3.1.1: Total Grants from Government and non-governmental agencies for research projects, endowments, Chairs in the institution during the last five years (INR in Lakhs)

Year	2016-17	2017-18	2018-19	2019-20	2020-21
INR in Lakhs	0	0.2	0.35	0.075	3.12

Name of the Project/ Endowments, Chairs	Name of the Principal Investigator/Co-investigator	Year of Award	Amount Sanctioned (Rs.)	Name of the Funding Agency
Impact Lecture Session (Online Mode)	Dr.A.Punitha	2021-2022	12,000/-	Ministry of Education's Innovation Cell
S&T Project on Studies on development of bio mask for sanitization	Dr.P.Ranjith Kumar-PI	2020-2021	2,80,000/-	TNSCST
Intra Project Expo - 2021	Dr.A.Punitha	2020-2021	20000/-	TNSCST, Chennai and NCSTC, New Delhi
Student Project Scheme: Title of the project "Smart Grid Development in digital meter and theft control using Internet of Things"	K.Gowsalya A.Abinas Kumar R.Arun Kumar Faculty Coordinator: Ms.J.Deepika	2019-2020	7500/-	TNSCST
State level seminar on recent trends in power electronic converters using MATLAB/SIMLINK	Ms.M.Dharani Devi Mr.A.Senthamarai Kannan	2018-2019	20000/-	TNSCST

Student Project Scheme: Title of the project "Automation for safety in heavy vehicles"	G.Dilon Antony M.Nithyanantham S.Marudhaselvam M.Maharaja Faculty Coordinator: Mr.D.Mahalingam	2018-2019	7500/-	TNSCST
Student Project Scheme: "An increasing the engine speed by using flywheel boster"	S.Ranjithkumar S.Denis I.Ajay Prasanth M.Aslam Nijamudeen Faculty Coordinator: Mr.A.Jothivel	2018-2019	7500/-	TNSCST
Student Project Scheme: Effective organ Preservation and Transplantation using AMBU bag	Agnel Irin.M Gowtham Manikandan.M Faculty Coordinator: M.Chandramohan	2017-2018	10000/-	TNSCST
Student Project Scheme: "ARDUINO based braille Tutor and interface for the blind"	Justine saji john V.Karthikraja. P.Sathiyaseelan C.Vajeeh Faculty Coordinator: A.Nallathambi	2017-2018	10000/-	TNSCST

PRINCIPAL

PRINCIPAL
M.A.M. SCHOOL OF ENGINEERING
SIRIGANUR, TIRUCHIRAPPALLI-621 105.

Gmail MT_Chandrasekar M <mchandrasekar1983@gmail.com>

Fwd: Guidelines and Instructions for Organizing Impact Lecture Sessions in IIC Institutions -Reg.

1 message

MT_Dr_Punitha. A <punithamamse@gmail.com> Fri, Dec 3, 2021 at 11:00 AM
To: chandrasekar M <mchandrasekar1983@gmail.com>

---------- Forwarded message ---------
From: **IIC MHRD** <iic.mhrd@aicte-india.org>
Date: Wed, Sep 15, 2021 at 2:25 PM
Subject: Guidelines and Instructions for Organizing Impact Lecture Sessions in IIC Institutions -Reg.
To:
Cc: Dipan Sahu <dipan.sahu@aicte-india.org>, selva rani <selva.rani@aicte-india.org>

To,

The Head of the Institute/IIC President/Convener/Impact lecture coordinator

Dear Sir/Madam,

Your IIC institution has been selected to organize impact lecture sessions with support from the Ministry of Education's Innovation Cell (MIC).

In the first phase, a total of 44 HEIs N-E States, J&K, Ladakh, other Himalayan States & Aspirational Districts of Country (Table-1) and 242 HEIs from remaining parts of the country are found eligible to organize impact lectures in their respective campuses **only on Online Mode** from **08th September 2021 till 15th Oct 21.**

The objective of the impact lecture program is to support IIC Institutes preferably from hilly/rural/backward regions or 3rd tier cities to organize impact lectures and establish a strong connection with the innovation and startup ecosystem enablers at the state and national levels. For impact lectures, you must invite renowned and successful innovators, Startup founders, IP experts, Angel/VC, and lead experts from the state and national innovation and ecosystem enablers/agencies to deliver motivational and inspirational sessions and sharing their innovation and startup journey with students and faculties.

Now you are required to organize impact lectures as per the guideline and submit the report in the IIC portal.

Guideline for conducting impact lecture sessions:-

Impact Lecture Session (Online Mode Only)			
Session 1	Organize between 8th Sept,2021-15th Oct 2021	Minimum Experts	Maximum Honorarium Amount/expert
Impact lecture 1	Same Day	Expert 1	Rs 3000/-
Impact lecture 2		Expert 2	Rs 3000/-
At Least 10 days Gap between two sessions			
Session 2	Organize between 8th Sept,2021-15th Oct 2021	Minimum Experts	Maximum Honorarium Amount/expert
Impact lecture 1	Same Day	Expert 1	Rs 3000/-
Impact lecture 2		Expert 2	Rs 3000/-
Total Grant (Reimbursement mode)			**Rs 12,000/-**

- Each session should be of at least 3 hours duration and should be taken by two external experts only. The Experts shall take two different topics.
- The expert should have at least 5 years of experience in the field of Innovation/ Entrepreneurship/ Startup/Design

Thinking/Incubation/Pre-Incubation
- There should be a minimum 10 days' gap between the two sessions.

-(minimum internal audience size 50).

-Eligible institutions should start planning and conduct the impact sessions from the date of receiving this email.

-Mandate form (Bank account details for transfer of funds) and Update Session Details have been enabled in IIC Portal. (Update/Upload it in IIC portal after login up to 23rd September 2021)

Steps to upload Mandate form Details:-

1.login to https://iic.mic.gov.in/login throgh **Incognito mode**

2. Click on scheme section

3. Click on Impact Lecture

3.**Click on Upload Mandate Form step 1**

4. Fill all the required fields (Bank details etc)

5. Click on submit

6.**Click on Click on Upload Mandate Form step 2**

7.Downloaded the filled mandate form and take printout of it.

8.Take signature and seal(stamp) of the concerned person on the mandate form as mentioned in the printout.

9.**Upload the duly signed mandate form in step 3**

Also add/update session details according to latest information

You can also add/update Impact lecture coordinator details.

(Upload report and other related documents option will be added later.)

-Institutes need to send a detailed statement of expenditure (Including certified Bills/Honorarium Receipts etc.) along with a copy of the report after the completion of the impact lecture sessions latest by **31st Oct 2021** to the **following address**(Also need to submit the report in IIC portal after login)

Ankush Prakash Sharma, Innovation Officer
Room No.223,2nd Floor, MoE's Innovation Cell(MIC)
AICTE HQ, Nelson Mandela Road
New Delhi-110070

-Fund will be transferred in Reimbursement mode Only.

Please refer to the scheme document available at https://api.mic.gov.in/uploads/institutes/mic/images/announcements/impact%20scheme%20-final%20guideline.pdf for more information

For any query or support, please contact Mr. Ankush Sharma, Innovation Officer, MIC, email - ankush.sharma@aicte-india.org, cell no - 9805484989

Regards

IIC National Coordination Team

MHRD's Innovation Cell, AICTE, New Delhi


MHRD'S
INNOVATION CELL
(GOVERNMENT OF INDIA)
INSTITUTION'S
INNOVATION
COUNCIL
(Ministry of HRD Initiative)

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMIL NADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai - 600 025
Phone : 044 - 2230 1428
Telefax : 044 - 2230 1552
Web : www.tanscst.nic.in
E-mail : ms.tanscst@nic.in/enquiry.tanscst@nic.in

DR. R. SRINIVASAN, M.Sc., Ph.D., F.I.C.S., M.A.C.S. (USA)
Member Secretary

Letter No TNSCST/STP/Covid-19/2020-21/ 3705 29.03.2021

To

The Principal
M.A.M. School of Engineering
Siruganur, Tiruchirapalli 621 105

Sir/Madam,

Sub: TNSCST – S&T Project on "Studies on development of biomask for sanitization" –Approval –grant release- intimation – Reg.

Ref: Proposal dated 15.06.2020

I am happy to inform you that State Council has approved your above cited research proposal for funding. A copy of the terms and conditions governing the grant is enclosed herewith for your reference. The approved budget for the project entitled "Studies on development of biomask for sanitization" is Rs.280000/- for one and half years. Kindly acknowledge your acceptance in a week time for the above budget and details including terms and conditions.

Kindly Find enclosed herewith cheque for first year approved grant of Rs.2,30,000/- (Rupees Two lakh thirty thousand only). You have to submit a declaration stating that the above cited "project has not receiving any funds from any other funding agency". All communication should be sent through the proper channel.

With best wishes,

Yours faithfully,

29/3/21

Member Secretary

Encl. 1.Cheque for Rs.230000/- No. 691158 dt.29.03.2021
2.Terms and conditions

Copy to:
Dr.P.Ranjithkumar
Professor
Dept. of Mech. Engg.
M.A.M. School of Engineering
Siruganur, Tiruchirapalli 621 105

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMIL NADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai - 600 025
Phone : 044 - 2230 1428
Telefax : 044 - 2230 1552
Web : www.tanscst.nic.in
E-mail : ms.tanscst@nic.in/enquiry.tanscst@nic.in

DR. R. SRINIVASAN, M.Sc., Ph.D., F.I.C.S., M.A.C.S. (USA).
Member Secretary

Ref: TNSCST/POP.SCI./14/2020-21/ 3755 29.03.2021

To
Dr.A.Punitha
Professor and Head
Dept. of Mechatronics Engg
M.A.M. School of Engg.
Siruganur, Trichy-621 105

M.A.M. SCHOOL OF ENGINEERING
01 APR 2021
SIRUGANUR, TRICHY-621 105

Sir/Madam,

Sub: Financial Assistance under Popularisation of Science (2020-21) - sanction intimation – Reg.

Ref: Your proposal dt.05.01.2021

With reference to your proposal cited above, the Council has sanctioned a sum of Rs.**20000/-** (Rupees Twenty thousand only) as financial assistance to conduct "Intra Project Expo – 2021". Kindly mention in all your communications, invitations and advertisements as that the programme is sponsored by TNSCST, Chennai and NCSTC, New Delhi.

Those who are not completed, kindly inform the exact date and venue of the programme within a week to the Council to enable us for monitoring the programme. Approved grant will be released on submission of Detailed Report, Utilization Certificate and Statement of Expenditure as per the guidelines.

Yours faithfully,

29/3/21
Member Secretary

Encl.: Guidelines and format of Utilization Certificate

Copy to:
The Principal
M.A.M. School of Engg.
Siruganur, Trichy-621 105

Dr. Punitha 1/4

General Guidelines

1. The programme should be conducted as per schedule and Report & Utilization certificate should be submitted within a month on completion of programme.
2. In all materials, invitation etc. council should be acknowledged as "***SUPPORTED by "TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY, GOVT OF TAMILNADU, CHENNAI and NCSTC,GOVT. OF INDIA, NEWDELHI".***
3. Feedback from participants may be obtained and included in the report.
4. Eminent scientists and Govt. officials may be invited for the programmes.
5. Wide publicity should be given in the newspapers about the programmes.
6. Bills and vouchers should be kept safe and should be produced as and when required.
7. Council officials will visit for monitoring the programme.
8. **On completion of the programme the following are to be submitted within a month time.**

a) Utilization Certificate - **TWO COPIES**
b) Statement of Expenditure - **TWO COPIES**

The above **TWO** (@ sl.no 8) are to be submitted, duly signed by **coordinator and the Head of the institution affixing SEAL with a covering letter.**

9. Programme Completion Report **TWO COPIES in book form** should be sent separately with following materials:

   a. Invitation
   b. Brief write up on programme (inaugural to valedictory-minimum 7pages)
   c. Press clippings
   d. Participants list & attendance
   e. Resource persons list as per schedule
   f. Feedback from the participants
   g. Photos (as album and not to be pasted)
   h. Books/materials (If any)
   i. All the above in one CD

10. In all programme related materials like banner, invitation, certificate etc, council name and logo should be used as,

TNSCST	தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம் **TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY** Government of Tamilnadu DOTE Campus, Chennai – 600 025

UTILISATION CERTIFICATE
(TWO COPIES)

1. Title of the programme :

2. Name of the Institution :

3. Name of the Grantee/Organizer :

4. Tamilnadu state council for Science and Technology sanction no., date & amount :

5. Head of the account : Part I Scheme (2020-2021)

Certified that Rs. of grants-in-aid sanctioned for the year 2020-2021 in favour of The Principal/Registrar under council letter no

has been utilized for the purpose of

for which it was sanctioned and the conditions of the grant are Fulfilled/ being fulfilled and the balance of Rs. is returned.

Signature of the coordinator

Signature of head of the Institution With seal

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai – 600 025.
Ph : 044-22301428, Telefax : 044-22301552 www.tanscst.nic.in

Dr.R.SRINIVASAN, M.Sc., Ph.D.,F.I.C.S., M.A.C.S.(USA).,
Member Secretary

Lr.No.TNSCST/SPS/AR/2019-2020 18.03.2020

To
The Principal
M.A.M. School of Engineering
Tiruchirappalli - 621 105

Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2019-2020 – approval intimation–grant release- reg.

With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and Seminar Paper in Time.

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest

Kindly send the utilisation certificate (format enclosed) and seminar paper (ref.T&C-no.5&6) on completion of the project.

Thanking you,

Yours faithfully,

18/3/20
Member Secretary.

18/3/20

Encl: a) Terms & Conditions (T&C)
b) Format of Utilisation Certificate (UC)
c) Cheque for Rs.7500/- No: 852989 dt.18.03.2020

Copy to: Individual Guides

53360

160. M.A.M. School of Engineering (1) – 7500/-

	Ms. J. Deepika Assistant Professor Dept. of Mechatronics Engineering M.A.M. School of Engineering Tiruchirappalli - 621 105	Smart Grid Deployment in Digital Energy Meter and Theft Control using Internet of Things	K. Gowsalya A. Abinas Kumar R. Arun Kumar	EME-088	The Principal M.A.M. School of Engineering Tiruchirappalli - 621 105	7500/-

S13511

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

(Established by Government of Tamilndu)

Directorate of Technical Education Campus, Chennai - 600 025

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DR. R. SRINIVASAN, M.Sc., Ph.D., F.I.C.S., M.A.C.S. (USA).

Member Secretary

Ref: TNSCST/PFA/SSW/VR/143/2018-19/ 6721 09.05.2019

M.A.M. SCHOOL OF ENGG. 14 MAY 2019 SIRUGANUR, TRICHY-621 105

To

Mrs.M.Dharani Devi

Head, Dept. of EEE

M.A.M. School of Engineering

Siruganur, Tiruchirapalli-621 105

Sir/Madam,

Sub: Partial Financial Support- "State Level Seminar on Recent Trends in Power Electronic Converters using MATLAB/Simulink" – Tiruchirapalli 13.03.2019-14.03.2019 - Approval – Reg.

Ref: Chairman approval dated 27.03.2019

With reference to the above we are happy to inform that a sum of **Rs.20000/-** has been approved as partial financial support for the above programme. i).In case of Those programmes which are already completed, you are requested to send two copies of the programme report containing details of the programme, invitations, technical details, list of participants, photographs, press release etc., and utilization certificate to the Council within one month from the receipt of this letter.ii). In case of those programmes which are to be organized a copy of the invitation and final details of the programme may be sent to the Council. The rescheduled plan should be intimated to the Council **on or before 31.05.2019.** The grant will be released after the receipt of above materials.

Any programme material printed after the receipt of this approval should acknowledge the Council's support as" Catalyzed and financially supported by Tamilnadu State Council for Science and Technology, Dept. of Higher Education, Government of Tamilnadu".

With wishes,

Yours faithfully,

9/5/19

Member Secretary

Copy to:

The Principal

M.A.M. School of Engineering

Siruganur, Tiruchirapalli-621 105

M.A.M. SCHOOL OF ENGINEERING

(Accredited by NAAC)

(Approved by AICTE, New Delhi & Affiliated to Anna University)

Siruganur, Tiruchirappalli – 621 105.

Academic year (2018-2019)

Department of Electrical and Electronics Engineering

Name of the Project/ Endowments, Chairs	Name of the Principal Investigator/Co-investivator	Department of Principal Investigator	Year of Award	Amount Sanctioned	Duration of the project	Name of the Funding Agency	Type (Government/ non-Government)
STATE LEVEL SEMINAR ON RECENT TRENDS IN POWER ELECTRONIC CONVERTERS USING MATLAB/SIMLINK	Ms. M. Dharani Devi / Mr. A. Senthamarai Kannan	EEE	2018-2019	20000	13-03-2019 &14-03-2019	TNSCST	GOVERMENT

HOD 14/3/2019.

HEAD OF THE DEPARTMENT
ELECTRICAL and ELECTRONICS ENGINEERING
MAM SCHOOL OF ENGINEERING
SIRUGANUR, TRICHY - 621 105.

PRINCIPAL

PRINCIPAL
M.A.M. SCHOOL OF ENGINEERING
SIRIGANUR, TIRUCHIRAPPALLI-621 105.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE Campus, Chennai – 600025

SEMINAR / SYMPOSIA / WORKSHOP APPROVED LIST 2018-19
BATCH II

Sl. No.	Name & Address of Co-ordinator / Organising Secretary	Title of the Programme / Venue & Date	Amount (Rs.)
1.	Dr.M.Syed Ali Dept. of Mathematics Thiruvalluvar University Serkkadu, Vellore – 632 115	International Level Conference on Mathematical Modelling, Analysis and Computing Vellore 13.12.2018-14.12.2018	20000/-
2.	Dr.M.Vasanthy Assistant Professor Dept. of Env. Biotechnology Bharathidasan University Tiruchirapalli – 620 024	National Level Seminar on Biotechnological solution for Environmental Challenges Tiruchirapalli 17.12.2018-18.12.2018	20000/-
3.	Dr.S.Rameshkumar Associate Professor Dept. of Horticulture Annamalai University Annamalai Nagar – 608 002	National Level Symposium on Horticulture in the Vanguard on Climate change and urban environment Annamalai Nagar 07.02.2019-08.02.2019	20000/-
4.	Dr.D.Prabha Assistant Professor Dept. of Environmental Sciences Bharathiar University Coimbatore – 641 046	State Level Workshop on Outreach Workshop on Sustainable Agriculture – A Translational Approach Coimbatore 26.02.2019-28.02.2019	25000/-
5.	Dr.N.Anbazhagan and Dr.S.Amudha Dept. of Mathematics Alagappa University Karaikudi-630 003	International Level Conference on Discrete and Computational Mathematics Karaikudi 20.12.2018-21.12.2018	20000/-
6.	Dr.C.D.Anuradha Director and HOD Dept. of Biotechnology Anna University Chennai – 600 025	International Level Conference on Avidadham – Metamorphosis from academia to bio-industrialization Chennai 25.02.2019-27.02.2019	25000/-
7.	Dr.M.Uma Devi Associate Professor Mother Teresa Women's University, Attuvampatty Kodaikanal – 624 102	International Level Conference on Energy Materials 2019 Kodaikanal 09.01.2019	15000/-
8.	Dr.C.Kannan Dept. of Chemistry Manonmaniam Sundaranar University, Tirunelveli-627 012	International Level Conference on Advanced Materials Chemistry at the Interfaces of Energy, Environment and Medicine Tirunelveli 30.01.2019-31.01.2019	20000/-
9.	Dr.A.V.Omprakash Professor and Head TANUVAS Madhavaram Milk Colony Chennai – 600 051	National Level Conference on Native Chicken production : Opportunities for Conservation, Productivity enhancement and commercial exploitation in view of Global Warming Chennai 19.12.2018-20.12.2018	20000/-
10.	Prof. M.Hussian Munavar Chairperson, School of Biological Sciences Madurai Kamaraj University Madurai – 625 021	International Level Conference on Genome Biology host defence bacteria to mammals Madurai 27.02.2019-01.03.2019	25000/-
11.	Prof.M.G.Sethuraman Dept. of Chemistry The Gandhigram Rural Institute, Gandhigram Dindigul – 624 302	International Level Conference on Research Initiatives in Chemistry for Sustainable Development (RICS – 2019) Dindigul 18.03.2019-19.03.2019	20000/-
12.	Dr.A.Maruthupandian Assistant Professor Dept. of Botany Periyar University Salem – 636 011	National Level Conference on 2nd Biofair – 2019 Exhibition on Bioprospecting India – 2019 Salem 07.03.2019-08.03.2019	20000/-
13.	Dr.P.Kalaiselvi Assistant Professor and Head Dept. of Pathology Dr.ALMPGIBMS University of Madras Chennai -600 113	National Level Workshop on Emerging Techniques in Molecular Pathology Chennai 14.03.2019-16.03.2019	25000/-

14.	Dr.Sr.P.Helen Chandra Associate Professor Dept. of Mathematics Jayaraj Annapackiam College for Women Periyakulam – 625 601 Theni Dt.	International Level Conference on Emerging Trends in Mathematical Sciences and Technology Theni 20.12.2018-21.12.2018	20000/-
15.	Dr.A.Punitha Tharani Head Dept. of Mathematics St.Mary's College Thoothukudi – 628 001	State Level Workshop on MATLAB based Mathematical Applications hands on training Thoothukudi 14.03.2019-15.03.2019	20000/-
16.	Dr.A.Arulraj Assistant Professor Dept. of Economics R.S.Govt. College Thanjavur – 5	National Level Seminar on Problems and Prospects : Women Health Management in India Thanjavur 24.01.2019-25.01.2019	20000/-
17.	Dr.J.Prakash Sahaya Leon Assistant Professor Dept. of Zoology Government Arts College for Men, Krishnagiri – 635 001	National Level Conference on Recent Trends in Microbial Impact on Environment (RTMIE- 2019) Krishnagiri 09.01.2019	15000/-
18.	Mrs.V.Manimozhi Associate Professor and Head, Dept. of Plant Biology and Plant Biotechnology Ethiraj College for Women Chennai – 600 008	National Level Conference and Exhibition on Herbal Biodiversity and Health Management New Strategies and approaches Chennai 07.02.2019-08.02.2019	20000/-
19.	Dr.Gayathri Harikumar Head Dept. of Commerce Guru Nanak College Chennai – 600 042	National Level Conference on Issues and Challenges in the New Millennium on Evolving Economy accounting, & business management Chennai 09.01.2019	15000/-
20.	N.Sumathi Head Dept. of Physics Government Arts College for Women, Nilakottai – 624 208	National Level Seminar on Recent Development in Nanotechnology and its applications Nilakottai 12.10.2018	15000/-

21.	Dr.G.Shamila Banu Head and Assistant Prof. Dept. of Zoology N.K.R. Govt. Arts College for Women, Namakkal – 637 001	International Level Conference on Challenges in Biological Science Namakkal 04.01.2019	15000/-
22.	Dr.A.Kangaiammal Assistant Professor Dept. of CA Government Arts College Salem -7	State Level Workshop on Outcome based education Salem 24.01.2019-25.01.2019	20000/-
23.	Dr.A.Uma Maheswari Associate Professor and Head, Dept. of Mathematics Quaid-E-Millath Government College for Women Anna Salai, Chennai – 2	State Level Workshop on Scientific Computing and Research Tools Chennai 28.02.2019	15000/-
24.	Dr.Viji Devanand Professor and HOD Dept. of Physiology Stanley Medical College Chennai – 1	IGNITE 2018 State Level Pedagogy Competition for Physiology Postgraduate cum Hands on Workshop and CME Chennai 06.12.2018-07.12.2018	20000/-
25.	Dr.(Mrs.) Fouzia Banu Dept. of Biochemistry J.B.A.S College for Women Teynampet Chennai – 600 018	National Level Conference on Beat Plastic Pollution Chennai 21.01.2019-22.01.2019	20000/-
26.	Dr.G.Helenruth Joice Assistant Professor of Physics Thiru Kolanjiappar Government Arts College, Vridhachalam Cuddalore – 606 001	National Level Conference on Emerging Trends in Renewable Energy and Innovation in Materials Science Cuddalore 15.02.2019-16.02.2019	20000/-
27.	Dr.A.T.Ravichandran Associate Professor of Physics National College Tiruchirapalli – 620 001	International Level Conference on Recent Advances in Materials Sciences Tiruchirapalli 04.02.2019-06.02.2019	25000/-
28.	Dr.S.Anguraj Assistant Professor Dept. of Commerce Angnar Anna Government Arts College, Vadachennimalai, Attur Salem – 636 121	National Level Workshop on Academic writing techniques and tools for college teachers and research scholars Salem 07.03.2019-08.03.2019	20000/-
29.	Dr.N.Thirunavukkarasu Organizing Secretary Dr.Ambedkar Government Arts College, Vyasarpadi Chennai – 600 039	National Level Conference on The values of biodiversity and their conservation Chennai 07.03.2019-08.03.2019	20000/-

30.	Dr.M.Mohamed Shabudeen Associate Professor and Head Jamal Mohamed College Tiruchirapalli – 620 020	International Level conference on Chemical and Environment Research Tiruchriapalli 19.12.2018	15000/-
31.	Dr.P.Pattinathar Dept. of Economics Vivekanandha College Tiruvedakam West Madurai	National Level Seminar on Economic and Environmental impact of plastics in India Madurai 01.02.2019	15000/-
32.	Dr.Geetha Swaminathan Stella Maris College 17, Cathedral Road Chennai – 600 086	National Level Conference on Energy – Smart Food for Humanity Chennai 05.02.2019-06.02.2019	20000/-
33.	Dr.K.Radhakrishnan Head Dept. of Zoology Government Arts College Thanthonimalai Karur – 639 005	National Level Seminar on Molecular Approaches in Conservation of biodiversity Karur 08.02.2019	15000/-
34.	Dr.C.Aiyavu Assistant Professor Dept. of Biochemistry Periyar EVR College Trichy – 620 023	International Level Conference on Cancer Inferno and its prevention strategies (ICCIPS-2019) Trichy 22.02.2019	15000/-
35.	Dr.RM.Murugappan Head, Dept. of Zoology Thiagarajar College Madurai-625 009	National Level Workshop on Molecular and Computational Biology Techniques Madurai 11.02.2019-14.02.2019	25000/-
36.	Dr.K.Regin Bose Assistant Professor Dept. of CSE Manonmaniam Sundaranar University Constituent College Kadayanallur – 627 751	State Level Workshop on Mobile Communication Kadayanallur 19.12.2018-20.12.2018	20000/-
37.	Dr.R.Senthilkumar Assistant Professor Dept. of Maths AAA College of engineering and Technology Sivakasi – 626 005	International Level Conference on Application of Mathematics in Science and Technology Sivakasi 14.03.2019-15.03.2019	20000/-
38.	Dr.Mrs.P.Kulamolial Principal Dhanapalan College of Arts and Science, Rajiv Gandhi Salai, Padur, Chennai-603 103	National Level Conference on Current Trends on Conservation of Biodiversity for food, nutrition and Health Chennai 27.02.2019-28.02.2019	20000/-
39.	Mr.S.Sitheesh Assistant Professor Dept. of Civil Engineering Dhanalakshmi College of Engineering, Navakkarai Coimbatore – 641 105	National Level Seminar on Utilization of E-waste in Construction Coimbatore 25.04.2019-26.04.2019	20000/-
40.	Dr.P.Karunakaran Professor Dept. of Aeronautical Engineering Excel Engineering College Komarapalayam Namakkal – 637 303	National Level Workshop on Global Challenges in Sustainability of Machining Processes Namakkal 16.01.2019-17.01.2019	20000/-
41.	Dr.Vasanntha Esther Rani Associate Professor and Head Fatima College Madurai-625 018	State Level Workshop on Intellectual Property Rights Madurai 21.02.2019	15000/-
42.	Dr.A.Ingimary Rita Head Dept. of Physics Holy Cross College Tiruchirapalli – 620 002	National Level Seminar on Frontiers in Geophyscis and Climage Change Tiruchirapalli 21.02.2019-22.02.2019	20000/-
43.	Dr.G.Vijaya Vice Principal Kalasalingam Institute of Technology, Anand Nagar Krishnakoil – 626 126	International Level Conference on Innovation in engineering Science and Technology Krishnakoil 15.02.2019-16.02.2019	20000/-
44.	Dr.S.Saravanan Dept. of Mechanical Engg. K.Ramakrishna College of Technology, Samayapuram Tiruchirapalli – 621 112	Internaticnal Level Conference cn Nanomaterials for Energy, Environmental and Engineering Applications Tiruchirapalli 28.03.2019-29.03.2019	20000/-
45.	Mrs.M.Dharani Devi Head Dept. of EEE M.A.M. School of Engineering Siruganur Tiruchirapalli-621 105	State Level Seminar on Recent Trends in Power Electronic Converters using MATLAB/Simulink Tiruchirapalli 13.03.2019-14.03.2019	20000/-
46.	S.A.Fathima Nuvairah Assistant Professor Dept. of ECE Mohamed Sathak Engineering College, Kilakarai – 623 806 Ramanathapuram Dt.	National Level Workshop on Emerging Trends of DIP on bioinformatics Ramanathapuram 04.02.2019	15000/-

for:

18/3/2019

HEAD OF THE DEPARTMENT
ELECTRICAL and ELECTRONICS ENGINEERING
MAM SCHOOL OF ENGINEERING
SIRUGANUR, TRICHY - 621 105.

PRINCIPAL
M.A.M. SCHOOL OF ENGINEERING
SIRIGANUR, TIRUCHIRAPPALLI-621 105.

47.	G.Renuka Assistant Professor Dept. of ECE Prince Dr.K.Vasudevan College of Engineering and Technology, Medavakkam Chennai – 127	National Level Seminar on VLSI Architecture for Image processing Chennai 27.02.2019-28.02.2019	20000/-
48.	Dr.S.Manonmani Associate Professor and Head Dept. of Chemistry PSG College of Arts and Science Civil Aerodrome Post Coimbatore – 641 014	National Level Seminar on Smart and Functional Materials Coimbatore 13.02.2019	15000/-
49.	Dr.S.Muthusundari Associate Professor Dept. of CSE RMD Engineering College Kavaraipettai – 601 206	National Level Seminar on Machine Learning with hands on workshop using weka tool and R Programming Kavaraipettai 15.02.2019-16.02.2019	20000/-
50.	Dr.S.Karunakaran Professor and Head Dept. of Petrochemical Engg RVS College of Engineering and Technology, Coimbatore – 641 402	National Level Workshop on The Economic Social and Environmental impacts of biofuel production and uses in India Coimbatore 08.03.2019	15000/-
51.	Dr.N.Nallusamy Professor Dept. of Mech. Engg. Sri Sivasubramaniya Nadar College of Engineering Rajiv Gandhi Salai Kalavakkam – 603 110	International Level Conference on Sustainable energy resources, materials and technologies, ISERMAT 2019 Kalavakkam 14.03.2019-15.03.2019	20000/-
52.	Mrs.R.Sivaranajani Associate Professor Dept. of ECE Sethu Institute of Technology Pulloor, Kariapatti Virudhunagar – 626 115	National Level Seminar on Satellite Remote Sensing in Climate Virudhunagar 03.01.2019	15000/-
53.	Dr.K.Sumathi Associate Professor Dept. of ECE Sri Sairam Engineering College, West Tambaram Chennai – 600 044	National Level Workshop on Recent Trends in Artificial Intelligence and Robotics Chennai 14.03.2019-15.03.2019	20000/-
54.	Dr.S.Susai Rajendran St.Antony's College of Arts and science for Women Dindigul – 624 005	National Level workshop Intellectual Property Rights & Research Proposal Writing Dindigul 02.03.2019	15000/-
55.	Dr.G.Umarani Srikanth Professor Dept. of CSE St.Peter's College of Engineering and Technology Avadi – 600 054	International Level Conference on Innovation in Information and communication technology ICIICT 2019 Avadi 25.04.2019-26.04.2019	20000/-
56.	R.Tamilselvi Assistant Professor Dept. of ECE Sri Ranganathar Institute of Engineering and Technology Coimbatore -641 110	State Level Seminar on Digital Image and Video Processing Coimbatore 01.03.2019	15000/-
57.	Dr.N.Rajkumar Associate Professor Dept. of CSE SVS College of Engineering Arasampalayam Coimbatore – 642 109	State Level Workshop on Cyber Safe Society for Women Coimbatore 14.03.2019-15.03.2019	20000/-
58.	E.Vidhyasri Assistant Professor Dept. of Mechanical Engg. Shree Venkateswara Hi-tech Engineering College Othakuthirai , Gobi-638 455	State Level Seminar on Co-firing with a Co2 Dispassionate biomass to evade global warming Gobi 19.03.2019	15000/-
59.	Dr.S.K.Mohan Associate Professor Dept. of Chemical Engineering The Kauvery College of Engineering, Salem – 636 453	State Level Seminar on Role of Biotechnology for Environmental Protection in Chemical Industries Salem 06.02.2019-07.02.2019	20000/-
60.	Prof.C.J.Vignesh Assistant Professor Dept. of EEE KPR Institute of Engineering and Technology, Arasur Coimbatore – 641 407	National Level Workshop on Recent Advancements in Automation and Industrial Revolution V4.0 Coimbatore 21.03.2019-22.03.2019	20000/-

61.	Dr.Nirmala Rebecca Paul Associate Professor and Head, Dept. of Maths Lady Doak College Madurai – 625 002	International Level Conference on New Frontiers in Mathematical and Computing Madurai 18.02.2019-19.02.2018	20000/-
62.	Mrs.S.Ananthi Associate Professor Dept. of Physics Nandha College of Technology Erode-638 052	National Level Seminar on Current Trends in Materials Science Erode 29.03.2019	15000/-
63.	Dr.K.Poonkudi Assistant Professor in Chemistry Nallamuthu Gounder Mahalingam College Pollachi – 642 001	Advanced Materials for Energy, Environment and Medicinal Applications Pollachi 23.04.2019-24.04.2019	20000/-
64.	Dr.V.Gomathi Professor and Head Dept. of CSE National Engineering College K.R.Nagar Tuticorin – 628 503	National Level Symposia on Componec'19 Tuticorin 19.02.2019-20.02.2019	20000/-
65.	Dr.S.Nirmala Professor and Principal Muthyammal Engineering College, Kakkaveri Rasipuram Namakkal-637408	National Level Seminar on Advanced Innovation in Energy Security & Management for Sustainable Future Namakkal 28.03.2019-29.03.2019	20000/-
		Total	**1235000/-**

M.A.M. SCHOOL OF ENGINEERING

An ISO 9001 : 2008 Certified Institution

Date : 09.01.2019

Dr.P.Ranjith Kumar, M.E., Ph.D.,
Principal

To,

Dr.R.Srinivasan,

Member Secretary,

Tamilnadu State Council For Science And Technology,

DOTE Campus,

Guindy, Chennai – 600 025

Sir,

Sub: Application for the grant of Partial Financial Assistance for conducting seminar – MAM School of Engineering, Trichy – Reg.

Herewith, I am sending the application for conducting Two days Seminar on " Recent Trends in Power Electronic Converters using MATLAB/SIMULINK" in March 2019 and request to kindly consider and sanction a partial grant to meet the expenditure.

The College Management has been kind enough to provide necessary facilitites for the participants.

I request you to kindly consider the application favourably.

Thanking You,

Yours faithfully

PRINCIPAL

PRINCIPAL
M.A.M. SCHOOL OF ENGINEERING
SIRIGANUR, TIRUCHIRAPPALLI-621 105.

Trichy - Chennai Trunk Road, Siruganur, Tiruchirappalli - 621 105.
0431 - 2910218 / 2910219, Mob : 7708000972
http://www.mamse.co.in Email : principal@mamse.co.in

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Autonomous body of Govt. of Tamilnadu)
DOTE Campus, Guindy, Chennai – 600 025.

Application for the grant of Partial Financial Assistance for Conference/ Seminar/ Symposia/Workshop

1. Name of the Organisation& Address : M.A.M SCHOOL OF ENGINEERING, SIRUGANUR, TIRUCHIRAPPALLI-621105. Email: ranjjith@gmail.com Mobile : 9894958888

2. Name of the Coordinators& Address : Mrs.M.Dharani Devi, Head of the Department /EEE M.A.M SCHOOL OF ENGINEERING, SIRUGANUR, TIRUCHIRAPPALLI – 621105. Email : daranidevi633@gmail.com Mobile: 8056402523

3. Nature of the activity (Conference/Seminar/Workshop, etc) : Seminar

4. Level (Institutional/State/National/Inter National) : State Level

5. Duration with dates : 2Days/ 13.03.19 & 14.03.19

6. Topic : Two Days Seminar on **"Recent Trends in Power Electronic Converters Using MATLAB / SIMULINK"**

7. Nature of participants (Teachers/Researchers /Industrialists /CollegeStudent etc.) : Faculty, Students and Industrialists

8. Expected number of participants : 100

9. Name designation, and address of speaker, lecturers etc.(Separate sheet to be used)

Name	Designation	Organization	Activity
Dr. V. Malathy	Professor	Anna University, Madurai	• Introduction of power electronic converters • Introduction to MATLAB/Simulink • Design of open loop controllers

Dr.N.Siva Kumaran	Professor	National Institute of Technology, Trichy	• Phase Controlled Rectifier • Choppers • Inverters
Dr.S.N. Deepa	Professor	Anna University, Coimbatore	• AC Voltage regulator • Cyclo Converters • FACTS Controllers • Solid State Drives for Various Controllers
Dr. R. Nagarajan	Professor	Gnamani College of Engineering, Namakkal	• Power quality Issues • Power converters for renewable energy systems

10. Total expected expenditure:

SNO	Head of Expenditure	Cost Estimation
1	TA/DA to resource persons	Rs.20,000/-
2	Honorarium to Resource Persons	Rs.20,000/-
3	Accommodation and Food for outstation participants	Rs,30,000/-
4	Brochures and Printing charges	Rs.8,000/-
5	Postal charges	Rs.7,000/-
6.	Notepad Kit	Rs.10,000/-
7	Refreshment	Rs.10,000/-
8	Photo/Video	Rs.8,000/-
9	Miscellaneous	Rs.5,000/-
10	Total	Rs.1,18,000 /-

11. a) Assistance sought from the State Council & Head of Expenditure : Rs.40,000/-

SNO	Head of Expenditure	Cost Estimation
1	TA/DA to resource persons	Rs.10,000/-
2	Honorarium to Resource Persons	Rs.10,000/-
3	Accommodation and Food for outstation participants	Rs,20,000/-
4.	Notepad Kit	Rs.10,000
	Total	Rs.50,000/-

b) Assistance from other agencies expected/ obtained & head of expenditure for which the grant was sanctioned /requested. : Nil

12. Any other points for consideration (Social relevance, beneficiaries, employment potential, improvement of productionor quality, etc) :

This Seminar mainly reveals various methods of modeling, circuit analysis approaches and numerical methods used in different simulation techniques. Several general purpose simulators such as MATLAB-SIMULINK, SIMNON, EMTP, EMTDC, SPICE, SABER etc. and dedicated power electronic circuit simulators like ATOSEC5, PSIM, SIMUPELS, KREAN will be discussed in brief. Several demonstrative examples using different simulators are provided to show the importance and ease of simulation in power electronic converters. Considering the use of hardware in simulation which may be the essential future demand in power electronic converter systems, some new developments are introduced to show the wide scope of research and developments.

13. Authorized Person responsible for submission of report, Utilisation Certificate etc. : Dr.P.Ranjith Kumar,
Principal,
M.A.M SCHOOL OF ENGINEERING,
SIRUGANUR,
TIRUCHIRAPPALLI-621 105.
Email: ranjjith@gmail.com
Mobile : 9894958888

14. In favour of whom the grant is to be given : Dr.P.Ranjith Kumar,
Principal,
M.A.M SCHOOL OF ENGINEERING,
SIRUGANUR,
TIRUCHIRAPPALLI-621 105.
Email: ranjjith@gmail.com
Mobile : 9894958888

Signature of the Coordinator

Station : Tiruchirappalli

Date : 09.01.19

Signature of the Head of the Institution/
Organization /Agency
PRINCIPAL
M.A.M. SCHOOL OF ENGINEERING
SIRUGANUR, TIRUCHIRAPPALLI-621 105.

M.A.M.SCHOOL OF ENGINEERING

(Accredited by NAAC)
(Approved by AICTE, Affiliated to Anna University, Chennai)
Trichy-Chennai Trunk Road, Siruganur, Tiruchirappalli-621 105.

Department of Elactrical and Electronics Engineering

&

Tamil Nadu State Council for Science and Technology,
Dept. of Higher Education, Government of Tamil Nadu

Cordially invite you for the inauguration of the National Level Seminar on

"Recent Trends in Power Electronic Converters Using MATLAB/SIMULINK"

Dr. V . MALATHI, M.E ., Ph.D.,

HoD EEE,Anna University Regional Campus,Madurai.
has kindly consented to inaugurate a national level seminar
at 10.00AM, on 17th June 2019,
Venue: College Auditorium

AI. Haj. M.A. Peer Mohamed, B.E.,M.B.A.,
Correspondent,M.A.M.School of Engineering.

Dr. P. Ranjith Kumar, M.E.,Ph.D.,
Principal, M.A.M. School of Engineering.

Mr. A. Senthamarai Kannan, M.E.,
Asso. Prof./EEE.,
M.A.M.School of Engineering.
Organizing Secretary

Mrs.M.Dharani Devi, M.E.,
Asso. Prof./EEE.,
M.A.M.School of Engineering.
Co ordinator

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilndu)
Directorate of Technical Education Campus, Chennai - 600 025
Phone : 044 - 2230 1428
Telefax : 044 - 2230 1552
Web : www.tanscst.nic.in
E-mail : enquiry.tanscst.nic.in / ms.tanscst@nic.in

DR. R. SRINIVASAN, M.Sc., Ph.D., F.I.C.S., M.A.C.S. (USA).
Member Secretary

Lr.No.TNSCST/SPS/AR/2018-2019/ 8702 26.08.2019

To

The Principal
M.A.M. School of Engineering
Siruganur
Tiruchirapalli-621105

Sir/Madam,

Sub: TNSCST- Student Project Scheme -2018-2019- Utilisation Certificate – Reg.
Ref: Councils approval dt.25.01.2019

With reference to the above scheme, your students have been approved with project(s) as per terms and conditions of the grant; you have to submit the utilization certificate in the prescribed format (already sent). So far we have not received the same. Kindly arrange to send the same on or before **06.09.2019**. If already submitted, submit the copy of the same. Others should return the approved grant as demand draft drawn in favour of the **"The Member Secretary, Tamil Nadu State Council for Science and Technology"** payable at Chennai.

Mr.D.Mahalingam Assistant Professor Dept. of Mechatronics Engineering	Automation for safety in heavy vehicles	G.Dilon Antony Nithyanantham M S.Marudhaselvam M.Maharaja	7500/-

Failing which Council will view seriously.

Thanking you,

Yours faithfully,

Member Secretary

EME-041

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMIL NADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai - 600 025
Phone : 044 - 2230 1428
Telefax : 044 - 2230 1552
Web : www.tanscst.nic.in
E-mail : ms.tanscst@nic.in/enquiry.tanscst@nic.in

DR. R. SRINIVASAN, M.Sc., Ph.D., F.I.C.S., M.A.C.S. (USA).
Member Secretary

Lr.No.TNSCST/SPS/AR/2018-2019/ 8701 26.08.2019

To

The Principal
M.A.M. School of Engineering
Siruganur
Tiruchirapalli - 621 105

Sir/Madam,

Sub: TNSCST- Student Project Scheme -2018-2019- Utilisation Certificate – Reg.
Ref: Councils approval dt.25.01.2019

With reference to the above scheme, your students have been approved with project(s) as per terms and conditions of the grant; you have to submit the utilization certificate in the prescribed format (already sent). So far we have not received the same. Kindly arrange to send the same on or before **06.09.2019**. If already submitted, submit the copy of the same. Others should return the approved grant as demand draft drawn in favour of the **"The Member Secretary, Tamil Nadu State Council for Science and Technology"** payable at Chennai.

A.Jothivel Assistant Professor	An increasing the engine speed by using flywheel booster	S.Ranjithkumar S.Denis I.Ajay Prasanth M.Aslam Nijamudeen	7500/-

Failing which Council will view seriously.

Thanking you,

Yours faithfully,

Member Secretary

EEE-064

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்
TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
(Established by Government of Tamilnadu)
Directorate of Technical Education Campus, Chennai – 600 025.
Ph : 044-22301428, Telefax : 044-22301502 www.tanscst.nic.in

Dr.R.SRINIVASAN, M.Sc., Ph.D.,F.I.C.S., M.A.C.S.(USA).,
Member Secretary

Lr.No.TNSCST/SPS/AR/2018-2019 18.02.2019

To
The Principal
M.A.M. School of Engineering
Siruganur
Tiruchirapalli - 621 105

Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2018-2019 – approval intimation–grant release- reg.

With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. Kindly read and ensure adherence to the terms and conditions such as submission of UC and seminar paper in time.

Kindly find enclosed here with the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest.

Kindly send the utilisation certificate (format enclosed) and seminar paper (ref.T&C-no.5&6) on completion of the project.

Thanking you,

Yours faithfully,

18/2/19

Member Secretary.

Encl: a) Terms & Conditions (T&C)
b) Format of Utilisation Certificate (UC)
c) Cheque for Rs 15000/- No: 795055 dt:18.02.2019.

Copy to: Individual Guides

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTE Campus, Chennai-600025

STUDENT PROJECTS SCHEME 2018-2019

Terms and Conditions of the grant

1. The project team **SHOULD NOT** change the topic of the project and should not deviate from the objectives of the sanctioned proposal. In the event of any such changes, sponsoring will be treated as cancelled and the college should return the sanctioned amount to TNSCST.
2. Every sanctioned project is allotted with a Project code Number. Please refer this number while corresponding with TNSCST.
3. The project sanction letter and the money will be sent to the Principal/Registrar of the institution with a copy to the Project guide.
4. The sanctioned project should be completed and the report should be submitted before end of **APRIL 2019.**
5. The state council will review the progress of the project at any time before completion of the project.
6. On completion of the project, 2-3 pages seminar paper (500 words, Times New Roman, 12 font size, single column, margins left- 2.5cm, right-2cm, top-2cm & bottom- 2cm, Word format without any figures & tables) should be submitted/uploaded in the council website.(link will be activated in due course of time) by mentioning the project code.
7. Utilization certificate (**UC**) should be sent to The Member Secretary, Tamilnadu State Council for Science and Technology, DOTE Campus, Chennai-600025. The Utilization Certificate should be signed by the GUIDE, HOD and PRINCIPAL/REGISTRAR/DEAN with official **seal** as the case may be.
8. The guides are responsible for timely submission of SEMINAR PAPER and UC.
9. The seminar paper will be included in the form of **PROCEEDINGS** which will be brought out during Seminar cum Exhibition, only for those who submit the **UC**
10. **Anyone student of** the project team should present and exhibit the findings before the experts in the Seminar cum Exhibition which will be organized during **July/August 2019.**
11. The project model /fabrication/equipment are all properties of the council and therefore these are to be kept safely in the college and it should be handed over to the council with necessary details and bills as and when required.
12. During the Seminar cum Exhibition," best project award and certificate" will be presented to the outstanding selected projects and completion certificates to all.
13. The council reserves the right to terminate the project at any stage if it is convinced that the grant has not been properly utilized or appropriate progress is not being made. In addition, the Council may designate officer/an Expert to review the work done.

14. If the GUIDE wishes to leave the Institution where the project is based, the Institute/GUIDE will inform the same to the Council and in consultation with Council, evolve steps to ensure successful completion of the project, before relieving the GUIDE. The Council reserves the right to order verification/audit of accounts by any Officer authorized by it. The bills and accounts shall be kept safely.

15. Unspent money if any should be refunded in the form of DD drawn in favour of The Member Secretary, Tamilnadu State Council for Science and Technology, DOTE Campus, CHENNAI-600025 payable at CHENNAI.

16. Students/faculties are requested to publish the research papers emerging out of the project work in leading Journals. **The council will encourage them through financial support in addition to project grant if they publish in leading/peer review journals.**

17. Investigators must acknowledge the Council in reports and technical/scientific papers publishing based on the research work done under the project

18. If the results of research are to be legally protected by way of patent/copy rights etc. the results should not be published in any form without action being taken to secure legal protection for the research results.

19. The state council encourages the students/faculties, who want to protect the results/invention created out of the project through its Patent Information Centre free of cost. (IPR facilitation Format enclosed).

20. The knowledge generated from the project will be the property of TNSCST and should be properly acknowledged. Transfer to technology generated shall be done in consultation with the Council.

21. The recipient organization shall comply, with such other conditions as may be suggested in the 'guidelines' issued in this regard from time to time.

22. All further correspondence should be addressed to **The Member Secretary, Tamilnadu State Council for Science and Technology, DOTE Campus, CHENNAI-600025** and should include project code.

MEMBER SECRETARY

தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

Directorate of Technical Education Campus, Chennai – 600 025

PATENT INFORMATION CENTRE

PATENT FACILITATION FORM

PIC Reference Number:
(by Office)

Date:

Applicant(s)	Address	Nationality
Name: Contact no.: Email:		
Inventor(s)	**Address**	**Nationality**
Name: Contact no.: Email:		
Title of the invention		
Field of invention		

- Have you approached any other institution for patenting this invention? (If yes, provide details and outcome).

Is the proposed invention novel (new)?		
i)	The Invention Is An Addition To The Existing Product/Process	YES/NO
ii)	The invention is a modification of the existing product	YES/NO
iii)	The invention is entirely new	YES/NO
Whether the proposed invention contains an inventive step?		YES/NO
Whether the proposed invention is capable of industrial application?		YES/NO
For what part of the invention, protection is needed? (tick the relevant)		
i)	Product	
ii)	Method(Process)	
iii)	Both	

Requirements to Draft Complete Specification

1.	Brief description of your invention Note : disclose the best method	
2.	Include diagrams (with proper labeling and brief description) (example : diagrams showing technical implementation, system architecture or any other diagrams)	
3.	Any experimental results available? (example : chart, graphs etc)	YES/NO
4.	what are the advantages of the present invention over existing technologies?	
5.	Unique feature of the invention	
6.	Chemical Structure (if chemical compounds involved)	
7.	If the proposed invention involves biological material, kindly fill the below details	
i)	whether deposition of the material to international depository authority of india made?	YES/NO
Ii)	Mention the characterstics of the biological material	
Iii)	What is the source and geographical origin of the biological material?	
8.	Indicate the current state of art (status of the invention)	Completed / In-Progress
9.	Is traditional knowledge involved? (usage of ayurvedic/siddha/unani knowledge)	YES/NO
10.	Present Stage Of Development (Including Scale Of Operation / Production, Validation, Quality Etc.)	
11.	Others (IF ANY)	

**Include additional sheets for explanation

Terms of service:

1. The applicant should bear the prescribed Government fee at the time of filing.
2. The applicant should strictly follow the timelines.
3. The council will provide any assistance sought for filing and further information till grant.
4. Any intimation from the Patent Office will be to the applicant's mailid/address. Hence, it is the applicant's responsibility to take over the communication from the Patent Office and get assistance from the state council.
5. The council is for facilitating IP filing, and is not responsible for any adverse office actions and hence cannot give assurance for grant of an application.

I / We certify and declare that all the information provided above are true and correct to the best of my / our knowledge and belief.

Signature with name

Date:
Place:

Patent Information Centre
Tamilnadu State Council for Science and Technology
DOTE Campus
Chennai-600025.
Tel: 044–22301428, Fax: 044 – 22301552
Email: enquiry.tanscst@nic.in, ms.tanscst@nic.in Website: www.tanscst.nic.in

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DOTE CAMPUS, CHENNAI - 600 025

STUDENT PROJECT SCHEME 2018-2019
UTILISATION CERTIFICATE

(TWO COPIES)

1. Name of the guide and address :

2. Name of the student(s) :

3. Title of the project :

4. Project code :

It is certified that a sum of Rs..... (Rupees) Sanctioned by the council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs. .....remaining unutilized is refunded.

Signature of the guide	Signature of the HOD	Signature of the REGISTRAR/PRINCIPAL/DEAN With SEAL

M.A.M. School of Engineering, Siruganur

	A.Jothivel Assistant Professor M.A.M. School of Engineering Siruganur Tiruchirapalli - 621 105	An increasing the engine speed by using flywheel booster	S.Ranjithkumar S.Denis I.Ajay Prasanth M.Aslam Nijamudeen	EEE-064	The Principal M.A.M. School of Engineering Siruganur Tiruchirapalli - 621 105	7500/-
✓	Mr.D.Mahalingam Assistant Professor Dept. of Mechatronics Engineering M.A.M. School of Engineering Siruganur Tiruchirapalli-621105	Automation for safety in heavy vehicles	G.Dilon Antony Nithyanantham M S.Marudhaselvam M.Maharaja	EME-041	The Principal M.A.M. School of Engineering Siruganur Tiruchirapalli-621105	7500/-

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
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4. Project code : EME - 041

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AUTOMATION FOR SAFETY IN HEAVY VEHICLE

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Abstract: This paper looks into the developments and trends in automation of vehicles which can control collision detection of vehicles. It is an attempt to provide a detailed research in this area. This paper explains the initiatives for automation in different levels of transportation system on vehicle level automation. Driver's comfort, increased safety is among the most important factors of automation. With reference to the analytical survey of the published research, this paper will try to provide a more clear understanding of impact of automation system on each of the above mentioned factors. The detail of sensory system requires dedicated paper due to its broad range and is not addressed in this paper.

Keywords: Automation Pedestrian AEB Operator sequence diagram Distributed cognition Complexity, Driver Assist System, collision detection, collision avoidance

I.Introduction

In the beginning of 21st century other advanced features collision warning and avoidance system were introduced into their products. However, there are many issues that need to be addressed before driving assistance system can be widely introduced in the future vehicles. The theoretical and experimental research on control issues is in a well developed stage. The main challenge in driver assistance system is the sensory issues. Today's technology has addressed many of the sensory issues with many still to be solved. The impact of automation on the driver necessitates an understanding of human factors in relation with the automated driving controls or assists. Research on human factor is very important and demands a lot more work. Legal and institutional aspects of automated vehicles are very important concern.

In the late 1980s and beginning of 1990s, state and private funded programs started more focused research in United States, Europe and Japan, to bring the idea of automated vehicles closer to reality. The main initiative was to improve the safety with automation. The very well organized and futuristic thorough research in this era, along with the rapid advancements in electronics and sensor technology, contributed to a more vivid understanding of the difficulties and potentials of such systems. Although the research in this period was focused more advanced highways, it later switched to intelligent vehicle initiative (IVI). While a lot has been said about improved safety and higher comfort level with automation in different papers, sometimes inconsistencies exist

between different points of views on these matters.

II. Scope

This paper looks into the current research underway in certain areas of vehicle automation and their impact on comfort and safety. Collision avoidance and collision warning are the main focus of the paper. The paper should serve as the introduction for those who are less familiar with the subject. While it is not possible to cover the large number of publications in this area, the key findings of the research are included. The focus is on more recent literature. The paper does address the issues related to sensory requirements as it is a vast area and requires a dedicated paper that investigates them.

III. Vehicle Automation

While developments in crash control have led to vehicle designs (car) that are much safer in the event of collision, they cannot reduce the chances of a collision. Vehicle accidents still occur every day, the minor ones cause economical losses to the society and serious ones causes injuries or loss of lives. Rear-end collision, for example account for approximately 1.8 million crashes annually. More strict traffic regulations and safety standards can be helpful in preventing the accidents to a certain degree. Many accidents can be avoided if the human driver limits can be overcome by automating some parts of the driving tasks with safety initiatives. This initiative has encouraged extensive research in collision warning and collision avoidance system.

The Collision warning system can warn the driver of an imminent collision. Statistical accident data show that a considerable portion of accidents is caused by driver's delay in recognizing or judging the "dangerous" situation. In forward collision, for example, it is claimed that if an extra half a second of warning time is provided to a driver, 60% of collision can be avoided and with one second of warning time it increases to 90%. Therefore, it is believed that providing some sort of appropriate warning to the driver can help reduce the probability and severity of vehicle accidents. Car companies are involved in major research plans to implement Collision Warning System, which can increase safety. Major regulatory state agencies are also interested in this area to improve safety on the roads. Collision Warning System has been in practice in commercial heavy truck fleets and buses in the United States for a few years now and has been very successful A more futuristic measure to prevent collisions is a collision avoidance system that can perceive the dangerous situation and automatically control the vehicle out of danger. When the driver fails to perform the necessary emergency maneuvered, a collision avoidance system will take the control and brakes and/or steers the vehicle to avoid a collision. The control paradigms that can perform slight emergency man oeuvres are in an acceptably developed stage. However, more robust situation-recognition systems are required before such systems can find practical use in every vehicle. Very robust and reliable sensory system is essential for reliable operation of the system. Liability issues are again more

important for collision avoidance systems as they can potentially overrun driver's decision and result in some unforeseen scenarios. Therefore liability issues are stronger challenges than technical barriers.

In the following sections, control issues, human factor concerns and liability are discussed in detail. Sensory requirements need dedicated publications and are not discussed in this paper.

IV. Vehicle Automation Control Scheme

The most researched area in vehicle automation is the control methodology. Once the sufficient information is gathered about the state of a vehicle with respect to other vehicles, a control scheme is required to either assist the driver in controlling the vehicle or autonomously control the vehicle itself. In automated systems, the higher level controller determines the desired motion of the vehicle for lower level controllers which control the engine, brakes, steering etc. therefore design of the higher-level controller requires a good understanding of the vehicle environment. Design of the lower level controller requires a good model of the vehicle itself.

A. Higher-level Controller

While lower level controllers are very similar, the differences in control design are reflected more in higher level control design. Higher eve controller processes the inputs from the driver, the infrastructure, other vehicles and the on board sensors and sends the appropriate commands to the brake and throttle control. Mass of the heavy duty vehicle can vary considerably in different loading scenarios and mild road grades can be serious loading for a heavy vehicle. Good estimation of mass and road grade can improve the performance of the higher level controller by reducing the chance of issuing infeasible control commands. The proper spacing is mostly determined by human factor issues which will be discussed later in this paper. Once the desired spacing or velocity is determined, the higher level controller calculates the desired acceleration that smoothly and quickly reduces or increases the spacing or velocity to their desired values. To imitate human behavior fuzzy or neuro controllers can e trained for spacing adjustments as suggested in. However many higher level controllers are based on mathematical models. For example, application of non-linear control schemes and optimal dynamic back stepping control.

The more challenging problems of automation emerge when the impact of such automation on the drivers of the involved vehicles is being considered. Section IV elaborates on the human factor side of automation.

V. Human Factor Issues

Goodrich and Boer categories driver assist systems into driver assist systems that are initiated by the driver to safely promote comfort and assist systems which are initiated by the system to comfortably promote safety. Human factor studies play a major role on the successful implementation of both types.

The driver is responsible for supervision of the automated tasks in advanced automated driving assist. The assist system normally relieves the driver from some routine physical tasks in driving, for example, maintaining a steady headway from the preceding vehicle.

Designing a collision avoidance system is bit complicated as it is the system responsible for monitoring driver's actions or consequences of such actions and to identify if a collision avoidance maneuvered is necessary. A collision warning system has the additional responsibility of communicating the situation to the driver so the driver can take timely and safe action. A very good understanding of driver's psychology and behavioral habit is therefore necessary. The research should determine the baseline human driver behavior and then evaluate the affect of different designs on driver's work load.

Human factor issues are not exclusive to driver assist systems. Many sectors of technology conduct Human Factor research for their products. Test results for identifying human driver's driving habits are available and could be used to establish a baseline for performance of the driver-assist system. Timely and accurate determination of driver alertness can increase the safety and improve reliability of system by reducing false alarms.

VI. Legal Issues

The discussed driver assist system can improve the safety but may change the character of vehicle accidents. Therefore, there is a possibility that cost of liability insurance for the manufacturers might discourage the rapid growth of driver assist system. The available published research reports that analyze the legal and institutional difficulties of driver assist systems are very few. The few existing reports and papers mainly discuss the legal issues of automated highways rather than vehicle level automation. Syverud explains how different driver assist information system might shift the liability distribution toward the manufacturer; he proposes the techniques that manufacturers can use to reduce the liability costs without massive tort law reforms.

1. Providing product warning;

2. Recording and documenting the performance of assist system;

3. Buying liability insurance covering the warning system;

4. Having an independent producer/installer with fewer assets produce/install the system after the vehicle is purchased by the consumer;

5. Persuading the state legislatures to enact laws that failure of a warning system cannot be used as a defense in a negligence suit;

6. Cooperating with federal agencies in implementing driver warning systems in accordance with guidelines promulgated by federal government.

There are common/particular interests between the government agencies, private companies, academic and research institutes in advanced vehicle control systems. The

government agencies are more interested in increased road safety and improved traffic condition.

VII. Conclusion

In this paper the recent trends of research on development of driving assist systems was reviewed. The focus was on collision warning and collision avoidance systems and their impact on driver's comfort, safety and traffic flow. The vehicle based assist systems have few barriers to pass before they can be used widespread. The benefits and deficits of such systems are not completely understood yet. The ways in which Automatic Collision Control systems can improve the driver's comfort and the different viewpoints of the safety are discussed. A safe and comfortable design requires longer headway between the vehicles. Abiding to this , design will decrease road capacity. Collision warning and avoidance systems have the added complexity that they should be able to recognize a hazardous situation and communicate it to the driver. The human factor issues are of great importance and therefore a section in this paper was dedicated to this subject. This review of the research on driver assist systems, collision warning and avoidance systems, provides a convenient way of evaluation of the recent research advances in the field. It serves as thorough reference for researchers and engineers in automotive engineering and will also be an introduction for those who are less familiar with the subject.

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AN INCREASING THE ENGINE SPEED BY USING FLYWHEEL BOOSTER

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Abstract: Flywheel is a circular wheel attached to the crankshaft of the engine that stores the mechanical energy of the engine during power stroke and imparts that stored energy to the preparatory strokes (i.e. suction, compression and exhaust stroke) during the engine working. It is made of steel or cast iron. It is mainly used in the engine and fabricating machines like rolling mills, punching machines, shear machines, presses etc. For example, in I.C. engines, the energy is developed only in the power stroke which is much more than engine load, and no energy is being developed during the suction, compression and exhaust strokes in case of four stroke engines. The excess energy is developed during power stroke is absorbed by the flywheel and releases it's to the crank shaft during the other strokes in which no energy is developed, thus rotating the crankshaft at a uniform speed. The aim of the project is to design a flywheel for a multi cylinder petrol engine flywheel using the empirical formulas. A 2D drawing is drafted using the calculations. A parametric model of the flywheel is designed using 3D modeling software Pro/Engineer. Analysis is done for two materials Cast Iron and Aluminum Alloy A360 to compare the results. Pro/ENGINEER is the standard in 3D product design, featuring industry-leading productivity tools that promote best practices in design. ANSYS is general-purpose finite element analysis (FEA) software package. Finite Element Analysis is a numerical method of deconstructing a complex system into very small pieces (of user-designated size) called elements.

I. Introduction to IC Engines

The internal combustion engine is an engine in which the combustion of a fuel (normally a fossil fuel) occurs with an oxidizer (usually air) in a combustion chamber. In an internal combustion engine the expansion of the high-temperature and -pressure gases produced by combustion applies direct force to some component of the engine, such as pistons, turbine blades, or a nozzle. This force moves the component over a distance, generating useful mechanical energy.

The internal combustion engine (or ICE) is quite different from external combustion engines, such as steam or Sterling engines, in which the energy is delivered to a working fluid not consisting of, mixed with, or contaminated by combustion products. Working fluids can be air, hot water, pressurized water or even liquid sodium, heated in some kind of boiler.

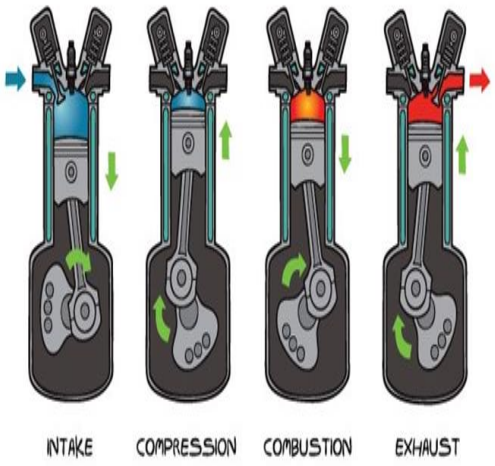
II. Applications

Internal combustion engines are most commonly used for mobile propulsion in vehicles and portable machinery. In mobile equipment, internal combustion is advantageous since it can provide high power-to-weight ratios together with excellent fuel energy density. Generally

using fossil fuel (mainly petroleum), these engines have appeared in transport in almost all vehicles (automobiles, trucks, motorcycles, boats, and in a wide variety of aircraft and locomotives).

Where very high power-to-weight ratios are required, internal combustion engines appear in the form of gas turbines. These applications include jet aircraft, helicopters, large ships and electric generators.

Four Stroke Configurations Operation



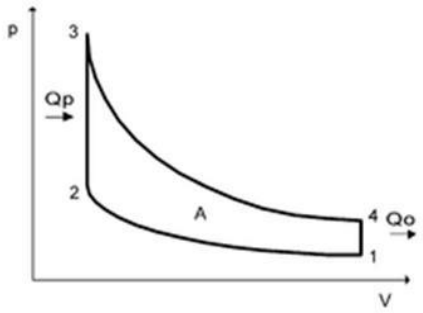
Four-stroke cycle (or Otto cycle)
1. Intake
2. Compression
3. Power
4. Exhaust

1. **Intake:**
   Combustible mixtures are emplaced in the combustion chamber
2. **Compression:**
   The mixtures are placed under pressure
3. **Combustion (Power):**
   The mixture is burnt, almost invariably a *deflagration*, **although** a few systems involve *detonation*. The hot mixture is expanded, pressing on and moving parts of the engine and performing useful work.
4. **Exhaust:**
   The cooled combustion products are exhausted into the atmosphere Many engines overlap these steps in time; jet engines do all steps simultaneously at different parts of the engines.
5. **Combustion:**
   All **internal combustion engines** depend on the exothermic chemical process of combustion: the reaction of a fuel, typically with oxygen from the air (though it is possible to inject nitrous oxide in order to do more of the same thing and gain a power boost). The combustion process typically results in the production of a great quantity of heat, as well as the production of steam and carbon dioxide and other chemicals at very high temperature; the temperature reached is determined by the chemical makeup of the fuel and oxidizers (see stoichiometry), as well as by the compression and other factors.
6. **Diesel Ignition Process:**
   Diesel engines **and** HCCI **(Homogeneous** charge compression ignition) engines rely solely on heat and pressure created by the engine in its compression process for ignition. The compression level that occurs is usually twice or more than a gasoline engine. Diesel engines will take in air only, and shortly before peak compression, a small quantity of diesel fuel is sprayed into the cylinder via a fuel injector that allows the fuel to instantly ignite. HCCI type engines will take in both air and fuel but continue to rely on an unaided auto-combustion process, due to higher pressures and heat.

III Engine Cycle

Four-stroke

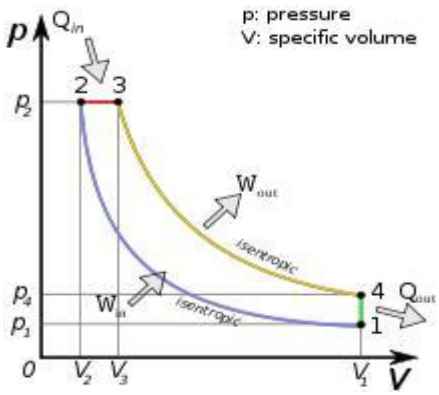
Idealized Pressure/volume diagram of the Otto cycle showing combustion heat input Qp and waste exhaust output Qo, the power stroke is the top curved line, the bottom is the compression stroke Engines based on the four-stroke ("Otto cycle") have one power stroke for every four strokes (up-down-up-down) and employ spark plug ignition. Combustion occurs rapidly, and during combustion the volume varies little ("constant volume"). They are used in cars, larger boats, some motorcycles, and many light aircraft. They are generally quieter, more efficient, and larger than their two-stroke counterparts.



The steps involved here are:

1. Intake stroke: Air and vaporized fuel are drawn in.
2. Compression stroke: Fuel vapor and air are compressed and ignited.
3. Combustion stroke: Fuel combusts and piston is pushed downwards.
4. Exhaust stroke: Exhaust is driven out. During the 1st, 2nd, and 4th stroke the piston is relying on power and the momentum generated by the other pistons. In that case, a four-cylinder engine would be less powerful than a six or eight cylinder engine.

Diesel cycle



IV.Introduction to Flywheel

Physics: A flywheel is a spinning wheel or disc with a fixed axle so that rotation is only about one axis. Energy is stored in the rotor as kinetic energy, or more specifically, rotational energy Ek,

$$E_k = \frac{1}{2} I\omega^2$$

- ω is the angular velocity, and
- I is the moment of inertia of the mass about the center of rotation. The moment of inertia is the measure of resistance to torque applied on a spinning object (i.e. the higher the moment of inertia, the slower it will spin after being applied a given force).
- The moment of inertia for a solid-cylinder is $= {}^{1}{}_{2}{}^{2}$
- for a thin-walled empty cylinder is I=², –
- and for a thick-walled empty cylinder is $I = {}^{1}{}_{2}\, m(r_{external}{}^{2} + r_{\text{int}} \_\_ ernal{}^{2})$

where m denotes mass, and r denotes a radius

σ $t = \rho r^{2}\omega^{2}$

when calculating with SI units, the standards would be for mass, kilograms; for radius, meters; and for angular velocity, radians per second. The resulting answer would be in joules. The amount of energy that can safely be stored in the rotor depends on the point at which the rotor will warp or shatter. The hoop stress on the rotor is a major consideration in the design of a flywheel energy storage system, where: σ_t is the tensile stress on the rim of the cylinder, ρ is the density of the cylinder, r is the radius of the cylinder, and ω is the angular velocity of the cylinder.

Examples of Energy Stored

Object	K (varies with shape)	mass	diameter	angular velocity	energy stored, [J]	energy stored, [Wh]
bicycle wheel at 20 km/h	1	1 kg	700 mm	150 rpm	15 J	4 × 10−3 Wh
bicycle wheel, double speed (40 km/h)	1	1 kg	700 mm	300 rpm	60 J	16 × 10−3 Wh
bicycle wheel, double mass (20 km/h)	1	2 kg	700 mm	150 rpm	30 J	8 × 10−3 Wh
Millstone grinding wheel	1/2	245 kg	500 mm	200 rpm	1.68 kJ	0.47 Wh
wheel on train @ 60 km/h	1/2	942 kg	1 m	318 rpm	65 kJ	8 Wh
giant dump truck wheel @ 30 km/h (18 mph)	1/2	1000 kg	2 m	79 rpm	17 kJ	4.8 Wh
small flywheel battery	1/2	100 kg	600 mm	20000 rpm	9.8 MJ	2.7 kWh
regenerative braking flywheel for trains	1/2	3000 kg	500 mm	8000 rpm	33 MJ	9.1 kWh
electrical power backup flywheel	1/2	600 kg	500 mm	30000 rpm	92 MJ	26 kWh
the planet Earth Rotational energy	2/5	5.97×1027 g	12725 km	~1 per day (696 μrpm [4])	2.6×1029 J	72 YWh (× 1024 Wh)

V High-Energy Materials

For a given flywheel design, the kinetic energy is proportional to the ratio of the hoop stress to the material density and to the mass:

$$E_k \alpha \frac{\sigma_t}{\rho} m, \quad \frac{\sigma_t}{\rho}$$

Could be called the specific tensile strength. The flywheel material with the highest specific tensile strength will yield the highest energy storage per unit mass. This is one reason why carbon fiber is a material of interest.
Calculations for Four Wheeler Petrol Engine Flywheel

Material: cast iron

Specifications of maruti zen estilo L×
Displacement = 1061CC

Power = 64@ 10000 (ps @rpm)= 64ps=64× 735.4988 = 47071.9232
Torque = 842 @3500 (N m @ rpm

Number of cylinder = 4 (valve)
Values per cylinder = 4 (valve)
Bore = 68.5mm

Stroke = 72mm
Compression ratio = 9:1
Volume per cylinder = 265.25CC

Density of petrol = C_8H_{18} = 737.22 $\frac{kg}{m^3}$ 60 F = 0.00073722 kg/cm^3

= 0.00000073722 kg/ mm^3

60 F = 288.555K =15.55^{0}C

N_1 = maximum speed in rpm during the cycle = 10000rpm

N_2 = minimum speed in rpm during the cycle = 3500rpm

Angular speed $W_1 = \frac{2\pi N_1}{60} = 1046.66\ rad/s$

$$W_2 = \frac{2\pi N_2}{60} = 366.333\ rad/s$$

Co-efficient of fluctuation of energies

$$C_E = \frac{maximum\ flutuation\ of\ energys}{work\ done\ per\ cycle}$$

Work done/cycle =T_{mean} x θ

θ = angle turned in radius

$\theta = 4\pi$ for 4stroke IC engine

$$T_{mean} = \frac{P \times 60}{2\pi N_1}$$

Power p =47071.9232W

$$T_{mean} = \frac{P \times 60}{2\pi N_1} = \frac{47071.9232 \times 60}{2\pi \times 10000} = 44.973$$

Work done per cycle $W_D = T_{mean} \times \theta = 44.973 \times 4\pi = 564.863$

$$C_E = \frac{\nabla E}{W_D}$$

$$C_E = 2.35 - 2.4$$

$$2.4 = \frac{\nabla E}{44.973}$$

∇E = 1355.671

Maximum fluctuation of energy

$\nabla E = MR^2 W_1^{\ 2} C_s$

$1355.671 = 5 \times R^2 \times 1046.66^2 \times 0.02$

M = mass of flywheel = 5Kg

R =0.111242M = 111.242mm

Mass of flywheel rim = m = 2πRAδ

δ = 7260 kg /m^3

$5 = 2\pi \times 111.242 \times A \times 0.0000726$

A = 985.83m^2

Cross section of rim to be rectangular

A = b x t (b = 2t)

A = 2t^2

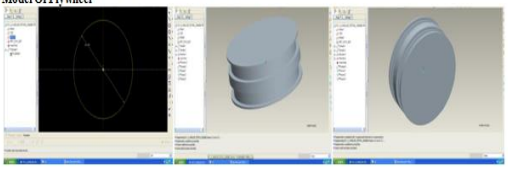
$t^2 = \frac{985.83}{2}$; $t = 22.201mm$; $b = 44.40mm$

VI .Introduction to Pro/Engineer

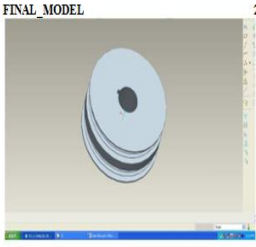
Pro/ENGINEER Wildfire is the standard in 3D product design, featuring industry-leading productivity tools that promote best practices in design while ensuring compliance with your industry and company standards. Integrated Pro/ENGINEER CAD/CAM/CAE solutions allow you to design faster than ever, while maximizing innovation and quality to ultimately create exceptional products.

Customer requirements may change and time pressures may continue to mount, but your product design needs remain the same - regardless of your project's scope, you need the powerful, easy-to-use, affordable solution that Pro/ENGINEER provides.

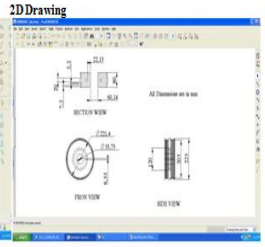
(i) Part Design, (ii) Assembly, (iii) Drawing and (iv) Sheet Metal Model Of Flywheel



FINAL_MODEL



2D Drawing



VII. Introduction to FEA

Finite Element Analysis (FEA) was first developed in 1943 by R. Courant, who utilized the Ritz method of numerical analysis and minimization of variational calculus to obtain approximate solutions to vibration systems. Shortly thereafter, a paper published in 1956 by M. J. Turner, R. W. Clough, H. C. Martin, and L. J. Topp established a broader definition of numerical analysis. The paper centered on the

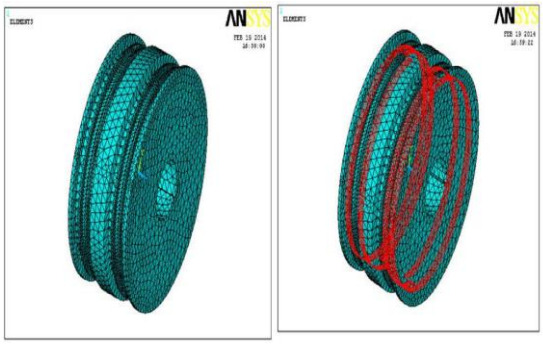
"stiffness and deflection of complex structures".

FEA consists of a computer model of a material or design that is stressed and analyzed for specific results. It is used in new product design, and existing product refinement. A company is able to verify a proposed design will be able to perform to the client's specifications prior to manufacturing or construction. Modifying an existing product or structure is utilized to qualify the product or structure for a new service condition. In case of structural failure, FEA may be used to help determine the design modifications to meet the new condition.

A wide range of objective functions (variables within the system) are available for minimization or maximization:
•Mass, volume, temperature
•Strain energy, stress strain
•Force, displacement, velocity, acceleration
•Synthetic (User defined)

There are multiple loading conditions which may be applied to a system. Some examples are shown:
•Point, pressure, thermal, gravity, and centrifugal static loads
•Thermal loads from solution of heat transfer analysis
•Enforced displacements
•Heat flux and convection
•Point, pressure and gravity dynamic loads

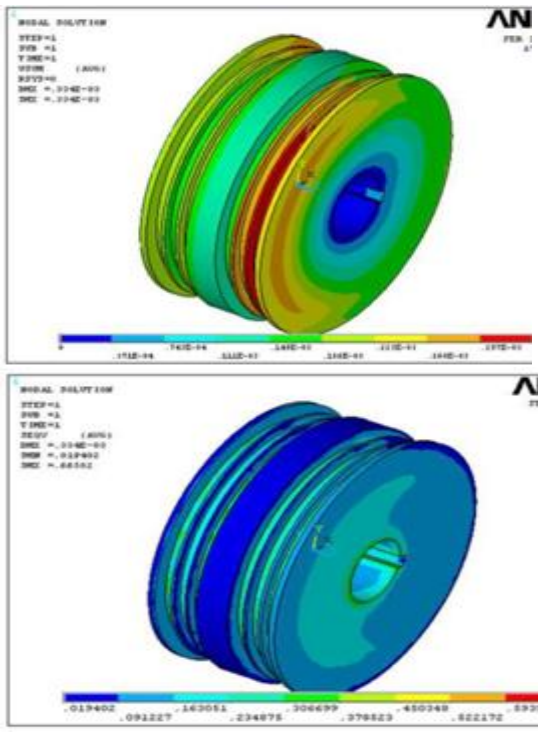
Meshed Model

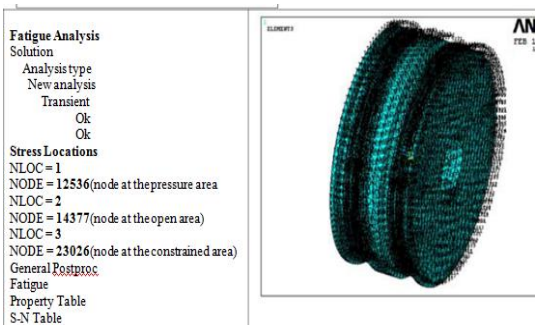


Post Processor

General Post Processor – Plot Results – Contour Plot General Post Processor – Plot Results – Contour Plot –

- Nodal Solution – DOF Solution – Displacement Nodal Solution – Stress – Von Mises Stress Vector Sum





Structural Analysis Results
Cast Iron

	RESULTS	PERMISSIBLE
DISPLACEMENT (mm)	$0.334e^{-3}$	
VONMISES STRESS (N/mm^2)	0.66582	620
	Frequency	**Displacement**
MODE 01	45.254	0.111115
MODE 02	63.595	0.20176
MODE 03	54.501	0.181312
MODE 04	69.819	0.159127
MODE 05	93.227	0.266552

A360 ALLOY

	RESULTS	PERMISSIBLE
DISPLACEMENT (mm)	$0.300e^{-3}$	
VONMISES STRESS (N/mm^2)	0.602591	344
	Frequency	**Displacement**
MODE 01	62.993	0.183335
MODE 02	91.32	0.32203
MODE 03	92.659	0.290446
MODE 04	101.252	0.250101
MODE 05	130.887	0.374698

IX Conclusions

In our project we have designed a four wheeler flywheel used in a petrol engine using theoretical calculations. 2d drawing is created and modeling of flywheel is done using Pro/Engineer. We have done structural and modal analysis on flywheel using two materials Aluminum Alloy A360 and Cast Iron to validate our design. By observing the results, for all the materials the stress values are less than their respective permissible yield stress values. So our design is safe. We have also done modal analysis for number of modes to see the displacement of flywheel for number of frequencies. By comparing the results for two materials, the stress value for Aluminum Alloy A360 is less than that of Cast Iron. So we conclude that for our design, Aluminum A360 is better material for flywheel. By using Aluminum A360 we can reduce Weight.

Fatigue analysis is also done on flywheel to verify the stress values at the selected nodes. The nodes are selected at constrained area, pressure area and open area. In this project its having some disadvantages is by replacing with Aluminum A360 energy storage is reduced. In this project mainly we had done material optimization. For both the materials the number of cycles allowed for flywheel is 500000 cycles.

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STUDENT PROJECTS SCHEME
SEMINAR CUM EXHIBITION
(2017 - 2018)

PROCEEDINGS

TAMILNADU STATE COUNCIL
FOR
SCIENCE AND TECHNOLOGY
CHENNAI

STUDENT PROJECTS SCHEME
SEMINAR CUM EXHIBITION
(2017 - 2018)

With Best Compliments from

(Dr. R. Srinivasan)

PROCEEDINGS

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
CHENNAI

MECHANCIAL ENGINEERING

ARDUINO BASED BRAILLE TUTOR AND INTERFACE FOR THE BLIND

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Abstract

Writing is a very effective means of communicating our thoughts to people. We use scripts provided by the language to convey our thoughts to paper. However, in case of people who don't have the sense of the version, they say a different type of script, known as Braille, named after its founder, Louis Braille. It is unlike the scripts that we, the sighted, use for Writing. Reading such scripts requires us to be able to see what has been written. But, Braille uses the sense of touch. Though Braille provides a method of writing for the visually impaired, it is still a difficult task to reach out to people as few find it necessary to learn Braille for their day to day communication. The interactive Braille tutor device comprises a Braille tutor unit (embedded section) and control unit (mobile). The Braille tutor unit consist of two embedded boards. The beads come out in various combinations to represent a particular letter of the English alphabet in Braille. The text conveyed by the tutor through mobile is sent via Wireless communication. Writer has six switches corresponding to the six beads to type the Braille characters by the students and a switch to respond back to the teacher. This helps the teacher to understand that the students are able to understand each alphabet she is providing them with. This results in effective learning and makes the learning process much more interesting.

Introduction

Communication is very important in our life. It helps to transfer our ideas and views to others. The visually impaired people find it really hard to communicate and for them there is a special script called the called the Braille. The Intelligent Braille Tutor is a device made to improve the communication for the visually impaired people. Braille is a tactile writing system used by the blind and the visually impaired. It is traditionally written with embossed paper. Braille-users can read computer screens and other electronics supports due to the refreshable Braille displays. They can writer, such as a portable Braille with the original slate and stylus or type it on a Braille writer, such as a portable Braille note-taker, or on a computer that prints with a Braille embosser.

Braille is name after its creator, Frenchman Louis Braille, who went bind following a childhood accident. In 1824, at the age of the age of 15, Braille developed his code for the French alphabet as an improvement on night writing. He published his system, which subsequently include musical notation, in 1829. The second revision, published in 1837, was the first digital (binary) form of writing. Braille characters are small rectangular blocks called cells that contain tiny palpable bumps called raised dots. The number and arrangement of these dots distinguish one character from another. Since the various Braille alphabets originated as transcription codes of printed writing systems, the mappings (set of character designations) vary from language to language.

Furthermore, in English to English Braille there are encoding: Grade 1, a letter by letter transcription used for basic literacy; Grade 2, an addition of abbreviations and contractions; and Grade 3, various non-standardized personal shorthand's. Braille cells are not the only thing to appear in embossed text. There may be embossed illustrations and graphs, with the lines either solid or made of series of dots, arrow, bullets that are larger than Braille dots, etc. Our project is an application of the above said Braille system. In the initial stage, these visually impaired people were taught using a board that constituted six slots and there were six marble beads. By arranging the beads in the required position, the students were made to feel it and learn the respective alphabets. But after a while this system became very tedious as the number of students increased and also the cost of each box.

Motivation

The device could be voice activated thus the blind could learn the Braille Language without the help of another individual.

- More character actuators could add to increase simplicity.
- The device could be scaled down to increase mobility and comfort.
- It could also be made available at lower cost to blind people.
- The device could thus aid the blind in becoming literate and therefore have a productive career and is the main motivation.

Methodology

The project consists of different components that work together for the device to work properly. It consists of a mobile application that allows the user to communicate with the device. There are two sections to the mobile application. The first is voice activated and the blind person could learn Braille by oneself. The other part is a tactile application that allows another user to teach Braille to a blind student. Once the input is received from the mobile device through a Bluetooth module the device converts it to digital signals that could then be converted to Braille by using the actuators. Thus the device could be used by the blind o study as well as to teach blind students.

Working

Our project is an application of the above said Braille system. In the initial stage, these visually impaired people were taught using a board that constituted six slots and there were six marble beads. By arranging the beads in the required position, the students were made to feel it and learn the respective alphabets. But after a while this system became very tedious as the number of students increased and also the cost of each box. The aim of our project is to make the learning process for the blind people an easy task. The interactive Braille tutor device unit and a remote unit. The Braille tutor unit has six slots, each of which houses a bead. The beads come out in various combinations to represent a particular letter of the English alphabet in Braille. There are a couple of features that makes learning fun. There is even a student to teacher communicator, which consist of push buttons. Pressing the buttons in the required pattern and entering the enter button, the teacher can verify if the students have understood her class. This way the learning process is interesting.

Advantages

- The blind could learn to read braille language without the help of another individual.
- This gives encourages the individuals to learn braille on their own.
- The blind could also use this device to read messages received in their subscriber identification module.
- The device is simple to use and it is user friendly.

Conclusion and future scope

The Braille tutor was successfully implemented and tested. The Braille device and the input applications are working properly and in good condition. This system when practically implemented would be highly efficient and maintenance cost effective. This system would reduce the labor cost. Moreover it would speed learning system for the visually impaired students and could tutor the without human intervention. This is efficiently possible with the voice activated application so that the blind students could learn the Braille language themselves. Furthermore this will also make the learning process very interesting.

- Thus this device is able to give a interface device for the visually impaired students.
- Braille character recognition is a key factor in increasing the reading rate.

- The application of this device is to equip the blind with a device that could tutor them to become better and faster readers.
- The new program can be effective in teaching the method of recognition used by fast readers.

So this device will bring about betterment to the society. Therefore by finishing this project we have made a device that could help visually impaired students to study the braille language and have a basic understanding of how to read using the braille code.

Guide: Mr.A.Nallathambi, Associate Professor, Department of Mechatronics Engineering, M.A.M.School of Engineering, Siruganur, Trichy-621105

AUTOMATIC SIGNAL ALERTING, ALARMING AND BRAKING SYSTEM FOR TRAINS USING MACHINE VISION TECHNIQUE

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Abstract

Our project mainly aims in designing and developing a system which is capable of automatic detection of traffic signal in railways, and alerting the loco pilot by alarms and automatic braking using machine vision technique. In today's modern world, major accidents of mass transportation system occurs mainly because of the carelessness of the drivers which results in loss of hundreds of lives within a second. Lack of driver/loco pilot's attention to respond to the traffic signal contributes to major percentage in accident causing factors. Our project strives hard to find a solution for this problem by using machine vision system. Camera used in machine vision system captures the traffic signal in frames and sends a warning alarm and an alert message to the locopilot and then braking is done if red signal is detected.

Introduction

Automatic traffic signal detection and responding is very important in Indian railways in order to prevent accidents which lead to major loss of human lives. It is used to detect the signal automatically and alert the loco pilot according to the signal detected. The camera is fitted in the train in front of the enginewhich takes images of the traffic signal and sends it to the raspberry pi which checks for the colour of the signal and takes corresponding action for the detected signal. Raspberry pi is also connected with alarm and LCD display. Raspberry pi is powered by battery.

Motivation

There are many Mechanical and human failures resulting in frequent accidents in trains. One such major accident which occurred on September 13, 2011 near Arakonam resulted as the driver of a train headed from Chennai Beach to Vellore ignored several yellow and red lights before crashing into a passenger train that was parked at the Chitheri station, waiting at a signal for clearance to move ahead. It led to loss of several people and many were injured. This incident led a foundation for our project.

Components with its functions

We have used raspberry pi model 3B for processing the captured image of traffic signals. Python opencv is used to code the function. The coding is fed to raspberry pi via SD card.Intex IT-306 WEBCAM of 8MP having the ability to record video is used.The image taken is in RGB format. L293 motor driver is used to control the motion of the wheels. Raspberry pi provides input for L293 to function. Pins on the left

Conclusion

This project presented a new approach in the detection of LPG at ambient condition. A cost efficient gas leakage detection system was proposed, designed and successfully implemented in this paper. It is an efficient security system. The cost involved in developing the system is significantly low and is much less than the cost of other gas detectors commercially available in the market. This system will be very useful for all urban and rural people.

Guide: Dr.T.Srinivasan, Associate Professor, Department of Mechanical Engineering, Sri Sai Ram Institute of technology, Chennai-600044

EFFECTIVE ORGAN PRESERVATION AND TRANSPLANTATION USING AMBU BAG

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Abstract

The objective of this project is to improve the safety monitoring during organ preservation and transplantation. A PDA controlled cool-box system lead to reperfusion injury so cool box is replaced by warm preservation during transportation and design of temperature controller is needed to regulate the temperature. The objective of this project is to improve the safety monitoring during organ preservation and transplantation. A PDA controlled cool-box system lead to reperfusion injury so cool box is replaced by warm preservation during transportation and design of temperature controller is needed to regulate the temperature. Peltier effect is majorly cooling of one junction and the heating of the other when electric current is maintained in a circuit of material consisting of two dissimilar conductors and thermostat is used for maintaining the set point. Microcontroller program coding is majorly used to switching one junction to another junction and hardware prototype have high insulation medium and box have highly secure coating which safeguard the organ from infection.

Introduction

Organ transplantation is one of the crucial methodologies evolved in day today life. Some of the problems faced during organ transplantation is that Organ transplantation is done normally with the help of Ambubag with the Silica gel filled around it for the preservation of organ within the particular time of travel. Ambu bag is coated with insulated cool box in order to avoid the room temperature enter into the box. Organ transplantation is the moving of an organ from one body to another or from a donor site to another location on the person's own body, to replace the recipient's damaged or absent organ. An ideal device should have the following feature: easy to use, small development budget (less than $100) and satisfying the performance requirement for conducting experiments. The project is based on an atmega-1284microcontroller as the main control unit with a PID control algorithm running inside. The petri dish's bath temperature is heated or cooled by a Peltier Plate. A Thermistor is used as the temperature detection device and sent feedback to the microcontroller regarding to current bath temperature of the petri dish. All components are connected with analog circuits to form a close loop feedback controller in order to dynamically control the petri dish's bath temperature. Graphic user interface is built with MATLAB to provide easy user access and monitoring.

Motivation

Organs and tissues that are transplanted within the same person's body are called auto graft. The objective of project is to improve the safety monitoring during organ preservation and transplantation. A PDA controlled cool-box system lead to reperfusion injury so cool box is replaced by warm Preservation

during transportation and design of temperature controller is needed to regulate the temperature. Peltier effect is used for cooling of one junction and the heating of the other when electric current is maintained in a circuit of material consisting of two dissimilar conductors. Thermostat is a device that automatically regulates temperature and maintains set point. Microcontroller programming is also used for switching one junction to another junction .Organ transplantation is the moving of an organ from one body to another or from a donor site to another location on the person's own body, to replace the recipient's damaged or Absent organ. Organ and tissues that are transplanted within the same person's body are called autographs. Transplants that are recently performed between two subjects of the same species are called allograph. Allograph can either be from a living or cadaveric source. Kidney is the most commonly transplanted organs, followed by the liver and then the heart. Cornea and musculoskeletal grafts are the most commonly transplanted tissues; these outnumber organ transplants by more than tenfold. Organ donors may be living, brain dead, or dead via circulatory death. Tissue may be recovered from donors who die of circulatory death, as well as of brain death – up to 24 hours past the cessation of heartbeat. Transplantation raises a number of bioethical issues, including the definition of death, when and how consent should be given for an organ to be transplanted, and payment for organs for transplantation.

Methodology

Organ stored in cool box lead to increase level of hydrogen sulphide which affects organ quality. So design of temperature controller with warm preservation of organ during transportation instead of ice bag is desired in order to avoid damage along with high safety precaution. Size of Ambu bag is 20 cm, as it does not contain any ice in the medium of storage during the transplantation. Peltier effect is normally used for regulating temperature. when temperature is below 37 degree Celsius,hot body is regulated and when the temperature of box is above 37 degree Celsius temperature switch over to cold junction by Thermostat This switching is done with the help of microcontroller programming automatically.MATLAB is used for simulation and the hardware is done using a thermostat for monitoring temperature and controlling the inner temperature of organ box during transplantation.

Working

At any given temperature the regulated output is maintained throughout. Thus the product with higher rate of constant temperature is regulated throughout with the safe coating gypsum material. PID Control temperature has been regulated and the offset error attained during the process is eliminated because of the integral effect. Organ transplantation with more advanced technology such as warm body preservation throughout the transplantation and also maintaining the exact constant temperature during the transplantation 37^0C is maintained. Thus metabolism change is easily avoided and the constant temperature in an Ambu bag is regulated throughout.

Advantages

- To avoid damage along with high safety precaution.
- Size of Ambu bag is 20 cm.
- Peltier effect is normally used for regulating temperature.
- Light weight
- Higher resistance over a medium

Conclusion and future scope

In this work previous decades, in organ transplantation various drawbacks have been observed, the method proposed in this project is easy to avoid damage to organs and also user friendly. The implementation of this project would benefit many hospitals along with the transplanted person without any metabolism change and also tissue damage. Thus Temperature has been controlled to 37 degree Celsius of body temperature inside a box synthesized using MATLAB SOFTWARE. In this phase Design of temperature controller and ATMEGA microcontroller is used for switching purpose of temperature at 37degree Celsius. This temperature is maintained for preserving an organ. Future scope is that we can change the gypsum coating to plaster of Paris which has added resistivity towards coating. The implementation of two or different organ at same box by regulating at different temperature also can be implemented in future scope.

Guide: Mr.M.Chandra Mohan, Assistant Professor, Department of Mechatronics Engineering, M.A.M.School of Engineering, Siruganur, Trichy-621105

DESIGNING OF AUTOMATIC CARGO LOADING AND UNLOADING MECHANISM

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Abstract

Nowadays there is a requirement to load and unload of cargo truck goods with less cost effective material handling equipment, therefore to meet the requirement of the problems and reduce the loading and unloading time in storage facilities and distribution canters there is need to make a mechanism, which can reduce the probability of using costlier MHE. The present works meets the criteria to solve these problems by providing a simple portable setup to load and unload of cargo truck goods under the application of minimal effort.

Introduction

Usually cargo loading and unloading process is done by using man power, Forklift, Crane, etc., In today's market so many machines are available for loading and unloading of goods but these machines are more expensive and it will not adapt for all places. By using of automatic motorized pallet with roller balls, the loading and unloading of cargo from truck to pallet as well as from pallet to truck can possible. This setup is basically works on the principle of screw and nut mechanism by converting rotary motion into a reciprocating motion under low cost with more convenient. The present setup is portable in nature which can be carried to places as required within the cargo truck itself. It is robust in design and cost effective in nature. Moreover there is no requirement of external source for the said mechanism

Motivation

The motivation for this project came with the hope that it is very much economical and helpful for easy loading and unloading process with less effort, more efficient and occupies less space.

Materials and methods

A Motorized pallet is operated by a DC motor and lead screw which is connected on the rotating shaft of the motor and the motor is connected with 12V DC battary . The whole system is working on the principle of screw and nut mechanism.A lead screw is also known as a power screw became a bridge for connecting bottom and top layer of the pallet. With the help of cross links the two rectangular frames are connected whose

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4. Project code : EME-053

It is certified that a sum of Rs 10,000 (Rupees) Sanctioned by the Council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs.....Nil..... remaining unutilized is refunded.

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4. Project code : EME-018

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