

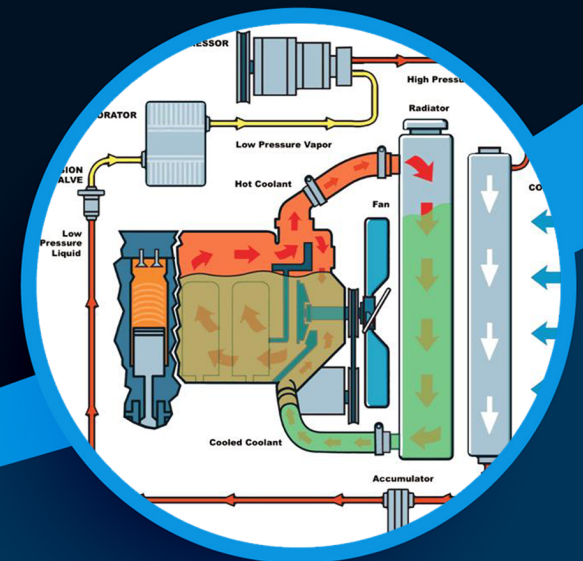


# VIT<sup>®</sup>

**Vellore Institute of Technology**  
(Deemed to be University under section 3 of UGC Act, 1956)

## National Workshop on Advanced Automotive Technologies

27<sup>th</sup> - 28<sup>th</sup> July 2019



*Organized by*

Department of Thermal and Energy  
&  
Automotive Research Centre  
School of Mechanical Engineering  
Vellore Institute of Technology  
Vellore - 632014, Tamil Nadu

Science and Technology, Govt. of India has recognized the school for its research activities and supported in 2003 and 2010 under FIST scheme. The courses offered cater to the needs of Aerospace, Defence, Manufacturing, Energy and Automotive industries. The research and academic ambience of SMEC enable the students to pursue higher studies in leading Universities in India and abroad. Three of the Bachelor's Degree Programme offered by the school, B. Tech. in Mechanical Engineering, B. Tech. Mechanical with Specialisation in Automotive Engineering, B. Tech. Mechanical with Specialisation in Energy Engineering are accredited by Engineering Accreditation Commission of ABET. Four of the Master's Degree Programme offered by the school, M. Tech. in Automotive Engineering, CAD/CAM, Industrial Design, Mechatronics and Manufacturing Engineering. Our School also provides collaboration of M. Tech in Automotive Engineering with ARAI Pune for industrial exposure.

### About the Workshop

This Workshop aims to provide the opportunity for the participants to enhance their knowledge in the advancement of alternative fuel & Engine Operation. This workshop will also help the participants to gain detailed understanding of latest technologies and innovations in the field of Engine Operation & Emission Control.

### Resource Person

**Mr. Yogesh Kalia** is a Founder, Director & CTO at Medhaavi Center for Automotive Research (Medhaavi). Mr. Yogesh Kalia in various capacities has worked with Mahindra & Mahindra, Bajaj, EicherMotors, Kirloskar, Various IITs, NITs and other engine research organization like IIP, iCAT etc. Mr. Yogesh Kalia has ~16 yrs of rich experience in the ECU based advanced engine technologies.

### Course Content

#### Day I

##### Session I

Introduction to Electronic Engine control, EGR and VGT

- ▶ Introduction of Automotive Electronics
- ▶ Working of Diesel Engine
- ▶ Mechanical fuel Injection pump
- ▶ Upcoming emission standard
- ▶ Concept of electronic diesel control
- ▶ Common rail direct injection system
- ▶ Concept of multiple injection
- ▶ Why this technology is required?
- ▶ Working principle of CRDI components (Injector + pump + sensor)

### About VIT

Vellore Institute of Technology (VIT) was founded in 1984 as Vellore Engineering College by the Chancellor Dr. G. Viswanathan. VIT attracts students from all the 29 states of India and more than 50+ countries because of its academic excellence. The credentials of VIT in academics and research, has placed VIT in the 13th position among the engineering institutions and VIT Business School has placed 17th position among the business schools in India by NIRF, Govt. of India Ranking. The world ranking body namely the QS has given 4 STAR rating to VIT, with that VIT becomes the first institution in India to have the 4 STAR rating. In addition to this, the consortium of industries, FICCI has adjudged VIT as the "Excellence in Faculty". VIT has the record of publishing maximum number of SCOPUS Indexed Research Journal papers in 2016, among Indian Universities, overtaking all the premier institutions. VIT has also completed 3 cycles of NAAC accreditation and has been rated as "A" grade institution. In addition, VIT also has obtained for the coveted ABET accreditation by US agency. VIT has introduced many innovations in academic processes, which adds value to every student. FFCS (Fully Flexible Credit System), PBL (Project Based Learning) for better learning, fully digitized academic portals that assists students in equipping themselves for 2020 market place, Hackathons / Makeathons as part of curriculum exercise which kindles the interest and the curiosity of students, which moulds them to be better problem solvers, 8th module in every subject being handled by industry experts, making the students contextualize the concepts they study in the classroom, are a few of the innovations that VIT has introduced.

### About the School of Mechanical Engineering (SMEC)

The School of Mechanical Engineering is amongst the premier schools of VIT started functioning right from 1984. The school has got a team of highly qualified faculty members, many holding PhDs from the elite institutes across the globe, to reach and train the best minds of this country. The pride of the school lies in the significant research funding received from several government agencies such as DST, DRDO, MNRE, CSIR, CVRDE, CPDO, IE, AR&DB, BRNS, ISRO, UGC, NRB, AICTE and also from international funding agencies such as DST-UKIERI, Royal Academy of Engg., Indo-German etc., Memoranda of Understanding (MoU) with various Industry Research Organisations and leading Universities. The Department of

## Session II

ABS, EFI, DPF, SCR, EGR, VGT

EGR, Variable Geometry Turbocharger (VGT)

- ▶ Electronic fuel injection
- ▶ ABS Technology
- ▶ Techniques for reduction of NOx gases, SCR Technology
- ▶ Techniques for reduction of PM, DPF Technology, concept of regeneration

## Day II

Practical:-

### CRDI Engine

- ▶ Practical demo of CRDI engine with open ECU
- ▶ Practical demo of sensors, Open Electronic Control Unit
- ▶ Online monitoring all the engine parameters
- ▶ Online change of injection timing, no. of injections, boost pressure, EGR etc.
- ▶ Reduction in engine noise with CRDI technology through laptop by changing the rail pressure
- ▶ Change in engine idle speed using CRDI technology through Laptop

### Who can apply?

UG & PG Students, Research scholars and Faculty members of engineering discipline interested to learn the field of engine technology, and applications are encouraged to apply.

### Registration Fee

Students (UG & PG) : ₹. 1000/-  
Research Scholar : ₹. 1200/-  
Faculty members : ₹. 1500/-  
Industry Persons : ₹. 2000/-

The registration fee includes GST, registration kit, Snacks, Tea and lunch for both days.

Certificate will be issued to all the participants.

# Number of seats are limited and are allotted on first come first serve basis.

### Important Dates

Last date for the receipt of application: 16-05-2019

### Registration Procedure :

Registration for the workshop can be made by paying the fee

online using the following link:

[http://info.vit.ac.in/events-vit/Automotive\\_Technology/apply.asp](http://info.vit.ac.in/events-vit/Automotive_Technology/apply.asp)

### Accommodation and Travel

All the out-station participants will be provided accommodation on payment basis, for boys, Boys Hostels of the institute (Rs.450/participant/day, Non-AC room) and for ladies Annexe Guest house (Rs.700/participant/day, AC room) No TA and DA will be paid to the participants.

### Advisory Committee

#### Chief Patron

**Dr. G. Viswanathan**, Chancellor

#### Patrons

**Shri. Sankar Vishwanathan**, Vice President

**Dr. Sekar Vishwanathan**, Vice President

**Shri. G. V. Selvam**, Vice President

**Dr. Sandhya Pentareddy**, Executive Director

**Dr. Anand A Samuel**, Vice Chancellor

**Dr. S. Narayanan**, Pro Vice Chancellor

#### Advisors

**Dr. R. Vasudevan**, Dean, School of Mechanical Engineering

**Dr. Bibin John**, HOD, Thermal and Energy Engineering

**Dr. Thundil Karuppa Raj R**, HOD, Automotive Engineering

**Dr. Ramesh Kumar C**, HOD, Automotive Research Centre

#### Co-ordinators

**Dr. Gaurav Dwivedi & Dr. Aruna Kumar Behura**

#### Organising Secretary

**Dr. Sekarapandian N & Dr. Thangaraja J**

#### Contact

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# VIT<sup>®</sup>

Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

Two day Workshop

on

**Advanced Automotive Technologies**

27<sup>th</sup>-28<sup>th</sup> July 2019

### Registration Form

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Affiliation : \_\_\_\_\_

Address : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Gender : Male / Female

Email : \_\_\_\_\_

Mobile : \_\_\_\_\_

Accommodation Required : Yes / No

(Accommodation for Participants on payment basis)

Place : \_\_\_\_\_

Date : \_\_\_\_\_

Signature of Applicant