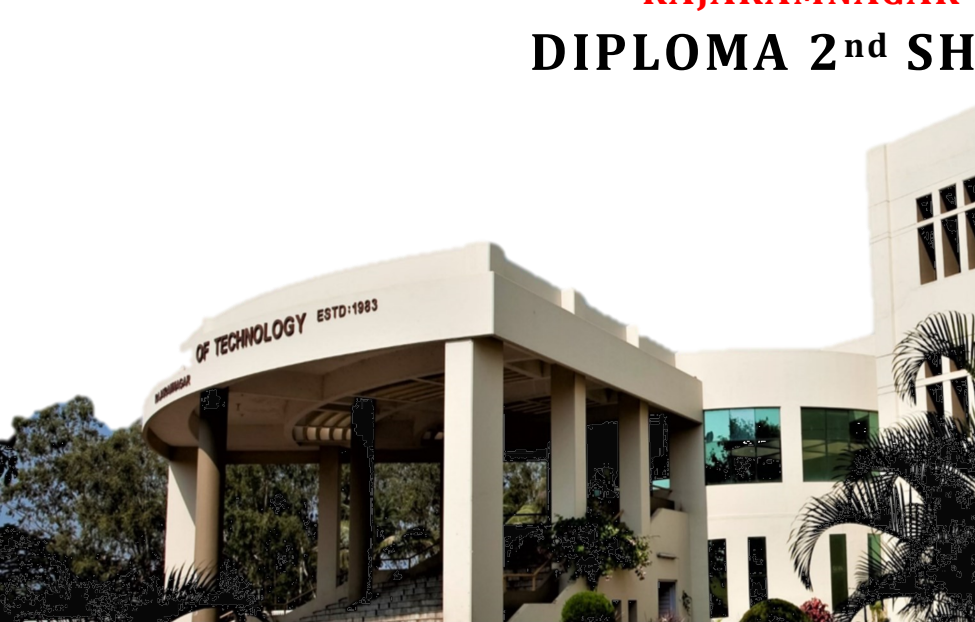


# THE AUTOHUB

AN ANNUALLY PUBLISHED NEWSLETTER

ISSUE 4  
JUNE 2019 - MAY 2020

DEPARTMENT OF AUTOMOBILE ENGINEERING  
**RAJARAMBAPU INSTITUTE OF TECHNOLOGY**  
RAJARAMNAGAR  
DIPLOMA 2<sup>nd</sup> SHIFT



## Vision

Create competent Automobile technocrat to take up challenges of ever changing global standards and serve local industrial and social requirements

## Mission

- To develop employable automobile technocrat with professional skills and ethical and social values.
- To associate with industry and alumni for mutual benefits like training, internship and expert lectures for the students.
- To encourage students for higher studies in recognized institutes
- To inculcate entrepreneurial attitude and values with lifelong learning.



## Best MSBTE Award

Students of Third Year Automobile Engineering  
(Diploma) achieved in  
**DIPEX 2020** for project titled  
'Manufacturing Auto Body Straightening Equipment'

## Editorial Board

Chief Patron

**Hon. Dr. Mrs. S. S. Kulkarni**  
(Director, RIT, Rajaramnagar)

**Hon. Dr. H. S. Jadhav**  
(Dean Diploma, RIT Rajaramnagar)

Chief Editor

**Prof. Rajendra S. Sargar**  
(Head, Automobile Engineering,  
Diploma)

Editorial Members

**Prof. Pravin A. Desai**  
**Prof. Mahesh J. Thorat**

**Prof. Nawaj A. Mulani**  
**Prof. Randhir Y. Chavan**

It is a matter of great pride and privilege for me being a part of departmental magazine "The AutoHub". The Automobile Engineering Department provides a platform for every student to develop their learning skills. The main thrust of the college has been to achieve human excellence to shape the personality of pupils through a host of extracurricular and co-curricular activities, and instilling in them the moral values. Our budding talents have expressed their thoughts, ideas, hopes, feelings, aspirations and convictions in a creative way. In fact, this is how they broaden their mental, psychological and intellectual horizons.



**Prof. Rajendra Sargar**  
Chief Editor

Thus, this Magazine reflects how the department has been able to live up to its aim, providing quality education to the students. As you scan through the pages, it will enlighten you with the important milestones that department has achieved this year. I heartily thank our Management for putting faith on me for this creative work, Director Dr. Mrs. S. S. Kulkarni and Dean Diploma Dr. H. S. Jadhav who have guided us at every stage of making this magazine. My thanks are also to our esteemed members of the editorial board for their co-operation and support and putting in their best in bringing out this issue of our Magazine. Happy Reading

## Alumni Message

R.I.T. Rajaramnagar (Diploma) is much beyond just an "Institution"... It actually denotes a "Culture"... Culture of excellence, empowerment, and enrichment. Being a part of RIT and Department of Automobile Engineering, I felt blessed. The college has molded my personality and clarified my vision of the future. That day is not far when people will recognize me with the name of RIT and I am very grateful to the Institute and department for providing guidelines and motivation to inspire me to achieve my goals.



**Sourabh Kumbhar**  
Automobile Engineering  
Batch 2019-20

## Cultural Cell Activities



Marathi Bhasha Din 2020 Celebration



Swacha Bharat Abhiyan on 21/01/2020



Black Theme Day on the occasion of Makar Sankranti 2020

## HYDROGEN CRACK SYSTEM

For more than a century, hydrocarbon fuels have played a leading role in propulsion and power generation. However, increase in stringent environment regulations on exhaust emissions and anticipation of the future depletion of worldwide petroleum reserves provides strong encouragement for research on alternative fuels. As a result various alternative fuels such as liquefied petroleum gas (LPG), compressed natural gas (CNG), hydrogen, vegetable oils, bio gas, producer gas have been considered as substitutes for hydrocarbon-based fuel and reducing exhaust emissions. But to develop whole new alternative fuel is quite a time consuming task and also takes quite longer time for the society to adapt to it. Hence it has become quite important to come up with newer and cheaper technologies which has the potential to increase the fuel economy significantly especially in a country like India where the current petrol price is above 80rs Hydrogen crack system (HCS) is one such prominent alternative which can increase the mileage of your vehicle buy the installation of this system.

### What is cracking?

Cracking is the process whereby complex organic molecules such as heavy hydrocarbons are broken down into simpler molecules such as light hydrocarbons, by the breaking of carbon-carbon bonds in the precursors. Simply put, hydrocarbon cracking is the process of breaking a long-chain of hydrocarbons into short ones.

### What is HCS?

HCS produces Hydrogen on Demand from regular petrol (gasoline) by cracking Hydrogen from Hydrocarbon vapour using heat alone. HCS is a simple, home-made system that can be added to any engine in an afternoon by anyone with minimal engine maintenance skills. It uses cheap parts that are readily available and easily bought at local stores. It increases the efficiency of engine resulting in more power and torque, reduced engine noise, vibration and reduced exhaust emissions. One would also experience at least 20% mileage increase. Here is a schematic diagram of the system.

### Working of HCS

Vapour from an auxiliary bubbler tank half filled with petrol flows through a rubber pipe into a 'heat tube' where it is heated to about 300 degrees Celsius by the hottest part of the exhaust pipe. This cracks the hydrocarbon molecules into Hydrogen and Carbon which flows on to the air inlet of the engine. Hydrogen has very high flame velocity and hence with the presence of hydrogen the engine approaches to thermodynamically ideal cycle. It mixes with the regular fuel/air and greatly increases the burn-efficiency of the engine.

### HCS Installation

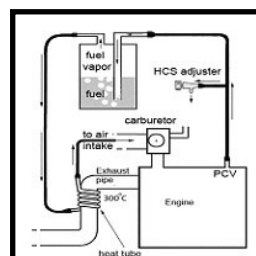
This is a rough installation of HCS on a Honda 200cc bike. The fuel bubbler can be located anywhere handy for refilling and connecting to the rest of the system. Wind a 3mm bore copper tubing at least three times around the hottest part of the exhaust pipe closest to the engine block. Allow about 6 inches (15 cm) copper pipe leading into and out of the coil so that the rubber connection pipe is not too close to the exhaust pipe. The rubber pipe carrying the Hydrogen can be fed directly into the air filter. The ventilation adjustment screw used for PCV can be of plastic which is easily available in any aquarium.

### Advantages of HCV

- This system gives similar results to the better known HHO system (Hydrogen Booster).
- But HHO requires electrical current in order to crack Hydrogen and Oxygen from water and this places a constant drain on the engine. HCS on the other hand just makes use of the heat of the exhaust gas.
- Hydrogen enhances the combustion and provides a valuable Expansion Medium. The net result is more power, less vibration, less engine noise and less exhaust emissions.
- The exhaust fumes are virtually invisible and emit very little odour.
- The mileage gain is nearly between 20% and 40% thus making it a worthwhile investment.
- Easy to install and affordable.

### Article by:

Ved Mandgavne  
Automobile Engineering  
Batch 2019-20



## Cleanliness Drive at Flood Affected Area

A total of 66 young men and women and 21 employees of Rajarambapu Engineering College and Rajarambapu Nursing College participated on 12/08/2019 to carry out sanitation campaign in the flood affected village Borgaon and Junekhed. Of these, 58 students-staff team cleaned at Borgaon and another team of 49 students-staff cleaned at Junekhed. At Borgaon, with the help of Hon. Kartik Patil, Director, Rajarambapu Co-operative Sugar Factory and Hon. Manik Patil, Director Rajarambapu Sahakari Bank, all public places in Borgaon village, Maruti Mandir Chowk, Village Secretariat, roads and Annabhau Sathe Nagar were cleaned. In Junekhed, Gram Panchayat roads, Zilla Parishad schools and some houses destroyed due to floods were cleaned. Hon. With the help of Rahul Patil, Deputy Panch, Junekhed, a cleaning campaign was implemented. Also, everyone cooperated to distribute useful and essential items for the flood victims in Junekhed.



Tuesday, On 13/08/2019, 100 students and staff from Rajarambapu Engineering College and Rajarambapu Nursing College from Rajaramnagar Center carried out a cleaning campaign at Walwa. In this, two groups of students and staff have been formed and Malbhag, Halbhag, Kotbhag, Zilla Parishad schools, Anganwadi, Primary Health Center, main roads etc. of Walwa village have been formed. The parts were cleaned. Two trolleys of wet and dry waste were collected under this initiative. Zilla Parishad School No. 1, Removing all benches, removing office tables, chairs, cupboards, emptying classrooms etc. Cleaning was done by the students. In this campaign, Walwa Taluka Youth Nationalist Congress President Hon. This cleaning campaign was implemented with the help of Sangram Patil. While cleaning in front of Zilla Parishad school at Kotbhag during this initiative, Hon'ble MP of Hatkanangale Lok Sabha constituency Hon. Dhairyashil Mane stopped and questioned the students and appreciated the cleanliness work.



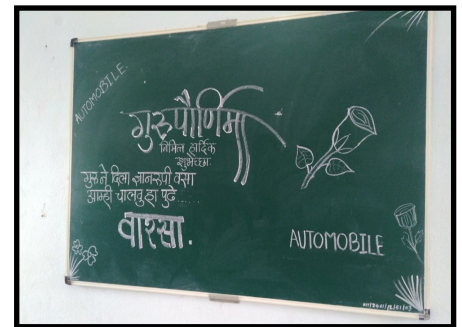
**Pune Motor Show 2019**

Department of Automobile Engineering attended an Auto Expo titled 'Pune Motor Show 2019' at Pune on Sunday,22/09/2019. This expo was organized by Prime Value at Deccan College Ground, Deccan College Road, Yerawada, Ranjeet Nagar, Pune between 20 Sept. to 22 Sept. 2019. Pune Motor Show 2019 is a trade expo on automotive, auto accessories & transportation. The exhibition showcased the umpteen number of automotive rights from bicycle to superbikes, hatchback car to the luxury segment to the commercial vehicles from exhibitors across India. Our students got a chance to explore a plethora of automotive including cars under a single roof. This will definitely help to enhance their interest in upcoming trades of automobiles.



**Gurupournima**

Guru Purnima is the day to felicitate gurus for they are the ones who prepare students to take on the onerous task of nation building. The Department of Automobile Engineering (Diploma) celebrated Guru Purnima on 16/07/2019 between 02:55 pm to 03:30 pm in the College premises wherein HOD Prof. R. S. Sargar enlightened all the students about the role of a teacher or guru in the life of a person. He said only with the true guidance of gurus, we can achieve heights in the respective fields while struggling hard to earn perfectness in our skills. He also said our holy scriptures have placed the importance of Guru near to the almighty. On this occasion, Prof. P. A. Desai addressed the gathering and explained the role of a teacher in a student's life. Students Mr. Ved Mandavgane (TY) and Mr. Shubham Jadhav (SY) also presented their thoughts about importance of gurus in students life and expressed vote of thanks on the behalf of all automobile students on this occasion.



**Technical Quiz Competition**

On the occasion of Engineer's day, K.E. Society's Rajarambapu Institute of Technology, Rajaramnagar, (Diploma 2nd shift) and Automobile Engineering Student Association (AESA), organized Technical Quiz Competition the second and third year Diploma students of automobile engg Quiz competition was scheduled on 15<sup>th</sup> September 2019. Total 54 students (33 students were from SY and 21 students from TY) participated in this event.

Group	Name of Student	Rank
SY	Patil Abhinandan A.	1 <sup>st</sup>
	Veer Harshwardhan J.	2 <sup>nd</sup>
	Talwar Sudama R.	2 <sup>nd</sup>

Group	Name of Student	Rank
TY	Mandavage Ved U.	1 <sup>st</sup>
	Patil Jaywardhan J.	2 <sup>nd</sup>

## Teacher Day

*“It is the supreme art of the teacher to awaken joy in creative expression and knowledge.”*

Department of Automobile Engineering (Diploma) and Automobile Engineering Student Association (AESA) celebrated Teachers’ day with great gusto and gaiety on 5 September 2019 between 02:55 pm to 03:30 pm. Students arranged the event to denote their love, respect, acknowledgement and recognition of the hard work put in by the teachers towards their development. They indicated that, teachers play a vital role in making students accountable citizens of tomorrow and wonderful human beings.



They are the cornerstone of students’ future and there’s nothing worth enough to gratify them for their selfless service and commitment. All teachers enjoyed and appreciated the program. Program concluded with HoDs address. Prof. P.A.Desai and Prof. Vishal Jadhav extended their heartiest thanks to all students on behalf of staff. All faculty also appreciated the new prefects for their successful coordination

## Some Notable Activities



Expert Lecture by Mr. Aniket A. Sawant (Alumni Batch 2018-19) on “Importance of Road Safety” on 15/01/2020



Expert Lecture by Mr. Shreyas S. Kale (Alumni Batch 2017-18) on “How to Prapare for MSBTE Exam” on 14/09/2019



Road Safety Rally in Sakharale on 17/01/2020



Think Blink FixUp Technical event successfully organized in state level technical event “DISTRICT 10 2k20” organized on 25/01/2020

## Best MSBTE Award



## Project Competition Award

Category		Best Innovative Idea		Mechanical
Prize	Name of the Students	Name of the College		
Third Prize Tyre Changing Machine	1. M. Waseem Yusuf Aga	Y B Polytechnic Sawantwadi		
	2. Gaurav Vinayak Jambhekar			
	3. Vivek Vilas Gosavi			
	4. Arbaz Amir Mallick			
	5. M. Amin Sharfuddin Shaikh			
Second Prize Manufacturing Auto Body Straightening Equipment	1. Jayawardhan J. Patil	R.I.T. Rajaramnagar, Sakhrate		
	2. Sourabh N. Kumbhar			
	3. Suraj Deshmukh			
	4. Omkar Nalawade			
First Prize Electric Sport Bike	1. Aftab A. Shaikh	MIT Polytechnic Kothrud		
	2. Darshil Vetal			
	3. Atharav Shinde			

Our Diploma Automobile Engineering Department students have won “**Best MSBTE Award**” in state level project competition Dipex 2020, for their project titled, “Manufacturing of Auto body Straightening Equipment.” This project has also have won **Second prize** under “Best Innovative Idea” in an online state level project competition “Avishkar 2020” for the project titled, “Manufacturing of Auto body Straightening Equipment.” This competition was organised by Zeal Institute, Pune between 13th May to 30th May 2020 through Google Meet and Zoom App. More than 2000 students had participated in this event from various institutes of all over Maharashtra state. principle of project was to remove dent of car body in all directions. This project was sponsored by SP Autocare, Islampur. Congratulations to all the students Mr. Omkar Nalawade, Mr. Suraj Deshmukh, Mr. Saurabh Kumbhar and Mr. Jayvardhan Patil (Students, T.Y. Automobile) and faculty guides Prof. Pravin Desai and Prof. Mahesh Thorat.

## Technical Paper Presentation Competition Award

Students of Third year Automobile Engineering department Mr. Ved U. Mandavgane and Mr. Sourabh N. Narayan won second prize at state level paper presentation competition organized by P.V.P.IT Budhgaon on 01/02/2020.



## Achievement in Annual Sports

Annual sports for AY 2019-2020 was very special for Automobile Engineering department. This year students of department were participated in all types of games and achieved remarkable ranks in same. Details of awards as follows:

Student Name	Class	Sports Name	Award
Sudama Talwar	SY	Shot Put	Winner
Sourabh Tate	SY	Running - 400 mtrs	Runner Up
Team Automobile	TY & SY	Kho Kho	Runner Up
Team Automobile	TY & SY	Cricket	Runner Up



**All awardees from Automobile Engineering department**



**10+** students from AE participated IEDSSA 2020 and achieved remarkable ranks



**05** students from AE participated and completed NSS training at Sakharale between 30/12/2019 to 04/01/2020



**07** students from AE participated cleanliness drive at borgaon organized by Cultural cell Diploma on the occasion of Ganesh Visarjan on 13/09/2019



**07** research paper were published on final year project of 05 students group from AE department



**09** industrial visits were organized by Dept of Automobile Engineering for students better understanding of academic concepts



**09** industry / Academic expert lectures were organized by Dept of Automobile Engineering

## Academic Toppers

Class	Rank	Name of the Student	%
TY	1st	Patil Jayvardhan J.	95.73
	2nd	Mane Vaishnavi B.	90.54
	3rd	Deshmukh Suraj S.	89.67
SY	1st	Veer Harshwardhan J.	91.29
	2nd	Suryawanshi Nikhil R.	90.59
	3rd	Jadhav Shubham S.	90.24



**100%**  
**Placement**

JOBS WITH SMILE

Sr. No.	Company Name	No. of Students
1	Precision Seals Manufacturing, Pune	07
2	Cummins India Limited, Pune	01
3	Bajaj Auto Ltd, Pune	01
4	John deer Ltd, Pune	02