Track 3 - Science & Technology, Natural Resources & Environmental Sciences, and Agricultural Sciences

Session No: 3.1

Panel Discussion Session Topic: Role of Industry & Start-Ups for Combating the Energy Requirements through Hybrid Solar and Allied Technologies

Day & Date: Thursday, 20th January 2022

Time: 12:00 PM- 1:30 PM

Overview:

Energy is a fundamental ingredient in human life. There is no industrial, agricultural, health, domestic, or any other sort of process that doesn't require a degree of external energy. Traditional fuels such as coal, petroleum, and natural gas contribute to the sum of primary energy consumed worldwide around 88% of the total. The rest comes from nuclear energy, which provides ~6% of the total, and renewable energies, mostly hydroelectric. Wind and solar energy are still marginal factors from a global perspective, but it is beginning to have a greater presence in some countries. From the global perspective; there are no more available sources of primary energy, which necessitate the search for alternate energy sources and hybrid technologies. There is a bigger challenge we envisage. The discussions in this session attempt to address the role of start-ups and the industry towards combating the energy requirements through hybrid Solar and related Technologies.

Session objectives:
The session aims to discuss progress in the technological solution and commercialization for meeting future energy requirements. The role of industries and start-ups with innovative solutions provide hope for day-to-day increasing energy demand. The session will help the participants to understand the energy crisis and energy management through innovative solutions provided by industries in different sectors. Hybrid solar technologies, rechargeable batteries and hydrogen energy are new emerging fields for alternate energy sources. The session will also help the participants to understand the harnessing of waste energy and its management for providing a clean and green energy solution.

Key Questions to be explored from the theme:

1. Explore the current initiatives at the national and global level to combat the energy crisis in view of the limited availability of fossil fuels?
2. Discussions on the recent innovations in hybrid solar technology?
3. Explore how rechargeable batteries can be made environment-friendly?
4. Explore the various entrepreneurial opportunities in energy management?
5. According to the esteemed panelists, which are the new technologies that can be commercialized for alternate energy solutions?
5. What will be take-home message for the student from this conference?

Session No: 3.2

Panel Discussion Session Topic: Innovations in Sustainable Waste Management

Day & Date: Thursday, 20th January 2022

Time: 2:00 PM- 3:30 PM

Overview:

With the ever-increasing human population and rapid industrialization, India's solid waste burden has become a serious matter of concern. The majority of the household, as well as industrial solid waste, ends up getting dumped in the landfill sites even when most of it can be potentially recycled. Improper waste management systems including lack of proper segregation, recycling & treatment has made it one of the biggest contributors to air, soil and water pollution. This leads to a host of well-documented environmental and public health impacts and increasing pressure on municipal governments to implement proper waste management solutions. The session on Innovations in Sustainable Waste Management will focus on understanding the current waste management strategies being adopted by municipal agencies across major Indian cities. The session will also facilitate debate on the potential for alternative waste management methods, which may provide better resolution to the associated environmental, health and social concerns. The session will also highlight the importance of recycling the waste as a sustainable solution to save the environment, and an important step towards sound management of resources.

Session objectives:

The session aims to discuss sustainable ways to deal with solid waste and to reflect on various processes and their outcomes to consider lessons for the establishment of sustainable waste management trajectories which can address environmental and health challenges whilst also addressing social concerns. The session will help the participants to understand the drawbacks of the existing waste management processes and what steps can be taken to improve the waste management system. It will specifically address the sustainable ways of handling e-waste and plastic waste, which are among the biggest contributors to this environmental problem.

Key Questions to be explored from the theme:

1. Discuss the current methods being employed by governmental agencies for handling solid waste.
2. Elaborate upon the recent innovations in environmentally sustainable waste management methods.
3. Examine alternative waste management strategies that are being used for handling plastic and e-waste.
4. Explore the various entrepreneurial opportunities in waste management and how can we convert waste to wealth?
5. What will be the take-home message for student from this conference?
6. According to the esteemed panelists, distinguish the areas in a sustainable waste management system that can be further improved?

Session No: 3.3

Panel Discussion Session Topic: Mathematics for Industry 5.0 - Models, Methods and Optimization Techniques

Day & Date: Thursday, 20th January 2022

Time: 3:45 PM- 5:30 PM

Overview:

Industry 5.0 is based on the observation or assumption that Industry 4.0 focuses less on the original principles of social fairness and sustainability but more on digitalization and AI-driven technologies for increasing the efficiency and flexibility of production. Industry 5.0 is not a technology-driven revolution but a value-driven initiative that drives technological transformation with a particular purpose. The concept of Industry 5.0, therefore, provides a different focus and point of view and highlights the importance of research and innovation to support the industry in its long-term service to humanity within planetary boundaries. Industry 5.0 also requires some form of technical approach for its interaction with the components based on automated production, cyber-physical components and the huge amount of available historical data. Mathematics and its application provide the tool for the technical framework for achieving the desired goal. Mathematical tools are helpful to analyze valuable data generated from the industry and this huge data brings a positive impact on the production, supply chain, healthcare, infrastructure and all other aspects of human life. The huge data generated is useful to make decisions on the growth of the economy. Artificial intelligence together with Mathematics plays a vital role in the organization and management of production and distribution processes in the future (2030), determining the scenarios of digital modernization of the modern economy through the prism of the organization of production of the future, and determining various potential functions that might be performed by artificial intelligence in this process.

Session Objectives:

The objectives of the sessions are as follows:
· Explore the extent to which mathematical techniques/model/analysis play a role to realize the goal of Industry 5.0.
· Can mathematical enabling technologies also help realize the goals of Industry 5.0, or do we need to develop a new approached to Industry 5.0 technologies?
· Understand if Mathematics, Statistical methods together with artificial intelligence (AI) is emerging as the backbone of Industry 5.0 and recognizes the power of industry for achieving societal goals beyond jobs and growth.
· Examine if we are living amongst two Industrial Revolutions (Industry 4.0 & Industry 5.0) based on data analytics, or effectively one – techno-social revolution?

Key Questions to be explored:

The idea of introducing entrepreneurship into education has gained significance in the last few decades. However, there is a host of challenges in promoting entrepreneurship in the higher education curriculum. Therefore, this panel discussion will examine questions such as:

- Understand how are the Higher Educational Institutions(HEIs) responsibly maneuvering and shaping young minds to be an important part of leveraging the economy?
- Examine if there are different pedagogies/teaching methods for entrepreneurship education to influence the entrepreneurial intentions of students?
- Explore how all stakeholders to HEIs may be engaged to promote entrepreneurship education within students?
- Illustrate various priority action areas to be immediately addressed to encourage entrepreneurial education?

Session No: 3.4

Panel Discussion Session Topic: Innovations in Defense technology and entrepreneurial leadership

Day & Date: Thursday, 20th January 2022

Time: 5:30 PM- 7:00 PM

Overview:

India has envisioned to be a five trillion economy by 2025. It is a considered view that for an economy to be versatile and dynamic, entrepreneurship is the best way forward. Entrepreneurship is an act that drives an entrepreneur towards creating an enterprise and adding value to the new socio-economic order. Technology, in general, and defense technology in particular, have redefined professionalism and business practices. Start-Ups in defense technology are revolutionizing military affairs on the one hand and providing disruptive payoffs in the new technology world order by driving initiatives through innovative thinking. Higher Education in Universities has become fertile grounds to research niche technology problems and incubate
prototypes giving rise to entrepreneurs by providing education that nurtures creativity and innovation. We can term this as a golden age where the world is passing through disruptive times, thereby giving enough chance to be entrepreneurially innovative. Thus, being creative, understanding the opportunity, thinking out of the box and translating it into a business proposition is the new mantra. The role of Higher Educational Institutions (HEIs) is critical in promoting a culture of entrepreneurship , innovation and creativity. Therefore, HEIs need to embed an entrepreneurial approach to the present education systems.

Session Objectives:

The objectives of the sessions are as follows:
· To examine the new technology world order and needs of Higher Education curriculum for enabling students to acquire entrepreneurial skills needed for the future
· To gain perspectives on the approaches to integrate entrepreneurship education into the curriculum of higher education to create job-ready def tech professionals
· To explore the Entrepreneurial ecosystem initiatives and best practices developed within universities aimed to encourage students to be innovative and choose the career of an entrepreneur

Key Questions to be explored:

The idea of introducing entrepreneurship into education has gained significance in the last few decades. However, there is a host of challenges in promoting entrepreneurship in the higher education curriculum. Therefore, this panel discussion will examine questions such as:

- How are the HEIs responsibly maneuvering and shaping young minds to be innovative?
- Are there different pedagogies/teaching methods for entrepreneurship education to influence entrepreneurship and innovation among students?
- How can all stakeholders including industry be engaged to promote entrepreneurship education within students?
- How can governments / Ministry of Education / Ministry of Corporate Affairs & other professional bodies develop coherent policies for academia-government industry interface?
- What are the various priority actions to encourage entrepreneurial education to create job-ready defense technology professionals?

Session No: 3.5

Session Topic: Recent Advances and Innovations in Environmental Science and Technology

Day & Date: 21st Jan 2022

Time: 5.30 PM – 7.00 PM

Overview:

People all around the world are facing challenges due to human-induced environmental changes, restricted and exploited resources, rising temperatures and ocean levels, ecological contamination, petroleum product emergency, endangered wildlife, and impractical financial constructions are only a couple of the difficulties governments and populaces face throughout the planet. In the light of developing worldwide issues, nations need to utilize innovations and approaches towards financial activities that are environmentally less harmful and that preserve resources and wildlife for the future generation. These issues require the adaption of new ways to deal with Eco-friendly advancements and practical improvement that would focus more on additional sources of growth to properly monitor and minimize the use of natural resources and improve the living conditions of the population. Ecological mindfulness not just alludes to appreciating the pulverization of our current circumstance by the man yet additionally fundamentally saves it from misuse, abuse, and over-utilization of regular assets. Environmental awareness not only refers to comprehending the devastation of our environment by man but also significantly saving it from abuse, misuse and over-use of natural resources. There is a significant requirement for presenting awareness programs among the overall population for encouraging enthusiasm for the climate. Sustainable development is associated with less environmental damage and is driven by comprehensive and all-encompassing policies, both international and of single countries that consider the needs of future generations. Among these policies, several suggest employing green technologies.

Session objectives

- To provide exposure to faculty members, corporate professionals, and research scholars on the concepts of recent advances in green technologies.
- To build sensitivity and develop awareness on environmental sustainability and wildlife conservation among participants
- To foster skills in thinking, reasoning, enquiring and making decisions about the environment and world around them.
- To promote critical evaluation of the status and future potential of India with respect to environment sustainability and conservation strategies.

Key Questions to be explored:

The purpose of discussion on recent advances and innovations in environmental science and technology is to bring forward the interest in environmental conservation. Today's greatest challenge that we face is the depletion and continuous damage of natural resources. The purpose we gather here, is to address how we can sustain and help our planet, Therefore, this panel discussion will examine questions such as:

- Are we aware enough to identify our critical role as flag bearers towards attaining environmental sustainability?
- How are we going to appreciate the role of green technology for a sustainable future?
- Are there different pedagogies/teaching methods existing for integrating recent advances in technology into teaching and student learning?
- How can all stakeholders to HEIs be engaged to promote entrepreneurship education within students?
- Role of government / MOEFCC in developing coherent policies for the conservation of environment and biodiversity?
- Asa foresight, what are the future areas of environmental technology and advancement that ensure a sustainable planet for all of us?

Session No: 3.8

Panel Discussion Session Topic: Green Entrepreneurship: Challenges and Strategies

Day & Date: Thursday, 21st January 2022

Time: 3:45 PM- 5:00 PM

Overview:

Environmental concerns are gradually becoming a fundamental part of the business in our daily life. Hence, the business units are adopting different business strategies on account of this environmental consciousness. This is the reason behind the concept of green entrepreneurship, which is evolving slowly but steadily in the market. Green entrepreneurship goes beyond the narrow technology-based aspects of doing business. It can nurture a culture of lifecycle-based thinking and stimulate green innovation at the societal level. In doing so, green entrepreneurs create a shift in peoples' mindsets towards greener thinking and increase demand for green products and services, boosting the dual effect of employment and environmental gains. It incorporates principles of sustainability into its business decisions and actively monitors them. This can be considered as an opportunity for those entrepreneurs, who rely on ecological redesigning and innovation of their product. It is the perfect phase for those entrepreneurs who want to be a part of this developing green market. Green entrepreneurs constitute an important

role in the economic development of the country. They are the driving force towards changing consumer behaviour and for launching, innovating, implementing and emerging new thoughts.

Green entrepreneurs face the following challenges –
· lack of access to financing,
· lack of substitution of the conventional products,
· cost controlling,
· redesigning,
· raw material
· lack of R&D infrastructure,
· insufficient government concern to support green entrepreneurship,
· public acceptance, etc.

Session Objectives:

The objectives of the sessions are as follows:
· To understand the concept and principle of Green entrepreneurship what entrepreneurial skills are needed for the students in future
· To gain perspectives on the approaches adopted and the problems and challenges undergone
· To explore the Entrepreneurial ecosystem initiatives and best practices developed aimed to encourage students to choose the career of an entrepreneur

Key Questions to be explored:

The idea of introducing the concept of Green entrepreneurship and understanding the importance of green entrepreneurship, its challenges
The panel discussion will examine questions such as:

- What are the problems and challenges faced in green entrepreneurship?
- How favourable is the policy and market structure for promoting green entrepreneurship and how can the policy be coherent in promoting green entrepreneurship?
- What are the skills required in a green entrepreneur?
- What are the various priority action areas to be immediately addressed to encourage green entrepreneurship?

Session No: 3.9

Panel Discussion Session Topic: Transitions in Technical Skills Requirements for Remote and GIS sector towards industry 5.0

Day & Date: Friday, 21st January 2022

Time: 5:30 PM - 7:00 PM

Overview:

New analysis identifies the ten best fields for remote work and their most in-demand skills. Soft skills aren't as soft as they sound. They can make or break your career especially when it comes to remote work. As the professional world settles into a new norm of working from

home, soft skills defined by Workable as “general characteristics that help employees thrive in the workplace, no matter their seniority level, role or industry” have come to the forefront in hiring and recruitment decisions. There are more remote jobs than ever before but there are also more remote job-seekers. Between a steady unemployment rate and the geographic flexibility of remote work, the market is saturated with candidates, many of whom are equally qualified from a technical standpoint. In a flooded hiring pool, hard skills matter but soft skills can help you rise to the top. As Industry 5.0 is what we see today, GIS techniques continue to evolve, users can leverage spatial data to deepen their understanding of patterns and relationships in the world around us. To make the most of this potential, professionals must hone their capacity for spatial thinking and GIS technical skills. If you are interested in pursuing a career at the forefront of geospatial thinking, exploring the GIS skills that are most needed in today’s organizations could be a vital step.

Session Objectives:

The objectives of the sessions are as follows:
· To examine the feasibility and adaptability of a person (across all age groups) towards remotely
· Understanding the requirement of Industry 5.0
· Transition and requirement in technical skills vis-a – vis demand

Key Questions to be explored:

- Is the idea of Remote work/accessibility applicable in the broad domain of earth science?
- Are we Industry 5.0 ready?
- Skillsets – Demand – Requirement – Delivery of skill set, are we in – line?

Session No: 3.10

Panel Discussion Session Topic: Agripreneurship: Meeting the Unmatched Market Demand

Day & Date: 22nd Jan'2022

Time: 10.15 AM - 11.45 AM

Overview:

India is a fundamentally agriculture-based economy. Around 62% of the population is living in the agriculture region relying upon farming for their primary occupation. The improvement of the economy will help India in fostering the country's local needs. Among provincial and metropolitans, the significant extent of the populace living can't get the advantages of the advancement occurring in India. Agripreneurship is an innovative way of embracing new strategies, processes, procedures in farming or the partnered areas of agribusiness for better results and monetary profit. Agripreneurship changes over farming movement into an enterprising action.

One in each two Indians depends on farming for the job. The rural scenario has changed radically since this intervention will require a new methodology and a completely new arrangement of innovation are a vital driver of tomorrow's advancements. In farming organizations, arranging might be much more central on account of the intrinsic uncertainty related to horticultural creation. The enormous populace of India is reliant upon agribusiness for their wellspring of income. Be that as it may, Indian farming is low in usefulness with the huge number of camouflaged joblessness. Enterprising advancement is an efficient and controlled improvement of an individual to a business person. Pioneering improvement projects might be characterized as a program intended to help a person in fortifying his innovative thought process and in gaining abilities and capacities important for assuming his enterprising part viably. Generally, agribusiness is viewed as a low-tech industry with restricted elements overwhelmed by various little family firms, which are for the most part focusing on improving rather than doing new things. Over the last decade, the present circumstance has changed drastically, because of financial advancement, the decreased sanctuary of agrarian business sectors, and a quickly changing, more definitive, society. Agricultural fundamentalism generally results in growth. The establishment of small and less capital-intensive industrial enterprises in rural areas, along with the introduction of new technologies in agriculture is likely to establish linkages between agriculture and industry.

Thus, there is a need to recognize the futility of such dogmas and take a practical and balanced view, recognizing the complementarity between rural and urban, agriculture and industry, capital and labour, and the induced and autonomous dimension of development.

Session Objectives:

The objectives of the sessions are as follows:
· To identify opportunities with Agripreneurship with a particular spotlight on India.
· To comprehend the degree of availability of the young for endeavouring to become agripreneurs in their given circumstances.
· To analyse the issues and difficulties obstructing the agripreneurs to arise in India.
· To identify peculiarities and extent of agribusiness situation in the Indian setting.
· To have SWOT analysis of Agripreneurship to match market demand.

Key Questions to be explored:

The idea of introducing entrepreneurship into education has gained significance in the last few decades. However, there is a host of challenges in promoting entrepreneurship in the higher education curriculum. Therefore, this panel discussion will examine questions such as:

- How are the HEIs responsibly maneuvering and shaping young minds to be an important part of leveraging the agrarian economy?
- Are there different pedagogies/teaching methods for entrepreneurship education to influence the entrepreneurial intentions of students?
- How can all stakeholders to HEIs be engaged to promote entrepreneurship education within students?
- unlock new collaboration for new technologies and innovations.
- What are the various priority action areas to be immediately addressed to encourage entrepreneurial education?

Session No: 3.11

Panel Discussion Session Topic: Role of Resilient Entrepreneurship and Disruptive Innovations to meet Food Industry 5.0 challenges.

Day & Date: Saturday, 22th January 2022

Time: 12 PM-1:30 PM

Overview:

From product invention to process production to product delivery, the world is experiencing an agile environment and producing disruption in industrial strategies. Before now, adopting Business 4.0 in the food production industry as a small and medium enterprise (SME) has been difficult. And today, industry 5.0 is being implemented on a large basis. Furthermore, customers have adopted the notion of society 5.0, which has an impact on strategic implementation in industries. To thrive in a competitive market, food manufacturing SMEs require direction. The entrepreneurs are finding it difficult to demonstrable rational cause-and-effect links as a result of the increased interconnection and networks created by quickly iterating technology, resulting in ambiguity in decision-making. As a result, it is difficult for them to assess, design, and implement feasible solutions based on their experiences. To keep pace with this unpredictable and unclear world, present and future entrepreneurs must learn the skills of leadership and cultivate new abilities. Although leading in such a dynamic environment can be difficult, it also offers unique and inventive opportunities for those who can identify and capitalise on the next waves of disruption. This rapid pace of technological advancement continues to spur novel solutions that have the potential to address global concerns like poverty, hunger, and inequity. This session emphasizes the role which entrepreneurs and innovators can play in meeting the upcoming challenges faced by Food Industry.

Session Objectives:

The session goals are to:

• Identify leadership strategies and practices that entrepreneurs use to create system-wide change;
• Comprehend the challenges that food and agri-based entrepreneurs face in their leadership journey;
• Comprehend the practices that entrepreneurs deploy to measure leadership success;
• Comprehend the role of technology in food and agripreneurs' day-to-day leadership; and
• Craft recommendations for future
entrepreneurs in the field of food. Nutrition and agriculture.

Key Questions to be explored:

This panel discussion will examine questions such as:

1. What are some of the most prevalent leadership styles and practices used by food entrepreneurs?
2. Evaluate the obstacles that entrepreneurs confront on their path to leadership?

3. What criteria do entrepreneurs use to determine leadership success?
4. How does technology play a part in your day-to-day leadership?
5. What advice would entrepreneurs give to future system-wide change leaders?

Session No: 3.12

Panel Discussion Session Topic: Innovative Nanotechnology for Societal Development

Day & Date: Thursday, 22nd January 2022

Time: 2:00 PM- 3:30 PM

Overview:

The 21st century has witnessed precipitous changes spanning from the way of life to the technologies that emerged. We have entered a nascent paradigm shift where science fiction has become science facts, and technology fusion is the main driver. Thus, ensuring that any advancement in technology reaches and benefits all is the ideal opportunity for everyone. Nanotechnology deals with the creation of materials, devices and systems through engineering the matter at the nanometer length scale. Arising the nanometer length scale in the novel property is a very critical process through which it would be able to manipulate and control individual atoms and molecules. At this point, physical, chemical, mechanical, electrical, optical, magnetic and other properties change, making use of such changes developing novel products and processes which have not been possible hitherto. The major implication of disruptive technology is the demand for new course content, employment, knowledge and skills.

The historically unprecedented developments of nanoscience and nanotechnology, in view of their phenomenal expansion and growth, in conjunction with their convergence with information science and molecular biology, confront our society and natural environment with new challenges. Technological revolutions have shown that discoveries at the frontiers of science have the potential to pave the way for radically innovative and integrated approaches, providing new solutions for some of the most pressing problems. To enable decision-makers to respond to what is best for people at large, the societal implications of the newly emerging fields need to be known and understood. Nanotechnology, unlike any other technology, can find applications in virtually all areas of human life. Despite being an infant at its evolution, some of the known issues related to nanotechnology suggest a wide spectrum of potential societal impacts. ICEIL'22 will provide a unique opportunity to promote new ideas for societal benefit. Further, the conference will pave the path to create an ecosystem to develop state-of-the-art products based on Nanoscience and Nanotechnology.

Session Objectives:

The objectives of the sessions are as follows:

- Inculcate new ideas and knowledge in Nanotechnology for societal benefit.
- Develop awareness about Nanotechnology in different parts of society.
- Initiate and promote the adoption of novel engineered nanomaterials into various sectors.

- Explore a good collaborative academic and research relationship with eminent speakers.

Key Questions to be explored:

The idea of introducing entrepreneurship into education has gained significance in the last few decades. However, there is a host of challenges in promoting entrepreneurship in the higher education curriculum. Therefore, this panel discussion will examine questions such as:

- How is nanotechnology responsible for maneuvering and shaping young minds to be an important part of leveraging the economy?
- How can all stakeholders to HEIs be engaged to promote entrepreneurship education within students?
- How can governments / the Ministry of Education develop coherent policies for entrepreneurship education?
- What are the various priority action areas to be immediately addressed to encourage entrepreneurial education?