



# ***FiRESiDE***

The House Magazine of the Thermax Group Volume 52 No. 4 October - December 2022



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## About the Cover

*A tiny, delicate shoot emerges from the soil to take its place in the world. Despite its small size, this wheat shoot represents the promise of new life and abundance. This shoot has the potential to grow into a strong and sturdy plant, producing an abundance of nutritious grain that can sustain human and animal life. Just as this plant will eventually grow, mature, and produce new seeds, so do we experience growth and change as we move through the different stages of our lives. It is a reminder that nothing in life is static and that there is always a potential for new beginnings and fresh starts.*

- Photo by Ritesh Chopuri, Heating



## Back Cover

## Thermax Cares For ESG

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## WORDS OF WISDOM

**"Although no one can go back and make a brand new start, anyone can start from now and make a brand new ending."**

- Carl Bard

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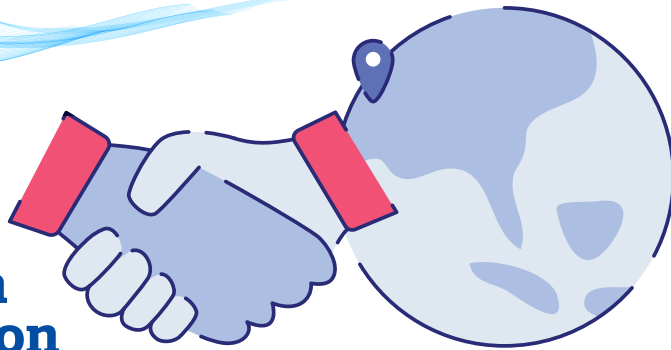
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## SLICE-OF-LIFE

● Success comes at the right time ● Not all heroes wear capes ● Just for laughs

# What's New?

## Thermax joins hands with ChemPoint to expand its ion exchange resins business in North America



**T**hermax Inc., a wholly owned subsidiary of the Thermax Group, announced a partnership agreement with ChemPoint, a tech-oriented sales and marketing expert for specialty products, for the distribution, marketing, and sales of Thermax's ion exchange resins in North America in early October.

While Thermax will continue to develop and deliver innovative

solutions for the ion exchange resins market, ChemPoint will provide the agility, expertise, and extended reach to improve penetration, service levels, and overall customer experience for Thermax's ion exchange resins.

"Thermax's Chemical business has been one of the leading manufacturers of ion exchange resins under the brand name Tulsion® for more than 35 years. With R&D capabilities,

state-of-the-art manufacturing facilities, and competent professionals, Thermax is able to tailor these ion exchange resins to serve a wide range of industries and applications across many geographies. Now with ChemPoint on board, we hope to proliferate and expand our business in the North American market as well," said Dinesh Mandhana, Vice President and BU Head - Chemical.

## Introducing Edge Live Operations Centre



*(From left) EC members Kirtiraj Jilkar, Ashish Bhandari and BC Mahesh inaugurate the Thermax Edge Live Operations Centre*

**S**etting a new milestone to the Edge Live initiative, the first Thermax Edge Live Operations Centre was inaugurated on 19<sup>th</sup> October for the Projects and Energy Solutions (P&ES) division at Environment House, Bhosari, Pune. MD and CEO Ashish Bhandari and Executive Council members – B. C. Mahesh, Executive Vice President and Head - Industrial Product Business; Pravin Karve, President - TBWES and P&ES, and Kirtiraj Jilkar, Executive Vice President and

BU Head – P&ES, inaugurated the centre.

Speaking on occasion, Ashish said, "With the addition of Edge Live Operations Centre, our customers will have the advantage of proactive and predictive insights that will enhance plant performance and uptime."

The second Edge Live Operations Centre was set up for the Heating division at Eco House, Chinchwad. The same was inaugurated on 16<sup>th</sup> January by Ashish Bhandari, B. C. Mahesh, Amit Sethi, Executive Vice President and Chief Digital and Information Officer and Hemant Joshi, SBU Head, Heating, in the presence of all stakeholders of Edge Live from the Heating division.

The operation centres are equipped to manage multiple sites and are backed by subject matter experts to ensure efficient asset monitoring and management.



*A sneak peek into the operations centre*

Thermax looks forward to setting up many such operation centres in the near future.



*(Third from left) B. C. Mahesh, Amit Sethi, Ashish Bhandari and Hemant Joshi, along with the Edge Live and Heating teams, at the operations centre at Eco House, Chinchwad*



# Ecophilia – working in the lap of nature

**W**alking the talk, Thermax Absorption Cooling and Heating division has built a new smart workstation, Ecophilia, at the Sri City factory. Built using sustainable scrap materials from the factory, the workstation offers seamless internet connectivity and is erected away from the hustle-bustle of factory life. It provides a serene working experience for the ones who love to work nestled inside nature.

The first smart unit was inaugurated by Venkatesh Balasubramanian, SBU Head, Absorption Cooling, and Jasmeet Bhatia, Chief Human Resources Officer, in early December. The plan to build many such workstations is on the anvil.



*The senior leadership team with factory members at Ecophilia*



*CHRO Jasmeet Bhatia and SBU Head Venkatesh Balasubramanian inaugurate the new smart workstation*

## Enabling backward integration, TOESL inaugurates dedicated briquetting facilities in Gujarat

**T**hermax Onsite (TOESL) recently inaugurated two dedicated briquetting facilities in Ahmedabad district, Gujarat, in collaboration with two vendor partners. This is in line with the company's strategy to increase contribution of biomass fuel sourcing from dedicated facilities and to have better control over quality and quantity of fuel.

Both plants shall process agro-waste as well as agro-industrial waste and shall together produce 1,400 tonnes of briquettes per month. These plants shall address nearly 30% of biomass fuel required at TOESL projects in Gujarat, and further expansion has been planned in a phased manner, involving investments from TOESL in the future.



*Biomass storage at the new briquetting facility in Gujarat*



## WWS secures its largest ever export order

**T**hermax Water and Waste Solutions division fulfilled a requirement of Bangladesh's biggest steel rolling mill and secured an order worth 5 million USD.

Our Industrial Project Group has a prominent presence in the Indian steel industry and its EPC (Engineering, Procurement & Construction) capability made it possible for this global steel titan to entrust us with this order.

With a unique design product for the mill industry and lower running costs of the raw water treatment plant, cooling towers, and auxiliaries, we were able to surpass a Chinese competitor who had previous relationship with the customer.

The scope of supply includes project management, engineering, procurement, manufacturing, construction, and commissioning of a cooling tower with a pumping system, a scale removal system, and associated piping valve equipment.



*At the contract signing ceremony*

## SDG Goals: The way forward

### Thermax Annual Calendar 2023

**R**ecognising the importance of Sustainable Development Goals (SDGs) in addressing the broader social and global environmental issues as well as their alignment with the Thermax philosophy, 12 out of the 17 SDGs were adopted as a theme for Thermax's annual table calendar 2023.

The Corporate Communications team carefully selected each SDG for the month based on its relevance, and appropriate imagery was chosen to illustrate Thermax's solutions in line with the goal.

These goals are increasingly forming a foundation for responsible investment as the world shifts its focus to ESG (Environment, Social, Governance). Thus, the



Sustainable Development Goals reflected in this year's calendar underscore our commitment and

way forward to building a greener world and shaping a prosperous future.



# Thermax leverages Social Media to Sensitise on Climate Action and Sustainable Solutions during COP27



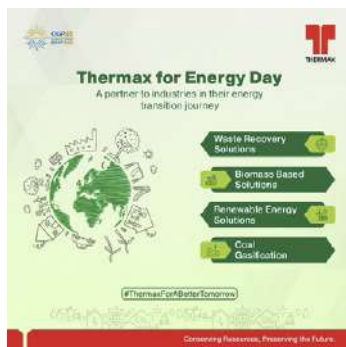
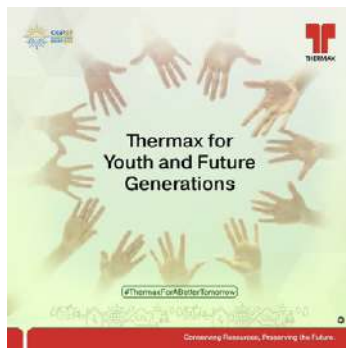
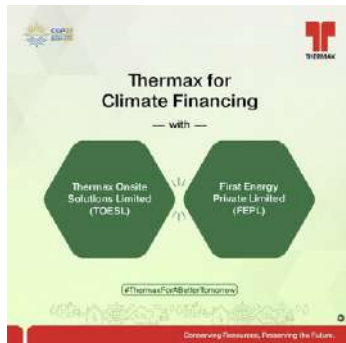
International forums such as COP27 and G20 serve as ideal platforms for countries, governments, corporates and other stakeholders to come together and advance the global agenda towards sustainability and climate action. At COP27, held in Egypt in November 2022, state delegates, diplomats, policymakers, activists, NGOs and private sector representatives from countries worldwide came together to discuss and strategise ways to achieve a net-zero world.

Being the preferred partner for industries seeking to decarbonise and achieve their net-zero commitments, Thermax aligned itself with the thematic days of COP27. During the days of the summit, Thermax amplified conversations on social media around the identified themes and shared how it contributes towards creating a sustainable future through its diverse green portfolio.

The thematic days included Finance Day, Science Day, Youth & Future Generations Day, Decarbonisation Day, Adaptation and Agriculture Day, Gender Day, Water Day, Ace & Civil Society Day, Energy Day, Biodiversity Day and Solutions Day. Thermax showcased its unique offerings from its portfolio each day, featuring FEPL and TOESL's renewable energy solutions, TBWES and Cooling's waste heat recovery solutions, Thermax Bio Energy Solutions' bio-CNG capability, and Heating's biomass-based boilers. In addition, the company highlighted innovative and cutting-edge technologies, such as coal gasification, and shared new updates from the WWS division.

Thermax also believes that to effectively address the climate crisis, change must begin from within. In keeping with this idea, we presented our environmental endeavours through Thermax Cares and highlighted the efforts of the Thermax Foundation.

With this campaign, we could reach out to a large audience, sensitising them about the need to adopt sustainable practices. This was reflected in over 1,42,742 impressions and 22,518 engagements received for our social media posts through organic reach.



# Expressions



I am very proud to see that Cooling has introduced diversity in many departments, whether on the shop floor, canteen, security or within staff functions. I hope, based on this positive experience, other locations invest in diversity of gender, differently abled and others.

In this piece, I would like to share my impression of the Union Budget and my experience of visiting two of our manufacturing facilities.

I liked the fact that the recent budget was a continuum of the previous one. It was well-thought-through, and there was something good for everyone. It talked about inclusive development, which is crucial for a country like India. A lot of emphasis was placed on good farming practices, women empowerment, self-help groups and the marginal sectors of society. Another initiative that particularly appealed to me was the introduction of teacher training techniques involving innovative pedagogy that would provide in-service training. If implemented well and in its true spirit, it will help strengthen the backbone of education.

As for infrastructure investment, giving a fillip of 33% on capex outlay is certainly needed in our country.

This will indirectly impact Thermax through investments in steel, cement, and so on. Also, the push to green growth – encouraging the use of alternate sources of energy will take the energy transition initiative to the next level. Additionally, it stressed the importance of skilling youth according to industrial requirements.

As an industrial energy and environment solutions provider, I think there is a lot within our ambit, and I hope we realise the opportunities that await us.

Talking of skilling our youth, last quarter, I spent a day at our Sri City Cooling plant, wherein I had the opportunity to interact with the women we have employed and trained. We have 15 young women, many of whom have come through the Apprenticeship Act and are undergoing training to be welders and data entry operators. All of them have completed their XII<sup>th</sup> Std.; some

have worked elsewhere and have now joined our company.

It was great talking to them regarding why they joined, what they like about the company and their aspirations. Many joined because of the salary and appreciate that women are truly respected within Thermax - they are cared for and encouraged. Two of them, Divya and Jyoti, have been with us for four years and are proud to be welders. They aspire to be upskilled and trained to take on other assignments within Thermax. Lakuva, who is under training, is a married lady with two young children. Luckily she has the support of her in-laws, and so is able to work. She aspires to become a welder. It was great to see their enthusiasm, smiles and efficient output! The challenge is to retain these young women, who, after a couple of years, leave us, predominantly due to social pressures like marriage.



I also had the opportunity to meet four specially abled young men working as welders / fitters on the shop floor. I am very happy to know that the local government sent people onto our shop floor to make sure the place was suitable for them. Some of our people are learning sign language to be able to communicate with them.

I am very proud to see that Cooling has introduced diversity in many departments, whether on the shop floor, canteen, security or within staff functions. I hope, based on this positive experience, other locations invest in diversity of gender, differently abled and others.

It's a pleasure visiting this vibrant place where there are many innovative practices being followed. They have used some of the open space to grow medicinal plants, a vegetable patch and fruit trees, a lot of which they use in their canteen. Any surplus is given to a nearby government school. They also have an open volleyball court and a charming outdoor quiet space created for employees to relax or work on their computers.

A special thanks to Raja, who has been the front runner of many new and creative practices, along with his team and to Venky, who has encouraged them.

It is thanks to our Director Nawshir, who was going to see the



*The medicinal and fruit garden at Sri City*

work of our CSR partner Manavlok, that I decided to accompany him and visit our Enviro factory too. I am very glad we spent some time with Vikas and his team, who have set up a very well laid out manufacturing facility with a lot of open space and beautiful flowering trees. Started 10 years ago, there are walls with photographs of the place as it came up; and many posters across the factory regarding safety.

Speaking to some of the contract workers regarding Social Compact (SoCo), I was happy to hear that basics like their salaries are being paid on time every month. When I asked about bringing women contract workers alongside, it was amusing yet sad to hear their response. They were most offended and questioned as to why we would ever think of that. Were the men not good enough? How do we change mindsets / practices – something for all of us to think about!

In Solapur, we also visited our first commissioned site for FEPL. It felt good to see us producing electricity from the sun with myriads of solar panels being installed over 27 acres

of land. FEPL has done a very good job - kudos to Ravi and the team.

Nawshir and I then spent some time with Aniket and Irfan of Manavlok - our NGO partner,

learning about farming and about the most precious resource – water. Also, how Manavlok, along with Sujata of our Thermax Foundation and our Enviro

team at Solapur have helped with widening and also bunding the river at Ranmasle village, which has been a boon to the villagers. They also help farmers with innovative solutions to enhance productivity - keeping pests away from their crops or using a simple piece of equipment that segregates seeds based on weight and therefore, quality and so on. India's biggest challenge is a lack of scale in farming, and therefore bringing farmers together to help sell their produce or invest in equipment that adds further value to their crops is the intention. It's such a different world – we were all in admiration of the entire Manavlok team, who is making a big difference!

To end, it's very heartening to see that we've restarted the SLDP (Senior Leadership Development Programme) - an internal training programme to develop our talent. With so many opportunities on the anvil, along with a plethora of challenges to juggle, we will need mature, wise, well balanced, inclusive and equitable senior leaders taking strategic decisions in line with our values, in the direction we have carved out for ourselves. My apologies I wasn't there for the launch since I wasn't well, but I promise to be there in person soon.

We also just completed our Annual Board Retreat with some of the leadership in the company, wherein each megatrend was discussed, as it applies to Thermax. Ashish and his team did an excellent job in continuing from where we left off last year, presenting where we see ourselves in 2030, but with a focus on the next three years. I must say both the Board and the EC came away energised.

Wish you all the very best.

Warmly,  
Meher

# Up Close

## ***"My only competition is myself"***

In a conversation with Priyanka Sarode, Deodatta Deshpande, CEO, Thermax Bio Energy Solutions Pvt. Ltd., shares his career trajectory, and his many experiences working across functions in Thermax. He talks about the immense potential of the new subsidiary company and predicts that it will expand into a Rs. 1,000 crore business in the near future.

"Hard work is ultimately what makes one stand out!" believes Deodatta Deshpande, CEO, Thermax Bio Energy Solutions Pvt. Ltd. Being a mechanical engineer, his journey in Thermax began when he joined the Process Heating Division in 1995 as a Design and Proposal Engineer. Within six months of his joining, he was part of a major project which involved the supply of a 22 TPH packaged shell type oil and gas fired boiler for a PVC plant in Vietnam for a Japanese major. In the capacity of a lead design engineer, he successfully engineered the project.

Sharing an interesting anecdote on the project, he says, "I had answered about 300 fax messages for the project that year. The project taught me the importance of responsibility and accountability in the formative years of my career. The behaviours like customer centricity, lead, own, create and collaborate (CLOCC) were incorporated naturally during the course of work."

As he progressed in his career, Deodatta was responsible for designing several complex packaged oil & gas fired boiler proposals, both for domestic and international markets.

Another significant milestone in his professional journey came in the form of Process Heating Division's substantial order from a leading oil & gas EPC player in Sharjah. He informs, "The proposal was so intricate that it mandated us to guarantee that not a single droplet of water was let out of the system. As a solution, we designed a sea water cool condenser for the project." He was also entrusted with the responsibility of working along with the detailing team in





overcoming the complexities of the project that offered him a distinctive learning experience.

Deodatta believes he has been fortunate to receive the guidance of his seniors and peers across functions during the foundational years of his career. He recalls, "I fondly remember S.M. Gadkari, Divisional Finance Controller, who was instrumental in helping me learn the ropes of finance and think beyond design and engineering. He explained to me the importance of large value orders for the Process Heating Division by correlating them to financial concepts like early break-even for the division and its impact on profitability."

The next assignment for Deodatta was to be part of Heating's endeavour to set up the business in Europe. He moved to the UK in 2004 as a programme manager and a representative of Thermax India. While the business was short-lived, this opportunity taught him many valuable lessons on the professional front. He shares, "The biggest takeaway was validating the ground realities of the business in relation to the initial assumptions made when launching a new initiative. I learned how to streamline and prioritise tasks, the importance of doing things right the first time, and meeting the expectations of the world's most demanding countries." This initiative paved the way for Thermax to expand its business in the European market with suitable business models. He returned to India in 2007 and worked with Heating International Sales.

It was in December 2009 that Deodatta decided to depart from Thermax. However, fate had other plans, and he returned to the company on 1<sup>st</sup> June 2010 as EPC Oil & Gas Sales Head in the MPP division. Here, he worked exclusively in the fertiliser and oil & gas sectors.

During his stint with MPP, Deodatta had to prepare a winning bid for setting up a 51 MW bottoming cycle plant to convert an open cycle gas turbine into a combined cycle power plant for a Government of India Navratna company at Agartala, Tripura. During the execution, the project ran into difficulties and was stalled. At this juncture, Deodatta was offered the opportunity to take on the position of a project manager, and he eagerly seized the opportunity. With his simple approach of 'there is a solution to every problem,' he along with the MPP civil design team, came up with simple and practical solutions in merely two months, and the site was up and running at full throttle. Through this project, Deodatta gained a coveted experience as an engineer, where he oversaw every aspect from concept to commissioning.

Deodatta took over the responsibilities as a Corporate Regional Manager – West in December 2016. One of the valuable lessons he learned during this time was from Hemant Mohgaonkar to maximise customer interactions. He narrates, "I made it a habit to meet a customer per day throughout the region without engaging in any transactions. These interesting customer interactions and valuable feedback sought from regional sales and service teams as well as channel partners reinforced the importance of aligning the business with market requirements."

In 2019, Deodatta assumed the role of SBU Head of SPP. This was a time when alternative sources of energy were emerging, and Deodatta was entrusted with the diversification of the business. To expand its footprint in the bio-CNG space, Thermax formed a separate entity, Thermax Bio Energy Solutions Pvt. Ltd. (TBSPL), and Deodatta was appointed as the CEO of this subsidiary company in August 2022.

Talking about Thermax Bio Energy Solutions, Deodatta anticipates it to become a Rs. 1,000 crore business within a year and establish itself as a unicorn in terms of its valuation. He adds, "We have a good headstart compared to our competitors. We are in the right space with the right joint venture partner and the right approach!"

Travelling across geographies and helping important portfolios has given a multi-faceted dimension to Deodatta's personality, grooming him into a successful leader. When asked about his leadership style, he comments, "TBSPL being a new and emerging business, it is important to have passionate and dynamic team members who complement each other and contribute beyond functional boundaries – much like a startup environment."

Looking back on his career trajectory, Deodatta believes in focussing on self-improvement and personal growth to achieve greater success and satisfaction. Thus, he considers his competition to be himself. A message that he would like to pass on to the younger generation is – "Be open and fearless in accepting new challenging roles right from the early stages of your career."

During his free time, Deodatta finds sports most enjoyable, particularly badminton, which he has been playing since 1997. He has also dabbled in tennis and is a die-hard fan of Manchester United. On weekends, he engages in badminton while keeping up with yoga regularly. Being a music aficionado, he loves listening to Indian classical music and playing the guitar. Among his favourite foods are traditional Puneri thalis and Goan rice and fish curry.

Deodatta is married to Nisha Deshpande and has a son, Aniruddha Deshpande, who is an MBBS doctor.

# Round up

## Thermax paves the way for India's high ash coal to chemicals journey

Ministry of Coal, Coal India Limited laud Thermax's high ash coal gasification project

In a significant leap to India's journey towards coal gasification, Thermax, along with its partner, Indian Institute of Technology, Delhi, has developed a technology to convert high ash Indian coal to chemicals. The plant is installed at Thermax's Chichwad factory, Pune, and this project is supported by the Department of Science and Technology, New Delhi.

To illustrate its technical prowess, Thermax organised a visit of senior officials from the Ministry of Coal (MoC) and Coal India Limited (CIL) to its 6 TPD coal to methanol (CTM) demo plant in Pune on 2<sup>nd</sup> December 2022. The dignitaries included Amrit Lal Meena, Secretary, Ministry of Coal; Manoj Kumar, Chairman and MD, Western Coalfields Ltd. (WCL); Sagar Sen, Technical Secretary, Coal India Ltd. (CIL); Manoj Kumar, Chairman and MD, Central Mine Planning & Design Institute Limited (CMPDI), and Chiranjib Patra, GM, CMPDI. They were welcomed



Chairperson Meher Pudumjee felicitates Amrit Lal Meena



Dr. Devkumar Gupta from RTIC shares information about the plant with MoC and CIL dignitaries

by the senior leadership of Thermax - MD and CEO Ashish Bhandari, Chairperson Meher Pudumjee along with Non-Executive Director Pheroz Pudumjee, CTO Dr. Mahesh Murthy, Prof. R. R. Sonde and Prof. S. Roy of IIT-Delhi.

The coal to methanol process, including coal gasification, gas clean up and conversion to chemicals, was demonstrated as an integrated part of the pilot plant. This is also a first-of-a-kind project which can convert 50% ash coal into value-added chemicals.

A detailed presentation on generating chemicals like methanol, ethanol, hydrogen, dimethyl ether (DME), olefins and other value-added chemicals from high ash coal was delivered, along with a discussion on go-to-market strategies. This initiative also aligns with the Prime Minister's vision of the gasification of 100 million tonnes of coal by 2030.

The dignitaries from the coal ministry lauded the demonstration efforts taken by Thermax and IIT-Delhi and discussed the action plan for the commercialisation of the technology.



Secretary of MoC, Amrit Lal Meena, at the demonstration site of methanol production from the plant

Amrit Lal Meena, Secretary, Ministry of Coal said, "The projected plan shared by Thermax to scale up the indigenised coal to chemical technology showcases a high level of confidence in the offering and its likelihood of commercial success. As discussions continue, we at the Ministry of Coal look forward to supporting initiatives like these to acknowledge the efforts of private players in establishing indigenously developed technology that will help secure the country's energy future sustainably."

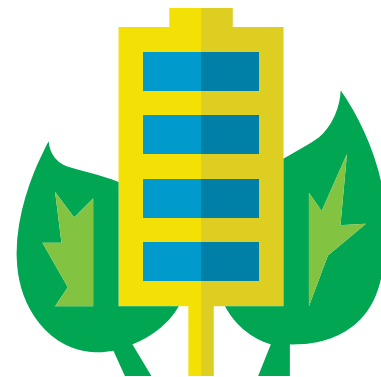


Thermax team shares information about the nature of coal, the quality of methanol produced from the CTM plant

As India strives towards its clean energy vision, Thermax is confident that this indigenously developed high ash coal to chemicals technology will be able to add value to the entire ecosystem.



## P&ES supports green power generation for an integrated steel plant



**T**he Projects and Energy Solutions division successfully commissioned the Rs. 503 crore order received to set up a captive power plant for an integrated steel plant of 3.0 MTPA capacity for Navratna Public Sector Enterprise at Nagarnar, Chattisgarh. This steel plant is spread over 1,800 acres of land.

This plant included three 160 TPH blast furnace gas, coke oven gas, and LDO fired boilers. The boilers are designed to utilise/ burn the CO in blast furnace gas from the steel making process to produce electricity/ power. Other systems include two 40 MW STGs, DM water plant, and cooling towers with a pump house.



*2 x 40 MW multi-fuel fired CPP synchronised for the integrated steel plant*

Two boilers with all auxiliary units of the DM plant, cooler towers, electrical and instrumentation facilities have been commissioned, while the STG 1 synchronisation was completed in the presence of the customer, consultant and State Electricity Board personnel.

Thermax was one of the companies that achieved the contractual milestone of synchronisation by following all safety protocols, contractual obligations, and requirements of the customer, consultant and statutory authorities.

## Cogen plant commissioning helps P&ES bag repeat business

**P**rojects and Energy Solutions successfully commissioned a 9.8 MW captive cogeneration plant for one of India's largest biochemical companies in Dhanbad, Jharkhand, India. The

project was executed on an EPC basis and included a 72 TPH AFBC boiler and other BoP systems.



*The 9.8 MW captive cogeneration plant commissioned at Dhanbad, Jharkhand.*

Thermax's digital solution, Edge Live, is deployed for predictive and proactive insights for the upkeep of the cogeneration plant. The delighted customer has also entrusted the team with Operations and Maintenance of the plant and given a repeat order for a 9 MW cogeneration plant as well.



## TBWES transports modular pressure parts of WHRS boiler for a cement major

TBWES received a lump sum turnkey (LSTK) order for an AQC boiler of 30 TPH and a PH boiler of 19 TPH from one of India's pioneering homegrown cement companies for their expansion project in Umrangso, Assam, catering to a plant capacity of 4,000 TPD.

For the first time ever, we supplied modular pressure parts (coil with header) for the cement waste heat recovery AQC boiler to the Umrangso site by covering a distance of 2,800 km. The pressure parts were fully manufactured and assembled at the Savli factory. In addition to reducing the safety risk for scaffolding and higher elevation work, it also eliminated a large



*The 30 TPH AQC boiler commissioned at customer site*



*The 19 TPH PH boiler commissioned at customer site*

volume of welding at the site, thus saving time.

Despite the site being located in a forest and hilly terrain with space limitations, the team successfully commissioned the AQC and PH boilers with the required safety regulations.

## Together with TBWES Field Engineers

**A**fter almost a time span of three years, TBWES Field Engineers' Meet 2022 and 2023 was held in two batches (21<sup>st</sup> to 23<sup>rd</sup> December and 11<sup>th</sup> to 13<sup>th</sup> January 2023) at Thermax Learning Academy.

The theme of the event was 'Work Together Work Safely'. The meet was inaugurated by Pravin Karve, President - TBWES and P&ES, and Shekar Kashalikar, CEO, TBWES, by lighting the ceremonial lamp.

205 engineers from the Construction Commissioning and Services SBU attended the seminar. With so many new colleagues joining the organisation over the past three years, the interaction was a great opportunity for everyone to get to know one another and share views, suggestions, and queries with the seniors.

Some very interactive technical, team building and soft skill training programmes were conducted,



*TBWES Field Engineers' Meet*

which were well appreciated by the participants. A variety of topics were discussed, including site safety procedures, quality checks at sites, Code of Business Ethics and Conduct (COBEC), Prevention of Sexual Harassment (POSH), Customer, Lead, Own, Create and Collaborate (CLOCC) behaviours, as well as auxiliary boiler equipment such as burners, fans, pumps etc.

The meet concluded with a get-together party.



## GTS Cooling empowers the team for a new era of services

**W**ith a view to enhancing customer experience and empowering the Cooling team for a new era of services, Global Technical Services (GTS) of Absorption Cooling conducted Thermax Service Franchise training sessions in Sri City in the month of December. The three-day training session imparted updates on the latest chillers and new digital initiatives added to the service offerings combined with a practical session. A chiller anatomy room was created to explain the cross-sectional and bisectonal view of all internal parts of the chiller to give the young engineers a clear understanding.

GTS continuously works on its service approach for the next-generation services to create value in the offering. This transformation to a new era of services fostered by people and digital excellence is driven individually with a scheduled roadmap and time plan to achieve service excellence. People-related initiatives include the Service Engineers' Training Programme, Technical Licensing Programme, and Customer Training Programme which have been scheduled for the first quarter of the financial year.



*A practical session on chiller updates*



*Participants of the TCA Engineers' Training Programme*



*Remote chiller management through Thermax Edge Live Operations Centre*

On the digital front, more than 80% of customers have been onboarded to Thermax Edge (the customer portal), and 60+ assets are on Edge Live (the AI and ML-powered online analytical engine). Together, the Cooling Service team gives customers an unparalleled experience of instant support and services.

To keep up with this fast transformation on the people and digital fronts, GTS develops various programmes to provide sustainable value-added services to our esteemed customers.

## Taking Zero We Go to the younger generation



*Students from NGO Sevalaya participate in an art competition on sustainability*

**A**s part of the Zero We Go campaign, representatives from Thermax visited Sevalaya, an NGO in Chennai, to create awareness of climate change and environmental responsibility among the younger generation. Along with imparting knowledge on degradable and non-degradable wastes, the event also included art and quiz competitions on sustainability.



*Team Thermax with the winners of the competitions*

The event was both educational and thought-provoking and thoroughly enjoyed by kids. Winners of the art and quiz competitions were awarded.





R. S. Jha

## One step closer to smart boilers

R. S. Jha, Head-Innovation, Heating division, published another research paper on digital twins of the boiler with the title – 'Stochastic gradient descent algorithm

for the predictive modelling of grate combustion and boiler dynamics' in one of the reputed international journals in the field of applied mathematics, ISA Transaction, featured by the International Society of Automation.

The model is capable of identifying changes in ambient conditions, fuel composition, combustion characteristics, and heat transfer performance due to slagging and fouling in runtime. This is very crucial for biomass

combustion due to the seasonal variation in fuel availability and supply. It can predict combustion, heat transfer, emission, efficiency, pressure, and water level. As the name suggests, the model is based on the multi-objective optimisation approach and adopts stochastic gradient descent algorithm to solve the optimisation problem. This emphasises the need for hybrid modelling by integrating data-driven and physics-based modelling. The model can compute the desired parameter and fine tune the boiler control using model-based control. It is further being modified to devise a new data-driven artificial intelligence based control strategy for the biomass boiler.

To know more about the research paper, [click here.](#)

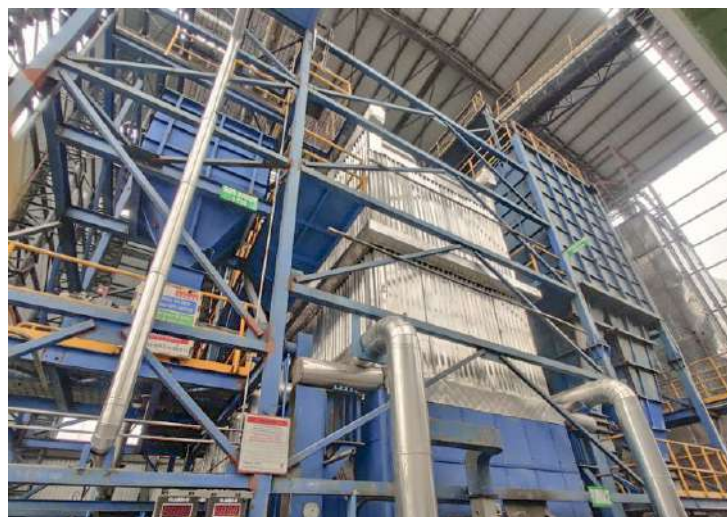
## Thermax Heating partners with a food major for its expansion project

Thermax successfully offered and executed a solution to cater to a food industry major's expansion project in the western part of India. Since its establishment in the early 1990s, the customer has emerged as one of the leading specialty ingredient providers for the food and beverage industry.

For its process expansion, Thermax Heating supplied a 30 TPH solid-fuel-fired, saturated steam boiler. This boiler has been designed to run on coal as the primary fuel and coal and biogas as the secondary fuel, thus offering fuel flexibility to the customer.

This unit was commissioned in December 2022 and has been handed over for continuous operation.

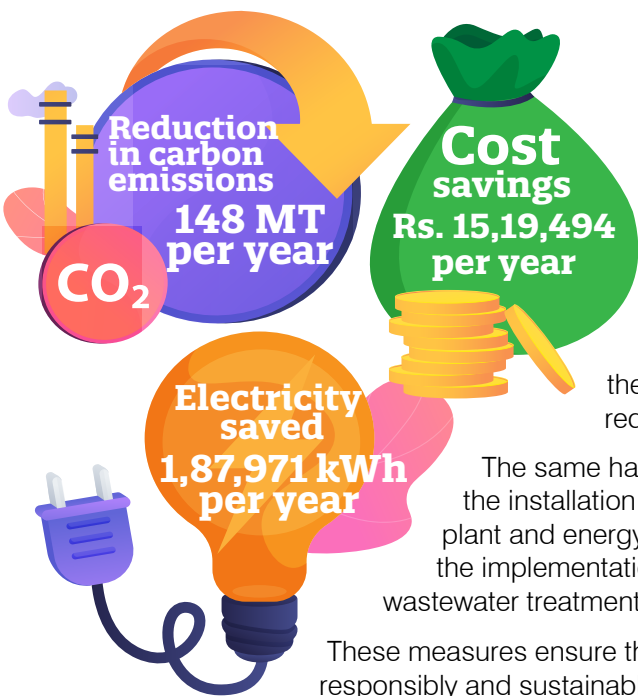
This boiler was supplied along with an electrostatic precipitator and fans.



Site image of the 30 TPH solid-fuel-fired, saturated steam boiler







## A 'green' shift towards sustainable manufacturing

In its commitment to sustainability, Thermax has been undertaking several initiatives at its factory locations. The green manufacturing initiative adopted at the Jhagadia chemical facility aims to reduce the plant's environmental impact by optimising resource usage, reducing waste generation, and improving energy efficiency.

The same has been achieved through the installation of 162 kWp solar power plant and energy-efficient lighting, as well as the implementation of waste-to-energy and wastewater treatment and recycling plants.

These measures ensure that the factory operates responsibly and sustainably while providing customers with the highest quality products.



162 kWp solar PV installation at Jhagadia

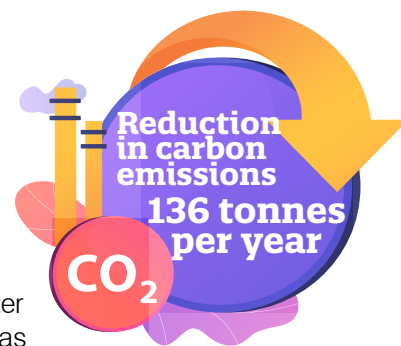
## At Chemical facility, Dahej



Electrical chillers replace VAM chillers at Dahej

also upgraded the chilled water system and replaced the VAM chillers with electrical chillers.

The green initiative has also been extended to the chemical facility in Dahej. A number of measures have been taken to make the facility sustainable, including the use of energy-saving equipment and waste management and recycling practices. Additionally, the facility has also implemented an advanced water management system to ensure optimum water consumption and reduce water wastage. It has



Thermax will continue to explore ways to make the chemical facility even more sustainable as it continues to lead the way in green manufacturing.

## WWS towards emergency care

### CPR training held at the Environment House

Underlining the importance of a life-saving skill, the WWS division held a Cardiopulmonary Resuscitation (CPR) training session for the staff at Environment House, Pune, in the month of December. Over two days, the training programme covered first aid, emergency treatment, and demonstrations of CPR.



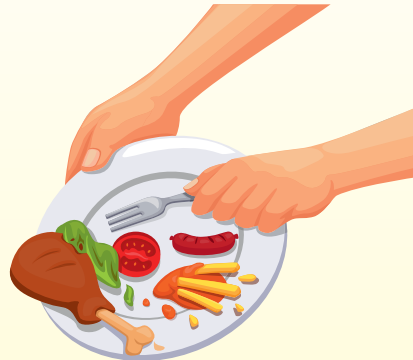
Demonstration of the CPR technique

In a practical exercise, employees took part in situation-based training conducted by Dr. Jayawant Shrikhande (Emergency Medical Services, Lokmanya Hospital), where each employee had to administer CPR to save a life in an accident.

Over 170 employees attended the training, which is planned to be extended to all the staff working on-site.

Vipin Upadhyay, Head, HSE, stated, "Given our current lifestyle, it's important that we

increase physical activity, resort to healthy diets, and also be ready to handle emergencies if necessary. Knowing how to conduct CPR can help one save the lives of those close to them who need an immediate response."



## My Clean Plate: Curbing Food Wastage in the Canteen

Realising the huge amount of food wastage in the canteen, the Employee Relations (ER) Team of the Chemical division, Paudh, undertook an initiative from the month of October 2022 to curb food waste and sensitise its employees on taking food as per one's requirement.

Firstly, a study on food wastage and its causes was undertaken. In order to raise awareness about food waste among employees, counselling and interactive sessions were conducted, as well as sensitisation material and effective posters were put up.

A daily monitoring exercise for food wastage was carried out, and per day food wastage was displayed on the canteen board and at different locations in the factory premises. Thereafter, a dialogue with employees was initiated for suggestions to understand the reasons for waste. Also, before cooking non-veg food, a count of non-vegetarians is considered at the time of morning/evening snacks.

Dilip Kadam, Associate Manager, ER, Paudh, said, "About 250 employees use our canteen facility on working days. Our team takes daily rounds of the canteen and gathers feedback from employees on the quality of food and their concerns. Our collective efforts have borne fruit, and the amount of food wastage has drastically come down since the month of October. I believe in the tagline – Teamwork means less 'me' and more 'we'. Together, we can make a difference. Finally, our aim is to reach zero food waste."

Based on the food analysis, the ER team has also resolved operational, taste, quality and other complaints.

With a good response to the initiative in Paudh, the food waste campaign has been extended to the Chinchwad factory and hopes to reach other Thermax factory locations.

### Avg. of food wastage per month and cost

SEP 2022

**394.8 kg, Rs. 30,369**

OCT 2022

**353.71 kg, Rs. 27,208**

NOV 2022

**328.60 kg,  
Rs. 25,276**

DEC 2022

**248 kg,  
Rs. 19,076**

JAN 2023

**210 kg,  
Rs. 16,153**

Weight of  
a rice plate =  
**650 grams**  
Cost per plate =  
**Rs. 50/-**

**DON'T WASTE FOOD**

## Chemical installs 11 automated dosing and monitoring systems in record time

A chemical major in Gujarat had approached Thermax for the treatment of its 11 cooling towers which had to be completed within a short time duration. Out of the 11 cooling towers on its premises, three are in the 135 MW power plant and eight of which are in the process section. Here, a major competitor was providing chemical treatment in the past. Another challenge in the project was keeping track of parameters and upset in all the cooling towers.

A technical discussion with the customer for monetary benefits using automation in the cooling water treatment programme opened the way. The Thermax team installed automated dosing and monitoring systems for all 11 cooling towers at the site after a live demo of the platform and reports. This helped the customer in 24 x 7 monitoring of the desired water parameters, ensuring the right chemical dosing under variable conditions with regular real-time reports, and preventing operational issues.

Eight out of 11 installations were stationed within the shortest span of 45 days, which was a significant achievement.



# WWS lands a major retrofit order

Under a collaborative initiative with our consulting partner, McKinsey, Thermax WWS division's services team began reaching out to customer sites for any upgrades or retrofit requirements. Thereafter, Thermax bagged an order worth Rs. 8 crores from a pioneer in the oil & gas industry (a government entity) in Pata, Uttar Pradesh. This retrofit order was placed for both Thermax's and competitors' CPU (Condensate Polishing Unit) and DM (Demineralisation Plant).

Retrofitting for the customer was a challenge as the customer was not clear on requirements, and drawings for the competitors' plants were not available. Our engineering and proposal teams performed a detailed technical audit to prepare and define the bill of quantity (BOQ). A thorough study of the site was undertaken to comprehend the customer's requirements.

Our sales team was involved in the order right from the tender preparation stage and was able to set the PQ (pre-qualification) criteria in Thermax's favour. Four of our competitors also bid for the order, but we were able to secure the contract because of our superior technical expertise and in-depth understanding of the client's site.

The scope of supply includes the supply, design, and commissioning of internal connecting piping works, valves, resin traps, and related items. As an existing and satisfied customer, they continue to rely on Thermax's expertise in water and wastewater solutions.



## Executing total water management for an automotive giant



The WWS division received a major order to set up a complex turnkey project of water and wastewater treatment plants at an Indian automotive major's plant in Sonipat, Haryana, for an expansion facility.

The scope of the Rs. 90 crore order includes the installation of sewage, effluent, and water treatment facilities along with a Zero Liquid Discharge (ZLD) plant that commits to a cleaner and more sustainable environment.

The Standard Plant Group and the Industrial Projects Group, with their standard products and EPC (Engineering, Procurement and Construction) offerings, respectively, came together to offer their expertise in end-to-end water management. The sales, proposal, engineering, and execution teams of both PUs (SPG & IPG) collaborated to support the customer with an economical solution.

This order speaks volumes about our organisation's capabilities and is a testament to our competence in EPC, product expertise, and manufacturing quality.

## Behaviour Based Safety: Building a Safety Culture



**W**e are committed to safety and firmly believe that all injuries are preventable. To further this safety initiative, Thermax has embarked on the journey of Behaviour Based Safety (BBS) implementation at all businesses across India. BBS Champions have been identified in every business to lead this initiative, who further train and groom

their colleagues on this subject, equipping them with the required skills for stewardship.

The BBS training is designed to influence employee actions toward safer outcomes, ideally by preventing an accident or injury from occurring. It encourages everyone to take care of each other by identifying at-risk behaviours and doing spot correction wherever

possible. This can help to change unsafe behaviours in the workplace and will be instrumental in improving the company's overall safety culture.

The programme is led by senior management with active involvement and reviews from business heads and site in-charges / station / factory managers.

With some positive success stories being reported by participants, the BBS programme is certainly gaining momentum.



*BBS training in progress at Jhagadia*



*Consultants impart the BBS training to workers at the Chinchwad factory*

**I**n the beginning of November, Cooling's south regional team travelled to Kodaikanal for the annual conference and outbound trip. Around 120 Thermax employees took part in the event, where they underwent team-building exercises to enhance the collaborative spirit and discussed futuristic ideas to bring Thermax to the next level.

## FUN @ Outbounds!

The two-day event also presented an opportunity to award and appreciate the outstanding work of individuals and cherish the time spent together with the team.

On the other hand, the Heating SBU visited Grand Victoria, The Fern, Panchgani, for their outbound trip in

November. The theme of the event was 'Diversity,' which celebrated people of diverse cultures, genders, outlooks, and talents!

The cultural programme included skits, dance performances, and live songs that exemplified the theme.



*Playtime for the Cooling team*



*A cultural extravaganza on 'Diversity'*



# CBG promotes sustainability through innovative technologies

This quarter, the Channel Business Group (CBG) achieved another milestone by introducing a range of new products in the market, along with its divisions, that feature technologies aimed to reduce costs, enhance productivity, and support end-users in their pursuit of clean air, clean energy, and clean water. The team has started seeing the fruits of these efforts. With orders for two electric boilers from Nepal and Bhutan, multiple orders for Rice Max and TactRX from the East and North, and the first Cube order in the South, the adoption of these products has been encouraging. The steady acceptance of these solutions demonstrates the industry's commitment to innovation and staying ahead of the curve.

The integrated marketing approach also supported the acceptance and promotion of new products through the tapping of relevant exhibitions for the rice industry and customer meets to position the heating and steam solutions. The expos in Sambalpur, Burdwan and Gondia, as well as the customer meet with the Kerala

plywood cluster, gave a good pipeline of leads for these offerings and proved as a fruitful medium to reach out to our audience with our range of energy efficient solutions.

On the digital front, CBG's campaign #AcceleratingSustainabilityTogether with 1,800+ mentions was a resounding success and a powerful source of industry cross-sell. By tapping a number of segments, the team could make sure that the entire range that the Channel Business Group of Thermax has to offer is communicated seamlessly to all our viewers.

With so many achievements in its basket, CBG is all geared up to cross the finish line and is confident of welcoming the new financial year with another feather in our cap and another record broken!



Customer interactions at the exhibition in Gondia

## When families get together! Thermax Day celebrations

It was a day to invite family members to the place of work as Chinchwad factory celebrated Thermax Day - Annual Family Get together for factory workers and their families on 25<sup>th</sup> December. The event was marked by a factory visit, fun games, selfie corners and refreshments.

That was not all! A musical night awaited the visitors. Saregama Little Champ fame Rohit Raut, along with his group, won the hearts of the audience with soulful and melodious songs. This was followed by a sumptuous dinner.



Rohit Raut enthral the gathering



Kids enjoy a game of snakes and ladder at the Chinchwad factory

This was the first time that the factory hosted a family get-together for workers and their families as per the recent long term settlement signed in June 2022. The same was appreciated by all the Union Committee and workers' family members.

Another Family Day celebration took place recently at Thermax's manufacturing plant in Sri City, Andhra Pradesh with a view to introducing family members, especially the younger generation, to our sustainable technologies and practices. It was also a time to catch up with friends and families, bond and spread smiles.

The activity aimed to ignite in kids a sense of social and environmental responsibility. The visiting families were gifted saplings as a token of gratitude.



Family in a frame at Sri City



Families are given a factory tour



## Bidding adieu with a treasure trove of learnings and memories

Learnings and memories are what remain when we look back on our stint at the workplace. This is particularly true for Thermaxians, who have spent over 15 years in the organisation. We bring forth five such talented members from team EXIM due to retire in the next couple of years. They reflect on how the team and the company have changed over the years and what Thermax means to them.

Loyalty, honesty, and an open culture at Thermax were the themes that arose from our talks with all of them. One common thread that runs through these team members' narratives is their expertise in their respective fields. Their commitment and hard work have made them the finest at what they do, and they have been able to excel and make significant contributions to the organisation.

What makes their stories even more inspiring is the fact that many of them come from humble beginnings. They have used their talent, hard work, and dedication to achieve success and create a meaningful impact at Thermax.

As we bid farewell to these talented team members, their stories serve as a reminder of the role that an organisation can play in shaping an individual's professional journey. The culture at Thermax has created a treasure trove of memories for these team members that will stay with them long after they leave the organisation.



### Chandrika Pillutla

Chandrika Pillutla, Group Head - EXIM, WWS, began working with Thermax in July 2009. Her fifth firm, Thermax, was a result of her interest in international commerce

and trade. With dual master's degrees - M. Phil – International Business and M. Commerce, she joined Thermax in the EXIM division to manage the incentives portfolio in Corporate EXIM. She vividly recalls one of her favourite experiences, when she had to contact Directorate General of Foreign Trade

(DGFT) Delhi during her early days for a modification of the brand rate for boilers, which directly impacted our drawback collection. She was able to persuade the government agency to alter the all industry brand rate, which affected not only Thermax items but all products in that category nationwide.

"The starting point of all achievement is desire," a quote by Napoleon Hill, is what egged her on while she handled multiple roles across EXIM, moving from commercial heating to handling logistics for all divisions, then handling logistics specifically



for Enviro and the WWS divisions. When the EXIM team got decentralised in 2015, she moved on to spearhead trade transactions for the WWS division.

She saw herself as a perfectionist, constantly focussed on the project or task at hand and reaching out to everyone in the division for assistance in completing it. She is upbeat and outgoing, and quickly makes friends with everyone. She meets with the division or functional head on a regular basis to brainstorm and learn from their experiences, which she thinks are more important aspects than any formal training she has ever had.

Since 2009 until now, she hasn't seen much change at Thermax except for the fact that everything has

become more systematic. Not only did she enjoy her work, but she even played wicketkeeper for the Thermax Women's Cricket Team for three years!

While she awaits her retirement date in November 2024, she is still very charged up by the new challenges and complications she encounters when executing any export shipment. Though she regrets it, one point that she was not able to tackle was addressing FOC shipments, which occur from time to time and do affect the overall cost of the project. She still has a yearning to do a doctorate in her field so that she is known as Dr. Chandrika instead, and we wish her all the best for this new upcoming endeavour.



## Anil Kshirsagar

Anil Kshirsagar, Assistant Manager, TBWES, who is due to retire in February 2024, says never to compromise on

professional ethics for personal gain, and he has been living by this principle all through his career. It was after clearing the interview in February 2002 that he got into Corporate EXIM, and later, when decentralisation occurred, he moved on to handle shipments for B&H, currently TBWES. He has been in multiple fields – software and hardware and has even served as a government employee under the Ministry of Agriculture, but Thermax was his first engineering organisation.

Right from the beginning, he enjoyed the freedom to complete the task as he best understood it. He had lots of opportunities to learn and grow during his tenure at Thermax. Right from the purchase of the plot for the SEZ facility to current times, he has seen the Mudra SEZ facility evolve and has handled complete documentation, compliance, the movement of goods, and payment reconciliation with banks and customers for many major projects. This was the first opportunity he had to learn about operations from SEZ, and he made the best use of it and learned a lot. As he evolved in his role,

traversing the day-to-day challenges, soon he was tasked with executing one of TBWES's major projects, Dangote. He and his team members managed the project's end-to-end paperwork, inbound and outbound movement, and payment reconciliation smoothly, and he boasts of executing no FOC shipments for the project. FOC shipments are a major loss for the organisation because we have to ship goods free of charge to the customer due to some shortage or malfunction in our equipment. Curtailing the same for such a major project is indeed quite an achievement!

A mantra he believes in is – 'Impart knowledge, enjoy every moment of life and strive for excellence at all times.'

Teaching is another passion of his, which has earned him the nickname 'Master' among his colleagues. Before his tenure, he had even taken a break from working for two years to teach along with his wife, who still continues on that path. Like his colleagues, he too has enjoyed knowledge-sharing sessions, trainings for communication, FOREX, SEZ, etc.



## Murlidharan Iyer

Murlidharan Iyer, Team Lead, Export Commercial, P&ES, also fondly called as 'Anna' or 'Murli,' is well known throughout the division for his blunt and direct responses. He may be blunt, but this attitude of his has often helped the company as well.

He joined in December 1994 in the Heat Recovery Division (HRD) in the commercial department. Throughout his tenure, he has handled multiple roles across all the divisions and finally settled in Power (now P&ES) in 2015. Coming from a background as a steno-typist, this was a completely new area for him, but that didn't hold him back from wanting to learn and contribute to the organisation. He has been involved in export commercial operations for both domestic and international movements since the beginning and has become proficient in the field. He has always preferred to handle end-to-end commercial transactions and ensure compliance related to the project, which has provided him with

a lot of knowledge and experience. When faced with a task or goal, he naturally calculates backward to determine the starting point and plan accordingly, which allows him to navigate the complexities of the task at hand.

He too appreciates the inclusive and supportive work environment at Thermax and is grateful for the strong foundation and accomplishments it has provided him. Throughout his tenure, he eagerly participated in numerous training opportunities to develop his skills in international trade. He is especially thankful to the P&ES department for affording him various chances to interact with customers abroad, allowing him to explore multiple countries in Asia and Africa.

As he awaits his retirement in November 2023, he hopes for more inter-departmental collaboration. He observes that while the culture at Thermax used to be more open, working in silos has led to a sense of isolation, and he wishes the team to sit centrally, which would foster the sharing of experiences and knowledge that would benefit all.



## Shaji George

When it comes about documentation and export shipments, one cannot miss out on Shaji George, Team Lead, TBWES. He joined EXIM to support software development at Thermax in February 1993

after serving as a management trainee at Babcock and Wilcox (now TBWES). He gradually became involved in export duties, and he now has extensive experience to share in both import and export. Shaji's tenure at TBWES shows that only by working hard and treating every opportunity positively can one advance in life. He embraced the chance to do export duties even though it wasn't part of his original plan. From his initial days, he supported transactions in the Energy Systems Division (ESD) and later moved on to handle shipments for WWS, Enviro, and finally TBWES. He later moved on to handle everything, from compliance issues to coordination with bankers and customers for payment reconciliations, and has seen the EXIM team switch from decentralised to centralised mode multiple times during his tenure. He recollects that in those earlier days, one had the freedom to complete the task

before informing one's senior with regards to any issue that cropped up, but later, the processes changed to following hierarchy and approvals as they became more systematic.

Like others, he is looking forward to superannuating from TBWES in July 2024. He recalls that the best part of his tenure was opting for multiple training sessions whenever he came across them but later decided to stop and let others learn and grow as well. He too enjoyed the extremely open and supportive working culture at Thermax, which is quite beneficial for everyone's growth.

Being on board as a support for software development in EXIM, he remembers the solution 'Magic' being brought in, which worked fairly well with export and import transactions and documentation. However, the system was scrapped when Oracle for Thermax and BAAN for TBWES were brought in. Now, other than export invoice generation, there isn't much that can be done in either of those systems related to EXIM transactions, and he feels the need for a single solution.

He states, "In order to grow, one should be hardworking, seize opportunities and move on."





## Ravi Kshatriya

While most of the above have exclusively or mostly handled the export movement of goods, when it comes to import shipments, Ravi Kshatriya is the one to approach. He has frequently assisted his team

members in emerging successfully from difficult import-related situations, thanks to his upbeat disposition and wealth of knowledge.

Ravi Kshatriya, one of the longest-serving team members in EXIM, joined Thermax way back in January 1987. He was onboarded due to his skill at speed typing, and he began his journey in Materials, Process Heat Division (PHD). In those days, he had the task of updating the register by hand with PO details. His dedication to his job landed him a role in July 1988. He has literally seen the transformation in the various divisions and has seen Thermax grow over the years. Even in those years, he did enjoy an open and free culture with the freedom to give suggestions when requested.

He later transferred from Materials to the Centralised Import Cell (CIC), and after the team merged with the International Division, he continued to handle imports. As of today, he has gained immense knowledge in all areas related to imports, including shipment clearance, liaising with DGFT for license and drawback issuances, and insurance-related matters for all divisions except Chemical and TBWES.

He also pursued his Diploma in International Business while he worked at Thermax. The numerous learning opportunities, training options for anything related to work, and periodic recognition were some of the major reasons he remained loyal to Thermax until his retirement date of September 2025. Not only did he enjoy the working culture at Thermax, but due to his passion for singing, he is one of the

founding members of 'Swar-Sandhya,' which used to perform at various events and has organised many of its concerts as well. He has many memories of performing at events along with many of Thermax's leadership members, of which he shared one with us where he invited Meher Pudumjee to sing along with the group, and Meher thoroughly enjoyed herself at the event. Groups and events such as 'Swar Sandhya' have helped him stay in touch with the members of the management as well as other divisions, with whom he may have not interacted on a day-to-day basis. "We hardly ever find anyone sticking with one organisation for such a long period of time in recent times," he says and believes that the influx of young minds into the company will undoubtedly benefit the organisation's growth.

Talking about his deep connection and commitment to the organisation, he says, "As far my testimony goes about my loyalty towards my organisation, I have strongly believed and followed the Bible verse from Colossians 3:23 - "Whatever you do, do it as if it is done for the Lord, and not for men - knowing that your real reward, will come from the Lord since you are actually employed by your Lord Jesus Christ and not by your earthly Master."

EXIM has never encountered any trade-related problems, thanks to the long-serving and knowledgeable colleagues who provide unwavering support. All of them have been approached a number of times by their teammates regarding any situations they may have faced during their trade transactions, and they have always been ready to help or provide support in whatever way they can. Ex-Thermax employees, as well as current team members, continue to seek their advice and support. Though we will miss them all as they retire one after the other over the next few years, their guidance and support will always be there for anyone who approaches them.



Compiled by **Rahul Hoare** and **Kanika Agarwal**, EXIM

## TÜRKÇİMENTO Technical Seminar & Exhibition 2022

**Cementing sustainable partnerships for a cleaner tomorrow**

The Air Pollution Control business team at Thermax recently participated in the 16<sup>th</sup> International TÜRKÇİMENTO Technical Seminar & Exhibition 2022 that took place in Turkey from 24<sup>th</sup> to 28<sup>th</sup> October 2022.

The Thermax booth displayed a wide range of clean air and product recovery solutions for the cement industry. Each day was marked with visits from fraternities in the cement industry. As part of the exhibition, Thermax also held a training session on ESP for select customers.

As the Turkish cement industry is very dynamic, Thermax's five decades of experience in this segment helped many visitors choose the right approach and innovative technologies.

Thermax is looking forward to such engaging opportunities in the future to facilitate the cement industry in its target towards net-zero emissions.



*Participants in the training session on ESP*



*Team  
Thermax with  
its business  
partners at  
the exhibition  
in Turkey*

## Palmex Indonesia 2022

The Air Pollution Control business of Thermax took part in Palmex Indonesia 2022, the prestigious International Palm Oil Congress and Exhibition in Asia, drawing participation from over 400 exhibitors.

At the event, Thermax displayed its new industry advances, current technologies, equipment and products. Our team had the opportunity to interact with potential customers, industry stalwarts and key Government officials.



*The Thermax team at the expo*

Visitors expressed a keen interest in understanding how our air pollution control solutions can address the emission needs of the palm industry.

## Dahej Industrial Expo 2022

Thermax exhibited its offerings in the areas of clean air, clean energy and clean water at the Dahej Industrial Expo 2022 held in Gujarat from 15<sup>th</sup> to 17<sup>th</sup> November. Along with these, our digital platform, Edge Live, was showcased and gained good traction in terms of visibility.



*The Thermax team*

The Gujarat industrial cluster includes over 5,000 small, medium and large scale industrial companies,

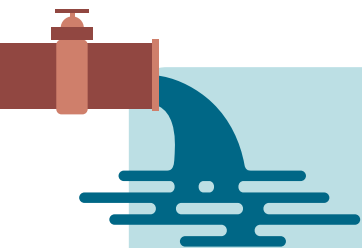
from chemicals & fertilisers, pharmaceuticals, biotechnology, textiles, machine tools, glass, engineering, and process equipment. Dahej being a major industrial belt for chemicals, glass and other segments, the exhibition aimed to attract customers from the industrial sector to promote our heating, cooling, water, chemical and air pollution control solutions.

The exhibition was well received by the visitors and was a good opportunity to connect with existing customers in the region.



*Customer interactions during the expo*





## Thermax exhibits its water and wastewater treatment solutions

### AIA International Conference

Thermax's WWS division collaborated with American Water Works Association (AWWA) India and the Ministry of Housing and Urban Affairs to co-sponsor the international conference and exhibition that took place in Varanasi on 5<sup>th</sup> and 6<sup>th</sup> December 2022.

During the conference, we presented and shared our insights on opportunities and methods for recycling and reusing treated wastewater, advances in water and

wastewater treatment, and IoT-based monitoring and surveillance of water quality.

Arshad Ali, Business Manager for Thermax, spoke about the numerous projects Thermax has undertaken to assist businesses in conserving water and lowering their carbon footprints.

Delegates from the Indian Government, as well as professionals and industrialists from around the world, gathered to discuss water-related issues.



*Business Manager Arshad Ali gives a presentation on Thermax's offerings for water and wastewater management*



*Attendees at the conference*

## IPA Conference & Exhibition

Thermax's WWS division recently participated in the 28<sup>th</sup> Indian Plumbing Association Conference & Exhibition held in Pune from 1<sup>st</sup> to 3<sup>rd</sup> December 2022.

Thermax presented a variety of water and wastewater treatment offerings for new urban needs throughout

the exhibition, enabling attendees to support the circular economy's principles of reducing, reusing, and recycling.



*A Thermax representative explains the atom model to visitors*

Many professionals from the building and plumbing industry attended the event, including MEP consultants, real estate developers, architects, and interior designers.

## Gasification India 2022

Thermax showcased its indigenous technology to convert high-ash Indian coal to chemicals at the recent Gasification India 2022 event held in New Delhi. This technology has been developed with its partner Indian Institute of Technology, Delhi.

In the presentation made before the august gathering of gasification experts, Thermax's Projects and Energy Solutions (EPC vertical) and RTIC (Research and Development) teams explained the successful running of the pilot plant in Pune and readiness for the commercial launch.

The technology was well appreciated by industry experts.



*Explaining the coal gasification technology to visitors*

# An L&D programme leveraged to the customer's advantage

***“Tell me and I forget. Teach me and I remember. Involve me and I learn.” - Benjamin Franklin***

As part of phase 2 of the L&D programme, Thermax conducted an in-person training for PepsiCo employees recently in Egypt. The F&B major, a loyal customer of Thermax, approached us to train their employees based on our technical expertise and decades of experience in the energy and environment space.

The customer's journey into learning and development started in 2020. This was the first time Thermax was able to turn a training programme into a business proposition and position itself as a reliable knowledge and training partner in the industry. This training programme conducted by WWS has been a great opportunity to educate people and spread awareness about water conservation and water and wastewater treatment. During the training sessions, participants learned about operating and monitoring water and wastewater treatment and recycling plants, including WTPs, STPs, and ETPs.

Basic to advanced learning sessions were conducted for operators and supervisors at all customer sites based in India. The customer then requested that we also train their staff outside of India.



*Thermax representatives with the customer team in Egypt*

Presentations, online training, hands-on practical sessions, and even assessments based on training experiences were conducted to gauge the learning of individuals. As determined by the evaluation, various levels

of sessions were organised to educate the populace.

Recently, the customer requested in-person training for professionals from Egypt, Saudi Arabia, and Pakistan. Representatives

from the WWS division - Nandan Prabhune, Group Head - Innovation, and Santoshkumar Karande, Group Head - Urban, and Rukhsana Shaikh, HR - L&D visited the customer's site in Egypt for level 2 training. This five-day classroom training programme, coupled with some live sessions, was a great

success, allowing participants to enhance their water and wastewater treatment knowledge and gain a better understanding of the technology.

Overall, it was a rewarding experience for all participants, with a healthy exchange of ideas and a lot of learning to carry back home!

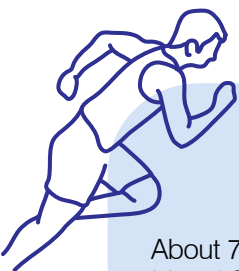
The Thermax team would like to thank the entire PepsiCo team for this opportunity.

With the resounding success of this programme, Thermax looks forward to extending its learning and development module to interested customers across its value chain.



*Demonstrating a water treatment process during the training*





## Thermaxians test their limits at Devils Circuit

About 75 Thermaxians enthusiastically participated in the unique obstacle racing series, Maruti Suzuki Devils Circuit held in Pune on 15<sup>th</sup> January. This was their 10<sup>th</sup> year anniversary. Started in 2011 as India's first obstacle racing series, Maruti Suzuki Devils Circuit is now a pan-India phenomenon with a community of over 2 million devil players, as fans and participants are called.

The event comprised a 5 km track interspersed with 15 obstacles. Alongside this, the event hosted a 3,000 sq. metres of Expo Zone playing host to beach volleyball and football, zumba, live performances, in-house DJ, flash mobs, tug-of-war, Maruti Suzuki Swift Fun Zone and a variety of other entertainment activities. It was a great opportunity for colleagues to bond over this fun-filled activity.

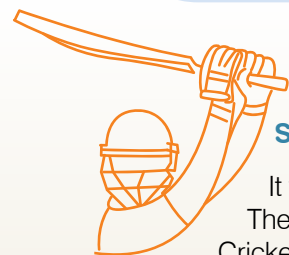
Kudos to all participants!



At the obstacle race



Thermaxians cheer after completing the Devils Circuit series



## A battle of runs!

### Senior Management Cricket Tournament

It was time to show one's sporty side! Thermax conducted the Senior Management Cricket Tournament for the first time since the Covid spell at the Tata Motors ground in Pimpri, Pune on 17<sup>th</sup> and 18<sup>th</sup> December. EC member B C Mahesh, Executive Vice President and Head - Industrial Product Business was the Chief Guest for the day. The highly anticipated tournament saw six enthusiastic teams



The winning team, Heating Warriors



The first runner-up team, TBWES Falcons

from different businesses battling it out for the coveted title.

With a healthy spirit of competition, the Heating Warriors emerged as champions, while

the TBWES Falcons finished as runners-up. The overall arrangements were made by the cricket committee.

Congratulations to the winning and participating teams!

## Smashing the 'shuttle'

### Badminton Tournament

Early January called in for players from Enviro and CBG divisions to show their play at the Badminton Tournament held at the Impetus Sporting Club, Wakad. About 30 teams with two players each participated in the tournament that was inaugurated by BC Mahesh, Executive Vice President and Head - Industrial Product Business.



Saturday, 21<sup>st</sup> January witnessed the knock-out matches between participants followed by quarter, semi finals and finals on 22<sup>nd</sup> January.

Naveen Sadhu, PU Head – Projects, Enviro and Jay Ghule, OEG – Enviro clinched the winner's spot. The first runners up were Sayali Mestry, HR Business Partner – Enviro and Rahul Golande, BPMP – Enviro. The second runner up position was bagged by Nikhil Ingle and Avinash Mali from Proposals, Enviro.

The event was organised by a committee from the Enviro division.



(From left) Second runners up - Avinash Mali and Nikhil Ingle, winners- Jay Ghule and Naveen Sadhu and first runners up - Sayali Mestry and Rahul Golande

# Diversity and Inclusion



## Breaking Stereotypes, Paving Paths

*“To change ourselves effectively, we first had to change our perceptions.”*  
— Stephen R. Covey

A shift in perspective can open gateways of opportunities as it did for Seema Jadhav, a chemist at the Quality Assurance (QA) department of the Paudh chemical factory. Recruited on 6<sup>th</sup> December 2022, Seema is the first woman employee at the factory. Company vacancies were referred to the gram panchayat with a preference for women employees.

Jitendra Deshpande, Factory Manager & Head, Production, informed, “Our focus was the acquisition of local talent, including the recruitment of women employees. This time we had a requirement in the QA department for a general shift,

and so we preferred a woman candidate. We received about 3-4 applications, out of which Seema was selected.”

Dilip Kadam, Associate Manager - ER, Paudh, seconded the view saying, “We always lacked when it came to women employee engagement in the SoCo parameters. Also, with the hiring of a woman employee, Thermax has sent a strong message that we stand by the local community. The feedback has been positive, and the initiative is now being endorsed by other gram panchayats as well.”

A conscious effort to recruit women employees in diverse functions has been undertaken by the HRs. Neelam Sharma, HR

Business Partner, Chemical, said, “We have been trying to recruit female candidates in the Paudh factory for a long time but did not find a suitable profile. So, when the requirement from the QA department came in, it was the right opportunity to hire a woman candidate. It is reassuring to know that everyone at the factory welcomed the move with open arms. It has been a team effort and a smooth onboarding process with everyone’s help. Once Seema was onboarded, along with the safety sessions, we also conducted the POSH session for awareness.”

Seema Jadhav, MSc. in Organic Chemistry, comes from Ambivali, Mazgaon. Due to the Covid spell, Seema was unable to find a job for two years after graduation.



After a small stint in a beverage company, she learned about the opening at Thermax. "My brother encouraged me to apply for the position in the QA department. My parents have been supportive too. Though I knew I would be the only woman working here, it did not deter my spirits; I wanted to try for it, and it was certainly a very good opportunity. Finally, I was selected after the interview round," Seema shared.

She remembers an instance when she had first visited the factory to enquire about her joining, and the security guard asked her to cross-check if she was at the right place as no women worked here.

Though Seema was nervous at the beginning, her cooperative nature and willingness to learn made her adapt easily to the company environment. It was an altogether new experience working in the lab with instruments. Seema currently oversees the sampling and analysis of final products before



*Seema Jadhav*

dispatch. "I learned something new from everyone every day. I underwent safety training and was trained on chemical handling and material safety data sheets. That safety is given the highest priority at Thermax is commendable," she added.

Giving feedback on Seema's work, Sangram Jagtap, Assistant Manager, QA, Chemical, commented, "Since she came from a chemical background and had brief industrial experience, she picked up the task soon. She has been very cooperative and a good learner."

Talking about the initiative,

Mukund Dasare, QA In-charge, Chemical, said, "We implemented this initiative on a pilot basis and are very happy with the outcome. Along with empowering the local community, it has helped the company to introduce gender diversity into our workforce."

Three months into the job, Seema wants to do her best and set an example for other girls like her. She commented, "Any prejudices should not stop one from pursuing his/her work. Everything starts with oneself. It's important to realise that when we grow, the organisation will also grow!"

# Limelight



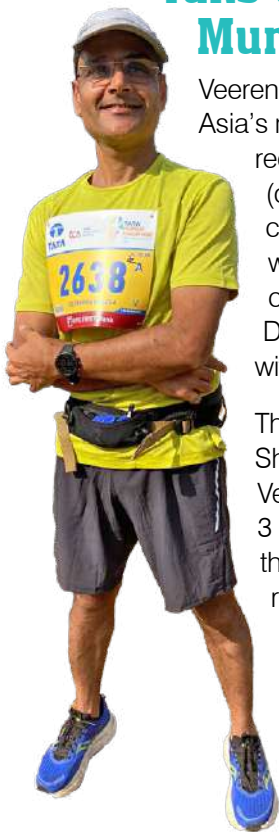
## Lokanathan A. S. bags 'Star Performer' award at the Indian Crossword League

Lokanathan A. S. from TBWES participated in the 10<sup>th</sup> edition of The Indian Crossword League (IXL) organised by Extra-C, a not-for-profit organisation providing a platform for extra-curricular pursuits with a focus on promoting crosswords as a learning tool for all age groups. This contest saw some renowned names from the world of crosswords - Eric Agard, an editor with USA Today, and Neville Fogarty, a crossword setter with The New Yorker.

Loks, as he is known among his friends, qualified as a finalist in the overall leader board of IXL 2022 after 10 rounds of online contests that were held every Sunday starting 18<sup>th</sup> September 2022. He received the 'Star Performer' award at the finals held in Bangalore on 25<sup>th</sup> December 2022. The championship trophy was won by Ramki Krishnan from Chennai.

Loks, who has been dabbling with crosswords since his university days in BITS Pilani, made his debut as a crossword setter in 2015 in the book titled Cryptic Crossroads authored by Sowmya Ramkumar, who is one of the regular crossword setters for The Hindu. Loks had also won the Times Of India Sunday Cryptic Crossword Contest, 'Circle of Smarts' in June 2021.

## Veerendra Rasela runs the full Tata Mumbai Marathon



Veerendra Rasela from TBWES - EXIM participated in Asia's most prestigious Tata Mumbai Marathon (TMM) recently and ranked 1,032 out of 7,203 participants (of full marathon) and 173 in the 45 to 50 age group category. The marathon witnessed a healthy turnout, with 55,000 people participating in six different race categories viz. Marathon, Half Marathon, Open 10K, Dream Run, Senior Citizens' Run and Champions with Disability.

The marathon was flagged off from Chhatrapati Shivaji Maharaj Terminus and ended at Azad Maidan. Veerendra ran a full marathon of 42.195 km in 3 hrs 58 min. To achieve the sub 4 target (complete the race within four hours), he followed a 16-week rigorous training schedule.

"Mumbaikars are very supportive when it comes to marathons. A number of locals are out providing hydration, fruits and lots of cheers. The atmosphere in the second half of the race was electric with music and dances starting from Pedder Road and all the way to Marine Drive," he informed.



## Samina Khalid wins the Corporate Communication Leaders' Award



Samina Khalid, Head, Corporate Communications, received the 'Top Most Corporate Communication Leaders' Award' at the 15<sup>th</sup> edition of Indy's Awards, organised by Stars of the Industry Group at Taj Lands End, Mumbai on 22<sup>nd</sup> November 2022.

The awards acknowledged excellence in mass communication, advertising, public relations and branding and also aimed at recognising and encouraging talent that has made an outstanding contribution to the industry. The awards were endorsed by the World Federation of Marketing Professionals.





## Emotional AI in the Workplace

AI has been the buzzword for years now. Anywhere you turn, you're bound to encounter debates, speculations and conversations on the potentials and dangers of AI. While we hear the term AI everywhere and every day, have you ever heard of EAI? Let's delve deeper and explore!

EAI stands for Emotional Artificial Intelligence – the latest beneficiary of the AI trend. This new area in computing combines artificial intelligence with biometrics, machine learning and big data to give us something more than AI.

EAI, to put it in simple terms, recognises and interprets human emotions. It enables devices to study a person's emotional state by analysing their body language, facial expressions, eyes, tone of voice, skin conductance level,

respiration, heart rate, as well as machine learning of images and words. Emotional AI uses multiple mediums to understand everything mentioned above. Emotional AI products consist of wearable bio-sensors and actuators that measure respiration, heart rate, and skin conductance levels; speech processors that analyse voice tone; video recognition software that tracks facial micro-expressions and even headsets that map brain activity.

The origins of this technology can be traced back to Rosalind Picard's work in affective computing. She coined the term 'affective computing' to describe computational technologies that can be utilised to predict and respond to a person's psycho-physical state. Though EAI is still considered to be in its nascent stage, it is already a

lucrative USD 20 billion business with profits predicted to double by 2024. Businesses are looking to invest in smart systems with human-like emotions to understand people and their needs.

Few of your regularly used applications and systems use EAI without you realising it. The biggest music streaming platform, Spotify, uses its voice assistant feature to determine the listener's mood to make accurate suggestions. Similarly, a lot of automobile biosensors can understand a driver's state by the speed – for example, the volume of music tends to lower automatically if the driver hits the brakes abruptly. Even when you're writing an email, Grammarly denotes how your email sounds by showing you a symbol at the bottom. If you click on the symbol, it interprets three dominating tones

in your writing. All these are nothing but just a few ways EAI tries to understand your mood, state of mind and emotional state.

That's not all, even your accessories have become smart. Amazon's Halo bracelet promotes mood awareness. We've also got smart toys for kids. Moxie, a smart toy, introduced kids to play-based learning exercises to get an understanding of the child's emotional, social and cognitive development.

Although the list majorly consists of examples of EAI surrounding you in your personal life, EAI is growing at the fastest pace in the workspace. Age-old companies such as IBM, Unilever and Softbank use emotional analysis for their recruitment process. Organisations are relying on effective tools to peep into one's psyche for various reasons. A Japanese company called 'Empath and Boston' developed a voice recognition software that helps them understand the client on the line as well as assess the employees' well-being. This software helps them serve customers better and look after their employees.

Likewise, a US company 'Spot' markets an AI chatbot that helps keep the workplace safer by identifying patterns in the office environment. Additionally, the security company Vibraimage sells 'suspect AI' camera recognition systems to global sporting events that allegedly 'predict' criminal intention by monitoring and analysing a person's gait, head

and eye movements, as well as facial expressions. Because of their high level of reliability, Vibraimage's products have been used in Japanese nuclear power plants and retail stores as well as Russian airports.

And it's no surprise that EAI has made it to HR. EAI is now involved in everything – from internal communication and employee development to onboarding the ideal candidate! These systems for HR promise to measure an employee's performance, allowing supervisors to encourage goal achievement, and maximum productivity while giving regular feedback and coaching to subordinates. Naturally, this aims to create a harmonious culture where the emotional and mental well-being of an individual is nurtured. This leads to a better outcome for the business as a whole.

With these technologies making rounds around the world, it is important to understand the cultural, national and subjective factors that influence people's perception of technology in the workplace. A journal by Peter Mantello, Manh-Tung Ho, Minh-Hoang Nguyen and Quan-Hoang Vuong named 'AI & Society' digs deep to understand how people respond to EAI in different settings.

1,015 job-seekers from 48 countries and 8 regions were interviewed with five major questions. The answers were a combination of descriptive answers and Bayesian multilevel analysis. The five questions used for the research were:

**RQ1:** What are the general concerns of future job-seekers regarding EAI as managers vs. AI as their replacement?

**RQ2:** What is the level of awareness of EAI among future job-seekers?

**RQ3:** How do socio-demographic and cross-cultural factors influence respondents' perceptions toward automated management systems?

**RQ4:** How do socio-demographic and cross-cultural factors influence self-rated knowledge regarding AI?

**RQ5:** How does self-rated familiarity with AI influence respondents' attitudes toward automated management?

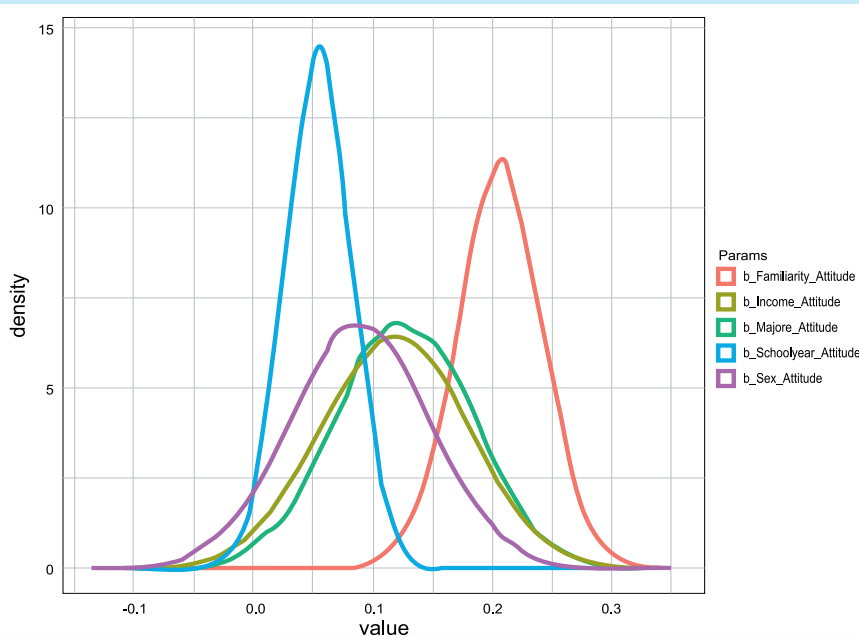
RQ1 and RQ2 were answered with descriptive statistics, the rest used Bayesian statistical analysis.

The objective of the survey was to better understand how socio-demographic, cultural, gender and economic factors impact perceptions and attitudes toward three aspects of AI-enabled human resources (HR) management and how the shift in attitude was perceived by EAI systems, which further impacted the analysis.

### The results:

For RQ1, upon answering general concerns job-seekers had regarding EAI, the participants were presented with nine ethical problems of AI from Julia Bossman's 'Top 9 ethical issues in artificial intelligence,' and were then asked to pick their top three. Interestingly, the top concern for international students was the human and machine interaction setting. 561 (55.3%) were confused





with the future of human interaction with machines – they believed the element of humanity would be lacking.

Coming in next with 488 (48.1%) responses: 'how do we keep AI safe from adversaries?' and the third greatest concern was unemployment. 467 (46%) participants felt AI would lead to unemployment. The fourth concern was similar to the previous with 445 participants or 43.8% population worrying about the unintended consequences of deploying.

Although studies have proven that people were not worried about AI replacing humans at jobs, this survey provided a more nuanced outcome. Currently, people might not be worried about AI coming for their jobs in the short term but the future generation is clearly concerned.

Coming to RQ2: When students were asked to choose the most accurate definition of EAI, they

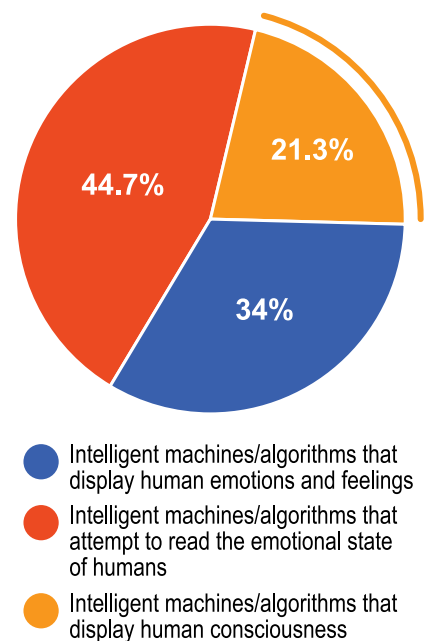
picked the most appropriate definition according to their knowledge. Nearly 44.7% chose 'intelligent machines/algorithms that attempt to read the emotional state of humans,' 34% responded – 'intelligent machines/algorithms that display human emotions and feeling,' and 21.3% of the respondents chose 'intelligent machines/algorithms that display human consciousness.' This meant almost 78% chose the roughly correct definition of EAI and affective computing.

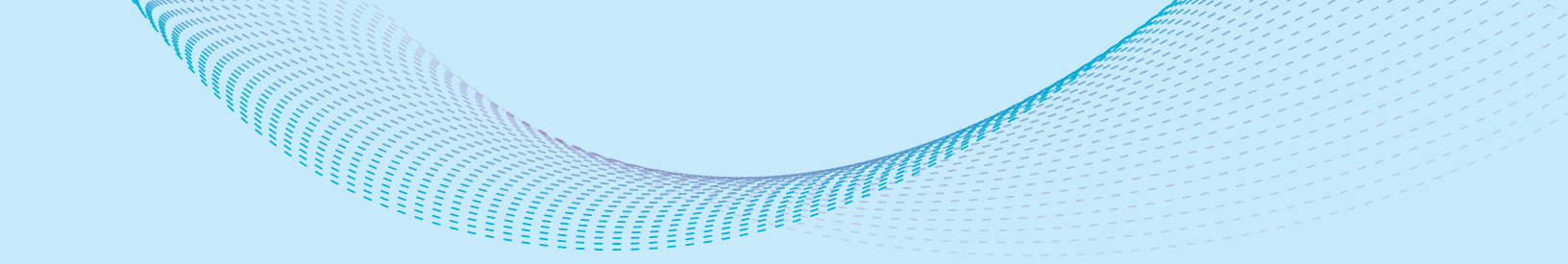
The answers to RQ3 revealed more than anticipated. EAI-enabled HR management is a multi-faceted issue, and participants expressed that socio-demographic and behavioural factors are not the only aspects that would temper the process. They expressed that other key characteristics such as religion, religiosity, region, cultural and political factors also play a significant role. This result contradicts the results derived

from the 'Technology Acceptance Model' or 'Theory of Reasoned Action' by Fred D. Davis and Hamed Taherdoost, respectively. The two scholars decided that EAI or AI would prioritise cost and benefit, whereas job-seekers predict it goes beyond that.

Students with higher income, men, business majors and better high schools were less likely to be worried about EAI-integrated HR management. In regards to family income, students coming from financially well-to-do families tend to attain higher education in reputed institutions, thus landing better jobs and becoming managers. Being a business major is correlated with less anxiety – this can be perceived as AI's lack of ethical and social implications. Adding to the speculations, it also predicted males to be more technologically efficient.

Religious beliefs and regions were also two big aspects pointed out by the students. Upon studying, it





was proved that EAI-enabled HR management indeed negatively correlates with religion. Students with firm religious backgrounds expressed more concerns.

RQ4 also tells us a lot about how people from different socio-demographic and cross-cultural differences have different opinions on arising technologies. This can in turn negatively impact a person's candidature in AI-driven HR management.

And finally, the RQ5 answers show that self-rated familiarity with AI had a rather positive correlation with attitude toward AI in HR management. This result again indicates that the participants who claimed to have knowledge of AI might not be aware of the biases and inaccuracies. While AI might have been around for quite some time, it still has a long way to go. The concept is still emerging and developing.

### Criticisms and Discrepancies

Although affect-driven automated management systems seem like a breakthrough in technology, scholar and author Arvid Kappas has criticised this by questioning the scientists on its legitimacy. In his research 'Smile When You Read This, Whether You Like It or Not: Conceptual Challenges to Affect Detection' published in 2010, Kappas asks about "how scientists can create technology that measures human emotions when they do not first understand what emotions are in the first place?" Besides highlighting the complexity of social and cultural modulators

that give rise to affective states, Kappas criticises the determinist logic of Emotional AI developers who believe accuracy and reliability "is just something that will eventually be solved with a better algorithm."

The second concern around EAI is much more severe. Just like any other technology, the threat of the data being misused is a possibility in EAI as well. Critical labour scholars remain sceptical of this discovery as this opens doors for labour exploitation. With information on a person's emotional and mental state, an employer has unimaginable power to manipulate and exploit an employee for personal gains. In her 2019 study on AI called 'Affectively Mistaken? How Human Augmentation and Information Transparency Offset Algorithmic Failures in Emotion Recognition AI,' Lauren Rhue notes that EAI can lead to discriminatory managerial practices and abusive power relations. Giuseppe La Torre and Alex Rosenblat also agree with Rhue and add that continuously being under the radar may lead to anxiety and stress in employees. Finally, in an article published in 2020 titled 'The Implications of Digital Employee Monitoring and People Analytics for Power Relations in the Workplace,' Ivan Manokha outlines how EAI would reduce the trust between managers and their teams, hampering productivity in the process.

When it comes to the discrepancies, EAI has responded differently to different attitudes of the participants. This not only solidifies the students' doubts on biases of EAI but also

proves that it relies on only the current state of the individual. Although it is designed to know more about humans compared to just AI, it defeats the purpose of forming judgements on the person's mind frame in that given moment. This highlights the need for further development in the field of human-AI interaction.

### Conclusion

AI and EAI have potential but nonetheless have a lot to improve. Job-seekers have expressed evident discomfort over being governed by machines. They prefer human contact. Similarly, employees would feel more vulnerable and exposed, which would affect their well-being and performance – the very opposite of what's being attempted with the help of EAI. And ultimately, EAI may lead to a deeper biopolitical issue which might disrupt the peace of the workplace as a whole. Instead of interviews being conducted in person where humans can connect, EAI will simply use emotion-sensing software to make decisions. This may cause a rise in conflicts on culture, gender, social class, ethnicity and attitudinal disposition. This dark discursive cloud that hangs over AI and EAI will only vanish if humans work in sync with it. The socio-demographic and cross-cultural inconsistencies in this paper give us a glimpse of the ethical and social implications of EAI. The case study aims to spread awareness as well as act as a platform to continue the discussion on EAI running.

Source: [AI & Society](#)



# Voices



## A rendezvous with the glorious Vijayanagar empire!

### A heritage cycle ride from Pune to Hampi

.....  
“Focus on the journey, not the destination. Joy is found not in finishing an activity but in doing it.”  
.....

- Greg Anderson

The most awaited cycle ride from Pune to Hampi was announced by the Indo Athletic Society (IAS) on 24<sup>th</sup> October 2022. The dates of the expedition were 7<sup>th</sup> to 12<sup>th</sup> December. I booked for the same within no time!

The adventure proved to be one of the most memorable and thrilling experiences of my life. It was indeed a challenging expedition!

#### **Day 1 – 7<sup>th</sup> December - Pune to Shetphal (Mohol) - 225 km**

This historical cycle ride was flagged off from Bhakti Shakti Garden, Nigdi. A group of almost 35 cyclists arrived at the spot at 04:00 am. After important instructions from the organisers and a few photographs, we started the ride at 04:35 am. Some 20 cyclists joined us from Nashik phata (at 5:00 am), and the remaining 20 joined us from Hadapsar. Once the group leader noted the headcount, the cyclists headed for the first leg of the

expedition from Pune to Indapur.

We stopped for breakfast at Chaufula, which was arranged by our local cycling friends and then continued our journey. Despite the cold weather, everyone seemed to enjoy pedalling. At 12:30 pm, we, a group of five cyclists, reached Indapur, where lunch was organised at Hotel Mauli Prasad. We rested for half an hour after lunch and then resumed our journey to Mohol. At 04:30 pm, we reached Mohol's Mauli Raje Mangal Karyalaya, where we would spend the night. On the first day, we covered a distance of 225 km!

#### **Day 2 – 8<sup>th</sup> December - Shetphal to Vijayapura (Bijapur) - 160 km**

On this day, the distance to be covered was 160 km – slightly less than the first day. All the cyclists left for Vijayapura at 4.45 am. The moonlight and blinking tail lamps made for a beautiful scene as all the cyclists went one after the other on the

extreme left side of the road! Breakfast was served by the Solapur cycle club at 7:00 am. This was the point from where we had to take a sharp right turn perpendicular to the Solapur highway. After covering some distance, we came across a board reading – ‘Welcome to Karnataka’ along the banks of river Krishna. As usual, we took a break for a photo session and entered Karnataka. With small stops for hydration and rest in between, the journey went smoothly.

Thereafter, I rode solo for 80 km non-stop until I reached Vijayapura at 12:30 pm. Post lunch, we took some time off to rest. In the evening, we visited the Gol Gumbaz and Shivalaya. Another exciting and eventful day had come to an end!

#### **Day 3 – 9<sup>th</sup> December - Vijayapura to Hampi – 220 km**

This was the last day, and we had

to cover a distance of almost 220 km from Vijayapura to Hampi. We started at 4:00 am as planned, and it was freezing cold that day, and it was becoming increasingly difficult to change gears and apply brakes because of stiff fingers. At 6:00 am, we had a tea break during which we prayed for the sun to come up and provide some heat, but it was in vain. We started moving ahead in that freezing cold.

Although the road looked straight, it was an uphill climb. There is normally a downhill after going uphill, but in this case, we were greeted with yet another uphill. This continued for a very long distance.

We, a group of four cyclists, took a break for lunch at the Jai Maa Bhadrakali hotel along the highway in the afternoon. The restaurant served delicious South Indian food, after which we continued cycling.

The cycling intensified in the evening as the heat subsided. We entered the historical city of Hospete at 4:30 pm. I was the first one to reach! I was too tired, so I gulped four glasses of coconut water to restore my energy. From here, I needed to cycle for another 10 km to reach Hampi. Finally, at 05:00 pm, I reached my destination. We were thrilled to have made it here. After all our hard work and determination, it



felt as if we had accomplished what we had set out to do. We had completed a total cycle journey of 610 km.

Arrangements for the night stay were made at a guesthouse near Hampi. The organiser welcomed us with warm greetings. Soothing music, rangolis, huge portraits against the backdrop of the 'Finisher' title made for a perfect setting for photos.

#### Day 4 – 10<sup>th</sup> December - Hampi tour – 15 km

It was the day to explore the majestic Vijayanagar empire (founded in 1336 and ruled up to 1646). We woke up early to visit magnificent temples and heritage sites crafted in stone. These included Malayavanta Raghunath Mandir, Laxmi Narsimha Mandir, Sasivekalu Ganpati Mandir, Kadalekalu Ganpati Mandir, Virupaksha Temple, Vijay Vitthal Mandir, Badavilinga, Hazara Ram Mandir, Mahanavami Dibba, Black stone Pushkarani, Lotus Mahal, Gajshala (elephant stables) and the

remains of Krishnadevaraya palace.

These breathtaking sites depict how prosperous the Vijayanagar empire was! Later in the evening, a brief gathering was held where all the cyclists were felicitated with trophies and medals.

#### Day 5 – 11<sup>th</sup> December 2022

This was the last day of the expedition. After breakfast, we bubble-wrapped our bicycles and loaded them safely into the truck. It was a free day for all of us, and we were allowed to wander in small groups.

I, along with four others, decided to visit the Anjeyanadri hill, the birthplace of Lord Hanuman. We hired a six-seater rickshaw and moved for Anjaneyadri. The temple was on a hill, and we had to climb about 575 steps. We reached the temple at 11:00 am, and after offering prayers, we started descending. Further, we visited the historical Pampa Sarovar & Shabari's cave, where Lord Ram and Shabari had met.

In the evening, we reached the Hospete railway station, from where we started our return journey to Pune.

We reached Pune the next day in the evening on 12<sup>th</sup> December. We then departed for our homes with a lot of memories, emotions and a promise to meet again for the next expedition!

I would like to conclude with a quote by author Zig Ziglar - "Difficult roads often lead to beautiful destinations. The best is yet to come."



Ganpat Masal

TBWES (Materials)







## Harmonica: My musical odyssey

My association with harmonica started when I was 12 years old. My father had a German make black coloured harmonica which he used to play. I always wondered how this instrument was played, and one fine day, I took it out and started playing. I did not know how to play it. The famous harmonica tune of the song - '*Hai Apna Dil to Awara*' from the film *Solva Saal* inspired me. Playing this song wasn't easy for me, and I ended up with only a few blows and draws. The harmonica was put back in the cupboard soon. I kept on trying and slowly could make it - though it was very basic and imperfect. The real journey began when I got an opportunity to attend one of the exclusive harmonica programmes at Bharat Natya Mandir in Pune. The playing of Shri. Nandu Belvalkar greatly influenced me. This was an ideal chance for me to learn the better way.

Let's talk about the origin of harmonica. An instrument called 'sheng' was first invented in China a few thousand years ago. This was harmonica in its primitive form. The instrument had bamboo reeds, and became a prominent instrument in Asian traditional music. The sheng was introduced to Europe in the late 18<sup>th</sup> century and soon became popular. Harmonica, in its present form, was first made by Christian Friedrich Ludwig Buschmann in Berlin in the 18<sup>th</sup> century.

In terms of size, the harmonica is the smallest free-reed-and-wind instrument. We know this instrument as *baja* in Marathi from our childhood. We often bought it at *jatras* (fairs) in villages. Most of us think this is the simplest instrument to play. However, it is an instrument that can be misplayed easily. This

is exactly what happened to me. Soon I started my lessons with Shri. Nandu Belvalkar, one of the renowned maestros in Pune. I learned that playing the harmonica required a certain technique. Harmonica is the only wind instrument that uses both the blow and draw technique, unlike other wind instruments, which use only the blow technique.

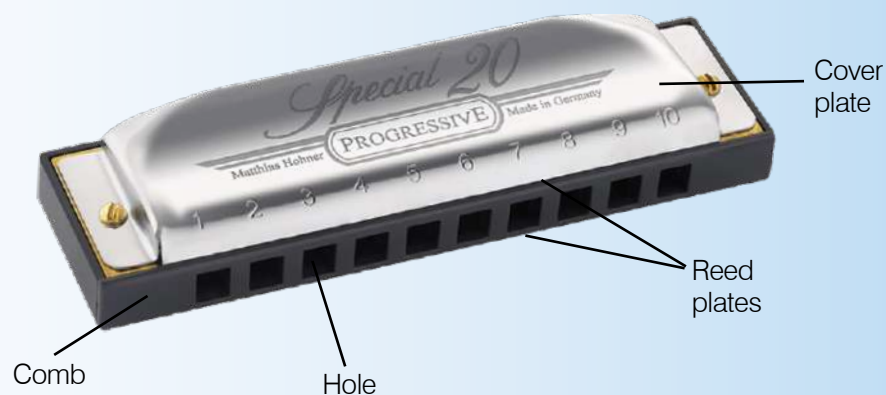
Harmonica constitutes parts as shown in the schematic diagram below.

The cover plates of the harmonica are usually made of stainless steel material to protect it from corrosion with either a wood or plastic chamber. The cost of a harmonica depends on various aspects, such as its make (usually Seydel, M. Hohner, Suzuki, Swan etc.) and its type. They are available in different scales (major scale, blues scale, minor scale etc.) with different keys - Ab, A, Bb, B, C, Db, D, Eb, E, F, F#, G etc. A few makes also offer custom tuned keys in the above scales.

There are mainly two types of harmonica - diatonic and chromatic. Diatonic harmonicas are designed to play in a single key though the standard Richter-tuned diatonic

harmonica can play other keys by forcing its reeds to play tones that are not part of its basic scale. The tremolo harmonica is a type of diatonic harmonica having two reeds per note. In a tremolo harmonica, the two reeds are tuned slightly off a reference pitch - one slightly sharp and the other slightly flat. The chromatic harmonica is typically used in jazz, classical, pop, and in music where the melodies require more than a seven-note major or minor scales (like on a standard diatonic harmonica). It is a type of harmonica that uses a button-activated sliding bar to direct air from the hole in the mouthpiece to the desired reed plate. When the button is not pressed, the harmonica will play a diatonic major scale, whereas if it is depressed, the same scale will be played a semitone higher in each hole. Thus, the instrument is capable of playing all the 12 notes of a chromatic scale barring *shrutis* in Indian classical music. The chromatic harmonica can thus be contrasted with a standard harmonica, which can play only the notes in a given musical scale.

My guru, Shri. Nandu Belvalkar often says, "When a song is being played on an instrument, we are





replacing the singer singing the song. We must honour him/her by playing melodiously". Despite the fact that playing the harmonica seems simple, to be an expert and to have good tone quality, it is essential to maintain proper air pressure during blow and draw, hold your breath, locate the appropriate slot on the harmonica, seal your lips properly, move your lips and the harmonica, and use the slider to achieve the desired effect of vamping note bending etc. These are some of the technical attributes, and coordination of all of them while playing the instrument is a skill that needs to be developed. I am still trying to develop these skills.

Playing the harmonica is very similar

to doing *pranayamas* - it uses the blow and draw technique. My personal experience is that playing the harmonica improves breathing and increases lung capacity.

Generally, harmonicas do not require any maintenance. It can be cleaned by just wiping it off with the help of a cloth or water. In a few cases, it needs to be tuned in order to restore its original scale. However, blowing too harshly can damage its reeds and require replacement.

The purpose of this article is to share my personal experience with the harmonica, which has helped me to reduce my stress and anxiety levels, depression, and is helping me to live a peaceful life.

But to tell you the secret, and if you take my advice - do not bother much about the historical and technical information given above. Get a harmonica and start playing the most melodious instrument!

Keep harping!



Parag Atre  
TBWES



## My new year's resolution to excel

Wishing you all a Happy New Year 2023!

An article I recently read gave a different perspective on New Year resolutions and how they are perceived globally. According to a survey, 31% of people believe that they have no inherent behaviour that needs to be changed, 23% think that they have tried and failed, 27% say that they just don't make resolutions and 19% assume that they lack willpower.

Instead of focussing on long-term goals, I always try to plan and execute short-term goals that accumulate so that I can achieve my longer term goals over time. So for 2023, my resolution is to wake up every day with a positive intent to learn, give more time to myself, and most importantly, communicate with myself.

Here is a message I am writing to myself in 2023:



Bhushan Belkhede  
Chemical

Every morning when you wake up, think that this is a new start of everything that you ever wanted to do.

If you are allowing yourself to see big dreams then mould yourself to deserve those dreams. When you cross the path, you will be facing hurdles. These hurdles are not to stop you but to make you rethink and accelerate further.

You are blessed with tremendous potential and skills which are sufficient to achieve those great heights. Take time to undust and polish those, you will emerge shinier than before.

You must be eager to see yourself at the top. There is always a place for you. As they say, there is always room at the top.

This is your year, this is your moment. For the great purpose you want to achieve, Accept the challenge and go further. Trust me, God is always with you!





# Devils Circuit – A unique escapade to 'BELIMITLESS'

Amidst a busy weekday, a mail hits the inbox, and it's about participation in 'Devils Circuit' to represent Thermax. Not sure of my selection, I immediately respond to nominate myself, and 'booyah!' my name is shortlisted. Since my early college days, I have always been glued to the television series – 'Khatron Ke Khiladi' and pondered how the entire experience would be as a participant. Little did I know that I too would witness this in the days to come.



*Jyoti Narawade at one of the hurdle races*

On the festive morning of 15<sup>th</sup> January 2023, when all my friends, relatives and colleagues were busy celebrating Makar Sankranti/Pongal/Lohri, I took a rough path to reach Amonora, the venue of the event. After reaching the venue, I was impressed with the vibrant mix of crowds, and fitness freaks – old and young who all seemed to be super excited as this was the 10<sup>th</sup> year of the season.

As a 'super host', the Maruti DC team was all set for the mega event, and here I stood with a blank slate about the event. As a

participant, I had butterflies in my stomach, overthinking about the various hurdles during the run and constantly blaming myself for choosing to participate rather than relaxing on a festive Sunday like any other girl next door.

As time passed, the arena was flooded with more than 5,000 participants and spectators who were enjoying zumba, a live DJ, tug-of-war and a plethora of fun activities.

We, Thermaxians, were warmly welcomed by Adnan Adeeb and his team. This 5 km running track was interspersed with 15 unique and challenging obstacles. Helping each other to overcome obstacles gave all of us a fantastic 'team building' opportunity. Every obstacle tested my physical and mental fitness. It subtly reminded me that there is always more to achieve and that striving for more is worth it!

Each hurdle gave us immense learning - be it the 'Height of Hell', 'Grab & Go', 'Murder by Mud' or the last one – 'Brain Freeze' where your entire body and mind are electrified and numb with a 'holy' dip in ice freezing puddle at the finish line. It's critical, and one cannot skip this last hurdle that leads you to the chunky medal.

While I pen this article, I'm humbly grateful to Thermax for giving me this thrilling opportunity to test my



fitness goals. I believe to be a true devilslayer as I stand tall. I certainly look forward to representing Thermax at all upcoming seasons in the future. This 'litmus test' has been a significant milestone in redefining my health journey and balancing both work and personal life at all times.

Last but not least, I will cherish the fitness goodies that I received for a lifetime!

Booyah!



*After winning the participating medal!*

Jyoti Narawade

HR – International Business Group

# Slice of Life

## Success comes at the right time

We often compare ourselves to our peers and consider ourselves late or, worse, a failure if we don't reach a specific milestone at a certain time. But there is no set date for success. However, if you keep going, your dreams will eventually come true in the most magical way. The power of pushing through has unimaginable potential. Don't take it from us; take it from the star of this story - Ida Keeling. The incredible tale of Ida Keeling proves that you can be successful at any age, but just know what success means to you.

Ida Keeling was raised in Harlem, New York, after her parents relocated from Anegada, British Virgin Islands, to the United States. She grew up in poverty and, sadly, lost her mother when she was still a young girl. To make ends meet during the Great Depression, Keeling worked hard, grinding jobs at factories.

In 1957, when she was only 42, her husband tragically passed due to a heart attack. But the tragedy did not end there. Out of her four

children, she lost both of her sons – Charles and Donald – to drug-related accidents in 1978 and 1980, respectively. This left a major impact on Ida. Her two daughters had taken notice of their mother's declining health and battle with depression, which seemed to get more difficult every day. They had begun to fret about the possibility of losing their mother soon if something didn't change. It was her daughter Cheryl who encouraged Ida to start running again – a full-fledged run, not just a jog around the block. Cheryl had been a lifelong athlete and figured the adrenaline rush would bring her mother out of the slump.

At this time, Ida was 67, and it had been decades since she had indulged in the activity. But she gave it a shot when Cheryl insisted.

Ida Keeling never stopped running after that day and got back to her old self. She set records for 60 metres in the 95-to-99 age group, and in 100 metres for the over-100 group.

She later recalled the first mini-run after all those years as 'never-ending' but nonetheless, it helped her forget about the bad memories. "I was just exercising," she says about that first run, "and now I'm all over the world."

When she was not on the field, she was at the gym working out. She made sure to hit the gym three-four times a week for weight training, running on the treadmill or pedalling on a bicycle. Cheryl described her mother as 'a gallon in a half-pint package' for her robust energy.

She went on to share her experiences and inspire her fellow runners with her autobiography titled 'Can't Nothing Bring Me Down: Chasing Myself in the Race Against Time'. Her philosophy is also apt for a runner: "Every day is another day forward."

Source: Reader's Digest



car tailgating her through a blizzard. She kept driving to lose the man in the car behind her when she suddenly heard the sound of her tyre blowing out. Marilyn pulled over on the side and stepped out to assess the situation. To add to the horror, she noticed the man behind her also pulling over and stepping out of his car. Without uttering a word, he walked over and changed her flat tyre. "I was going to get off two miles back," he said, "but I didn't think that tyre looked good."

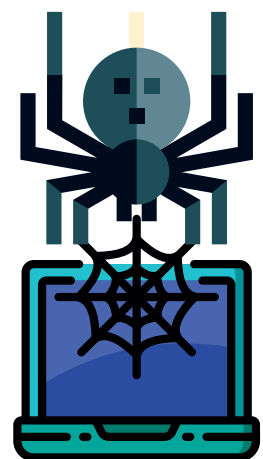
Source: Reader's Digest

Driving alone can be terrifying. It easily steers the mind to the worst-case scenarios, especially in bad weather or night time. You can imagine what Marilyn Attebery from Washington was going through when she noticed a

## Just for laughs

**Why did the spider get a job in I.T.?**

**Answer:  
He was a great web designer.**



Source: [www.riddles.com](http://www.riddles.com)



# Offices come alive during Christmas celebrations

Fun and frolic unfolded at Thermax offices as we ushered in the Christmas festivities. The jolly Santa made an appearance and added to the merriment by distributing gifts and marking the festive season. The occasion was made even more special as employees got to be each other's 'Secret Santa,' exchanging thoughtful gifts and thank-you cards. The entire Thermax family came together to groove to the tunes of Christmas jingles, spreading the cheer all around.

Carnival-themed celebrations at Savli were a huge hit among employees, as they were transported to a fun fair at their office premises. Games such as musical chairs, antakshari, bucket ball, target-it, and break the pyramid were organised. A photo booth was also set up, allowing employees to capture their precious moments of laughter and enjoyment.

Overall, it was a memorable end to the year, filled with lots of spirit and infectious smiles, as Thermaxians bid adieu to yet another year with a heart full of gratitude and happiness.

## Thermax House, Pune



*We are all smiles!*



*Gifts and more...*

## Savli

*Colours of celebration*



*A different ball game!*



## Sai Chambers, Pune

*...Jingle all the way!*



## Sri City

*Greetings and gifts*



## **Thermax Cares For**



**#ThermaxForABetterTomorrow**

The year 2023 will see renewed vigour  
for creating a better tomorrow  
with the integration of ESG.