G. S. Mandal's
Maharashtra Institute of Technology, Aurangabad
Department Of Plastic And Polymer Engineering

E-PLASTIZINE

Aug-Sept 2017 Vol: 1 Issue:2

Editorial Message

Dear Readers,

It gives us immense joy and satisfaction to introduce our second issue of 'E-PLASTIZINE' Magazine So this time we have made an attempt to bring out the talent concealed within our student community. This issue includes informative technical as well as non-technical articles and host of other things. We hope you enjoy reading this issue as much as we have enjoyed making it.

Ms. Aarti Mulay

Message from HOD's Desk

It is a great pleasure that our Department of Plastic and Polymer Engineering is releasing Issue 2 of "PLASTIZINE", Vol.1, for this academic year to explore the creative ideas and activities of our students. In an era of digitization and e-learning, it is apt to go digital for expressing our views on different socio-economic, political or cultural issues. It is an active platform for both staff and students to share information, latest technical knowledge and imaginations in all dimensions.
This magazine would not have been possible without the enthusiastic and hard work of all student participants, editorial board members and all faculty members. I register my sincere appreciation to the students and editorial team for their timely effort to bring this 2nd issue of magazine. I wish all the staff members and students for success in their future endeavours.

- Dr. Aniruddha Chatterjee

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Learning gives creativity,
Creativity leads to thinking,
Thinking provides knowledge,
Knowledge makes you great.

- Dr. A. P. J. Abdul Kalam

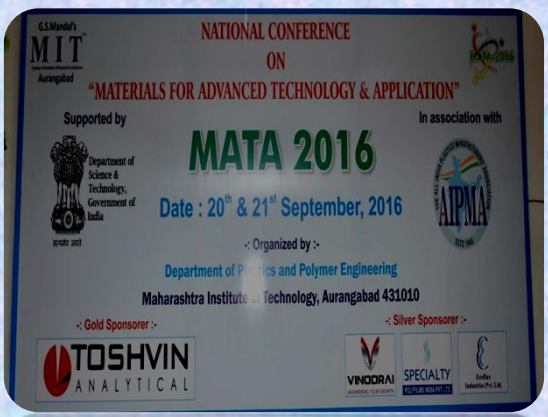
VISION OF THE DEPARTMENT

Departments of plastic and polymer engineering aspires to achieve excellence by imparting education and training to developed young technocrats as multidimensional personalities for the service of mankind.

MISSION OF THE DEPARTMENT

To impart quality education to the aspiring students for fulfilling technological and societal needs by providing
• State of the art infrastructural facilities and competent facilities.
•Practical training to face challenges of modern plastic and polymer industries.

National Conference on Materials for Advanced Technology & Application (MATA) -2016

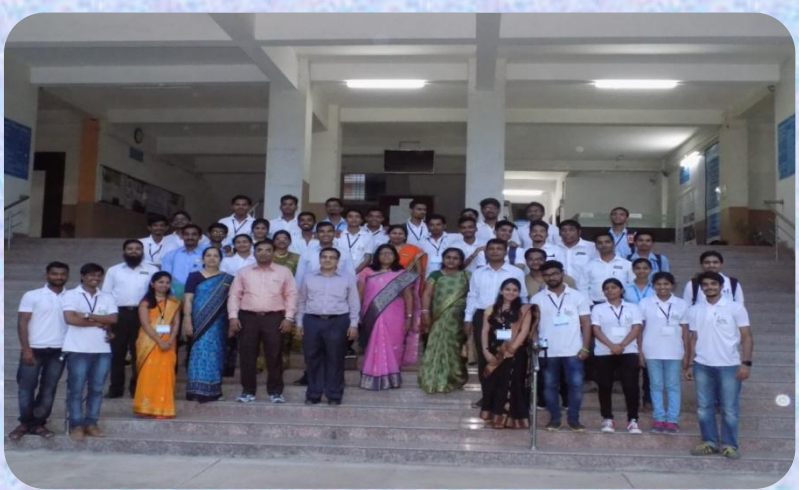


Banner

Inauguration

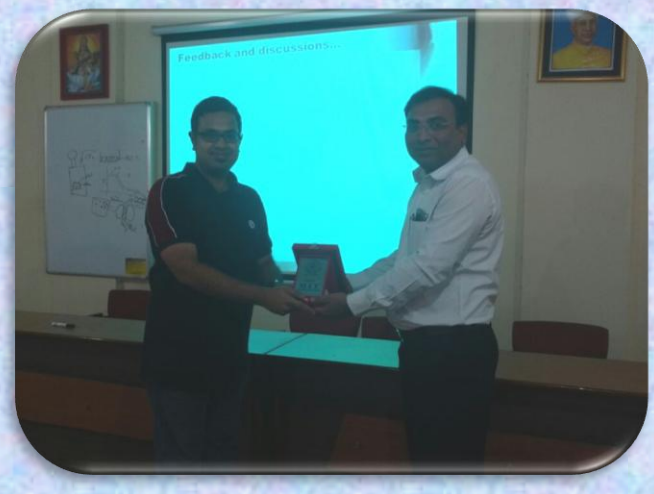
Welcome of invited speakers

Prize Distribution



Organizing Committee

Departmental Achievements



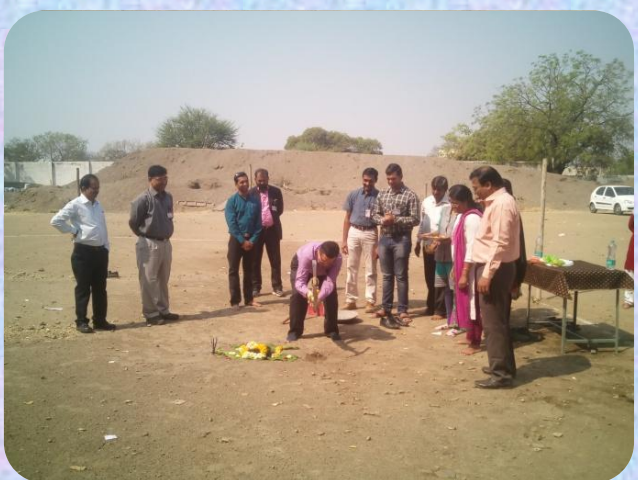
Guest lecture by Dr. S. Bhattacharya on 9th January, 2017

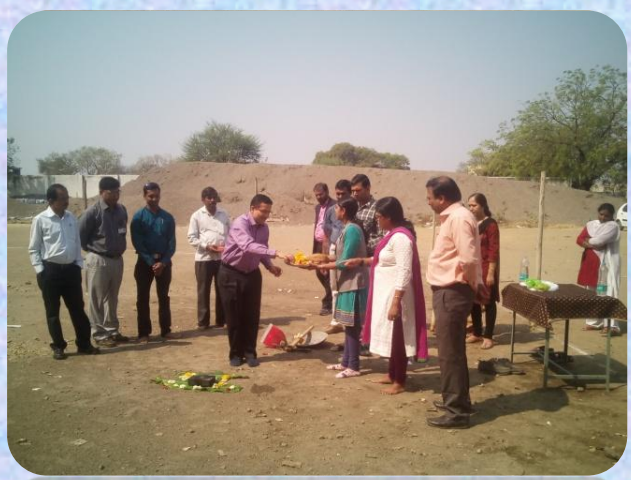
5 day workshop for students on "Plastics Product Design & Modelling using CAD"

Plastivision 2017

Department has been actively participated in Plastivision 2017, 19-23 January, 2017, where we have got complimentary stall of 1m sq in AIMPA job fair pavilion for promoting our department and MIT college as we are having MOU with AIPMA.

Workshop on "Fourier Transform Infrared Spectroscopy" held on 20th – 25th Feb 2017





M-CIP Bhoomipujan

Faculty Publications

- Mujahid A. Ansari, Srushti Wadekar, Priyanka Gaikwad, Sujata Shinde, Plastics Product Design and Analysis, International Journal of Polymer Science and Engineering, 2 (2016) 46-49 .
- Alok Tiwari, Brijesh Pandey, Raghvendra Mishra, Ajay Vasudeo Rane, Jaya Suryawanshi , Synthesis of samarium (Sm) doped thin film of $SrMnO_3$ by pulse laser deposition and its structural and magnetic characterization , Current Science Perspectives , 2 (2016) 1-4
- Alok Tiwari, Brijesh Pandey, Abitha V K, Raghvendra Mishra, Amit Vasudeo Rane, Jaya Suryawanshi, Simulation of ultra-wideband co-planar boat microstrip patch antenna with IE3D software for wireless communication, Current Science Perspectives , 2 (2016) 10-13.
- Akshay W. Tathe, Mangesh U. Kande, Shyam G. Tonde, Aarti H. Mulay, Isolation and Characterization of Tamarind Seed Polysaccharides Being Used as a Biopolymer in Modern Drug Delivery System, International Journal of Polymer Science and Technology, 2 (2016).
- H. H. Shinde, P. S. Sewalikar (Shindikar), Conversion of Waste Plastic into a Resource , International journal of innovations in engineering & technology, 6 (2016) 167-170.
- Aastha P. Chakraborty, Madhavi Gaonkar, Eggshell as Calcium Supplement Tablet, International Journal of Animal Biotechnology and Applications, 2 (2016) 1-6.
- Madhavi Gaonkar, A. P. Chakraborty, Application of Eggshell as Fertilizer and Calcium Supplement Tablet, International Journal of Innovative Research in Science, Engineering and Technology, 5 (2016) 3520-3525.
- Uday Shankar, Subhendu Bhandari, Dipak Khastgir, Electrodeposition of nanostructured silver particles and it's composite with polyaniline on flexible electrode, Journal of Basic and Applied Research International , Vol. 19, Issue 4, pp 267-271 (2016)
- Dipankar Ghosh, Subhendu Bhandari, Dipak Khastgir, Synthesis of MnO_2 nanoparticle and its effective utilization as UV protector for outdoor high voltage polymeric insulator used in power transmission line, Physical Chemistry Chemical Physics, Vol. 18, Issue 48, pp 32876-32890 (2016)
- Subhendu Bhandari, Nikhil K. Singha, Dipak Khastgir, Synthesis of graphene-like ultrathin polyaniline and its post-polymerization coating on nanosilica leading towards superhydrophobicity of composites , Chemical Engineering Journal , Vol. 313, pp 1302-1310 (2016)
- Subhendu Bhandari, Dipak Khastgir, Effect of unsaturation in bicarboxylic acid dopants for solid-state synthesized polyaniline , Polymer International , 65 (2016) 698-705.
- Subhendu Bhandari, Dipak Khastgir, Corrosion-free electrochemical synthesis of polyaniline using Cu counter electrode in acidic medium, International Journal of Polymeric Materials and Polymeric Biomaterials , 65 (2016) 543-549.
- Prashant S. khoragade, Jitendra B. Naik, Aniruddha Chatterjee, Polystyrene-grafted wollastonite nanofiller for styrene butadiene rubber nanocomposite: rheological, thermal and mechanical studies , Polymer Bulletin, (2016) .
- Debasree Kundu, Chinmay Hazra, Aniruddha Chatterjee, Ambalal Chaudhari, Satyendra Mishra, Amol Kharat, Kiran Kharat, Surfactin-functionalized poly(methyl methacrylate) as an eco-friendly nano-adsorbant: from size-controlled scalable fabrication to adsorptive removal of inorganic and organic pollutants , RSC Advances , 6 (2016) 80438 .
- Prashant S. Khobragade, D.P. Hansora, Jitendra B. Naik, Aniruddha Chatterjee, Flame Retarding Performance of Elastomeric Nanocomposites: A Review, Polymer Degradation and Stability , 130, 194-244 (2016) .
- Sarang S. Bari, Aniruddha Chatterjee, Satyendra Mishra, Biodegradable Polymer Nanocomposites – An Overview, Polymer Reviews , 56 (2016) 287-328.
- Sarang S. Bari, Aniruddha Chatterjee, Satyendra Mishra, Ultrasonication assisted and surfactant mediated synergistic approach for synthesis of calcium sulfate nano-dendrites, Ultrasonics Sonochemistry , 31 (2016) 39-50.

Students Activities 2016 - 17

- Prashant Gupta, Prathamesh Trivedi, Ronak Shah Participated and presented technical paper in national level Affinity & Confluence organized by MIT Pune on 24th -25th Apr2017.
- Chandrakant Mane Attended STUP on Recent Development in Processing, Testing & Characterization of Plastics at CIPET Aurangabad from 15th -17th February, 2017.
- 23 students of TY PPE participated Workshop on 'Aptitude skills and how to face interview' on 4th Feb 2017, conducted by MBA dept.
- Jay Korde, Nikit Deoray, Aditya Kulkarni Presented paper in Plastivision -2017 on 19th January, 2017.
- Jay Korde Participated and presented in state level Avishkar 2016 organized by Dr. BAMU and MIT Aurangabad on 5th Nov 2016.
- Deepak Prajapati Participated and presented in state level Avishkar 2016 organized by Dr. BAMU and MIT Aurangabad on 5th Nov 2016.
- Akshay Pawar Participated in "Best out of Waste" in state level SHODH-2K16 organized by Pravah Foundation at MIT Aurangabad on 12th Mar 2016.

Students Activities 2017-18

- Abstract has been accepted of Suranjana Chaudhuri, Vishwanath Jadhav, Akshay Tayade on "Biopolymer based Superabsorbent Composite: A Review" for Technical Paper Presentation in PRAKALP 2017-18, which will be held on 8th - 10th sep 2017 at MIT alandi, Pune.
- Abstract has been accepted of Bhagyesh Chavan, Akshay pawar on "Photo-Oxidative degradation of LLDPE packaging films by addition of chemically modified clay particles" for Technical Paper Presentation in PRAKALP 2017-18, Which will be held on 8th -10th sep 2017 at MIT alandi Pune.
- Abstract has been accepted of Suranjana Chaudhuri, Vishwanath Jadhav, Shweta Upganlawar on " Green Technology used in tuning the properties of Superabsorbent polymer: A Review" for Technical Paper Presentation in PRAKALP 2017-18, which will be held on 8th - 10th sep 2017 at MIT alandi, Pune.
- Abstract has been accepted of Bhagyesh Chavan, Akshay pawar on "Photo-Oxidative degradation of LLDPE packaging films by addition of chemically modified clay particles" for Technical Paper Presentation in ICMMD 2017-18, which will be held on Dec 11th -12th 2017 at MIT Aurangabad.
- Abstract has been accepted of research paper of Prashant Gupta, Prathamesh Trivedi, Ronak Shah on "Effect of reinforcement of organofunctional clay on the structural properties of Modified Unsaturated Polyester Resin" for Technical Paper Presentation in ICMMD 2017-18, which will be held on 11th - 12th Dec 2017 at MIT Aurangabad.
- Students have attended guest lecture on "Overseas Education & Career Opportunities "which was delivered by Mr. Hyder from Vishwashri Consultancy on 12th Aug 2017.

MIT- Centre for Industry relevance in Polymer Science & Engineering (M- CIP)

Objectives

1. Establish Training Center for all plastics manufacturing processes
2. Provide maximum facility to new comers in advanced industrial research and innovations
3. Provide support to the industry by training to students and industrial people

Major equipment
Injection Moulding Machine 450 tonnage (Ferromatic Milacron, USA)
Rotomoulding Machine (EN1000 Vinodrai Engineering, Jalna, India)
Stretch Blow Moulding Machine (CV/2STK)
EOT Crane (Electromech, Germany)

Industries for In-plant Training 2016-17

Vaidya Group of Industries, Aurangabad

Shimadzu, Mumbai

Helvoet ,Pune

Abhijeet Tools and Dies, Mumbai

TE Connectivity, Pune

Supreme, Jalgaon

Goodyear Tyres, Aurangabad

BASF, Manglore

Shriram Axiall, Kota

Asian Paint, Mumbai

Schulman, Baroda

Gharda Chemicals, Mumbai

Arzoo Plastics, Mumbai

TAL, Nagpur

Finolex, Pune

Swapnil Danekar
Reliance Industries Ltd, Mumbai
Annual package: 5.5 Lakhs/annum

BKT

- Atul jagtap
- Kaseem Shaikh
- Rameshwar Kanade
- Nitin Kokate
- Rushikesh Kharde
- *Package: 3.4 lakhs /anuum*

Cosmo Films Ltd

- Deepali Kamble
- Rakhee Gaikwad
- *Package: 1.92 lakhs/ anuum*

Gate Qualifiers (from left)
Deepak Prajapati, Rushikesh Ambekar, Satish Chopde

Result of May/Jun 2016-17

Year	Name of student	CGPA
Second Year	MANE VIKRAM V.	9.20
	WAGHAMODE PRAVIN K.	8.27
	CHAUHAN DHARMISHT V.	8.00
Third Year	TRIVEDI PRATHAMESH H.	8.11
	MANE CHANDRAKANT	8.11
	GHADGE AKSHAY GAJANAN	7.86
Final Year	CHOPDE SATISH	8.38
	TIWARI GEETANJALI	8.32
	PRAJAPATI DEEPAK	8.18

CONGRATULATOINS TO ALL ACHIEVERS

PAID IN FULL

A little boy came up to his mother in the kitchen one evening while she was fixing supper, and he handed her a piece of paper that he had been writing on. After his mom dried her hands on an apron, she read it, and this is what it said:

**For cutting the grass :5Rs.*
**For cleaning up to my room : 1Rs.*
**For going to the store for you : 1Rs.*
**For getting a good report card : 5Rs.*
**For cleaning up : 2Rs.*

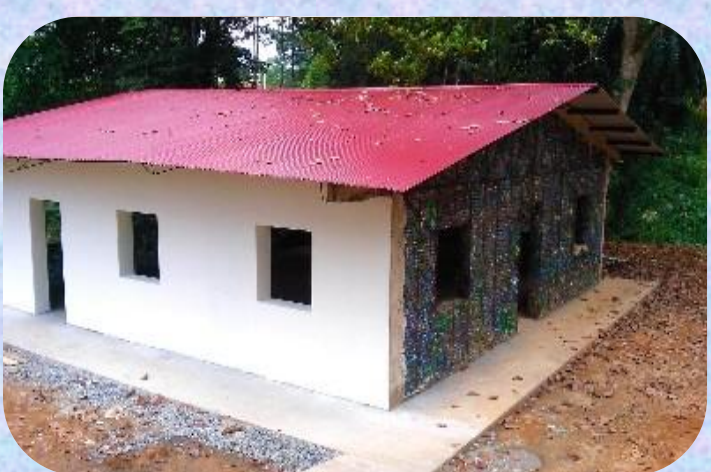
Well, his mother looked at him standing there, and the boy could see the memories flashing through her mind she picked up the pen, turned over the paper he'd written on, and this is what she wrote :

**For the nine months I carried you while you grew inside me : NO CHARGE*
**For all the nights that I've sat up with you, doctored and prayed for you : NO CHARGE*
**For all the trying times , and the tears that you've caused through the years : NO CHARGE*
**For all nights that were filled with dried , and for the worries I know were ahead :NO CHARGE*
**For the toys ,food ,clothes and even wiping your nose : NO CHARGE*
**When you add it up, son, the cost of my love is: NO CHARGE*

When the boy finished reading what his mother had written, there were big tear in his eyes , and he looked straight up at his mother and said,
" Mom, I sure do love you."
And then he look the pen and in great big letters he wrote : "PAID IN FULL"
This story is dedicated to the most beautiful, most powerful people on planet earth :
Our Mothers!

- Akshay G. Ghadge
B.Tech

Plastics Bottles Village in Bocas



Canadian Robert Bezeau is the owner and creator of a innovative Bocas eco-friendly real estate project called the Plastic bottle Village. Robert spearheaded the Bocas recycling program in 2012, making a positive change on island. What was interesting to Robert is the recycled materials being removed from the garbage, and saved from being burned or buried in the only one landfill.

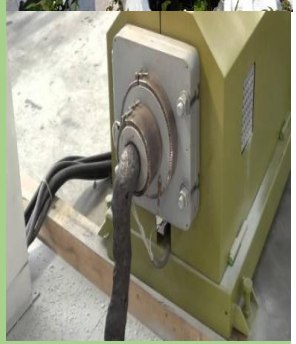
He estimates over 1 million bottles were accumulated, in just one and a half years. With this in mind Robert created the Village. The Village is designed to take advantage to the recycled good, particularly plastic bottles, which are surprisingly good building blocks. The community will consist of around 120 homes/lots, as well as a small boutique, eco-lodge that will mesh with the community's fruit.

Utilizing recycled plastics bottles as the main insulation inside of its concrete walls, this style of home building is definitely green approach. While some might be skeptical of a house built from plastic bottles the earthquake resistant very cool in temperature, and sturdy.

Robert's goal is to educate people about creative and useful ways to reuse plastics bottles on large scale. He aims to help create a Bocas Del Torto tat visitors can remember as pristine, having seeing people working together to keep the planet clean and green.

-Akshay G. Tayde
B-Tech

Need of THERMOCOL Recycling



Waste collection and disposal is a system that is like most other businesses, based on economics. Hence it is not wrong to say that waste reaching or not reaching landfills depends simply, on money. If there has been a value attributed to a certain waste material, then a rag picker knows that when they collect a certain quantity of that material, they will get paid for it. The reason Thermocol is not being collected today is because of the lack of financials associated with the material. There could be many reasons for this. While some materials are simple to handle, others are quite complex. Materials like Tetrapak were brought in the limelight a long time ago due to environmental concerns and the manufacturers themselves had to start getting involved and ensure the collection and recycling of this material.

Today, Thermocol waste is generated largely in retail and in industries. At a household level, one gets Thermocol in the packaging of white goods bought and the quantum of Thermocol is not that much. Often, it is collected alongside the garbage by the garbage collectors and since it does not have a value, it gets dumped into the municipal corporation truck which takes it straight to the landfills. When in the landfills, Thermocol being high in volume, takes up a lot of space. It is highly flammable and on burning releases carcinogenic fumes. Thermocol is extremely light and floats on water resulting in it also becoming a choking hazard for river and sea creatures.

- Jay Patel
TYPPE

In 2030, The Only Cars Sold In India Will Be Electric

Looking at the gas guzzlers that fill the roads today, the idea of making every car electric may seem like a distant pipe dream. But to leaders in India, it not only seems feasible, but it's a goal whose wheels are already in motion. If all goes according to plan, every new car purchased in 2030 and onward will be run solely on electric power. For a country with the world's second largest population, this could have a huge impact on the world.

The Driving Force

Electric cars in India today are quite rare: at the end of 2015, there were 6000 electric cars in a country with an estimated population of 1.26 billon. Road Transport and Highways Minister Nitin Gadkari is leading the team of officials tasked with figuring out the gritty details of the move to electric transportation. The goal isn't to have every car on the road be electric by 2030. Instead, their hope is to eliminate the sale of gas-powered cars by ensuring that every new car sold will run on electric power starting in 2030.

Here's how the plan will work: consumers will reportedly have the option to receive an electric vehicle without any upfront payment and pay it off little by little with money that would have otherwise gone towards filling the tank. This is similar to the way the Indian government encouraged the adoption of LED bulbs, although that plan has its critics. The government is also supporting electric car production with the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India Scheme. The idea is that by encouraging a replacement marketplace, electronic vehicles will be far more prevalent and accessible than they are today.

By incentivizing electric cars now by lowering taxes and minimizing duties, India hopes it can start the trend early and see how the market responds as 2030 approaches. By making it clear that no gas-powered cars can be sold in the country beginning in 2030, the move could encourage automakers to get on board early while the market is fresh and developing.

- Pravin Waghamode
TYPPE

Edited by

Editorial Staff Team

Ms. Aarti Mulay
(Editor-in-chief)
Mr. Ayan Dey
(Co-Editor)

Editorial Student Team

Prathamesh Trivedi
Vaibhav Jaiswal
Vishal Tathe
Akshay Ghadge

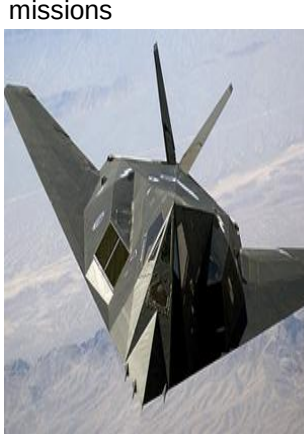
RECENT ADVANCEMENT OF POLYMERS IN BALLASTIC APPLICATIONS

The battlefield is a jungle where those who can stay invisible have the upper hand! Combining offensive effectiveness with defensive safety, the art of camouflage has become one of the most advanced fields of military research. However, more than simply striving `thwart the enemy's detection capabilities.

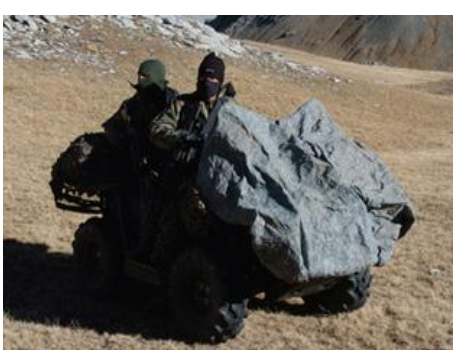
In order to achieve this, they must be address a range of issues such as reducing the electromagnetic signature of radar echo, the infrared footprint of heat sources and, at sea, the acoustic phenomena picked up by the sonar. These three issues that make motorised and metal-covered military equipment vulnerable, have opened up the way for non-conductive and insulating materials such as plastic resins.

This potential for absorption was also used to develop RAM materials (Radar Absorbent Materials) that can reduce radar echo and infrared signatures. In order to achieve this, carbon-, silicone- or polyurethane-based composites are coated in conductive polymers such as polyaniline, charged with ferrite particles that trap the waves not absorbed by the lower layers.

No less important is the role of paints and finishes applied to new equipment or during maintenance operations, which are unfortunately quite frequent with these fragile pieces of equipment. Some vehicles get around twenty successive coats aimed at improving stealth through their insulating, reflective, electromagnetic or anti-vibration properties. Others, like the Rafale, are coated with a stealth-improving paint for certain missions



The defense industry is already preparing a new generation of active, rather than passive, stealth technologies. To achieve this, engineers are working on the development of nanostructured composites or metamaterials, often with a polymer matrix, which are structured in such a way as to stop or deflect the propagation of optical, acoustic or electromagnetic waves in the material.



Certain flexible coatings can reduce the radar echo of a vehicle and also increase or reduce the apparent surface temperature of a vehicle to align it with the surrounding atmosphere. It then becomes almost undetectable.

This was achieved with the BZ 200 tarp adopted by the members of the Hubert commando unit. Tested with the French national Navy's most sophisticated detection systems.

-Ketan Tavhare
B. Tech