



FACULTY OF
**ENGINEERING &
& TECHNOLOGY**

ARAI[®]
Progress through Research

WELCOME TO
UNIVERSE OF
POSSIBILITIES
**TRANSFORM
YOUR WORLD**

Excellence in Engineering
Education & Research

15th Rank in India (TOI 2019)

#LearnWhatMatters

Ph.D. In collaboration with



Research Institute of the Automotive Industry with the
Ministry of Heavy Industries & Public Enterprises, Govt. of India

3rd
Best Private University
To Study In India
(INDIA TODAY 2018)

4 DECADES
of
EXCELLENCE

5th
Best Private
Institute In Research
(TOI 2019)

15th
Best for Placement
In India
(TOI 2019)

1,000+
Faculty

16,000+
Students

**Average Salary
₹ 6.5 LACS PA**

1,00,000+
Alumni

mitwpu.edu.in

Ph.D.

Duration

Minimum 3 years &
Maximum 6 years

Intake: 20



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Progress through Research



About MIT-WPU School of Engineering and Technology

MIT-WPU Faculty of Engineering & Technology carries forward the legacy of four decades of excellence in engineering education inherited from MIT Pune to create 'future ready' engineers who excel in the technological spectrum. With an emphasis on practical application of theoretical knowledge, MIT-WPU has one of the best placement records in India. Concurrent with our aim to achieve all round excellence, MIT-WPU is the first university to offer 'Peace Curriculum' for the spiritual and moral enhancement of the students. MIT-WPU firmly believes in technological advancement supported by a value based education system and hence peace studies form an integral part of the curriculum across all 80+ UG, PG & Ph.D. Study Programs at MIT-WPU. MIT-WPU has state of the art infrastructure along with numerous Ph.D. programmes so as to make MIT-WPU a foremost center for research and development of new technologies to solve larger world issues like the environment, food shortages and energy deficiency.

About ARAI

The Automotive Research Association of India (ARAI) is a well-known Automotive Research, Development, Testing & Certification Institute in the country under the Ministry of Heavy Industries & Public Enterprises, Govt. of India.

ARAI Academy is a Skill Development initiative of ARAI, located on a 5-acre area in the middle of Industry at Chakan with education excellence over the last 15 years. Research Scholars would have open access to various labs like Containerized Engine Test Cell, Noise & Vibration, EMI/EMC, Automotive Engineering Systems, Automotive Electronics & Embedded Systems, CAE & Design and latest software such as Altair, Ansys, AVL, GT and Ricardo through the Simulation lab. Also visit <http://www.araiindia.com> and <http://academy.araiindia.com> for more information on the ARAI and ARAI Academy respectively.

About Ph.D. programme in collaboration with ARAI

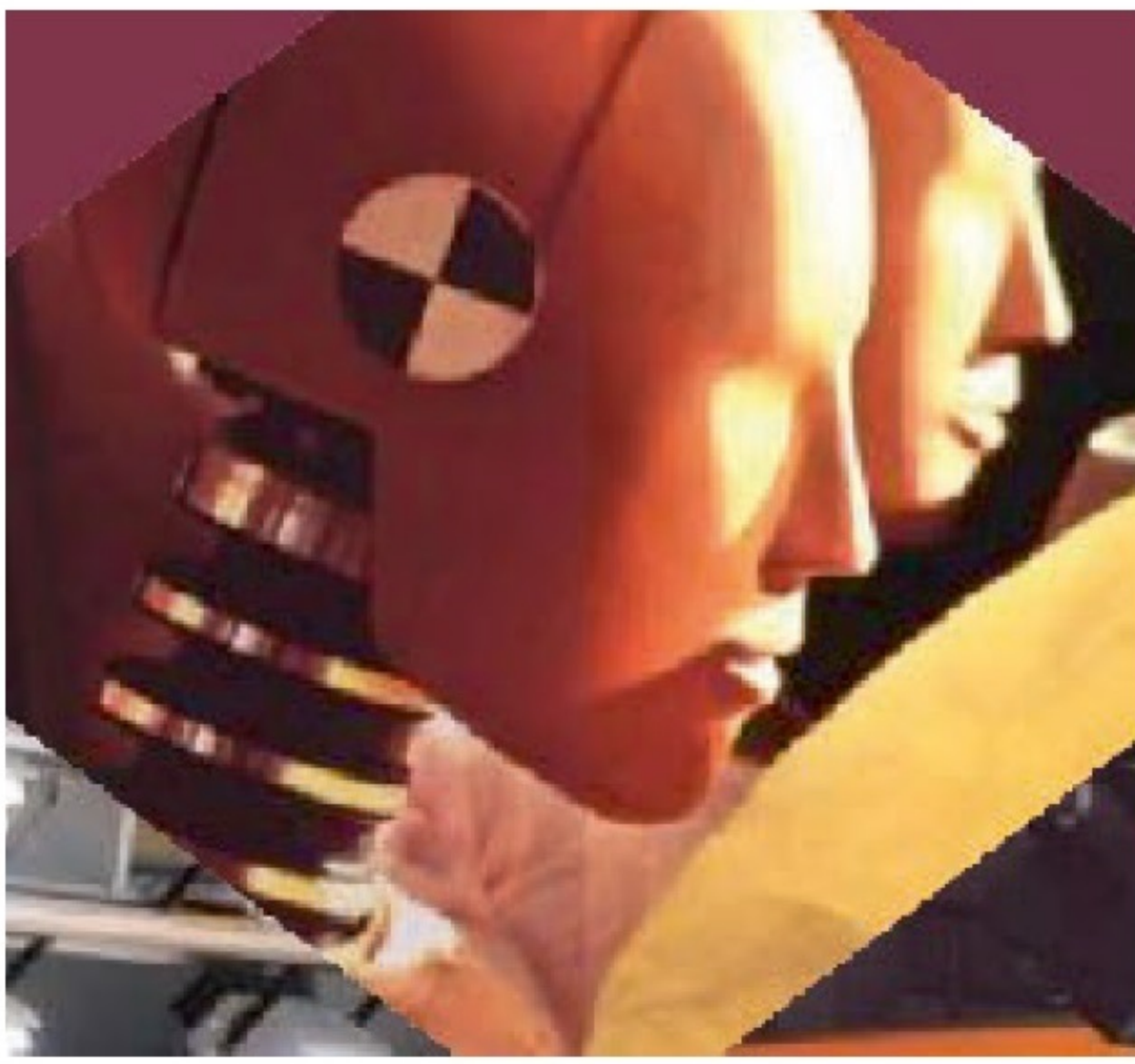
The design and development of present-day automobiles lay more emphasis on safe, smart and sustainable mobility. More and more research are required in connected, autonomous, shared and electric mobility. R&D efforts in these fields need to address issues such as emission, climate change, fuel economy, noise, vibration and harshness, alternate energy, design of powertrain, electric & hybrid vehicles, advanced automotive materials and manufacturing, vehicle crash worthiness, structural dynamics, electronic control and embedded systems, mechatronics, information technology, recyclability, etc. There is a need to carry out cutting-edge research in the aforementioned areas.

ARAI and MIT-WPU have agreed to pool their resources to support research work leading to a Ph.D. Programme. Both ARAI and MIT-WPU will recognise the expertise and the research adequacy for each research work undertaken. MIT-WPU, by virtue of being a University, shall award Degree in association with ARAI, as per its statute and rules & regulations.



Objective

To facilitate research oriented working professionals from the industry, serving faculty members, scientists working in research labs, fresh postgraduate students and others to carry out research in an ideal environment of academic excellence and state of the art laboratories in two of India's premier institutions and obtain doctoral degree.



MIT-WPU and ARAI offers Ph.D. Programmes in focused areas of Automotive Technologies in following streams

- **Mechanical Engineering**
- **Computer Engineering**
- **Electronics and Communication Engineering**
- **Chemical Engineering**
- **Petroleum Engineering**
- **Polymer Engineering**



Powertrain, Emissions and Alternate Fuel

- Swirl Optimization
- After Treatment Device
- Engine Testing and Certification
- Automotive Fuels and Emissions
- Engine Design and Development
- Engine Combustion & Simulation
- Biodiesel
- Automotive Transmission



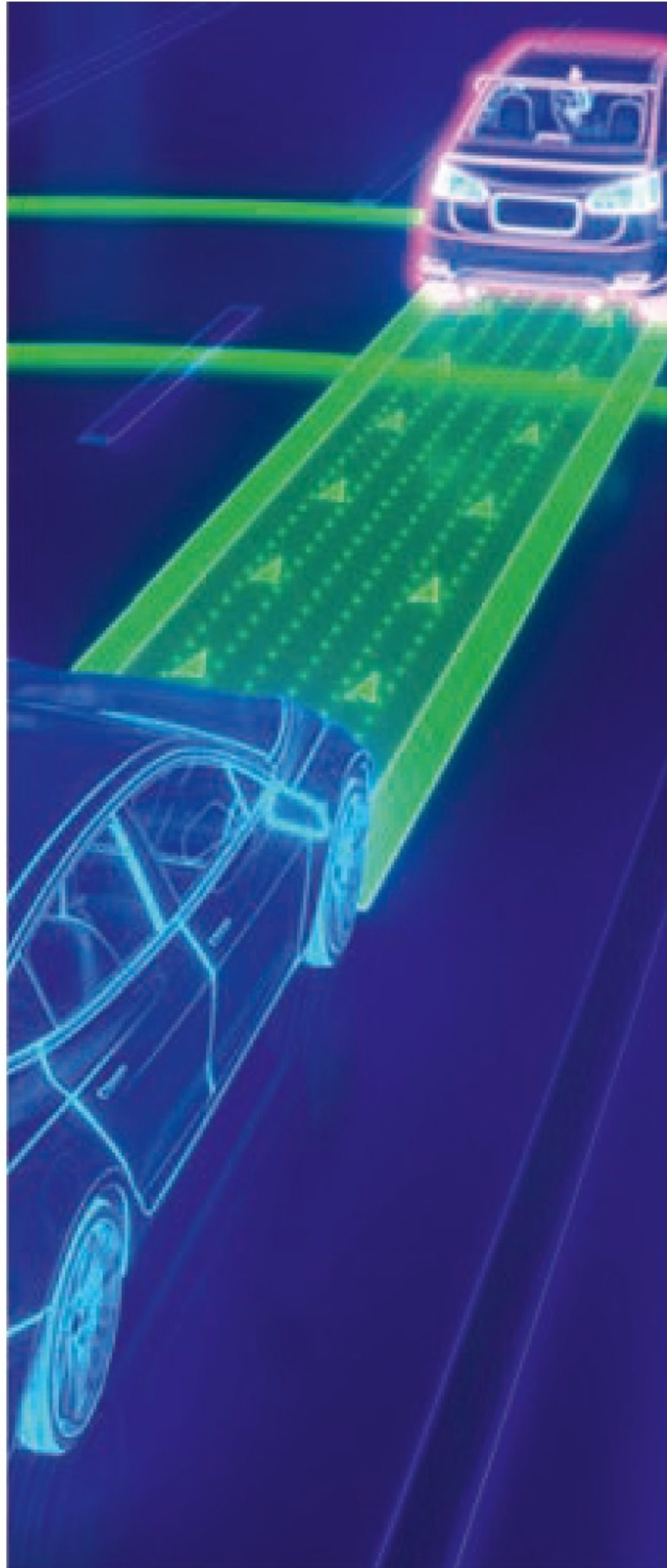
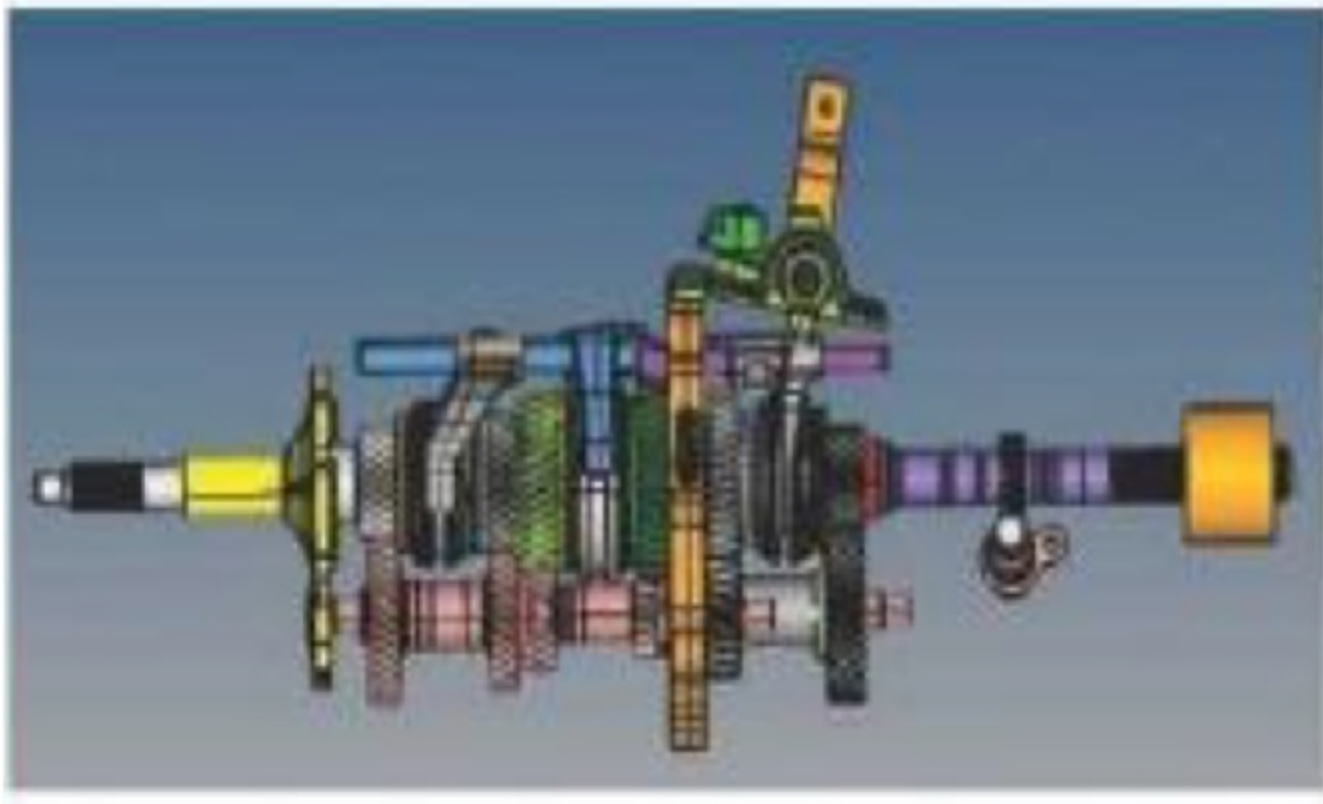
Automotive Materials & Manufacturing and Structural / Vehicle Dynamics

- Material Characterization and Failures Analysis
- Advanced Manufacturing Technology
- Materials for Batteries and Fuel Cells
- Vehicle Dynamics & Control
- Fatigue Analysis / Structural Dynamics
- ADAS / Hardware-in-loop



Safety, Lighting and Component & Vehicle Testing

- Automotive Safety and Crashworthiness
- Automotive Lighting / Photometry
- Automotive Engineering System
- Automotive Testing & Certification
- Impact Injury Biomechanics
- Automotive Sub-Systems
- Driver and Traffic Simulation



NVH, CAE, CFD

- Noise and Vibration Control
- Power Train and Electric NVH
- Modal Analysis
- Sound Characteristics of Materials
- Acoustic Enclosure
- Semi Active and Active Noise Cancellation
- Finite Element Analysis
- Computational Fluid Dynamics
- Automotive Aerodynamics & Styling

Electronics & Embedded Systems, Electric & Hybrid Vehicles

- Engine Electronic and Management Systems
- Automotive Electronics
- Journey Risk Assessment
- Micro Grid and Charging Infrastructure
- Automotive Real Time Embedded Systems
- Model Based Design & RPT
- CAN & CAN Open Technology
- Battery and BMS

Special Topics

- Autonomous and Connected Vehicles
- Vehicle Body Engineering
- 2/3-Wheeler Technology
- Off Highway Vehicles
- Automotive HVAC

Eligibility & Selection Process

Eligibility

M.E./ M.Tech. in relevant fields with eligibility criterion as per University Grants Commission (Minimum Standards and Procedure for Award of M.Phil./ Ph.D. Degrees) Regulations, 2016.

Selection

For selection process and other details of Ph.D. program, please visit <https://mitwpu.edu.in/mit-wpu-and-arai-phd-program>

Tuition Fees

Rs. 2,00,000/- per academic year for first two years and

Rs. 1,00,000/- from the third academic year onwards.

DIRECTOR (Admissions)



Dr. Prasad Khandekar

Dean, Engineering & Technology MIT-WPU
Advisor - Centre for Industry Academia Partnerships



Dr. K C Vora

Sr. Deputy Director & Head,
ARAI Academy

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TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS



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