NATIONAL CONFERENCE ON

"INNOVATION IS KEY: ADVANCING SCIENCE & TECHNOLOGYFOR A BETTER WORLD-2023"

(NCIAST-2023)

ISBN NO: 978-93- 83060-30-6

17th & 18th November 2023

ORGANIZED BY

DEPARTMENT OF BASIC SCIENCE AND HUMANITIES

Gandhi Institute of Excellent Technocrats (GIET)

Ghangapatana, Bhubaneswar, Dist: Khurda, Odisha, Pin: 752054

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS
GHANGAPATNA, BHUBANESWAR
ODISHA

NATIONAL CONFERENCE
ON
"INNOVATION IS KEY: ADVANCING SCIENCE & TECHNOLOGY FOR A BETTER WORLD – 2023"(*NCIAST-2023*)
(17TH & 18TH NOVEMBER, 2023)

ORGANIZED BY:

DEPARTMENT OF BASIC SCIENCE & HUMANITIES

GIET, GHANGAPATNA, BHUBANESWAR

CONFERENCE COMITTEE

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Dr. Rama Narayan Sabat, Vice Chairman
Smt. Minakshi Panda, Secretary

Patron

Dr.Subhrajit Pradhan, Principal

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Co-Convenor

Dr. Amaresh Chandra Pradhan, Associate Prof., BSH

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Prof. Pravat Mallik
Prof. Mamata Mohapatra
Prof. Pallishree Mohapatra
Prof. Arpita Dutta
Prof. Arun Kumar Jena
Prof. Pradip Kumar Sahu

About the Institution…

Gandhi Institute of Excellent Technocrats (GIET), Ghangapatana, Bhubaneswar under the flagship of Gandhi Group of Institutions (G.G.I) is an AICTE approved institute established in the year 2009. The B.Tech, MBA and MCA programs of the institute are affiliated to Biju Patnaik University of Technology, Odisha and the Diploma Programme is affiliated to State Council for Technical Education and Vocational Training, Govt. of Odisha, Bhubaneswar. The institute is set up by Venkateshwar Educational Trust and is being managed by distinguished Governing Council members comprising senior executives from Academics and Industries. The Institute works with a mission to provide quality education of international standards for producing technocrat sand future leaders in a disciplined and conducive environment as an integral part of our societal commitment to promote education globally. It was started with an intake of 240 students in four branches with a motto of providing quality engineering education in a highly disciplined environment. In less than a decade it become a citadel of engineering education having 1080 intake with 7 B. Tech. Courses and 2 PG courses i.e. MBA and MCA. It has been regarded as Modern Gurukul by the students, alumni, faculty and all distinguished visitors for its learning environment, faculty, infrastructure and the facilities.

About the Department…

The Department of Basic Science and Humanities started from the inception of the college in 2009. Knowledge in basic science forms the base of Engineering. Department of Basic Science and Humanities aims to fulfill this function most efficiently. This Department is devoted to foster the fundamental principles and understanding of Science to enhance the students' basic knowledge of Engineering. Its objective is to provide value-based education to the budding scientists and engineers.

The Department comprises different subjects of study namely Mathematics, Physics, Chemistry, Economics and English. The students of our college are highly benefited by the knowledge and experience of many doctorates of the department. Well experienced and highly qualified faculty members of the department have made consistent and strenuous efforts to improve the students' learning, research and development processes. The department has state of the art English Language Laboratory with a glob arena language software, Physics lab, Chemistry lab and advanced department library facilities. It also encourages students to take up challenging projects and internships at the national and international level inorder to fine tune their technical skills. The department provides opportunities for them to join various student chapters such as ISTE, IEEE, Music Club, Drama Club, Photography Club etc.

In addition to these other extracurricular activities like regular study tours, quiz competitions, annual paper presentation competition, robotics workshops etc.It has opened avenues to promote entrepreneurships among budding engineers and imbibe in them the concept of corporate social responsibility. The department also helps the students to acquire English communication skills to increase their proficiency in English language which will enable them to cope up with the cut throat competition in the job management.

About the Conference…

Theme of the Conference:

"National Conference on Innovation is Key: Advancing Science & Technology for a Better World"

The National Conference on "Innovation is Key: Advancing Science & Technology for a Better World – 2023" (NCIAST-2023) is a platform for industry experts, researchers, and policymakers to come together and explore the latest advancements and challenges in the fields of Science & Technology especially Materials in Energy and Environment, Mathematical accessibility.

Conference Highlights:

- **In-depth discussions on fabrication of nanomaterials and its application towards energy and environment.**
- **Mathematical application in Science & Technology.**
- **Innovation in cutting-edge research.**
- **Recent advances in Science and Technology.**
- **Presentation of cutting-edge research papers and case studies.**

Conference topics:

- **Recent Trends in Science & Technology.**
- **Innovative Approach towards cutting-edge research.**
- **Mathematics towards Technology.**
- **Nanomaterials in energy & environment application.**
- **Battery storage technologies and application.**
- **Planetary Innovation.**
- **Recent Biological Approach in Technology.**

KEY NOTE SPEAKERS:

- **Dr. Sushanta Kumar Badamali**
  Prof., Chemistry, Utkal University
- **Dr. Swadesh Kumar Sahoo**
  Prof., Mathematics, IIT, Indore
- **Dr. Sadhana Dash**
  Prof., Physics, IIT, Bombay
- **Dr. Alok Ranjan Nayak**
  Asst. Prof., Physics, IIIT, Bhubaneswar

Message from Hon'ble Governor of Odisha…

ରଘୁବର ଦାସ
ରାଜ୍ୟପାଳ, ଓଡ଼ିଶା
रघुवर दास
राज्यपाल, ओड़िशा
Raghubar Das
Governor, Odisha

ରାଜ ଭବନ
ଭୁବନେଶ୍ୱର-୭୫୧୦୦୮
राज भवन
भुबनेश्वर-७५१००८
RAJ BHAVAN
BHUBANESWAR-751008

November 15, 2023

MESSAGE

I am glad to know that the Department of Basic Science and Humanities at Gandhi Institute of Excellent Technocrats (GIET), Ghangapatna, Bhubaneswar is organizing a National Conference on "**Innovation is Key: Advancing Science and**

Message from Hon'ble Member of Parliament…

Aparajita Sarangi
Member of Parliament
(Lok Sabha)
Bhubaneswar, Odisha &
National Spokesperson, BJP
Member:
- Inter Parliamentary Union (IPU) Executive Committee
- Standing Committee on Urban Development
- Joint Committee on Offices of Profit
- Committee on Ethics

सत्यमेव जयते

Letter No. : MPAS/ESET/2023/8001

Date : 15/11/23

Message

I am glad to know that **Gandhi Institute of Excellent Technocrats** is organizing a National Conference on 'Innovation is Key: Advancing Science and Technology for a Better World-2023' on 17th & 18th November,2023.

I am sure the Conference will unfold the latent potentiality of the students in its gate fold.

I extend my best wishes to the members of organization on this memorable educative occasion.

Yours Sincerely

(Aparajita Sarangi)

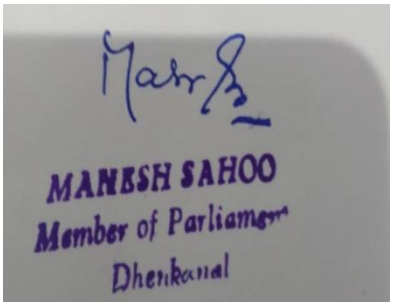
A-56, Palaspali, Bhubaneswar, Odisha - 751 020, Phone: (0674) 2592888 (O)
SABKA SAATH - SABKA VIKAS - SABKA VISHWAS
Email: mpbbsrls@gmail.com

Message from Hon'ble Member of Parliament…

Mr. Mahesh Sahoo
Member of Parliament,
Dhenkanal

I would also like to express my gratitude to the organizing committee and I welcome all the delegates for the National Conference titled ""National Conference on Innovation is key: Advancing science and Technology for a Better World--2023"," on 17th and 18th November 2023 at GIET, Ghangapatna, Bhubaneswar, Odisha.
Scientific and technological activities refer to the elucidation of unknown phenomena, and to the creation of new knowledge through the discovery of new natural laws and principles, and the new knowledge obtained is then utilized in the real society.

This conference provides a unique opportunity for us to come together, learn from each other, and collectively explore innovative solutions to some of the most pressing challenges in our fields.
I wish you all good luck and hope the event become successful with the opportunity to learn from each other.



Mr. Mahesh Sahoo
Member of Parliament
Dhenkanal

Message from Chief Patron…

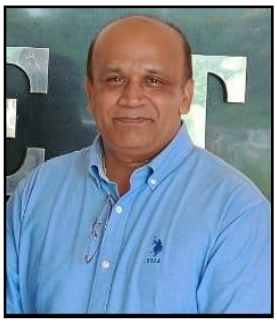
DR. SATYA PRAKASH PANDA
CHAIRMAN
GIET, GHANGAPATANA, BBSR

*I am extremely pleased to know that the Department of Basic Science & Humanities of GIET, Ghangapatana is organizing "**National Conference on 'Innovation is Key: Advancing Science & Technology for a Better World'-2023'** on 17th and 18th Nov 2023.*

I understand that the large number of researchers have submitted their research papers for presentation in the conference and also for publication. The response to this conference from all over India is most encouraging. I am sure all the participants will be benefitted by their interaction with their fellow researchers and engineers which will help for their research work and subsequently to the society at large.
I wish the conference meets its objective and confident that it will be a grand success.

With regards
Dr. Satya Prakash Panda
Chief Patron, NCIAST-2023

Message from Chief Patron…



ER. RAM NARAYAN SABAT
VICE CHAIRMAN
GIET, GHANGAPATANA, BBSR

*I hope this message finds you well. I am delighted to announce our institution's upcoming National Conference on "**Innovation is Key: Advancing Science & Technology for a Better World-2023**" scheduled to take place from 17th & 18th of November. As the Vice Chairman of our Institution, I am truly excited about this significantevent that reflects our commitment to academic excellence and sustainable development.*

This conference will serve as a platform for the researchers to explore the latest advancements and challenges in the fields of Science & Technology. It is an opportunity for us to showcase our institution's dedication to advancing knowledge and contributing to the betterment of society.

As esteemed members of our faculty, your participation is instrumental in making this conference a success. I encourage you to consider submitting your research papers, proposing sessions, and actively engaging in discussions during the event. Your expertise and contributions will undoubtedly enrich the conference and help us achieve our goals.

Together, we can make this National Conference a platform for meaningful discussions, as discussion and collaboration at this conference will drive the innovation needed to make further advancements in the various fields.

Best regards,
Er. Ram Narayan Sabat
Chief Patron, NCIAST-2023

Message from Chief Patron…..

ER. MINAKSHI PANDA
SECRETARY
GIET, GHANGAPATANA

It is indeed a memorable day that a two day ***National Conference on 'Innovation is Key: Advancing Science & Technology for a Better World– 2023'*** *on Nov 17-18 , 2023 is being organized by the Department of Basic Science & Humanities at GIET, Ghangapatna to achieve the well-defined purpose of setting up an important landmark successfully by way of utilizing the activities consisting of expert lectures from exceptional achievers and presentations of researchers in relevant areas in an atmosphere of healthy interaction and sharing.*

As we face growing concerns about environmentally sustainable solutions to modern technology based problems, this conference shall provide an invaluable platform for collaboration, knowledge sharing and innovation.

I am highly grateful to the members of the team for exercising painstaking effort in making this conference successful.

Minakshi Panda

Thank you
Best regards,
Er. Minakshi Panda
Chief Patron, NCIAST-2023

Message from Patron…

DR. SUBHRAJIT PRADHAN
PRINCIPAL
GIET, GHANGAPATANA

*I am pleased to announce that our Institution will be hosting a " **National Conference on Innovation is Key: Advancing Science & Technology for a Better World– 2023"**, which is scheduled to take place from 17th & 18th of November. This event represents an excellent opportunity for our academic community to contribute to the advancement of knowledge in this critical field.*

The conference aims to bring together experts, researchers, and industry professionals to discuss the latest trends, innovations, and best practices in the fields of Science & Technology. It will serve as a platform for exchanging ideas and fostering collaborations that can have a lasting impact on our academic space.

I encourage all faculty members to actively participate in this conference by submitting research papers, organizing sessions, and engaging in meaningful discussions. Your contributions will undoubtedly enhance the quality and significance of this event.

Thank you for your dedication to advancing knowledge and promoting sustainable practices in our field. Let us work together to make this National Conference a memorable and transformative experience for all involved.

Thank you
Best regards,
Dr. Subhrajit Pradhan
Patron, NCIAST-2023

Message from Advisory Committee …

DR. CHANDAN KUMAR SAHOO
DEAN R&D
GIET, GHANGAPATANA

Research, curiosity and discovery have been in existence ever since man's presence on this planet millions of years ago, civilization has been characterized by curiosity and discovery. Therefore, the curiosity to explore what will happen, how it happens, is there a better way to do it, has been the driving force behind all research efforts. During the past few decades, the engineering faculties have taken a number of initiatives to reorient the engineering machinery to play leading roles in the industrial development process.

I am delighted to acknowledge the "National Conference on Innovation is key: Advancing science and Technology for a Better World--2023", organized by the Department of Basic Science and Humanities. I appreciate organizing team for showing their keen interest in organizing a successful conference to provide a platform for contributors to explore new ideas and exchange research findings among researchers.

I thank the support of all students, authors, reviewers, conference team, faculty members, and conference Convenor for making the conference a grand success.

I extend my best wishes for successful conduct of the conference.

Chandan Kumar Sahoo

Thank you
Best regards,
Dr Chandan Kumar Sahoo
Advisory Committee, NCIAST-2023

Message from Convenor

Warm Welcome to the National Conference on *Innovation is Key: Advancing Science & Technology for a Better World* – 2023!!

PROF. TARAKANTA SAHOO
(CONVENOR, NCIAST-2023)
DEPARTMENT OF BASIC SCIENCE & HUMANITIES.

Dear participants,

It is my immense pleasure to welcome you all to this year's ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***, organized by the Department of Basic Science and Humanities. This conference has been designed to provide a platform for the budding researchers and academicians to share their precious research findings and experiences.

I strongly believe that this conference will contribute significantly to the advancement of knowledge and facilitate the exchange of ideas in the field of Science & Technology. We have an impressive lineup of speakers and presentations who would cover the topics relevant to the emerging innovations.

As the Head of the Department, I am grateful for the support and dedication of the organizing team. Without their efforts, this conference would not have been possible. I urge you all to make the most of this opportunity.

Furthermore, I would like to say that your presence and participation are crucial to the success of this conference. Your contributions to the discussions and debates will help us to identify new approaches and solutions to the challenges that we face.

Thank you.

Prof. Tarakanta Sahoo
(CONVENOR, NCIAST-2023)

Message from Co-Convenor

DR. AMARESH CHANDRA PRADHAN
(CO-CONVENOR, NCIAST-2023)
DEPARTMENT OF BSH

Dear Distinguished Delegates,

It is with great pleasure that I extend a heartfelt welcome to each and every one of you to the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***As the convener of this monumental event, I am honored to have the privilege of hosting an assembly of such accomplished professionals, researchers, and visionaries in these vital fields. Your presence here reflects your commitment to advancing knowledge, driving innovation, and addressing the pressing challenges of our time.

Throughout this conference, you will be immersed in a dynamic atmosphere of intellectual exchange, collaboration, and discovery. From this conference we can gain inspiration from esteemed keynote speakers who have made significant contributions to the fields we are passionate about, connect with fellow delegates, forge new partnerships, and exchange ideas that can spark innovation, participate in hands-on workshops and sessions designed to enhance your skills and practical understanding. The knowledge you share and the connections you make have the potential to shape the trajectory of development in Science and Technology on a global scale. Once again, welcome to the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***. Let's seize this opportunity to inspire, innovate, and make a positive impact on the world.

Amaresh ch. Pradhan

Prof. Amresh Pradhan
(CO-CONVENOR, NCIAST-2023)

MESSAGE FROM ORGANISING COMMITTEE

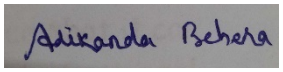
Dr. Adikanda Behera
Asst. Professor
GIET, Ghangapatana

Eminent Conference Attendees,

A warm and enthusiastic welcome awaits you at the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023.*** As This gathering marks a pivotal moment in our ongoing journey to tackle the critical challenges and seize the opportunities within these vital fields. We are thrilled to witness the convergence of experts, researchers, academics, industry leaders, and innovators who are eager to contribute their knowledge and insights. Your participation not only enriches the dialogue but also propels the progress of Science and Technology.

Our dedicated organizing committee has thoughtfully crafted a comprehensive program encompassing cutting-edge research, practical applications, and industry trends. This broad spectrum of content aims to provide a fertile ground for robust discussions, idea generation, and meaningful collaborations. In addition to the presentations, we have arranged networking opportunities, panel discussions, and interactive sessions to facilitate dynamic exchanges and forge valuable connections. We urge all attendees to actively engage in these activities to fully benefit from the conference experience. We extend our heartfelt gratitude to our sponsors, partners, and volunteers whose unwavering support has been instrumental in bringing this event to life. As we embark on this enlightening journey of exploration and knowledge sharing, we aspire to inspire each of you not only to gain valuable insights but also to leave with a renewed commitment to shaping an advanced sustainable future.

Together, let us work towards a world driven by innovation towards a sustainable Science and Technology. We eagerly anticipate the lively discussions and collaborative endeavors that will help define our shared path forward for the betterment of society.



Dr. Adikand Behera
(Organizing Committee, NCIAST-2023)

Prof. Alok Ranjan Sahoo
Asst. Professor
GIET, Ghangapatana

Respected Conference Participants,

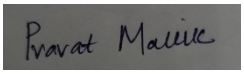
We extend a heartfelt welcome to the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***. Your esteemed presence adds significant value to this event, uniting experts and forward-thinkers dedicated to advancing these pivotal domains. Our faculty members, distinguished experts in their respective domains, have worked diligently to create a platform that facilitates the exchange of cutting-edge research, innovations, and insights. Their expertise and leadership have been invaluable in shaping the direction of our institution's contributions to sustainable energy solutions and technological progress.

Our meticulously crafted program encompasses state-of-the-art research, practical applications, and industry insights, engage actively in networking, panel deliberations, and interactive forums to fully leverage the opportunities presented. Our profound gratitude goes out to our sponsors, collaborators, and devoted volunteers whose unwavering support has made this event a reality. Let this gathering ignite inspiration and foster collaboration as we collectively strive for an advanced yet sustainable future, characterized by innovation to solve various real-world problems.

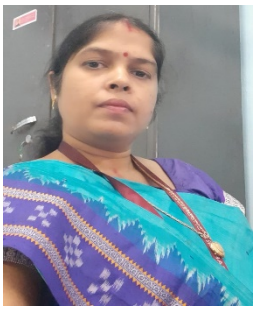
Prof. Alok Ranjan Sahoo
(Organizing Committee, NCIAST-2023)

Prof. Pravat Mallik
Asst. Professor
GIET, Ghangapatana

Esteemed Participants of the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***, We proudly extend our unequivocal support and admiration for the esteemed faculty members who have been instrumental in orchestrating this landmark event. Their tireless commitment to organizing this conference underscores their dedication to advancing the fields of Science and Technology. As educators, mentors, and researchers, they stand at the forefront of knowledge, driving progress and innovation. We wholeheartedly endorse and back their efforts in organizing this conference, confident in their ability to ensure its success. We encourage all participants to actively engage with our esteemed faculty members, as they offer a wealth of knowledge and inspiration. Our gratitude extends to the organizing committee, sponsors, and participants for their collaborative contributions to this momentous event. Let us collectively recognize and celebrate the pivotal role our faculty plays in shaping the future of the field of Science and Technology.

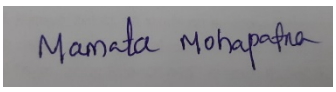


Prof. Pravat Mallik
(Organizing Committee, NCIAST-2023)



Prof. Mamata Mohapatra
Asst. Professor
GIET, Ghangapatana

It gives me immense pleasure to write this message for the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***. It is with great pleasure that I extend a heartfelt welcome to all of you. Our committee has devoted endless hours to assemble experts, researchers, and visionaries in these vital fields. We are enthusiastic about creating an environment for discussions, collaborations, and knowledge exchange that will shape the future of Science and Technology. Throughout this conference, we encourage you to actively participate in sessions, network with fellow attendees, and explore the latest developments. Your collective contributions will drive progress and innovation in these crucial sectors. Our sincere gratitude goes to our sponsors, partners, and dedicated volunteers who have been instrumental in making this event a reality.



Prof. Mamata Mohapatra
(Organizing Committee, NCIAST-2023)

Prof. Pallishree Mohapatra
Asst. Professor
GIET, Ghangapatana

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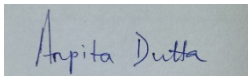
Pallishree Mohapatra.

Prof. Pallishree Mohapatra
(Organizing Committee, NCIAST-2023)

Prof. Arpita Dutta

Asst. Professor
GIET, Ghangapatana

I am delighted to welcome you all to the ***National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023***. We are organizing this conference with a vision to provide the students as well as the faculty with a platform for intellectual academic discussions on the new discoveries and innovations in the field of Science and Technology. I hope all the efforts bear fruitful as together we embark upon a journey of knowledge sharing and exchanging of ideas.



Prof. Arpita Dutta
(Organizing Committee, NCIAST-2023)

Prof. Arun Kumar Jena
Asst. Professor
GIET, Ghangapatana

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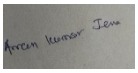
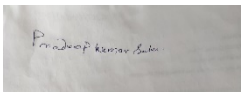


Prof. Arun Kumar Jena
(Organizing Committee, NCIAST-2023)

Prof. Pradip Kumar Sahu
Asst. Professor
GIET, Ghangapatana

It gives me immense pleasure to write this message for the National Conference on Innovation is Key: Advancing Science & Technology for a Better World -2023. It is with great pleasure that I extend a heartfelt welcome to all of you. Our committee has devoted endless hours to assemble experts, researchers, and visionaries in these vital fields. We are enthusiastic about creating an environment for discussions, collaborations, and knowledge exchange that will shape the future of Science and Technology. Throughout this conference, we encourage you to actively participate in sessions, network with fellow attendees, and explore the latest developments. Your collective contributions will drive progress and innovation in these crucial sectors. Our sincere gratitude goes to our sponsors, partners, and dedicated volunteers who have been instrumental in making this event a reality.



Prof. Pradip Kumar Sahu
(Organizing Committee, NCIAST-2023)

Message from Resource Person …

Dr. Sushanta Kumar Badamali
Professor,Chemistry
Utkal University, Odisha

It gives me immense pleasure that Department of Basic Sciences and Humanities, Gandhi Institute of Excellent Technocrats, Bhubaneswar is organizing a National conference on Innovation is Key: Advancing science and technology for a better world (NCAIST-2023) during 17-18 November 2023. On the eve of the occasion the Department is bringing about a souvenir, to mark the event.

For ages together, the impact of Science and Technology for providing a better and safer world is well recognized. However, there remain several challenges which need to be resolved in a sustainable manner. I am sure the conference will provide a platform to the researchers to discuss the issues and come out solutions; those may be implemented in near future, to make life much better and the world much safer.

I congratulate and extend my best wishes to the Department of Basic Sciences and Humanities and organizers of the conference (NCAIST-2023) for holding such an event.

I wish the conference a grand success.

Prof.Sushanta Kumar Badamali
Proffessor.,Chemistry
Utkal University

Message from Resource Person …

Dr. Swadesh Kumar Sahoo
Professor, Mathematics
IIT, Indore, Madhya Pradesh

It is heartening to note that Gandhi Institute of Excellent Technocrats (GIET), Ghangapatna, Bhubaneswar is organizing a National conference on Innovation is Key: Advancing science and technology for a better world (NCAIST-2023). This event aims to bring together experts and thought leaders in these pivotal fields to exchange knowledge, insights, and innovations. I appreciate the efforts of the organizing committee for organizing such an innovative and appropriate theme for the conference. As we all know that innovation plays a crucial role in addressing various global challenges and have significant importance in today's world.

I am also honored to be invited as a resource person for this conference. I thank the organizers for giving me the opportunity to share my thoughts on this theme with the students, engineers and fellow researchers. I wish you all good luck and hope the event become successful with the opportunity to learn from each other.

Dr.Swadesh Kumar Sahoo
Professor, Mathematics
IIT,Indore,Madhya Pradesh

Message from Resource Person …

Dr. Sadhana Dash
Professor, Physics
IIT, Bombay, Maharashtra

Many Congratulations for organizing this innovative scientific conference and the journey so far. May the relentless pursuit of success win your institute great accolades in your future endeavors.

My best wishes for the road ahead!!

Thanks, and Best

Regards

Dr. Sadhana Dash
Professor, Physics
IIT Bombay, Maharashtra

Message From Resource Person…

Dr. Alok Ranjan Nayak

Assistant Professor, Physics

IIIT, Bhubaneswar, Odisha

I am happy to learn that Gandhi Institute of Excellent Technocrats (GIET),Ghangapatna, Bhubaneswar is organizing a National conference on Innovation is Key: Advancing science and technology for a better world (NCAIST-2023).

This conference has been timely organized on a very relevant theme of the society. Therefore, I appreciate the efforts put forward by the Department of Basic Science and Humanities to organize this conference. I am also happy to be invited as a resource person for this conference.

Dr. Alok Ranjan Nayak
Assistant Professor, Physics
IIIT, Bhubaneswar, Odisha

INVITED TALK

PROBING BIG BANG THROUGH LITTLE BANGS

Dr. Sadhana Dash
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Abstract

The field of ultra-relativistic heavy-ion Physics have advanced our understanding of hadronic matter under extreme conditions. The `Little Bangs' made in particle collider experiments reproduce the conditions in the Big Bang when the age of the Universe was a fraction of a second. The basic information on nucleon–nucleon collisions and the use of the nucleus as an arena to study the interaction of one nucleon with another and the knowledge of the QGP will be an essential ingredient in quantitative understanding of the very early Universe.

INVITED TALK

GEOMETRY OF STEREOGRAPHIC PROJECTION AND ITS APPLICATIONS

Dr. Swadesh Kumar Sahoo
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Abstract

We consider the classical stereographic projection of the Riemann sphere onto the extended complex plane. The chordal distance on the sphere plays an important role in this geometry. We will discuss how certain geometric structure in the complex plane maps onto the sphere. We will see how this stereographic projection connects to Mobius transformation in the Euclidean n-space. Finally, we discuss some applications.

INVITED TALK

NANOSTRUCTURED MATERIALS IN 21ST CENTURY

Dr.Sushanta K. Badamali
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Abstract

Over the ages, the human civilization has thoroughly exploited the materials for the own survival and comfort. As a result the development in materials has taken place rapidly and continuously. The evolution of materials has resulted in development of nanomaterials in 21st century. These materials behave exceptionally different as compared to their bulk analogues. It has brought a sea change in the application of materials beyond the boundary and penetrated to the every sphere of science and engineering. The presentation will include the chronological development materials, current status of nanomaterials in terms of their applications and future directions.

INVITED TALK

FIBROBLASTS DRIVEN WAVE DYNAMICS IN MODELS FOR CARDIAC TISSUE

Dr.Alok Ranjan Nayak
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Abstract

Cardiac fibroblasts, which are non-myocyte cells, often multiply and connect with cardiac myocytes during fibrosis, a process of cardiac tissue healing after a myocardial infarction; these fibroblasts can form different textures: patchy, interstitial, and diffuse. Therefore, it is important to know the effects of fibroblasts on electrical wave propagation in cardiac tissue. In this talk, I will give a brief introduction to mathematical models of cardiac tissue comprising myocytes and fibroblasts. I will then present a few representative results of our numerical simulations, obtained from single-cell, two-dimensional and three-dimensional domains, to show how fibroblasts connection, density, distribution, and pattern affect electrical wave propagation in cardiac tissue models.

NCIAST-2023

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UNVEILING THE FUTURE OF CONNECTIVITY : LEO FAST

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ABSTRACT

Now-a-days, where connectivity is a necessity, staying connected globally has been a daunting challenge. However, a groundbreaking innovation promises to change the game. The LEO FAST, introduced by TEAM LEO, is set to revolutionize the way we connect with the world. In order to focus on cutting-edge technology, the LEO FAST acts as a magnet for networks, attracting and optimizing network signals for a stable and fast connection anywhere on the planet. Global compatibility, real-time network optimization, and extended battery life, are the key features to make this chip stand out. The benefits are transformative, offering seamless international travel, consistent high-speed internet, and reduced dropped calls and lag. The LEO FAST finds applications in various scenarios, from international business travel to remote work and adventure travel. This chip's versatility allows it to be seamlessly integrated into a range of devices, including smartphones, laptops, and IoT devices. But the journey doesn't end here. LEO FAST is committed to enhance connectivity further, with exciting features and developments on the horizon. The future of global connectivity is brighter than ever. As team LEO opens the floor to questions, it's clear that the LEO FAST is not just a product; it's a promise of better, more reliable global connectivity, bringing the world closer together in this ever-expanding digital age.

KEYWORDS: Instant connectivity, Versatility, Seamless international travel, Cutting age technology, Real time Network optimization.

Paper Id: NCIAST-23/02

LEVERAGING OPEN SOURCE NETWORKING FOR AI DRIVEN NETWORK OPTIMIZATION

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ABSTRACT

In our increasingly interconnected world, networks form the foundation of communication and data transmission. As these organizations grow in complexity and scale, the requirement for productive administration and improvement becomes crucial. Utilizing the combination of open-source networking solutions and artificial intelligence (AI), this presentation investigates how associations are improving their organisation execution, security and effectiveness through innovative integration. We begin by introducing the concept of open-source networking solutions which is highlighting the platforms like Open Day light and ONOS. Further, the transformed landscape of network management by providing cost-effective, flexible and community driven options. Furthermore, the rise of AI technology is leading a new era of network optimization. AI can analyze vast datasets, predict network issues and dynamically adapt to change conditions, all in real time. This presentation digs into the advantages of interconnecting open source and artificial intelligence, such as the cost effectiveness and robust support of open-source solutions alongside the potential for AI to revolutionize network management. By incorporating AI modules into open-source networking stages, associations are tracking down remarkable ways of improving their organizations, expanding steady quality and security. Genuine applications and contextual analyses demonstrate the tangible benefits of this synergy, outlining how organizations and foundations are accomplishing huge upgrades in network proficiency and resolute quality. Moreover, we here highlight the challenges and contemplations that accompany this reconciliation, stressing data privacy and the necessity of high quality data. For the future development of network connectivity, the apparent open source and AI will be the key source. This presentation provides insight into these emerging trends, offering a glimpse of the network management landscape that is set to shape our connected world in years to come.

***KEYWORDS**: Artificial intelligence, Network connectivity Communication, Data privacy, Network management*

Paper Id: NCIAST-23/03

A COMPARATIVE STUDY: PROPOSED MOM-2 OVER SUCCESSFUL MOM-1 OF INDIA

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ABSTRACT

The Indian Space Research Organization (ISRO) is working on a second mission to Mars called Mars Orbiter Mission 2 or Mangalyaan 2.The mission is planned to be launched in the year 2024 by GSLV MKIII and to arrive in mars 2025. It is a sequel of MOM-1 which was launched in 2013 and successfully entered Martian orbit on 24th Sep 2014. The key objectives of MOM-2 to study the Martian exosphere, ionosphere and signs of life on Mars. This is a orbiter mission in which orbiter will use aero breaking to lower it's apses and enter into mars orbit. In comparison of Mangalyaan 1, this mission consists of 4 main payloads which will be more advance than MOM-1 are MODEX (Mars orbit dust experiment). The measure interplanetary dust particles, RO (Radio occultation) measure neutral and electron density profiles, energetic iron spectrometer which makes study on solar wind. The LPEX (Langmuir probe and electric field) will measure electron density and its number. It also includes hyperspectral camera which collect data of object from electromagnetic spectrum, a high resolution panchromatic camera, one of the science payloads under development is an Ionosphere, which measure plasma sensitivity on Mars surface. The major problem in MOM1 is MSM (methane sensor for Mars), in which we are unable to distinguish data of methane from sun sample spectra data. Hence, this mission boasts a specialized methane sensor. So MOM-2's payloads exemplify the mission's ambition to unreveal mysteries of Mars.

KEYWORDS: Mars, MOM 1, MOM 2, GSLV, MODEX, RO, LPEX, EIS, IP

Paper Id: NCIAST-23/04

NANOTECH IN MEDICAL APPLICATIONS

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ABSTRACT

It is the study of controlling and manipulating the matter on an atomic level to Nanoscale. The minimum structure size of 100 nanometers of dimension. The technology which can change our world within seconds i.e., Nanotechnology. There are many applications such as medical, electronics, transportation, energy and environment. By the assistance of nanotechnology for minute surgery, robots are made for quick and accurate medical function. These instruments would be precise and accurate. Cancer and Bone marrow Transplant are some medical issues can be cure through Nanotechnology. Treatments can be improved through these technologies by use of nanocameras, nanopills, nanoinjections etc. There is a less chance of mistake and faults. Nanotechnology can treat cancer by including chemotherapy, in drugs resistance, lack of selectivity and lack of solubility. It includes photodynamic therapy which has a potential for non invasive for dealing with disease, growth and tumors. Potential applications include early diagonosis and targeted drugs delivery for cancer treatment. Biomedical instrumentation, surgery, pharmaceutical, and Health care. "Life is all about a nanomaterial change"

KEYWORDS: Nanotechnology, Health care, Cancer, Treatment, Biomedical

Paper Id: NCIAST-23/05

RECYCLABLE AND BIODEGRADABLE PLASTICS

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ABSTRACT

The purpose of this study is to investigate the contribution of biodegradable plastics to sustainable new plastic product. The sustainable are cost effective, in which plastics perform their useful function without causing negative externalities. Biodegradable plastics are those that degrade naturally over time. With research carried out across diverse sustainability principles using the triple bottom line method, a multi-disciplinary strategy (social attitudes, environmental consequences, and economic characteristics). Biodegradable plastics became the initial target, as the position of plastics in the plastics system would inevitably be diminished if it could not be established for biodegradable plastics that give equivalent or improved material properties in contrast with traditional plastics. Therefore, the purpose of this study is to look at the various motives that drive companies to produce biodegradable plastic products, as well as the factors that influence their long-term viability. As a result, the study found that the economic component was the most important element, followed by environmental effects and social attitudes. The research also discusses the variables that influence the adoption of biodegradable plastics, as well as a sustainable framework for improving biodegradable plastics' long-term viability. The findings also assess the effectiveness of the suggested framework, which includes seventeen principles spread over three levels of sustainability. There are nine for the social dimension, eight for the economic dimension, and seven for the environmental dimension. This paper offers a comprehensive and efficient means of evaluating and finding optimal options for industries with biodegradable plastics. Moreover, transformation biodegradable plastic to new plastic product follows the green technology.

***KEYWORDS**: Biodegradable plastic, Sustainability, Bio-based plastics, Triple bottom line (TBL) approach*

Paper Id: NCIAST-23/06

ANTI- HIV USING NANOROBOTS

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ABSTRACT

Nanorobots hold great promise in the treatment of HIV, offering the potential for more targeted and effective drug delivery and even gene editing. While there are no approved systems for the treatment of HIV using nanorobots yet, several promising studies have been conducted that demonstrate the feasibility of this approach. Nanorobots can be engineered to recognize specific markers on the surface of HIV-infected cells and deliver drugs directly to these cells, reducing the viral load in the patient's body and slowing the progression of the disease. Moreover, nanorobots can carry gene editing tools that could be used to kill the virus from infected cells. However, further research is needed to optimize these systems and evaluate their safety and efficacy in animal models and clinical trials. If successful, nanorobots could offer a game-changing approach to the treatment of HIV, providing more targeted and effective treatment options for patients.

KEYWORDS: Nanorobot, HIV, WBC, Treatment, Cell

Paper Id: NCIAST-23/07

ADITYA – L1

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ABSTRACT

The ADITYA – L1 mission is an exciting space exploration project by the Indian space research organization (ISRO). The mission aims to study the sun's behavior and its impact on our Earth. The main goal of Aditya – L1 is for research about the outermost layer of the sun called corona. Basically, it is a hot and dynamic region which includes various solar phenomena like solar winds, coronal mass ejections (CME) etc. This is necessary because these solar events can affect our technological systems, power grids, satellites etc. The spacecraft will be placed in a special orbit called the Lagrange point L1, which is a point in space where the gravitational force of sun and earth are balanced. This L1 orbit is helps us to detect the suns activity 24* 7 and also during the solar eclipse. Scientists and researchers hope that the data gathered by Aditya-L1 will enhance our understanding of suns behavior and its influence on our planet. This knowledge will contribute to predict the suns unpredictable activities. The Aditya-L1 mission is a significant step forward in advancing our knowledge of the sun and its effects on our daily lives.

KEYWORDS: ISRO, Aditya-L1, CME, Lagrange point.

Paper Id: NCIAST-23/08

AI SMART DUSTBIN

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ABSTRACT

Our smart dustbin is an advanced technology based on the Artificial Intelligence (AI) technology. The AI based dustbin which movable automatically in the lane where garbage and dry leaves were thrown. It can clean most of the garbage, drug leaves and dust which thrown on the highway, expressway and city roads. It will help you to effortless cleaning and it will clean automatically. When a vehicle goes on the highway at 80 to 100 km/h speed they do not need to stop the car at the middle of the road. They can throw the garbage from the car windows without stopping the car. By the air resistance force garbage are move to the side of road. A white line is drawn at the side of the road then the dustbin will assist the lane and will move for range 500 to 800 meter. At the bottom of the dustbin a vacuum will placed it. It will pull all the garbage and dry leaves by vacuum. In the dustbin battery is connected to the solar panel which provides energy to the motor and the motor is connected to the battery. Private companies, government and other people can advertise their product by our dustbin display is fixed front of our dustbin.

KEYWORDS: Artificial Intelligence, Dustbin, Cleanliness, Brand advertisement,

Paper Id: NCIAST-23/09

NANOTECHNOLOGY IN MEDICAL APPLICATIONS : A MINIATURIZED REVOLUTION

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ABSTRACT

Nanotechnology has emerged as a groundbreaking field with immense potential to revolutionize the medical industry. This abstract provides an overview of the transformative role that nanotechnology plays in various medical applications. At the nanoscale, novel materials, devices, and techniques are harnessed to enhance diagnostics, drug delivery, and therapies. Nanoparticles, due to their unique properties, have found application in targeted drug delivery systems, enabling precise drug administration, and minimizing side effects. Nanoscale materials, such as quantum dots and gold nanoparticles, are integral to advanced imaging techniques, facilitating early disease detection. Furthermore, nanoscale scaffolds and tissue engineering enable the development of regenerative medicine solutions, paving the way for organ and tissue repair. This abstract delves into the interdisciplinary nature of nanomedicine, highlighting the synergy between biology, chemistry, physics, and engineering. It also emphasizes the importance of addressing ethical, safety, and regulatory considerations as nanotechnology continues to advance in the medical field. In summary, nanotechnology offers a promising avenue for the development of innovative medical solutions, addressing some of the most pressing healthcare challenges. As research and development in this field progress, it is imperative to harness the potential of nanotechnology to provide safer and more effective medical treatments and diagnostic tools.

KEYWORDS: Drug delivery, Gold nanoparticle, Nanomedicine, Medical applications

Paper Id: NCIAST-23/10

ENERGY FROM WASTE FOOD

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ABSTRACT

Energy from waste food is an innovative solution to address the growing problem of food waste and the need for sustainable energy sources. This abstract explores the concept of converting waste food into usable energy through various technologies and processes. Food waste is a significant global issue, with billions of tons of food being discarded yearly. This waste not only contributes to environmental pollution but also represents a missed opportunity for energy production. Energy from waste food involves harnessing the organic matter in food waste and converting it into biogas, biofuels, or electricity. One standard method of energy generation from waste food is thermal conservation. This process involves heating the food waste to high temperatures in the absence of oxygen resulting in the production of syngas, which can be used for electricity generation and for chemical production. Implementing energy from waste food technologies requires proper waste management systems and infrastructure. Energy from waste food can be generated using a zero-electrode system. This innovative technology involves the use of microbial fuel cells (MFCs) that utilize bacteria to break down organic matter in the food waste and convert it into electricity, which can be stored in the battery. By converting organic matter into biogas, biofuels, or electricity, this approach not only reduces environmental pollution but also provides a renewable and sustainable energy source.

KEYWORDS: Energy, Waste food, Zero electrode system, MFCs

Paper Id: NCIAST-23/11

NANOMATERIALS FOR BATTERY TECHNOLOGY

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ABSTRACT

Nano battery technology has been introduced to manage the scarcity of power. In this type of battery, we used nano materials of lithium which is vary powerful because it provides much more amount of charge transport. The use of nanotechnology to enhance performance by increasing energy storage density has also allowed much smaller batteries to be made for applications which are less demanding but benefit from small, light and flexible rechargeable batteries. The advantage of nano-based research and technology has improved the energy and power-density, cyclability and safety of modern batteries. Lithium ion is a strong device because of them high surface area, porosity etc. These types of battery improve the stability and specific capacity and this lithium ion battery leading to higher specific capacity even at high charge discharge current rates. This type of lithium ion batteries are top performance and can store energy for a long time in a small surface and provide energy. It provides much more amount of charge and it can provide electric charge for a long time. This type of battery can survive within 35 days without input current to provide electric charge. It supports to increase /expat the life span of the space craft and machine. Basically it's input is solar charge i.e solar cell providing electric charge to battery. This type of battery mainly used in spacecraft and any space lender. The increase of surface area enhances the flow of current in between the electrode and the chemicals inside the battery. The higher power density, shorter charging time, and longer shelf life are key factor for an excellent battery.

KEYWORDS:-Nanomaterials, Lithium ion, Battery, Power density, , Cathode , Anode , electrolyte

Paper Id: NCIAST-23/12

NANOTECHNOLOGY IN MEDICAL APPLICATIONS

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ABSTRACT

Nanotechnology has emerged as a groundbreaking field with immense potential for revolutionizing medical applications. This report provides an overview of the current state of nanotechnology in medicine, highlighting its significance, key advancements, and promising future prospects. The integration of nanotechnology in medical applications holds the promise of enhancing diagnostics, therapeutics, and overall patient care. The remarkable progress in the development of nanoscale devices, such as nanorobots and lab-on-a-chip systems, which have the potential to revolutionize minimally invasive surgery and diagnostics. Nanotechnology in medical applications presents a paradigm shift in healthcare. The report underscores the importance of continued research and collaboration between scientists, healthcare professionals, and policymakers to harness the full potential of nanotechnology in the medical field.

KEYWORDS: Nanotechnology, Medical applications, Healthcare

Paper Id: NCIAST-23/13

AI IN BANKING AND FINANCE

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ABSTRACT

Artificial Intelligence (AI) in Banking and Finance ensures fraud detection, automates customer service, and improves risk management. AI algorithms can analyze vast amount of data which is providing insights into customer behavior such as credit risk and investment opportunities. It promises to create more efficient and accurate financial services, making accessing financial products and services easier and faster. We can expect to see even more exciting possibilities with new developments and advancements. From chat bots to robot-advisor, AI has the potential to transform the way we interact with banks and financial Institutions. using smart AI virtual assistants, financial institutions are able to monitor transactions while keeping an eye on customer behaviours and various compliances and regulations The banking industry is flourishing with AI integration touching almost every aspect, from the digital KYC verification process to calculating credit scores helps banks identify fraudulent activities, track loopholes in their systems, minimize risks, and improve the overall security of online finance.

KEYWORDS: Artificial intelligence, Banking, Financial services, Consumer satisfaction

PaperId: NCIAST-23/14

ROAD SAFETY

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ABSTRACT

Automatic signal is alert to prevent accidents at the time of U-turns on roads. Automatic signal for turning times produce when the vehicle wheel touches on the humps. These humps are made by the help of some gadgets. This types of accidents occur mostly because of the driver unable to see the vehicle coming from the opposite side of the road curves, our system uses sensors to detect any vehicles reaching on the humps that humps alert immediately on other side vehicle by red signal and also producing alert sound. If that near the road of turning point is clear green signal is produce. Thus the system provide safety for drivers to prevent turning time accident on the road and provide safety for driver and also vehicles prevent accident in the curve roads. The following technical paper relates to the design and construction of a the modern bootblack speed bumps based on principal of non-Newtonian fluid contort the vehicles traveling at a speed below the restricted Limit and to prove deleterious to over speeding vehicles. The aim of the project is to overcome the pertinent issues posed by the conventional concrete speed breakers. To minimize the damage of to the automobiles and reducing fatal accidents. The bootblack mixture is to prefer in this project owning to its diloctone shear thickening properties. This makes the mixture stiffer, when a vehicle approaches it at a high speed.

KEYWORDS: Safety, Alert, Accident, Sound,U-turns

PaperId: NCIAST-23/15

GREEN TRANSPORTATION

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ABSTRACT

Green transportation, a pivotal solution to address climate change, urban congestion, and environmental degradation, encompasses sustainable transportation methods prioritizing reduced carbon emissions, improved air quality, and resource conservation. Electric vehicles (EVs), powered by electricity and producing zero tailpipe emissions, offer an eco-friendly alternative to traditional vehicles. Furthermore, alternative fuels such as hydrogen and biofuels are reducing greenhouse gas emissions. Beyond vehicle technology, green transportation includes improved public transit, cycling infrastructure, and pedestrian-friendly urban planning. Smart transportation systems and Internet of Things (IoT) technologies facilitate efficient traffic management and promote shared mobility solutions. Green transportation not only mitigates climate change but also fosters more sustainable, livable communities, promising a cleaner, healthier, and eco-friendly future for all. We conclude that"green transportation" represents a vital step towards creating a sustainable and eco-friendly world.

KEYWORDS: Green transportation, pivotal solution, EVs, IOT

Paper Id: NCIAST-23/16

ADITYA L1

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ABSTRACT

The Aditya-L1 is the first space-based solar observatory of the Indian Space Re-search Organization (ISRO). The spacecraft will carry seven payloads providing uninterrupted observations of the Sun from the first Lagrangian point. Aditya-L1 comprises four remote sensing instruments, viz. A coronagraph observing in visible and infrared, a full disk imager in Near Ultra-Violet (NUV), and two full-sun integrated spectrometers in soft X-ray and hard X-ray. In addition, there are three instruments for in-situ measurements, including a magnetometer, to study the magnetic field variations during energetic events. Aditya-L1 is truly a mission for multi-messenger solar astronomy from space that will provide comprehensive observations of the Sun across the electromagnetic spectrum and in-situ measurements in a broad range of energy, including magnetic field measurements at L1.

KEYWORDS: Aditya-L1, CMEs, Sun, Solar-terrestrial

PaperId: NCIAST-23/17

NANOTECHNOLOGY FOR MEDICAL APPLICATIONS

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ABSTRACT

Nanotechnology is the study of extremely small structures, having size of 0.1 to 100 nano medicine is a relatively new field of science and technology. Brief explanation of various types of pharmaceutical nano systems is given classification of nano materials based on their dimensions is given. An application of Nanotechnology in various fields such as health and medicine, electronics, environment, is discussed in details. Application of nano particles in drug delivery, protein and peptide delivery, cancer are explained. Application of various nano systems in cancer therapy such as carbon nano tube, dendrimers, nano crystal, nano wire, nano shells etc. are given. The advancement in nano technology logy helps in the treatment of neuro degenerative disorders such as Parkinson's dresses and Alzheimer's dieses. Nanoparticle probes can endow imaging techniques with enhanced signal sensitivity, better spatial resolution and ability to relay information on biological systems at molecular and cellular levels. Applications of nano technology in tuberculosis treatment, the clinical application of Nanotechnology in operative dentistry, in ophthalmology, in surgery, visualization, tissue engineering, antibiotic resistance, immune response are discussed in this article. Nano pharmaceuticals can be used to detect diseases at much earlier stages. The precise manipulation of materials at this scale holds promise for revolutionizing healthcare.

KEYWORDS: Nano devices; Nano material; Nano medicine; Nano pharmaceutics; Drug delivery

PaperId: NCIAST-23/18

BIODEGRADABLE SANITARY PAD

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ABSTRACT

Menstruation is a process in which woman discharges blood and other material from the lining of the uterus at an interval of about 28 to 35 days until menopause. Sanitary Pads are absorbent disposable single use products designed to receive, absorb, and retain menstrual fluid. Most of the rural women and some urban women use cloth also as absorbent because it is cheaper. However, in our study, conducted in Delhi-NCR, we found that the use of cloth during menses has lowered a lot (2%, n-974) and the women have switched to the use of sanitary pods (90%, n=974). Though, this practice elevates the reproductive health & hygiene of women, it also raises a major problem to the environment after it has been disposed. Frequently, it is openly dumped in landfills, as it is collected with domestic waste. The rag pickers come in contact with them & contract diseases as soiled pads harbor several bacteria and viruses. There are no stringent guidelines/lows for its disposal in India and it is neither bracketed as biomedical waste, nor categorized as plastic waste. As a result, they continue to choke our landfills. One conventional sanitary pad contains the equivalent of about four plastic bags Conventional pads may also contain furans, pesticides like pyrethrum, Procymidone, Meacham and fensulfathion synthetic fibers and petrochemical additives. Most sanitary pads are bleached with chlorine compounds that contain traces of the dioxin. The US Environmental Protection agency (EPA) has named dioxin to be the most potent carcinogen which does not degenerate even after decades in the soll. Hence, there should be arrangements for safe disposal of commercial sanitary pads or other alternatives for menstrual hygiene, to maintain sustainable environment.

KEYWORDS: Sanitary pads, Menstruation, Hygiene, Sustainable environment.

Paper Id: NCIAST-23/19

GLOBAL WARMING IMPACT AND FUTURE PERSPECTIVE

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ABSTRACT

Global Warming is a dangerous effect in our environment that We are facing there days. Rapid industrialization, increase in the pollution growth & pollution are Causing a rise in global warming. Global warming refers to the increase in the average temperature of the earth's Surface during the last century. It is the result of a natural process occurring in the atmosphere called the Greenhouse Effect. This amplification is caused by the addition of a range of gasses to the atmosphere as a result of domestic & industrial activity. The main culprits are carbon dioxide & methane. The advantages of Global warming are Plant growth and milder Climates. The next ice age may be prevented from occurring transportation less need for energy consumption to warm cold place Our all team members Create a project to change this polluted environment. Due to this project our future generation will be Satisfy.

KEYWORDS: Electric, Technology, Networks, Development

Paper Id: NCIAST-23/20

NANOTECHNOLOGY FOR BATTERY TECHNOLOGY

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ABSTRACT

Nano materials have emerged as promising candidates for enhancing the performance of battery technology. The unique properties exhibited by these materials at the nanoscle level offer numerous advantages over conventional battery materials. This abstract provides an over view of the recent advancements in nano materials for battery technology and there potential application. The use of nano materials in battery electrodes has shown significant improvements in energy storage capacity, charging rates and overall battery performance. Nanostructure materials such as nanowires, nanoparticles and shorter diffusion paths for ions, resulting in enhanced electro chemical reaction. This leads to higher energy density, faster charging times, and improved cycling stability. while Li-ion batteries have seen drastic changes over the years a lot of work has yet to be done to make batteries an alternative comparable to the existing fules. Nanotechnology actually offers new ways of designing, synthesizing and manipulating cathode materials to solve power limitations and dramatically increase the efficiency of battery. Overall, the incorporation of nano materials in battery technology has revolutionized the field by overcoming traditional limitation and enabling the development of high-performance, durable, and sustainable energy storage system. Further research and development in this area hold great promise for addressing the growing demand for advanced batteries in various application including electric vehicles, portable electronic and grid energy storage. Nanostructure offers new ways of designing and synthesizing materials to address power constraints and dramatically boost battery efficiency.

KEYWORDS: Nanomaterials, Battery technology, energy storage, electrode materials, sustainability, high-performance batteries.

Paper Id: NCIAST-23/21

CYBER SECURITY

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ABSTRACT

Cyber security is a fast-growing field of IT concerned with reducing organizations' risk of hacks or data breaches. According to research from the Enterprise Strategy Group, 46% of organizations say that they have a "problematic shortage" of cyber security skills in 2016, up from 28% in 2015. Commercial, government, and non-governmental organizations all employ cyber security professionals. The fastest increases in demand for cyber security workers are in industries managing increasing volumes of consumer data such as finance, health care, and retail. However, the use of the term "cyber security" is more prevalent in government job descriptions. And prevention of cyber security is said here. Today, due to the modern lifestyle, people have joined technology life and use more technology for shopping and financial transactions in their cyberspace. At the same time, the safeguarding of knowledge has become increasingly difficult. In addition, the heavy use and growth of social media, online crime, or a cybercrime has increased. In the present world information security plays an important role. Whenever we think of cyber security, we think of 'cybercrimes,' which expand tremendously every day. Different governments and businesses take various steps to avoid this form of cybercrime. In addition to numerous cyber protection initiatives, many people are also very worried about it. This paper focuses primarily on cyber security concerns related to the new technology. It also concentrates on the new technologies for cyber security, ethics, and developments that impact cyber security.

KEYWORDS: Cyber-security, Cyber-crime, Hacking, Android apps

FOREST MANAGEMENT WITH AI

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ABSTRACT

This paper proposes a novel robotic animal herding system based on a network of autonomous barking drones. The objective of such a system is to replace traditional herding methods (e.g., dogs) so that a large number (e.g., thousands) of farm animals such as sheep can be quickly collected from a sparse status and then driven to a designated location (e.g., a sheepfold). In this paper, we particularly focus on the motion control of the barking drones. To this end, a computationally efficient sliding mode based control algorithm is developed, which navigates the drones to track the moving boundary of the animals' footprint and enables the drones to avoid collisions with others. Extensive computer simulations, where the dynamics of the animals follow Reynolds' rules, show the effectiveness of the proposed approach.

KEYWORDS: Forest, Algorithm, Collision, animals, footprint

Paper Id: NCIAST-23/23

5G WIRELESS TECHNOLOGY

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ABSTRACT

5G Technology is the 5th generation of wireless communication, represents a transformative leap in the way we connect, communicate and internet with the digital world. It offers unprecedented data speeds, low latency and massive device connectivity. It is complete wireless communication with almost no limitations. It has incredible transmission speed. Now, we have 5G, the latest generation of mobile technology which is 10 times more capacity than others. Expected speed up to 1Gbps which is faster & reliable than 4G which is the lower cost than previous generation. 5G technology delivers significantly faster data speeds compared to it's predecessor, making real-time streaming, high-definition video calls and rapid downloads and uploads a seamless experience. 5G will be single unified standard of different wireless networks, including LAN technology, LAN/WAN WWWW (World Wide Wireless Web) , unified IP & seamless combination of broadband. -Software defined radio, encryption, antivirus. -High resolution for crazy cell phone users.5G wireless technology has a wide range of applications. It can greatly enhance communication speeds, support the Internet of Things (IoT), enable autonomous vehicles, and improve virtual reality experiences. In the healthcare field, 5G can enable remote surgeries, telemedicine, and real-time monitoring of patients. It has the potential to revolutionize various industries by providing faster and more reliable connectivity. .

KEYWORDS: Smart Meter, Smart Components, Sensors, Energy, Power, Efficiency

Paper Id: NCIAST-23/24

FULL DRIVE VIRTUAL REALITY

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ABSTRACT

You might have used VR headsets and thought it was pretty impressive how immersive it was. However, the Full Dive Virtual Reality (FDVR) promises to redefine the VR experience. This technology pushes VR beyond immersive headsets and makes the user one with the machine through the use of a Brain-Computer Interface (BCI). The user is immersed in a whole different world. A world beyond our imagination, in which they can feel, realistically interact with, and move with freedom. It would almost feel like teleportation in a virtual sense. Or as a lucid dream, but with more or less full consciousness, as with our perception of reality as we know it. The magic of Full-dive VR technology underlies haptic immersion through neural signals supplied to the brain. Haptic sensory technology enables us to feel physical sensations. We can feel like we're actually running, jumping, or getting tapped on the shoulder in these other worlds. It's like a direct connection to our mind, giving us a seamless experience without moving a single muscle. FDVR enables us to democratize experience, work from anywhere, Immersive learning, and expand our cognitive capabilities. Despite recent advances, FDVR technology remains in its infancy. The latest VR systems use a combination of hardware and software to produce convincing simulations that blur the line between the virtual and real world. However, it still can't offer realism in a fully fledged 3-D world. There is still much work to be done to fully realize the full potential of this technology. The possible limitations to this are its effects on mental health, commercial interests, and poorly designed software. FDVR is not yet a reality but it's definitely an exciting concept to think about, and with the advancements being made, it will become a reality shortly.

KEYWORDS: Revolutionizing, Energy, Powergeneration, Security, Reliabilityetc.

PaperId: NCIAST-23/25

NANOTECHNOLOGY IN MEDICAL SCIENCE GENETIC TRAITS,NANOPARTICLES AND THEIR MEDICAL APPLICATION

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ABSTRACT

Healthcare, as a basic human right, has often become the focus of the development of innovative technologies. Technological progress has significantly contributed to the provision of high-quality, on-time, acceptable, and affordable healthcare. Advancements in nanoscience have led to the emergence of a new generation of nanostructures. Each of them has a unique set of properties that account for their astonishing applications. Since its inception, nanotechnology has continuously affected healthcare and has exerted a tremendous influence on its transformation, contributing to better outcomes. In the last two decades, the world has seen nanotechnology taking steps towards its omnipresence and the process has been accelerated by extensive research in various healthcare sectors. The inclusion of nanotechnology and its allied nanocarriers/nanosystems in medicine is known as nanomedicine, a field that has brought about numerous benefits in disease prevention, diagnosis, and treatment. Various nanosystems have been found to be better candidates for theranostic purposes, in contrast to conventional ones. This review paper will shed light on medically significant nanosystems, as well as their applications and limitations in areas such as gene therapy, targeted drug delivery, and in the treatment of cancer and various genetic diseases. Although nanotechnology holds immense potential, it is yet to be exploited. More efforts need to be directed to overcome these limitations and make full use of its potential in order to revolutionize the healthcare sector in near future.

KEYWORDS: Nanotechnology, Nanosystems, healthcare, cancer, genetic disorders, drug delivery.

FIBONACCI NUMBERS AND ITS APPLICATIONS

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ABSTRACT

The number sequence has been a constant source of attraction for many number theorists from ancient times. One of the most fascinating and simplest number sequences among all number sequences is the celebrated Fibonacci sequence discovered by an Italian mathematician Leonardo Pisano better known for his nickname Fibonacci. The Fibonacci sequence (F_n) is defined recursively by

with initials and This sequence has a wide range of applications in science and engineering apart from that these numbers appear in nature. For instance, as an application in computer science, the Fibonacci numbers are used in algorithms. Fibonacci sequence appears in biological situations such as the arrangement of leaves on a stem, spiral form by Daisies, the arrangement of Pine cones etc. In this talk, we will discuss the Fibonacci sequence and its applications.

KEYWORDS: Fibonacci numbers, Golden ratio.

Paper Id: NCIAST-23/27

MARS ORBITER MISSION

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ABSTRACT

The mars orbiter Mission, commonly known as Mangalyaan, is an outstanding space mission of ISRO (Indian space research organization) which was launched in 5 November 2013 and on 24 September 2014 it successfully entered into the orbit of mars. The rocket used for this mission is PSLV-XL C-25 and it was lunched from Satish Dhawan Space Center. The most exciting fact is that the cost of this mission is only 450cr ($74 million dollar), which is cheaper than a Hollywood film. It was India's first interplanetary mission and it made ISRO the fourth space agency to achieve Mars orbit, after Ros cosmos, NASA, and the European Space Agency. It made India the first Asian nation to reach the Martian orbit and the first nation in the world to do so on its maiden attempt. The scientific goal of this mission was search for life, understanding the surface and the planet's evolution, and preparing for future human exploration. But unfortunately, it lost its contact in 2 October 2022. The mars orbiter mission carried 5 scientific payloads like Mars Color Camera (MCC), Thermal Infrared Imaging Spectrometer (TIS), Methane Sensor for Mars (MSM), Mars Exospheric Neutral Composition Analyzer (MENCA), Lyman Alpha Photometer (LAP). This mission has a exclusive step for the advancement of our knowledge about the Mars.

KEYWORDS: Mars orbiter mission (MOM), ISRO, PSLV-XL, MCC, TIS, MSM, MENCA, LAP.

Paper Id: NCIAST-23/28

AN OVERTIME PRODUCTION OF AN EOQ MODEL FOR LINEAR DETERIRATING ITEMS WITH PRICE STOCK AND LIFETIME DEMAND, CONSTANT HOLDING COST

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ABSTRACT

The aim of the paper is to discuss a production inventory model for linear degrading goods with price, stock, and lifetime demand rate constant holding cost along with an overtime production facility and shortages are not allowed. The prime objective is to reduce the total relevant values using mathematical 12.0. The working model is mathematically formulating differential equations and also finding solutions. This model ultimately has been illustrated through a numerical example and soft computing using mathematical 12.0. Formally gnu plot software is used to plot the graphs to check the exactness of the model. The prime objective of the thin model and its functionality as well as sensitivity analysis in order to visualize the optimal solution with respect to the change in the value of the parameters.

Keywords: Overtime production, linear Deterioration, price stock, Lifetime Market Demand, constant Holding cost.

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NCIAST-2023

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