SUMMER ISSUE - MAY 2022

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DEPARTMENT OF MECHANICAL ENGINEERING

MECHANOTOMY
यांत्रिकी सोपान

THE NEWSLETTER

The Department of Mechanical Engineering is continuously striving to achieve excellence in education, academics and overall development of the society. This newsletter highlights the recent achievements and developments of the Department.

inSIDE

TECHNICAL EVENTS

- Pitching Event for Proof of Concepts(PoCs) developed & linkage with Innovation Ambassadors for mentorship support.
- Kickoff Session on Product Lifecycle Management (PLM) using PTC Windchill.
- Pitching Event for Ideas scouted & linkage with Innovation Ambassadors for mentorship support.
- Training on Product Life Cycle Management (PLM).
- Workshop on exploring mental horizon in the area of R&D and Innovation.

SPORTS ACTIVITIES

- Kabaddi
- Tug-of-war(@Lloyd)
- Basketball (@AKTU Zonals)
- Tug-of-war
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- MoU and Tie-up with Capgemini
- List of placed students in the session 2021-22(Till April'22)

LATEST RESEARCH PUBLICATIONS

MEET THE EDITORIAL TEAM

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Dr. Praveen Pachauri

Managing Editor
Mr. Rakesh Kumar Singh

Creative Editor
Mr. Pulkit Srivastava

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Student Coordinator
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Student Coordinator
Mr. Pratiya Amrit

Student Coordinator
Mr. Sanju Dey

Student Coordinator
Mr. Aditya Singh

Student Coordinator
Mr. Rahul

Success is not a one-shot process. It is the result of a continuous improvement after each failure.

" कर्म ही दीन है। कर्म ही ईमान है।
कर्म ही पूजा है। कर्म ही धर्म है। "

Dr. O. P. Agarwal
MANAGING DIRECTOR

We believe in valuing the 21st century education system. Today when education is going through a sea change, we leave no stone unturned to match our pace with emerging trends & newer technologies. My best wishes to the Department of Mechanical Engineering for the first issue of "Mechanotomy", the newsletter.

Dr. Neema Agarwal
ADDITIONAL MANAGING DIRECTOR

NIET has been helping its students to write their own stories since its inception. Committed in providing the best jobs by creating life-changing educational opportunities and collaborative learning environments. I congratulate the Mechanical Engineering Department for establishing their new newsletter.

Mr. Raman Batra
EXECUTIVE VICE PRESIDENT

Proactive scanning of the recent development in technology space, early identification of upcoming needs of the industries and curriculum designed for holistic development of the students and meticulous execution of teaching and learning process are the hallmark of our value chain to deliver "Industry ready professionals".

Mr. Praveen Soneja
DIRECTOR GENERAL

We motivate our students to dream big and ensure that right spirit and necessary talent are inculcated in the students to help them realize their objectives. We also continuously strive to instil ethical values in our wards so that they become responsible citizens of the future.

Dr. Vinod Mansiram Kapse
DIRECTOR

A person without vision is similar to a sailor without a compass. Have a vision, plan your goals, accept new challenges, work hard to achieve them and make your life worthful. ME Department is continuously making efforts in updating skills, organizing technical and cultural. events in line with latest trends in Teaching Learning process.

Dr. B. C. Sharma
DIRECTOR (ACADEMICS)

WELCOME TO THE DEPARTMENT OF MECHANICAL ENGINEERING

Dear Friends, Mechanical Engineers need to play a vital role in the development of new machines, devices and processes to benefit mankind. They need to apply their creative imagination and professional skills in a variety of situations. The Department of Mechanical Engineering at NIET, Greater Noida imparts technical knowhow to the students, promote their problem-solving skills and involve them in innovation of new techniques and technologies.

The Department of Mechanical Engineering at NIET is continuously striving to achieve excellence in education, academics and industry oriented research & consultancy work to serve the society. The faculty members of the Department are engaged in research in classical as well as in upcoming areas of Mechanical Engineering. The Department has active Chapters of various technical bodies such as *T*he Indian Society of Heating, Refrigerating and Air Conditioning Engineers(ISHRAE), Society of Automotive Engineers(SAE), Indian Society for Technical Education (ISTE), etc. Also the Mercedez- Benz Centre of Excellence and PTC Centre of Excellence fostering Industry 4.0 needs (Automation Lab, PTC Creo Lab, Robotics Lab, 3D-Printing & Reverse Engineering Lab and Smart Manufacturing lab) are the strengths of the Department. The UG programme of the Department is accredited by the National Board of Accreditation (NBA), Government of India, New Delhi.

We aim to provide our students a perfect blend of cognitive, psychomotor and affective domain skills that help them to serve the society in best possible way. Our prime objective is to facilitate the students with advanced R&D and by up-skilling them as per the requirement of the Industry, in order to bridge the academia-industry gap. Global recognition for its outstanding technical education and research capabilities is the sole aim of Mechanical Engineering Department at NIET, Greater Noida.

Dr. Praveen Pachauri
Director (Projects & Planning)
Head of the Department,
Department of Mechanical Engineering

VISION

The department envisions to be recognized globally for its outstanding technical education, research & consultancy capabilities to address the ever-changing, social-global issues ethically.

MISSION

- To deliver outcome based education and develop state-of-the-art research facilities to provide opportunities to interpret, apply and disseminate knowledge.
- To inculcate the culture of up gradation of knowledge and skills of human resources thorough Self learning, E-learning and training activities.
- To equip the students with academic, corporate and entrepreneurial leadership, communication skills and global awareness required in the engineering profession and society in general.
- To establish an environment that encourages and builds an exemplary degree of citizenship, professional and personal integrity and ethical behavior.

PROGRAM EDUCATIONAL OBJECTIVES

PEOs of the B.Tech. in Mechanical Engineering program are as following:

- To be capable of applying scientific and engineering attitude to analyze, design and solve real life problems.
- To lead a successful career in industries; pursue higher studies or entrepreneurial endeavors.
- To demonstrate his potential to bridge the gap between industry and academia for societal needs with latest tools and techniques.
- To address environmental, technological and engineering challenges ethically.

PROGRAMME SPECIFIC OUTCOMES

Engineering Graduates will be able to

- Apply analyze, design and solve the complex problem related to Mechanical Engineering.
- Implement the use the software, latest equipment and scientific concepts for the betterment of the society in professional and ethical manner.
- To present their technical ideas, execute various projects and learn the upcoming interdisciplinary technology

Program/Activity Name:
Pitching Event for Prof of Concepts (PoCs) developed & linkage with Innovation Ambassadors for mentorship support.

Program Type:
Motivational Speech

Theme:
Entrepreneurship & Startups

Number of student Participants:
117

Number of Faculty Participants:
22

Objective:
The objective of the programme was to familiarize the participants with an idea of PoCs and its linkage with Innovation Ambassadors. The programme aimed at informing the participants about the IIC at NIET and how it may help the budding innovators and entrepreneurs to convert their innovation in an actual business venture. Participants were pitched with their developed PoCs and were mentored to improve for further developments.

The IIC at NIET organized an information sharing session on 17th December 2021 at 12 PM in the Institute's Auditorium. The speaker, Mr. Sanjay Kumar informed the participants about the functioning of the IIC and how the council is promoting innovation and entrepreneurial spirit among the students. The Govt. of India has collaborated with various Higher Education Institutions in the country and AICTE encourages the students to innovate and convert the innovation into real business ventures. IICs have been set up in various institutions as part of the bigger objective of systematically fostering a culture of innovation and startup in educational institutions.

Program/Activity Name:
Kickoff Session on Product Lifecycle Management (PLM) Using PTC Windchill through Innovative and Competitive Business Environment

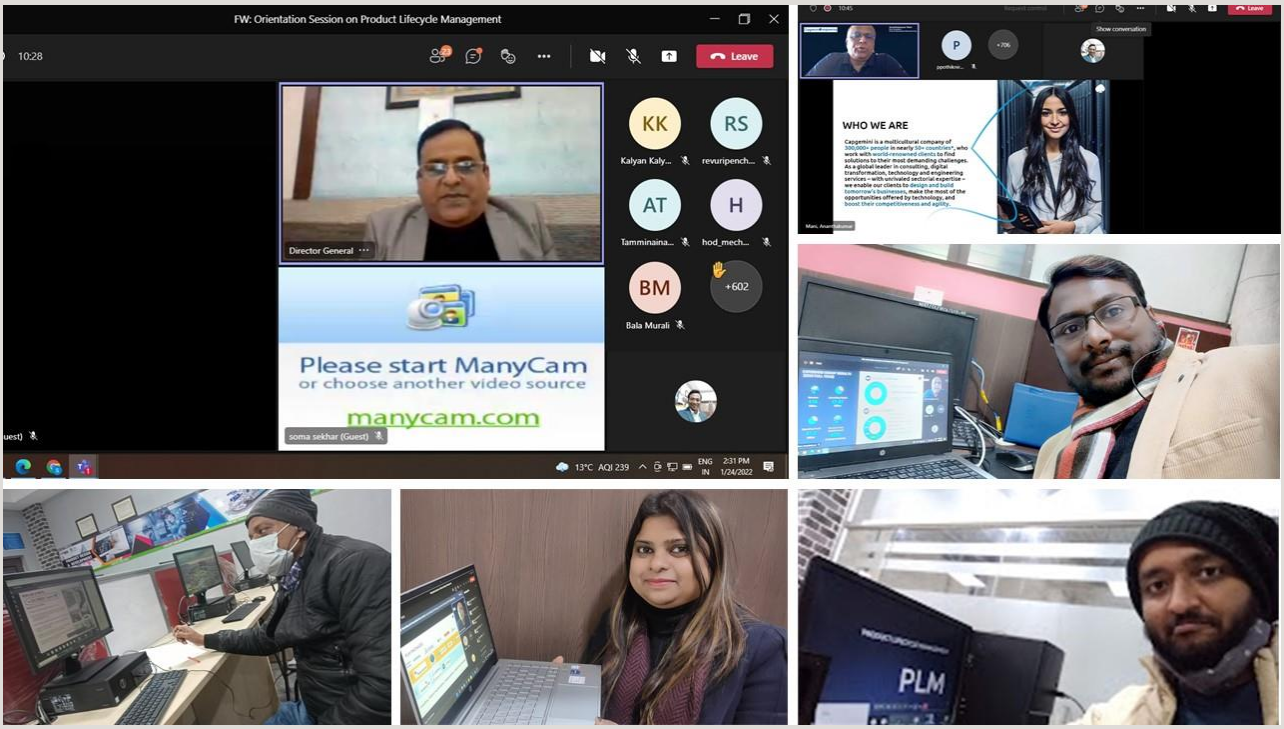
Program Type:
Workshop

Theme:
R&D and Innovation

Number of student Participants:
200

Number of Faculty Participants:
30

Objective:
To familiarize and encourage the students of ECE, EEE, and Mechanical Engineering disciplines about the application of Product Lifecycle Management (PLM) in the industries and optimum career opportunities in the field of PLM through Innovative ideas and challenges in business settings.
The event was focused on encouraging the young students and to develop innovative and creative thinking in the field of PLM. The success stories of young innovators and the veteran experts certainly influenced the young minds as they can co-relate the ideas to these young innovators and ignite the young brains to go ahead in shaping their own career with optimum growth and opportunities in the field of PLM.



Program/Activity Name:
Pitching Event for Ideas Scouted & linkage with Innovation Ambassadors for mentorship support.

Program Type:
Pitching Event

Theme:
Entrepreneurship

Number of student Participants:
46

Number of Faculty Participants:
12

Objective:
To provide a platform to the students to pitch their business ideas that can be converted into entrepreneurial ventures.
The TBI, NIET received 33 nominations for the event, out of which 21 teams were shortlisted for idea pitching. During the Idea Pitching event on 15th February 2022, 8 teams out of the shortlisted ones presented their business ideas. The selected teams are given mentors to further concretize their ideas and transform those into actual business ventures.
The attraction of the event was very enthusiastic presentations from the budding entrepreneurs. The Programme certainly inspired many students to think innovatively and promoted entrepreneurial spirit amongst the students.

Program/Activity Name:
Training on Product Life Cycle Management (PLM) using PTC Windchill

Program Type:
Training

Theme:
Innovation and Competitive Business Environment

Number of student Participants:
36

Number of Faculty Participants:
4

Objective:
To keep the pace with the industry requirement and ensure that all NIET students are employable with the knowledge of latest Technologies/Skills. The PLM (PTC Windchill) Training in collaboration with Capgemini was organized from 24th March 2022 to 29th April 2022. Students learnt about the available tools, technologies and techniques for aggregation and integration of data throughout the digital manufacturing and entire product life-cycle. They got foundational knowledge to assist in efforts to facilitate design, planning, and production scheduling of goods and services by applying product life cycle data. Main concepts of this training were delivered through PTC Windchill's open architecture which enables easy integration with other enterprise systems, including IoT, providing a solid foundation for a product-driven digital thread. PTC's PLM system provides comprehensive out-of-the-box functionality and highly configurable role and task-based apps.

Program/Activity Name:
Workshop on Exploring Mental horizon in the area of R&D and Innovation

Program Type:
Workshop

Theme:
Industry 4.0, R&D and Innovation

Number of student Participants:
200

Number of Faculty Participants:
25

Objective:

A three day (21st April 2022 to 23rd April 2022) Technical Workshop on "Exploring Mental horizon in the area of R&D and Innovation" was organized by The Department of Mechanical Engineering in association with NIET-IIC for the students of 2nd and 3rd Year of B.Tech Mechanical Engineering, containing 5 sessions (in each of 5 modules) for the students. Modules covered the topics such as Rapid Prototyping (3d Printing/Additive Manufacturing) PTC Creo, PLM, Windchill and AR/VR, Automotive Mechatronics (Mercedes Benz) , Artificial Intelligence and ML and Industrial Automation and IOT. Mechanical Department and other department faculties were the main speakers.

The workshop was designed to impart hands on experience to the students so that they become familiar to the needs of the industry. Students who participated in the event got a high degree of interest in the these areas and now they are excited to explore more in these fields.

Valedictory session was held on the 23rd April 2022. Dr. Praveen Pachauri (HOD, Mechanical Engineering Department) gave the Welcome Note in the Valedictory session. Mr. Praveen Soneja, Director General, Prof. Vinod M Kapse Director, Dr. B. C. Sharma, Director Academics, Mr. Rakesh Kumar Singh, Deputy Head , MED and Faculty members of Mechanical Engineering Department, NIET Greater Noida were also present there. The students were provided with the Certificates of participation during the Valedictory session.

Glimpses of the workshop

EBULLIENCE - 2022

Students of Mechanical Engineering participated in the Annual Sports Meet "Ebullience-2022" and won in many events including kabaddi, tug of War, chess, volleyball, etc. Some special moments are shared here.

Kabaddi

All work and no play, makes Jack a dull boy. While we train our mind with the technical activities, it's equally important for us to train our bodies as well. What's better than a round of our Indian game, Kabaddi. Our boys always do well in the game and this year to they were the runner up in the Inter-Branch Kabaddi Tournament.

Tug-of-war (@LLoyd)

Not just in our college, but our students shine everywhere. The left side picture was taken when our students won the Tug-of-War championship at LLOYD Group of Institutions.

Team Mechanical Engineering has proven to be the leaders everywhere in every field. It is a proud moment for the Department of Mechanical Engineering

Basketball (@AKTU Zonals)

We encourage our students to play as much as they study. We work on overall growth of our students and Basketball can be the best choice for our future Kobe Bryants. We believe in our students. Every year our team takes part in the AKTU Zonal Sports Championship, and we are proud to say that our students give their best and win the field.

Tug-of-war

Let's start with the good news. Students of Mechanical branch scored first position in the Inter-Branch Tug-of-War Tournament, organized by NIET during Sports Fest. We are amazed by the outstanding performance of our students. This is just a glimpse of the potential our students have. They are capable of touching hieghts in every domain.

Chess

Do we have our own grandmasters? Yes, we do! On some days we don't feel like going out to play, what's better than a game of chess. During sports fest, many indoor game tournaments are also conducted by the DSW. Students of Mechanical don't take part for fun, they take part to win. After all those Permutations and Combination are in the blood veins of Mechanical Engineers.

Water Rocketery

Elon Musk failed two times before launching the first successful SpaceX rocket. Water rocketry competition is our first step towards blooming future astronauts and space scientist. Department of Mechanical Engineering organizes this star event every year during Fest. This competition is about enhancing your inner scientist and develop a water rocket that launches far beyond we expect it to be.

Robo-war

Robots and humanoids are a big thing of charm these days and in future also. Whether we talk about manufacturing field, medical field or entertainment field, robots are playing an important role.

As mechanical engineers it's our duty to make that fiction into reality. Because we do the impossible. Robo-war is one such activity during the Technical Fest in which students build their own robots and tries to win the battle. Supercool right !

Farewell - 2021

The Farewell party for the 2020-21 batch students of the whole NIET was organized by the students of 2022 batch. The students of mechanical engineering were amongst the best organizers. So it won't be wrong to say that our students have developed a good management skills. Its a pride that the President of Music Club, President of Editorial Club, and the President of DSW society represent MED.

Dance @ Technical Fest 2022

According to Indian Culture we start every new thing remembering our Holy Deity Lord Ganesha. To Celebrate the inauguration of Sports and Tech Fest, our college's official dance club, The Juventas, performed a religious and powerful performance to motivate the participants. The Department of Mechanical Engineering support the students to take part in the dance and showcase their extra-curricular skills.

Edition: New Delhi, 2022 • Tuesday, March 8, Issue

CITY NEWS

THE CLASIC NEWSPAPER OF DELHI

Capgemini PLM Lab inaugurated at NIET Greater Noida, Mechanical students to get employment through "Train and Hire" model

Noida Institute of Engineering and Technology (NIET) Greater Noida, which is the first private institute in Uttar Pradesh to get autonomous status by UGC, has tied up with Capgemini, which aims to develop the talent of students on the basis of "Train and Hire" model. Enhancing the pool is aimed at enhancing industry and academia interaction and strengthening the alliance between the two institutions. Under this agreement, PLM Lab has been set up in NIET Campus which was inaugurated on 7th March 2022 by Shri Alok Wadhera- Vice President (SFS)-Capgemini, Shri Praveen Goyal-Assistant Vice President- Capgemini, Shri Prasad Shetye-Executive Vice President- Capgemini. , Mr. Anantkumar Mani-Vice President-Capgemini, Mr. Raman Batra-Executive Vice President-NIET, Mr. Praveen Soneja-Director General-NIET, Dr. Vinod M. Kapse-Director-NIET, Dr. B.C. Sharma, Director (Aql)-NIET, All the heads of departments, Prof. Sanjay Kumar and students were present.

The program was inaugurated by Dr. Vinod M Kapse-Director-NIET through a presentation about the achievements of the institute.

Students being briefed by Capgemini officials

Officials from Capgemini and NIET during the inauguration

Mr. Raman Batra - Executive Vice President - NIET said that NIET has always been encouraging innovation and application of new technologies and has established a new identity not only in the academics but in the industry. The teachers will also be trained on in PLM technologies through the Faculty Development Program on Developmental Skills.

List of ME Students Placed in Session 2021-22 (Till date)				
S.No.	Roll No.	Name	Branch	Placed for
1	1813340901	Aakash	ME	TalentServe
2	1713340002	Aarthik Suneja	ME	TalentServe
3	1713340026	Arjun Kumar	ME	TalentServe
4	1713340046	Himanshu Rai	ME	TalentServe
5	1713340106	Sarthak	ME	TalentServe
6	1813340901	Aakash	ME	Dynatech Controls Pvt. Ltd.
7	1713340026	Arjun Kumar	ME	VIVO Mobile India
8	1713340045	Himanshu Pathak	ME	VIVO Mobiles India
9	1813340917	Prashant Mehra	ME	VIVO Mobiles India
10	1713340028	Ashutosh Dhar Dwivedi	ME	Clearpack Group
11	1713340003	Abhijeet Singh	ME	Congruex Asia-Pacific
12	1713340046	Himanshu Rai	ME	Congruex Asia-Pacific
13	1713340072	Mohit Barnwal	ME	Congruex Asia-Pacific
14	1713340052	Kartik Ray	ME	Congruex Asia-Pacific
15	1813340904	Abhishek Sharma	ME	BYJU'S
16	1813340080	Shivansh	ME	Amazon
17	1813340022	Harshit Gajjar	ME	Capgemini
18	1813340027	Jayant Hazela	ME	Capgemini
19	1813340050	Piyush Kumar Awasthi	ME	Capgemini
20	1813340084	Souvik Roy Chowdhury	ME	Cognizant GenC
21	1813340026	Hritik Dogra	ME	Cognizant GenC
22	1813340050	Piyush Kumar Awasthi	ME	Cognizant GenC
23	1813340087	Tamish Kumar	ME	Cognizant GenC
24	1813340089	Ujjwal Srivastava	ME	Cognizant GenC
25	1813340067	Rishikesh Kushwaha	ME	Cognizant GenC
26	1813340093	Vinay Verma	ME	Cognizant GenC
27	1901330409042	Shivam Singh	ME	Cognizant GenC
28	1813340098	Vishal Patel	ME	Wipro
29	1813340027	Jayant Hazela	ME	Wipro
30	1813340093	Vinay Verma	ME	Wipro
31	1813340026	Hritik Dogra	ME	TCS (Ninja)
32	1813340098	Vishal Patel	ME	TCS (Ninja)
33	1813340089	Ujjwal Srivastava	ME	TCS (Ninja)
34	1813340027	Jayant Hazela	ME	TCS (Ninja)
35	1813340034	Luv Ratan	ME	Phronesis Partners
36	1813340018	Devesh Singh	ME	Muvro Technologies
37	1901330409012	Atul Arya	ME	Sanmar Group
38	1813340057	Prithviraj Singh Chauhan	ME	Sanmar Group
39	1813340001	Abahya Pratap Singh	ME	BYJU'S

Our Proud Recruiters

Details of Research Publications in the Session 2021-22			
SCI Indexed Papers	Scopus Indexed Papers (Journal)	UGC Care Journal Papers	Scopus Indexed Papers (Conference)
1	3	2	7

DE GRUYTER

Materials Testing 2022; 64(4): 533–540

Testing for Welding, Joining or Additive Manufacturing Applications/Materialography

Shashi Prakash Dwivedi*, Praveen Pachauri, Manish Maurya, Ambuj Saxena, Ravi Butola, Rohit Sahu and Shubham Sharma

Alumina catalyst waste utilization for aluminum-based composites using the friction stir process

https://doi.org/10.1515/mt-2021-2074

Abstract: A significant amount of environmental pollution is caused by oil refinery industries in the form of spent alumina catalyst (SAC) waste generated during the process. This waste causes various detrimental effects on human health. In this study, an effort has been made to consume the SAC in the fabrication of aluminum-based composite materials via the friction stir process (FSP). An X-ray diffraction image of the SAC powder used in this work confirms the occurrence of Al_2O_3, Fe_2O_3, SiO_2, and CaO phases. These hard-phase materials form the basis for SAC to be used as reinforcement content with the aluminum alloy. The FSP is used to create the composite material. It is evident from the scanning electron microscopy image of the Al/SAC composite developed by the FSP technique that fair distribution of constituent ingredients is attained during the process. The incorporation of SAC contents in the aluminum alloy results in remarkable enlargement in tensile strength and hardness of the composite material. The Al_2O_3, Fe_2O_3, SiO_2, and CaO phases of SAC showed a considerable effect on thermal expansion and corrosion weight loss of the composite.

1 Introduction

The world is looking forward to sustainable solutions, but industrial waste materials pose an unavoidable situation due to industrial needs. The waste materials have many detrimental effects to the environment, still the companies have no feasible solution, and they allow these waste materials to lay outside in open air. These materials are not recyclable, and their presence causes air and soil pollution [1, 2]. The presence of industrial waste in the open area provides fertile space for viruses and microorganisms, thus posing chances for the spread of fatal diseases. To avoid such situations, many scientists have tried to reuse these waste materials. However, an attractive solution for the use of waste materials is always welcome. Some research conducted on scrap aluminum alloy wheel-based composite revealed that mechanical characteristics can be improved by the addition of spent alumina catalyst (SAC) and Rice husk ash (RHA) as reinforcement contents [3]. The study on collagen mixed with alumina particles-based reinforcement material for aluminum-based composite material also manifested an improvement in both the physical and mechanical properties [4, 5].

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Research Article

Team Cognition Approach in Agile Software Development

Raj Kumar Goel[1], Chandra Shekhar Yadav[1], Shweta Vishnoi[2,*], Laxman Singh[3] and Praveen Pachauri[4]

[1]Department of Computer Science & Engineering, Noida Institute of Engineering & Technology, Greater Noida, India
[2]Department of Physics, Noida Institute of Engineering & Technology, Greater Noida, India
[3]Department of Electronics and Communication, Noida Institute of Engineering & Technology, Greater Noida, India
[4]Department of Mechanical Engineering, Noida Institute of Engineering & Technology, Greater Noida, India

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Abstract

Crowdsourcing cognitive science (CCS) provides a cutting-edge development strategy for scient
innovation to leverage the positive features of the platform. Utilizing the positive qualities of the p
risk is the prime decisive task. The crowdsourcing paradigm shortens software development
parallelism of design, coding and testing through flexible implementation. Although software
traditional paradigms were more complex and interdependent, they can be made easy using the c
a new way for scientific advancement in this field. The objective of this study is to build more
As per WHO/World Bank, 15% people in the world have challenges due to disabilities. In the N
Development, disability cannot be seen as a hurdle for the lack of digital access and for the
rights. It is also important to reinforce the exogenous effect in order to sustain the internal
and technology for agile process convergence. Crowd-sourced design reduces develop
involving intelligence, creativity, and critical thinking of people at different levels of
consistency and reliability of team are also assessed with the help of Cronbach's alp
approach has been validated for its effectiveness and verified with the help of Smart Ind

Design Engineering

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An Intelligent Image Inpainting Autoencoder Model for Irregular Mask

Vineet Kumar[1], A. K. Sinha[2], A. K. Solanki[3], P. Pachauri[4], Chandra Shekhar Yadav[5]

[1,4,5]Noida Institute of Engineering & Technology, Gr. Noida, U.P., India
(vineet.kumar.verma@gmail.com, Mob No. 9911483519)
[2]UST Software India Pvt Ltd., New Delhi, India
[3]Department of Computer Science & Engineering, BIET, Jhansi, India

Abstract

Image inpainting is a method of filling in the best conceivable artifacts in the missing, damaged
ng portions of a digital image or filling in the holes as opposed to eliminating the objects
in the image utilizing the data from the best region neighboring the holes. The existing
methods had rendered the immeasurable result in reconstructing the damaged area in
For the filling, however, the missing parts, which affect the complex structure and
still a challenge. Deep learning that mimics the human brain makes a great
n studying the missing part by extracting many features and choosing the most

Sambodhi
(UGC Care Journal)
ISSN: 2249-6661
Vol-44 No.- 01 (I) January-March (2021)

Mechanical PropertiesInvestigation of Al 6063 T6/ SiC MMC Fabricated Through Electromagnetic Stir Casting WithSqueeze Casting

Shyam Lal Verma (Professor Department of Mechanical Engineering, Noida Institute of Engineering and Technology, Greater Noida, Uttar Pradesh)

P. Pachauri (Professor Department of Mechanical Engineering, Noida Institute of Engineering and Technology, Greater Noida, Uttar Pradesh)

Vinod M Kapse (Professor Department of Electronics Engineering,Noida Institute of Engineering and Technology, Greater Noida, Uttar Pradesh)

Dr. Chandan Kumar (Professor Department of Mechanical Engineering, Noida Institute of Engineering and Technology, Greater Noida, Uttar Pradesh)

Mustqueem (Assistant Professor, Department of Mechanical Engineering, I Engineering and Technology, Ghaziabad, Uttar Pradesh)

**Corresponding authore-mail:shyamlal561@gmail.com*

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ABSTRACT:

This study presents a new method for an inexpensive fabrication of aluminum matrix compositeswith fine microstructures and super combination of electromagnetic stir castingwith squeeze casting meth composites were fabricated using 2, 4 and 6 weight percentage of Si particlesize 200 mesh) in aluminum alloy Al 6063T6matrix metal. The used to provide an inert environment to the meltduring the fabrica composite was investigated for micro structure examination and the r like tensile strength, elongation, hardness and impact strength. The resu

UGC Care Group 1 Journ

A REVIEW ON ENERGY SOURCES, IN INDIA

Arvind Kumar Tiwari
Assistant Professor, Department of Applied Sciences, Rajkiya Engineering College, Sonbhadra, India

Chandan Kumar
Associate Professor, Department of Mechanical Engineering, BIT Sindari, Dhanbad, India

Praveen Pachauri
Professor, Department of Mechanical Engineering, NIET, Greater Noida, India

Praveen Mishra
Assistant Professor, Department of Mechanical Engineering, BIT Mesra, Ranchi, India

Email address: aktiwarijmi@gmail.com

ABSTRACT

In this paper an extensive review on Renewable Energy Sources (RES), its potential and policy on it for optimal usage of it in context of India has been highlighted. The various RES, its locations, policies and programs on it have been addressed. Further, investigations on future plan on RES in India have been discussed also.Energy is the prime factor for a nation's socio-economic growth and development. India is a socio-economic developingcountry and its population isincreasing very fast, so the energy demand is always increasing. Due to boundary conditions of conventional energy sources, the RES can play a significant part to accomplishtherequirement of energy. TheRES is anecofriendly and sustainable kind of energy source which is consequent directly from natural surroundings and has huge potential to offer

021 International Conference on Technological Advancements and Innovations (ICTAI)

A review on conglomeration of Technologies for Smart Cities

Avyansh Gupta
Delhi Public School
Rohini,
New Delhi, India
avyansh04@gmail.com

S. Vikram Singh
Amity University
Greater Noida
Uttar Pradesh, India
s.vikram@live.com

Ansh Pachauri
Apeejay International School
Greater Noida
Uttar Pradesh, India
Anshpachauri2005@gmail.com

Prateek Chaturvedi
Amity University,
Greater Noida,
Uttar Pradesh, India
prateekonmail@gmail.com

Praveen Pachauri
Noida Institute of Engineering & Technology
Greater Noida, U.P, India
profpachauri@gmail.com

Smita Sharma
Amity University
Noida

***Abstract*- The dream of creating Smart Cities is associated with many desires, aspirations, technological limitations and concerns related to a safe and secure human life. This paper is an effort to assess the desired features in a smart city and explore the available solutions by means of upcoming technologies. The key aspects that are prominent for a smart city: infra, economy and policy, technology, sustainability, and health are enumerated with key desired features. These aspects can be fulfilled only by means of available technology solutions. The paper discusses the role of (IoT, Cloud Computing, Big Data, AI &ML and Block chain technology in developing a solution to fulfil the needs of a smart city. The strength and dependence of the technologies on one another is discussed to take the maximum benefit of these technologies while designing an appropriate solution for the smart city.**

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Optimization of magnesium ZK60A/SiC/B_4C hybrid composite fabricated by friction stir processing

Sashikant Awasthi [a], Prateek Gupta [a,*], Praveen Pachuri [a], Mudit Tyagi [a], Aniruddha [b]

[a] Department of Mechanical Engineering, Noida Institute of Engineering & Technology, Greater Noida, UP 201306, India
[b] Bharat Heavy Electricals Limited, Delhi, India

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RACT

r processing (FSP) is a surface modification approach that may enhance microstructures, and cessing flaws. Thereby to improve mechanical properties like strength, ductility, corrosion- fatigue, FSP was introduced. In this research, microstructural analysis, hardness, and opti- veloped magnesium hybrid composite were analyzed using process parameters i.e. tool tilt ?), %wt. of reinforcement (SiC/B4C), and rotational speed (600, 1000, 1400 rpm). High- S) tool is used having a threaded pin with scrolled shoulder (TPSS). The results revealed particles are uniformly distributed in the Mg matrix. No defects were observed. To ess variables, L9 orthogonal array was implemented. Weight percentage has more s as compared to tool tilt angle and rotational speed. The acceptable mean value of).35 HRB.

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Virtualization Risks and associated Issues in Cloud Environment

Parinishtha Surya
Student
Modern School
Barakhamba Road., New Delhi
parinisthasurya123@gmail.com

Praveen Pachauri
Mechanical Engineering Department
Noida Institute of Engineering & Technology
Greater Noida, India
profpachauri@gmail.com

Ansh Pachauri
Student
Apeejay International School
Greater Noida,
India
anshpachauri2005@gmail.com

Prateek Chaturvedi
Mechanical Engineering Department
Amity University
Gautam Buddh Nagar
Uttar Pradesh, India
prateekonmail@gmail.com

Suman Avdhesh Yadav
Computer Science and Engineering Department
Amity University,
Gautam Buddh Nagar.
suman.avdheshyadav@gmail.com

Divya Singh
Computer Science and Engineering Department
Amity University,
Gautam Buddh Nagar, U.P, India
dsingh@gn.amity.edu

***Abstract* - Cloud computing is dynamically evolving with high end services that are available in low costs and are easily accessible on-demand. Virtualization has made it possible to access data and resources from anywhere on a pay-as-you-use basis. With the magnification of cloud applications, there arises a need to identify the risks associated with virtualization technology. One big issue is configuration management of such a heterogeneous network. There is a need to design a secure access mechanism to handle the multi-tenancy. Virtualization faces a big challenge in resource allocation and developing trust among its users. Handling the data migration among virtual machines is another big issue. The evaluation of service level agreement of the service provider is also very important. It must cover all the details of agreement defining all the services that the CSP is promising along with the associated charges in detail.**

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Design and optimization of the shape of electrostatic precipitator system

Anurag Pal [a], Anuj Dixit [b], Ashish Kumar Srivastava [c,*]

[a] Noida Institute of Engineering & Technology, Greater Noida, U.P 201306, India
[b] Greater Noida Institute of Technology, Greater Noida, U.P 201306, India
[c] G.L. Bajaj Institute of Technology and Management, Greater Noida, U.P 201306, India

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Keywords:
Electrostatic precipitator system
W-type electrostatic plate
Turbulence
Current density

ABSTRACT

The electro hydrodynamic (EHD) flows in "Optimization of The Shape of Electrostatic Precipitator System" which also known as "Cup shape W type electrostatic precipitator system" is simulated on Ansys Fluent 6.1. The "Cup shape" and W type electrostatic precipitator System is comparing with old flat plate Electrostatic precipitator system. According to theoretical analysis model particle flow is analyze by time-averaged conservation equations of mass and momentum, the electric field and current flow equations. The W-type collecting surface space charge density is more uniform rather than the flat plate. It is seen that on W- type circular wire plate number of trap particle is more than the flat plate type, whereas number of escapes is more in flat type. Which state that increasing the voltage of this design increase the efficiency of the system. In Cup design electrode release greater number of ion or electric field than the circular type electrode. Together using of w type and cup type electrode increase the ionization and collection area, which improve the efficiency of the ESP design. Separate work on practical design already done in previous work for Cup shape electrode with the flat collecting plate design and w type collecting plate with circular wire which give much better results.

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Parametric optimization of process parameters during the friction stir processing of Al7075/SiC/waste eggshell surface composite

Rishabh Dwivedi [a], Rakesh Kumar Singh [a], Sanjay Kumar [a], Ashish Kumar Srivastava [b,*]

[a] Noida Institute of Engineering & Technology, Greater Noida, U.P. 201306, India
[b] G.L. Bajaj Institute of Technology and Management, Greater Noida, U.P. 201306, India

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AB

g materials with specific properties are increasing day by day. In this
a vital role to fulfil these requirements. Several researchers are con-
cades to make better the properties of composites which are envi-
blem of decomposition. Friction stir process is an energy-efficient
echnique for the production of surface composites, In the present
e composite of Al7075-T651. SiC and waste eggshell are used as
urpose, tool rotational speed, tilt angle and percentage of rein-
investigate the result after performing the tensile test and
he improvement in both the tensile strength and hardness.
strength and microhardness is 395.57 MPa and 159.0577 at
and reinforcement are 1739.49 rpm, 1.96° and 6% of volume,

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Effect of powder metallurgy on high entropy alloy materials: A review

Karan [a], Praveen Pachauri [a], Abdhesh Kumar [a], Manish Maurya [b,*]

[a] Department of Mechanical Engineering, Noida Institute of Engineering and Technology, Greater Noida, India
[b] Department of Mechanical Engineering, Accurate Institute of Management and Technology, Greater Noida, India

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Powder metallurgy
High entropy alloy
Mechanical properties
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ABSTRACT

Powder metallurgy technique is widely used in aerospace, medical sector, and automobile engineering. It is a simplest method used for fabricating components with high entropy materials. In this article, the mechanical and microstructural properties of the high entropy alloys (HEAs) materials are observed. The certain process parameters are such as particle size, sintering (temperature, pressure and time), blended speed with time and heating rate are also observed. This review article will help the researchers to find the results obtained by various experiments performed previously through powder metallurgy (PM) technique.

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Investigation and characterization of microwave processed joint of MS1020

Prateek Gupta [a,*], Vikas Kumar [a], Shivaji Chaudhary [a], Sudhir Kumar [b], Jitendra Kumar Singh [c], Pankaj Kumar Chauhan [c]

[a] Noida Institute of Engineering and Technology, Greater Noida, India
[b] GNIOT, (IPU Campus), Greater Noida, India
[c] G.L. Bajaj Institute of Technology and Management, Greater Noida, India

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Microwave Joining
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ABSTRACT

Microwave welding is the special processes of joining materials with the help of electro
It is really more challenging than other welding processes, because metals generally ref
netic waves at ordinary conditions. This paper blends metallic content (Mild Steel) with a
with frequency of 2.45 GHz and strength 900 W. Microwave radiations is intended for jo
steel plates by applying Nickel paste as an interfacing material of an ordinary thickn
between the surfaces. The joints are distinguished by X-ray diffraction (XRD) analysis, opti
tural analysis, tensile power, percentage elongation and Vickers microhardness. The micro
ysis clearly indicates the full melting of the interfacing powder with bonding between the
with less porosity present at the joints. XRD is responsible for the development of Fe_3C a
cesses. The microhardness, tensile strength & percent elongation of the joint are 180 H
and 5.04% respectively.

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Investigation and characterization of brass jo microwave hybrid heating process

Prateek Gupta [a,*], Shivaji Chaudhary [a], Vikas Kumar [a], Sud

NIET, Greater Noida, India
GNIOT, (IPU Campus), Greater Noida, India
L. Bajaj Institute of Technology and Management, Greater Noida, India

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rength
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ABSTRACT

Microwave energy is a novel technique for joining metals and composites in the field of manufacturing. In this paper, joining of bulk metallic material (Brass) is successfully carried out using microwave hybrid heating. Joint is formed at 480 sec exposure time with power 900 W and frequency 2.45 GHz. The joint is studied by using microstructural analysis, XRD, SEM, Tensile strength, Hardness and % elongation. Microstructural analysis reveals that small amount of porosity is observed and joint is clearly visible. Formations of various compounds which improve the mechanical properties of the joint are shown in XRD analysis. SEM analysis indicates the formation of dense joint with no cracks and voids. Tensile strength, hardness and percentage elongation were measured i.e. 292.67 MPa, 50 Hv and 7.30% respectively.

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ference on Computational and Experimental Metho

DEPARTMENT OF MECHANICAL ENGINEERING IN PRINT MEDIA

एकेटीयू की सूची में तीन छात्रों को मिला स्थान

जासं, ग्रेटर नोएडा : डा. एपीजे अब्दुल कलाम प्राविधिक विश्वविद्यालय ने अपने 19वें दीक्षा समारोह की तैयारी शुरू कर दी है। विभिन्न कोर्स की परीक्षा में अंतिम वर्ष में प्रदेश में सर्वश्रेष्ठ नंबर पाने वाले छात्रों को स्वर्ण, रजत व कांस्य पदक दिया जाएगा। विवि द्वारा जारी की गई सूची में नालेज पार्क कालेजों में पढ़ने वाले छात्रों ने भी स्थान प्राप्त किया कालेज की लर इन सूची में

अनिरुद्ध उपाध्याय • सौ. स्वयं

तमन्ना • सौ. स्वयं

शालू • सौ. स्वयं

विश्वविद्यालय स्तर पर तीसरा स्थान प्राप्त किया है। कालेज प्रबंधन ने छात्रा को बधाई दी। एनआईईटी कालेज की एक छात्रा व एक छात्र ने भी सूची में जगह बनाई है। मैकेनिकल इंजीनियरिंग में कालेज के छात्र अनिरुद्ध उपाध्याय ने सूची में पांचवां स्थान प्राप्त किया। एमबीए की छात्रा शालू ने सूची में दसवां स्थान प्राप्त किया। कालेज के कार्यकारी उपाध्यक्ष रमन बत्रा ने दोनों छात्रों को बधाई दी।

एनआईईटी में पीएलएम लैब की स्थापना

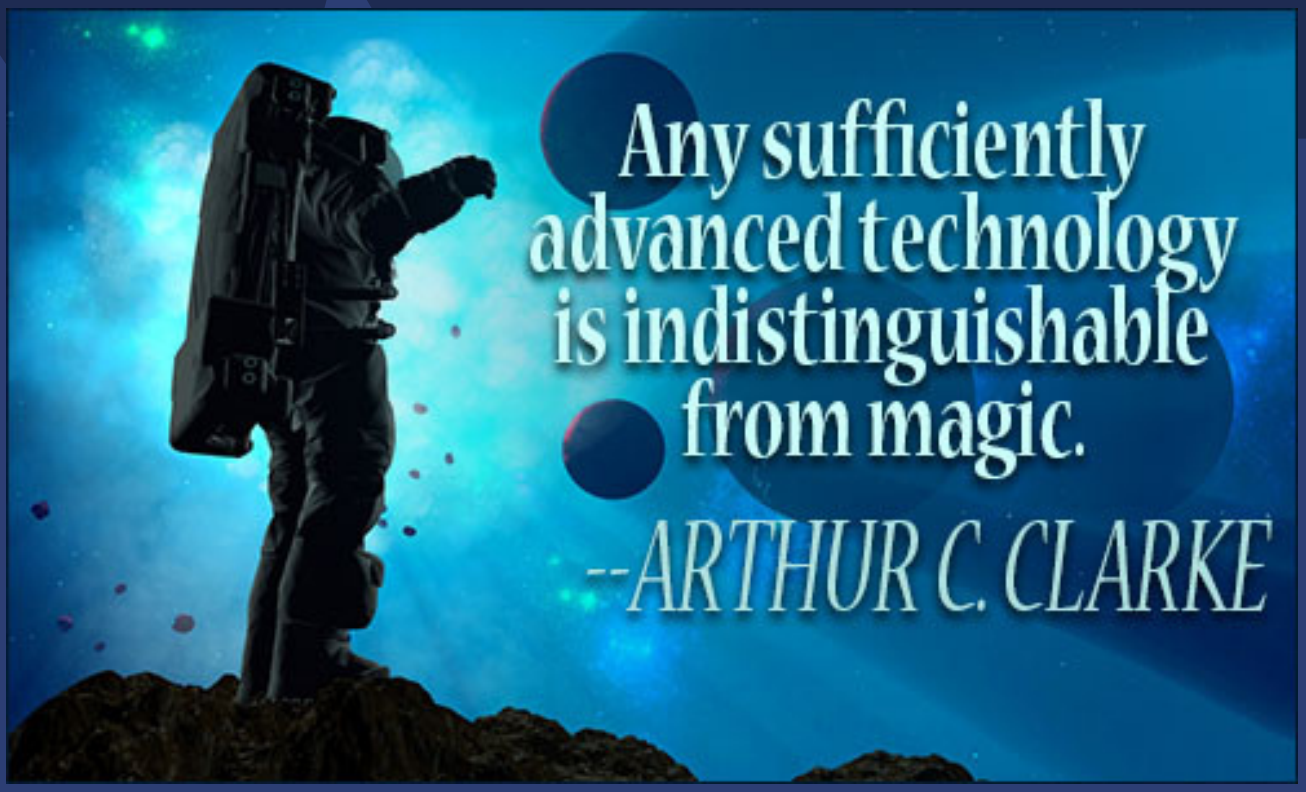
एनआईईटी कालेज में लैब शुभारंभ के दौरान उपस्थित लोग

जासं, ग्रेटर नोएडा: नालेज पार्क स्थित एनआईईटी कालेज ने कैपजेमिनी के साथ करार किया है। जिसका उद्देश्य विद्यार्थियों के टैलेंट पूल को बढ़ाने के लिए उद्योग और शिक्षण जगत के संवाद को बढ़ाना और दोनों संस्थानों के बीच गठबंधन मजबूत करना है। इसी के अंतर्गत एनआईईटी कैंपस में पीएलएम लैब स्थापित की गई है। लैब का उद्घाटन करते हुए आलोक बढेरा ने कहा कि लैब के माध्यम से विद्यार्थियों को अंतरराष्ट्रीय स्तर पर तकनीकी क्षेत्रों में रोज प्राप्त होंगे। वाइस प्रेसि कि कंपनी असीम स है कि वि को प्राप कर दे एकजी बत्रा ने के अनुप्रयोग को सदैव हो प्रो करता आया है, जिसका सीधा फायदा छात्रों को मिलता है।

राष्ट्रीय विज्ञान दिवस पर विद्यार्थियों ने दिखाये विज्ञान के हुनर

ग्रेटर नोएडा, 28 फरवरी (देशबन्धु)। एनआईईटी ग्रेटर नोएडा के राष्ट्रीय विज्ञान दिवस के अवसर पर शिक्षा मंत्रालय-भारत सरकार की इन्नोवेशन सेल तथा एआईसीटीई की ओर से की गयी पहल के अंतर्गत एनआईईटी-आईआईसी के द्वारा प्रोजेक्ट प्रतियोगिता एवं प्रदर्शनी का आयोजन किया गया। कार्यक्रम का शुभारंभ एनआईईटी के एक्जीक्यूटिव वाइस प्रेसिडेंट रमन बत्रा के द्वारा प्रवीण सोनेजा-महानिदेशक-एनआईईटी, डॉ. विनोद एम कापसे, निदेशक-

एनआईईटी, डॉ. बी. सी. शर्मा-निदेशक (अका.) एनआईईटी, एनआईईटी-आईआईसी के पदाधिकारियों, शिक्षकों एवं प्रतिभागी विद्यार्थी शामिल रहे। इस कार्यक्रम में विद्यार्थियों से दो प्रमुख थीम 'प्रोजेक्ट' और 'माई वर्कलैब-माई स्ट्रेन्थ' पर आवेदन मांगे गए थे। प्रोजेक्ट थीम को हार्डवेयर और सॉफ्ट वेयर दो श्रेणियों में विभाजित किया गया। 'माई वर्कलैब-माई स्ट्रेन्थ' में विद्यार्थियों को अपनी प्रयोगशाला का तीन मिनट का वीडियो बनाकर उससे किस प्रकार से इन्नोवेशन किया जा सकता है, इस विषय पर प्रस्तुतीकरण देना था। प्रोजेक्ट थीम में कुल 32 टीमों ने जबकि 'माई वर्कलैब-माई स्ट्रेन्थ' थीम में कुल 6 टीमों ने हिस्सा लिया। इस कार्यक्रम में लगभग 200 से अधिक विद्यार्थियों ने हिस्सा लिया और अपने प्रोजेक्ट एवं प्रयोगशाला वीडियो का प्रदर्शन किया।



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