TECHFINIX '18

A NATIONAL LEVEL TECHNICAL SYMPOSIUM

FEB 2ND & 3RD

PAAVAI ENGINEERING COLLEGE

(AUTONOMOUS)

Approved by AICTE & Affiliated to Anna University, Chennai

Accredited by NBA and NAAC (UGC) with 'A' Grade

Paavai Nagar, NH-44, Pachal, Namakkal - 637 018.

SOUVENIR

OF

A NATIONAL LEVEL TECHNICAL SYMPOSIUM

TECHFINIX '18

FEB 2ND & 3RD

ORGANIZED BY THE DEPARTMENTS OF

AERO, AGRI, CHEMICAL,
CIVIL, CSE, ECE, EEE, IT,
MECH & MCT

CHAIRMAN'S MESSAGE

Shri. CA.N.V. Natarajan, B.Com., F.C.A.,
Chairman, Paavai Institutions

Mr. Narayana Moorthy, founder of Infosys, once expressed his concern that the quality of students entering IITs has gone lower and lower and therefore, more emphasis has to be given to research at the undergraduate level and exams should test the independent thinking of students. Independent thinking or thinking differently is the principal parameter for any growth or development. We have already been invested with innovative minds like Newton, Einstein, Faraday, Wright Brothers and Adam Smith. They dared to perceive things differently and turned around the life of people.

Science is exponentially growing by leaps and bounds and we have to keep ourselves abreast of the latest technologies and embrace interdisciplinary approach. Students need to pursue interdisciplinary, multi-skilled and application-oriented education after graduation in order to enhance not only their employability opportunities but also the prosperity of their future. Recently, research in diverse fields is catching up. To be specific, research in nanotechnology alone spans across different fields such as power generation, space technology, forensic science, electronics and communication and so on. Students can disclose and showcase their originality and talents by doing research.

Having said and done, I feel very much pleased to see that the departments of B.E/B. Tech, Paavai Engineering College, have ventured to conduct a National Level Technical Symposium, TECHFINIX'18, 2nd and 3rd February 2018 on our campus. The symposiums are conducted to promote the much-needed interdisciplinary research and to encourage the young engineering minds from different regions to meet, interact and share their constructive and creative concept towards technical excellence and advancements.

I honestly feel that the wealth of innovative information generated through this symposium would act as a launch-pad for several useful discussions and meaningful deliberations with regard to the emerging trends in modern science and technologies.

I wish to thank the participants, paper presenters and all those who have involved themselves in the successful conduct of symposium TECHFINIX'18.

Wishing the symposium TECHFINIX'18 a grand success.

CORRESPONDENT'S MESSAGE

Smt. MANGAI NATARAJAN

Correspondent, Paavai Institutions

I am glad to know that Paavai Engineering College (Autonomous) is organizing a National Level Technical Symposium, TECHFINIX'18 on 2nd and 3rd February 2018 and a great number of young budding techies from different parts of our nation are going to meet under one umbrella and indulge in discussing and deliberating on various top-notch concepts in Science and Technology.

Thinking out-of-the-box is the basic root for all innovations and inventions. I strongly believe that TECHFINIX'18 would provide a wonderful opportunity for the young minds to voice their own ideas and views so that the future generation would be benefited. I would suggest the slogan "Think and Link; Link and Think" should develop interdisciplinary research which is the most sought-after activity for the betterment of the human kind.

I like to congratulate the participants, paper presenters, faculty members, Heads of the departments and all those who have contributed for the successful conduct of symposium.

Wishing TECHFINIX'18 all the very best.

DIRECTOR – ADMINISTRATION'S MESSAGE

Dr. K.K. RAMASAMY
Director – Administration,
Paavai Institutions

The younger generation needs to be educated to thrive through the changes to face the challenges. We always strive to create potential student community which will emerge as valuable contributory asset for the development of the nation. Technical events like Conference, Seminars and Symposium, create an ambience in which new ideas and research flourish by which innovators and leaders of tomorrow shall emerge.

I am happy to know that all departments of Paavai Engineering College have joined hands in bringing the budding engineers under one roof. The National Level Technical Symposium TECHFINIX'18 will surely provide a wide spread opportunity for the participants to collaborate, exhibit and share their knowledge and skills.

I firmly believe that the students would definitely prove their leadership and team spirit in conducting the various events. I am very much sure that the outcome of the symposium will reinforce the students' perspectives by bringing viable and useful information to the learning community.

My sincere and hearty wishes for the grand success of TECHFINIX'18.

DIRECTOR – STUDENT AFFAIRS

Ar. Avanti Natarajan, M.S.(Arch)

Director – Student Affairs
Paavai Institutions

Innovation distinguishes between a leader and a follower- Steve Jobs

It is a pleasure to know that young Engineers of this nation are coming together to speak out their minds at TECHFINIX'18 conducted by Paavai Engineering College on 2nd and 3rd February. Engineers of this day require innovation, collaboration, hands-on-exposure and practical knowledge to stay on track with evolving technologies and TECHFINIX'18 would sure levitate these minds that are raring to innovate.

I would like to congratulate the Principal, HoDs, Faculty members and all the students for coming together to organise such a mammoth event that speaks technology and engineering. The core organising committee has to pull the strings right to unfold such a wonderful event.

This symposium is definitely going to put across a lot of information and innovation that is going to benefit the participants and the engineering community as a whole.

Wishing the best for TECHFINIX'18.

PRINCIPAL'S MESSAGE

Dr. M.PREM KUMAR

Principal

It is a joyful moment to know that National Level Technical Symposium, TECHFINIX'18 is organized during 2nd and 3rd February, 2018. Symposiums are conducted for recognizing and implementing innovative practices and projects that promote the cause of human welfare. Engineers design, construct, operate and play a vital role in providing the solutions for the issues of Science and Technology.

TECHFINIX'18 is conducted with the view to promote further impetus to the implementations of provisions relating to Aeronautical, Agricultural, Chemical, Civil, CSE, IT, ECE, EEE, Mechanical and Mechatronics Engineering. It is a platform for mentoring the young people in technology which exposes A to Z of technology at your fingertips, marking ahead with academia.

The awards aim at acknowledging the unique and extraordinary skills of the participants. We strike the balance between curricular and co-curricular activities such that the students are trained to optimise opportunities in the global arena.

I believe that the symposium will create an intensive educational experience in short period of time by introducing new concepts simulating participants to investigate on their own in the form of research.

Moreover, symposium is a forum where the technocrats innovate and share ideas they have developed and it paves way to develop hands-on skills to the participants. This event will create a great impact on the minds of the techies.

I wish all the beneficiaries a grand success.

PREFACE

We, the departments of engineering, are organizing the National Level Technical Symposium TECHFINIX'18. It aspires to steam up and spring on the endowment towards multidisciplinary approach to research with an emphasis on indigenous problems. It creates an environment for gathering and sharing information about science and technology in relation to the constructive growth of the society.

TECHFINIX'18 aims at nourishing the individual talents of the budding engineers and good deed and endeavor to grasp the peak of prosperity. Our student society has toiled together with trustworthiness, passion and perseverance to create a new milestone in the intellectual journey of the Gen-Y.

DAY 1

INAUGURATION

Date: **2nd Feb 2018** Time: **10:00 am** Venue : **Aanandha Arangam (A/C)**

Shri. CA . N. V. NATARAJAN
Chairman, Paavai Educational Institutions
will preside over the function

Smt. MANGAI NATARAJAN
Correspondent, Paavai Educational Institutions
will light the kuthuvilakku

Shri. R. PANNIR
General Manager-HR & Medical
M/S. Bharat Heavy Electricals Ltd.
Tiruchirappalli

will be the chief guest
and will deliver the inaugural address

Dr. K. K. RAMASAMY
Director-Administration, Paavai Educational Institutions

Dr. M. PREMKUMAR
Principal, Paavai Engineering College
will felicitate

and

Ms. S. KAVYA
Final Year ECE, Paavai Engineering College
will welcome the gathering

DAY 2

VALEDICTORY

Date: **3rd Feb 2018** Time: **03:30 pm** Venue: **Aanandha Arangam (A/C)**

Shri. CA. N. V. NATARAJAN

Chairman, Paavai Educational Institutions

will preside over the function

Smt. MANGAI NATARAJAN

Correspondent, Paavai Educational Institutions

will deliver the valedictory address

Dr. K. K. RAMASAMY

Director-Administration, Paavai Educational Institutions

Dr. M. PREMKUMAR

Principal, Paavai Engineering College

will felicitate

and

Mr. J. MITHUN DASS

Final Year MCT, Paavai Engineering College

will propose the vote of thanks

ORGANIZING COMMITTEE	
PATRONS	**Shri. CA. N. V. NATARAJAN, B.Com., FCA** Chairman, Paavai Educational Institutions **Smt. Mangai Natarajan,** Correspondent
ADVISORY COMMITTE	**Dr. K. K. Ramasamy,** Director-Administration **Smt. Avanti Natarajan,** Director-Student affairs **Dr. M. Prem Kumar,** Principal
CONVENOR	**Dr. R. Arangasamy,** HOD / ECE
CO-CONVENORS	**Dr. A. Supha lakshmi,** HOD / CSE **Dr. G. Balaji,** HOD / EEE **Dr. R.Jagannathan,** Dean / AGRI **Prof. M. Mohan**, HOD / S & H **Prof. D. R. P. Rajarathinam,** HOD / MCT **Prof. J. Umanambi,** HOD / CIVIL **Prof. G. Srinivasan,** HOD / CHEMICAL **Prof. B. Venkatesan,** HOD / IT **Prof. D. Rajkumar,** HOD / AERO
STUDENTS CO-ORDINATORS	**Arul. R. T** (AERO) **Krishnan** (AGRI) **B. Ajai kumar** (CHEMICAL) **R. Visanth** (CIVIL) **A. Deepak pradeep** (CSE) **D. Krishnaraj** (ECE) **K. M. Vishnu vartan** (EEE) **M. Monika** (IT) **S. Santhosh** (MECH) **J. Mithun dass** (MCT)

PAAVAI ENGINEERING COLLEGE, NAMAKKAL – 637 018

TECHFINIX'18

ALL DEPARTMENT EVENT CO-ORDINATORS

In connection with National level technical symposium "TECHFINIX'18" held on 2nd and 3rd February 2018.

The following Staff members and student coordinators are debuted for the various symposium activities.

AERONATICAL:

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02.02.2018 CUTE HALL 11.00 A.M-1.00 P.M	D. Rajkumar	1. B. J. Simon rosario 2. K. Abinesh
2	SORT-IT-OUT	02.02.2018 CUTE HALL 1.40 P.M-3.00 P.M	A. Anupriya	1. D. Gowthaman 2. Ahamed
3	GREAT ASTRONOMER	02.02.2018 CUTE HALL 3.00 P.M-4.40 P.M	M. Malavizhi	1. S. Vairamoorthi 2. P. Mohamedzamman
4	FLY-IN	03.02.2018 TT306 9.00 A.M-12.00 P.M	P. Prasanna	1. B. Shakthivel 2. N. Nawaz basha
5	AVIATION ART	03.02.2018 TT306 1.00 P.M-3.00 P.M	G. SASI	1. R. Surya 2. Azhagarasan

AGRI:

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02.02.2018 BRIGHT HALL 11.30 A.M-1.00 P.M	A. Subashini S. Nithiya	R. Karan kumar T. Karthikeyan
2	POSTER PRESENTATION	02.02.2018 DRAWING HALL 11.30 A.M-1.00 P.M	A. Meignanamoorthi P. Athira	C. Seetharaman S. Subash
3	AGRO QUIZ	02.02.2018 TT-407 2.30 P.M-4.00 P.M	S. Kiruthika Dr. R. Jaganathan	S. Chindhu E. Eniya
4	WORKSHOP	03.02.2018 TATA HALL 9.30 A.M-12.30 P.M	K. B. Ramkumar S. Usha	T. Vaishnavi A. Sathish kumar
5	PROJECT SHOW	03.02.2018 DRAWING HALL (MAIN BUILDING) 9.30-12.30	S. Sreedevi Dr. C. Mayilswami	M. Keerthiga P. Ashok kumar
6	HITCHING	03.02.2018 MECH / CIVIL LAB 2.00 P.M-3.30 P.M	S. Sathiya sutha Dr. R. Jaganathan	P. Sivaranjani M. Soundharyaswetha

CHEMICAL:

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02.02.2018 SMART HALL 11.30-12.30AM 01.30-3.00PM	G. Srinivasan	1. M. Krishnamoorthi (III) 2. Sasi kumar (III) 3. Vinoth (II) 4. Kavi nandhini (II) 5. Elamathi (II)
2	POSTER PRESENTATION	03.02.2018 DRAWING HALL (218)TT 9.30-10.30AM	G. Srinivasan	1. R. R. Jegan(iii) 2. Suresh(ii) 3. Vicky(ii) 4. Kamal raj(ii)
3	CHEM-O-PHILIA	03.02.2018 (304)TT 9.30-11.00AM	D. Srinivasan	1. M. P. Harinisri (III) 2. Sabari(II) 3. Paranthaman (II)
4	HEM-WAR	02.02.2018 DIGITAL LAB MAIN BLOCK 11.30-12.30AM 1.30-3.00PM	D. Srinivasan	1. M. Ashokmaari (III) 2. Suresh babu (III) 3. Kishore(II)
5	CHEM-FREEZE	03.02.2018 (304)TT 1.30-2.30PM	J. Jency bavithra	1. M. S. Najeeb (III) 2. Abu thahir(II) 3. Srihari(II)
6	CONNEXION	03.02.2018 (304)TT 11.00 -12.30 A.M	S. Nagul dev	1. C. Dhilip kumar(III) 2. Kalamani(III) 3. Gowri(III)
7	MERRY-BLAST	02.02.2018 DIGITAL LAB MAIN BLOCK 03.00-4.30PM	S. Nagul dev	1. J. Venkatesh(II) 2. Abi(II) 3. Chandhini(II)

CIVIL

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02.02.2018 PRESTIGE HALL 1.30 P.M-4.15 P.M	1. Mr. K. Vivek 2. Mr. K. Dhanapal	1. M. Yuvaraj (IV-B) 2. S. Muruganandam (III-A) 3. K. Santhosh (III-B) 4. K. Mohan (II-A) 5. P. Priyadarshini (II-B)
2	TECHNICAL QUIZ	02.02.2018 (T 311) 2.10 P.M-4.40 P.M	1. Mrs. A. Kalaivani 2. Mr. B. Thiyagarajan	1. R. Udaya Shree (IV-B 2. A. Nasreen Banu (IV-B) 3. S. Dinesh (III-A) 4. M. Yuvraj (III-B) 5. C. Manickam (II-A) 6. V. Soundarya (II-B) 7. A. Ranjani (II-B)
3	BRICK MODELING	03.02.2018 Kalpana Chawla Open Theatre 6.00 A.M-8.00 A.M	1. Mr. P. Vignesh 2. Mr. A. Jayapal	1. M. Santhosh Kumar (IV-B) 2. S. Dhivakar (III-A) 3. S. Revathi (III-B) 4. P.Karanprakash (II-A) 5. K. Sudarshan, (II-B) 6. M. Sudarshan (II-B)
4	SITE ALL ROUNDER	03.02.2018 (T 311) 9.00 A.M-11.00 A.M	1. Mr. M. Rajkannan 2. Ms .S. Sharmila Devi	1. K.Vishwaraj (IV-B) 2. S. Nivashini (IV-B) 3. S.Nandhini (IV-B) 4. J. Abinaya (III-A) 5. P. Kalaivani (III-A) 6. A. Ranjitha, (III-B) 7. N. Shramila (III-B) 8. N. Nithish, (II-A) 9. G. Dhivya Praba (II-A) 10. K. Priya (II-B) 11. N. Swathi (II-B)
5	CADD CONTEST / CODE CRACKING	03.02.2018 (T226 & T201 - CADD Lab) 9.00 A.M-11.30 A.M	1. Mr. J. Doraikkannan 2. Mr. A. Arun	1. M. Nandhini (IV-B) 2. S.Mouli (IV-B) 3. M.Girishankar (III-A) 4. R. Vijay Krishna (III-B) 5. S. Sudagar (III-B) 6. V. Yuvraj (II-A) 7. Prabanjana (II-B)

6	POSTER PRESENTATION	03.02.2018 (T226) 1.30 P.M-4.00 P.M	1. Mr.N. Moorthi 2. Mr. S. Surya Prakash	1. M.Yuvaraj (IV-B) 2. A.Dinesh Babu (III-A) 3. S. Santhosh (III-B) 4. R. Balachandar (II-A) 5. S. Yuvaraj (II-B)
7	OPTIMUM ARCHITECTUS	03.02.2018 (T311) 9.00 A.M-11.30 P.M	1. Mrs. K. Sharmiladevi 2. Ms. S. Gayathri	1. S. Moulidaran (IV-B) 2. B. Gokul (III-A) 3. S. Shanthini (III-B) 4. V. Vichitra (III-B) 5. P. Jayaprasanth (II-A) 6. M. Jaganathan (II-A) 7. Parthiban (II-B)

ECE

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02.02.2018 DIGITAL LAB 1.40 P.M-4.40P.M	1. Dr. T. Loganayagi 2. Mrs. D. Tharini	1. S. Priyanga (IV-B) 2. M. Srimathan (IV-B) 3. V. Sasikumar (IV-B) 4. S. Kaviya (IV-A) 5. N. Nandhini (III-B) 6. E. Abbarna (II-A)
2	CIRCUITRIX	02.02.2018 ELECTRONICS LAB 2.10 P.M-4.10 P.M	1. Mr. V. Sakthivel 2. Mr. A. Kumaravel	1. R. Poovendrapandi (IV-B) 2. J. Vinothkumar (IV-B) 3. V. Anjugam (IV-A) 4. R. Shankari (III-B) 5. T. Jagadesh (II-A)
3	PROJECT EXPO	03.02.2018 VISVESWARAYA BLOCK 9.30 A.M-1.30 P.M	1. Mr. S. Vijayakumar 2. Mr. S. R. Thiruvasagam	1. S. Manikandan (IV-A) 2. R. Nijandhan (IV-B) 3. V. S.rithiksrinivas (IV-A) 4. C. Vasanth (III-B) 5. V. Sajan (II-C)
4	TECHNICAL QUIZ	03.02.2018 KALAM'S CHAMBER 9.00A.M-11.00 A.M	1. Mrs. M. Sudha 2. Mrs. R. Bhuvaneshwari	1. S. Pavithraa (IV-B) 2. P. Vignesh (IV-B) 3. A. Thirumurugan (IV-B) 4. K. R. Sathish (IV-B) 5. V. Narmadha (III-B) 6. K. Aishwaran (II-A)
5	MULTIMEDIA PRESENTATION	03.02.2018 CUTE HALL 10.00 A.M-1.30 P.M	1. Mr. S. Satheeshkumar 2. Mr. G. Nandhakumar	1. A. Veerabalu (IV-B) 2. S. Vignesh (IV-B) 3. S. Alex (IV-A) 4. M. Naveen (III-B) 5. N. Bharanidharan (II-A)
6	SPIN WHEEL & ADZAP	03.02.2018 M213 11.30 A.M-1.00 P.M	1. Dr. S. Vijaykumar 2. Mr. K. R. Ganeshkumar	1. S. Vasanthkumar (IV-B) 2. S. Yadhupriya (IV-B) 3. K. Kiranbala (IV-A) 4. E. Rajalakshmi (III-B) 5. M. Pradeep (II-B)
7	LINE FOLLOWER	03.02.2018 NEAR TEMPLE TOWER 9.00 A.M-12.30 P.M	1. Mr. S. Gnanasekaran 2. Mr. P. Johnvivek	1. S. Balaji (IV-A) 2. T. Arjun (IV-A) 3. S. Balaji (IV-A) 4. Sabari (III-B) 5. S. Gopinath (II-A)
8	TALK SHOW	03.02.2018 CUTE HALL 2.10 P.M-3.10 P.M	1. Mr. S. Kumarganesh 2. Mrs. R. Mohanapriya	1. V. Archana (IV-A) 2. B. Menakapriya dharshini (IV-A) 3. C. Kavya (IV-A) 4. Daniel ebenezer (III-A) 5. A. S. Shakilabanu (II-C)

EEE:

S.NO	EVENT	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02.02.2018 MICROPROCES-SOR LAB 01.40 P.M.– 04.40 P.M	K. K. Poongodi	1. E. Roshini (IV-B) 2. S. Janarathanan (IV-A) 3. K. Dhivya (IV-A) 4. K. Saranya (IV-A) 5. S. Punithavalli (III-B) 6. A. Asif (III-B) 7. Gopala samy (II-A) 8. K. Vimalnath (II-B)
2	WORKSHOP	03.02.2018 BRILLIANT HALL 9.30 A.M – 03.00 P.M	G. Umamaheswari	1. R. Rakesh kumar (IV-B) 2. S. Vijaya shalini (IV-B) 3. N. Vijay (III-B) 4. M. E. Amjath ali (III-B) 5. S. Balasubramaniam (III-A) 6. R. Ajith (II-A) 7. N. Vijay (II-B)
3	PROJECT EXPO	03.02.2018 SEMINAR HALL (MB208) 9.30 A.M – 01.30 P.M	A. Rathinam	1. Guruguhan (IV-A) 2. Lisanthinie (IV-A) 3. S. Sakthivel (IV-B) 4. M. N. Gokul raj (III-A) 5. Vimal (II-B) 6. Gopi (II-A) 7. Jayasurya (II-A)
4	CIRCUITRIX	02.02.2018 ELECTRONICS LAB 02.10 P.M. – 04.10 P.M	G. Deivamani	1. P. Praveen kumar (IV-B) 2. Raghul Fredrick (IV-B) 3. Bharathi (IV-A) 4. Indhumathi (IV-A) 5. Ashokraja (III-A) 6. Sanjith (II-B) 7. Santhosh (II-B) 8. Ananth (II-A)

5	TECHNICAL QUIZ	03.03.2018 CLASS ROOM 09.30 A.M -12.30 A.M	D. Murugasen	1. S. Sathish kumar (IV-B) 2. K. Sivakarthick (IV-B) 3. Chandrasekaran (IV-A) 4. M. Karthick (IV-A) 5. V. Ramya (III-B) 6. Ponlucina (II-B) 7. Nivetha (II-A) 8. Sri ram (II-B)
6	LINE FOL-LOWER	03.02.2018 TT NEAR LIFT 09.30 A.M -12.30 P.M	S. Ramachandran	1. Aishwarya (IV-A) 2. Kamalakannan (IV-A) 3. Dinesh (III-A) 4. S. Siva sankar (III-B) 5. Viswa kumar (II-B) 6. Surya (II-B) 7. Sankar (II-B)
7	CONNECTIONS	02.02.2018 CLASS ROOM (T 213) 1.0PM-3.10PM	A. Udhaya kumar	1. G. Sundhar (IV-B) 2. Noorun nasirah (IV-B) 3. Priya (III-B) 4. S. Prabhu (III-B) 5. S. Surendran (III-B) 6. Kiruthiga (II-B) 7. Preetha (II-A)
8	TECH-MAT	02.02.2018 SIMULATION LAB 3:10 PM- 4.40 PM	D. Boopathi	1. K. Gobinath (IV-A) 2. Loganayaki (IV-A) 3. Pradeepa (III-B) 4. Manimaran (II-A) 5. Kiruba (II-A) 6. Hazna fathima (II-A)

MECHANICAL:

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER PRESENTATION	02-02-2018 KALAM'S CHAMPER 1:30PM-4:40PM	1. Mr. V. Subburam 2. Mr. A. Natarajan	1. S. Ranjith kumar (IV-C) 2. S. Senthilkumar (IV-D) 3. Praveen (III-C) 4. B. Hariharan (III-A) 5. Samshad shahzada (II-C) 6. M. S. Naveen kumar (II-C)
2	PROJECT EXPO	03-02-2018 SEMINAR HALL 9:30AM-12:30PM	1. Mr. P.N. Mohan kumar 2. Mr. N. Logeswaran	1. J. Ajitkumar (IV-A) 2. A. P. Anbuviknesh (IV-A) 3. K. Kishore bala (III-B) 4. G. Premkumar (III-C) 5. T. Saravanan (III-C) 6. Sriram chandhar (III-D) 7. V. S. Dhevesh (II-D) 8. E. Sridhar (II-D)
3	TECHNICAL QUIZ	02-02-2018 METROLOGY LAB 1:30PM-4:40PM	1. Mr. S. A. venkatesh 2. Mr. R .Mohan raj	1. S. Arunraj (IV-A) 2. K. Prakash (IV-B) 3. C. Dinesh kumar (III-A) 4. S. Harisudha (III-D) 5. S. Shalikabegam (III-D) 6. K. Subashri (II-D) 7. K. Keerthana (II-D)
4	3D MODELLING	03-02-2018 CAD/CAM LAB 1:30PM-3:00PM	1. Mr. R. Gunasekaran 2. Mr. P. Sathish kumar	1. S. Arunraj (IV-A) 2. J. Ajitkumar (IV-A) 3. Anantha pradeep (III-A) 4. P. Kumaresan (III-B) 5. M. Vignesh (III-B) 6. B. Manikandan (II-B) 7. V. Tamilselvan (II-D)

5	IC RACE	02-02-2018 KALPANA CHAWLA OPEN THEATRE 1:30PM-4:40PM	1. Mr. J. Mahendran 2. Mr. V. Elango 3. Mr. G. Suresh kumar	1. C. Janarthanan (IV-B) 2. R. Kumaresan (IV-B) 3. A. Arun (IV-A) 4. M. Indiran (III-B) 5. Sasikumar (III-C) 6. Nizamudeen abdulla (III-C) 7. S. Dharshan (III-A) 8. V. Mohanraj (III-B) 9. S. Ranjith kumar (IV-C)
6	MACHINING	02-02-2018 MACHINE SHOP 1:30PM-4:40PM	1. Mr. M. Prasad 2. Mr. M. Vinoth kumar	1. S. Siddeshwaran (IV-D) 2. P. Sivaperumal (IV-D) 3. E. Velmurugan (III-D) 4. C. Veerakannan (III-D) 5. O. Dhayanidhi (II-A) 6. M. Madhanraj (II-B)
7	ASSEMBLE AND DISMANTLE	03-02-2018 THERMAL LAB 9:30AM-12:30PM	1. Mr. J. Sujith kumar 2. Mr. P. Mohanraj	1. P. Vignesh (IV-D) 2. R. Sathiriyan (IV-D) 3. T. Kiran (III-B) 4. K. Rajeshkumar (III-C) 5. A. Pradeep (III-C) 6. P. Deepanraj (II-A) 7. C. Dharun kumar (II-A)
8	WATER ROCKETRY	03-02-2018 KALPANA CHAWLA OPEN THEATRE 9:30AM-12:30PM	1. Mr. M. S. Vijayanand 2. Mr. T. Sathish	1. S. Muthukumar (IV-B) 2. V. Goutham (IV-B) 3. Sanjay (III-C) 4. R. Rajesh (III-C) 5. M. Dhanaseelan (II-A) 6. K. Ajith kumar (II-A)

MCT:

S.NO	EVENTS	DATE VENUE AND TIME	STAFF CO-ORDINATOR	STUDENT CO-ORDINATOR
1	PAPER RESENTATION	02.02.2018 BRILLIANT HALL 10.00 A.M-12.30 P.M	R. Arun babu	1. M. Kameleshkumar(IV) 2. T. Gowsicraj (III) 3. M. Vairamuthu (II)
2	LINE FOLLOWER	02.02.2018 NEAR TEMPLE TOWER 9.00 A.M-12.30 P.M	S. Vinoth	1. G. Vignesh (IV) 2. P. Sathivel (III) 3. T. Sanjay (II)
3	ROBO WAR	02.02.2018 TRANSYLVANIA 1.30 P.M-4.00 P.M	S. Rajesh raja	1. Harish (IV) 2. S. Shanmugaraj (III) 3. P. Mahendran (II)
4	ROBO SOCCER	03.02.2018 TRANSYLVANIA 10.00 A.M-12.30 P.M	S. Rajesh raja	1. P. Manojkumar (IV) 2. G. Arun (III) 3. R. Kanmani (II)
5	CAD MODELLING	03.02.2018 CAD-LAB (MCT) 10.00 A.M-11.30 A.M	G. Raja	1. P. Gowtham (IV) 2. M. Lakshmanan (III) 3. K. Tamilselvan (II)
6	PROJECT EXPO	02.02.2018 PEC MAIN BUILDING	R. Arun babu	1. D. Nishanth (IV) 2. B. Jeevitha (II)
7	TECHNICAL QUIZ	02.02.2018 CAD-LAB 2.00 P.M-3.00 P.M	M. Ramesh	1. S. Sivakumr (IV) 2. Poovarasan (III) 3. Karthikeyan (III)
8	TREASURE HUNT	02.02.2018 PAAVAI CAMPUS	M. Ramesh	1. G. Premanandh (IV) 2. Vijaykumar (II)

ABSTRACT

PAAVAI ENGINEERING COLLEGE, NAMAKKAL

(AUTONOMOUS)

TECHFINIX'18

DEPARTMENT OF AGRICULTURAL ENGINEERING

S.NO	AUTHOUR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1.	R.Vasanthi K.Gilbert P.Kokila	Determination of Plant Efficacy Using PGPR In Agricultural Crop	Saveetha Engineering College, Chennai
2.	M.Fathima, G.Dhatchayani, K.Mohanapriya	Modeling of Kinetic Equilibrium and Thermodynamics	Bannari Amman Institute of Technology, Sathyamangalam
3.	Sharmiladevi.N, Prasanna.G Anandhi.S,Revathi.G	Production and isolation of Biosurfactants	Kalaignar Karunanidhi Institute of Technology, Coimbatore
4.	Fathima.M, Deepika Dhaslima.A	Phytoremediation of SiO2 from Dye Polluted Soil Using Raphanus Raphanistrum Subsp. Sativus- A Environmental Toxicology Assessment Study	RVS Eengineering College, Dindugal
5.	C.Swetha	Protection of Biofertilizer	Nandha Engineering College, Erode
6.	R. Chevvanthy S. Kirana Haasika	Zero Budget Natural Farming	Sri Shanmuga College of Engineering and Technology, Salem
7	Nirmal.K	Night soil based Biogas plant	Mahendra Engineering College, Salem
8	Nirmal.K, Gayan.S	Protected Crop cultivation	Mahendra Engineering College, Salem
9	Sharmiladevi.N, Nirosha M, Nandhini.S	Extraction and Optimisation of Pectin from cassia fistula	Selvam College of Engineering, Namakkal

DETERMINATION OF PLANT EFFICACY USING PGPR IN AGRICULTURAL CROP

R.VASANTHI K.GILBERT P.KOKILA

SAVEETHA ENGINEERING COLLEGE, CHENNAI

Determination of plant growth promoting efficacy using PGPR in agricultural crop. The rhizosphere soil samples were collected from various agricultural fields. Serial dilution and spread plating techniques were performed to obtain morphological distinct colonies. Screening for IAA production for all the bacterial isolates will be performed. Molecular identification using 16srDNA gene sequencing for the best efficient IAA producing bacteria will be performed. To check the PGPR efficacy under invitro condition in an agricultural crop.

MODELING OF KINETIC EQUILIBRIUM AND THERMODYNAMIC

M.FATHIMA, DHATCHAYANI. G, MOHANAPRIYA. K

BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHYAMANGALAM

Cadmium is a widely distributed in the earth's crust. In the environment Cadmium is toxic to plants, Animal and Microorganisms. Cadmium is released by various natural and anthropogenic sources to the atmosphere, aquatic environments.We are used egg shell as a Activated Carbon to remove the Cadmium ion in textile dye water. Activated egg shell was prepared using ortho-phosphoric acid (chemical activation method).It was characterized by the SEM analysis to study the surface morphology.Sorption Study can be effective tool in removing Cadmium. In this study, Sorption ability of egg shell was investigated in batch experiments. The effects of initial concentration of Cadmium, pH and Temperature, Adsorbent Time on metal removal were investigated. The kinetics, equilibrium and thermodynamic parameters will be studied.

PRODUCTION AND ISOLATION OF BIOSURFACTANT

SHARMILADEVI.N, PRASANNA.G, ANANTHI.S, REVATHI.G

KALAIGNAR KARUNANIDHI INSTITUTE OF TECHNOLOGY, COIMBATORE

The worldwide growing environmental concern and researchers to study alternative ways to process industrial waste and the use of natural surfactants, or bio surfactants, is among one of the most promising methods due the fact that such compounds are metabolic products of fungi, bacteria and certain strains of yeast. Bio surfactants are amphiphilic molecules with, high biodegradability, low toxicity and structural diversity that are capable to reduce interfacial tension of mixtures of water and hydrocarbons and thus an excellent alternative to replace synthetic surfactants. Bacillus subtilis LB5a can produce lipopeptide type of bio surfactant. The antifungal property of lipopeptide produce Turin, this inuring get active after autoclaving pH (5-11) and with a self-life of 6 months at -18˚c.

PHYTOREMEDIATION OF SIO2 FROM DYE POLLUTED SOIL USING RAPHANUS RAPHANISTRUM SUBSP.SATIVUS- A ENVIRONMENTAL TOXICOLOGY ASSESSMENT STUDY

FATHIMA, DEEPIKA.M,DHASLIMA.A

RVS EENGINEERING COLLEGE, DINDUGAL

Our main motive is to remove sio2 from the soil that taken from the dye industry by using Raphanus raphanistrum subsp.Sativus(by using PHYTOREMEDIATION PROCESS).We have collected the soil from Sipcot, Erode,which is famous for chemical industries.We have characterized the soil by using SEM and EDX analysis.As a result the concentration of heavy metals in the soil for SiO2 (106.04),NaK(30.82) AlK(Al2O3) (2.11),CaK(0.65),S(FeS2)(10.49),FeK(2.22).Among these SiO2 recommended concentration level is 52.22 (WHO,FAO). Later,after the plant grown the parts of the plant have taken separately and have examined under Atomic Absorption Spectrometry.As a result the presence of sio2 in the roots,leaves and stem have been identified. By using the uptake and transport mechanism the affect of sio2 to the vegetable is been blocked. Finally,the soil that plant grown is taken and analysed by using SEM and EDX.

PRODUCTION OF BIOFERTILIZER

C. SWETHA

NANDHA ENGINEERING COLLEGE, ERODE

Biofertilizers are eco-friendly and cheap solution for the development of sustainable agriculture. The bacterial inoculation of the vegetable, agricultural and domestic waste can be considered as organic compost containing phosphorous sources to spinach plant growth. Phosphorus(P) is the second major plant nutrient limiting factor for crop productivity. Bacterial generalize Azotobactor

ZERO BUDGET NATURAL FARMING

R. CHEVVANTHY S. KIRANA HAASIKA

SRI SHANMUGA COLLEGE OF ENGINEERING AND TECHNOLOGY, SALEM

This paper analyzes how peasant movements scale up agroecology. It specifically examines Zero Budget Natural Farming (ZBNF), a grassroots peasant agroecology movement in India. ZBNF ends reliance on purchased inputs and loans for farming, positioning itself as a solution to extreme indebtedness and suicides among Indian farmers. The ZBNF movement has achieved massive scale not only because of effective farming practices, but because of a social movement dynamic – motivating members through discourse, mobilizing resources from allies, self-organized pedagogical activities, charismatic and local leadership, and generating a spirit of volunteerism among its members.

NIGHT SOIL BASED BIOGAS PLANT- ALTERNATIVE FOR LPG

NIRMAL.K

MAHENDRA ENGINEERING COLLEGE,SALEM

Biofertilizers are eco-friendly and cheap solution for the development of sustainable agriculture. The bacterial inoculation of the vegetable, agricultural and domestic waste can be considered as organic compost containing phosphorous sources to spinach plant growth. Phosphorus(P) is the second major plant nutrient limiting factor for crop productivity. Bacterial generalize Azotobactor

PROTECTED CROP CULTIVATION

NIRMAL.K, GAYAN.S

MAHENDRA ENGINEERING COLLEGE,SALEM

Protected cultivation practices can be defined as a cropping technique wherein the micro climate surrounding the plant body is controlled partially or fully as per the requirement of the vegetable species grown during their period of growth. With the advancement in agriculture various types of protected cultivation practices suitable for a specific type of acro-climatic zone have emerged. Among these protective cultivation practices, Green house, Plastic house, Lath house, Cloth house, Net house, shade house, Hot beds and Cold frames etc is useful for the central India.

EXTRACTION AND OPTIMIZATION OF PECTIN FROM CASSIA FISTULA

SHARMILADEVI.N, NIROSHA.M, NANDHINI.S

SELVAM COLLEGE OF ENGINEERING,NAMAKKAL

Pectin is widely used as a gelling agent in jams, candies, jellies, and also used as a thickener, stabilizer in food processing industries. In our work Cassia fistula flower was used as a material for pectin extraction. Microwave-assisted extraction (MAE) using powers of 40, 60 or 80 W and heating times of 30, 45, 60 S , pH 1,1.5,2 and solid liquid ratio 1:10,1:15,1:20 were studied . The effect of pH, time, microwave power and solid-liquid ratio for the maximum yield of pectin was studied using Box-Behnken response surface experimental design. The experimental data was analyzed by least square regression analysis (ANOVA) method and characterization was done by using FTIR analysis. The optimum Microwave assisted extraction conditions for the highest pectin yield was found to be: Microwave power of 40W, pH of 1, time of 30 s and solid–liquid ratio of1:10 g/ml

PAAVAI ENGINEERING COLLEGE, NAMAKKAL.

(AUTONOMOUS)

TECHFINIX'18

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1	Divya.S, Anuhashika.S	Wireless Communication	Saveetha Engineering College, Chennai
2	Nathiya.S Meena.A	Electronic Wonder Robot Fish Technology	Sri Sai Ram Engineering College, Chennai
3	Maheshbalan.K Kalaiarasi	Graphene the Supercalifragilistic Element	Velammal College of Engineering and Technology, Madurai
4	AafrinFathima.N, Priyanka.S	Nano Leave Electricity	Bannari Amman Institute of Technology, Sathyamangalam
5	Vijaykannan.M	Wireless Communication	ManayarKarasi Engineering College, Madurai
6	MukaeshSenthilkumar	Embedded System and Robotics	Kongu Engineering College, Erode
7	Harini.T	Embedded System for monitoring and Automatic controlling	Sri Krishna College of Technology, Coimbatore
8	Sowndharya A. Jayshree P.	Advantages and Disadvantages of Technology	Coimbatore Institute of Technology, Coimbatore
9	Sulfiya Parveen B. Priya Dharshini S.	Global Warming	Sastra University, Thanjavur
10	Divya Barathi, Nandhini	Artificial Intelligence and expert Systems	Government Engineering College , Thanjavur
11	Vaishali J.B. Jaishri C.S. Suvitha S.	E-Waste Management	Kongunadu College of Engineering and Technology, Trichy

WIRELESS COMMUNICATION

S.DIVYA, S.ANUHASHIKA

Saveetha ENGINEERING COLLEGE, CHENNAI

The mobile communication generations has traversed a long way through different phases of evolution since its birth early in the 1970s. The steady global boom in the number of mobile users each year has periodically spurned the development of more and more sophisticated technologies trying to strike the right chord primarily in terms of provision of seamless global roaming, quality services and high data rate. Today numerous different generation technologies with their individual pros and cons are existing globally. The coming era of 5g systems is foreseeing a potential smooth merger of all these heterogeneous technologies with a natural progression to support seamless cost-effective high data rate global roaming, efficient personalized services, typical user-centric integrated service model, high Qos and overall stable system performance. However, every step in such technological advancements presents huge research challenges. this article aims to focus upon some of these potential challenges along with different proposed feasible and non-feasible solutions in the areas of mobile terminals and users, mobile services, mobile and wireless access networks, and communication, in order to give an in depth view of the next-generation communication systems.

ELECTRONIC WONDER ROBOT FISH TECHNOLOGY

NATHIYA.S AND MEENA.A

SRI SAI RAM ENGINEERING COLLEGE, CHENNAI

Robotic fish are underwater robots that emulate locomotion of live fish through actuated fin and/or body movements. They are of increasing interest due to their potential applications such as aquatic environmental monitoring and robot-animal interactions. In this work, several bio-inspired robotic fish prototypes have been developed that make use of periodic tail motions. A dynamic model for a tail-actuated robotic fish is presented by merging rigid-body dynamics with large-amplitude elongated-body theory. The model is validated with extensive experiments conducted on a robotic fish prototype. The role of incorporating the body motion in evaluating the tail-generated hydrodynamic forces is assessed, which shows that ignoring the body motion (as often done in the literature) results in significant overestimate of the thrust force and robot speed

GRAPHENE THE SUPERCALIFRAGILISTIC

K.MAHESBALAN AND KALAIARASI

VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY,MADURAI

Graphene, a sheet of carbon atoms bound together in a honeycomb lattice pattern, is hugely recognized as a "wonder material" due to the myriad of astonishing attributes it holds. It is a potent conductor of electrical and thermal energy, extremely lightweight chemically inert, and flexible with a large surface area. It is also considered eco-friendly and sustainable, with unlimited possibilities for numerous applications. In the field of batteries, conventional battery electrode materials are significantly improved when enhanced with graphene. Graphene can make batteries that are light, durable and suitable for high capacity energy storage, as well as shorten charging times. It will extend the battery's life-time, which is negatively linked to the amount of carbon that is coated on the material or added to electrodes to achieve conductivity, and graphene adds conductivity without requiring the amounts of carbon that are used in conventional batteries.

NANO LEAF ELECTRICITY

AAFRIN FATHIMA.N, PRIYANKA.S

BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHYAMANGALAM

Nano technology is the word making a huge resolution in our science Industry. It is a fascinating science for many scientists as if offers them many challengers, one such challenges, and one such challenge is creating nano leaves using the solar Botanic technology. By using this nano leaves creation, they try to solve our biggest problem in this year.

WIRELESS POWER TRANSMISSION

S. DIVYA, S.ANUHASHIKA

MANAYARKARASI ENGINEERING COLLEGE, MADURAI

We cannot imagine the world without electric power. Generally the power is transmitted through wires. This presentation describes an original idea to eradicate the hazardous usage of electrical wires which involve lot of confusion in particularly organizing them. These techniques include resonating inductive coupling in sustainable moderate range. The coupling consists of an inductor along with a capacitor with its own resonating frequency.

EMBEDDED SYSTEM AND ROBOTICIS

MUKAESH SENTILKUMAR

KONGU ENGINEERING COLLEGE, ERODE

Embedded System are ever more capable engineering systems that we all use in our daily lives, ranging from applications in mobile telephones to washing machines, cars to aeroplanes. This is currently one of the major growth areas and there is an increasing demand from industry for engineers who possess in-depth expertise in embedded systems. Another important field of engineering involves robotic systems. Students develop practical skills in the design, programming and interfacing of embedded microcontrollers and you will have the opportunity to design autonomous embedded systems through robotic and aerospace applications. Systems Engineering Systems engineering is an interdisciplinary field of engineering that focuses on how complex engineering projects should be designed and managed over the life cycle of the project. Issues such as automatic control of machinery, logistics, and the coordination of different teams become more difficult when dealing with large, complex projects. Systems engineering deals with work-processes and tools to manage risks on such projects, and it overlaps with both technical and human-centered disciplines.

ADVANTAGES AND DISADVANTAGES OF TECHNOLOGY

SOWNDHARYA A AND JAYSHREE P

COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE

The triumphs of technology have provided material wealth beyond the fondest dreams of kings and nobles of the last century. Having achieved this pinnacle of technological success, a large and growing proportion of our people insist that these amazing accomplishments are not what they wanted after all. The younger generation, for whom these riches were intended to be priceless heritage, increasingly disclaim the goals of the past 100 years and insist that the cost has been too great. Intelligent, educated, and well-endowed youth have been turning to communes, drugs, and violence to escape a world threatened by man's inability to control the products of his own creation. The complications of technological achievements have high priority among the targets of current protests. Widespread antagonism toward technology seems misdirected, because the fault lies more in human utilization of technology than in fruits of industrial innovation. The human animal has failed to attain the full potential of his technology or to forecast and control its complications. Individual intelligence, incentive, and innovation have created modern marvels; our greatest deficiency is a lack of group intelligence or judgment in identifying and assessing human needs, developing mechanisms for attaining or supporting essential requirements, and applying effective constraints to avoid excesses. Super-success and overabundance are the prime characteristics of our current crises. Unless industrialized nations are prepared to cast aside current creature comforts and regress to the simple life of the past, new techniques and technologies must be the prime hope for improving the total environment for future generations. Compounded complications of these new approaches can be avoided by improved understanding of human desires and requirements.

GLOBAL WARMING

SULFIYA PARVEEN B. AND PRIYA DHARSHINI S.

SASTRA UNIVERSITY, THANJAVUR

"Global warming has come across as a monumental factor of discussion among different countries. Wide-scale use of non-renewable energy resources has exponentially increased the levels of pollution. This has upended environmental stability and started increasing the global temperature (the surface temperature has raised by almost .5°C in the last 25 years. This has resulted in the rising rate of melting of the ice cap on mountains and thus the rise of oceanic levels. This also has a direct influence on rains and weather fluctuations. At this rate, while global warming may not cause much harm to the existent populace, it will surely be a menace for the coming generations. The rampant escalation of heat waves and retreat of glaciers are just small if not insignificant expressions of global warming. Over the last 15 years, many G30 summits have been on the matter. Most countries have adopted potent Renewable Energy Targets for the next 20 years and are planning to go partially or wholly off the grid. The establishment of renewable energy sources like sun, wind and water and processing of greenhouse gases are worthy solutions. This research work takes a detailed look at the potencies and stretches if global warming and how it can be curbed. It also provides a startling way out through the apparent holocaust the word is facing, say, in the next century. The comprehensive work zeroes in on typical topographies which relate to the aspects of global warming with greater credence and finds mercurial evidence of the levels of dismantling that global warming can cause. The research work makes one thing clear. We cannot just depend on what our respective Governments are doing for the motion; we have to proactive steps towards rendering stability to the environment through energy-conscious systematization at home."

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

DIVYA BARATHI,NANDHINI

GOVERNMENT ENGINEERING COLLEGE , TANJORE

Artificial intelligence (AI) is the intelligence of machines and the branch of computer science that aims to create it. According to Textbooks, the Artificial Intelligence is "the study and design of intelligent agents, where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success". Artificial intelligence has been the subject of optimism, but has also suffered setbacks and, today has become an essential part of the technology industry, providing the heavy lifting for many of the most difficult problems in computer science. All research is highly technical and specialized, deeply divided into subfields that often fail to communicate with each other Subfields have grown up around particular institutions, the work of individual researchers, the solution of specific problems, longstanding differences of opinion about how AI should be done and the application of widely differing tools. The use of Artificial Intelligence methods is becoming increasingly common in the modeling and forecasting of hydrological and water resource processes. There is a class of computer programs, known as expert systems that aim to mimic human reasoning. Expert systems have been built to diagnose disease (Pathfinder is an expert system that assists surgical pathologists with the diagnosis of lymph-node diseases, aid in the design chemical syntheses (Example), the prospect for mineral deposits (PROSPECTOR), translate natural languages, and solve the complex mathematical problem (MACSYMA).

E-WASTE MANAGEMENT

VAISHALI J.BJAISHRI C.S.AND SUVITHA S.

KONGUNADU COLLEGE OF ENGINEERING AND TECHNOLOGY, TRICHY

Electronic products have made our life easy by saving time and beingefficient. Now it has becomedifficult for us to function withoutelectronic equipments. Most of our household work is done by usingelectronic appliances.Communication systems haverevolutionaries by way of mobile phones. Entertainment productlike television and music systemhave added enjoyment to our life.Electronic products, which wereonce thought to be luxury, have presently become a need.From villages to cities, all of them have using electronic products either in the form of radioor a high tech computer. There are places in India where people donot have access to electricity butthey still have electronic productsoperated with battery. Increase inthe use of electronic products haveresulted in increase in productionof these products and hencecreated a new waste, which istermed as Electronic waste or E-waste.The E-Waste is one of thefastest growing environmental problems of the world, as there is alack of awareness among peopleabout its treatment and seriousimpacts. E-waste needs to be treated as a hazardous waste.

PAAVAI ENGINEERING COLLEGE,NAMAKAL

(AUTONOMOUS)

TECHFINX'18

DEPARTMENT OF CIVIL ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1	Nazeem..N.N,Gokul.M	A low cost water treatment	Sri Krishna College of Engineering and Technology, Coimbatore
2	T. Karthickumar, K. Sivanesh	3d Flooring Using Epoxy Resin	SNS College of Engineering and Technology, Coimbatore
3	SatheeshKumar.R	A plan of 3BHK residential house	Sree Sowdambika College of Engineering, Viruthunagar
4	Kiubkaran.R,Karthik.J	Blue crete	Kingston Engineering College, Vellore
5	Karthi.K.V,Karthi.T	A study of mixed waste Management	Kongu Engineering College, Erode
6	Abishak.S	Self healing concrete	Cheran College of Engineering, Karur
7	Dhanalaxmi.M,Anitha.v	Earth Quake resistant structure	Saranathan College of Engineering, Trichy
8	Dheepak, Biju Joyal	Stress Ribbon Bridge	K.S.R College of Technology, Tiruchengode
9	Amarnath.A	Intelligent Building	Kongu Engineering College, Erode
10	Satheeshkumar. P	Wasted plastic used in concrete mixture	Mahendra Institute of Engineering and Technology, Salem

A LOW COST WATER TREATMENT BY USING A NATURAL COAGULANT

N.N.NAZEEM ARIEF, M.GOKUL

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY, COIMBATORE

The quality and accessibility of drinking water are of paramount importance to human health. Drinking water may contain disease-causing agents and toxic chemicals and to control the risks to public health, systematic water quality monitoring and surveillance are required. Thousands of chemicals have been identified in drinking water supplies around the world and are considered potentially hazardous to human health at relatively high concentrations. Heavy metals are the most harmful of the chemical pollutants and are of particular concern due to their toxicities to humans. Drumstick seed acts as a natural coagulant, adsorbent and antimicrobial agent. It is believed that the seed is an organic natural polymer.

3D FLOORING USING EPOXY RESIN

T. KARTHICKUMAR, K. SIVANESH

SNS COLLEGE OF ENGINRREING AND TECHNOLOGY, COIMBATORE

The epoxy coatings are considered to be absolutely perfect for an industry and an industrial surface. An industrial floor or surface is referred to the floor that is tough, resistant to damage from heavy weight of machineries or heavy footfall, attracts less dirt, is easy to wipe off and safe for all the people and the machines travelling in that area. It is believed that the epoxy coatings are made by combining two polymers chemically reacting with each other and then resulting in a product that is perfect to smoothen the rough or uneven floor. This product is tough but is seamless and looks attractive in every place or at its every application. It becomes impossible to detach it from the floor once it is applied. When combined with concrete, the resin gets even harder and looks quite better in comparison to the normal coating. Apart from simply making the floor smooth and presentable, It provides the floor an anti slip grip. The great advantages associated with the compressive strength of epoxy coatings. It prevents cracking of the floor, thereby leading to improved load handling capabilities. The cleaning and dirt and dust resistant properties have made the epoxy coatings Looking at the wide popularity of these products, a lot of companies have chosen this as a business option and sell the epoxy coatings at highly affordable rates thus making it an even popular as well as an acceptable choice by all the business owners for their industries or warehouses.

A PLAN OF 3BHK RESIDENTIAL HOUSE

R.SATHEESHKUMAR

SREE SOWDAMBIKA COLLEGE OF ENGINEERING, VIRUTHUNAGAR

This residential house consist of three Bedroom, Hall, Kitchen, Dining Hall, Pooja Room, Sit out, Veranda, Elevated Water tank and Underground Water tank. The Dimensions of planed area is 30'*50'. The area required for construction is 1500 sq.ft nearly 3.5cent.A elevated water tank is constructed at the top of the house. The size of the tank is 5ft*5ft*5ft. The volume of the tank is 3165liters with free board of 0.5ft.A underground water tank is designed at below the portico portion.

BLUE CRETE

R.KIUBAKARAN,J.KARTHIK

KINGSTON ENGINEERING COLLEGE, VELLORE

According to a study the buildings are one of the heaviest consumers of natural resources and account for a significant portion of the greenhouse gas emissions that affect climate change. So, we're taking Traditional Portland Cement and replacing it with an even better product with a host of other valuable properties, not the least of which is making it more environmentally friendly and cost-effective. Blue Crete is a technology uses a proprietary catalyst/binding agent that is combined with materials containing alumina silicate to produce a cement product that dramatically lowers the amount of energy required to produce the cement and CO2 that is emitted into the atmosphere. It is the first *true* alternative to traditional forms of Portland cement.

A STUDY ON MIXED WASTE MANAGEMENT

K.V.KARTHI, T.KARTHIK

KONGU ENGINEERING COLLEGE, ERODE

India's Fast growing Population generates a large quantities of wastes among which they are reasonable part of Organic and Non-toxic wastes, which are also deposited or thrown along with Non-Biodegradable wastes in turn leads to road side dumping, incineration, land filling etc…This leads to Ground water contamination due to improper landfilling and air pollution due to burning of wastes.

SELF HEALING CONCRETE

ABISHAK.S

CHERAN COLLEGE OF ENGINEERING, KARUR

Self-healing concrete could solve the problem of concrete structures deteriorating well before the end of their service life. Concrete is still one of the main materials used in the construction industry, from the foundation of buildings to the structure of bridges and underground parking lots. Traditional concrete has a flaw; it tends to crack when subjected to tension. A healing agent that works when bacteria embedded in the concrete convert nutrients into limestone has been under development at the Civil Engineering. The self-healing process by the particular bacteria is explained in detail in this presentation.

EARTHQUAKE RESISTANT STRUCTURE

M.DHANALAXMI & V.ANITHA

SARANATHAN COLLEGE OF ENGINEERING, TRICHY

The view that the safeguarding of a building against earthquake is solely the task of a structural engineer is not correct. An unfavorable architectural plan can often be only partly adjusted buy large dynamic calculations and dimensioning. A functional plan as well as good layout of construction details is often more effective then extensive calculations. Facilities constructed under the current provision of Building Code require that they be built to resist a specified minimum level of force that might be generated by an earthquake.

STRESS RIBBON BRIDGE

DHEEPAK, BIJU JOYAL

KSR INSTITUTE OF TECHNOLOGY, THIRUCHENCODE

A stressed ribbon bridge is a stress architecture(same in many ways to a simple intermission bridge).These ribbon bridges stiffened by cables. This require minimum quality of materials They are quick and convenient to construct if given appropriate condition without false work. They are erected independently from existing terrain and therefore they have a minimum impact upon environment during construction. It is great platform for connecting two main places. Therefore STRESS RIBBON BRIDGE plays a major role in foreign countries.

INTELLIGENT BUILDING

AMARNATH.A

KONGU ENGINEERING COLLEGE, ERODE

Intelligent buildings are the new era in the field of construction throughout the world as the technology is changing how we design and emerging technology towards maximized occupants' comfort and well being with sustainable design. Temasek Polytechnic, 2003 told that "An intelligent building maximizes the comfort and productivity of its occupants and allows building managers to manage their resources effectively with minimal lifetime cost". There is a need, as it is eco-friendly, cost effective and has many social benefits. They adjust the inside functional aspects such as lighting, ventilation, fire-fighting, air conditioning, etc,

WASTED PLASTIC USED IN CONCRETE MIXTURE

SATHEESH KUMAR P

MAHENDRA INSTITUTE OF TECHNOLOGY, SALEM

Disposal of plastic waste in an environment is considered to be a big problem due to its very low biodegradability and presence in large quantities. In recent time use of such, Industrial wastes from polypropylene (PP) and polyethylene terephthalate (PET) were studied as alternative replacements of a part of the conventional aggregates of concrete. Plastic recycling was taking place on a significant scale in an India. As much as 60 % of both industrial and urban plastic waste is recycled which obtained from various sources. People in India have released plastic wastes on large scale have huge economic value, as a result of this, recycling of waste plastics plays a major role in protecting the environment.

PAAVAI ENGINEERING COLLEGE, NAMAKKAL.

(AUTONOMOUS)

TECHFINIX'18

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1	Muthupandi.S	Weather Forecasting	Kamarajar College of Technology, Chittoor, Andhra Pradesh
2.	N. Pradeep, B.S. Shankar	Human area Networking	Dr.Mahalingam College of Engineering and Technology, Pollachi
3	R. Chitra, P. Hayna	Blue Eyes Technology	Adhiyamaan College of Engineering, Hosur
4	Arunkumar,KSathya	Campro-G	NSN College of Engineering and Technology, Karur
5	P.Yaashica	Internet Of Things	Kongunadu Engineering College of Engineering and Technology, Trichy
6	R. Gowsalya, S.Adithyajayaramarajan	Smart Real Time Driver Monitoring System for Safe Commuting in Vehicles	Sona College of Technology, Salem
7	S.R. Balapoojitha	3D-Internet	Vivekanandha College of Engineering for Women, Tiruchengode
8	S.Harini	Big Data Analysis	Knowledge Institute of Technology, Salem
9	Sibiraj	RFID Technology	Dhirijilal Gandhi College of Technology, Salem
10	SuriyaBanu.L, Kowsalya.L	Challenges and oppurtunities of waste management in IOT	K.S.R College of Technology, Tiruchengode

WEATHER FORECASTING

MUTHUPANDI.S

KAMARAJAR COLLEGE OF TECHNOLOGY,CHITTOOR,ANDHRA PRADESH

Weather forecasting is used to predict the state of the atmosphere for a given location. This method will predict weather based on some basic climatic factors such as temperature, humidity and wind. To predict the future's weather condition, the variation in the conditions in past years must be utilized. So it requires large amount of past data set to predict the weather forecasting. He probability that it will match within the span of adjacent fortnight of previous year is very high .We have proposed the use of K-medoidsand Naive Bayes algorithm for weather forecasting system with the basic climatic parameters. It will forecast the weather based on previous record therefore this prediction will prove reliable

HUMAN AREA NETWORKING

N.PRADEEP, B.S.SHANKAR

DR.MAHALINGAM COLLEGE OF ENGINEERING AND TECHNOLOGY,POLLACHI

Now a day's electronic devices become smaller and lower in power Requirements, and they are less expensive. We have begun to adorn our bodies with personal information and communication appliances. Such devices include cellular phones, pagers and personal digital assistants and many more. But currently there is no such method for these kinds of devices to share data. Networking these kinds of devices can reduce functional I/O redundancies and allow new Conveniences and services.

BLUE EYES TECHNOLOGY

R.CHITRA, P.HAYNA

ADHIYAMAAN COLLEGE OF ENGINEERING, HOSUR

The world of science cannot be measured in terms of development and progress. It has now reached to the technology known as "Blue eyes technology" that can sense and control human emotions and feelings through gadgets. The eyes, fingers, speech are the elements which help to sense the emotion level of human body. The basic idea behind this technology is to give the computer the human power. We all have some perceptual abilities. That is we can understand each other's feelings. For example we can understand ones emotional state by analyzing his facial expression. If we add these perceptual abilities of human to computers would enable computers to work together with human beings as intimate partners.

CAMPRO-G: AN AUTONOMOUS AN OPTIMAL PATH PLANNING MOBILE ROBOT GUIDE FOR CAMPUS

ARUN KUMAR K,SATHYA

NSN COLLEGE OF ENGINEERING AND TECHNOLOGY, KARUR

Service robots are being widely implemented to provide specialized services to mankind, related to surveillance, vigilance, accident reporting, mechanical labor and behavior analysis. This paper presents the application of a mobile robot CAMPRO in a college campus. The robot equipped with a compass makes use of a pre generated map learned by the robot by integrating GPS data and motion sensor information. The map is used for navigating our robot to the desired location for multiple request servicing based on the job specified by the client. The work presents an architecture for efficient handling of the requests for an optimal order of their execution. Optimal path is calculated considering the shortest path; the request order and the processing time required in servicing the client request.

INTERNET OF THINGS

P.YAASHICA

KONGUNADU COLLEGE OF ENGINEERING AND TECHNOLOGY,THOTTIYAM

This paper proposes a new way for the betterment of lifestyle of visually impaired people by making them go around the city or walk alone without the help of anyone but with a connected cane. The cane will be connected to internet where comes the concept of internet of things. It is also Bluetooth enabled to give instructions to the user to move around. As it is a fact that IOT is the intelligent connection of people, process, data and things, here the thing (cane) is connected to people (visually impaired) and acquires data (instructions) then process it to convey them to user. The cane will automatically connect to the nearby pedestrian light by using GPS. Thus, it would let someone to know when it is safe to cross the street and even guide them step by step. Hence this IOT device will surely enhance the life of visually impaired people by allowing them to do things independently.

SMART REAL-TIME DRIVER MONITORING SYSTEM FOR SAFE COMMUTING IN VEHICLES

Gowsalya.R, ADITYAJAYARAMARAJAN.S

Sona College of Technology, SALEM

Gone are the days when cars were an item of luxury, it has become available at one's beck and call. Road accidents have also increased exponentially. A detailed analysis shows that a life is lost every 4 seconds due to road accidents. Assistance mainly in the form of intelligent vehicle systems is provided due to the advancement of computing technology. Driver fatigue, drunk drivers, and texting while driving are significant factors in a large number of vehicle accidents. To prevent a huge number of sleeps induced road accidents, Driver drowsiness detection has been considered a major potential area. This paper proposes a real time monitoring system using image processing, face/eye detection techniques. Further, to ensure real-time computation we make use of features learnt using convolutional neural network so as to explicitly capture various latent facial features and the complex non-linear feature interactions. This system prevents traffic accidents, by warning the driver or officials of drowsiness.

3D INTERNET

Balapoojitha.S.R

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN, TIRUCHENGODE

The 3D Internet is a powerful new way for reaching consumers, business customers, co-workers, partners and students. It combines the immediacy of television, the versatile content of the Web, and the relationship building strengths of social networking sites like Facebook. It is inherently interactive and engaging. Virtual worlds provide immersive 3D experiences that replicate real life.

BIG DATA ANALYSIS

S.HARINI

KNOWLEDGE INSTITUTE OF TECHNOLOGY,SALEM

Big data is a term used to describe a massive volume of both structure and unstructured data that is difficult to process using traditional database and software techniques. While the data complexities are increasing including data volume, the real impact hinges on our ability to uncover the value in the data through Big Data Analytics technologies. Big data analytics tests large amounts of data to uncover hidden patterns and other insights. With today's technology, it is possible to analyze your data and get answers from it almost immediately an effort that is slower and less efficient with more traditional business intelligence solutions. Big Data Analytics poses a grand challenge on the design of highly scalable algorithms and systems to integrate the data and uncover large hidden values from datasets that are diverse, complex, and of a massive scale.

RFid Technology

SIBIRAJ

DHIRIJILAL GANDHI COLLEGE OF TECHNOLOGY,SALEM

This paper presents the technology of Active Radio Frequency Identification (RFID) an Wireless Mesh Sensor Network (WMSN) that will be used in agriculture. In this paper, ZigBee technology platform is applied in 2.45 GHz, an active RFID to sustain the WSN by developing a fully automated IOT solution to agriculture .The system includes a set of sensors nodes installed in a crops field sending an ID which are embedded sensors. The ID is about soil condition, to a specific area .The pump station will use information of base station to sprinkle water .The automatic control system is very essential in agriculture .Therefore wireless automated irrigation is efficient.

CHALLENGES AND OPPORTUNITIES OF WASTE MANAGEMENT IN IOT-ENABLED SMART CITIES

SURIYA BANU.L, KOWSALYA .L

K.S.R. COLLEGE OF TECHNOLOGY, TIRUCHENGODE.

The new era of Web and Internet of Things (IOT) paradigm is being enabled by the proliferation of various devices like RFIDs, sensors, and actuators. Smart devices (devices having significant computational capabilities, transforming them to 'smart things') are embedded in the environment to monitor and collect ambient information. In a city, this leads to Smart City frameworks. Intelligent services could be offered on top of such information related to any aspect of humans' activities. A typical example of services offered in the framework of Smart Cities is IOT-enabled waste management. Waste management involves not only the collection of the waste in the field but also the transport and disposal to the appropriate locations. In this paper, we present a comprehensive and thorough survey of ICT-enabled waste management models. Specifically, we focus on the adoption of smart devices as a key enabling technology in contemporary waste management. We report on the strengths and weaknesses of various models to reveal their characteristics. This survey sets up the basis for delivering new models in the domain as it reveals the needs for defining novel frame works for waste management.

PAAVAI ENGINEERING COLLEGE, NAMAKKAL.

(AUTONOMOUS)

TECHFINIX'18

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1.	Maheshbalan.K Kalaiarasi	Graphene the Super califragilistic Element	Velammal College of Engineering and Technology, Madurai
2.	AafrinFathima.N, Priyanka.S	Nano Leave Electricity	Bannari Amman Institute of Technology, Sathyamangalam
3.	Vijaykannan.M	Wireless Communication	ManayarKarasi Engineering College, Madurai
4.	Mukaesh Senthilkumar	Embedded System and Robotics	Kongu Engineering College, Erode
5.	Harini.T	Embedded System for monitoring and Automatic controlling	Sri Krishna College of Technology, Coimbatore
6	Sowndharya A. Jayshree P.	Advantages and Disadvantages of Technology	Coimbatore Institute of Technology, Coimbatore
7	Sulfiya Parveen B. Priya Dharshini S.	Global Warming	Sastra university, Thanjavur
8	Divya Barathi, Nandhini	Artificial Intelligence and expert Systems	Government Engineering College , Thanjavur
9	Vaishali J.B. Jaishri C.S. Suvitha S.	E-Waste Management	Kongunadu College of Engineering and Technology, Trichy
10	Divya.S, Anuhashika.S	Wireless Communication	Mahendra Engineering College, Tiruchengode
11	Nathiya.S Meena.A	Electronic Wonder Robot Fish Technology	K.Ramakrishna College of Technology, Trichy

GRAPHENE THE SUPERCALIFRAGILISTIC

K.MAHESBALAN AND KALAIARASI

VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY, MADURAI

Graphene, a sheet of carbon atoms bound together in a honeycomb lattice pattern, is hugely recognized as a "wonder material" due to the myriad of astonishing attributes it holds. It is a potent conductor of electrical and thermal energy, extremely lightweight chemically inert, and flexible with a large surface area. It is also considered eco-friendly and sustainable, with unlimited possibilities for numerous applications. In the field of batteries, conventional battery electrode materials are significantly improved when enhanced with graphene. Graphene can make batteries that are light, durable and suitable for high capacity energy storage, as well as shorten charging times. It will extend the battery's life-time, which is negatively linked to the amount of carbon that is coated on the material or added to electrodes to achieve conductivity, and graphene adds conductivity without requiring the amounts of carbon that are used in conventional batteries.

NANO LEAF ELECTRICITY

AAFRIN FATHIMA.N, PRIYANKA.S

BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHYAMANGALAM

Nano technology is the word making a huge resolution in our science Industry. It is a fascinating science for many scientists as if offers them many challengers, one such challenges, and one such challenge is creating nano leaves using the solar Botanic technology. By using this nano leaves creation, they try to solve our biggest problem in this year.

WIRELESS POWER TRANSMISSION

S. DIVYA, S.ANUHASHIKA

MANAYARKARASI ENGINEERING COLLEGE, MADURAI

We cannot imagine the world without electric power. Generally the power is transmitted through wires. This presentation describes an original idea to eradicate the hazardous usage of electrical wires which involve lot of confusion in particularly organizing them. These techniques include resonating inductive coupling in sustainable moderate range. The coupling consists of an inductor along with a capacitor with its own resonating frequency.

EMBEDDED SYSTEM AND ROBOTICIS

MUKAESH SENTILKUMAR

KONGU ENGINEERING COLLEGE, ERODE

Embedded System are ever more capable engineering systems that we all use in our daily lives, ranging from applications in mobile telephones to washing machines, cars to aeroplanes. This is currently one of the major growth areas and there is an increasing demand from industry for engineers who possess in-depth expertise in embedded systems. Another important field of engineering involves robotic systems. Students develop practical skills in the design, programming and interfacing of embedded microcontrollers and you will have the opportunity to design autonomous embedded systems through robotic and aerospace applications. Systems Engineering Systems engineering is an interdisciplinary field of engineering that focuses on how complex engineering projects should be designed and managed over the life cycle of the project. Issues such as automatic control of machinery, logistics, and the coordination of different teams become more difficult when dealing with large, complex projects. Systems engineering deals with work-processes and tools to manage risks on such projects, and it overlaps with both technical and human-centered disciplines.

ADVANTAGES AND DISADVANTAGES OF TECHNOLOGY

SOWNDHARYA A AND JAYSHREE P

COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE

The triumphs of technology have provided material wealth beyond the fondest dreams of kings and nobles of the last century. Having achieved this pinnacle of technological success, a large and growing proportion of our people insist that these amazing accomplishments are not what they wanted after all. The younger generation, for whom these riches were intended to be priceless heritage, increasingly disclaim the goals of the past 100 years and insist that the cost has been too great. Intelligent, educated, and well-endowed youth have been turning to communes, drugs, and violence to escape a world threatened by man's inability to control the products of his own creation. The complications of technological achievements have high priority among the targets of current protests. Widespread antagonism toward technology seems misdirected, because the fault lies more in human utilization of technology than in fruits of industrial innovation. The human animal has failed to attain the full potential of his technology or to forecast and control its complications. Individual intelligence, incentive, and innovation have created modern marvels; our greatest deficiency is a lack of group intelligence or judgment in identifying and assessing human needs, developing mechanisms for attaining or supporting essential requirements, and applying effective constraints to avoid excesses. Super-success and overabundance are the prime characteristics of our current crises. Unless industrialized nations are prepared to cast aside current creature comforts and regress to the simple life of the past, new techniques and technologies must be the prime hope for improving the total environment for future generations. Compounded complications of these new approaches can be avoided by improved understanding of human desires and requirements.

GLOBAL WARMING

SULFIYA PARVEEN B. AND PRIYA DHARSHINI S.

SASTRA UNIVERSITY, THANJAVUR

"Global warming has come across as a monumental factor of discussion among different countries. Wide-scale use of non-renewable energy resources has exponentially increased the levels of pollution. This has upended environmental stability and started increasing the global temperature (the surface temperature has raised by almost .5°C in the last 25 years. This has resulted in the rising rate of melting of the ice cap on mountains and thus the rise of oceanic levels. This also has a direct influence on rains and weather fluctuations. At this rate, while global warming may not cause much harm to the existent populace, it will surely be a menace for the coming generations. The rampant escalation of heat waves and retreat of glaciers are just small if not insignificant expressions of global warming. Over the last 15 years, many G30 summits have been on the matter. Most countries have adopted potent Renewable Energy Targets for the next 20 years and are planning to go partially or wholly off the grid. The establishment of renewable energy sources like sun, wind and water and processing of greenhouse gases are worthy solutions. This research work takes a detailed look at the potencies and stretches if global warming and how it can be curbed. It also provides a startling way out through the apparent holocaust the word is facing, say, in the next century. The comprehensive work zeroes in on typical topographies which relate to the aspects of global warming with greater credence and finds mercurial evidence of the levels of dismantling that global warming can cause. The research work makes one thing clear. We cannot just depend on what our respective Governments are doing for the motion; we have to proactive steps towards rendering stability to the environment through energy-conscious systematization at home."

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

DIVYA BARATHI,NANDHINI

GOVERNMENT ENGINEERING COLLEGE , TANJORE

Artificial intelligence (AI) is the intelligence of machines and the branch of computer science that aims to create it. According to Textbooks, the Artificial Intelligence is "the study and design of intelligent agents, where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success". Artificial intelligence has been the subject of optimism, but has also suffered setbacks and, today has become an essential part of the technology industry, providing the heavy lifting for many of the most difficult problems in computer science. All research is highly technical and specialized, deeply divided into subfields that often fail to communicate with each other Subfields have grown up around particular institutions, the work of individual researchers, the solution of specific problems, longstanding differences of opinion about how AI should be done and the application of widely differing tools. The use of Artificial Intelligence methods is becoming increasingly common in the modeling and forecasting of hydrological and water resource processes. There is a class of computer programs, known as expert systems that aim to mimic human reasoning. Expert systems have been built to diagnose disease (Pathfinder is an expert system that assists surgical pathologists with the diagnosis of lymph-node diseases, aid in the design chemical syntheses (Example), the prospect for mineral deposits (PROSPECTOR), translate natural languages, and solve the complex mathematical problem (MACSYMA).

E-WASTE MANAGEMENT

VAISHALI J.B JAISHRI C.S.AND SUVITHA S.

KONGUNADU COLLEGE OF ENGINEERING AND TECHNOLOGY, TRICHY

Electronic products have made our life easy by saving time and being efficient. Now it has become difficult for us to function without electronic equipments. Most of our household work is done by using electronic appliances. Communication systems have revolutionaries by way of mobile phones. Entertainment product like television and music system have added enjoyment to our life. Electronic products, which were once thought to be luxury, have presently become a need. From villages to cities, all of them have using electronic products either in the form of radio or a high tech computer. There are places in India where people do not have access to electricity but they still have electronic products operated with battery. Increase in the use of electronic products have resulted in increase in production of these products and hence created a new waste, which is termed as Electronic waste or E-waste. The E-Waste is one of the fastest growing environmental problems of the world, as there is alack of awareness among people about its treatment and serious impacts. E-waste needs to be treated as a hazardous waste.

WIRELESS COMMUNICATION

S.DIVYA, S.ANUHASHIKA

MAHENDRA ENGINEERING COLLEGE, TIRUCHENGODE

The mobile communication generations has traversed a long way through different phases of evolution since its birth early in the 1970s. The steady global boom in the number of mobile users each year has periodically spurned the development of more and more sophisticated technologies trying to strike the right chord primarily in terms of provision of seamless global roaming, quality services and high data rate. Today numerous different generation technologies with their individual pros and cons are existing globally. The coming era of 5g systems is foreseeing a potential smooth merger of all these heterogeneous technologies with a natural progression to support seamless cost-effective high data rate global roaming, efficient personalized services, typical user-centric integrated service model, high Qos and overall stable system performance. However, every step in such technological advancements presents huge research challenges. this article aims to focus upon some of these potential challenges along with different proposed feasible and non-feasible solutions in the areas of mobile terminals and users, mobile services, mobile and wireless access networks, and communication, in order to give an in depth view of the next-generation communication systems.

ELECTRONIC WONDER ROBOT FISH TECHNOLOGY

NATHIYA.S AND MEENA.A

K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY

Robotic fish are underwater robots that emulate locomotion of live fish through actuated fin and/or body movements. They are of increasing interest due to their potential applications such as aquatic environmental monitoring and robot-animal interactions. In this work, several bio-inspired robotic fish prototypes have been developed that make use of periodic tail motions. A dynamic model for a tail-actuated robotic fish is presented by merging rigid-body dynamics with large-amplitude elongated-body theory. The model is validated with extensive experiments conducted on a robotic fish prototype. The role of incorporating the body motion in evaluating the tail-generated hydrodynamic forces is assessed, which shows that ignoring the body motion (as often done in the literature) results in significant overestimate of the thrust force and robot speed

PAAVAI ENGINEERING COLLEGE, NAMAKKAL.

(AUTONOMOUS)

TECHFINIX'18

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF PAPER	COLLEGE NAME
1	Ragunath, M	Smart gird technology	Sri ManakulaVinayagar Engineering College, Puducherry
2	SmauelJabasingh. D	Internet of things	St.MotherThresa Engineering College, Tuticorin
3	T.Ishwarya	Graphene future of electric world	SNS College of Technology,Coimbatore
4	R.Vigneshwaran	Magnetic refrigerator	Sethu Institute of Technology, Madurai
5	Rahul. K, Natarajan. K	Smart class	Bannariamman Institute of Technology, Coimbatore
6	J.Manimaran	Nano Leaf Electricity	Sona College of Technology, Salem
7	N.Gowthaman	Electricity Generation through Rubber tube	Sengunthar Engineering College, Tiruchencode
8	S.Poovarasan	Electronic Cigarettes	M.Kumarasamy College of Engineering, Karur

SMART GIRD TECHNOLOGY

RAGUNATH. M

SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE, PUDUCHERRY

The digital technology that allows for two way communication between the utility and its customers and sensing along the transmission lines is what make the grid smart. Like the internet the smart grid will consist of controls, computers, automation and new technologies will work with the electrical grid to respond digitally to our quickly changing electric demand. The smart grid is not just about utilities and technologies; it is about giving youth information and tools you need to make choice about your energy use.

INTERNET OF THINGS

SAMUEL JABASINGH

ST.MOTHER THERESA ENGINEERING COLLEGE,TOTICORIN

This paper will provide an overview of Internet of Thinks, with emphasis an enabling technologies, protocols and application issues. The IoT is enabled by the latest developments in RIFD, smart sensors, communication technologies and internet protocols. The basic premise is to have a smart sensor collaborate directly without human involvement to deliver a new class of application. The current revolution in internet, mobile, machine to machine technologies can be seen as the first phase of IoT. Finally we provide detailed service use-cases to illustrate how the different protocols presented the paper fit together to deliver desired IoT service.

GRAPHENE FUTURE OF ELECTRIC WORLD

T. ISWARYA

SNS COLLEGE OF TECHNOLOGY, COIMBATORE

Graphene is an exciting new atomically-thin two-dimensional (2D) system of carbon atoms organized in a hexagonal lattice structure. This "wonder material" has been extensively studied in the last few years since it's first isolation in 2004. Its rapid rise to popularity in scientific and technological communities can be attributed to several its exceptional properties. In this thesis I will present several topics including fabrication of graphene devices, electrical and mechanical properties of graphene. We will witness a world where there will be scarcity for energy resources, but mankind is blessed that we are provided with the natural resource which will last for millions of years.

MAGNETIC REFREGERATOR

VIGNESHWARAN. R

SETHU INSTITUTE OF TECHNOLOGY, MADURAI

Our presentation is about magnetic refrigerator. It is the one of the recent trends in electrical branch. It is defined as the response of solid to an applied magnetic field. Here our presentation contains its operation, block diagram, applications, merits and demerits of it. The light can be controlled with the help of temperature sensor. The fan can be controlled using the human sensor. Automatic attendance system can be done with the help of board. The roll number of the students can be read with the speaker and with the help of sound as present or absent it will automatically count the total number of absents in the last and the roll number that are absents. Our presentation contains its operation, block diagram, applications, merits and demerits of it.

SMART CLASS

RAHUL. K, NATARAJAN. K

BANNARIAMMAN INSTITUTE OF TECHOLOGY, COIMBATORE

The ultimate aim of this project is to make all the classrooms into Smart Classrooms with the help of automation. Automatic on and off lights and fans when it is needed. Closing of windows and doors during the smart classes. Automatic attendance system for the time consumption. The smart classroom has many advantages by switching on and off the lights and fans the electricity can be saved in a large manner. when the smart class is required no one need to stand and close the windows and the doors when the projector is switched on the doors and the windows can be automatically closed. Time can be reduced in taking attendance. So implementation of this project will be good in present and also future for the automated world.

NANO LEAF ELECTRICITY

MANIMARAN. J

SONA COLLEGE OF TECHNOLOGY, SALEM

Nano technology is the word making a huge resolution in our science Industry. It is a fascinating science for many scientists as if offers them many challengers, one such challenges, and one such challenge is creating nano leaves using the solar Botanic technology. By using this nano leaves creation, they try to solve our biggest problem in this year. We will witness a world where there will be scarcity for energy resources, but mankind is blessed that we are provided with the solar and air which will last for millions of years. And recently with the emerging nanotechnology scientists are working on the new content called the nano leaves that will help to producing electricity with the help of solar power which can serve the future demands. As the near future it is expected to face a huge energy crisis. In this paper we intend to light on how exactly the nano leaves can be achieved and what are the future aspect and prospects. Are we witnessing a true revolution in renewable sources?!!!

ELECTRICITY GENERATION THROUGH RUBBER TUBE

GOWTHAMAN.N

SENGUNTHAR COLLEGE OF ENGINEERING, THIRUCHENCODE

In this paper we discussed the topic about electricity production by using "RUBBER TUBE". Which is one of the renewable energy source to produce power. In this method wave power is used to produce electricity. In the rubber tube both ends are closed, and one end of the tube connected with turbine and generator. Wave energy from the sea is converted inside the rubber as kinetic energy. This kinetic energy is used to drive the turbine and the turbine shaft relates to the generator from that we produce electricity This electricity is taken outside via cable.

ELECTRONIC CIGARETTES

POOVARASAN.S

M. KUMARASAMY COLLEGE OF ENGINEERING, KARUR

Although conventional cigarette smoking has declined markedly over the past several decades among youth and young adults in the United States (U.S. Department of Health and Human Services [USDHHS] 2012), there have been substantial increases in the use of emerging tobacco products among these populations in recent years (Centers for Disease Control and Prevention [CDC] 2015c). Among these increases has been a dramatic rise in electronic cigarette (e-cigarette) use among youth and young adults. It is crucial that the progress made in reducing cigarette smoking among youth and young adults not be compromised by the initiation and use of e-cigarettes. This Surgeon General's report focuses on the history, epidemiology, and health effects of e-cigarette use among youth and young adults; the companies involved with marketing and promoting these products; and existing and proposed public health policies regarding the use of these products by youth and young adults.

PAAVAI ENGINEERING COLLEGE, NAMAKKAL.

(AUTONOMOUS)

TECHFINIX'18

DEPARTMENT OF MECHATRONICS ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1	Kishore	Node MC using Custom Box	Vel Tech Engineering College, Chennai
2	Thogaivadivu.V	Electronic voting machine using Finger print	Agni College of Technology, Chennai
3	John Kelvin	Nano robotics	St.Joseph Engineering College, Chennai
4	Janarthanan . K Raghul Srinivasan.V	Waste Heat Utilization Through Cross Flow Heat Exchanger	AR College of Engineering and Technology, Tirunelveli
5	VimalRaj.S, Manikandan Sabarish.S	Safety Intelligence in Automobile	Agni College of Technology, Chennai
6	Sounder Rajesh .P Boobesh .R	Laser Ignition System For IC Engines	Hindustan College of Engineering and Technology, Coimabtore
7	Jayasuriya .R	Automatic plant shaping machine	Bannari Amman Institute of Technology, Sathyamangalam
8	Aravind	Square hole drilling machine	Kongu Engineering College, Erode
9	Harisudha.m	Position Control of Cylinders using RFID	Knowledge Institute of Technology, Salem

NODE MC USING COUSTOM

KISHORE

VEL TECH ENGINEERING COLLEGE, CHENNAI

In our daily life, *Custom Boxes* are becoming items of common use. It is easy to find these boxes, and any customization can be induced in accordance to the creativity and originality of the customer's product. Along with creativity in the structure of the boxes, **Custom Packaging Boxes** can also be printed with numerous options of decorating and styling ideas to make these boxes look different from each other and make them speak for themselves in the market. Customized boxes are created from various stocks available from recyclable to corrugated and cardboard sheets. At a glance they seem to be very simple to manufacture but a deep analysis of the process reveals that lot of Steps are involved in bringing them to perfection. Starting from scanning, assembling, printing, die cutting, lamination and pasting all these steps needs 100% perfection to bring in the natural aesthetics of the box its self.

ELECTRONIC VOTING MACHINE USING FINGER PRINT

THOGAI VADIVU.V

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In democratic societies, voting is an important tool to collect and re-act people thinking's. Traditionally, voting is conducted in centralized or distributed places called polling booths. Voters go to polling booths and cast their votes under the supervision of authorized parties. Then the votes are counted manually once the election has completed. With the rapid growing development of computer technology and cryptographic methods. The electronic voting systems can be employed that replace the incident and most importantly error-prone human Component.

NANO ROBOTICS

JOHN KELVIN.S

St.JOSEPH ENGINEERING COLLEGE

Nanotechnology has come to fore as a technology that has the potential to create the next multi-trillion dollar market. As any another technology in the past, this technology is also faced with various challenges as well as opportunities to create jobs and enable the growth of markets. But the question that we need to ask ourselves is whether this technology is being nurtured responsibly or this greatest opportunity of our times to create new markets is being squandered.

WASTE HEAT UTILIZATION THROUGH CROSS FLOW HEAT EXCHANGER

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AR COLLEGE OF ENGINEERING AND TECHNOLOGY, TIRUNELVELI

This paper deals with the utilization of waste heat by using cross flow heat exchanger. Today the sugar units are integrated plants which apart from manufacturing sugar, generate power and supply to the grid and also have distillery to produce ethyl alcohol. The Salem Co-operative Sugar Mill have a sugar plant and co-generation plant which has two Fluidized Bed Combustion Boiler and each boiler produces 40 tonnes per hour of steam at a pressure of 21kg/cm2 at a temperature of 3200C. The steam produces electric power and exhaust steam is being supplied to sugar plant to boil the sugarcane milk. The condensed water has temperature of 550C. In exist one, the forced drought air is preheated by flue gas in air preheater. Then the preheated air is sent to the boiler. In this project an attempt has been made to utilize the waste heat by a cross flow heat exchanger that means the heat absorbed from condensate water, then the heat is used to preheat the FD fan air before enters the air preheater. In turns there is a scope for reduction in fuel consumption. Finally the potential savings are presented by implement the newly designed cross flow heat exchanger by considering the design parameters of condensate temperature, inlet temperature of air and mass flow rate of water and air.

SAFTEY INTELLIGENCE IN AUTOMOBILE

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This paper aims at giving an overview of implementing safety and security systems in automobiles for today and future development. In today's emerging world, technologies are booming at every places to nourish our humanity. There has been enormous advancement in automobile technologies over past and still to come. However accidents are still happening around us, especially where roads are not laid properly. Unobserved pot holes are one of the main reasons in rural areas. Moreover due to lack of traffic control facilities, violation of rules and carelessness while driving has led to increased fatal rates. To create awareness in rural areas, the vehicles have to be created with special features, which is the main focus of this paper.

LASER IGNITION SYSTEM FOR IC ENGINES

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Sustainability with regard to internal combustion engines is strongly linked to the fuels burnt and the overall efficiency. Laser ignition can enhance the combustion process and minimize pollutant formation. This paper is on laser ignition of sustainable fuels for future internal combustion engines. Ignition is the process of starting radical reactions until a self-sustaining flame has developed. In technical appliances such as internal combustion engines, reliable ignition is necessary for adequate system performance. Ignition strongly affects the formation of pollutants and the extent of fuel conversion internal combustion engine. Compared to a conventional spark plug, a laser ignition system should be a favorable ignition source in terms of lean burn characteristics and system flexibility. Yet several problems remain unsolved, e.g. cost issues and the stability of the optical window. The literature does not reveal much information on this crucial system part. Different window configurations in engine test runs are compared and discussed.

AUTOMATIC PLANT SHAPING MACHINE

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BANNARI AMMAN INSTITUTE OF TECHNOLOGY, ERODE

Plant cutting is a technique for propagating plants in which a piece of the source plant, called the cutting, is placed is the soil to grow as an independent plant. The cutting produces new roots and stems, and thus becomes a new plant. This technique is used in workshops to reproduce plants for selling. In this paper we are presenting a system to automate the plant cutting process of ornamental plants. The process starts with a single stem of the parent plant, with no branches.

SQUARE HOLE DRILLING MACHINE

ARAVIND

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This paper discusses the mechanical design and simulation of a square hole producing tool based on Reuleaux Triangle. The main aim of this paper is to investigate how a circular motion can be converted into a square motion by purely a mechanical linkage; an application of which is to construct a special tool that drills exact square holes. A geometrical construction that fulfills the laid objective is Reuleaux Triangle. Additionally, for this geometry to work from a rotating drive (such as a drill press) one must force the Reuleaux triangle to rotate inside a square, and that requires a square template to constrain the Reuleaux triangle as well as a special coupling to address the fact that the center of rotation also moves. The practical importance of this enhancement is that the driving end can be placed in a standard drill press; the other end, when restricted to stay inside the ambient square, will yield a perfectly square locus and this can be turned into a working square-hole drill. The developed design had a success rate of 98.7% i.e. it removed approximately 98.7% area of the desired square. The fabrication of the developed design in this paper has been done on Steel (EN8) that is ideal for soft surfaces but if harder materials are used, hard surfaces application is also possible.

POSITION CONTROL OF CYLINDER USING RFID

HARISUDHA.S

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RFID (Radio Frequency Identification) is the latest technology to be used in library theft detection systems. Unlike EM (Electro-Mechanical) and RF (Radio Frequency) systems, which have been used in libraries for decades, RFID-based systems move beyond security to become tracking systems that combine security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying, and materials handling.

PAAVAIENGINEERING COLLEGE, NAMAKKAL

(AUTONOMOUS)

TECHFINX'18

DEPARTMENT OF MECHANICAL ENGINEERING

S.NO	AUTHOR'S NAME	TITLE OF THE PAPER	COLLEGE NAME
1	Nethaji	Green Engine	Veltech Hitech Engineering College, Chennai
2	Sathish.S	Friction Stir Welding	Government College of Engineering and Technology, Coimbatore
3	Parthiban.M	Magnetic gear system	MepcoSchlenk Engineering College, Sivakasi
4	Harshankumar.M	Smart Materials	Thiyagaraja Engineering College, Madurai
5	Vinothkumar.R , Vellasamy.L	Common rail direct injection system	National Engineering College, Madurai
6	Manikanta.K, Mahmeedkailemula.M	Flexible Manufacturing System	Adhiyamaan College Of Engineering, Hosur
7	Vigenesh.B,Vignesh.P	Rotary valve engine	Kongunadu College of Engineering, Trichy
8	Santhosh.S	Reverse Engineering	Anna University BIT Campus, Trichy
9	Sathish.C	Peltier Module	K.S.R College of Engineering, Tiruchengode

GREEN ENGINE

NETHAJI

VELTECH HITECH ENGINEERING COLLEGE, CHENNAI

Innovative thinking leads to develop of new technologies. Today, the world is facing serious pollution crisis due to the exhaust gases from vehicles using petroleum based fuel. The pollutants like HC, NOx occurs due to the incomplete combustion of fuel. These pollutants are very harmful to human being causing various diseases. Also the fuel resources are depleting rapidly. This paper includes introduction to Green Engine, technical features, working and comparison with the conventional internal combustion. Therefore this also helps to overcome fuel-crisis. "GREEN ENGINE" will bring new revolution in the field of engine technology.

FRICTION STIR WELDING

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GOVERNMENT COLLEGE OF ENGINEERING AND TECHNOLOGY, COIMBATORE

Friction welding method is one of the most simple, economical and highly productive methods in joining similar and dissimilar metals. It is widely used in the automotive, aircraft and aerospace industrial applications. For many applications it is often necessary to join ceramic to metal to make the finished part. Ceramic-metal bonding is one of the biggest challenges that have faced manufacturers and users over the years because of the inherent differences in the thermal expansion coefficients of the two types of materials. The experimental results indicatethat the mechanical strength of friction- welded Al2O3– YSZ /6061 Al alloy componentswere obviously affected by joining rotational speed selected.

MAGNETIC GEAR SYSTEM

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MEPCOSCHLENK ENGINEERING COLLEGE, SIVAKASI

Magnetic geared permanent-magnet machines artfully incorporate the concept of magnetic gearing into the permanent-magnet machines, leading to achieve low-speed high-torque direct-drive operation. Gears and gearboxes are extensively used for speed change and torque transmission in various industrial applications. It is well known that the mechanical gear has a high torque density, but suffers from some inherent problems such as contact friction, noise, heat, vibration and reliability are of great concern. In order to avoid these types of problems we are using magnetic meshing gears. That is the gears are meshed together with the help of magnetic force of attraction without making into contact. By using such kind of gearing systems we can reduce the wear and tear that are commonly seen in mechanical spur gear systems and the magnetic gears works smoothly without any sound and the main advantage of magnetic gearing is it will not get heated as long as it works.

SMART MATERIALS

HARSHANKUMAR.M

THIYAGARAJA ENGINEERING COLLEGE, MADURAI

Over the past century, we have learned how to create specialized materials that meet our specific needs for strength, durability, weight, flexibility, and cost. However, with the advent of smart materials, components may be able to modify themselves, independently, and in each of these dimensions. Smart materials can come in a variety of sizes, shapes, compounds, and functions.But what they all share- indeed what makes them "smart"-is their ability to adapt to changing conditions. Smart materials are the ultimate shape shifters. They can also alter their physical form, monitor their environment, and even diagnose their own internal conditions. They can also do all of this while intelligently interacting with the objects and people around them. More boldly, it is highly likely that once smart materials become truly ubiquitous-once they are seamlessly integrated into a webbed, wireless, and pervasive network -smart materials will challenge our basic assumptions about, and definitions of "living matter."

COMMON RAIL DIRECT INJECTION SYSTEM

VINOTHKUMAR.R AND VELLASAMY

NATIONAL ENGINEERING COLLEGE, MADURAI

There is a lots of development seen in country's science and technology .Diesel engine also undergone a sea of changes from a Rudolf diesel engine invented it way back in 1892.In that days fuel injection into the CI ENGINE is purely based on mechanical systems which operated by cams shafts that was driven by the engines itself. But at present COMMON RAIL DIRECT INJECTION SYSTEM is the trend. This system is used in most of the diesel engine automobiles because of their fuel efficiency, fine atomization of fuel and increase in mileage.

FLEXIBLE MANUFACTURING SYSTEMS

MANIKANTA. K MAHMEEDKAILEMULA.M

ADHIYAMAAN COLLEGE OF ENGINEERING (AUTONOMUS),HOSUR

Flexible manufacturing systems or fms combine several production technologies to manufacture a wide variety of parts in random order by machine rather than manual labor. Basically, fms is a combination of machine tools, material handling equipment, computer components and software. Its major applications lay in the metal working industries. However, fms may also be appropriate for any batch manufacturing situation where the variety of parts produced is high and/or the product mix is variable.

ROTARY VALVE ENGINE (CAMLESS ENGINE)

VIGNESH. B,VIGNESH. P

KONGUNADU COLLEGE OF ENGINEEING &TECHNOLOGY

The primary objective of the project is to reduce the frictional power of engine and increase the break power of engine by changing the design of valve and reducing the components of the engine. The report summarizes in a concise manner of almost all the principle parts and its functions. Illustrative sketches and diagram are given when and where needed.

REVERSE ENGINEERING

SANTHOSH

ANNA UNIVERSITY BIT CAMPUS, TRICHY

This paper introduces the term reverse engineering (RE), and to the associated techniques that can be used for scanning physical parts. In addition, this paper presents the process of reverse engineering and the strategy for scanning and converting the scanned data into a 3-D surface or solid model. In CADCAM, rapid prototyping, and a range of new technologies that provides business benefits. Reverse engineering (RE) is now considered one of the technologies that provide business benefits in shortening the product development cycle. My paper depicts how RE allows the possibilities of closing the loop between what is "as designed" and what is "actually manufactured".

PELTIER MODULE

C.SATHISH

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Thermoelectric cooling uses the Peltier effect to create a heat flux between the junction of two different types of materials. A Peltier cooler, heater, or thermoelectric heat pump is a solid-state active heat pump which transfers heat from one side of the device to the other, with consumption of electrical energy, depending on the direction of the current. Such an instrument is also called a Peltier device, Peltier heat pump, solid state refrigerator, or thermoelectric cooler (TEC). It can be used either for heating or for cooling, although in practice the main application is cooling. It can also be used as a temperature controller that either heats or cools.

ARTICLES

ISRO PSLV-C40

ISRO's Polar Satellite Launch Vehicle, in its forty second flight, successfully launched the 710 kg Cartosat-2 Series Remote Sensing Satellite along with 30 co-passenger satellites from Satish Dhawan Space Centre SHAR, Sriharikota. This flight is designated as PSLV-C40.

The lift-off of PSLV-C40 occurred at 0929 hrs (9:29 am) IST from the First Launch Pad. After a flight lasting 16 minutes 37 seconds, the satellites achieved the polar Sun Synchronous Orbit of 503 km inclined at an angle of 97.55 degree to the equator. In the succeeding seven minutes, Cartosat-2 series satellite, INS-1C and 28 customer satellites successfully separated from the PSLV in a predetermined sequence. The fourth stage of PSLV-C40 fired twice for short durations to achieve a polar orbit of 365 km height in which India's Microsat successfully separated.

After separation, the two solar arrays of Cartosat-2 series satellite deployed automatically and ISRO's Telemetry, Tracking and Command Network (ISTRAC) at Bengaluru took over the control of the satellite. In the coming days, the satellite will be brought to its final operational configuration following which it will begin to provide remote sensing data using its panchromatic (black and white) and multispectral (colour) cameras.

The 11 kg INS-1C and the 100 kg class Microsat, the two Indian co-passenger satellites of Cartosat-2, are also being monitored and controlled from ISTRAC, Bengaluru. The 28 international customer satellites belong to Canada, Finland, France, Republic of Korea, UK and the USA. Cartosat-2 is a remote sensing satellite with the resolution of 0.6 metres which can spot even smaller objects within a square of 0.6 m by 0.6 m. The ISRO scientists made it public, that these satellites are capable of high-resolution in specific spot imagery. Indian Space Research Organisation (ISRO) Satellite Centre Director M Annadurai told reporters said,

"When the last satellite is ejected out it will become the hundredth satellite…the first century we have done. It is the maiden century. So PSLV-C40 marks maiden century of Indian satellite,"

PSLV-C40 have done through the technology called "multiple burn technologies" under which the rocket's engine is switched off and then switched on to control its height.

So far, PSLV has successfully launched 51 Indian satellites and 237 customer satellites from abroad.Today's successful mission came after a rare failure in August last year when the PSLV-C39 could not release the backup navigation satellite IRNSS-1H due to a technical snag in the fourth and last stage.

The lift-off was postponed by a minute because of fear of collision with space debris.

Here are 10 highlights about the historic launch by ISRO:

1. PSLV-C40 carrying Cartosat-2 Series and 30 other satellites, including those from the US, France, Finland, the UK, South Korea and Canada.

2. *PM Narendra Modi hailed*

ISRO scientists for the successful mission, saying the moment signifies the agency's achievements as well the country's "bright future" in space programme.

3. Scientists said that the mission is a unique one, since the satellites were launched in two orbits. Thirty of the satellites were launched in an orbit 550 km about, and one 359-km above the Earth.

4. The 44.4-metre tall PSLV-C40 roared into a clear sky after a perfect lift-off after a 28-hour countdown.

5. The 320-tonne rocket ejected the satellites one-by-one and deployed them into the earth's lower orbit about 17 minutes and 18 seconds after the lift-off. The total weight of all the 31 satellites carried on-board PSLV-C40 is about 1,323 kgs.

6. "After 100 successes there can still be failures. We should learn from the past mistakes. We have made rigorous changes after the failure," said ISRO chief AS Kiran Kumar after the launch.

7. The whole process of placing the satellites in two orbits will take 2 hours 21 minutes -- the longest so far. The 28-hour countdown for the launch of the PSLV started at 5.29 am on Thursday.

8. The PSLV-C40 mission is happening four months after the failure of PSLV-C39.

9. As an observational satellite, Cartosat will beam high-quality images for cartographic, urban and rural applications, coastal land use and regulation and utility management like road network monitoring.

10. "This mission is an excellent tribute to our chairman AS Kiran Kumar and a welcome to chairman-designate K Sivan. Three consecutive launches are planned from second launch pad in addition to those in the first launch pad. The construction of the second assembly centre is in its final phase of completion. A project is underway to increase capability of first launch pad to 15 launches a year" said Satish Dhawan Space Centre director P Kunhikrishnan.

AQUAPONIC

Aquaponics is the combination of aquaculture (raising fish) and hydroponics (the soil-less growing of plants) that grows fish and plants together in one integrated system. The fish waste provides an organic food source for the plants, and the plants naturally filter the water for the fish.

The word aquaponics comes from words aquaculture, which is the cultivation of fish or other water- based animals, and the word hydroponics, where plants are grown in a sterile medium or completely in water.

By combining the fish, water and plants, Portable Farms Aquaponics Systems use an integrated environment to produce vegetables and fish in very small space, with very little water.

Aquaponics has its roots in ancient China and parts of the aquaponics system were developed in other areas of the world where high concentrations of people lived who were observant of the relationships that existed naturally in their environment.

In China, farmers knew that land livestock waste could be added to their fields or ponds to increase production of vegetables and fruit bearing plants. They also noticed that different fish had different tolerances to the level of land-animal waste in their water. For example too much pig or chicken waste caused many fish to die (the modern explanation for this is lack of oxygen) so they were careful about balancing their system for maximum yield and minimum fish loss. These Chinese farmers were able to refine their systems so they could grow chickens in pens above pigs, (with the waste dropping through along with any spilled food) who were in a pen over a pond with carp in it, and then the water flowed to another pond with other less tolerant fish such as catfish, and perhaps other aquatic animals and certainly other water plants were grown and harvested. These systems were so called flow-through systems, meaning that water was used once through the ponds, and then released to the local paddies, streams, lakes or ocean. The sludge from the bottom of the ponds was used on the fields and some of the water was used in the paddies for fertilizer before it was released.

The third participants are microbes (nitrifying bacteria). These bacteria convert ammonia from the fish waste first into nitrites, and then into nitrates. Nitrates are the form of nitrogen that plants can uptake and use to grow. Solid fish waste is turned into vermi compost that also acts as food for the plants

UN reports tell us that in 2012, for the 6th time in an eleven-year span, the world will eat more food than it produces. With 7 billion people in the world now and the expanding population growth of the projected 9.3 billion in 2050, there must be a shift towards vegetarianism and the option for farm-raised fish as a protein source for many, and a shift away from meat heavy diets, but this will take time. Growing crops to feed cattle, pigs, lamb or sheep take up more land and emit more greenhouse gases than producing crops for direct human consumption. In the 21st Century, food production accounts for up to 29 percent of man-made greenhouse gasses; twice the amount the United Nations has estimated comes from traditional 'dirt' methods of farming.

Many areas of the world, such as California, require elaborate and expensive aqueducts and irrigation systems to deliver potable water to farming regions. A tremendous amount of fresh water evaporates or is otherwise wasted with conventional farming methods. Third world countries often lack the financial resources, arable land and technology to produce sufficient food, and in particular enough protein to maintain the health of their human populations. There are also health concerns raised by humans consuming pesticide residues on fruits and vegetables and hormones in chicken, pork and beef. Wild birds and animals are adversely affected by pesticide and fertilizer. Local waters (ponds, rivers, and streams) are also polluted by the runoff from the pesticides and fertilizers used for local growing.

LOW PRESSURE AMMONIA

Catalysts containing ruthenium and cobalt-enhanced catalysts are characterized by higher activity per volume compared to the conventional iron-based catalysts which are used for ammonia synthesis. Main benefits are lower catalyst volumes, lower operating pressure, and a higher conversion rate per pass. While there are energy benefits offered by these catalysts (UNIDO, 1979 p.180; IPTS/EC, 2007 p.81), the energy savings could be offset by increased energy requirements for ammonia refrigeration (IPTS/EC, 2007 p.81). At high pressures most of the ammonia can be condensed by cooling water while at lower pressures (15-20 MPa) the refrigeration requirements are high (UNIDO, 1979 p.173).

Some examples of different catalyst types are (Ullmann's, 2011 p.169):

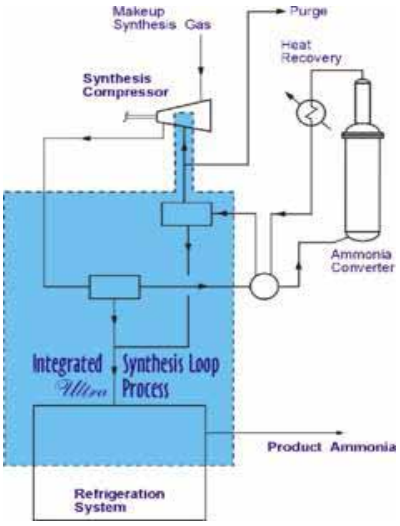
Cobalt-modified magnetite catalyst. The activity per volume is twice that of conventional iron-based catalysts (Ullmann's, 2011 p.170). The use of cobalt was introduced in 1984 by ICI. It was initially used in an ammonia plant in Canada using the ICI Catalco's AMV process. Later on other ammonia plants using the AMV and LCA process.

Iron-based catalyst using wustite instead of magnetite. This type of catalyst is used in seven ammonia plants (total capacity 5,600 t/d).

Ruthenium on a graphite support catalyst. The ruthenium catalyst used in the Kellogg Advanced Ammonia Process (KAAP) has a considerably higher surface area than conventional iron-based catalysts, and is claimed to be 10-20 times more reactivity than iron-based catalysts. There are three plants in Trinidad using the KAAP ruthenium-based catalyst. Tøpsoe has also developed a ruthenium-based catalyst with no current industrial application.

In order for ruthenium-based catalysts to be widely adopted the benefits from their use will have to justify the higher costs. In 2000, ruthenium prices increased by a factor of four as ruthenium found new applications in the electronic industry (Ullmann's, 2011 p.172).

This measure is applicable to both new and existing steam reforming plants and partial oxidation plants . Ammonia synthesis from hydrogen and nitrogen is an industrially important process. Many researches have studied this process searching for improvements. Improvements have been made, particularly with respect to catalysts, but the basic process, known as the Haber process, has remained unchanged since its development



almost one hundred years ago. The Haber process is based on the reaction:

$$N_2 + 3H_2 \longleftrightarrow 2NH_3$$

This reaction is reversible, meaning both the forward and reverse reactions proceed at appreciable rates under typical reaction conditions. Lowering the temperature shifts the equilibrium in favor ammonia production, but lowering the temperature also lowers the reaction rate. Catalysts accelerate the reaction, but even with catalysts the reaction rate places a lower limit on the practical temperature range. Increasing the pressure also shift the equilibrium in favor of ammonia production, but increasing the pressure increases both pumping costs and equipment.A typical industrial process involves a compromise in both temperature and pressure. For example, a typical process is carried out at about 500° C. and 250 atm over an iron catalyst. At these conditions, the reaction equilibrium limits the single pass conversion to about 20%. The overall conversion is increased by separating the product from the reactor exhaust and recirculating the unconverted reagents.

A typical separation process involves cooling the exhaust to condense ammonia and then physically separating the liquid ammonia. Other separation processes have been mentioned. U.S. Pat. No. 4,180,553 proposes recovering hydrogen by membrane separation. U.S. Pat. No. 1,219,663 describes separating ammonia by adsorption onto carbon or absorption into a liquid. U.S. Pat. No. 4,537,760 describes an adsorptive separation process in which a hot stream of ammonia-containing gases is used to regenerate the adsorbant followed by condensation of ammonia from the gases. There remains a long felt need for an improved ammonia synthesis process.

Cellular Lightweight Concrete (CLC) is conventional concrete, where natural aggregate (gravel) is exchanged for the best insulation medium available, namely air, embedded in an organic and bio-degradable foam that offers no chemical reaction but solely serves as wrapping material for the air. Consequently CLC behaves, like conventional concrete, in particular concerning curing, hardening and most important "ageing ". CLC infinitely increases its strength by hydration (forming of crystals in cement) as long as exposed to humidity in the atmosphere.

For structural (steel-reinforced) application, CLC is used in densities of 1,200 to 1,400 kg/m³, which, due to the billion of micro-sized and uniform air bubbles offer 500 % more thermal insulation and a substantially higher fire-rating than conventional concrete. If a wall of conventional concrete should offer the same thermal insulation as CLC, the wall produced would have to measure 5 times thicker and therefore also use 10 times more material (sand, gravel, cement) to produce. CLC structures in hot climatic zones require only 1/5th energy for air-conditioning when compared to traditional clay-brick structures.

Since the early twentieth century, two ideas were developed to produce lightweight concrete – Aerated Autoclave Concrete (AAC) and Cellular Lightweight Concrete (CLC). Each is based on the idea that adding air bubbles to mortar would lower its weight while at the same time improving the product.

The difference between AAC and CLC lies in how the air bubbles are generated.

AAC uses aluminium powder to catalyse a reaction that generates hydrogen gas – bubbles formed from the reaction and are trapped in a lime, fly ash, gypsum and very small percentage of cement slurry. The slurry is allowed to set and then the product is cut into panels or blocks and placed in an autoclave to cure (an autoclave is required because the slurry has low cement contents).

CLC is a process based on making air bubbles in the form of a foam and then mixing the foam into a cement / fly ash slurry. The slurry is then poured into moulds. Since CLC slurries have higher cement contents, no autoclave curing is required – instead, the finished product is cured like normal concrete or Steamed Cured with low pressure to achieve early strength.

As compared to AAC lightweight products, CLC air bubbles are significantly smaller, stronger, and each bubble is part of a closed cell system – which means Brick wall CLC block products have lower water absorption – about half of the water absorption as AAC And Brick. Like Cement, CLC blocks increase in strength when exposed to moisture. Hence CLC bricks become tougher over time.

KOTLIN

Kotlin is a statically typed programming language that runs on the java virtual machine and also can be compiled to javascript source code or uses the LLVM compiler infrastructure. Its primary development is from a team of Jetbrains programmers based in Saint Petersburg, Russia.

While the syntax is not compatible with Java, Kotlin is designed to interoperate with Java code and is reliant on Java code from the existing Java Class Library, such as the collections framework .In July 2011 JetBrains unveiled Project Kotlin, a new language for the JVM, which had been under development for a year.

Kotlin v1.0 was released on February 15, 2016. This is considered to be the first officially stable release and JetBrains has committed to long-term backwards compatibility starting with this version.At Google I/O 2017, Google Announced First-class Support For Kotlin On Android.

Java is the most widely used language for Android development, but that doesn't mean it is always the best choice. Java is old, verbose, error-prone, and has been slow to modernize. Kotlin is a worthy alternative.In July 2011 JetBrains unveiled Project Kotlin, a new language for the JVM, which had been under development for a year.JetBrains lead Dmitry Jemerov said that most languages did not have the features they were looking for, with the exception of Scala. However, he cited the slow compile time of Scala as an obvious deficiency. One of the stated goals of Kotlin is to compile as quickly as Java. In February 2012, JetBrains open sourced the project under the Apache 2 license.

The name comes from Kotlin Island, near St. Petersburg. Andrey Breslav mentioned that the team decided to name it after an island just like Java was named after the Indonesian island of Java (though the programming language Java was perhaps named after the coffee.

JetBrains hopes that the new language will drive IntelliJ IDEA sales.

Kotlin v1.0 was released on February 15, 2016.This is considered to be the first officially stable release and JetBrains has committed to long-term backwards compatibility starting with this version. At Google I/O 2017, Google announced first-class support for Kotlin on Android.Kotlin v1.2 was released on November 28, 2017. Sharing Code between JVM and Javascript platforms feature was newly added to this release.

Tools

IntelliJ IDEA has plug-in support for Kotlin. IntelliJ IDEA 15 is the first version to bundle the Kotlin plugin in the IntelliJ Installer, and provide Kotlin support out of the box.

JetBrains also provides a plugin for Eclipse.

Integration with common Java build tools is supported including Apache Maven, Apache Ant, and Gradle.

Android Studio (based on IntelliJ IDEA) has official support for Kotlin, starting from Android Studio 3.

Emacs has a Kotlin Mode in its Melpa package repository

One of the obvious applications of Kotlin is Android development. The platform was stuck on Java 7 for a while (with some contemporary language features made accessible through the use of Retrolambda or the Jack toolchain) and Kotlin introduces many improvements for programmers such as null-pointer safety, extension functions and infix notation. Accompanied by full Java compatibility and good IDE support (Android Studio) it is intended to improve code readability, give an easier way to extend Android SDK classes and speed up development.

Kotlin was announced as an official Android development language at Google I/O 2017. It became the third language fully supported for Android, in addition to Java and C++.

Adoption[edit]

According to the Kotlin website, Prezi is using Kotlin in the backend. DripStat has done a writeup of their experience with Kotlin.

According to Jetbrains blog, Kotlin is used by Amazon Web Services, Pinterest, Coursera, Netflix, Uber, Square, Trello, Basecamp, and others. Corda, a distributed ledger developed by a consortium of well-known banks (such as Goldman Sachs, Wells Fargo, J.P. Morgan, Deutsche Bank, UBS, HSBC, BNP Paribas, Société Générale), has over 90% Kotlin in its codebase.

According to Google, Kotlin has already been adopted by several major developers—Expedia, Flipboard, Pinterest, Square, and others—for their Android production apps.

5th generation mobile networks or 5th generation wireless systems, abbreviated 5G, are the proposed next telecommunications standards beyond the current 4G/IMT-Advanced standards. operating in the millimeter wave bands (28, 38, and 60 GHz).

5G planning aims at higher capacity than current 4G, allowing a higher density of mobile broadband users, and supporting device-to-device, more reliable, and massive machine communications 5G research and development also aims at lower latency than 4G equipment and lower battery consumption, for better implementation of the Internet of things. There is currently no standard for 5G deployments

The Next Generation Mobile Networks defines the following requirements that a 5G standard should fulfill.

Data rates of tens of megabits per second for tens of thousands of users

Data rates of 100 megabits per second for metropolitan areas

1 Gb per second simultaneously to many workers on the same office floor

Several hundreds of thousands of simultaneous connections for wireless sensors

Spectral efficiency significantly enhanced compared to 4G

Coverage improved

Signaling efficiency enhanced

Latency reduced significantly compared to LTE.

In addition to providing simply faster speeds, they predict that 5G networks also will need to meet new use cases, such as the Internet of Things (internet connected devices), as well as broadcast-like services and lifeline communication in times of natural disaster. Carriers, chipmakers, OEMS and OSATs, such as Advanced Semiconductor Engineering (ASE) and Amkor Technology, Inc., have been preparing for this next-generation (5G) wireless standard, as mobile systems and base stations will require new and faster application processors, basebands and RF devices.

Although updated standard that define capabilities beyond those defined in the current 4G standards are under consideration, those new capabilities have been grouped under the current ITU-T 4G standards. The U.S. Federal Communications Commission (FCC) approved the spectrum for 5G, including the 28 GHz, 37 GHz and 39 GHz bands, on 14 July 2016.

A new mobile generation has appeared approximately every 9 years since the first 1G system, Nordic Mobile Telephone, was introduced in 1982. The first '2G' system was commercially deployed in 1992, and the 3G system appeared in 2001. Fourth generation (4G) systems fully compliant with IMT Advanced were first standardized in 2012. The development of the 2G (GSM) and 3G (IMT-2000 and UMTS) standards took about 10 years from the official start of the R&D projects, and development of 4G systems began in 2001 or 2002. Predecessor technologies have been on the market a few years before the new mobile generation, for example the pre-3G system CdmaOne/IS95 in the US in 1995, and the pre-4G systems Mobile WiMAX in South-Korea 2006, and first release-LTE in Scandinavia 2009. In April 2008, NASA partnered with Machine-to-Machine Intelligence (M2Mi) Corp to develop 5G communication technology.

Mobile generations typically refer to non–backward-compatible cellular standards following requirements stated by ITU-R, such

as IMT-2000 for 3G and IMT-Advanced for 4G. In parallel with the development of the ITU-R mobile generations, IEEE and other standardization bodies also develop wireless communication technologies, often for higher data rates, higher frequencies, shorter transmission ranges, no support for roaming between access points and a relatively limited multiple access scheme. The first gigabit IEEE standard was IEEE 802.11ac, commercially available since 2013, soon to be followed by the multigigabit standard WiGig or IEEE 802.11ad

Based on the above observations, some sources suggest that a new generation of 5G standards may be introduced in the early 2020s.[12][13] However, significant debate continued, on what exactly was 5G. Prior to 2012, some industry representatives expressed skepticism toward 5G.[14] 3GPP held a conference in September 2015 to plan development of the new standard.[15]

New mobile generations are typically assigned new frequency bands and wider spectral bandwidth per frequency channel (1G up to 30 kHz, 2G up to 200 kHz, 3G up to 5 MHz, and 4G up to 20 MHz), but skeptics argue that there is little room for larger channel bandwidths and new frequency bands suitable for land-mobile radio.[14] The higher frequencies would overlap with K-band transmissions of communication satellites.[16] From users' point of view, previous mobile generations have implied substantial increase in peak bitrate (i.e. physical layer net bitrates for short-distance communication), up to 1 gigabit per second to be offered by 4G.

If 5G appears and reflects these prognoses, then the major difference, from a user point of view, between 4G and 5G must be something other than faster speed (increased peak bit rate). For example, higher number of simultaneously connected devices, higher system spectral efficiency (data volume per area unit), lower battery consumption, lower outage probability (better coverage), high bit rates in larger portions of the coverage area, lower latencies, higher number of supported devices, lower infrastructure deployment costs, higher versatility and scalability, or higher reliability of communication. Those are the objectives in several of the research papers and projects below.

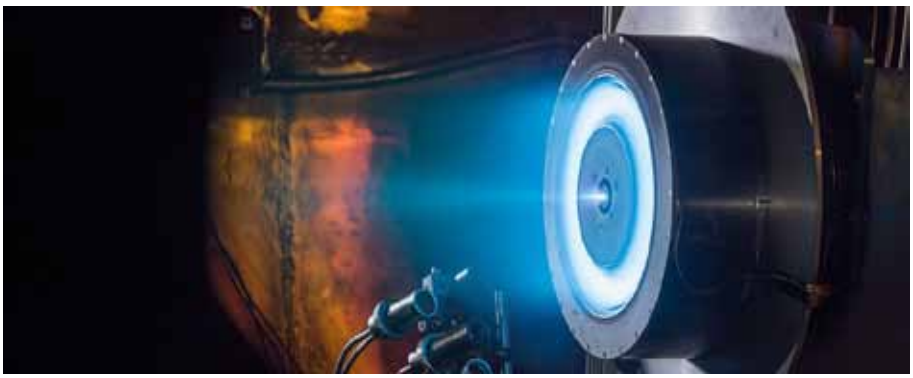
GSMHistory.com[17] has recorded three very distinct 5G network visions that had emerged by 2014:

A super-efficient mobile network that delivers a better performing network for lower investment cost. It addresses the mobile network operators' pressing need to see the unit cost of data transport falling at roughly the same rate as the volume of data demand is rising. It would be a leap forward in efficiency based on the IET Demand Attentive Network (DAN) philosophy.

A super-fast mobile network comprising the next generation of small cells densely clustered to give a contiguous coverage over at least urban areas and getting the world to the final frontier of true "wide-area mobility." It would require access to spectrum under 4 GHz perhaps via the world's first global implementation of Dynamic Spectrum Access.

A converged fiber-wireless network that uses, for the first time for wireless Internet access, the millimeter wave bands (20 – 60 GHz) so as to allow very-wide-bandwidth radio channels able to support data-access speeds of up to 10 Gbit/s. The connection essentially comprises "short" wireless links on the end of local fiber optic cable. It would be more a "nomadic" service (like Wi-Fi) rather than a wide-area "mobile" service.

In its white paper, 5G Empowering Vertical Industries, 5G PPP, the collaborative research programme organized as part of the European Commission's Horizon 2020 programme, suggests that to support the main vertical sectors in Europe—namely automotive, transportation, healthcare, energy, manufacturing, and media and entertainment—the most important 5G infrastructure performance requirements are a latency below 5 ms, support for device densities of up to 100 devices/m^2 and reliable coverage area, and that a successful 5G deployment will integrate telecommunication technologies including mobile, fixed, optical and satellite (both GEO and MEO). A typical mobile network comprises around 17,000 base stations. With 4G densification and 5G rollout that number might rise by 3x or more – and perhaps to over 100,000 base stations within 3-5 year



WORLD'FASTEST MOTOR

Sir James Dyson has unveiled his latest invention, a hand-held vacuum cleaner which is run on "the fastest motor in the world", ten times quicker than the engine of a Boeing 747 aircraft.

At 104,000 revolutions per minute, the motor turns ten times as fast as a commercial aircraft, five times as fast as a Formula 1 engine and more than twice as fast as the most powerful industrial milling machines. The only thing quicker is a dentist's drill, but that is technically a turbine, not a motor.

NASA - ION PROPULSION

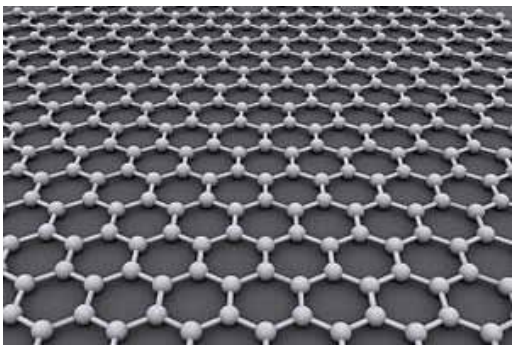
Ion thrusters are being designed for a wide variety of missions from keeping communications satellites in the proper position (station-keeping) to propelling spacecraft throughout our solar system. These thrusters have high specific impulses ratio of thrust to the rate of propellant consumption.

Ion propulsion is even considered to be mission enabling for some cases where sufficient chemical propellant cannot be carried on the spacecraft to accomplish the desired mission.

It was designed to work with 100% green technology and is powered by electricity only. In Dubai, the innovative one-person aircraft will reportedly have a maximum speed of 160 kmph (100 mph) and a maximum flying height of about 3,500 meters Researchers from North Carolina State University have developed a new technique for directly printing metal circuits, creating flexible, stretchable electronics. The technique can use multiple metals and substrates and is compatible with existing manufacturing systems that employ direct printing technologies. Metal printing offers low-cost way to make flexible, stretchable electronics.

The researchers tested the resilience of the circuits on a polymer substrate and found that the circuit's conductivity was unaffected even after being bent 1,000 times. The circuits were still electrically stable even when stretched to 70 percent of tensile strain.

The researchers demonstrated the functionality of the printing technique by creating a high-density touch sensor, fitting a 400-pixel array into one square centimeter.

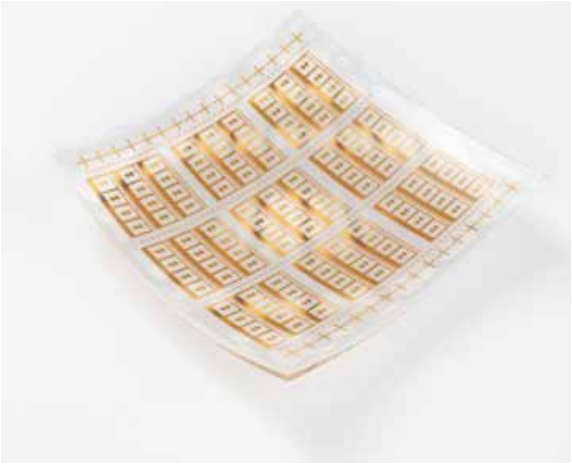


GRAPHENE THE NEXT GENERATION STEEL

Graphene is made of a single layer of carbon atoms that are bonded together in a repeating pattern of hexagons. Graphene is one million times thinner than paper.

Carbon is an incredibly versatile element. Graphene's flat honeycomb pattern grants it many unusual characteristics, including the status of strongest material in the world. Columbia University mechanical engineering professor James Hone once said it is "so strong it would take an elephant, balanced on a pencil, to break through a sheet of graphene the thickness of Saran Wrap".

These single layers of carbon atoms provide the foundation for other important materials. Carbon nanotubes which are another emerging material, are made of rolled graphene. These are used in bikes, tennis rackets and even living tissue engineering.

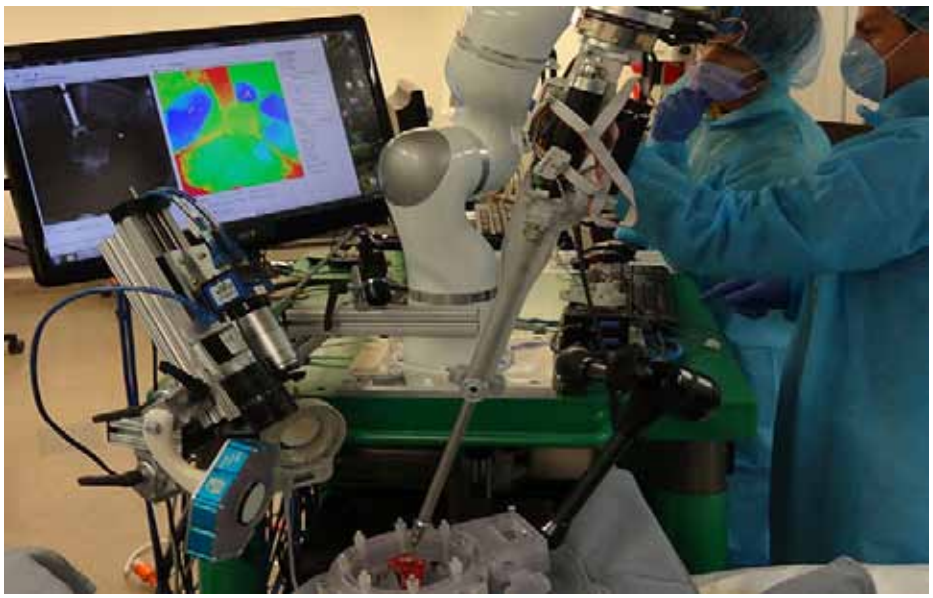


Application of Graphene:

With the help of the two-dimensional material graphene, the first flexible terahertz detector has been developed by researchers at Chalmers. The opportunities are great within health and Internet of Things, and for new types of sensors

Terahertz radiation has a wide range of uses and can occur in everything from radio astronomy to medicine. The term refers to the electromagnetic waves whose frequencies range from 100 gigahertz to 10 terahertz. Demand for higher bandwidth in wireless communications and depiction for security applications has led to intensified research on systems and componentsintended for terahertz frequencies.

Autonomous Robot Surgeon Bests Humans in World First



In a robotic surgery breakthrough, a bot stitched up a pig's small intestines using its own vision, tools, and intelligence to carry out the procedure. What's more, the Smart Tissue Autonomous Robot (STAR) did a better job on the operation than human surgeons who were given the same task.

STAR's inventors don't claim that robots can replace humans in the operating room anytime soon. Instead they see the accomplishment as a proof of concept—both for the specific technologies used and for the general concept of "supervised autonomy" in the OR.

"Even though we surgeons take pride in our craft at doing procedures, to have a machine that works with us to improve outcomes and safety would be a tremendous benefit".

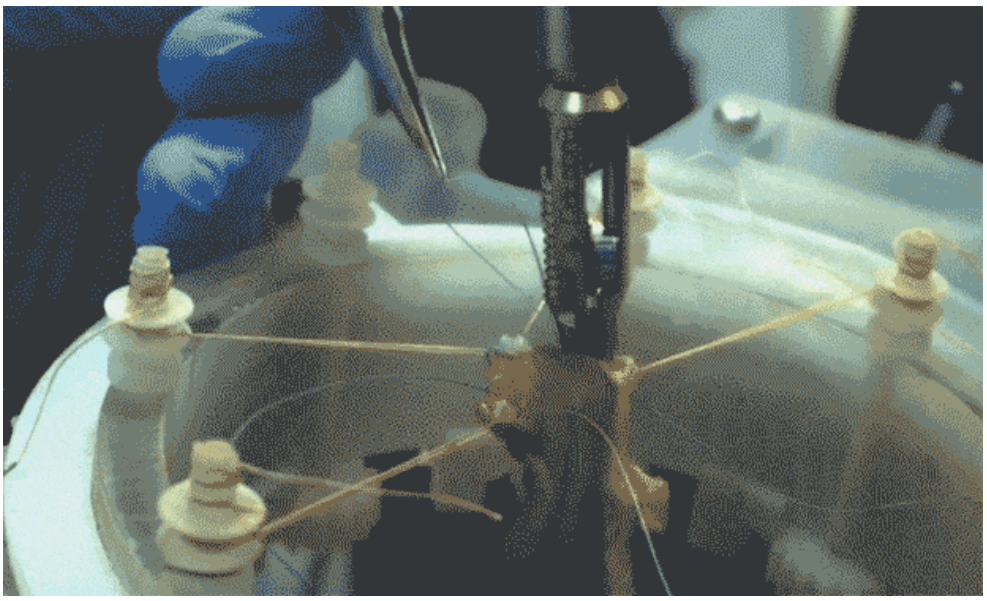
For this study, published today in the journal *Science Translational Medicine*, researchers programmed their robot to carry out a procedure called intestinal anastomosis, in which a piece of intestine that's been cut through is stitched back together. It's like repairing a garden hose, said Ryan Decker, the senior engineer on the team, in that the sutures must be tight and regularly spaced to prevent leaks. STAR performed this task both on *ex vivo* tissue in the lab and on *in vivo* tissue in an anesthetized pig, and experienced human surgeons were given the same tasks. When the resulting sutures were compared, STAR's stitches were more consistent and more resistant to leaks.

The robot did have a little help. In about 40 percent of its trials, the researchers intervened to offer guidance of some sort—as in the GIF above, where a human hand is seen holding the thread. In the other 60 percent of trials, STAR did the job completely on its own.

The researchers don't think these assists invalidate their claim of autonomy; instead they see the setup as representative of shared control setups that would be appropriate for real ORs. Human surgeons could supervise procedures or even trade off tasks with the robot, letting the machine do more routine or tedious parts of an operation. "You can imagine that if something critical is happening, that would be a point where the surgeon is going to be closely monitoring the robot," Decker said. "I'm sure they wouldn't feel comfortable just letting it run and going to take a coffee break."

Today, some surgical procedures already incorporate smart machines. Robots routinely carry out the crucial steps in some procedures including

orthopedic knee replacements, Lasik eye surgery, and hair transplants. What these types of



surgery have in common, though, is the fixed nature of their targets, as leg bones, eyes, and heads can be held in place during the procedure. Soft tissue surgeries are much messier and more difficult to automate, because all the slippery pink parts of the body shift around and are hard to track.

The current state-of-the-art robot for soft tissue surgery is the da Vinci system from Intuitive Surgical, but it's not automated at all. The da Vinci is a tele operated system, in which the surgeon sits at a console and manipulates controls in dexterous maneuvers that are mimicked by tiny tools inside the patient's body.

STAR solved the soft tissue challenge by integrating a few different technologies. Its vision system relied on near-infrared fluorescent (NIRF) tags placed in the intestinal tissue; a specialized NIRF camera tracked those markers while a 3D camera recorded images of the entire surgical field. Combining all this data allowed STAR to keep its focus on its target. The robot made its own plan for the suturing job, and it adjusted that plan as tissues moved during the operation.

The researchers trained STAR only on how to perform this particular intestinal suturing procedure. "We programmed the best surgeon's techniques, based on consensus and physics, into the machine," Kim said.

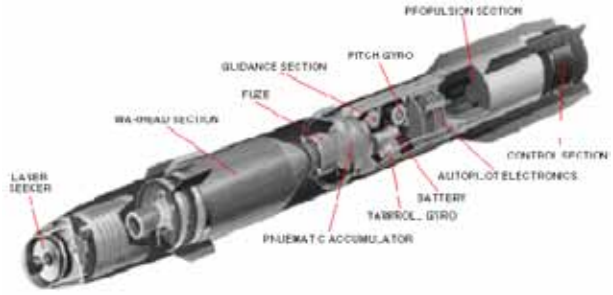
An outside expert in the field of surgical robotics called this study a breakthrough, but also said its limitations show that autonomous robots "will not come to the OR soon." Blake Hannaford, a pioneer of autonomous surgical robotics at the University of Washington, noted that the NIRF tags that the robot relied on were placed by humans.

Hannaford also questioned the clinical significance of the task that STAR performed. "While in a technical sense, semi-autonomous suturing is a 'grand challenge' problem of surgical robotics, clinically much suturing and bowel anastomosis is done by staplers which can do the whole thing in seconds," he wrote in an email. "Clearly the task they chose does not justify the elaborate equipment they used."

The STAR team said this task was simply intended as proof that autonomous robots could meet the challenge of soft tissue surgery. While the robot may not be ready to take over the OR, Kim said he hopes his technology will be integrated into commercial devices in the next few years. If robotic systems are shown to improve safety and patient outcomes, he said, medicine may go the way of the auto industry.

"Now driverless cars are coming into our lives," Kim said. "It started with self-parking, then a technology that tells you not to go into the wrong lane. Soon you have a car that can drive by itself." Similarly, he said, surgical robots could start by giving human surgeons a helping hand. And maybe one day they'll take over.

LASER GUIDED MISSILES



"Laser guidance is a technique of guiding a missile or other projectile or vehicle to a target by means of a laser beam. Some laser guided systems utilize beam riding guidance, but most operate more si..."

Laser guidance is a technique of guiding a missile or other projectile or vehicle to a target by means of a laser beam.

Laser guided systems utilize beam riding guidance, but most operate more

Similarly to semi active radar homing(SARH).

This technique is sometimes called SALH, for Semi-Active Laser Homing. With this technique, a laser is kept pointed at the target and the laser radiation bounces off the target and is scattered in all directions.

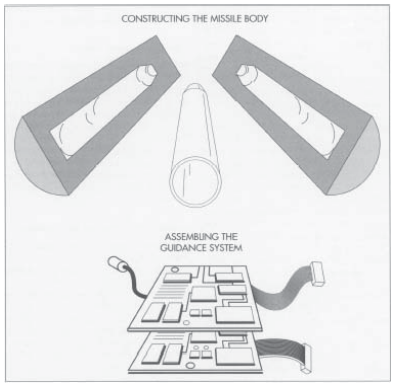
That laser guidance is not useful against targets that do not reflect much laser

energy, including those coated in special paint which absorbs laser energy.

The principal laser components—the photo detecting sensor and optical

filters—are assembled in a series of operations that are separate from the rest of

the missile's construction. Circuits that support the laser system are then soldered onto preprinted boards. The circuit boards for the electronics suite are also assembled independently from the rest of the missile. If called for by the design, microchips are added to the boards at this time.



are the missile body, the guidance system (also called the laser and electronics suite), the propellant, and the warhead. The missile body is made from steel alloys or high-strength aluminum alloys that are often coated with chromium along the cavity of the body in order to protect against the excessive pressures and heat that accompany a missile launch. The guidance system contains various types of materials—some basic, others high-tech—that are designed to give maximum guidance capabilities. These materials include a photo detecting sensor and optical filters, with which the missile can interpret laser wavelengths sent from a parent aircraft. The photo detecting sensor's most important part is its sensing dome, which can be made of glass, quartz, and/or silicon. A missile's electronics suite can contain gallium-arsenide semiconductors, but some suites still rely exclusively on copper or silver wiring. Guided missiles use nitrogen-based solid propellants as their fuel source. Certain additives (such as graphite or nitroglycerine) can be included to alter the performance of the propellant. The missile's warhead can contain highly explosive nitrogen-based mixtures, fuel-air explosives (FAE), or phosphorous compounds. The warhead is typically encased in steel, but aluminum alloys are sometimes used as a substitute.

Design

Two basic types of laser guided missiles exist on the modern battlefield. The first type "reads" the laser light emitted from the launching aircraft/helicopter. The missile's electronic suite issues commands to the fins (called control surfaces) on its body in an effort to keep it on course with the laser beam. This type of missile is called a beam rider as it tends to ride the laser beam towards its target.

The second type of missile uses on-board sensors to pick up laser light reflected from the target. The aircraft/helicopter pilot selects a target, hits the target with a laser beam shot from a target designator, and then launches the missile. The missile's sensor measures the error between its flight path and the path of the reflected light. Correction messages are then passed on to the missile's control surfaces via the electronics suite, steering the missile onto its target.

Regardless of type, the missile designer must run computer simulations as the first step of the design process. These simulations assist the designer in choosing the proper laser type, body length, nozzle configurations, cavity size, warhead type, propellant mass, and control surfaces. The designer then puts together a package containing all relevant engineering calculations, including those generated by computer simulations. The electronics suite is then designed around the capabilities of the laser and control surfaces. Drawings and schematics of all components can now be completed; CAD/CAM (Computer-Aided Design/Manufacture) technology has proven helpful with this task. Electronics systems are then designed around the capabilities of the aircraft's laser and the missile's control surfaces. The following step consists of generating the necessary schematic drawings for the chosen electronics system. Another computer-assisted study of the total guided missile system constitutes the final step of the design process.

kaleidoscope

R Oviya
III AGRI B

Ilakkiya
II CIVIL A

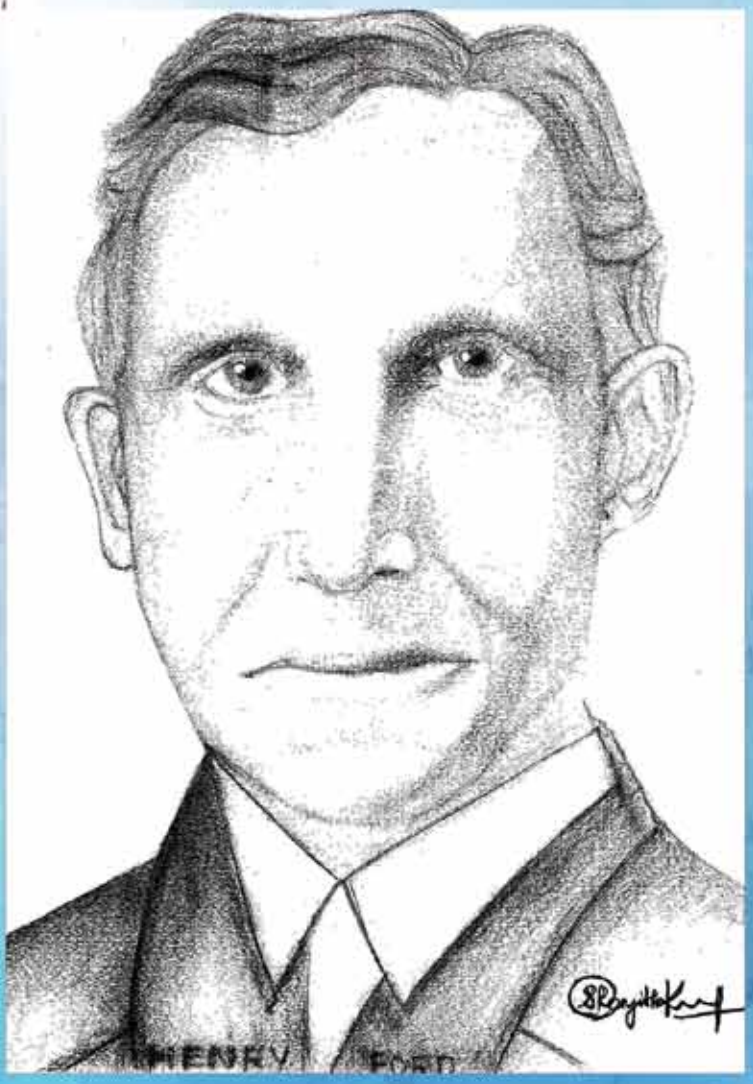
Anandha Pradeep
III MECH A

Anandha Pradeep
III MECH A

K Abinesh
III AERO

S Nivetha
II EEE B

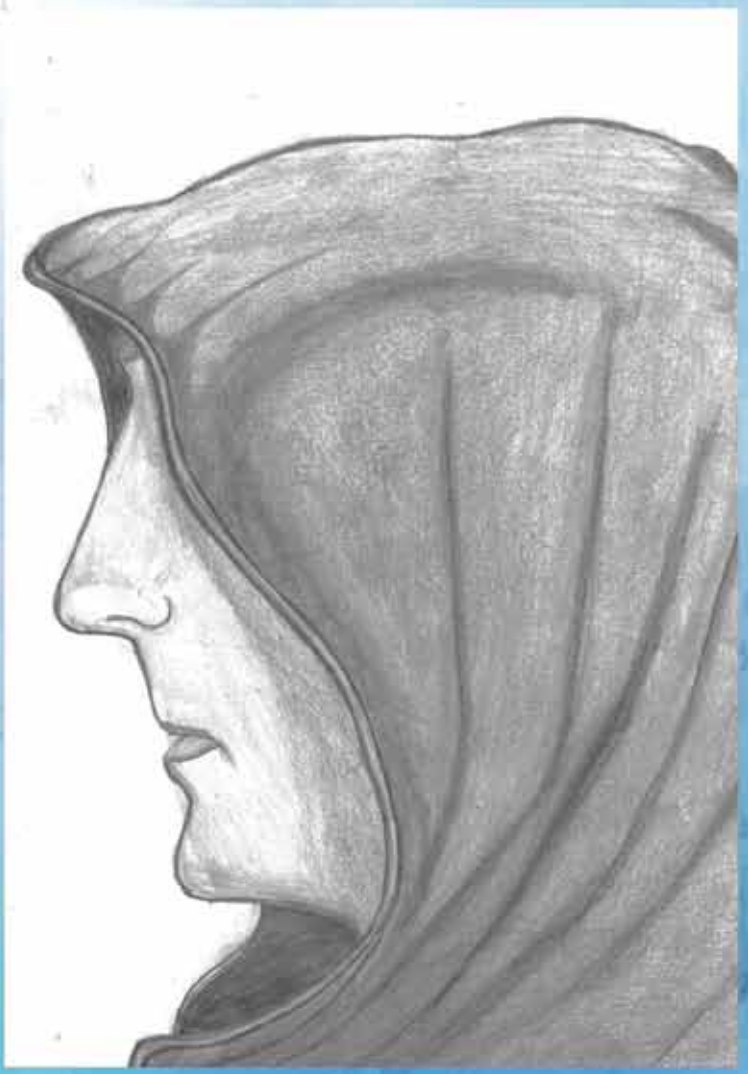
K Pavithra
II IT



S Ranjith kumar
IV MECH C

Anandha Pradeep

III MECH A



B Prabakaran

II EEE B

G Karthick
III ECE A

K Gayathri
III CSE A


poetry

உனக்காக உலகம்

தோழனே துணிந்தெழு
உனது வெற்றிப்பாதைகள்
உனக்காக காத்திருக்கின்றன
தற்கொலை எனும் அமைதிக்கடலில் விழாமல்
வெற்றி எனும் ஆழ்கடலில் நீந்திப்பார்
உனது புகழை இந்த உலகம் பாராட்டும்
தோல்வியின் பலத்தைக்கண்டு அஞ்சாதே
வெற்றியின் சிகரத்தைத்தொட்டும் மடியாதே
உனது தன்னம்பிக்கையை உயர்த்திடு
மென்மேலும் உயர்ந்திடு
உன்னிடம் உள்ள தோல்விகளை
உனது வெற்றிகளால் முறித்திடு
இந்த உலகில் உனது வெற்றிப்பாதைகள்
உனக்காக காத்திருக்கின்றன
அவற்றையெல்லாம்,
உனது பாத அடிகளைக்கொண்டே நிரப்பிடு
நண்பா மீண்டெழு,
இது உனக்காக உலகம்
அதில் நீயே வெற்றி பெற்று முன்னேறு. –

S.கிருத்திகா
EEE-II year

நாளைய இளைஞர்கள்

நேற்றைய இந்தியாவின் குழந்தைகளாகவும் இன்றைய இந்தியாவின் படிகட்டாகவும்
நாளைய இந்தியாவின் கூடர் ஒளியாகவும் திகழும் இளைஞர்களே
உங்களின் ஒற்றுமை அன்றைய முதியோரின் வேற்றுமையை ஒழிக்கட்டும்
அவர்களின் மதம் எனும் மதவேற்றுமையை ஒழிக்கும் மதயானைக் கூட்டங்களே
நீ தாமரையின் மேல் இருக்கும் தண்ணீராய் இல்லாமல்
ஆழமாய் வேர் ஊன்றி நிற்கும் ஆலமரமாய் இரு,
உன்னை எவராலும் சாய்க்க முடியாது!
வானில் இருந்து விழுந்து தெரிக்கும் மழைத்துளியாய் இல்லாமல்
தெரித்து ஓடாமல் நிற்கும் உன் மனதைரியத்தை நம்பு
ஜெயிக்க முடியாது என்று அவநம்பிக்கை கொண்டு
வேலைப்பார்க்காதே, ஜெய்ஹிந்த் என்று சொல்லிபார் என்றும் வெற்றி கிட்டும்.

S.முரளிதரன்
Civil-B. Final year

நட்பு

ஆழ் மனதினை அரித்திடும்
அழியாத கவலைகள் கூட
நட்புக்குள்ளே இங்கு அன்பாக
நாம் போடும் செல்ல சண்டைகள்
சின்னச் சீண்டல்களில் நொடி கூட
தயங்காமல் மறைகின்ற மாயமென்ன
வரிகளால் விளக்க முடியாதது
வாழ்க்கையை விளக்குவது நட்பு

J.நவின்
Mech-C

உங்கள் பாதையை
நீங்களே தேர்ந்தெடுங்கள்
ஏனெனில்... வேறு எவராலும்
உங்கள் கால்களைக் கொண்டு
நடக்க முடியாது....

G.கவாதி
Chemical II

அம்மா

1. கண்ணில் பார்வையாகவும்
ஊயிரில் மூச்சாகவும்
இதழில் பேச்சாகவும்
உடலில் உயிராகவும்
மனதில் குணமாகவும்
மலரில் வண்ணமாகவும்
வானில் நிலவாகவும்
இருளில் ஒளியாகவும்
இருகின்றாள் என்றும் அம்மா!

2. என் அன்னை மடிக்கு பஞ்சிமெத்தை
ஈடில்லை
அவளின் பாதத்திற்கு வானமும் எல்லை
இல்லை
உன் துயரம் கண்டு என் உள்ளம்
ஏங்காத நாள் இல்லை அம்மா....

படித்தவைகள்

நட்சத்திர ஆண்கள்
சுற்றிலும் நின்று
கண்ணாடிப்பதால் தானோ....
நிலா பெண்
மெல்ல மெல்ல

நிலா

தண்டு இல்லை
நரை இல்லை
நீர் இல்லை
அழகால் மலறும்
வெண்தாமரை பூ
நிலா.....

பெண்

எண்ணிய கொடுமை செய்தோம்
பெண் என்பவள் பாவம் அன்றோ....
பெண் என்பவள் ஒரு சாபமன்றோ...
தாயையும் தாங் பூமியையும்
சிதைத்தவர் நாமன்றோ...
இனி மறுமுறை உயிர்த்திட வழியுமுன்டோ....

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காதல் அல்ல,
பார்க்கும் பொழுது மட்டுமே பாசம் பெருகுகிற
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