design Institute

Design of Machining Fixture for CNC and VMC

5 - 9 October 2018: Bengaluru

Basics of fixture design if not implemented correctly results in poor productivity and quality problems. The set-up time and cycle time reduction, increased accuracy on components, deskilling the job setting operation are obvious advantages. Keeping this in view, IMTMA organized this programme which introduced participants to the fundamentals of fixture, fixture elements, design of machining fixture for VMC project, study of customer component for fixture design, study of machine for fixture design, conceptualization of fixture with reference to actual



customer component, etc. The programme was highly interactive and covered an entire 360° view on all types of fixture design aspects.

Design of Fixture - Aluminium Forging for CNC & VMC

11 - 13 April 2019: Bengaluru

Design of fixture is key to effective utilization of machine tools. Basics of fixture design if not implemented properly will result in poor productivity and quality concerns. The set-up time and cycle time reduction, increased accuracy on components, deskilling the job setting operation, etc. are some of the advantages of a good fixture. Keeping these in view IMTMA structured a course to enable engineers learn the basics of fixture design and work towards creating the final design.

A complete process of aluminium forging and casting components fixture design was carried out from



concept to finish design. Pre-design activities like design input, conceptualization, process planning, accuracy consideration, cycle time estimation, poka-yoke, design for accuracy, manufacturing and assembly were addressed during the course.

Activities of BIEC



BIEC Hall 5 for Igniting Exhibitions

Continuing with its efforts of providing world class exhibition facilities, BIEC expanded its infrastructure. A new state-of-the-art exhibition hall (Hall 5) measuring 17,500 square metres was constructed. The new hall is the latest addition to BIEC infrastructure and increases the exhibition space to around 77,200 square metres. IMTEX 2019 & Tooltech 2019 was held in this hall earlier this year. BIEC is now one of the largest Exhibition and Conference facility in the country.

85th UFI Global Congress

31 October - 3 November 2018: Expoforum, Saint Petersburg

BIEC participated in UFI's Global Congress – the exhibition industry's annual gathering. UFI's annual Global Congress is known as the exhibition industry's largest global meeting of the year, combining international networking with unique content. It was an ideal opportunity for members to gain insight into topics of strategic interest, on the current industry trends and challenges that the exhibition industry is currently facing.



13th Annual Meeting (AFECA AGM)

23 October, 2019: Kintex

The Asian Federation of Exhibition and Convention Associations (AFECA), Asia's most important international exhibition organization, held its 13th Annual Meeting (AFECA AGM) on 23 October 2019 at Kintex in Korea. In conjunction to the AGM, AFECA also held the 4th AFECA Asia MICE Youth Challenge and 2018 AFECA Asian Awards. BIEC participated in this event to further Indian exhibition industry's vision and mission.



57th ICCA Congress

11 - 14 November 2018: Dubai

ICCA Congress is one of the prestigious events in international association meetings industry calendar. 57th ICCA Congress was a dynamic four-day programme of education, networking and business opportunities. A total of 1,156 industry experts from 79 countries had travelled to Dubai for the meeting. BIEC participated in this meeting and had extensive meetings with business heads from the global exhibition industry.

New Products Developed by Members in 2018 - 2019

ASHOK MANUFACTURING COMPANY PRIVATE LIMITED

1. 55 ton capacity heavy duty CNC Turret Punch Press – (for thick plate punching and higher tensile strength material).
2. Special, large tool sizes punching in a CNC Turret Punch Press
3. Robotic servo controlled auto pressure setting to grind very thin sheets.

BHARAT FRITZ WERNER LIMITED

1. Vertical Turning Center RL CF (BVL series developed for medium size component operations in a single set-up [Model – BVL RL CF]
2. Horizontal Machining Center with Automatic Rotary Pallet Changer (Developed for enhanced flexibility, reduced cycle times, increased operator's comfort and better ergonomics) [Model – Novel H]
3. Turn-mill Center with Y axis [Model – Turn-mill Helix – Y Axes]
4. Next-gen HMC series one with 400 pallet size with high-speed machining capability [Model – ORION 4000]
5. Next-gen HMC with Universal Head [Model – ORION FX]

CADEM TECHNOLOGIES PRIVATE LIMITED

1. NCyclopedia an E-Learning Portal – To provide foundation competence in CNC Milling and Turning

DARSHANA INDUSTRIES PRIVATE LIMITED

1. New range of Consoles, Support Arm Systems, Enclosure Systems, Industrial Workstations and KIOSK systems.

DYNEMECH SYSTEMS PRIVATE LIMITED

1. Anti-Vibration Table with Auto-Levelling Pneumatic Mounts (Import Substitute) [Model – Series DIT-AM].

ELECTRONICA HITECH MACHINE TOOLS PRIVATE LIMITED

1. CNC Wire cut EDM [Model – Tool Master 5 f]
2. CNC Wire cut EDM [Model – Tool Master 5 S]
3. CNC Wire cut EDM [Model – Tool Master 6 f]
4. CNC Wire cut EDM [Model – Tool Master 6 S]
5. CNC Wire cut EDM [Model – Job Master D-lite with Linear Motor]
6. ZNC EDM [Model – D 300 Fuzzy]

New Products Developed by Members in 2018 - 2019

ELECTRONICA PLASTIC MACHINES LIMITED

1. Hydraulic RAM type Injection Moulding Machine [Model – HyLock 350]

ELSCINT AUTOMATION

1. High Speed Rotary / Centrifugal Feeder for Needle Rollers
2. Automatic Machine for laser marking of Keys and stacking
3. Shell Feeding Elevator
4. Tray loading automation for Uranium Pellets

IND-SPHINX PRECISION LIMITED

1. Ultra Micro Drill of size 0.015mm (15micron)
2. Coolant Hole Long drills for Precision Machining with 15d, 20d, 25d and 30d
3. Micro Coolant Hole drill dia 0.50mm with 0.050mm coolant hole size
4. Wide range of High Precision CVD Diamond Coated Ballnose Endmills for Digital Dentistry
5. High Precision Micro Tools for Medical Implants

JASH PRECISION TOOLS LIMITED

1. Cast iron T-slotted test bench "Lateral motorized movement" (Plate size is 3000 mm X 2000 mm).

KENNAMETAL INDIA LIMITED

1. Tool & cutter grinding machine for micro tools [Model – EcoGrind Sx⁵ LiMo]
2. 7 axes Twin spindle Flexible machine for Earth mover components
3. Twin Spindle Machine [Model - FLEX Fx 360]
4. Oil hole drilling & pad milling machine for 3 m length crankshaft (IoT features enabled for ease of operations & analytics for better maintenance)
5. 5 axis Flex Machine for Front Axle Beam Machining.

MILACRON INDIA PRIVATE LIMITED

1. Injection Moulding Machines – High Performance machine [Model - Q Series 110, 280 & 350]
2. Blow Molding Machines - Shuttle Series machine for Packaging containers [Model - Blow Molding UMS 140]
3. Extrusion Single Screw Extruder for Pipe Manufacturing [Model - SG45]

New Products Developed by Members in 2018 - 2019

PRAKASH ENGITECH PRIVATE LIMITED

1. Drill Tap and Endmill Cutter Re-sharpening Machine [Brand – PRAKASH]

RAJAMANE INDUSTRIES PRIVATE LIMITED

1. Induction Motors for IE3 Efficiency (0.2 to 7.5 kw, 2 pole motors used in coolant pumps have been upgraded to IE3 efficiency)
2. Coolant pump with Filtration- GCI- Series (Pump has been developed in collaboration with NOP, Japan).
3. RTAH- Horizontal pump- all SS (for spindle cooling application, with 5 bar pressure)
4. All SS RTH- High pressure pump (To handle DM water in EDM Wirecut Machines).

SAHAJANAND LASER TECHNOLOGY LIMITED

1. OnThe Fly Laser Marking solution [Model - OPTIFLY]
2. Laser Welding [Model – Nova]

SCHENCK ROTEC INDIA LIMITED

1. Smart Balancer Eco (This instrument is used to measure speed, vibration, vibration analysis and balancing).

UCAM PRIVATE LIMITED

1. Mill Turn Rotary Table (Direct Drive Rotary Table, integrated into machine bed, can rotate at high speeds for turning prismatic parts as big as Dia. 600 and also rotate at low RPM for milling applications) [Model – UTTR-630 DDi-TM]

ZECHA PRECISION TOOLS

1. Special Mill Cutters [Model – PEACOCK]

New Members Enrolled in 2018 - 2019

[As on 30 June 2019]

AMPCO METAL INDIA PRIVATE LIMITED

A-8/4, Village-Nighoje Chakan MIDC,
Phase 4, Tal-Khed,
Pune - 410501, Maharashtra.

(Manufacturer - Tube Bending Toolings, Tube Forming
Rolls, Deep Drawing Dies, High Conductivity Copper
Alloy Parts & Aluminum Bronze Parts).

DIVIDE BY ZERO TECHNOLOGIES

Office No. 3 & 4, Ground Floor, Building No. 3,
Navi Mumbai - 400710, Maharashtra.

(Manufacturer - 3D Printers)

FRICTION WELDING TECHNOLOGIES PRIVATE LIMITED

Unit No. 9 and 10, Shivkamal Industrial Estate,
Pune - 411023, Maharashtra.

(Manufacturer - Friction Welding Machines)

LASER AUTOMATION PRIVATE LIMITED

H-15, Kumar Park, Bibvewadi,
Pune - 411037, Maharashtra.

(Manufacturer - Laser Marking Machine, Dot Pin
Marking Machine, Laser, Welding, Cladding,
Hardening Machine)

NEUMATICA TECHNOLOGIES PRIVATE LIMITED

#C-276/1, 7th Cross, 1st Stage,
Bengaluru - 560058, Karnataka.

(Manufacturer - Hydro Pneumatic, Hydraulic & Servo
Press Machines. Parts For Hydro Pneumatic, Hydraulic
Presses & Servo Presses, Controllers, Tools, Others)

DIGVIJAYA ENGINEERS

8-Maninagar Mavdi Plot ,
Rajkot - 360004, Gujarat.

(Manufacturer - Punching Machines, Presses &
Shearing Machine)

ENERGY MISSION MACHINERIES (I) PRIVATE LIMITED

Plot no. 87/1, Nr. Pushpak Industrial Estate,
Phase-1, G.I.D.C,
Ahmedabad - 382445, Gujarat.

(Manufacturer - Hydraulic Shearing, Press Brake and
CNC Press Brake)

J V EXPORTS

HB-225, Village, Jaindiali, Chandigarh Road,
Ludhiana - 141112, Punjab.

(Manufacturer - Machining Centres & CNC Turning
Machines)

MARPOSS INDIA PRIVATE LIMITED

147, Sector 7, IMT Manesar,
Gurugram - 122050, Haryana.

(Manufacturer - High Precision Measuring Equipment)

SCHMERSAL INDIA PRIVATE LIMITED

Plot No. G-7/1, Ranjangaon, MIDC, Tal-Shirur,
Pune - 412220, Maharashtra.

(Manufacturer - Position Switches, Door Contacts &
Pull wire E-stop Switches).

New Members Enrolled in 2018 - 2019

[As on 30 June 2019]

SYSTEM CONTROLS TECHNOLOGY SOLUTIONS PRIVATE LIMITED

No. 119, 3rd Main, NGEF Layout, Kasthuri Nagar, Bengaluru - 560043, Karnataka.

(Manufacturer - Motion Controls, Data Acquisition System & Embedded Software development, Application software development & Manufacturing, Electronics Board Design Development & Manufacturing).

TRANSTECH GEARS PRIVATE LIMITED

#10/1, Lakshmipura Main Road, Bengaluru - 560090, Karnataka.

(Manufacturer - Gear Boxes, Motors, Geared Motors)

VT TOOLS PRIVATE LIMITED

FCA-A-3668, 3669 SGM Nagar, NIT, Near Raja Chowk, Faridabad - 121001, Haryana.

(Manufacturer - Parts & Accessories for Machine Tools, Including Systems Attachments, Accessories).

TAURUS PRIVATE LIMITED

No.24, D2 & E3, KIADB Industrial Area, Bangalore Rural, Bengaluru - 562107, Karnataka.

(Manufacturer - SPMs, Oil Hole Drilling Machine, 6 Station Fine Boring Machine, Pre-Boring and Circlip Grooving Machine)

VP INDUSTRIES

Plot No. B-51/52, Kagal-Hatkanangale, Five Star' M.I.D.C. Area, Kolhapur - 416236, Maharashtra.

(Manufacturer - Boring Bar, Carbide Drills, Reamers, End Mill, Cutters)

Total Membership of IMTMA as on June 2019: 458 Members

IMTMA Initiatives





Glimpses





Indian Machine Tool Manufacturers' Association
www.imtma.in

Head Office

Bangalore International Exhibition Centre (BIEC)
10th Mile, Tumkur Road, Madavara Post, Bangalore - 562 123, Karnataka (India).
T: +91 80 6624 6600 F: +91 80 6624 6661 E: imtma@imtma.in

Regional Office (West)

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
