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INSIDE THE NEWSLETTER

THE EDITOR'S NOTE

COLLECTIVE PARTICIPATION AND CONTRIBUTION FOR VIKSIT BHARAT@2047!

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Dear Readers

Greetings!

The idea of 'Viksit Bharat @2047', calls for an inclusive economic participation of all citizens, to make India a developed nation by 2047 (marking the completion of 100 years of India's Independence!). For this, it envisions economic growth, sustainable development, improved infrastructure, improved ease of living and doing business, and sustained social welfare. Also, it sees a lot of potential for manufacturing and digital technology sector to achieve its vision. Infact, this journey will have its own set of possibilities as well as challenges, but the way ahead will certainly depend on the collective consideration and participation of all stakeholders.

In this backdrop, the April (2024) edition of EcoTech Talks presents perspectives on India's aspiration and vision of Viksit Bharat@2047, especially in the context of its journey towards manufacturing and digital transformation. We are hopeful that these insights will motivate and educate all the concerned stakeholders, especially youth, to take part and contribute towards this transformational journey.

Infact, to mark the very first anniversary of EcoTech Talks, we have conceptualised this April (2024) edition on the given theme, so as to make a small yet humble contribution from our side towards the vision of Viksit Bharat@2047. We are indeed very grateful to all the green contributors and green warriors for joining us and making it a collective endeavour.

Have a happy reading!

Warm regards

GREEN CONTRIBUTERS AND THEIR EXPERT OPINION

Shri S. Krishnan
Secretary
Ministry of Electronics and Information Technology (MeitY, GoI)

VIKSIT BHARAT AND MANUFACTURING SECTOR: POSSIBILITIES, CHALLENGES AND WAY AHEAD FOR ELECTRONICS/IT/TELECOM SECTOR

The strategic initiative 'Viksit Bharat' is the government's endeavor to propel India into a developed nation by 2047. Central to this mission is fostering inclusive economic participation. A key objective is to position India as the world's third largest economy within five years. This requires concerted efforts in economic growth, sustainable development, infrastructure enhancement, ease of living and business, and social welfare.

The Ministry of Electronics and Information Technology (MeitY) released the "National Strategy on Additive Manufacturing" on 24th February 2022. The strategy is focused on creating a conducive environment for the design, development, and implementation of additive manufacturing technologies in India. Its goal is to overcome technical and economic challenges, attracting top global additive manufacturing companies to set up operations in India, along with ancillary support services. This effort aims to strengthen the domestic market and increase India's presence in the global market for additive manufacturing.

Additive manufacturing, often referred to as 3D printing, stands out as a transformative technology with significant green contributions in manufacturing. By fundamentally altering traditional production methods, additive manufacturing minimizes environmental impact in several key ways. Firstly, its precise layer-by-layer construction allows for the optimization of material usage, drastically reducing waste compared to subtractive manufacturing processes. Additionally, additive manufacturing enables on-demand production, which diminishes the need for large-scale inventory storage and transportation, thereby lowering carbon emissions associated with supply chains. Moreover, the localized nature of 3D printing facilities can further reduce transportation-related pollution. Overall, additive manufacturing plays a crucial role in promoting sustainability by conserving resources, minimizing energy consumption, and mitigating environmental harm across various industries.

Potential of AM Ecosystem in India presents an opportunity for India 3 (individuals or households that fall within the lower-income bracket or economically disadvantaged group) to transition into Industry5.0 from industry3.0/2.0 for green products. Primary issues for AM deployment are affordability of the technology to India 3 and market accessibility to India 1/global market. The way ahead is to lower cost of printable material, 3D printers, software license cost in Indian AM ecosystem so that manufacturing using AM can be taken up by micro-enterprises. Green products like clay kulhad, mud house etc. can play a big role here as material cost will be zero. E-commerce at an affordable rate to India 3 will provide necessary market access.

Indian Women in 3D Printing (IW3DP) facilitates collaboration and innovation among women in the additive manufacturing (AM) sector, with a focus on creating an inclusive environment and empowering women to thrive in AM. They have pioneered technology for clay Kulhad Manufacturing, utilizing freely available soil as the primary material and a 3D clay printer. Given India's status as the largest exporter of Kulhad, this innovation opens up global market opportunities for branded clay kulhad. AM here eliminates the need for new molds for customized designs.

A pioneering instance of AM in construction site was seen in Spain, where the first prototype utilizing clay and 3D printing techniques was developed. The TOVA structure exemplifies this sustainability ethos, constructed with clay sourced onsite, complemented by a substructure of polymers and a wooden roof. In clay house construction, labor accounts for 60% of the total cost, while materials make up the remaining 40%.

Implementation of additive manufacturing (AM) techniques offers a substantial reduction in both labor and material expenses, rendering the manufacturing of clay kulhads and construction of clay houses more economically accessible for individuals in India 3 and similar regions of the global south. Embracing AM is essential to expedite construction schedules while lowering expenses, thereby enhancing sustainability by utilizing locally-sourced materials.

In essence, 'Viksit Bharat' strives for a prosperous, sustainable, and inclusive India. Leveraging additive manufacturing, India aims to boost its economy while promoting environmental sustainability. Expansion of initiatives like Indian Women in 3D Printing (IW3DP) and innovations in construction is expected to increase additive manufacturing's potential for inclusive economic growth and a greener future.

INDIA'S DIGITAL REVOLUTION: EMBRACING THE FUTURE WITH INNOVATION

Col. (Retd.) Suhail Zaidi
Director General
MAIT

In the heart of South Asia, India is experiencing a profound metamorphosis, shedding old paradigms to embrace the limitless possibilities of the digital age. Spearheaded by the visionary Digital India initiative, this transformation is propelling the nation into a vibrant tech-powered society, poised to conquer the challenges of the 21st century and seize its thrilling prospects. Let's delve into this captivating journey, celebrating the milestones achieved and the promising horizons that await.

The Digital India vision emerged from a critical need – to bridge the vast digital divide and foster inclusive growth across the nation's diverse landscape. At its core, this ambitious initiative aims to establish digital infrastructure as a fundamental utility for every citizen. The result? On-demand governance and services, empowering individuals to actively engage in the digital fabric of our times. This comprehensive agenda sets the stage for a revolutionary era in India's technological voyage.

Central to India's financial inclusion strategy is the ingenious JAM Trinity: Jan Dhan-Aadhaar-Mobile. This innovative framework integrates Jan Dhan bank accounts, Aadhaar unique identification numbers, and mobile connectivity. The impact? Streamlined delivery of welfare benefits to millions, a lifeline evident during the unprecedented challenges of the COVID-19 pandemic. This approach not only enhances efficiency but also expands the reach of crucial government services.

The digital wave has catalysed a remarkable surge in e-commerce across India, reshaping consumer behaviour and empowering small enterprises to connect with a broader market. Startups are flourishing, driving innovation, and creating exciting job prospects. India's vibrant startup ecosystem underscores the nation's burgeoning tech talent and its potential to emerge as a global innovation hub.

While India's prowess in software and IT services is well-known, the hardware manufacturing sector is poised for transformation. Recent government initiatives aim to revitalize this sector, nurturing local production and positioning India as a key player in electronics manufacturing. This strategic pivot promises new avenues for growth and innovation.

India's strength in semiconductor design is globally recognized, with a significant presence in integrated circuit design. Strategic partnerships and supportive policies are poised to consolidate India's role in the global semiconductor value chain, fostering indigenous innovation and bolstering competitiveness on the world stage.

Despite these strides, challenges persist. Digital literacy gaps in rural areas and cybersecurity concerns demand attention. Bridging these divides is crucial to ensure equitable access and a secure digital ecosystem. Equipping citizens with digital skills through targeted educational programs in coding, data science, and cybersecurity is imperative for a future-ready workforce.

India's digital evolution is a saga of resilience, innovation, and inclusivity. This ongoing transformation promises a future where technology empowers every citizen. As this remarkable journey unfolds, India's trajectory in the digital realm holds the potential for transformative impact, both domestically and internationally.

But this journey demands collective commitment. By prioritizing digital inclusivity, fostering robust infrastructure, and investing in skilling initiatives, India can ensure that the dividends of the digital era reach every corner of the nation. Empowering citizens to thrive in the digital economy will propel India towards a future defined by technological prowess and inclusive prosperity. The call to action is resounding: equip, bridge, and embrace the boundless potential of a tech-driven India.

VIKSIT BHARAT AND ELECTRONICS SECTOR

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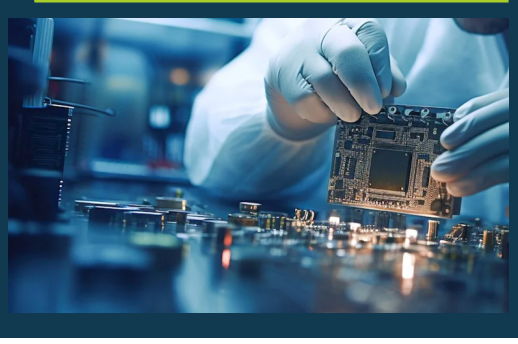


On 13th March 2024, the Hon'ble Prime Minister of India Shri Narendra Modi ji spelled out his vision on the electronics manufacturing in India in the presence of learned and respected dignitaries. He said – "Today marks a historic occasion as we embark on a journey to create history and take a significant stride towards a brighter future. The foundation stones for three major projects, collectively worth approximately Rs 1.25 lakh crore, dedicated to semiconductor manufacturing, have been laid. These semiconductor facilities, located in Dholera and Sanand in Gujarat, and Morigaon in Assam, will contribute to positioning Bharat as a major global hub for semiconductor manufacturing. I extend my heartfelt congratulations to all fellow countrymen for this significant initiative, marking a pivotal beginning and a decisive step forward. It is noteworthy that our friends from Taiwan have also participated in this programme virtually. These efforts by Bharat are also exciting me tremendously!"

In view of his aforesaid statement, Bharat is now geared towards manufacturing of semiconductor materials and devices, more specifically chips for advanced applications. This event was organized at such a mega scale that participants from more than sixty thousand educational institutes, colleges and universities participated in this program. This has set a new world record for the time to come. Bharat is already a world power in Space, Nuclear Science and Digital Transactions. The next research domain is certainly semiconductor manufacturing and fabrication of chips and devices. Bharat is poised to excel in this field as well. To this end, more than 40000 compliances have been removed to ensure "Ease of Doing Business". The Foreign Direct Investment is now being invited more vigorously to facilitate huge investments in this sector. As semiconductors find their applications in many areas, few sectors are identified to be promoted. These are – Defence, Telecom and Insurance sectors. Presently this country is second largest world manufacturer of mobile or hand-held devices. This sector is also dependent on chips. Additionally, the entire luxury segment car industry is dependent on chips and sensors, and their IoT based application. Similarly, one major area of chips is medical electronics and instrumentation. Not a single sensing device used for medical investigations can operate without chips. Artificial Intelligence and Machine Learning is the software backbone to drive these chips in the most optimum manner. Therefore, the interlinking of these thrust areas and their development for various uses of the society is the need of the hour.

Obviously, there are many challenges way ahead. Bharat lacks in quality experimental research in universities in this area. The major research geared in this direction is based on device simulation which is very difficult to be reproduced under clean room conditions where these devices are manufactured. Good clean room facilities are seldom available in universities. The faculty of universities and colleges has limited access to national level research institutes where these facilities do exist. The priority should be from prototype development to efficient device fabrication. In such a scenario, the Ministry of Electronics & IT (MeiTY) has an important role to play. The policy framework should be made such that it begins with providing good funding for research projects in this domain in higher educational institutions. When the students and faculty are involved in this process, the vision propounded by the Hon'ble Prime Minister will surely see the ray of light.

The stride taken by the Government of India in general and MeiTY in particular is a good step in this direction. We are pretty sure that it has the potential to lead the nation and eventually Bharat will become a world power in this area.

OUR GREEN INITIATIVES AND ACTIVITIES

#BEAGREENWARRIOR: OUR GREEN CAMPAIGN FOR MOBILISING THE YOUTH

BUILDING A CHAIN OF GREEN WARRIORS FOR MISSION LiFE!

H.M.E.'s Green Resolution - 2024 is to Mobilse 1 lakh green warriors to take up LiFE Actions and Green Lifestyle for Environment.

AWARENESS WORKSHOPS FOR ENGAGING AND SENSITIZING THE YOUTH

During January- March (2024), team H.M.E has collaborated with six new Green Warrior Institutions/Organisations and conducted awareness-cum-sensitization workshops for the youth and professionals on the theme of 'Mission LiFE and E-waste Management', by involving multiple resources and pedagogies.

GREEN WARRIOR INSTITUTIONS JOINING OUR GREEN CAMPAIGN #BEAGREENWARRIOR

12th January, 2024: Awareness Workshop for the Trainee Teachers of Department of Education and Humanities, Manav Rachna University (Faridabad, Haryana), to mark the celebration of National Youth Day

27th February, 2024: Awareness Workshop for the Project Manager, Site Engineers and Plant Operators of Bhagirathi Water Treatment Plant (Larsen & Toubro Constructions C/o Delhi Jal Board, Gokulpuri- Delhi)

21st February, 2024: Awareness Workshop for the Trainee Teachers and Teacher Educators of Department of Educational Studies, Jamia Millia Islamia (Jamia Nagar, Delhi)

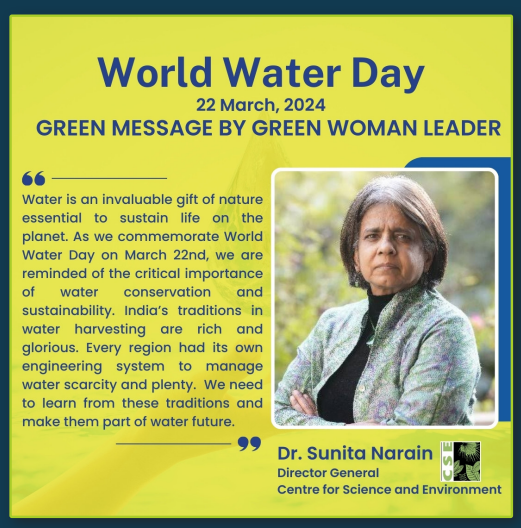
29th March, 2024: Awareness Workshop for the Legal, Commercial and Customer Service Team of Casio India Co. Private Ltd. (Mathura Road, Delhi) to mark the celebration of International Day of Zero Waste.

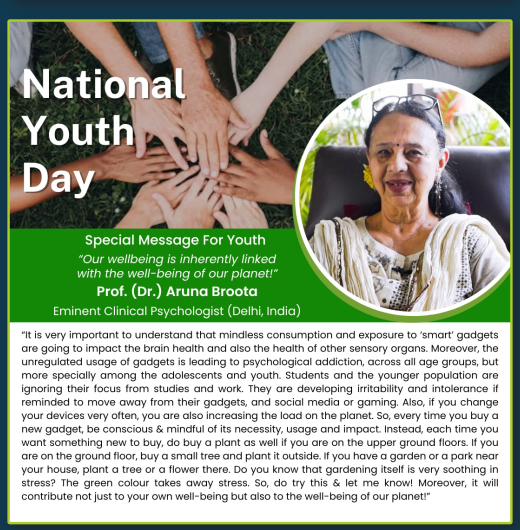
24th February, 2024: Awareness Workshop for the students of Ram Lal Anand College (RLAC), University of Delhi

1st April, 2024: Awareness Workshop for the Trainee Teachers of Institute of Vocational Studies (IVS- recognised by NCTE, affiliated to GGSIP University and SCERT, Delhi) to mark the celebration of International Day of Zero Waste.

GREEN MESSAGE SHARED BY GREEN WOMEN LEADERS

(INSPIRING YOUTH OF BHARAT TO TAKE UP GREEN LEADERSHIP AND ACTION)





GREEN ADVOCACY AND CAMPAIGNING THROUGH OUR DIGITAL SPACE

Through regular social media creatives and informational videos, our digital space has been actively contributing and advocating the cause of sustainability and Mission LiFE.

OUR NEXT PLAN

1. Celebrating World Environment Day (5th June, 2024) by strengthening green collaboration with various educational institutions.
2. Continuing awareness - cum - sensitization workshop on 'Mission LiFE and E-waste Management', along with integrating e-waste collection drive with it.
3. Distributing e-waste collection bins among the participating green warrior institutions.
4. Promoting the participation and engagement of youth (especially teachers, teacher educator and trainee teachers) for wider green impact.

JOIN H.M.E.'S CAMPAIGN 2024

SPECIAL THANKS TO OUR SUSTAINABILITY PARTNERS

JANUS CORP. REINVENTING STANDARDS

D&M INTRADE PVT. LTD.

CASIO

GRATITUDE TO ALL THE GREEN WARRIOR INSTITUTIONS: 2024

Department of Education & Humanities (Manav Rachna University, Faridabad)

Department of Educational Studies, F/o Education (Jamia Millia Islamia, Delhi)

Department of Environmental Studies, Ram Lal Anand College (University of Delhi)

LARSEN & TOUBRO
Bhagirathi Water Treatment Plant (L&T Constructions C/o Delhi Jal Board, Gokulpuri)

Institute of Vocational Studies (Affiliated to GGSIPU & SCERT, Delhi)

CASIO
Casio India Co. Private Ltd. (Mathura Road, New Delhi)

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