



PRIYADARSHINI
ENGINEERING
COLLEGE

VOLUME III
2014-15
ISSUE 3

MECHXION

2K15

DESCRIPTION

Institute Profile

Page 1

Dignitaries Message

Page 2-3

Department Profile
and (PEOs)

Page 4

Program Outcomes
(POs)

Page 5

Student Corner

Page 6-21

Technical Article

Page 22-26

A Magazine of

EDITORIAL BOARD COMMITTEE

Patron : Dr.P.Natarajan M.E.,Ph.D
Chief Editor : Mr.S.Tharaknath M.Tech.,
Faculty In charge(s) : Mr. A. Avinash Kumar M.Tech.,
Mr. S. Ashfaque Ahmed M.Tech.,
Final Year Students : Prasanth R
Anand M
Third Year Student : Gnanavel G
Second Year Student : Nandha Kumar.D



ABOUT THE INSTITUTE

Priyadarshini Engineering College, the flagship of Jai Barath Charitable Trust, was established in 1995 at Vaniyambadi in Vellore district of Tamilnadu. The college has been approved by All India Council for Technical Education, New Delhi and affiliated to Anna University, Chennai. Priyadarshini Engineering College situated in the rural area of Vaniyambadi, Vellore District is committed to the vision of developing itself into a multi campus, Inter - disciplinary Institution of Excellence through symbiotic efforts and innovative practices of management and faculty to provide the student with an ambient academic environment, ideal for the pursuit of knowledge and development carrier.

VISION OF THE INSTITUTE

To inculcate in the young rural minds the aptitude to compete with the world class technocrats.

MISSION OF THE INSTITUTE

1. To instill technical skills to compete in the sustainable world.
2. To impart holistic value based technical education.
3. To intensify research and development (R&D) activities in technological development.
4. To imbibe core values of love for motherland, performance of duty, compassion, tolerance, honesty and integrity.

MOTTO

PERSEVERANCE, ENDURANCE, COMMITMENT

“கற்றலும், கற்றவை கேட்டலும், கேட்டதன்கண் நின்றலும்”



ADMINISTRATOR'S MESSAGE

Greetings to all the readers of this magazine MECHXION 2K15. Education is the development of individual according to one's needs and demands of society, and contributes to building socio-economic infrastructure of nation. Our college has been playing a crucial role in the development of academic excellence. Right from its establishment, the college has been contributing to provide this country, the best engineering brains and talents. I sincerely appreciate all the members of staff who have contributed besides their academic activities and those who have taken strenuous efforts in bringing out the magazine successfully. I wish it to be a continuous process. Wish you Good Luck!

PRINCIPAL'S MESSAGE

I am very happy that the department of Mechanical Engineering is releasing their Department magazine "MECHXION 2K15" which encompasses the Activities of the department, Technical & General articles of the faculty and students for the academic year 2014-15.

To get better placements in core industries, it is not sufficient to learn fundamentals only. They have to know recent developments in all the fields of Mechanical Engineering. Now a day's Internet is paving the ways for acquiring knowledge in the latest developments in almost all the fields of engineering, technology, arts and sciences. Magazines in general will help the faculty and students to learn the latest developments in the fields Mechanical Engineering I owe my hearty appreciations to the HOD, faculty and students of the department for their sincere efforts to release the magazine to highlight the technical advancements in the branch of Mechanical Engineering. I wish them "The Very Best" in all their future endeavors.

VICE PRINCIPAL'S MESSAGE

I am happy to note that Mechanical Engineering department has taken the initiative to prepare a Department magazine "MECHXION 2K15" to highlight the activities of the Department and to bring out the talents of students. I am sure it will be a regular publication at every year intervals. This venture will help the students to plan, organize and execute various programs. I wish the HOD, Staff and Students of Mechanical Engineering all success in their future endeavors. It is always a pleasure to be a part of a team which strives to bring out the talents of students and staff.

HOD'S MESSAGE

As a HOD I wish to take the opportunity to assure you that our team will try our best to maximize Student's participation in the department. This magazine will reflect the intellectual as well as creative ideas of the students in addition to the technical articles. I am sure that it will be a good medium for the faculty and the students to disseminate useful information and update themselves. I strongly believe that it would be an excellent medium through which the world can learn about the potential and achievements of Mechanical Engineering Students. I hope that this would be an ongoing process and the magazine would bring out the talent of everyone. I join others in appreciating and recognizing the hard work of the editors and the magazine committee in bringing out the magazine and in wishing them success in their Endeavour.

EDITORIAL BOARD'S MESSAGE

Dear Readers,

It gives us great pleasure to bring you the Mechanical Engineering Magazine "MECHXION 2K15" which will be released every year. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This magazine is a platform to exhibit the literary skills and innovative ideas of teachers and students. We would like to place on record our gratitude and heartfelt thanks to all those who have contributed to make this effort in a successful manner. We profusely thank our honorable justice Mr.V.Rengasamy and Principal Dr.P.Natarajan for giving support and encouragement and a free hand in this endeavor. Last but not the least we are thankful to all the authors who have sent their articles. We truly hope that the pages that follow will make an interesting read.

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering came into being in the year 1999 and the first batch of Mechanical Engineers graduated in the year 2003. The department was first started with the intake strength of 40 seats in 1999. After, the intake was increased to 60 seats in 2004. At present the department offers 120 seats from 2014. The department has both undergraduate and postgraduate courses in Mechanical Engineering and Design. In the year 2013 Post Graduate Programme in Engineering Design was launched. The department has laboratory and workshop facilities with modern sophisticated equipment to carry out research in all areas related to Mechanical Engineering. Throughout its history, the department has provided a strong technical foundation to prepare students to meet the changing needs of industry.

VISION OF THE DEPARTMENT

To produce competent Mechanical Engineers specifically from rural based population to confront the latest technological innovations.

MISSION OF THE DEPARTMENT

1. Imparting quality education and training to nurture competitive Mechanical Engineers.
2. Motivating innovations in the various fields of Mechanical Engineering with better infrastructure facilities to meet the industrial and societal requirements.
3. Inculcating ethical values in their careers for their successful life.

PROGRAMME EDUCATIONAL OBJECTIVES(PEOs):

PEO 1. Core Competence:

Graduates will Excel in their Professional Career with Strong Fundamental Technical Background.

PEO 2. Breadth:

Graduates will be able to demonstrate their Technical Skills in Designing, Fabrication and Installation of New Mechanical Components.

PEO 3. Professionalism:

Graduates will be Competent to Exhibit their Multidisciplinary Skills in Related Fields of Mechanical Engineering.

PEO 4. Teaching & Research:

Graduates will Pursue Higher Studies in Mechanical Related Disciplines to work in the field of Teaching and Research.

PROGRAMME OUTCOMES(POs):

PO 1: Engineering Knowledge:

Apply the knowledge of mathematics, science, engineering fundamentals and core engineering for complex engineering problems.

PO 2: Problem Analysis:

Identify, formulate and analyze complex engineering problems.

PO 3: Design & Development of Solutions:

Design and develop solutions for complex engineering problems.

PO 4: Investigations of complex problems:

Use research based knowledge to conduct investigations of complex problems.

PO 5: Modern Tool Usage:

Apply appropriate modern tools and techniques to tackle Mechanical Engineering problems.

PO 6: Engineer and Society:

Provide solutions to Mechanical Engineering problems relevant to societal needs.

PO 7: Environment and Sustainability:

Acquire contemporary knowledge to sustain in the ever changing environment.

PO 8: Ethics:

Apply professional ethics.

PO 9: Individual and Team work:

Exhibit individual and leadership qualities in multidisciplinary group.

PO 10: Communication:

Comprehend and communicate effectively in a team.

PO 11: Lifelong Learning:

Engage independently in lifelong learning.

PO 12: Project Management and Finance:

Plan and manage a project in a cost effective manner.

STUDENT CORNER

எம்ச

கிட்டுக்கி ஒரு மரும வணர்ச்சிப்படி
 கிட்டுக்கி ஒரு மரும வணர்ச்சிப்படி - எம்ச

படிக்கட்டில் மருமவணர்ச்சி
 படிக்கட்டில் மருமவணர்ச்சி - எம்ச

குப்பாயும் மருமவணர்ச்சி
 குப்பாயும் மருமவணர்ச்சி - எம்ச

அவருக்குக்கும், அவருக்குக்கும் மருமவணர்ச்சி
 அவருக்குக்கும், அவருக்குக்கும் மருமவணர்ச்சி - எம்ச

சினிமாவும் மருமவணர்ச்சி
 சினிமாவும் மருமவணர்ச்சி - எம்ச

கவியாணமவணர்ச்சி
 கவியாணமவணர்ச்சி - எம்ச

மரும
with me

1. The sorrow behind your smile
2. The love behind your anger
3. The reason behind your silence.....

AIM OF EDUCATION:

Poovarasan D(Third Year Mech)

- E – To eradicate ignorance and illiteracy
- D – To develop a sense of discipline
- U – To utilize the power of understanding
- C – To cultivate a sense of curiosity
- A – To acquire the quality of inspiration
- T – To teach the quality of tolerance
- I – To inculcate interest for acquiring knowledge
- O – To be obedient to elders
- N – To be noble and humble in life.

Friends:

Karthikeyan S(Third Year Mech)

Bad friends hit you in the back
 Good friends hit u in the face.
 Be careful with your words,
 Once they are said,
 They can be only forgiven not forgotten

The most important things,
 In life are not things.
 When writing the story of your life,
 Don't let anyone else hold the pen.

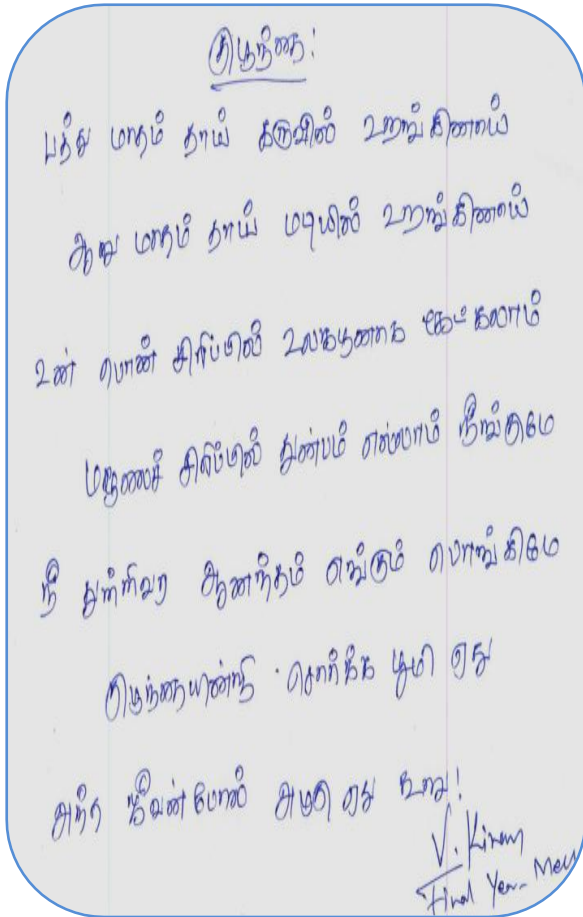
If you do right no one remembers,
 If you do wrong no one forgets.
 Life is too short to spend it with
 People who suck the happiness out of you.

Do not lie because every little lie you
 Lie brings you closer to good-bye....
 Only trust someone who
 see only these three
 things in u....

OUR COLLEGE :

Surya A(third Year Mech)

It is our Priyadarshini engineering college
 Where we get precious knowledge
 It has become in our life a part
 That we can never forget it through we depart
 The PEC students are the best
 They can overcome any type of tests.
 Though they play some plans
 They always get ranks.
 The lecturers are so fine
 They always make us shine.
 People like them are very rare
 Hence a nice relationship we share.
 Lecturers with their explaining
 Students alert with understanding.
 We will leave this college tomorrow
 With our hearts heavy and full of sorrow.
 The college life to me is a treasure
 For never we will find such a pleasure.



"Robe dirty!" the man exclaimed.

Three more years went by and the head monk came to him and said, "What are your two words?"

"I quit!" said the man.

"Well," the head monk replied, "I am not surprised. You have done nothing but complain ever since you got here!"

ENGLISH JOKES

Pazhani 3 (Third Year Mech)

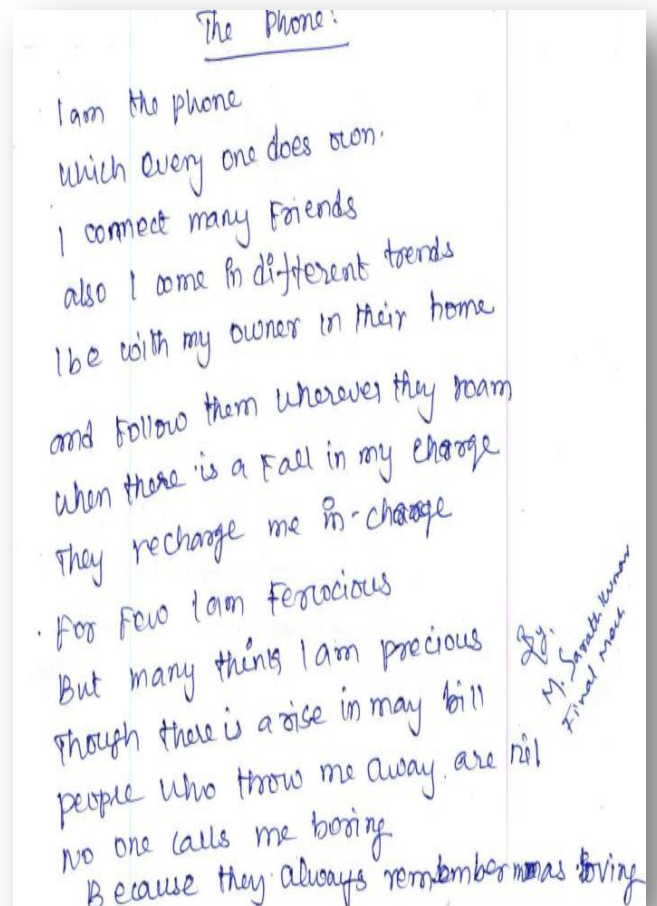
A man wanted to become a monk so he went to the monastery and talked to the head monk.

The head monk said, "You must take a vow of silence and can only say two words every three years."

The man agreed and after the first 3 years, the head monk came to him and said, "What are your two words?"

"Food cold!" the man replied.

Three more years went by and the head monk came to him and said "What are your two words?"





Nivashi Kumar L (Third Year Mech)



M. Karthi (Third Year Mech)



Vinoth S (Third Year Mech)



M. Pradeeshi (Third Year Mech)

HOW MATHS AND LIFE ARE RELATED.....

Sathishkumar D(Final Year Mech)

Vector: Life needs direction, hence it is a vector

Complex: Life is full of complex problems

Integration: Life is an integration of good and bad

Analytical: Life is difficult for one to analyze

Determinants: The value of determinants of life is determined by god

Differentiation: Life is differential into four stages namely childhood, youth, middle and old age

Probability: Life is one where the probability of success should be high

Modern algebra: As algebra changes from ancient to modern man's life style should also change from ancient to modern

Trigonometry: The sum of squares of hard work and intelligence is equal to the square of success in life

MATHEMATICS- The king of all —ARTS|| and the queen of all —SCIENCES||

M - Morality
A - Action
T - Truthfulness

H - Humility
E - Excellence
M - Memory
A – Ability
T - Talent
I- Integrity
C - Character
S – Sincerity

If I feel unhappy, I do —MATHEMATICS|| to become happy.....

COLLEGE CAMPUS

Vinoth S(Third Year Mech)

1st year
New entry
Respecting professors
Waiting in the class
Students introductions
Innocent faces
Silent tables
Getting arrears
2nd year
Forming gang
Last bench rockers
Window sightings
Giggling in the middle
Outstanding students
Donating fine for ID cards
Group study
Clearing arrears
3rd year
Often absent in the class
Frequent presence in canteen
Mocking with friends
Getting suspense's for vacation
Outing with friends
Sleeping in exam hall
Speaking in class hours
Show off among juniors
Ever rocking Prefinal years
Waiting for final year
Thanks we the terrific Third Years

IF you think.

IF you think you are beaten you are
 If you think you chose not, you don't
 If you like to win, but think you can't
 It's almost a cinch you won't
 IF you think you'll lose you've lost
 For, but in the word we find.
 Success begins with a fellow's will.
 It's all in the state of mind.
 IF you think you are outclassed you are,
 you've got to think high to rise
 you've got to be sure of yourself
 before you can ever win a prize
 Life's battle doesn't always go
 to the stronger and faster man,
 but sooner or later the man who wins,
 is the man who thinks he can!

*M. Suresh Kumar
Mech*

Paper over - MATCH OVER
 Merit - 6RUNS
 First division - 4RUNS
 Second division - 2RUNS
 Third division - SINGLE RUN
 Supplementary - SAVED FROM RUN
 OUT.

குறிமை

பெண்கள் படுவதில் துவக்கித் தோல்வி
 நான் தக்கப் புகழினால் வென்றேன்
 தோல்வி படுவதில் துவக்கித் தோல்வி
 நான் தக்கப் புகழினால் வென்றேன்
 சிறிது நேரம் கண்டி எல்லா
 நெருக்கி அழகு வென்றேன் அன்று
 அவசியமில்லாத புகழ் அவசியமாக தக்க
 இடத்தே கண்டி அன்று!
 அவசியமில்லாத அமைச்சர்க்குட எல்ல
 இடத்தே புகழினால் வென்று நான் அடங்கி விட்டேன்
 எவ்வளவு இடத்தே நெருக்கி வென்று நெருக்கி மனிதனாக

39
 Jothi Basu,
 Final Mech

EXAMINATION IS THE GAME OF CRICKET :

T. Ezhilvannan (Second Year Mech)

- Preparation for examination - FIELDING
- Examination - BATTING
- Examiner - UMPIRE
- Examination hall - STADIUM
- Question paper - OVER
- Hard question paper - FAST BOWLING
- Confusing question paper - SPIN BOWLING
- Success by fair means - LEG BI
- To be sent out from the hall - LBW
- Checked while helping others - HIT WICKET

Examination

Jothi Basu A(Final Year Mech)

- Nearing is our examination
- Must study with concentration
- English with its pronunciation
- Signals with its classification
- Maths with its transformation
- Electronic circuits with its derivation
- Electrical engineering with its operation
- Digital electronics with its simplification
- OOP with its virtual function
- Thereby increases our stress and tension
- And there is no time for relaxation

A Poem For Mom

Jothi Basu A(Final Year Mech)

You are the sunlight in my day,
 You are the moon I see far away.
 You are the tree I lean upon,
 You are the one that makes troubles be gone.
 You are the one who taught me life,
 How not to fight, and what is right.
 You are the words inside my song,
 You are my love, my life, my mom.
 You are the one who cares for me,
 You are the eyes that help me see.
 You are the one who knows me best,
 When it's time to have fun and time to rest.
 You are the one who has helped me to dream,
 You hear my heart and you hear my screams.
 Afraid of life but looking for love,
 I'm blessed for God sent you from above.
 You are my friend, my heart, and my soul.
 You are the greatest friend I know.
 You are the words inside my song,
 You are my love, my life, my Mom

അപ്പു അമ്മാൾ കാഴ്ച
 കാഴ്ച അമ്മാൾ ഉന്ദ ചുണ്ടകൾ
 വെക്കുന്നതുകൾ ഉന്ദയ്യ ലൗകികം . . .
 ക്രമീകരണത്തിൽ വെക്കുന്നതുകൾ കാഴ്ച
 വെക്കുന്നതുകൾ കാഴ്ചകൾ
 ഉന്ദ ചുണ്ടകൾ കാഴ്ചകൾ - അപ്പു
 കഴിഞ്ഞു കഴിഞ്ഞു കഴിഞ്ഞു
 നീ കഴിഞ്ഞു നീ കഴിഞ്ഞു
 നീയെ നീയെ നീയെ ഉന്ദയ്യ - അപ്പു
 ധർമ്മം ഉന്ദയ്യകൾ
 നീയെ നീയെ നീയെ നീയെ
 കാഴ്ചകൾ നീയെ - അപ്പു
 അപ്പു ഉന്ദയ്യ . . .
 അപ്പു ഉന്ദയ്യ . . .
 കഴിഞ്ഞു നീയെ . . .
 നീയെ നീയെ . . .
 ഉന്ദയ്യകൾ ഉന്ദയ്യ . . .
 ഉന്ദയ്യകൾ നീയെ . . .

Sathishkumar D(Final Mech)

After Graduation in Engineering:

HIGHER STUDIES

After graduations the next step is getting a master's degree like M.tech, MBA or M.S. and after that if one is still enthusiastic, then they can go for a Ph.D. Let's discuss each option one by one.

1. Masters in Technology (M.Tech)

There are two ways possible. Either go for an Indian university like IITs, IISc or go to foreign university. In USA the equivalent degree is M.S, which will be discussed in a separate tab. For M.Tech one needs to appear for GATE (Graduate Aptitude Test in Engineering).

Graduate Aptitude Test in Engineering (GATE)

It is jointly conducted by IISC and seven IIT and is considered to be a benchmark test for engineering graduates. Each year one IIT take the responsibility of conducting the exam on rotation basis. The scores are only for application to graduate programs in engineering disciplines in India. Any candidate who has cleared her bachelors or masters or is in the final year of her respective course is eligible for GATE. Some PSUs like BARC, NPIL and HAL give preference to GATE scores, so apart from being a ticket to higher education, it is also helpful in landing up at that dream job.

Basic Features of GATE :

Examinations for all the 22 papers will be conducted by an ONLINE Computer Based Test (CBT). The online examination paper will contain some questions for which

numerical answers must be keyed in by the candidate using the virtual keypad. Rest of the questions shall be of Multiple Choice Question (MCQ) type.

Biometric information (Photograph and Fingerprints) for randomly selected candidates may be captured before the start of the examination.

GATE examinations will be held during forenoon and afternoon sessions on alternate weekends (Saturday and Sunday) between 31st January and 14th February every year. Examination for some of the papers in GATE will be held in multiple sessions. Exact details regarding complete examination schedule will be notified at a later date.

For GATE 2015 the entire process of filling up of application form, uploading of certificates/documents, etc., will be online and the candidates should not send any hard copy of their application form/documents, etc., to any of the IIT/IISc zonal GATE office.

The payment of application fees would be online through different modes like net banking, debit/credit card, e-challan, etc.

The admit cards for GATE would be available only through online. Candidates can download their admit card from GA hard copy of admit cards will be posted to the candidates.

2. Master of Science (MS)

USA has been a preferred destination for Indian engineers for the past several years and Indians continuously form the largest chunk of foreign students in USA. To get admission in a foreign university for MS, one needs to appear for Graduate Record

Graduate Record Examination (GRE)

It is an admission requirement for many graduate schools in USA and in other English-speaking countries. It is a computer-based test measuring verbal reasoning, quantitative reasoning, critical thinking, and analytical writing skills that have been acquired over a long period of time and that are not related to any specific field of study. Unlike GATE, there is no cut-off line for GRE and the admission score varies from one university to other. After appearing for GRE, one needs to apply to the universities of his choice. As applying to each university is very costly affair, hence selection of universities is an equally important activity. The selection should be based on realistic assessment of One's abilities and GRE score. For scholarships many universities also consider the research work that a candidate has undertaken previously. Combining this with the GRE core, they give an admission offer to a candidate.

3. Master of Business Administration (MBA)

Again like M.Tech one has many options. In fact the options are much more here, owing to the presence of a large number of good private colleges. First we will discuss about the options available in India. For admission to Indian institutes there are many exams like CAT, MAT, XAT, apart from separate exams conducted by some universities like FMS.

Common Admission Test (CAT)

It is conducted by IIMs on an all-India basis and is basically used for admission to IIMs. There are other colleges as well, which use CAT score for granting admissions. Post 2009, the pattern has moved from offline to online mode and has seen a change in pattern as well. With the increase in number of IIM and increase in number of seats in each IIM, it has become an attractive option. What works against it is the exorbitant fees being charged by the IIMs.

Management aptitude test (MAT)

It is the smaller, less popular and less efficient brother of CAT. Its score is applicable to basically every other college that is not covered under CAT.

XAT, FMS

Some other colleges like XLRI Jamshedpur, XLRI Bhubaneswar and FMS New Delhi conduct their own admission test and a student need to appear in these exams to be eligible for these institutes.

Graduate Management Admission Test (GMAT)

It is a computer-adaptive standardized test in mathematics and the English language for measuring aptitude to succeed academically in graduate business studies. Business schools commonly use the test as one of many selection criteria for admission into graduate business administration programs (e.g. MBA, Master of Accountancy, etc.) Principally in the United States, but also in other English-speaking countries. Similar to GRE, based upon preference, score and capability, one needs to apply to institutes separately. So the selection of institutes is

very important. Most good universities give a lot of weight to work experience (unlike Indian institutes). Thus a similar score can land you in different university based upon your work experience. A GMAT score is valid for five years, so you can take the exam during your student days (when your mind is really sharp) and then apply for schools after three years (with proper work experience). To select a B-school one can have a look at the last year average and median score, which is published by most of the schools.

Test of English as a Foreign Language (TOEFL)

It evaluates the ability of an individual to use and understand English in an academic setting. It sometimes is an admission requirement for non-native English speakers at many English-speaking colleges and universities. So it is an advantage if you have taken TOEFL along with GRE/GMAT. Sometimes some universities demand this score if you are a foreign student (as in the case of Indian student). The test consists of reading, listening, speaking and writing section. The minimum score may vary from one school to other, with Harvard and MIT demanding a score of 100. Unlike other exams it can be taken any number of times, to improve upon the previous score and the score is valid for two years. Colleges consider the most recent TOEFL score as a parameter.

International English Language Testing System (IELTS)

It is an international standardized test of English language proficiency. It is jointly managed by University of Cambridge ESOL Examinations, the British Council and IDP Education Pty

Ltd, and was established in 1989. For applying to any British university IELTS score is generally a precondition. The structure is similar to TOEFL and both the scores can be used interchangeably. Again similar to TOEFL the requirements for each university vary with Oxford demanding a score of 7.0 and Essex University demanding a score of 5.5. The score is valid for two years. For information into IELTS and application procedure, one can directly walk into any British Council.

situated all across India and get the application form

S.Tharaknath(HOD/Mech)

THE SWEET FOND MEMORIES AND THE PAIN

We all go through the pain at one time on another,
 But no one understands the pain unless they lose someone closest to their heart.
 One who cared about you and loved you the most,
 One who understood your every thought and every emotion.
 The one for whom you would have always been a kid, no matter how old you were,
 The one who with a sweet kiss could wipe away your tears,
 One who knew how to put a smile on your face at the worst of moments
 The one who held your hands and taught you to walk,
 The one for whom your smallest achievements brought the greatest joys.
 The one who would forgive your biggest sins
 These things remain as sweet fond memories.
 but along with them live those tears.

No one can understand the pain unless they have lost that someone so dear

Rajesh K(Final Year Mech)

Big skyscraper projects going on in India

The big skyscraper projects currently going on in India are (Top 5):

1) World One

Location- Upper Worli, Mumbai
 Height- 1,450 feet (442 meters)
 Completion- In 2016
 Type- Residential Apartment
 Floor Count- 117
 Developer-Lodha group
 Architect- Pei Cobb Freed & Partners
 Structural engineer- Leslie E. Robertson Associates
 Cost- INR20 billion (US\$310 million)

2) Oasis Tower

Location- Worli, Mumbai
 Height- 1,220 feet (372 meters)
 Completion- In 2016
 Type- Residential, Commercial
 Floor Count- 85 & 53
 Developer- Oasis Realty
 Architect- Kohn Pedersen Fox
 Structural engineer- Leslie E. Robertson Associates

3) Palais Royale

Location- Lower Parel, Mumbai
 Height- 1,050 feet (320 meters)
 Completion- In 2015
 Type- Residential
 Floor Count- 75 + 2 Underground floors
 Developer- Shree Ram Urban Infrastructure Ltd.
 Architect- Talati and Panthaky

Structural engineer- Joseph Colaco
 Cost- INR920 crore (US\$140 million)

4) Namaste Tower

Location- Lower Parel, Mumbai
 Height- 1,037 feet (316 meters)
 Completion- In 2015
 Type- Residential, Commercial
 Floor Count- 63
 Developer- Jaguar Buildcon
 Architect- WS Atkins Plc
 Structural engineer- WS Atkins Plc

5) Lokhandwala Minerva

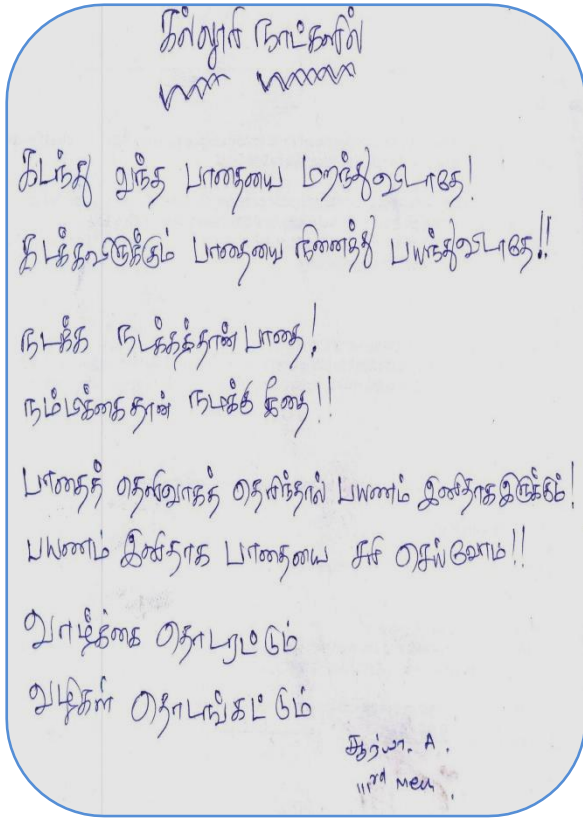
Location- Mahalaxmi, Mumbai
 Height- 1,037 feet (304 meters)
 Completion- In 2015
 Type- Residential
 Floor Count- 82 X 2
 Developer-Lokhandwala Developers
 Architect- Hafeez Contractor
 Structural engineer- J+W Consultants

Vinoth R (final Year Mech)

English Jokes:

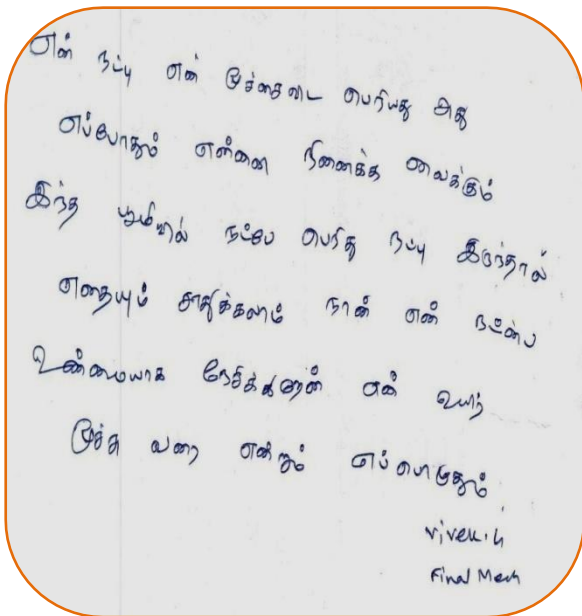
Two children are talking.
 A: Meet my new born brother.
 B: Oh, he is so handsome! What's his name?
 A: I don't know. I can't understand a word he says

V. Jayapal(Second Year Mech)



Fred replied, "Actually, I've found many women that I have wanted to marry, but when I bring them home to meet my parents, my mother doesn't like them." His friend thinks for a moment and says, "I've got the perfect solution, just find a girl who's just like your mother." A few months later they meet again and his friend says, "Did you find the perfect girl? Did your mother like her?" With a frown on his face, Fred answers, "Yes, I found the perfect girl. She was just like my mother. You were right, my mother liked her very much." The friend said, "Then what's the problem?" Fred replied, "My father doesn't like her."

M. Pradeesh (Second Year Mech)



English Jokes:

Fred is 32 years old and he is still single. One day a friend asked, "Why aren't you married? Can't you find a woman who will be a good wife?"

BEING SMART ALWAYS

Smartness is an extremely subjective trait of a human. For a teacher, the student who scores 95/100 is smart; for a father, if his daughter can become an independent woman in life, she is smart; in a peer group, anyone who can make a come-back with a quick repartee is automatically assumed to be smart. So what do these 'smart' people have in common? Take a look:

- 1. Knowledge.**
If smart is what you want to be, knowledge is what you will have to gather. Pick up any smart person in your life, I can bet if he/she is not a storehouse of incredible amount of information and worldly wisdom.
- 2. Confidence.**
If I had the power to make changes in the English language, I would make the word 'smart' a synonym of 'confidence'. Because these two qualities

work hand-in-hand. One quality implies the other. These two traits can just never work in isolation.

3. Listen.

Have you ever seen any smart-ass trying to speak out of his turn. No. If you did, trust me he is not really a very smart person. Because they always listen, soak in as much as they can. Why? Because Point no 1. So listen, listen intently and you will surprise yourself by the amount of knowledge you gain from sources you could never have imagined.

4. Think.

This is the most crucial part. Smart people think. And they think longer and deeper. For me, this is the only thing that separates a normal person from a smart man. You need to form opinions on diverse subjects and you need to back them up with some really impressive points, and those points are not going to come by themselves if you don't think.

5. Alert.

Why? Because read the above point. You can only be smart if you think, and to think you need to have knowledge about the subject and to have knowledge, you need be alert. You need to be aware of your surroundings. Don't just see. Observe everything.

6. Polite. And Firm.

This is something you will notice in smart people. They never fight, never get into useless arguments; they will just say what they want to and walk away, because they are not desperate to prove a point. But being just polite won't work, you have got to be firm. You have got to have that tinge of narcissism about yourself. After all if you don't respect yourself, don't expect the world to respect you.

7. Belief.

Though this is the last point of the answer, yet it is the very first step you will have to take. Believe you are smart. Tell this to yourself everyday, every hour and every minute. Keep on reminding yourself constantly about it. Even if the world knocks you down, rips your confidence apart, don't lose hope, do not settle, have a firm belief in yourself. Take a look at me, my father constantly keeps reminding me that I am a dumb-ass, yet here I am telling you how to be smart. :D As other have said, you can't be smart always. But you can increase your smartness by improving bettering yourself as the situation demands. Here is a good quote for you: Half of being smart is knowing what you are dumb about. never miss an opportunity to learn in life..... think before you speak..... have many experience in live..... develop a positive personality..

Prasanth R(Final Year Mech)

WAYS TO LIVE- SUCCESS

Sarathkumar M (Final Year Mech)

Success is important to anybody....

You know what success means? It is favorable termination of attempts. Success means more than money, fame or managing tasks very well, its also about getting the best out of yourself, gaining respect, controlling stress and leading happy, calm and fulfilled life, living with a sense of satisfaction. We often try to solve our problem by looking for external solutions only to get frustrated when the problems keep showing up over and over again. But the real solution lies with ourselves.

We just have to find it to have a success.

“Success is all about having courage to take risk”. Taking the risk is not easy like spoon feeding. If you are ready to take risk, then surely you get success. We have courage to take risk. You know? Your life is a mirror that reflects back to you what you’ve put into the world. So always do good to others. Never hurt anyone. Have good communication with all who are around you. Never close your heart to others because you will be the one who suffers. Have an open heart. Be patient and compassionate with yourself and the other person. Accept your different perspectives and work toward the middle ground for harmony and good relations by keeping your heart open.

Do you strive to be a perfect? Then have a self confidence. Be unique don’t depend on others. Don’t please others. Rather, trying to please others, please yourself instead by doing your best and knowing its good enough. Do well and be good. Think that you are unique unlike anyone else on this earth, with your own special talents and gifts. Strive for excellent rather than perfection. Put you into a state of being that is favorable to achieving success, joy fulfillment be truthful. When you come from your truth and your heart desires, you will have real happiness Have a successful life

Shake off your problems:

A man's favorite donkey falls into a deep precipice; He can't pull it out no matter

how hard he tries; He therefore decides to bury it alive.

Soil is poured onto the donkey from above. The donkey feels the load, shakes it off, and steps on it; More soil is poured.

It shakes it off and steps up; The more the load was poured, the higher it rose; By noon, the donkey was grazing in green pastures.

After much shaking off (of problems) And stepping up (learning from them), One will graze in GREEN PASTURES.

POTATOES, EGGS, AND COFFEE BEANS

Once upon a time a daughter complained to her father that her life was miserable and that she didn’t know how she was going to make it. She was tired of fighting and struggling all the time. It seemed just as one problem was solved, another one soon followed.

Her father, a chef, took her to the kitchen. He filled three pots with water and placed each on a high fire. Once the three pots began to boil, he placed potatoes in one pot, eggs in the second pot, and ground coffee beans in the third pot.

He then let them sit and boil, without saying a word to his daughter. The daughter, moaned and impatiently waited, wondering what he was doing.

After twenty minutes he turned off the burners. He took the potatoes out of the pot and placed them in a bowl. He pulled the eggs out and placed them in a bowl.

He then ladled the coffee out and placed it in a cup. Turning to her he asked. “Daughter, what do you see?”

“Potatoes, eggs, and coffee,” she hastily replied.

“Look closer,” he said, “and touch the potatoes.” She did and noted that they were soft. He then asked her to take an egg and break it. After pulling off the shell, she observed the hard-boiled egg. Finally, he asked her to sip the coffee. Its rich aroma brought a smile to her face.

“Father, what does this mean?” she asked.

He then explained that the potatoes, the eggs and coffee beans had each faced the same adversity– the boiling water.

However, each one reacted differently.

The potato went in strong, hard, and unrelenting, but in boiling water, it became soft and weak.

The egg was fragile, with the thin outer shell protecting its liquid interior until it was put in the boiling water. Then the inside of the egg became hard.

However, the ground coffee beans were unique. After they were exposed to the boiling water, they changed the water and created something new.

“Which are you,” he asked his daughter. “When adversity knocks on your door, how do you respond? Are you a potato, an egg, or a coffee bean?”

Moral: In life, things happen around us, things happen to us, but the only thing that truly matters is what happens within us. Which one are you?

Vijay V (Third Year Mech)

TEN THINGS YOU CAN DO TO BE HAPPY

1. Start filtering out the noise in your life.

Be careful about who you give the microphone and stage to in your life.

Don't just listen to the loudest voice. Listen to the truest one.



2. Start choosing differently, for your own well-being.

A big part of your life is a result of the little choices you make every day. If you don't like some part of your life, it's time to start tweaking things and making better choices, right now, right where you are.



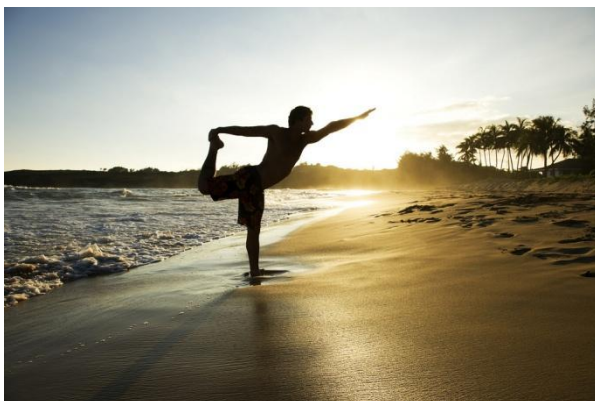
3. Start being way more productive than you are busy.

There's a big difference between being busy and being productive. Don't confuse motion and progress. A rocking horse keeps moving but never makes any forward progress. In other words...



4. Start dedicating time every day to meaningful activities.

What you do every day matters, but WHY you do what you do matters even more. So quit doing just what you're able to do; figure out what you were made to do, and then do more of it. And if you only have fifteen minutes a day to spare, no problem – make those fifteen minutes meaningful.



5. Start being present.

If your mind carries a heavy burden from the past, you will experience more of the same. Let it go. And also be careful not to dwell so much on creating your perfect future life that you forget to live today. Be here now and make the most of it.



6. Start replacing your worries with positive actions.

Most of the things I've worried about didn't happen. Most of the things I've hoped for and worked hard for did. The same is true for the happiest and most successful people I've talked to and worked with over the years. So keep dreaming and keep DOING.



7. Start letting your love overpower your fear.

There are only two energies at the core of the human experience: Love and Fear. Fear pushes what you want away from you. Love draws it in.



8. Start doing what's right, even if it's not the easiest option.

Just because you can, doesn't mean you should. Just because it's easy, doesn't mean it's worth your while. Do what's right, not what's easiest right now. It's a less stressful and regretful way to live in the long run.



09. Start comparing yourself to yourself and no one else.

Forget what others have and where they are. You're not walking in their shoes, and you'll never comfortably walk in your own if you keep comparing yourself to them. So focus on what's best for YOU and your unique circumstances. What do you need to do next for your own objectives? Do it!

You won't be distracted by comparison if you're captivated with purpose.



10. Start letting grace have the last word.

We'll only lose the arguments our pride insists on winning. When it's more important to win arguments than love people, we need to start all over again with our faith and priorities.



TECHNICAL ARTICLES

1. STANFORD RESEARCHERS STRETCH A THIN CRYSTAL TO GET BETTER SOLAR CELLS

Crystalline semiconductors such as silicon can catch photons and convert their energy into electron flows. New research shows that a little stretching could give one of silicon's lesser-known cousins its own place in the sun.

Nature loves crystals. Salt, snowflakes and quartz are three examples of crystals – materials characterized by the lattice-like arrangement of their atoms and molecules. Industry loves crystals, too. Electronics are based on a special family of crystals known as semiconductors, most famously silicon.

To make semiconductors useful, engineers must tweak their crystalline lattice in subtle ways to start and stop the flow of electrons. Semiconductor engineers must know precisely how much energy it takes to move electrons in a crystal lattice.

This energy measure is the band gap. Semiconductor materials such as silicon, gallium arsenide and germanium each have a band gap unique to their crystalline lattice. This energy measure helps determine which material is best for which electronic task.

Now an interdisciplinary team at Stanford has made a semiconductor crystal with a variable band gap. Among other potential uses, this variable semiconductor could lead to solar cells that absorb more energy from the sun by being sensitive to a

broader spectrum of light. A colorized image, enlarged 100,000 times, shows an ultrathin layer of molybdenum disulfide stretched over the peaks and valleys of part of an electronic device. Just 3 atoms thick, this semiconductor material is stretched in ways to enhance its electronic potential to catch solar energy. (Photo: Hong Li)

The material itself is not new. Molybdenum disulfide, or MoS₂, is a rocky crystal, like quartz, that is refined for use as a catalyst and a lubricant. But in Nature Communications, Stanford mechanical engineer Xiaolin Zheng and physicist Hari Manoharan proved that MoS₂ has some useful and unique electronic properties that derive from how this crystal forms its lattice.

Molybdenum disulfide is what scientists call a monolayer: A molybdenum atom links to two sulfurs in a triangular lattice that repeats sideways like a sheet of paper. The rock found in nature consists of many such monolayer's stacked like a ream of paper. Each MoS₂ monolayer has semiconductor potential. "From a mechanical engineering standpoint, monolayer MoS₂ is fascinating because its lattice can be greatly stretched without breaking," said Zheng, an associate professor.

By stretching the lattice, the Stanford researchers were able to shift the atoms in the monolayer. Those shifts changed the energy required to move electrons. Stretching the monolayer made MoS₂ something new to science and potentially useful in electronics: an artificial crystal with a variable band gap.

"With a single, atomically thin semiconductor material we can get a wide range of band gaps," Manoharan said. "We think this will have broad ramifications in sensing, solar power and other electronics." Scientists have been fascinated with monolayer's since the Nobel Prize-winning discovery of grapheme, a lattice made from a single layer of carbon atoms laid flat like a sheet of paper.

In 2012, nuclear and materials scientists at Massachusetts Institute of Technology devised a theory that involved the semiconductor potential of monolayer MoS₂. With any semiconductor, engineers must tweak its lattice in some way to switch electron flows on and off. With silicon, the tweak involves introducing slight chemical impurities into the lattice.

In their simulation, the MIT researchers tweaked MoS₂ by stretching its lattice. Using virtual pins, they poked a monolayer to create nanoscopic funnels, stretching the lattice and, theoretically, altering MoS₂'s band gap. Band gap measures how much energy it takes to move an electron. The simulation suggested the funnel would strain the lattice the most at the point of the pin, creating a variety of band gaps from the bottom to the top of the monolayer. The MIT researchers theorized that the funnel would be a great solar energy collector, capturing more sunlight across a wide swath of energy frequencies.

When Stanford postdoctoral scholar Hong Li joined the Department of Mechanical Engineering in 2013, he brought this idea to Zheng. She led the

Stanford team that ended up proving all of this by literally standing the MIT theory on its head.



Instead of poking down with imaginary pins, the Stanford team stretched the MoS₂ lattice by thrusting up from below. They did this – for real rather than in simulation – by creating an artificial landscape of hills and valleys underneath the monolayer. They created this artificial landscape on a silicon chip, a material they chose not for its electronic properties, but because engineers know how to sculpt it in exquisite detail. They etched hills and valleys onto the silicon. Then they bathed their nanoscape with an industrial fluid and laid a monolayer of MoS₂ on top.

Evaporation did the rest, pulling the semiconductor lattice down into the valleys and stretching it over the hills. Alex Countryman, a PhD student in applied physics in Manoharan's lab, used scanning tunneling microscopy to determine the positions of the atoms in this artificial crystal. He also measured the variable band gap that resulted from straining the lattice this way.

The MIT theorists and specialists from Rice University and Texas A&M University contributed to the Nature

Communications paper. Team members believe this experiment sets the stage for further innovation on artificial crystals.

"One of the most exciting things about our process is that is scalable," Zheng said. "From an industrial standpoint, MoS₂ is cheap to make." Added Manoharan: "It will be interesting to see where the community takes this."

2. PROBING MARS, CHARGING CARS

Engineers developing a drill for probing Mars, the Moon and asteroids have created the world's first portable charger to power up electric cars anywhere, anytime. Drawing on the same voltage as a vacuum cleaner, the charger can be plugged into any household socket without blowing a fuse.

The key lies in the tiny transformer, similar to the box on your laptop cable, which converts power from the grid to maintain a stable supply and cut charging times. Norwegian company Zaptec are also developing a space drill under ESA funding, with the transformer powering a plasma drill for slicing through rock.

"Rotary drills are inefficient in space," points out Zaptec's CEO, Brage Johansen. "They suffer friction in the borehole and require heavy equipment." ESA is funding Zaptec's feasibility study to assess if their plasma Zapdrill is more effective or will drill deeper in our search for life on other planets.

Right now we're scratching the surface," explains ESA's Sanjay Vijendran. "With today's technology we can go down about 2 m for missions such as our ExoMars rover. But we want to get to at least 10 m with the same size drill." "We believe Mars might have underground water which could potentially harbor life, but so far we've not had the technology to explore deep enough."

Space scientists have been looking for a better way and the answer might lie in a flash of lightning. Plasma is the hot, electrically charged gas that powers the Sun and constitutes most of our Universe. On Earth it manifests as lightning, electrical sparks and the auroras over our poles. In its human-made form, plasma provides the light in fluorescent tubes and now the cutting edge of a space drill.

"The plasma drill is the closest thing to cutting rock with a lightsabre," smiles Brage. "Our drill head produces small bolts of lightning 1–5 cm long that pulverize the rock from within." "This lightweight drill requires no weighted bits or heavy generators. "On Mars we have only 100 W available and we can run the whole system below that using solar power and small batteries."

Engineers have been crushing stone in laboratories with 'lightning' for half a century but only recently has progress in microelectronics enabled them to develop a drill.



Zaptec's innovation lies in the compact transformers that provide the voltage for the plasma spark, thanks to advanced cooling techniques and miniaturization. "We realized that the same transformers we were developing for the space drill could also make the best chargers for electric cars," says Brage.

"Zaptec's reuse of their special space technology to power a plasma drill on Mars to charge electric car batteries is a good example of how developments in our European space programmes can help other industrial sectors," said Fredrik Fjellså from Prekubator TTO, the Norwegian partner of ESA's Technology Transfer Programme network of technology brokers. "This Zaptec space technology will be a great help for the growing use of environmental friendly electric cars." Zaptec has an agreement with Renault, who will be rolling out the portable charger for their Zoe customers in Norway from early 2016.

Juice up anywhere

"Norway is Europe's biggest market for electric vehicles but the grid is different from the rest of Europe," explains Renault's Philippe Dupuy. "The car doesn't always recognize the quality of the

electricity and could refuse to charge." The space charger ensures electricity from the grid is always acceptable to the vehicle and is safe. "Drivers can plug into any socket along their journey, never having to worry about getting stranded without power."

At home, new Zoe owners can use the cable without installing a wall box, giving them 10 A in a regular socket and 16 A on a dedicated home socket. "It's like the Smartphone of today compared with the mobile phone of the 1980s," contemplates Brage. "Today's car chargers are clumpy and impractical, weighing over 100 kg. We've got ours down to 2 kg and we're very proud of that."

Thanks to their experience in space, Zaptec have created power electronics that will almost certainly transform the electric car and might just help us find life on Mars.

3.ENGINES OF THE FUTURE

Over the past several years, road transportation has seen some significant advances in what are considered alternative technologies. Energy storage, electric drive systems, and fuel cell technology all seem to be poised to find a significant place in the automotive marketplace. But it would be a mistake to believe that such technologies will completely sweep aside what has come before. Instead, the internal combustion engine will continue to be integral to the transportation of people and goods for the foreseeable future.

That is not to say that things will stay as they are now. The engine is

undergoing a significant evolution of its own, as new fuel economy and emissions standards in the light-duty and heavy-duty sectors push the development of new technologies on an unprecedented scale toward the theoretical limits of engine operation. Coupled with continuing research into fundamental engine processes, the introduction of affordable high-performance computing, and the adoption of advanced manufacturing techniques throughout industry, those new technologies are leading to potentially disruptive opportunities for the introduction of engines with extraordinarily high efficiencies. How these new engines perform and how they will be integrated into new vehicle architectures will be the story of personal mobility for this half of the 21st century.

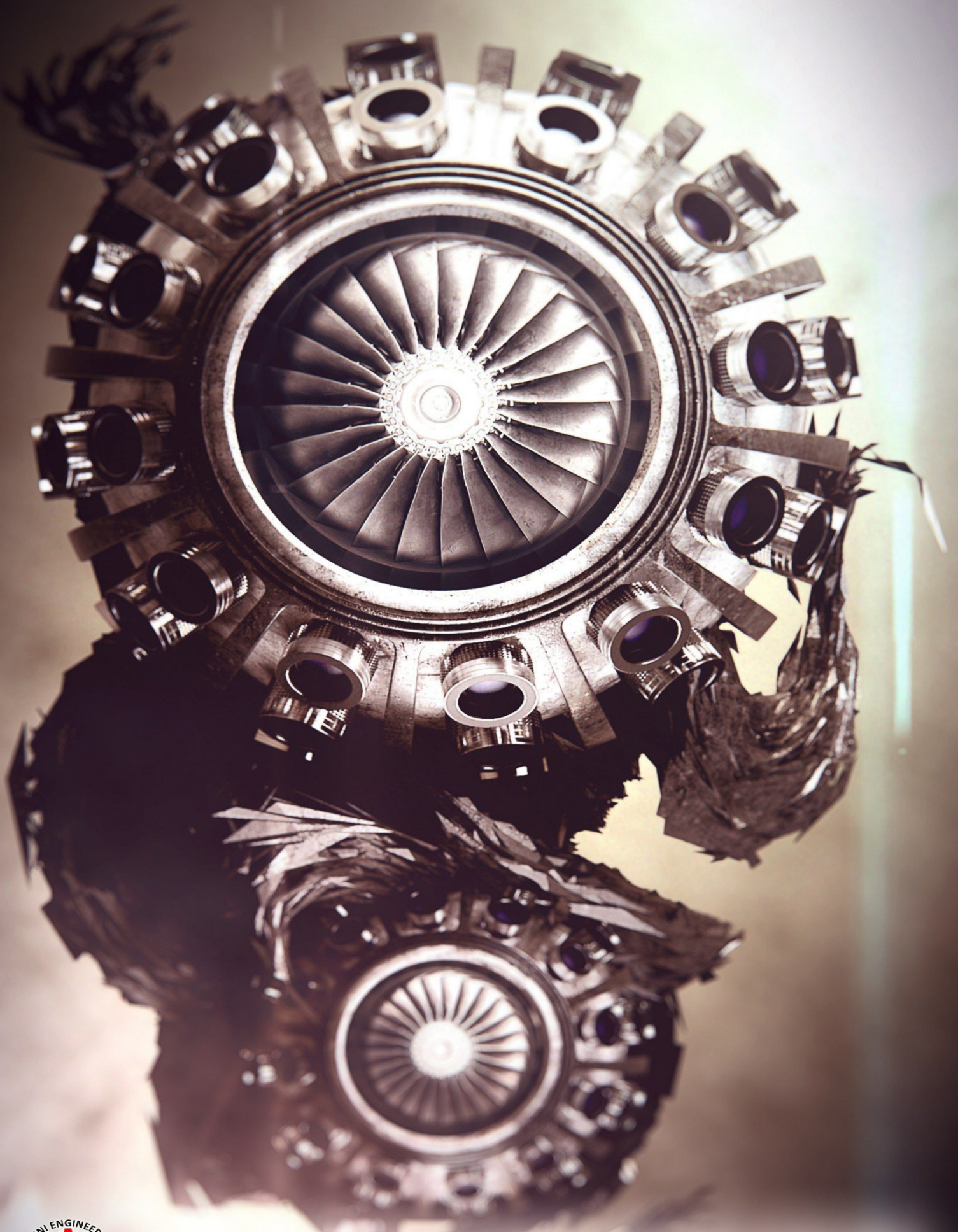
The internal combustion engine has seen a remarkable evolution over the past century. Before 1970 the evolution of engine design was driven by a quest for performance and an increase in octane in the fuel supply. Since then, however, the imperative was the need to meet new emissions and fuel economy regulations. Vitaly Prikhodko of ORNL's Fuels, Engines and Emissions Research studying advanced catalysts which are used to reduce vehicle pollution. Image: ORNL

As an example, the potential of technologies such as gasoline direct injection were known and attempted in production more than 50 years ago, but direct injection has only become widely available in production within the last decade and now makes up approximately 38 percent of new light-duty vehicle sales. Another example is low-temperature combustion modes such as homogeneous

charge compression ignition combustion—in which fuel and air are injected during the intake stroke and then compressed until the entire mixture reacts spontaneously—which were demonstrated in a laboratory more than 30 years ago but are still many years away from market introduction.

Game-changing advances in recent years are improvements in engine technologies, sensors, and onboard computing power. This combination of technologies will enable unprecedented control of the combustion process, which in turn will enable real-world implementations of low-temperature combustion and other advanced strategies as well as improved robustness and fuel flexibility. In fact, technological advances are blurring our historical distinction between spark-ignition and compression-ignition engines; we will see new engine concepts that blend the best characteristics of both engine types to push the boundaries of efficiency while meeting stringent emissions regulations worldwide.

The push toward higher-efficiency engines will alter exhaust temperatures and chemistry and may create challenges for emission control technologies. For example, new higher-efficiency engines will have lower exhaust temperatures, due to more efficient work extraction at the piston. Lower exhaust temperatures will, in turn, require the development of new emission control technologies, which must not only be effective at low temperatures but also must survive high exhaust temperatures encountered under high load conditions.



PRIYADARSHINI ENGINEERING COLLEGE

(Approved by A.I.C.T.E, New Delhi & Affiliated to Anna University Chennai)
Chettiyappanur Vill & Post, Vanniyambadi - 635751.