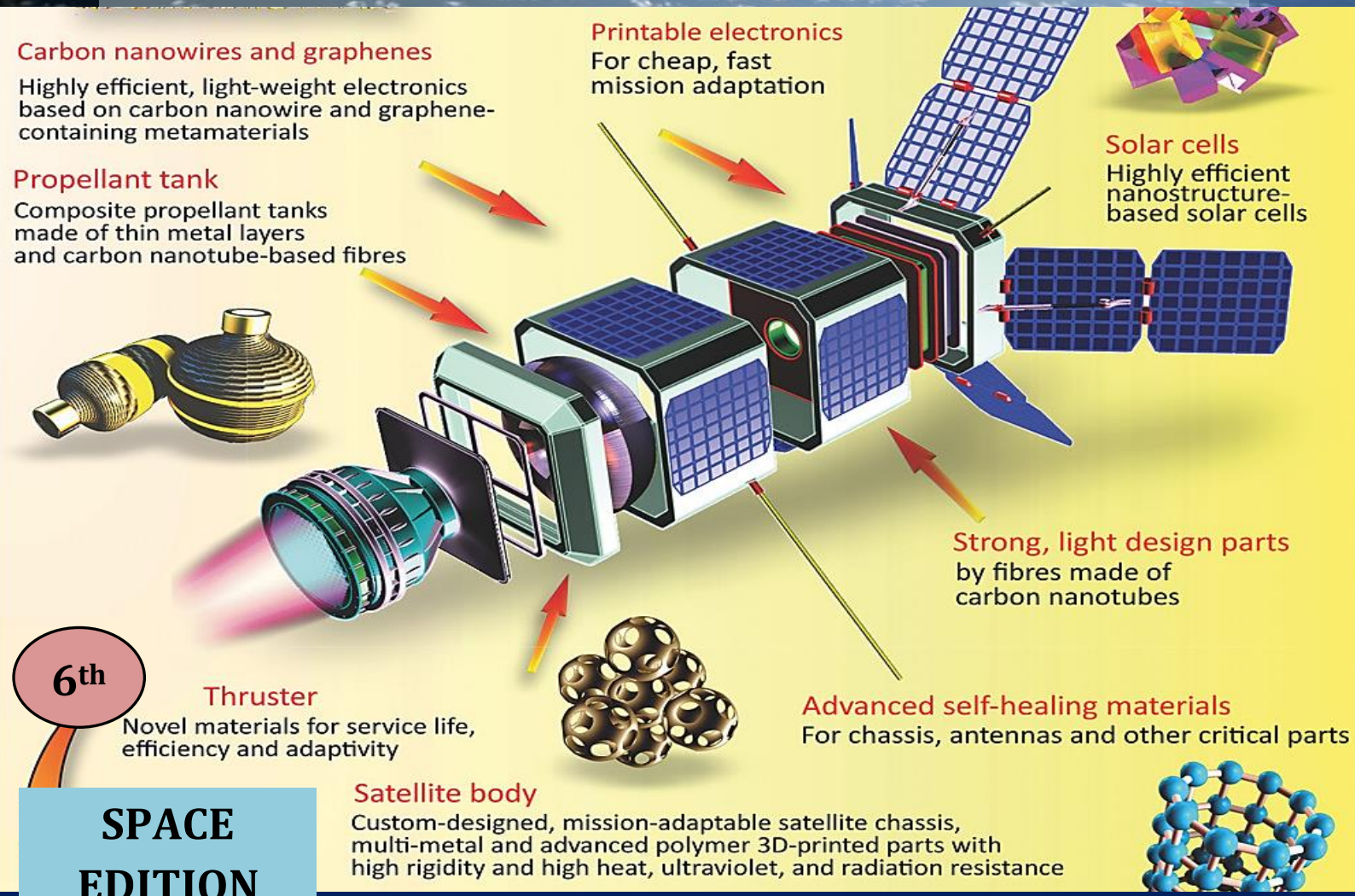
MET.TEL NEWSLETTER

METALLURGY DEPARTMENT

DR. S. & S. S. GHANDHY COLLEGE OF ENGINEERING & TECHNOLOGY, SURAT



6th

SPACE EDITION

JULY 2023

Message From The Desk of Head of The Department

Dear Students, Faculty, and Staff,

I am delighted to announce the release of the 6th edition of our Department Newsletter, themed "Space Edition," for July 2023. This edition showcases the remarkable achievements and endeavours of our department over the past year, highlighting our journey towards excellence in metallurgical education and research.

Reflecting on the previous year, our department has been bustling with activities aimed at fostering academic growth, industry exposure, and holistic development. We have organized a series of expert lectures and industrial visits, providing invaluable insights into the future of metallurgy and its applications in various industries. From exploring the advancements in steel manufacturing to delving into additive manufacturing technologies, our students have had the opportunity to broaden their horizons and gain practical knowledge beyond the classroom.

Additionally, our department has actively engaged in extracurricular activities, celebrating events such as International Yoga Day, Har Ghar Tiranga, and Saheed Din, fostering a sense of community and patriotism among our students.

In response to the challenges faced in admissions, we have taken proactive measures to raise awareness about metallurgy through sessions conducted by alumni and faculty members. These initiatives aim to inspire and attract aspiring students to join our vibrant community and embark on a fulfilling journey in metallurgical engineering.

Furthermore, I am proud to acknowledge the academic achievements of our faculty members. Ms. Sonam Patel has successfully completed her PhD, demonstrating her dedication to advancing knowledge in the field of metallurgy. Additionally, Mr. Nirmal Patel's commendable accomplishment of completing the Pre-Commission Course SD-171 at Officers Training Academy, Kamptee, Maharashtra, and being commissioned as a Lieutenant in the National Cadet Corps is a testament to his exemplary leadership and commitment to serving the nation.

As we continue to uphold our commitment to excellence, innovation, and service, I extend my gratitude to all members of our department for their unwavering dedication and contributions. Together, let us strive to elevate the stature of our department and inspire future generations of metallurgical engineers to reach for the stars.

Best Regards,

Mrs. Bindu H. Goyal
Head of the Metallurgy Department

STAFF MEMBERS

Mrs. B. H. Goyal (HOD)
ME-Industrial Metallurgy

Mr. S. F. Parmar (LME)
ME- Material Technology

Dr. S. M. Patel (LME)
Ph.D. – Met. & Mats. Engg.

Mr. M. J. Joshi (LME)
ME-Material Technology
Ph.D. (Pursuing)

Mr. T. K. Kyada (LME)
ME-Industrial Metallurgy
Ph.D. (Pursuing)

Mr. R. D. Dave (LME)
ME-Welding Technology
Ph.D. (Pursuing)

Mr. N. G. Patel (LME)
ME-Industrial Metallurgy
Ph.D. (Pursuing)

Mr. A. M. Gautam (LME)
ME-Material Technology
Ph.D. (Pursuing)

Ms. J. B. Lad (Lab. Asst.)
Diploma Mechanical

INSIDE THIS ISSUE

VISION OF THE INSTITUTE

"To be a unique center of excellence in technical education & innovation for sustainable growth of industry and society."

MISSION OF THE INSTITUTE

- To impart globally viable technical core competencies and skills.
- To respond effectively to the ever-changing needs of industry and community at large.
- To promote conducive campus environment and resources for qualitative education and innovation.
- To inculcate moral, ethical, and professional values amongst all internal stakeholders.

VISION OF THE DEPARTMENT

"To lead in diploma metallurgical engineering education with focus on innovation and sustainable development of industry and society."

MISSION OF THE DEPARTMENT

- To impart and empower students with relevant knowledge, competence, and creativity with special emphasis on metallurgical engineering.
- To promote conducive environment for all round development of students.
- To promote linkages with external agencies to meet changing needs of industry and society.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- The metallurgy diploma graduate will be able to make successful career in metallurgical industry to meet ever changing needs of industry.
- To enable diploma graduate for lifelong learning and higher studies.
- Identifying and engage in innovation, become an entrepreneur for sustainable development of society.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- Apply the fundamental knowledge of metallurgy for the benefit of society, industries, and research organizations.
- Diploma holders will be able to select suitable techniques for testing of metals and alloys.

EXPERT TALK ON "FUTURE OF METALLURGY IN STEEL INDUSTRIES"

On August 5, 2022, the metallurgy department hosted an expert talk titled **"Future of Metallurgy in Steel Industries,"** delivered by alumni Mr. Birju Kajiwala, Lead Welding Engineer at Petrofac International (UAE) LLC, and Mr. Vimarsh Jariwala, Operations Manager at AMNS, Surat. This enlightening session was attended by 14 final-year students. Both speakers shared valuable insights into the evolving landscape of metallurgy within the steel industry, providing students with valuable perspectives on potential career paths and emerging opportunities. The talk served as a platform for students to gain industry-specific knowledge and guidance from accomplished professionals in the field.

EXPERT TALK ON "MOCK GD & INTERVIEW"

On September 3, 2022, an expert talk on **"Mock GD & Interview"** was conducted by Mr. Bhavesh Rana, an Engineer at L & T, Hazira, Surat. This event was attended by fourteen final-year students. Alongside Mr. Rana, faculty members from the Metallurgy department, including Ms. S. M. Patel, Mr. R. D. Dave, Mr. M. J. Joshi, and Mr. T. K. Kyada, facilitated mock group discussions and interviews for the students.

The purpose of this initiative was to equip students with the necessary skills and confidence to navigate group discussions and interviews, which are integral parts of the job placement process. By providing practical experience and valuable insights, the session aimed to prepare students for the challenges they might encounter during their future career endeavors. The interactive nature of the session allowed students to actively engage in simulated group discussions and interviews, receiving constructive feedback from both industry experts and faculty members.

INDUSTRIAL VISIT AT AADHYA ENGINEERING SERVICES, VADODARA

Metallurgy department had arranged industrial visit for 5th semester students in **"Aadhya Engineering Services, Makarpura, Vadodara"** on 03/10/2022. 14 students of 5thsemester visited this company. Faculty member Mr. S. F. Parmar accompanied and guided the students throughout the visit.

INDUSTRIAL VISIT AT INDUS UNIVERSITY, AHMEDABAD

The metallurgy department arranged a visit to the Metallurgical & Materials Engineering Department at **"Indus University",** Ahmedabad on 05/01/2023. The visit was exclusively organized for the 3rd and 5th semester diploma students, providing them with an opportunity to explore and gain insights into the department's facilities and resources. A total of 32 students participated in the visit, accompanied by two dedicated faculty members, Ms. Sonam M. Patel, and Mr. Ravi D. Dave. The visit aimed to broaden the students' understanding of mineral processing by exposing them to practical applications and fostering an interactive learning environment.

SEMINAR ON "ADDITIVE MANUFACTURING: A STEP TOWARDS THE FUTURE OF MANUFACTURING"

The Metallurgy Department, organized a seminar on **"Additive Manufacturing: A Step towards the Future of Manufacturing"** on 24/03/2023. With an impressive turnout of 65 participants, including 08 staff members and esteemed guests, the event proved to be a resounding success. Dr. Jaykumar J. Vora, Assistant Professor of PDEU, Gandhinagar, delivered an insightful and engaging lecture, shedding light on the transformative potential of additive manufacturing in the field of manufacturing. The seminar provided an excellent platform for knowledge sharing and served as a testament to the college's commitment to staying at the forefront of emerging technologies.

CO-CURRICULAR ACTIVITIES

INDUSTRIAL VISIT AT JMT INDIA INC., SURAT

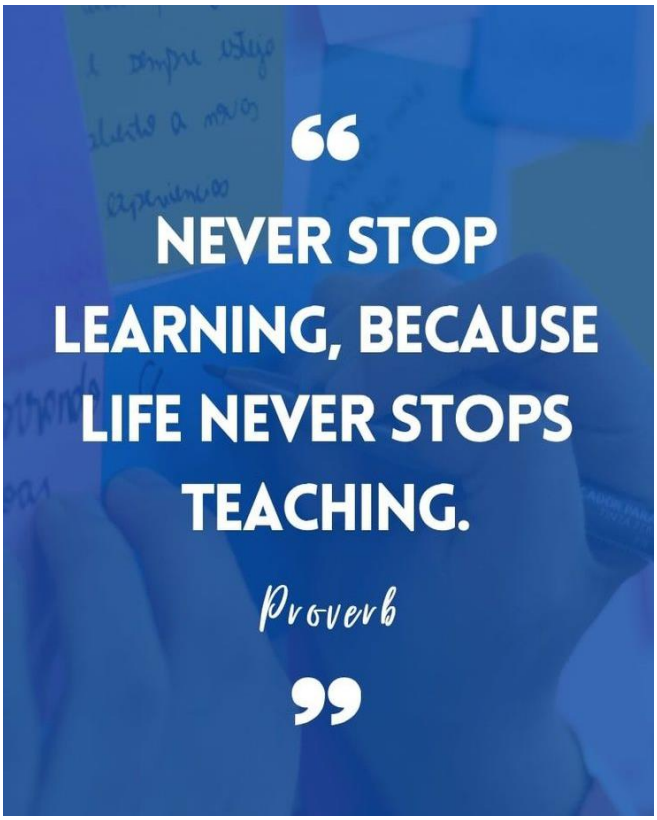
The metallurgy department facilitated a visit to **"JMT India Inc." located in Sachin**, Surat on 20/04/2023. The visit was exclusively organized for the 4th semester diploma students, accompanied by Mr. Suresh Parmar, a dedicated faculty member. During the visit, the 25 students were exposed to various aspects of metal casting, including the process itself, pattern and mold making, testing, and finishing operations. This first-hand experience provided the students with valuable insights into the practical application of metallurgical principles, bridging the gap between theory and practice. The visit proved instrumental in enhancing their understanding of metal casting techniques and highlighted the importance of quality control measures.

EXPERT LECTURE ON "IMPORTANCE OF MECHANICAL TESTING THROUGHOUT PRODUCT LIFECYCLE"

An expert lecture on **"Importance of Mechanical Testing throughout Product Lifecycle"** was organized by the department on 24/04/2023. The event garnered great interest, attracting an audience of 57 students and 08 staff members. Mr. Kush Shaligram, a renowned Quality Engineer from Schaeffler India Ltd., Vadodara, delivered an enlightening lecture on the topic. With his expertise and industry insights, Mr. Shaligram emphasized the crucial role of mechanical testing at various stages of the product lifecycle. The lecture provided valuable knowledge and real-world perspectives, empowering the attendees with a deeper understanding of the subject matter. The successful event showcased the college's dedication to offering comprehensive learning experiences to its students.

INDUSTRIAL VISIT AT "ELECON ENGINEERING COMPANY LTD., VALLABH VIDYANAGAR"

An industrial visit organized at **"Elecon Engineering Company Ltd." Located in Vallabh Vidyanagar,** Gujarat on 14/06/2023. This visit was specifically arranged for the 4th semester students, with the accompaniment of two faculty members, Ms. Sonam M. Patel, and Mr. Ravi D. Dave. A total of 24 students enthusiastically participated in the visit, which provided them within valuable insights into various aspects of Metal Casting Processes, encompassing pattern and mold making, testing, finishing operations, as well as carburizing, nitriding, and other heat treatment processes. This practical experience further enhanced their understanding of metallurgical processes and their significance in achieving desired material properties.



Take your risk now. As you grow older you become more fearful and less flexible.

INTERNATIONAL YOGA DAY CELEBRATION

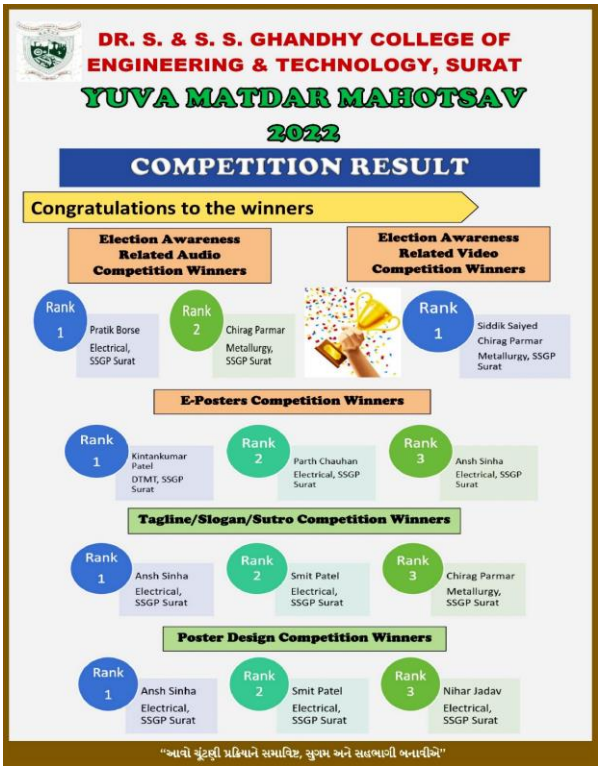
Under the Aazadi ka Amrut Mahotsav celebrations, the "**International Yoga Day**" was arranged on June 21, 2022. A total of 9 staff and many students enthusiastically participated in the event. Nidhi Goyel and Mr. Askhand, certified yoga instructors from the Art of Living, guided the participants in practicing yoga.

HAR GHAR TIRANGA

As part of the Azadi ka Amrut Mahotsav celebrations, the Metallurgy department organized the **"Har Ghar Tiranga"** program on 12/08/2022. All staff members and a total of 14 students enthusiastically participated in this event, which aimed to foster patriotic fervor and unity among the department community.

YUVA MATDAR MAHOTSAV 2022

Dr. S. & S. S. Ghandhy College of Engg. & Technology, Surat had **organized "Yuva Matdar Mahotsav 2022"** under the Voter Awareness and Voter Education Campaign (SVEEP). As per the instructions of the Election Commission to actively engage the people in the electoral process on the theme "Let's make the electoral process inclusive, smooth and participatory" Yuva Matdar Mahotsav was organized on 18/08/2022. In this event 4 students were participated.



ORIENTATION PROGRAM 2022

The Metallurgy department conducted the "Orientation Program 2022" for first-year students on 23/09/2022. All staff members and a total of 40 students participated in this comprehensive event. The program aimed to familiarize first-year students with the metallurgy branch, its subjects, outcome-based education, and career opportunities in the field. Additionally, students were given a tour of the metallurgy department's classrooms, laboratories, and other facilities, as well as a general tour of the college campus.

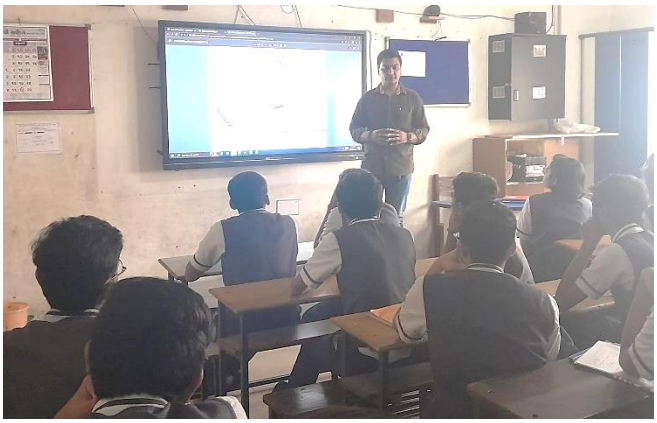
SAHID DIN CELEBRATION

Our college celebrated Shahid Din in the honor of our brave martyrs who have laid down their lives for the country. Every year on 30th January, India celebrates Martyrs' Day or Shaheed Diwas. The day has been chosen to honour our brave martyrs who have laid down their lives for the country. A two-minute silence in memory of Indian martyrs is observed throughout the country. All Staff members of metallurgy department and students were present for two-minute silence in memory of Indian martyrs.

METALLURGY AWARENESS PROGRAM BY ALUMNI

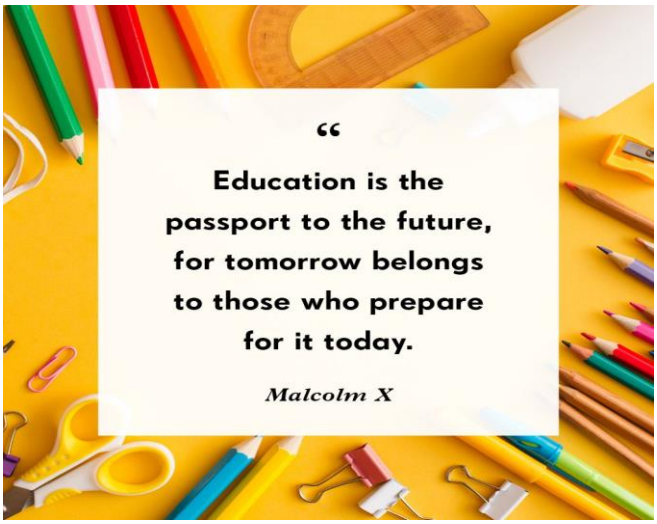
Parth Mistry, an esteemed alumnus of our college's Metallurgy Department, recently shared his expertise in a session titled "Metallurgy Awareness Program" at the

Mahidharpura Urban Society English Medium School on March 6, 2023. Parth, currently employed at Arcellor Mittal Nippon Steel in Surat, brought a wealth of industry experience to the session. With his firsthand knowledge of metallurgical processes and applications gained through his work at one of the leading steel companies, Parth provided invaluable insights to the 31 eager students in attendance. His practical insights into the workings of Arcellor Mittal Nippon Steel added depth to the discussion, giving students a glimpse into real-world metallurgical practices. Parth's dedication to sharing his expertise and inspiring the next generation of metallurgists underscores his commitment to both his profession and the broader community. We are grateful for Parth's continued engagement and congratulate him on his contributions to fostering metallurgy awareness among students.



METALLURGY AWARENESS PROGRAM BY FACULTY

Mr. Ravi Dave, faculty of Metallurgy Department, conducted a "Metallurgy Awareness" session at Dr. S. S. Ghandhy College of Engineering & Technology, Surat, as part of the ACPDC Awareness Program on June 11, 2023. With insightful discussions and practical examples, he imparted knowledge about metallurgical sciences, igniting curiosity among attendees. Dave's expertise and engaging presentation style left a lasting impression, inspiring students to delve deeper into the field of metallurgy. Mr. Ravi Dave's dedication to sharing his expertise in metallurgy not only enriched the understanding of the attendees but also sparked a newfound interest in the branch, paving the way for future exploration and innovation in the field.



EXTRA-CURRICULAR ACTIVITIES

The number of co-curricular and extracurricular activities carried out at the institute and departmental level. The details of these activities are:

SR. NO.	ACTIVITY NAME	DATE
1.	ANTI-DRUG AWARENESS CAMPAIGN	05/07/2022
2.	"SAVE SOIL" MOVEMENT	19/07/2022
3.	A DOCUMENTARY ON RAIN HARVESTING AND WATER CONSERVATION BY EBSB	18/07/2022
4.	CM FLAG MARCH RALLY	04/08/2022
5.	TIRANGA RALLY	12/08/2022
6.	FLAG MARCH RALLY	12/08/2022
7.	BHUTPURVA VIDHYARTHI MANDAL FALICITATION PROGRAM	15/08/2022
8.	INDEPENDENCE DAY CELEBRATION	15/08/2022
9.	YUVA MATDAR MAHOTSAV 2022	18/08/2022
10.	ON HAND PRACTICE SESSION ON "CHANGING CAR WHEEL"	25/08/2022
11.	EXPERT TALK	25/11/2022
12.	RIFLE SHOOTING	03/10/2022
13.	HAR GHAR TIRANGA	03/08/2022
14.	NATIONAL YOUTH DAY CELEBRATION UNDER AZADI KA AMRUT MAHOTSAV	12/01/2023
15.	REPUBLIC DAY CELBRATION	26/01/2023
16.	SAHID DIN CELEBRATION	30/01/2023
17.	LIFE SKILLS AND EMPLOYABILITY SKILLS SET A AND SET C	13/02/2023 TO 17/02/2023 AND 20/02/2023 TO 24/02/2023
18.	FUNCTIONAL ENGLISH SKILLS 1 & 2 SET B & SET D	FROM 30/01/2023 TO 03/02/2023 AND 06/02/2023 TO 10/02/2023
19.	SPORTS WEEK	10/04/2023 TO 15/04/2023
20.	RIFLE SHOOTING TRAINING	06/05/2023
21.	PUNIT SAGAR ABHIYAN (WATERBODY'S CLEANING)	25/05/2023
22.	PUNIT SAGAR ABHIYAN RALLY (PLASTIC FREE INDIA DRAMA)	30/05/2023
23.	PUNIT SAGAR ABHIYAN RALLY (PLASTIC FREE INDIA DRAMA)	21/06/2023
24.	9TH INTERNATIONAL YOGA DAY	21/06/2023
25.	SCIENCE FEST 2023	29/04/2023

PROJECTS AND INDUSTRIAL TRAINING

PROJECTS OFFERED IN 5th SEMESTER

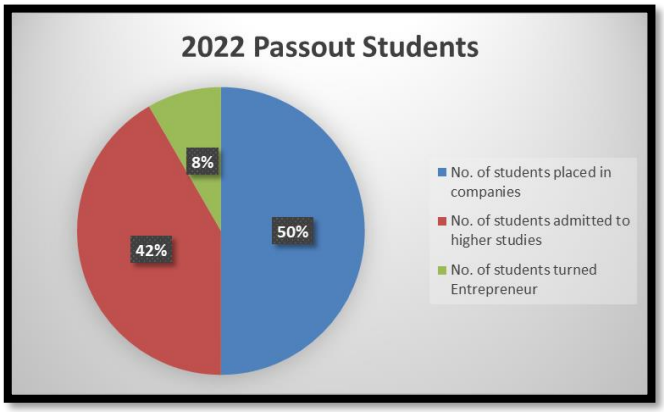
Group No.	PROJECT TITLE	GUIDE NAME
1	Sustainability in Metallurgy	Mrs. B. H. Goyal
2	Improvement of the mechanical properties of 7xxx aluminium alloys	Mr. S. F. Parmar
3	Effect of alloying element on microstructure and properties of Al-Mn alloy	Ms. S. M. Patel
4	Review on Blade Materials	Ms. S. M. Patel
5	Evaluation of Al-Sn (ANSI 852.0) alloy as a die cast material	Mr. M. J. Joshi
6	Development of aluminium alloyed sacrificial anode	Mr. T. K. Kyada
7	Effect of heat input on microstructure and mechanical properties of carbon steel welded by SMAW process	Mr. R. D. Dave

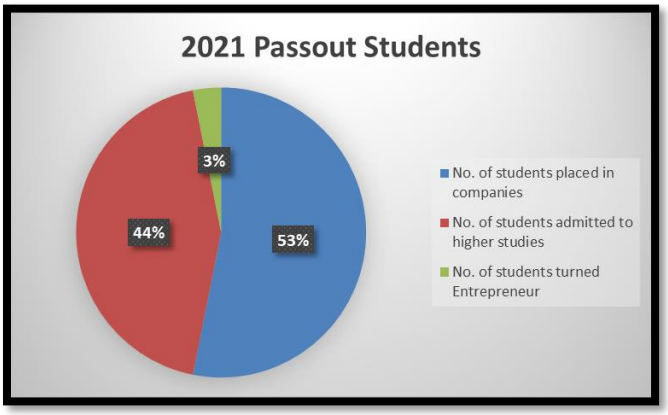
INDUSTRIAL TRAINING

Group No.	INDUSTRY NAME	ADDRESS
1	L&T Special Steels and Heavy Forgings	Hazira, Surat
2	Jay Metal Cast (JMT)	Udhana, Surat
3	Tata Steel	Ahmedabad
4	JMT	Sachin

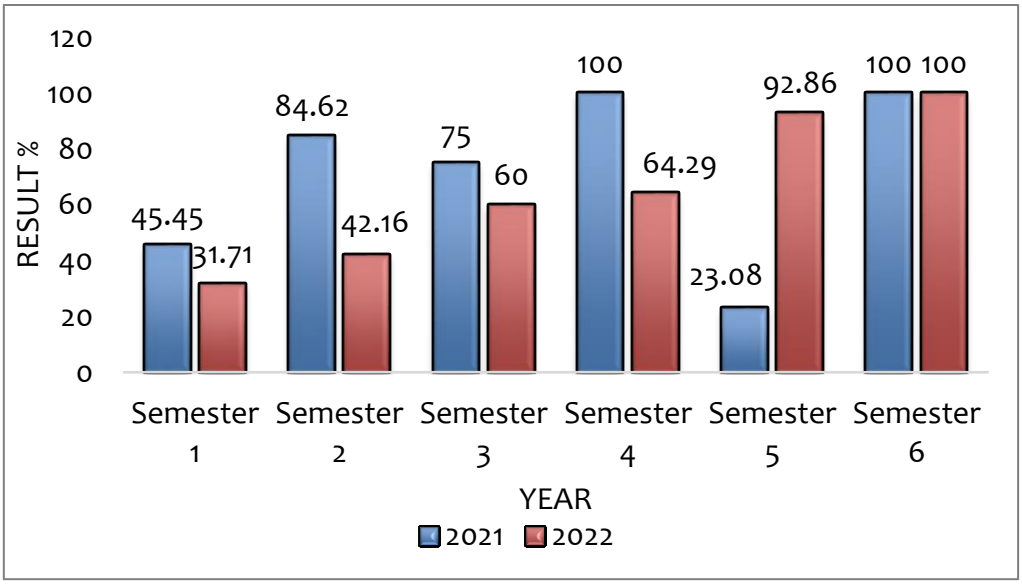
Companies Visited for Placement:

Company Name	Campus Date	Salary offered (Monthly)
AMNS	20/01/2023	15000
Schaffler	21/02/2023	15000
CMR	24/05/2023	18000





RESULT OF 2022 EXAMINATION



FACULTY PARTICIPATION

1. TRAINING

SR. NO.	FACULTY NAME	START DATE	END DATE	TRAINING NAME	ORGANIZER
1.	Mr. S. F. Parmar	11/07/2022	15/07/2022	Organizational Effectiveness	NITTTR, Bhopal
2.	Mr. S. F. Parmar	29/08/2022	02/09/2022	Performance Appraisal and Development	NITTTR, Bhopal
3.	Ms. S. M. Patel	12/09/2022	16/09/2022	Web based Courseware Development	NITTTR, Bhopal
4.	Mr. M. J. Joshi	04/07/2022	08/07/2022	Assessment of Lab Experiments in mechanical Engineering	NITTTR, Bhopal
5.	Mr. N. G. Patel	11/07/2022	22/07/2022	2D-animation	NITTTR, Bhopal
6.	Mr. M. J. Joshi	19/09/2022	23/09/2022	Processing and Characterization of Materials	Metallurgy Department, Government Engineering College, Gandhinagar,
7.	Mr. A. M. Gautam	19/09/2022	23/09/2022	Processing and Characterization of Materials	Metallurgy Department, Government Engineering College, Gandhinagar,
8.	Mr. T. K. Kyada	22/08/2022	26/08/2022	Media Resource Development for Lab	NITTTR, Bhopal
9.	Ms. S. M. Patel	19/06/2023	23/06/2023	Entrepreneurship and Start-Ups in Context of NEP 2020	NITTTR Bhopal (Online Mode)
10.	Mr. M. J. Joshi	27/03/2023	31/03/2023	Operation and Maintenance of Science Lab Equipment	NITTTR Bhopal

2. PAPER PRESENTED/PUBLISHED:

SR. NO.	FACULTY NAME	DATE	TITLE	ORG	JOURNAL NAME	Remarks
1	Mr. Mandar J. Joshi	09/09/2022	Study of High-Performance Polymer Matrix Nanocomposite: A Review	International Research Journal	Engineering and Technology (IRJET)	2395-0056
2	Ms. Sonam M. Patel	16/12/2022	Effect of Mn on microstructure, mechanical properties, and corrosion behaviour of Mg-Ni alloys	Scopus indexed journal	Engineering Research Express	DOI: 10.1088/2631-8695/aca9a8
3	Ms. S. M. Patel	10/02/2023	Microstructure, Mechanical Properties and Corrosion Behaviour of Mg-Cu nd Mg-Cu-Mn Alloys	KPR Institute of Engineering & Technology, Coimbatore, Tamilnadu	-	Best Paper Presentation Certificate-

FACULTY ACHIEVEMENT

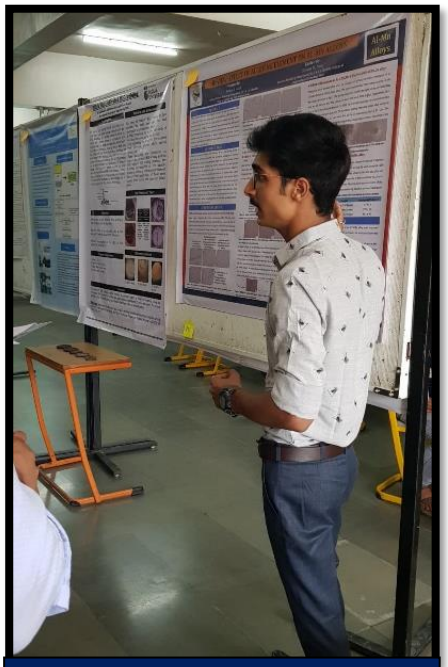
Mr. Nirmal G. Patel, Lecturer Metallurgy had completed Pre-Commission Course SD-171 at Officers Training Academy, Kamptee, Maharastra. He is commissioned as a **Lieutenant in National Cadet Corps**.
Training Duration: 13th August 2022 to 22nd October, 2022

Ms. Sonam M. Patel
Faculty of Metallurgy Department
successfully completed her Ph.D. in Metallurgical and Materials Engineering from the Department of Metallurgical and Materials Engineering at the Faculty of Technology and Engineering, The Maharaja Sayajirao University of Baroda, Vadodara.

Ph.D. Title: Study of the Effect of "Mn" on Magnesium and Magnesium-Based Alloys.

STUDENT AWARD

Aditya Singh
received gold medal in GTU 12th convocation for getting highest marks in whole diploma engineering programme in metallurgy branch.



Kishan Gohil
secured 3rd rank in State level Poster Competition on **"Recent Advances in Materials Processing and Applications"**

Lawaniya Adep
Felicitate for played state level **Kho-Kho** and secured 3rd rank

SR. NO.	STUDENT NAME	DATE	TYPE OF ACTIVITY	REMARKS
1.	Kishan Gohil	05/08/2022	State level Poster Competition on "Recent Advances in Materials Processing and Applications"	Participated & secured 3rd rank
2.	Dev Parmar			Participated
3.	Farida Zaveri			Participated
4.	Dipesh Patel			Participated
5.	Krish Valani			Participated
6.	Lawaniya Adep			Participated
7.	Jenish Shah			Participated
8.	Dev Parmar	15/08/2022	Felicitation Ceremony	Volunteer
9.	Farida Zaveri			Volunteer
10.	Ranjitkumar Choudhary			Volunteer
11.	Jay Patel			Volunteer

STUDENT PARTICIPATION

12.	Kinjal Patel			Volunteer
13.	Chirag Parmar			Volunteer
14.	Ranjitkumar Choudhary	08/08/2022	Poster Making Competition on Journey of Development of our National Flag	Participated
15.	Jay Patel			Participated
16.	Kinjal Patel			Participated
17.	Chirag Parmar			Participated
18.	Ranjitkumar Choudhary	13/07/2022	Gujarat Gyan Guru Quiz	Participated
19.	Jay Patel	13/07/2022		Participated
20.	Kinjal Patel	12/08/2022 19/08/2022 16/12/2022		Participated
21.	Chirag Parmar	13/07/2022 29/07/2022 05/08/2022 09/08/2022 24/08/2022		Participated
22.	Kinjal Patel	29/07/2022	SCOPE Quiz	Participated
23.	Chirag Parmar			Participated
24.	Chirag Parmar	05/08/2022	Tiranga Making Competition	Participated
25.	Ranjitkumar Choudhary	18/08/2022	Poster Making Competition on Yuva Matdar Mahotsav 2022	Participated
26.	Jay Patel			Participated
27.	Chirag Parmar	18/08/2022	Video Competition, Audio Competition, Slogan Competition in on Yuva Matdar Mahotsav 2022	Participated and Secured 1st rank in Video, Secured 2nd rank in Audio, Secured 3rd rank in Slogan
28.	Siddik Saiyed	18/08/2022	Video Competition on Yuva Matdar Mahotsav 2022	Participated and Secured 1st rank in Video
29.	Lawaniya Adep	16/10/2022	Annual Training Camp, Rajpipla	Attended
30.	Lawaniya Adep	20/10/2022	Life style for the environment	Participated
31.	Jenish Rana			Participated
32.	Lawaniya Adep	04/11/2022	Central Vigiliance Comission	Participated

STUDENT PARTICIPATION

33.	Jenish Rana	23/11/2022	Puneet Sankalp	Participated
34.	Solanki Anurajsinh	30/07/2022	Poster Making & Quiz Competition on Science Fair 2022	Participated & Volunteer
35.	Shaikh Khalid			Participated & Volunteer
36.	Om Biswal		Project Model & Quiz Competition on Science Fair 2022	Participated & Volunteer
37.	Abhishek Tiwari		Project Model & Quiz Competition on Science Fair 2022	Participated & Volunteer
38.	Ghanchi Yasin		Quiz Competition on Science Fair 2022	Participated
39.	Swati Pandey		Science Fair 2022	Volunteer
40.	Anjali Pandey		Science Fair 2022	Volunteer
41.	Sneha Patel		Poster Competition on Science Fair 2022	Participated
42.	Binshi Patel			Participated
43.	Dhruvi Patel			Participated
44.	Riyank Patel		Project Model Competition on Science Fair 2022	Participated
45.	Prince Patel			Participated
46.	Saiyad Siddik	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
47.	Ranjit Choudhary	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
48.	Farida Zaveri	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
49.	Dipesh Patel	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
50.	Kinjal Patel	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
51.	Chirag Parmar	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
52.	Dev Parmar	5/6/2023	Participated in workshop	Advanced Energy Storage Systems
53.	Kishan Gohil	5/6/2023	Participated in workshop	Advanced Energy Storage Systems

"Metallurgical Marvels: Crafting Chandrayaan 3 for Lunar Exploration"

By Adep Lawaniya, Kishan Gohil, Krish Valani

Highlight the significance of metallurgy in Chandrayaan 3 🚀. The spacecraft's materials are carefully chosen for their strength, lightweight design, and ability to withstand harsh conditions. #Metallurgy plays a crucial role in the development of these materials, which are vital for the success of the mission.

❤ #Titanium: This strong and lightweight metal is well-suited for space applications. It is used in the lander and rover structures, as well as the heat shield, offering strength and protection. 💪

❤️ #Aluminium: As another lightweight metal, aluminium is used in the orbiter structure. Its machinability enables the creation of intricate components necessary for the spacecraft. 🛠

💛 #Inconel: This high-temperature resistant alloy shields the lander from intense re-entry heat. It also ensures the rover components endure the harsh lunar conditions. 🔥

💚#Ceramics: Strong and lightweight, ceramics withstand high temperatures and radiation. They are employed in rover wheels and other components, enduring the Moon's unforgiving environment. 🌑

💙#Composite Materials: By combining materials like carbon fiber and Kevlar, composite materials deliver strength and lightness. They are used in lander, rover, and heat shield components, enhancing performance. 🛡

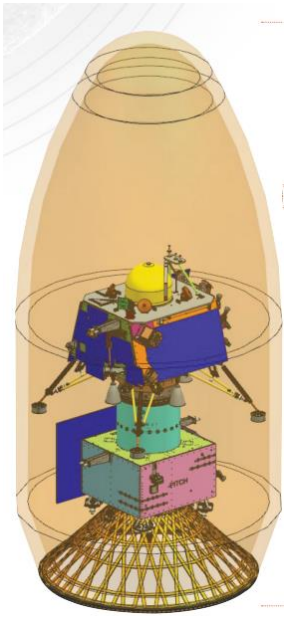
💜 #Steel: Renowned for its strength and durability, steel is utilized in critical structural components of the spacecraft. ⚙

🖤 #Glass: Transparent and resistant to space conditions, glass is employed for windows and lenses on the spacecraft. 🪐

Propulsion Module

Chandrayaan-3 consists of an indigenous propulsion module, lander module, and a rover with an objective of developing and demonstrating new technologies required for inter-planetary missions. The propulsion module will carry the lander and rover from injection orbit to till 100 km lunar orbit. It also carries a Spectro-polarimetry of Habitable Planetary Earth (SHAPE) payload to study the spectral and polarimetric measurements of earth from the lunar orbit. The main function of Propulsion Module is to carry the LM from launch vehicle injection orbit to till Lander separation.

LVM3-M4/ Chandrayaan-3 Mission



LVM3 is the operational heavy lift launch vehicle of ISRO and has a spectacular pedigree of completing 6 consecutive successful missions. This is the 4th operational flight of LVM3, aims to launch the Chandrayaan-3 spacecraft to Geo Transfer Orbit (GTO). LVM3 has proved its versatility to undertake most complex missions like: Injecting multi-satellites Mission planning to ensure safe relative distance among separated satellites through re-orientation and velocity addition maneuvers. Multi orbit (LEO, MEO, GEO) and execute interplanetary missions. India's largest and heaviest launch vehicle ferrying indian and international customer satellites. LVM3-M4 will be launched from the Second Launch Pad (SLP), SDSC, SHAR.

Forging the Future: The Crucial Role of Metallurgy in Space Exploration

By Dev Parmar, Farida Zaveri, Chirag Parmar

When we think about space exploration, we often picture astronauts floating in their shiny spacesuits or sleek rockets blasting off into the sky. But did you know that a big part of what makes all this possible is something called metallurgy? It's like the magic behind the scenes that helps spacecraft survive the crazy conditions of space.

Imagine you're building a spaceship. You want it to be tough enough to handle being launched into space and then floating around in zero gravity. But you also want it to be light so that it's not too expensive to send it up there. That's where metallurgy comes in.

Metallurgists, the people who work with metals, have figured out how to make materials that are super strong but also lightweight. They use metals like titanium and aluminum, which are tough but not too heavy. These metals are used to build the structure of the spacecraft, as well as things like heat shields that protect it from burning up during re-entry into Earth's atmosphere.

But space isn't just about flying around; it's also about dealing with harsh conditions like extreme temperatures and radiation. That's why metallurgists also make use of special materials like ceramics, which can handle the heat without melting. These ceramics are used in parts of the spacecraft that need extra protection, like the wheels of rovers that explore other planets.

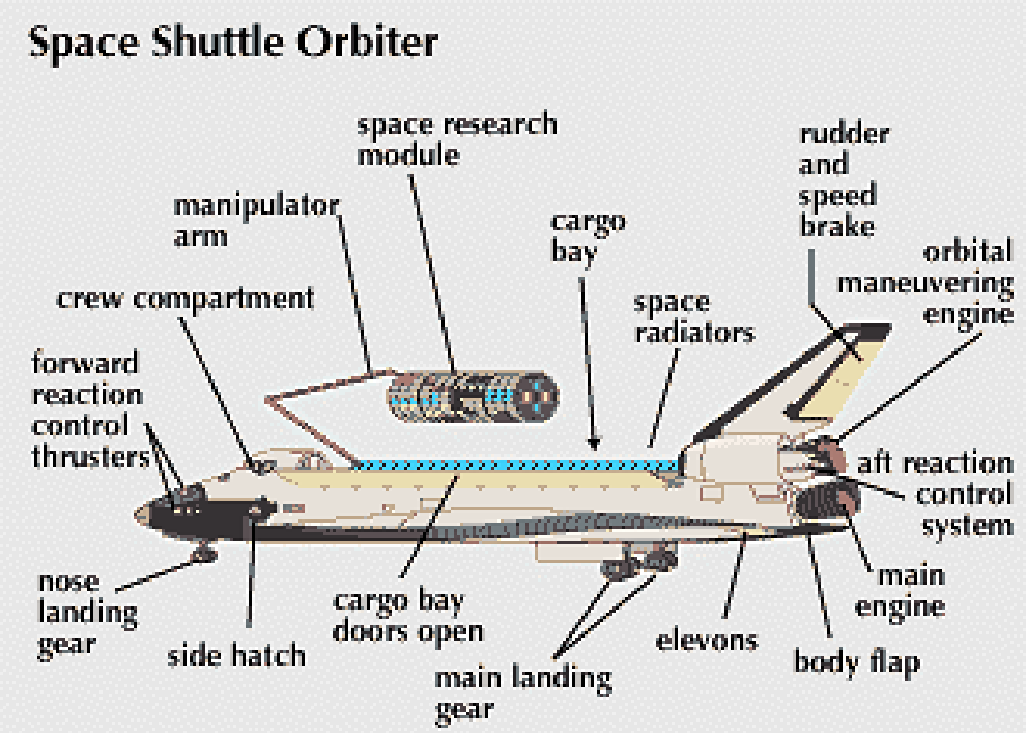
When it comes to making things move in space, metallurgy is just as important. Rocket engines need to be made of materials that can withstand the intense heat and pressure of blasting off into space. That's where high-temperature alloys like Inconel come in handy.

And it's not just about getting to space; it's also about staying there. That's why metallurgists are always coming up with new materials that can help us explore even farther. Things like carbon nanotubes, which are super strong and lightweight, could one day be used to build even better spacecraft.

So, the next time you look up at the stars and dream about exploring space, remember that there are scientists and engineers working behind the scenes, using the magic of metallurgy to make it all possible. Thanks to their hard work, we can keep reaching for the stars and discovering new worlds beyond our own.

Space Shutter Orbiter

By Prince Patel



कुछ तो अलग है हम

जनम हो ते ही घर की लक्ष्मी हम कहलती

दुनिया हमें बेटी क्यों नहीं बुलाती

पेड़ा नहीं जलेबी है बाती जाती

बचपन से घर में पराया धन होनेकी गुहार लग जाती है

ये ना करो वो ना करो

लोग क्या कहेंगे तेरी माँ ने कुछ नहीं सिखाया है कहकार

पहिले सेही सास बहू के पावन रिश्ते को ग्रहण लगा दिया जाता है

क्यों नहीं बेटेकोभी जिम्मेदार बनना सिखाया जाता है

अंदर के गुस्से को घुट घुट उबाल कर वो जो बनती है मसाला चाय मानकर पारोसा जाता है

जापानी पंखा बनाती है तो जाने केसे वो लच्छा पराठा बन जाता है

आज नमक कम है, मिर्च ज़्यादा है, तेल कम है बस इसी तरह कुछ बसवाद उसकी जिंदगी को कर दिया जाता है

काम घर भर के करती है,

पगार ना पाकर भी छोटी छोटी खुशियाँ समेटती ,

फिर भी my mother is house wife की संज्ञा है पा जाती

और यूं नजर अंदाज़ हो जाती hai

महावारी के उन मुश्किल दिनों में बस leave me alone कहेना चाहती

देवी अम्बिका, लक्ष्मी सरस्वतिकी तरह पूजी जाती है

परंतु खुले आम लाज उसकी शर्मसार होती है और फिर निर्भया नाम से जानी जाती है

कानून और कायदे हम ताक पर रखते हैं और बदनाम वो हो जाते हैं

लेकिन फिर भी हिम्मत रख कर, कुछ हट कर,

अहिल्याबाई,लक्ष्मीबाई, कल्पना चावला और नए भारत की वैज्ञानिक बनकर चंद्रायन को चांद पर पहोचा जाती,

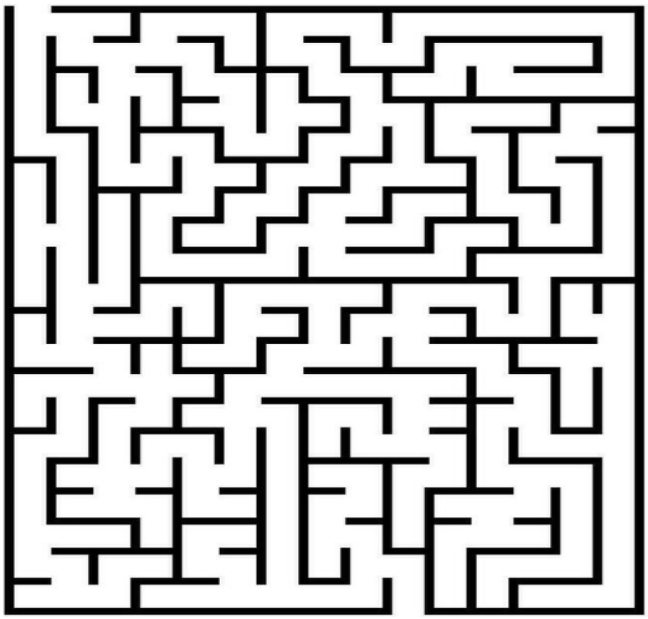
और खुद को bold and beautiful कहकर मुस्कुराती जाती

कुछ तो है अलग हम, कुछ तो अलग है हम, यही डंके की चोटपर कहती जाती.....

By Mrs. Bindu Goyal (HOD Metallurgy Department)

Mandar Joshi (Faculty)

Start



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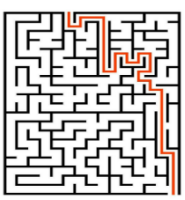
Answer



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