

The Institution of Engineers (India)

Puducherry State Centre

IEI NEWS "98 Years of Relentless Journey Towards Engineering Advancement for Nation Building"

● e-mail: puducherryisc@ieindia.org

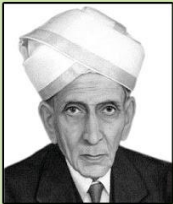
● website: www.ieipsc.org

● Phone: 0413-2331815

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To give real service, you must add something which cannot be bought or measured with money.

-Mokshagumdam Visvesvarayya

Bharat Rathna
Sir Mokshagumdam Visvesvarayya
1860- 1962

FROM CHAIRMAN'S DESK



As the Chairman of the Institution of Engineers, IEI, PSC, I take the privilege to inform that IEI is enabling and refining the young and dynamic minds with desirable human values merged with the state of art technology in the ever challenging and refined domain of engineering science. IEI actively conduct numerous events with intellectually skilled & socially responsible sessions, seminars, discussions, case studies,

promisingly reinforce the overall knowledge and skills of the young Engineers present in the IEI. Our sincere endeavour shall be to group Engineers in various branches and convert them into suitably trained human material with higher orbits in an overturned society. I invite all the Young and Dynamic Engineers to be a part of the premier board and gain from our state of the art services and training method which help to strengthen the great career of Engineering.

Dr. K. PAJANIRADJA @ KICHENA FIE
Chairman, IE(I) PSC

FROM HONORARY SECRETARY'S DESK



Dear Fellow Engineers,

Firstly, I would extend my good wishes to your family, personally and on behalf of The Institution of Engineers (India), Puducherry state center. Our IEI- PSC is organizing various technical activities in the Engineering Institutions spread over the union territory of Puducherry. With the overwhelming support of Chairman of our committee, we could able to conduct many seminars, technical talks, workshops etc., to the budding engineers of Puducherry U.T. During our activities, we try to provide awareness about the student centred activities of IEI such as memberships, paper presentations, project funding etc., Also, it is our prime responsibility to join new members to IEI. I congratulate and thank our institutional supporters for the cooperation rendered to our activities. We are striving hard to organize more technical activities in the coming months. Your active participation is solicited.

Er. D. Giridhara Rao FIE
Honorary Secretary, IE(I) PSC

Forthcoming Events at IEI, PSC

May 17th 2018 "World Telecommunication Day"

05th June 2018 "World Environment Day"

EVOLUTION OF PERFORMANCE CHARACTERISTICS OF SPUR GEAR DRIVE FOR IMPROVED BENDING STRENGTH

R. Ravivarman & Dr. K. Pajaniradja
Department of Mechanical Engg. PEC

In a spur gear drive, when the gear ratio is more than one the bending strength of the pinion and gear is dissimilar. In order to balance the bending strength of the gear drive, the stress developed in the pinion has to be decreased which can be attained by using a non-standard spur gear drive. This can be accomplished by varying the tooth thickness at the reference circle in spur gears. Non-Standard Spur gear drive is one in which the tooth thickness at the reference circle of the gear and pinion is not same. In this work, the bending strength of the gear drive is balanced by varying the tooth thickness at the reference circle through profile modification technique. For this study a code has been developed in MATLAB for generation of the involute and trochoidal teeth profile which is then transferred to ANSYS software for evaluating the load share at the tooth, bending strength and the contact stresses using Finite Element Analysis (FEM). Using this stimulated results obtained, the parameters that support the performance of non-standard gear drive is assessed using a combinational method of FEM and analytical estimation. Thus parameters like EHL film thickness, sliding distance, friction coefficient and tooth wear are predicted and compared with a standard gear drive. Through this study on load share, fillet stress, contact pressure and the respective tooth wear for standard and non-standard spur gear drives, it can be concluded that the use of non-standard pinion and gear of unequal tooth thickness add sensible change in gear and pinion drive parameters and justified as one of the possible solutions for the enhancement of wear and load carrying capacity of the gear tooth in bending and contact.

M-SAND – AN ALTERNATIVE TO RIVER SAND

Er. S. Thirounganama, Executive Engineer, DRDA, Puducherry.

In construction industry, concrete consume a huge amount. About 35% volume of concrete is comprised of fine aggregate (sand). The main cause of concern is the non renewable nature of natural sand and the corresponding increasing demand of construction industry. Therefore looking for an alternative to river sand has raises. The easiest and cheapest alternative to natural sand is manufacturing, sand by crushing rocks /stones in desired size and grade by suitable method. Sand produced by such means is known as manufactured/crushed/artificial sand. Crusher dust is a byproduct generated while producing crushed aggregate. In wet conditions the crusher dust resembles M-sand. The crusher dust does not have a standardized process and do not undergo the basic process of shaping, grading and cleaning. Original M-sand is manufactured through the process of shaping cubically, grading and cleaning. Cubical shape – Every tiny sand particle of original M-sand is cubical shaped using ISI machine. This makes bonding very strong and State-of-the-Art technology helps to control the flakiness and elongation of every sand particle. The surfaces of duplicate particles are sharp, elongated and flaky which makes the bonding weak. This deteriorates the strength and durability of concrete. High quality mix – The mix of original M-sand is perfect because grading is done by double sieve technology adhering to IS 383 (1970) Zone-II. Original M-sand has micro fines of minimum 150 microns less than 10% and minimum 45 microns less than 2%. This ensures long life and high strength for concrete made of original M-sand.

SUSTAINABLE PUDUCHERRY – ROLE OF ENGINEERS

Er. D. Karunakaran, Associate Professor,
Department of Mechanical Engg. SMVEC

Sustainability aims at progressive positive development without compromising resources available for future use. This concept gains utmost importance among the developed nations of the world, targeting sustainability through Engineering. As a part of our motherland, our cute spiritual tourism land of union territory of Puducherry is full of natural resources like a long beautiful sea shore, huge water bodies, greenish cultivatable agricultural lands. The major threats to Puducherry's sustainability are the waste management and preservation of water resources. Mixed garbage collected from houses, segregation of degradable and non degradable wastes from the garbage mass, water consuming and polluting industries, chemical and air polluting industries, rain water harvesting, drainage water management, preservation of lakes, ponds and rivers, construction of check dams, increasing the use of alternative energy sources etc., are the major challenges to be addressed to convert present Puducherry into sustainable Puducherry. As socially responsible Engineers, it is important to follow and make others to follow 3 R's: Reduce, Reuse and Recycle. Innovative Ideas to control wastage of energy, sustainable new products, sustainable green constructions, ensuring clean and pure environment are some of the targets to be achieved by Engineers of the nation.

Sl.NO	Name	Designation	Division	Membership No	Contact No	Contact ID
1	Dr.K.Pajaniradja @ Kichena , Professor, Dept. of Mech.Engg., PEC	Chairman	Mechanical	F-120479-3	98940 45673	palaniradja72@pec.edu
2	Er.D.Giridhara Rao , Chief Engineer (Rtd.),PWD, TN	Honorary Secretary	Mechanical	F-114384-7	94435 87757	dgiridharorao@yahoo.in
3	Dr.R.Nakkeeran , Prof. & Head, Dept. of ECE, PU	Immediate Past Chairman	ECE	F-118431-4	94430 29346	nakkeeranpu@gmail.com
4	Dr.K.Ethirajulu , Former Principal PEC	Committee Member	Mechanical	F-107335-0	94432 58101	kethirajulu@gmail.com
5	Dr.B.Radjaram , Prof. & Head, Dept. of Mech.Engg., MVIT	Committee Member	Mechanical	F-122527-4	94437 48471	radjaram@rediffmail.com
6	Er.D.Karunakaran , Associate Prof. Dept. of Mech. Engg., SMVEC	Committee Member	Mechanical	M-145264-3	98437 98449	dk.kn@hotmail.com
7	Er.S.Thirougnaname , EE,DRDA, Govt. of Puducherry	Committee Member	Civil	M-125406-3	94433 56700	thirou16@gmail.com
8	Er.S.Suresh , EE,PWD, Govt. of Puducherry	Committee Member	Civil	M-141137-8	99944 43711	sureshenggpdy@gmail.com
9	Er.A.Sithanandam , Consultant in Civil Engg	Committee Member	Civil	M-125652-6	97895 46862	arsithanandam@yahoo.com
10	Er.D.Shanmugavadivel , AE, Electricity Dept., Govt. of Puducherry	Committee Member	EEE	M-146690-3	94425 25797	ds_vadivel@yahoo.co.in
11	Dr.R.Saravanane , Professor, Dept. of Civil Engg., PEC	Committee Member	Environment	F-115835-6	94871 56037	rsaravanane@pec.edu
12	Dr.S.Gopalakannan , Prof. & Head, Dept. of Mech. Engg., AEC	Committee Member	Production	F-120109-5	99449 49026	gopalakannan75@gmail.com

Events at IEI, PSC(Jan to March,2018)

Organised by
THE INSTITUTION OF ENGINEERS (INDIA)
(Established 1926, Incorporated by Royal Charter 1935)
PUDUCHERRY STATE CENTRE
under the aegis of
DEPARTMENT OF CIVIL ENGINEERING
CHRIST COLLEGE OF ENGINEERING AND TECHNOLOGY
An ISO 9001:2008 Certified Organisation
(Approved by AICTE and affiliated to Pondicherry University)
Pitcheerampet, Moolakulam, Puducherry-605019

Solicit your benign presence for the
WORLD HABITAT DAY
to be held on Saturday, 3rd February 2018 at 10.30 a.m. in the
Conference Hall(Main Block)

Dr. K.Pandurangan
Professor(Pondicherry Engineering College)
has kindly consented to deliver a technical lecture on
"HOUSING POLICIES : AFFORDABLE HOMES"

will preside over the function
Dr.S.R.S.PAUL
Chairman and Managing Director
(Sri Paul Educational Trust)

will facilitate the function
Dr.A.RAVICHANDRAN
DIRECTOR
Christ College of Engineering and Technology
& Christ Institute of Technology

will facilitate the function
Dr.S.Pradeep Devaneyyan
Dean(School of Mechanical and Building Science)
will welcome the gathering

E.D.GIRIDHARA RAO
Honorary Secretary, IEI, PSC

D.K.PAJANIRADJA@KICHENA
Chairman, IEI, PSC

Organised by
THE INSTITUTION OF ENGINEERS (INDIA)
(Established 1926, Incorporated by Royal Charter 1935)
PUDUCHERRY STATE CENTRE
Under the aegis of
DEPARTMENT OF MECHANICAL ENGINEERING
RAAK COLLEGE OF ENGINEERING AND TECHNOLOGY
No.1 Muthupillalpalayam Road, G.N Palayam, Sulthanpet, Puducherry - 605110.

Solicit your benign presence for the
ENERGY CONSERVATION DAY
to be held on Saturday 10th February 2018 at 10.00 AM in the Seminar Hall

Dr. G.S.GUNASEGARANE, M.Tech., Ph.D.,
Associate Professor, Department of Mechanical Engineering
Pondicherry Engineering College, Puducherry

has kindly consented to deliver a technical lecture on
"Renewable Energy Options for Today's and Future"

Er. B. MOHAMED FAROUK
Chairman, Farook Educational Trust

Mr. A. MOHAMED ILAYAS
Secretary
RAAK College of Engineering and Technology
Will preside over the Function

Dr. A. SIVAKUMAR
Principal
RAAK College of Engineering and Technology

Er. GIRIDHARA RAO **Dr. PAJANIRADJA @ KICHENA**
Honorary Secretary, IEI, PSC Chairman, IEI, PSC

Will Felicitate the Function

Organised by
THE INSTITUTION OF ENGINEERS (INDIA)
(Established 1926, Incorporated by Royal Charter 1935)
PUDUCHERRY STATE CENTRE
Under the aegis of
DEPARTMENT OF MECHANICAL ENGINEERING
PONDICHERRY ENGINEERING COLLEGE
PUDUCHERRY - 605 014

Solicit your benign presence for the
"TECHNICAL MEET - 2018"
to be held on Monday, 26th February 2018, at 10.30 A.M.
in the Seminar Hall, Department of Mechanical Engineering

Er. G. BAPUJI
Chief Manager (Turbine Maintenance Division)-NEC
has kindly consented to deliver the invited lecture on
"Energy Audit and Recent Developments in Renewable Energy"

Dr. P. DANANJAYAN
Principal
Pondicherry Engineering College
will preside over the function

Er. D. GIRIDHARA RAO **Dr. K. PALANIRADJA**
Honorary Secretary, IEI, PSC Chairman, IEI, PSC

will facilitate the function
Dr. K. MAHADEVAN
Head, Department of Mechanical Engineering
will welcome the gathering

All are invited
(Programme Overlaid)

The Institution of Engineers (India)
(Established 1926, Incorporated by Royal Charter 1935)
Puducherry State Centre
in association with
Department of Electronics Engineering
School of Engineering and Technology
Pondicherry University (A central University)
Puducherry - 605 014

The Chairman, Honorary Secretary and Members of the IEI State Centre, and Faculty,
Research Scholars and Students of the Department of Electronics Engineering
cordially invite you to participate in the
"Workshop on Professional Ethics"
to be held on 23rd, Friday, February 2018 between 10.00 a.m. and 4.15 p.m.
in the Seminar Hall, Science Block III, Pondicherry University

Prof. Gurmeet Singh
Vice-Chancellor, Pondicherry University
has kindly consented to deliver the inaugural and Chief Guest Address

Prof. P. Dharmavathan
Dean, School of Engineering and Technology, and
Dean, Ramanujan School of Mathematical Sciences, Pondicherry University
will deliver the Presidential Address

Dr. S. Riasudeen **Dr. S. Victor Anand Kumar**
Assistant Professor Professor
Department of Management Studies Department of Management Studies
Pondicherry University Pondicherry University
consented to accomplish the Workshop

Er. D. Giridhara Rao **Prof. K. Palaniradja**
Honorary Secretary, IEI (I), PSC Chairman, IEI (I), PSC
will facilitate the function

Dr. R. Nakkeeran
Immediate Past Chairman, IEI (I) PSC
Head, Department of Electronics Engineering
Pondicherry University

Photo Gallery



IEI, PSC & Department of Electronics Engineering, Pondicherry University jointly organized one day workshop on **“Professional Ethics”** at Pondicherry university on 23.02.18. Prof.P.Dhanvanthan, Dean, School of Engineering and Technology inviting chief guest Prof.(Dr) Gurmeet Singh, Vice Chancellor, Pondicherry University



IEI, PSC & Department of Mechanical Engineering, Raak college of Engineering and technology jointly organized a Technical Lecture in the title **“Renewable Energy options for todays and future”** on 10.02.18 in view of Energy Conservation Day



A view of committee meeting held at Hotel Anandha Inn , Puducherry

Head Quarter News

IEI Service Spectrum for Engineering Community

- The range of engineering and technological knowledge to all members, planning and organizing activities that impact engineering such as continuation of education course, seminar, symposia, workshops, conventions ,conferences etc at both national and international levels.
- Providing access to R&D activities and engineering practices across multitudes of engineering and technological disciplines.
- Focusing on the new developments, techniques, products, processes and other issues of topical interest to boost professional growth.
- Communication emerging engineering and technological scenario through IEI news, the institutional journal published monthly and insightful discourse and reviews on specialized engineering issues in IEI's annual publication Technorama' as well.
- Providing advanced library service as well as knowledge interfaces at the IEI headquarters, states and local centres.
- Fostering national and international cooperation to promote new age excellence in engineering and technology.
- Acting as an accreditation body for courses in engineering.
- Acting as a qualifying body and conducting examination for its non-formal education programming catering to aspiration of prospective entrants to the profession.
- Supporting and rewarding individual pursuits and achievement in furthering that art and science of engineering technology.

International Professional Engineers' Certification

By virtue of being member of the international professional engineers agreement (IPEA) since 2009, The institution of engineers (India) represents India and is empowered to establish and maintain the India section of the international professional engineers (INTPE) register. Details are available at https://www.ieindia.org/intr_prof.aspx

'Professional Engineers' Certification

The institution of engineers (India) renders certificate of competence to engineers by way of profession engineers' certificate known as P.Eng. (India). Professional engineers (PE) certification not only enhances the engineering professional' status, but also makes them suitable to maintain higher level of authority and responsibility, enabling an engineer or an educator. Details including the guidelines, application form, etc. are available at IEI website: www.ieindia.org

ACADEMIC PROGRAMME OF IEI

THE ACADEMIC PROGRAMME OF THE INSTITUTION MAINLY CONSISTS OF SECTIONS 'A & B' EXAMINATIONS, POPULARLY KNOWN AS THE AMIE EXAMINATION.

SECTION A & B EXAMINATION

As notified by the Government of India, passing of Sections A & B Examination of the Institution is equivalent to a degree in engineering in the respective discipline. The qualification is accepted by the central academic organizations, e.g. IITs and also by central recruitment agencies, e.g. UPSC.

These examinations are mainly opted by:

1. The diploma engineers for their career advancement
2. The engineering graduates in a particular discipline, who want to obtain engineering degree qualification in some other discipline for career advancement.

SECTIONS A AND B EXAMINATION CONSIST OF:

- Section A (NON-Diploma): Applicable for Technician Members of IEI only
 - Section A (Diploma): Applicable for Senior Technician Members of IEI only
 - Section B:
1. The Technician and Senior Technician Members of IEI who have completed Section-A or exempted from Section-A in their respective Scheme are eligible to appear in Section B Examination.
 2. The Corporate Members of IEI (FIE / MIE / AMIE) may also appear in Section B examination after registration in Section B directly in any discipline after Section-B registration provided that member has not completed section B examination of IEI or Graduate degree in engineering in the same discipline earlier.

IEI Membership

The corporate membership of the institution is open to any person with an accredited engineering degree with required professional experience. The membership portfolio based on accumulated professional experience and level of responsibilities includes; Associated member, Member and Fellow grade, subjecting to strict scrutiny by a nominated high level committee at IEI, HQ, Kolkata. For detail and online application for IEI membership, visit: <http://www.ieindia.org>

Membership fee structure (inclusive of GST) Grade-wise

Fellow for Direct enrolment: ₹ 12980

Member for Direct enrolment: ₹ 4897

For transfer:

MIE to FIE: ₹ 10620, ₹ 8567, ₹ 7505

AMIE to MIE: ₹ 10738, ₹ 9275, Rs7505

For transfer:

AMIE to MIE: ₹ 2006, ₹ 2596, ₹ 2172

Associate member: ₹ 4189

Student member: ₹ 1500

Member technologist: ₹ 4012

Associate member technologist: ₹ 3481

Institutional member membership free: ₹ 1, 77,000

For further details, please contact Director (Membership) Address:

The Institution of Engineers (India),
8 Gokale Road, Kolkata 700 020,
Ph: 033-40106225, 40106302, 40106267,
E-mail: membership@ieindia.org, www.ieindia.org

EDITORIAL BOARD

Chairman:

Prof. (Dr.) K. Pajaniradja
@ Kichena, FIE
(M) 98940 45673
Email: palaniradja72@pec.edu

Honorary Secretary:

Er. D. Giridhara Rao, FIE
(M) 94435 87757
Email: dgiridhararao@yahoo.in

Editor:

Er. D. Karunakaran, MIE
(M) 98437 98449
Email: mailstokaruna@gmail.com

TO

If undelivered please return to :
The Institution of Engineers(India)
Puducherry State Centre
63, NSC Bose Salai PWD Campus,
Ground Floor Circle-I Office,
Puducherry 605 001.

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