SFA Mumbai Chapter

Newsletter

JULY 2020

http:// www.sfa.mes.ac.in

PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY RASAYANI

News at a Glance

- From the editor's desk
- Golden Jubilee celebration under the leadership of Dr. K. M. Vasudevan Pillai, Founder Chairman & CEO of MES & Dr.Daphne Pillai, Secretary MES

- Safety Matters : Some Facts And Figures On Fire & Road Accidents
- Activities of the Chapter during Oct. to Jan. 2020
- World Quality Month & Constitution Day Celebration-2019
- Events Organized:
- International Students Olympiad 2020
- Two Days Outreach program on "Materials Manufacturing & Drone workshop" In Association With Industries & Professional Societies
- Forthcoming Events
- Metallography for Industries
- Structural integrity of Welded Structure
- Design Materials Selection & Facture Control for Gears
- Structural Integrity of Welded Structures
- Design, Material Selection & Fracture

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From Editor's Desk

Incorporating Universal Human Values in Higher Education

The second quarterly issue of the Newsletter is brought in July 2020 to commemorate the golden jubilee celebration of the Mahatma Education Society.It addresses Govt.'s initiative on incorporating UHVs in education and the roadmap of it's implementation. An online interactive workshop for Margdarshaks & DTE was held during June 14-18,2020 that was addressed the Chairman and member secretary of AICTE.

The concept of UHVs in higher education is not new.The holistic development concept was deliberated during the first National holistic development conference at the University of California San Diego. Several commissions in the past have articulated the need for human values in education.

The formal technical education in India dates back to mid 19th century. The major pre-independece policy initiative was the appointment of UGC in 1902 and the issue of Indian Education Policy Resolution in 1904. Thereafter establishment of IISc Bangalore and several other institute took place. AICTE was formed in November 1945 by GOI based on the CABE (committee of central advisory board of education of 1943) to cover programme in Engineering & Technology to combat post war challenges. Later on AICTE was given statutory power by AICTE Act of Parliament in 1987 that included many disciplines.Since then AICTE has initiated many measures for improvement in technical education. Mandatory student induction programme with universal human values is one such measure. This is in accordance with the draft education policy 2019 that emphasises the need for developing full human personality and creation of a just and equitable society that includes holistic perspective about life. According to the think tank, education today is focussed on employment and wealth generation with minimum efforts. Institutions therefore should incorporate UHVs in their vision document.

On March 14,2017,AICTE announced measures to improve the quality of technical education. A model revised curriculum for UG studies in engineering & technology was launched on Jan. 14, 2018 at the AICTE by HRD.The revised curriculum prepared by a team of IIT professors for each discipline along with representatives from industries. It has only 160 credits instead of 260. It is a mix of core courses, electives form the Department and outside, skill based labs, project based labs , virtual labs through consortium headed by IIT Delhi and six to eight weeks summer internship. Already 80 virtual labs have been developed with 1700 experiments. Every student on admission will be put through a 3 weeks mandatory student induction programme (SIP) based on universal human values UHV 1 before classes start. A 3 credits UHV-2 course during third / fourth semester is also a mandatory part of the model curriculum.

In order to implement the scheme all the 10,000 colleges under AICTE has to create a value education cell (VE Cell).Every institute has to prepare UHV faculty in ratio 1:20 admitted students from each Department. Faculty has to attend a 8 days FDP-SI to be illegible for conducting UHV-1 during SIP. The effective running of the programme shall be under the supervision of Chairman NCC-IP,Convener IP, Regional coordinator,University coordinator,State academic coordinator,Local programme coordinator and college SIPcell .

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Editorial: 50 Years of High Impact Research

The first issue of *Metallurgical Transactions* appeared in 1970, with Gerhard Derge of the Carnegie Institute of Technology as Editor. The journal formed as a result of the merger of *Transactions of the Metallurgical Society of AIME* and *Transactions Quarterly* of the American Society for Metals. In 1975, the journal split into *Metallurgical Transactions A* and *B*, specializing in physical and process metallurgy, respectively. The journals were renamed *Metallurgical and Materials Transactions* (MMT) *A* and *B* in 1994. The non-profit MMT journals are jointly managed by TMS and ASM and support a broad range of professional activities within the societies. MMT serves the entire international community, with broad geographical representation on the editorial board.

It is interesting to consider the 10 most highly cited papers of 1970, which will be familiar to many:

- *Dispersion Strengthened Superalloys by Mechanical Alloying*, J.S. Benjamin, https://rd.springer.com/article/10.1007/BF03037835
- *The Relation Between Polycrystal Deformation and Single-Crystal Deformation*, U.F. Kocks, https://rd.springer.com/article/10.1007/BF02900224
- *The Effect of Carbide and Nitride Additions on the Heterogeneous Nucleation Behavior of Liquid Iron*, B.L. Bramfitt, https://rd.springer.com/article/10.1007/BF02642799
- *The Influence of Alloying, Temperature, and Related Effects on the Stacking Fault Energy*, P.C.J. Gallagher, https://rd.springer.com/article/10.1007/BF03038370
- *The Temperature Dependence of the Flow Stress of the γ' Phase Based upon Ni_3Al*, P.H. Thornton, R.G. Davies, and T.L. Johnston, https://rd.springer.com/article/10.1007/BF02819263
- *The Origin of Freckles in Unidirectionally Solidified Castings*, S.M. Copley, A.F. Giamei, S.M. Johnson and M.F. Hornbecker, https://rd.springer.com/article/10.1007/BF02643435
- *The Martensite Phases in 304 Stainless Steel*, P.L. Mangonon and G. Thomas, https://rd.springer.com/article/10.1007/BF02642003
- *The Role of Dislocations in the Flow Stress Grain Size Relationships*, J.C.M. Li and Y.T. Chou, https://rd.springer.com/article/10.1007/BF02900225
- *Interdendritic Fluid Flow and Macrosegregation; Influence of Gravity*, R. Mehrabian, M. Keane, and M.C. Flemings, https://rd.springer.com/article/10.1007/BF02900233
- *The Role of Oxide Microstructure and Growth Stresses in the High-Temperature Scaling of Nickel*, F.N. Rhines and J.S. Wolf, https://rd.springer.com/article/10.1007/BF02642020

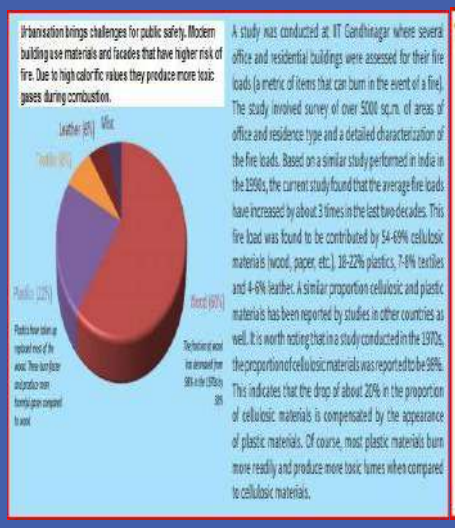
In 2020, there is still active research on the material systems in these papers as well as on the phenomena studied, enabled by remarkable developments in instrumentation, theory, computation, and data-driven approaches. Entirely new material systems have emerged since 1970, including nanostructured materials, intermetallic compounds, metallic glasses, TRIP/TWIP steels, and high entropy alloys. Processing innovations have also been prominent, with recent examples including friction stir welding, equal channel angular extrusion, strip casting, and many variants of additive manufacturing. Atom probe tomography, electron backscattered diffraction, high-resolution scanning transmission electron microscopy, synchrotron X-ray diffraction, high temperature *in situ* observations, and many other instrumentation innovations have brought important new insights to material structure and properties. Advances in theory and simulation, from the atomic scale (density functional theory, molecular dynamics), to the micro-scale (dislocation dynamics, phase field, cellular automata) and the macroscale (crystal plasticity finite element analysis, fluid flow and solidification) have also revolutionized our understanding and guided us toward the new materials and processes reported each year in MMT.

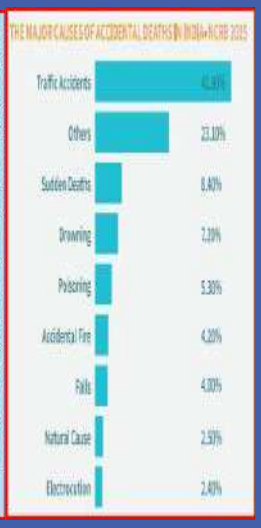
To highlight the rich scientific tradition of MMT, the editorial team has invited a series of articles from distinguished scientists on current topics of interest to the community. These articles will appear in free-access form in issues published throughout this volume year, and will be accessible at https://www.springer.com/journal/11661 (MMTA) and https://www.springer.com/journal/11663 (MMTB), within the Collections link. (The entire collection across both journals can be found at https://www.springer.com/journal/11661/updates/17852226.) The papers convey the current understanding of a wide spectrum of phenomena related to materials structure, processing, and properties, and point to important challenges for the future. The next 50 years will undoubtedly be an equally exciting time for materials, and *Metallurgical and Materials Transactions* will continue to evolve in scope, content, and delivery to continue to convey, with the highest standards, the emerging and ever-evolving research of this field.

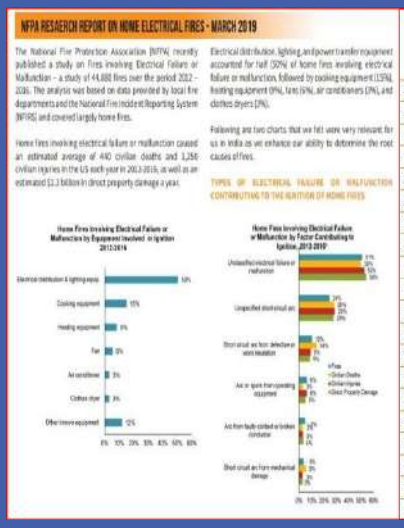
SAFETY MATTERS

SOME FACTS AND FIGURES ON FIRE & ROAD ACCIDENTS

Some recent incidents of fire due to flaws in fire safety policies:
May 24, 2019: a fire broke out due to electrical short circuit in the building that housed a coaching institute in Surat
The country was shocked to see on TV the boys and girls jumping out of building. (22 young lives were lost).
2019, World famous Notre-Dame Cathedral in Paris went up in flames causing serious damage to its roof.
More than 80% of building fires are attributed to electrical faults.
Visible identifiable causes of electrical fires listed in a PhD thesis 2018 by J. N. Martels of University of Germany are : Light flickering, Dimming, power Interruption, Fuse Blowing, Breaker Tripping, Bulbs Burning out, Slow moving appliances
A literature review on fire and road accidents are presented in this poster.







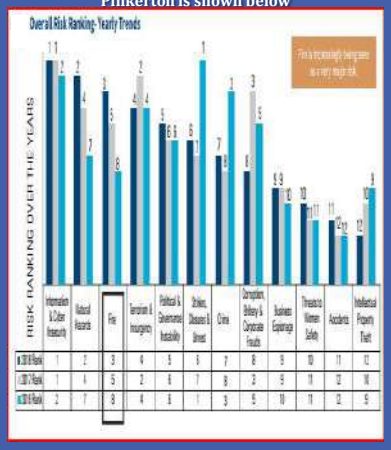
Even after installing MCBs, MCCBs, ACBs & VCBs fires are reported to take place due to 20 factors given below.

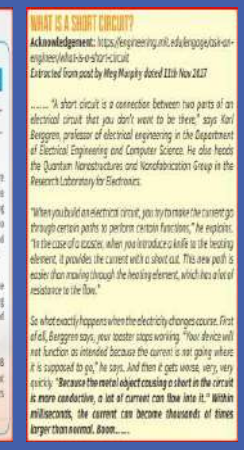
Type of Fault	RISKS: Fire Risk	Electro-cution	Equipment Damage	Efficiency loss
Short circuit	X			
Over current	X			
Earth leakage	X	X	X	
Critical Overvoltage	X		X	
Critical Undervoltage	X		X	
Arc faults	X		X	
Neutral loss	X		X	
Surge	X		X	
Earth voltage	X	X	X	
Phase/Line loss	X		X	
Phase Reversal			X	
Voltage harmonics			X	
Short term interruptions			X	
Voltage variation			X	X
Voltage unbalance			X	X
Current unbalance	X			X
Current harmonics	X		X	X
Power factor				X
In rush current			X	
Reverse current		X		

According to India Risk Survey(IRS) the three major risks in each region of India is given below.

NORTH	SOUTH	EAST	WEST
Natural Hazards	Information & Cyber Insecurity	Political & Governance instability	Information & Cyber insecurity
Information & Cyber Insecurity	Corruption, bribery & corporate frauds	Information & Cyber insecurity	Natural Hazards & fire
Fire	Crime	Strikes, Closures & threats	Fire

The year trends of overall risk ranked by Pinkerton is shown below





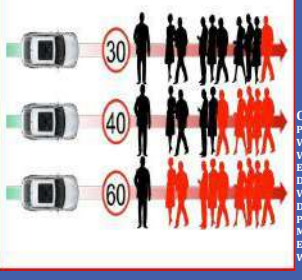
Haddon Matrix developed in 1970 by Dr. William Haddon a medical doctor & leader in Highway accidents research consists of 3 matrix(Host, Agent & Environment) & 3 time phase (Pre-event, Event and Post event)

	Host (children, elderly, adults in home)	Agent: Vehicle (cigarette, matches, appliances, heaters, and upholstered furniture)	Physical Environment (home)	Social Environment (community norms, policies, rules)
Pre-event (before fire starts)	• Teach children not to play with matches • Provide information about fire risk and smoking (loose clothing, long hair, etc., may catch on fire)	• Redesign cigarettes so they self-extinguish • Automatic shut-off for appliances such as coffee makers • Inspect and clean chimneys, heating systems each year.	• Lower flammability of structures • Insure adequate emergency escape exits from home	• Improve efforts to curb smoking initiation • Improve smoking cessation efforts
Event (during fire)	• Teach children to stop, drop and roll • Plan and practice a fire escape route with children and adults • Teach children not to hide during a fire	• Design furniture with materials that are less toxic when burned • Design upholstery that is flame resistant	• Install smoke detectors • Install sprinklers • Increase number of usable exits	• Pass ordinances requiring smoke detectors and/or sprinkler systems • Fund the fire department adequately to provide enough personnel and equipment for rapid response
Post-event (after child or person injured by fire)	• Provide first aid and CPR to all family members	• Design heaters with quick and easy shutoff device	• Build homes with less toxic building materials	• Increase availability of burn treatment facilities

Haddon Matrix Applied to the Problem of Residential Fires. Source: Dr. Carol Runyan, University of North Carolina, Injury Prevention Research Center.

Speed thrills but kills

The figure below shows the probability of being killed by a car going at a given speed. At 30 km/h there is a 9 out of 10 chance that the person survives, but at 60 km/h there is only 1 in 10 chance of surviving. Safe speed considers human tolerance to sudden impact, which means the speed of the car should be lower than the speed at which there is a fatality. Researchers have thus calculated that the safe speed on a highway can be 70 km/h and 30 km/h in residential/busy areas.



Summary

- **Prevention is better than cure.**
- **Know reasons for fire and take preventive measures.**
- **Adopt BIS on National Electrical Code (NEC)**
- **Adopt National Building Code NBC-2016 for safety of building in general & fire safety in particular.**
- **Ensure compliance to safety norms.**

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World Quality Month & Constitution Day Celebration-2019

At the initiative of Mahatma Education Society the PHCET & PHP

IN ASSOCIATION WITH INDUSTRIES & PROFESSIONAL SOCIETIES

Organized constitution day celebrations along with World Quality month for creating awareness regarding fundamental duties and responsibilities amongst students, faculty and industries as per program given below

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY | SFA Mumbai Chapter | PHP – PILLAI HOC POLYTECHNIC

Date : November 26, 2019
Time : 14:00 to 16:00 hrs

Venue:
Conclave, 1st Floor
Pillai HOC College of Engineering & Technology Rasayani

ASQ Human Development & Leadership Division | ASQ WORLD QUALITY MONTH November 1 – 30, 2019 JOIN THE CELEBRATION!

14:00-16:00 hrs	Program Itinerary
14:00 to 14:10	Inauguration
14:10 to 14:15	Reading the Preamble of Indian Constitution
14:15 to 14:30	Quality Consciousness Dr. Joseph T Mathew, Professor, Dept. of Computer Science of Engineering PHCET Rasayani
14:30 to 15:00	Quality Technical Education to Meet Local & Global Challenges Dr.R.C.Prasad Ex Professor IIT Bombay, Prof. Department of Mechanical Engineering PHCET Rasayani
15:00 to 15:45	Presentation from Industries & Professional Societies
	Open Session for Discussion
15:45 to 16:00	Vote of Thanks Followed by High Tea

The function started by reading the preamble of the Indian constitution and to strive towards excellence in all fields

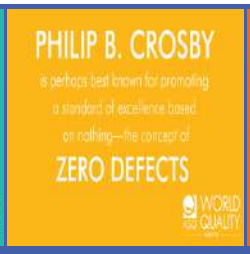
November is also recognized as the world quality month throughout the globe. On this occasion the role of quality and its importance in industries and institutes of higher education was emphasized by lectures on concepts of quality, quality consciousness and quality technical education to meet the local and global challenges. Some of the photographs taken on this occasion are shown below:

Dr. Madhumita Chatterjee Principal PHCET Rasayani welcomed the guests and highlighted the importance of the occasion

Professor R.C. Prasad
Convener & Vice Chair ASQ-LMC Mumbai explained the concept of Root Cause Analysis & emphasized the role of quality education in nation building and enhancing employability by enriching " Teaching-Research Synergy & Education-Industry interaction"

Mr. Satyanarayan Joddabge
General Manager JAY Precision Product (I) PVT. LTD. presented an overview of quality concepts

Dr. Joseph T Mathew Professor, Department Of Computer Science and Engineering emphasized the importance of quality consciousness. The program ended with the vote of thanks followed by High tea.



INTERNATIONAL STUDENTS OLYMPIAD 2020

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY | SFA Mumbai Chapter | PHP – PILLAI HOC POLYTECHNIC

in

Hot Bulk Forging Technologies

On

May 16, 2020

Supported by

QFORM

Venue: B-404, Engineering Building, PHCET, Rasayani

Some of the Photographs of the International Students Olympiad -2019

List of 41 Universities from 14 countries around the world participating in Olympiad 2019 is given below:

Bulgaria:
1. Technical University of Sofia (Olympiad 2017 Organizer)

China:
2. Hebei University Of Science and Technology
3. Yanshan university
4. Beijing Jiaotong university (Olympiad 2017 Organizer)

Germany:
5. IFU of Stuttgart (Olympiad 2017 Organizer)
6. Fachhochschule Südwestfalen (Standort Meschede)
7. BTU Cottbus-Senftenberg (Olympiad 2017 Organizer)
8. Bergakademie Freiberg

India:
9. Pillai College of Engineering (Olympiad 2017 Organizer)

Jordan:
10. Jordan University of Science and Technology (Olympiad 2017 Organizer)

Macedonia:
11. Saints Cyril and Methodius University of Skopje (Olympiad 2017 Organizer)

Poland:
12. AGH University of Science and Technology (Olympiad 2017 Organizer)
13. Wroclaw University of Technology

Romania:
14. University Politehnica of Bucharest (Olympiad 2017 Organizer)

Ukraine:
15. National Metallurgical Academy of Ukraine (Olympiad 2017 Organizer)
16. Dniprovsk State Technical University

Russia:
17. Bauman Moscow State Technical University
18. National University of Science and Technology 19. MISiS (Olympiad 2017 Organizer)
19. Omsk State Technical University (Olympiad 2017 Organizer)
20. Izhevsk State Technical University (Olympiad 2017 Organizer)
21. Samara State Technical University
22. Moscow Aviation Institute
23. State National Research Polytechnical University of Perm
24. Peter the Great St. Petersburg Polytechnic University (Olympiad 2017 Organizer)
25. Lipetsk State Technical University
26. Moscow State University of Mechanical Engineering
27. Moscow Aviation Institute Stupino campus
28. Komsomolsk-on-Amur State Technical University
29. Baltic State Technical University
30. South Ural State University
31. Naberezhnochelininskiy institut KFU

South Korea:
32. Kongju National University (Olympiad 2017 Organizer)

Taiwan:
33. National Sun Yat-sen University
34. National Kaohsiung University of Applied Sciences
35. National Formosa University
36. National Changhua University of Education
37. National Chung Hsing University (Olympiad 2017 Organizer)

Turkey:
38. Gebze Technical University (Olympiad 2017 Organizer)

Vietnam:
39. Hanoi University of Industry
40. Hanoi University of Science and Technology (Olympiad 2017 Organizer)
41. Le Quy Don Technical University

CERTIFICATE

SPECIALIST № 859

This certificate verifies that

Student of

Pillai HOC College of Engineering and Technology, India,

Vaibhav Kanoje

is a certified specialist and has the skills to work in QForm software for simulation of metal forming processes, including preparing geometrical models, performing simulations and analysing results.

Software version: QForm VX 8.2

Qualification report topic: Design of the ring-type part hot forging process as Olympiad task

Sergey Stelurov
Attorney
QFX Simulations Ltd.

Yury Gladkov
Managing Director
QuantorForm Ltd.

3 June 2019

QFORM

www.qform3d.com

CERTIFICATE

FOR ORGANIZING

QForm National Students Olympiad in Hot Bulk Forging and Extrusion Technologies

Professor

R.C. Prasad

Pillai HOC College of Engineering and Technology (PHCET)

Stelurov Sergey

Gladkov Yury

29 April 2019

QFORM

www.qform3d.com

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Vice Chair ASQ-LMC Mumbai
Vice Chairman SFA Mumbai Chapter
Coordinator International Olympiad 2017
Ex. Professor IIT Bombay
Professor, Mech. Engg. Dept. PCE Panvel

Two Days Outreach program
On
Materials Manufacturing & Drone workshop

IN ASSOCIATION WTH INDUSTRIES & PROFESSIONAL SOCIETIES

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY
SFA – Mumbai Chapter
PHP – PILLAI HOC POLYTECHNIC

Date : December 20-21,2019
Time : 9.00 am to 5.00 pm

Venue:
Conclave, 1st Floor
Pillai HOC College of Engineering & Technology Rasayani

Supported by

Mahatma Education Society
ITA India Chapter
IEI Student Chapter PHP
SAE Student Chapter PHCET

Introduction :

- This program is an outreach program aimed to expose concepts of advanced materials manufacturing on the first day followed by its applications for Drone making & flying on the next day.
- It will provide hands on expertise on Design, Assembly & Applications of Printed Circuit Boards and Sensors / 3D Printing of plastics
- The students of Class IX, X, XI and XII can participate in this program to get an opportunity to meet and network with students from other schools, faculty and representatives from Industries.
- The program will be conducted under the direction of Professors, Industry experts and students from IIT Bombay and PHCET Rasayni
- The objective of this program is to excite and engage young minds to pursue career in Engineering
- It will consist of short lectures and interactive lab sessions culminating in drone workshop , where students will be taught how to assemble a Palm-top Drone and learn to fly it using an App on their Smart phones , which they can download from internet
- Each team will be handed over the components of drone kit, which will be collected back at the end of the workshop
- All the participants should bring a fully charged Smart-phone along with chargers
- There will be a drone flying competition after the workshop and members of Top 2 teams will be awarded a certificate and a prize.
- A participation certificate will be issued to all who successfully complete the workshop
- SELECTION PROCESS :
- Each school will select two to four students who have basic knowledge of Physics, Chemistry, Math and Strong interest in pursuing Engineering Career
- These students should be asked to prepare PPTs (max. 3 slides) indicating why do they want to learn about materials along with different applications of drones. The first slide should include the names of the students, Class & Name of the school with Address of the contact person
- The PPTs should be sent to the Workshop Director by email (rcprasad@mes.ac.in) on or before Dec. 12 , 2019
- The selection of maximum 60 students from different schools will be intimated by Dec.15, 2019.
- THIS IS AN SPONSORED PROGRAM AND THE STUDENTS DO NOT HAVE TO BEAR ANY COST EXCEPT THEIR TO AND FRO EXPENSES
- LUNCH & EVENING SNACKS WILL BE PROVIDED TO THE STUDENTS AND THEIR ESCORTS/GUARDIANS BY THE ORGANIZERS WITHOUT ANY CHARGES
- THIS IS A DAY WORKSHOP AND SPONSORED STUDENTS MUST BE ACCOMPANIED BY SCHOOL ESCORTS/GUARDIANS ON BOTH DAYS

For Further Information, please contact

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Two Days Outreach Program on

"Materials Manufacturing & Drone Workshop"

In Association with Industries & Professional Societies

Day 1 : December 20,2019	Program Itinerary	
9:00 – 10:00 hrs	Inauguration Introduction to design, assembly & applications of PCBs, Sensors & 3D printing	
10:00 – 12:30 hrs	Group 1 Hands on Lab session & experiments on PCBs	Group 2 Hands on Lab session & experiments on sensors, 3D printing & Laser Cutting
12:30 – 13:30 hrs	Lunch	
13:30 – 15:30 hrs	Group 1 Hands on Lab session & experiments on sensors, 3D printing & Laser Cutting	Group 2 Hands on Lab session and experiments on PCBs
15:30 – 17:00 hrs	Visit to toys making factory (Subject to approval by Jay Precision Products India Pvt. Ltd. Rasayani)	

Day 2 : December 21, 2019	Program Itinerary
8:30 – 9:30 hrs	Inauguration Inaugural Address by Prof. R. K. Pant, Dept. of Aerospace Engg., IIT Bombay
9:30 – 10:30 hrs	Introduction to Quadrotors and Multirotors
10:30 – 10:45 hrs	Introduction to Palm -Top Drone Kit
10:45 – 11:45 hrs	Palm -Top Drone assembly
11:45 – 12:15 hrs	Safety instructions and Drone flight testing
12:15 – 13:15 hrs	Lunch and Battery Charging
13:15 – 14:15 hrs	Drone Practice Session
14:15 - 15:15 hrs	Drone Flying Competition : Qualifier round
15:15 – 15:45 hrs	Tea break and Battery charging
15:45 - 16:30 hrs	Drone flying competition : Final Round
16:30– 17:00 hrs	Distribution of Certificates and closing ceremony

The MES in association with industries and professional societies like SFA, AESI and IWPA conducted a two days outreach programme on materials manufacturing and drone workshop during December 20-21, 2019 at the center of innovation and research, PHCET Rasayni. The program aimed to reach out to school students from remote areas to excite and empower them to pursue careers in Engineering and activities related to materials manufacturing for aviation and aerospace. The brochure and the programme has been given earlier. Prof. R. K Pant, Dept of Aerospace along with a team of students from IIT Bombay conducted the workshop on Drone Assemblies and Flying Competition. Total 15 teams comprising 2 to 3 students drawn from different school participated. The occasion was graced by Capt. Mohini Shroff founder and board member of IWPA and the first leady who participated in the air race India organized by AESI 2003. Some of the photographs of the workshop are enclosed below.


20/12/2019 & 21/12/2019
Organised By
PHCET
SFA
PHP
Materials Manufacturing
ITA


crescent


Workshop
ITA


Two Days Outreach program On
Materials Manufacturing & Demo workshop
IN ASSOCIATION WITH INDUSTRIES & PROFESSIONAL SOCIETIES

INTERNATIONAL STUDENTS OLYMPIAD IN UNIVERSITIES AROUND THE WORLD

On

HOT BULK FORGING AND EXTRUSION TECHNOLOGIES

April 2020

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY

SFA – Mumbai Chapter

PHP – PILLAI HOC POLYTECHNIC

QFORM

Venue:

Centre of Innovation & Entrepreneurship Cell
Pillai HOC College of Engineering and Technology, Rasayani

India is one of the fastest growing economy (ranked sixth in the world) . The share of the manufacturing sector alone is expected to be one trillion USD by 2025. Empowerment of manufacturing sector and continuous improvement in skilling of people and R&D is required to achieve this target. The future lies in intelligent manufacturing that is compliant with Industry 4.0 with 4.0 defects. The way forward for engineering institutes is to provide training & learning to prepare students to meet the challenges of Industries on the shop floor.

In the light of above and the world wide interest the Mechanical Engineering Department at PHCET & PHP is organizing a competition between students that will take place in April 2020 for universities around the world.
We invite students to participate in the International Olympiad at universities around the world.

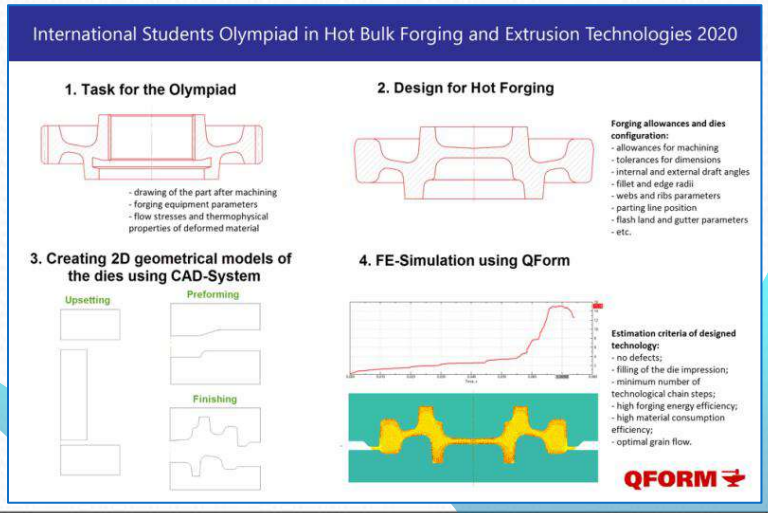
10 most qualified participants will be selected by Pillai HOC College of Engineering and Technology, Rasayani. The competition will be preceded by a National Workshop on "Application of Simulation & Failure Analysis in Product Development". This workshop will provide an outstanding opportunity to learn about the Role of Simulation & Failure Analysis for getting Reliable Products at low cost.

Last Date for Submission of names for the Olympiad: February 14, 2020

Last Date for display of selected students for the Olympiad: March 21, 2020

Selected Students will be provided solved examples from previous Olympiad for review as well Training course of simulation in Qform along with internet training on software for practice before the Olympiad

Winners will get specialist certificates of skill development in Qform Software simulation



For further queries please contact:

Dr. R.C. Prasad
Ex. Professor IIT Bombay
Professor
Dept. Mechanical Engineering
Pillai HOC College of Engineering & Technology, Rasayani
Via Panvel, Raigad, MH- 410207
Mobile :- 09869236812 / 8433883165
Email :- rcprasad@mes.ac.in / rssppa@gmail.com
www.sfa.mes.ac.in

One Day Professional Development Workshop

On

Application of Simulation
&
Failure Analysis For Product Development

April 4, 2020

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY | SFA Mumbai Chapter | PHP – PILLAI HOC POLYTECHNIC | QFORM

Are you interested to Evaluate your Products & Processes, Predict & Eliminate Defects, Increase Productivity & Quality at Decreased Cost Using Manufacturing Process Simulation & Failure Analysis?

Then
Register for this 1 Day Workshop

This Workshop will provide an outstanding opportunity to learn about Role of Simulation & Failure Analysis for getting Reliable Products at low cost

Venue:
Seminar Hall
Pillai HOC College of Engineering & Technology, Rasayani`

Person desirous of participating in this professional development program are requested to fill in the accompanying attached form and send the same to the Convener:

Dr. R.C. Prasad
Convener & Vice Chairman SFA Mumbai Chapter
Ex. Professor IIT Bombay
Professor, Department of Mechanical Engineering PHCET Rasayani
Via Panvel, Rasayani, Taluka – Khalapur, Dist. Raigad-410207
Phone :- (02192)-252005 / 250066 Mobile :- 09869236812 / 8433883165
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REGISTRATION FORM

One Day Professional Development Workshop

On

Application of Simulation
&
Failure Analysis For Product Development

April 4, 2020

NAME _____

DESIGNATION : _____

ORGANISATION : _____

MAILING ADDRESS _____

MOBILE: _____ EMAIL: _____

Registration Charges

Category	Rs.
Student participant	300 (This includes one year membership of SFA student chapter)
Faculty , SFA, IIF, ASM & ASME Members	750
Participants from Industries	1500
EXHIBITORS	5000 (this includes tables for display & free registration for two participants)

Registration Charges Include: Tea, Lunch & Participation Certificate

Payment towards participation in Cash / DD / Cheque No. _____ drawn in favor of 'Pillai Consultancy & Research Projects' payable at Mumbai.

RTGS / NEFT / IFSC Code Details:
Name of the Account Holder: Pillai Consultancy & Research Projects
Name of the bank: ANDHRA BANK
Branch: NEW PANVEL
Account No. 165110100019962
RTGS / NEFT / IFSC Code: ANDB0001651
PAN No. AAA TM 5536 H
GST No.: 27AAATM5536H1ZI

Date: **Signature of the applicant**

(PHOTOCOPY ADDITIONAL COPIES OF THIS FORM, IF NEEDED)

One Day Training Workshop

Under Industries Institute Interaction Programme

On

Challenges & Opportunities in Foundry Industries

Organized by

Supported by

May 16, 2020

Venue:

Conclave, 1st Floor

Pillai HOC College of Engineering & Technology Rasayani

For any enquiry please contact the Course Director

Dr. R.C. Prasad

Ph.D . IISc Bangalore,M.Tech. IIT Madras, Distinguished Alumnus BIT Sindri

Former Professor IIT Bombay

Professor, Dept. of Mech. Engg. PCE Panvel & PHCET Rasayani

PHCET Rasayani

Via Panvel, Rasayani, Taluka – Khalapur, Dist. Raigad-410207

Phone :- (02192)-252005 / 250066

Mobile :- 09869236812 / 8433883165

Email :- rssppa@gmail.com / rcprasad@mes.ac.in

Web :- www.sfa.mes.ac.in

About the workshop

Engineering Institutes are facing challenges to prepare work ready technical personnel by offering quality technical education at UG level. The way forward for non autonomous institutes is to provide training and learning materials that cover the gap between syllabus prescribed by the Universities and the graduates attributes required by the industries. The Mahatma Education Society's Engineering and Polytechnic Institutes have started Industries Institute Lectureship Programme to enhance experience for students and faculty. The objective is to bridge the Knowledge gap between existing course curriculum and the actual requirement of the industries and connect research with the industrial problems. This training workshop is a step in this direction to prepare students who meet the career challenges & opportunities through special lectures related to their course by experienced industry professionals.

Workshop Coverage

Many things can go wrong during casting operation leading to defects in products. Performance of casting depends on soundness that is influenced by casting defects. Defects may arise due to improper design , improper material selection , improper processing , poor maintanance and abuse during service. This training workshop aims to provide practical grounding in hardware and software required in foundry processes for identifying cause of components failures. This course plans to cover :

Manufacturing defects in casting and their analysis
Detection of defects in castings & NDE
Metallography and heat treatment of casting
Failure mode & mechanisms
Methodology of casting failure analysis
Case study of failure analysis
Post the workshop, participants will get opportunity to visit select industry that will enhance their employability

REGISTRATION FORM

One Day Training Workshop

Under Industries Institute Interaction Programme
on
Challenges & opportunities in Foundry Industries

May 16, 2020

NAME _____

DESIGNATION : _____

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Date: **Signature of the applicant**

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INTERNATIONAL STUDENTS OLYMPIAD IN UNIVERSITIES AROUND THE WORLD

On

HOT BULK FORGING AND EXTRUSION TECHNOLOGIES

April 2020

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY

SFA – Mumbai Chapter

PHP – PILLAI HOC POLYTECHNIC

QFORM

Venue:

Centre of Innovation & Entrepreneurship Cell
Pillai HOC College of Engineering and Technology, Rasayani

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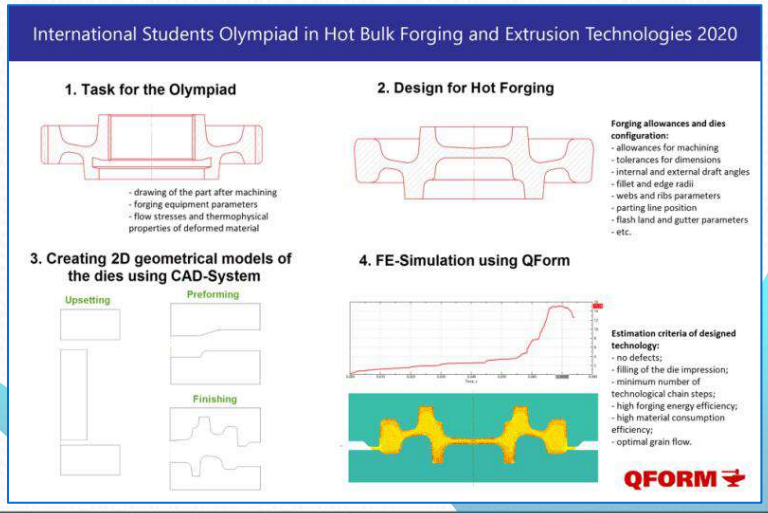

For further queries please contact:

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www.sfa.mes.ac.in

ONE DAY NATIONAL WORKSHOP

on

FAILURE ANALYSIS OF BOILER TUBES

Organized by

PHCET
PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY

SFA
Mumbai Chapter

PHP
PILLAI HOC POLYTECHNIC

March 28, 2020

Venue:

Seminar Hall, 1st Floor

Pillai HOC College of Engineering & Technology Rasayani

The Pillai HOC College of Engineering & Technology, Rasayani in association with Society for Failure Analysis Mumbai Chapter is organizing a One Day National Workshop to address the issue of failure of Boiler tubes that is one of the most significant causes of forced outages of thermal power plants. Boiler tubes are located in different heating zones and are subjected to high temperature, pressure and corrosive conditions. Though they are designed for and should have long life but fail during service. There are a large number of causes that has to be identified for taking corrective action and preventive measures. Failure of Boiler tubes are important for plant operators, maintenance engineer, fabricators and suppliers alike. Plants have management supported BTF reduction programme but only some of them address BTF to root cause level.

Workshop Coverage:

In the light of above this one day workshop is being organized to exchange technical information to understand, identify and mitigate Boiler tube failures. The focus will be on :

- **Understand and Identify Causes of Failures**
- **Leading Modes and Mechanisms of Boiler Tubes Failures.**
- **Water Chemistry Corrosion and Deposition Problem**
- **NDE for Determining Extent of Damage**
- **Root Cause Failure Analysis**
- **Corrective and preventive measures to minimize tube failures**
- **Case Studies of Boiler Tube Failures and Analysis**

List of Invited Speakers :

Dr. Nagesh Kini, Principal Scientist & Head Centre of Excellence in Materials Science, Thermax Ltd., Pune
Mr. Paresh Haribhakti, MD, TCR Advanced Engineering Pvt. Ltd. Vadodara
Prof. V.S. Raja, Professor, Dept of MEMS, IIT Bombay
Dr P. K. De, Ex. Head Corrosion Division, BARC, Mumbai
Dr. G. V. Patil, Head, Mechanical Engineering Department, PHCET Rasayani
Dr. R.C. Prasad, Ex. Professor IIT Bombay , Prof. , Dept. of Mech. Engg., PHCET Rasayani
Dr. A. Bhardwaj, EX. GM, IEOT, ONGC, Panvel
Dr. Shyamsunder Mandayam, GE Global Research Centre Bangalore
Dr. D. N. Manik , Professor, Department of Mechanical Engineering, IIT Bombay
Mr. B. K. Shah, Ex. Head, Quality Assurance Division, BARC Mumbai
Mr. Manohar Rao, Ex. ED, BPCL Mumbai
Mr. T.S. Kathayat, President, Welspun Corp. Ltd, Lower Parel, Mumbai

Sponsorship

The event can be sponsored by donating Rs.25,000/-. The sponsorship entitles mention on the banners, free registration for two delegates and table space for exhibiting equipments / products.

Souvenir

A souvenir will be brought out on this occasion. It will contain the abstracts of the papers and advertisements. The tariff for advertisements in the souvenir is as below:

Back Cover	**Rs.10000/-**
Inside Cover Pages	**Rs.7500/-**
Full Page	**Rs.5000/-**
Half Page	**Rs.3000/-**

Important Dates

Deadline for abstract	March 12, 2019
Deadline for full paper	March 19 ,2019
Deadline for presentation PPT	March 26, 2019

Participation:

Person desirous of participating in the workshop are requested to fill in the accompanying attached form and send the same to the Convener:

Address for Correspondence :

Dr. R.C. Prasad
Convener & Vice Chairman SFA Mumbai Chapter
Ex. Professor IIT Bombay
Professor, Department of Mechanical Engineering PHCET Rasayani
Via Panvel, Rasayani, Taluka – Khalapur, Dist. Raigad-410207
Phone :- (02192)-252005 / 250066 Mobile :- 09869236812 / 8433883165
Email :- rssppa@gmail.com / rcprasad@mes.ac.in
Web :- www.sfa.mes.ac.in

REGISTRATION FORM

ONE DAY NATIONAL WORKSHOP

on

FAILURE ANALYSIS OF BOILER TUBES

March 20, 2020

NAME _____

DESIGNATION : _____

ORGANISATION : _____

MAILING ADDRESS : _____

MOBILE: _____ EMAIL: _____

Registration Charges

Category	Rs.
Student participant	200
Faculty & SFA, IIF, ASM Members	1500
Participants from Industries	2500

Registration Charges Include: Tea, Lunch & Participation Certificate

Payment towards participation in Cash / DD / Cheque No. _____ drawn in favor of 'Pillai Consultancy & Research Projects' payable at Mumbai.

RTGS / NEFT / IFSC Code Details:
Name of the Account Holder: Pillai Consultancy & Research Projects
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Branch: NEW PANVEL
Account No. 165110100019962
RTGS / NEFT / IFSC Code: ANDB0001651
PAN No. AAA TM 5536 H
GST No.: 27AAATM5536H1ZI

Date: **Signature of the applicant**

(PHOTOCOPY ADDITIONAL COPIES OF THIS FORM, IF NEEDED)

WORKFORCE TRAINING / PROFESSIONAL DEVELOPEMENTY PROGRAM FOR GEAR INDUSTRIES

In Association with Industries & Professional Societies

on

Design Materials Selection & Facture Control for Gears

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY | SFA Mumbai Chapter | PHP – PILLAI HOC POLYTECHNIC

On Saturday, February 29, 2020

Venue:

Conclave, 1st Floor

Pillai HOC College of Engineering & Technology Rasayani

Preamble:

Gears are used for over thousands of years in sizes varying from micrometer to meters in diameters for applications in toys to aerospace. The materials rang from plastics to ultra high strength heat treated steels. A variety of surface hardening techniques are used to achieved better notch sensitivity, fatigue, bending strength, pitting and wear strength.

This course is developed in consultation with industries to provide information that will help designers, process engineers, manufacturers and heat treaters to meet the requirements of shop floor. The instructors for the course are drawn from academia, industries and research establishment having decades of experience that will take care of the new technological developments and business practices to meet the requirements of Industry 4.0. It will consist of lectures, interactive lab sessions and training on shop floor in local gear industries.

OBJECTIVES:

- Develop Industry relevant skills and create shop floor ready work force
- Offer placement linked industry relevant course
- Create talent pool for industrial domains expert
- Involve industry experts for training
- To develop appropriate skill ecosystem

WHO CAN BENEFIT?

- Engineering students will develop a skills to become employable
- Gear engineers and researchers
- Users
- Maintenance technicians
- Managers

Person desirous of participating in the professional development program are requested to fill in the accompanying attached form and send the same to the Convener:

Dr. R.C. Prasad
Convener & Vice Chairman SFA Mumbai Chapter
Ex. Professor IIT Bombay
Professor, Department of Mechanical Engineering PHCET Rasayani
Via Panvel, Rasayani, Taluka – Khalapur, Dist. Raigad-410207
Phone :- (02192)-252005/ 250066 Mobile :- 09869236812/ 8433883165
Email :- rssppa@gmail.com/ rcprasad@mes.ac.in
Web :- www.sfa.mes.ac.in

COURSE COVERAGE:

- Gear Design, Manufacturing and Inspection
- Use of FEA, CAD/CAM for Computerised Gear Design and Manufacture
- 3D Printing of Gears
- Metrology and Tribology of Gears
- Selection of Gear Materials and Heat Treatment of Gears
- Surface Hardening of Gears
- Applications of Lasers in fabrication, Heat Treatment and Welding of Gears
- Gear Failures: Types, Causes and Remedies
- Overload
- Bending Fatigue
- Hertzian Fatigue
- Wear
- Scuffing and Cracking
- Gear can not last for ever therefore how to improve & extend Gear life through short pinning & plasma nitriding.
- Case studies of Failure Analysis

REGISTRATION FORM

WORKFORCE TRAINING / PROFESSIONAL DEVELOPEMENTY PROGRAM FOR GEAR INDUSTRIES

In Association with Industries & Professional Societies

Design Materials Selection & Facture Control for Gears

Saturday, February 29, 2020

NAME : _____

DESIGNATION : _____

ORGANISATION : _____

MAILING ADDRESS : _____

MOBILE: _____ EMAIL: _____

Registration Charges

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Date: **Signature of the applicant**

(PHOTOCOPY ADDITIONAL COPIES OF THIS FORM, IF NEEDED)

Industry Institute Interaction Programme

An Initiative of PHP & PHCET

In Association with Industries & Professional Societies

on

Metallography for Industries

Organized by

PHCET – PILLAI HOC COLLEGE OF ENGINEERING & TECHNOLOGY | SFA Mumbai Chapter | PHP – PILLAI HOC POLYTECHNIC

Supported by ITA India chapter

On Saturday, January 25, 2020

Venue:

Conclave, 1st Floor

Pillai HOC College of Engineering & Technology Rasayani

Engineering Institutes are facing challenges to meet the rising expectations of stake holders. The challenge today is to prepare work ready technical personnel by offering quality technical education . The way forward for non autonomous institutes is to provide training and learning materials that cover the gap between syllabus prescribed by the Universities and the graduates attributes required by the industries. This training is a step in this direction to prepare students who meet the career challenges & opportunities through special lectures related to their course.

Metals & Alloys are widely used for a variety of industrial applications. This training workshop will provide an outstanding opportunity to the students pursuing diploma / degree in engineering & professionals working in production & quality assurance in industries to develop skill & sound understanding of all aspects of metallography that is practiced on shop floor but extremely difficult to learn on the job.

Person desirous of participating in this program are requested to fill in the accompanying attached form and send the same to :

Dr. R.C. Prasad
Convener & Vice Chairman SFA Mumbai Chapter
Ex. Professor IIT Bombay
Professor, Department of Mechanical Engineering PHCET Rasayani
Via Panvel, Rasayani, Taluka – Khalapur, Dist. Raigad-410207
Phone :- (02192)-252005 / 250066 Mobile :- 09869236812 / 8433883165
Email :- rssppa@gmail.com / rcprasad@mes.ac.in
Web :- www.sfa.mes.ac.in

Program Itinerary

09:30 - 10:30	Registration
10.30 -11.30	Fundamental principles of sample preparation for Metallographic Examination.
11.30 -13.00	Metallographic Techniques for Microstructural Characterization: Inclusion , Grain Size, & Decarburisation.
13:00 - 14:00	Lunch
14:00 - 15:30	Microstructural interpretation of different types of steels & cast irons before & after heat treatments .
15:30 - 16:00	Hardenability determination using Jominy end Quench test. Case hardening and its Measurements.

REGISTRATION FORM

Industry Institute Interaction Programme

An Initiative of PHP & PHCET

In Association with Industries & Professional Societies

Metallography for Industries

Saturday, January 25, 2020

NAME : _____

DESIGNATION : _____

ORGANISATION : _____

MAILING ADDRESS : _____

MOBILE: _____EMAIL: _____

Registration Charges

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Student participant	200
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Date: **Signature of the applicant**

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INDIAN SOCIETY FOR TECHNICAL EDUCATION

FOUNDED 1968

SHORT-TERM TRAINING PROGRAMMES (STTPS)

On

Composites: Fracture Toughness, NDE & Failure Analysis

Date : June 22, 2020 To June 26, 2020

Venue: Seminar Hall, PHCET, Rasayani

COURSE DETAILS			
1.	Significance & Objectives of the programme (list one or two major objectives)	Light Weight, Corrosion & Damage Resistant Taught Composites are used for many critical applications in Automotive, Aerospace, Defense and Marine Industries. The applications in different sectors have a dramatic impact on Gross National Product and Employment Opportunities in our country. The objective of this program is to provide : 1. Basic Understanding of Manufacturing, Mechanical Properties and Damage Mechanisms to prevent failures of composites during service. 2. Testing and Evaluation of Composites using Fracture Mechanics and Advanced NDT Methods	
2.	Course Content/Coverage (List 5 to 8 major topics with proposed duration of coverage in hours for each topic)	**Topic**	**Duration**
		1. Synthesis of Metal, Ceramic, Polymer & Rubber Composites for Automotive, Aerospace, Defense and Marine Applications	09 hrs.
		2. Nanofiber & Nanocomposites: Synthesis & Characterization	02 hrs.
		3. Fatigue, Fracture & Failure Analysis of Composites	08 hrs.
		4. Fracture Toughness & Non destructive Evaluation using Fracture Mechanics Principles	09 hrs.
		5. Corrosion Behaviour of Composites	04 hrs.
		6. Mechanical & Fracture Toughness (K_{IC}, G_{IC}) Testing of Composites & their relevance to performance	04 hrs. Practical
		7. Processing Composites / 3D Printing & Fracture Toughness of 3D Printed Plastics	04 hrs. Practical
		8. New NDT Techniques including Computed Tomography for Defects Detection in Composites	04 hrs. Practical
		9. Industrial Visit	04 hrs. Practical
3.	Course Schedule	Total working days = 05 Lecture = 32 hrs. Laboratory/Practical = 12 hrs. Industrial/Field Visits = 04 hrs. Total hours engaged = 48 hrs.	
4.	Details of special equipment or laboratory facilities available for the course	Wet Lay-up, Vacuum Bagging, Vacuum Infusion Processing set up for PMC, 3D Printing of Plastics, Thermography, Mechanical Testing (Tensile/ Shear / Impact / Hardness)	
5.	Collaboration with industry/ other institutions/ departments (indicate name of organization, nature of collaboration and experts involved)	1. Dr. K. Rajkumar, Director Indian Rubber Manufactures Research Association Thane Mumbai 400604, (Standardization & Quality Concern for Rubber Blades / Composites) 2. Dr Manoranjan Patri, Director NMRL, (Evaluation of Toughness, Corrosion and Damage Mechanics Using SEM) 3. Dr. G.S. Prabhu, Technical Director, FINE FINISH ORGANICS PVT. LTD.,(NABL Accredited) (Tensile Testing of Composites)	

For further queries please contact:

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