

Ashwa

Solar Car

Astra Robotics

Jatayu

Innovative Clubs of RVCE

Garuda

Chimera

RVCE

Vyoma

Krusha

Hydra

Frequency

Helios

Coding

Antariksh

EDC



ashwa RACING



Started in 2003- FIRST INDIAN FSAE TEAM STATEMENT OF WORK

To build budding undergraduate engineering students into industry-ready individuals through racecar engineering while aiming to develop innovative, high performance and eco-friendly technology in order to solve the world's mobility problems.



Successfully built 15 cars since 2005 and participated in FSAE Competitions across the globe every year.

- 2014- First Indian team to make both Hybrid and Combustion Cars in a single race season
- 2015-Formula Design Challenge-India-4th position overall
- 2015- Formula Hybrid USA-Debut performance in Formula Hybrid- 7th Position Out of 35 registered teams
- 2016-Formula Hybrid-USA-2nd in Design, 2nd in Project Management, 4th Overall.
- 2016-Formula Student Czech Republic- 2nd position in Cost Event
- 2017- Formula Hybrid USA – 2nd in Project Management, 1st in Acceleration, 2nd Overall
- 2017 Formula Student Italy- Fastest Indian Car based on timing.
- 2018 Formula Bharat – Fastest Car in India based on acceleration



- Structure- Mild Steel Space Frame
- Weight- 210kg, Top Speed- 120 kmph, Covers 75m stretch in 4.8s
- Suzuki GSX R600 Engine, Drexler LS Differential, ZF Sachs Dampers.

OVERALL BUDGET- INR 22 Lakh

DEPARTMENTS INVOLVED- ME/ECE/EEE/IEM/EIE/CSE/CE

Sponsors: RSST, Mahle, Schunk, Schneider Electric, EFD Induction, AMS, ABB, Dynamatic Technologies Limited, DMG Mori, Continental, Schaeffler Gruppe, Mallar Group, Magod Laser, Infineon

Mars Rover

- **STARTED IN 2015**
- **OUR PROJECTS**
- > **Autonomous Car**

Designing and developing an autonomous car that will help us solve many everyday problems that we face on the roads today.

- > **Astra Mars Rover**

Each year the Astra Team develops a Mars rover to compete in the University Rover Challenge organized by the Mars Society in the MDRS, Utah, USA.

- **ACHIEVEMENTS**

2015-Anveshan, E-Yantra, E-scale cup, Semi Autonomous Bot' Shastra(IITM)

2016-Microbotics challenge(IIT-M), Quest ingenium hackathon, Mercedes benz hackathon, Trail blazer challenge(NIT-K)

2017 – Phyxit, Pravega(IISC), Dexter's lab, Pravega(IISC), E-Yantra, Smart India Hackathon, MoU with Hyperverge, University Rover Challenge

- **TECHNICAL DETAILS**

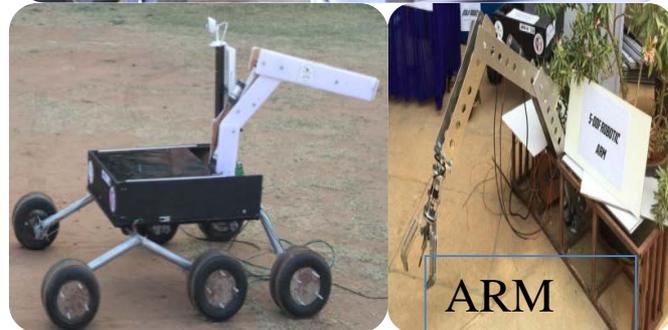
-> **Astra Mars Rover:** Double lambda mechanism, 2.4Ghz Communication from Rover to Base Station, GPS and Image Processing.

-> **Autonomous Car:** Image Processing using LIDAR, Machine Learning, Object detection sensors (Ultrasound and Sonar).

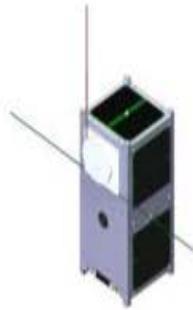
Departments involved:

ECE/ME/CSE/ISE/EIE/IEM/BT/TCE/BT/CV/ASE/CE/EIE/MCA

Cost: 20,90,000/-



Sponsorship: RSST, Toradex, Hyperverge, Anu Engineering Works, S P Robotic Works, Acton Electric Inc,



- Started in 2015- 1st Indian Student Satellite team to carry out biological experiment in space

Started by students of Aerospace engineering aspiring to be young nano-satellite entrepreneurs. Emerged as a 100 member stable team with members from all departments including Biotech. The team has an aim of launching the satellite by 2019.

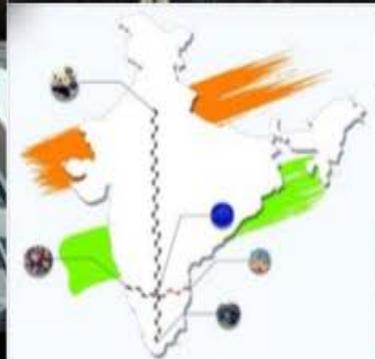
Specifications

- Nanosatellite 10cmX10cmX22.7cm
- Mass - 2.66kg
- Biological payload
- Mission life – 3 months
- Project Duration – 3-5years
- Low Earth Polar Sun-synchronous orbit of 550-600km
- ARM Cortex M4 Chipset
- Al 6061 T6 chassis with a Magnetorquer for stability

OVERALL BUDGET- INR 95 Lakh

DEPARTMENTS -

ASE/EIE/ECE/CSE/IEM/ME/BT/CH/ISE/TCE/EEE



- Team was launched by Prof. U.R. Rao
- 1st Prize among 25 colleges in Nanosats Competition conducted at IIAP, Bengaluru
- International recognition by world renowned nanosat agencies.
- Baseline Design Report (BDR) successfully completed within 2 and half months to ISRO.
- BDR well accepted and appreciated by ISRO.
- Great support from national to international agencies to the project.



TEAM CHIMERA



• Started in 2006

The team is involved in designing and fabricating Formula styled Electric prototypes for FSAE events. Has participated in various national and international event and achieved the following.

- 2007 – Chennai – Hybrid auto battle (First team to build hybrid prototype)
- 2011 – Berlin, Germany - Challenge Bibendum
- 2014 – New Hampshire, USA-Formula Hybrid - First Asian Team & Fan favourite awardee
- 2015 – Formula Electric Italy - Best Asian Team
- 2016 – Japan SAE- Rookie Awardee
- 2017 – Japan SAE- 6th Business Presentation
- 2018 – Formula Bharat -5th in Cost Report, 6th in Business Presentation, and 10th in Design Evaluation
- 2018 – Formula Green – 3rd in Business Presentation, Cost Report, Design Evaluation

Design specifications

Material: Mild steel, AISI 4130,

Wheel Base: 1600mm;

Track Width: 1200mm

Weight: 250kgs; Battery Capacity: 96V & 60Ah

Motor: 3-Phase AC induction motor; Power: 5.7KW

Departments involved: ME/EEE/ECE/EIE/IEM/CSE/CVE

Cost of the Project: 18 Lakhs

Sponsorship: RSST, Reva, BEML, General Industries, Kamal Bells, HPCL, Solidworks, Agni Motors, Prakyath Machine & Machine Tools, JSW, Goel TMT, Sireesh Auto, Phyttech.



PROJECT GARUDA



- **Started in 2006**
- Seven Prototypes and Three Urban concept cars till date.
- The First Supermileage Team of India



Structure : Aluminum Alloy – 6063

Battery: 1KWh, 48V Lithium Ion Battery

Motor: 1KW,3.5Nm 3 phase Brushless DC motor

Custom designed : Hub, Steering, Carbon fiber shell, Motor Controller, Bi freewheel differential

Cost : Rs. 9.83 lakhs

Departments involved: ME/IEM/CV/EEE/ECE/EIE/TE/ASE/CSE



Achievements:

- Won 'ROTARY YOUNG' award in 2008.
- Won 'Perseverance in the face of adversity' award in SEM-UK in 2009.
- Placed 14 in SEM-2012. ONLY INDIAN TEAM TO FINISH THE EVENT.
- Only Indian team to pass all static and dynamic tests in Battery electric Urban concept category in SEMA 2017

Sponsorship: RVCE, RSST, Lisbeth Eilenberger, Global IP Services, Ajay Industries

TEAM HELIOS RACING



- Started in 2006
- 2007-First Indian team to participate in Baja SAE South Africa.
- 2015- Won 1st place in Baja Student India(National Champions)
- 2016- Won 4th place in Baja SAE India(Out of 400 Indian teams)
- 2016-Won 2nd Place in acceleration, Baja SAE International, Rochester(Out of top 100 teams from across the globe)
- 2017: Won 2nd Lightest car award, 3rd in Acceleration and 4th in design

ALL TERRAIN VEHICLE

- Speed: 60 kmph ; Acceleration: 4.2 sec- 150ft
- Steering: 3.0 m turning radius
- Wheel base: 51 inch;
- Brake: Tandem Master Cylinder
- Suspension: Chromoly AISI4130 and Aluminum 7075 T6 design;
- Gearbox: Custom Designed and fabricated, Custom CVT transmission.
- Cost : Rs. 8 lakhs for the car;
- Registration & Transport: Rs. 10 lakhs

Departments involved: ME, EC, EIE, IEM.

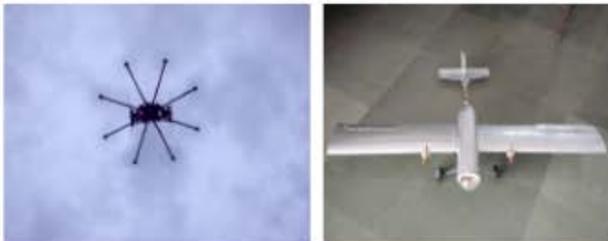
Final Year Projects

- 2016 – Design, analysis and manufacturing of Suspension, steering and brakes
- 2016 – Design, analysis and manufacturing of Power train.
- 2017 - Design of custom brake calliper
- 2017 – Design of a Custom CVT



Sponsorship: Meritor, Honda, CNC India, RSST, Wilwood, Fox Racing, Scholarian Racing, Universal Urethanes, Accuspirls, Bhatia Tools, Stahlwille, Solidworks, Helios Alumni Association

Project Jatayu - Autonomous Unmanned Aerial Vehicles



- **Started in 2008**
- 2009 – 3rd in Australian Outback Challenge
- 2012 – Best Debutant Team - SUAS, Maryland, USA
- 2012 – BITS Goa – Tail Spin Event
- 2013 – IIT Kharagpur
- 2014 – Participated SUAS Maryland – USA
- 2015 – Participated SUAS Event Maryland – USA
- 2016 – Placed 18th overall in SUAS, Maryland, USA
- 2016: Placed 5th in VIT graVITas

Structure: Balsa, Carbon fibre

Wing Span : 3000 mm

Length : 1800mm

Weight : 3 Kg

Camera: Canon S110

Autopilot System : Pixhawk

Communication : Odroid U3 and Futaba R617

Departments involved: ME/CSE/ECE/AS

Projects:

Vayu, Silver Surfer, Sentinel, Vayu-2

Project Applications

Design and Development of Autonomous UAV for Search and Rescue operations and Reconnaissance

TEAM HYDRA



OBJECTIVES

To deploy the AUV as an “Automated Underwater Vehicle”, which will also be deployed as a ‘Purifier’. To also develop the AUV for surveying and navigation purpose.

To develop it to supporting the initiatives such as ‘SWACHH BHARAT ABHIYAN’ ‘MAKE IN INDIA’, this shall comply with the modern day market requirements.

ACTIVITIES

- Design and fabrication of the outer structure of auv.
- Developing android application to monitor and control the auv.
- The hardware implementation of the electronics part
- Planning the underwater communication .
- Lake water sample collection and testing.
- Simulation.

FACULTY ADVISOR

Dr. Prasanna Kumar
Professor, EIE

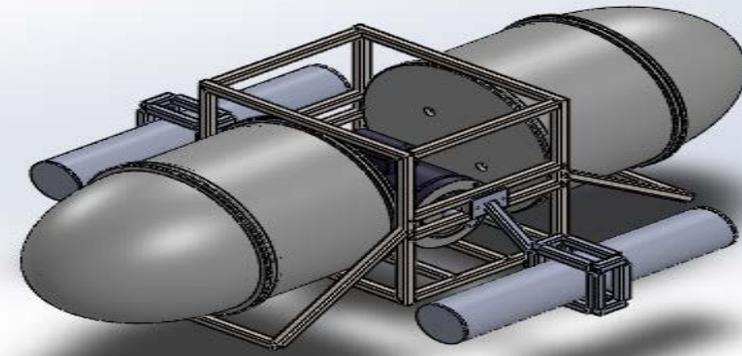
ABOUT THE TEAM

The Dream Team is a special cell of Team Hydra, Headed by Siddhant bajpai (Team Head), Nishant srivastava (Opertaion Head) and other members are dedicated towards making the AUV into a commercially viable product.

Working in collaboration with the government of India, The dream team aims at manufacturing a feasible product by the end of year 2017.

ACHIEVEMENTS.

1. Participation at NIOT competition at Chennai.
2. Secured second place in PDR presentation at NIOT, Chennai.
3. Received the Best project award from IISc Bengaluru.
4. Working in collaboration with Government of India, under two projects.
 - a)Autonomous underwater vehicle.
 - b)Autonomous Underwater Purifier



TEAM KRUSHI



- STARTED IN THE YEAR 2016
- R & D TEAM DEDICATED TO BUILD FARM MACHINERIES FOR UPLIFTMENT OF FARMERS
- SIGNED MOU WITH E.T.D.C(ESCORTS TRAINING AND DEVELOPMENT CENTRE) TO UNDERTAKE PRACTICAL PROJECTS.
- “AERIAL LIFT PLATFORM” WAS THE BEST MECHANICAL OUTGOING PROJECT IN YEAR 2017
- “AERIAL LIFT PLATFORM” NOMINATED AS TOP TEN BEST PROJECT BY F.P.S.I (FLUID POWER SOCIETY OF INDIA)
- TO PARTICIPATE IN I.Q.S (INTERNATIONAL QUARTER SCALE COMPETITION) IN THE YEAR 2018

THE DEPARTMENTS INVOLVED: ME,EIE,IEM,CHE,AERO.
COST OF PROJECT : Rs 14,00,000.

FINAL YEAR PROJECT : AERIAL LIFT PLATFORM
FOR AGRICULTURAL AND CIVIL PURPOSE.

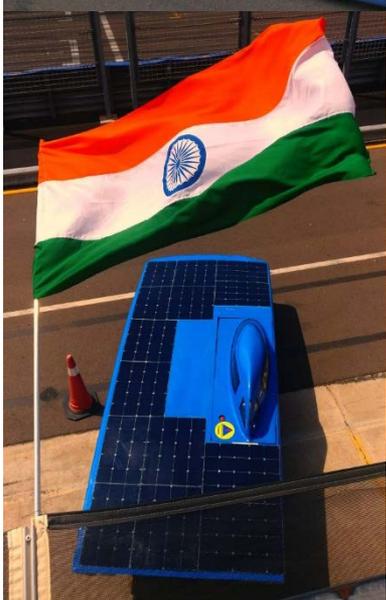
SPONSORORS : RSST , E.T.D.C ,CLAAS
INDIA.

RVCE SOLAR CAR TEAM

Started in 2013

- 2017 – October – World Solar Challenge – Australia.
- 2014 - First International Team to be donated the high efficiency Si cells from SunPower, USA
- 2016 – First place in Dr. AIT national level technical exhibition.
- 2015 - Presented Youth Achievers's Award at Wipro Earthian Program.

Dimensions and weight:	4000x1600x1200 mm. 220kg (without driver)
Chassis	Carbon fiber monocoque design (Carbon fiber honeycomb sandwich structure)
Solar Panel	SunPower, USA- Maxeon Gen 2 cells(monocrystalline silicon cells). 22.4% efficiency.
Tires	Bridgestone Ecopier 95/80 R16
Brakes and suspension	Hydraulic all wheel braking, Regenerative rear brake. Double wishbone front Suspension and trailing arm rear suspension.
Batteries	Panasonic NCR18650B Li-ion cell 120V, 50Ah, 6kWh battery system.
Motor System	Mitsuba In-Hub Brushless DC Motor 97%efficiency
Telemetry System	IBM Blumix cloud computing platform
Value	Rs. 60 lakhs
Departments involved	ME/EEE/ECE/EIE/IEM/CSE/BT
Registration & Transport	Rs. 20 lakhs



1ST PLACE
Dr AIT NATIONAL LEVEL
TECHNICAL EXHIBITION

Sponsorship : Wipro , IBM, Siemens-Gamesa, SunPower, HHV Solar, 3M, Honeywell technologies, ICP, Rhinokore composite solutions, Ultralife Batteries, Anabond RnD, Dynamatic technologies, SanE, Tritium, RECOM, Fernandes Innovative Solutions, RSST.



Started in 2007

Team Vyoma is the aerodesign club of RVCE. It is one of the leading student projects in India having won many national and international competitions, awards like the NASA Systems Engineering Award among many others.

The main objective is to design and develop low cost drones and also carry out cutting edge research for the development of Unmanned Aerial Vehicles.

- 2008 – SAE Finished 18th
- 2009 – SAE Finished 20th
- 2011 – SAE Finished 8th
- 2012 – SAE Finished 7th
- 2013 – SAE Finished 8th,
- **Won NASA Systems Engineering Award**
- 2015 – AIAA Design Build Fly Finished 40th
- 2016 – AIAA Design Build Fly Design -6th Overall 40th
- 2017 – IMAV- Finished 7th, Technoxian Finished 5th

DBF 2018:

Structure: Carbon Fibre Composites, MDF, Balsa, Monokote.

Weight: 0.8 – 1.6 kg, Span: 0.51m; Wing: E420

Speed : 25m/s, Altitude : 70ft, Payload : 0.8kg

Motor: Turnigy D2836 1100kV

Cost : Rs. 4.5 lakhs

Registration & Transport : Rs.12 lakhs

Departments Involved: ME/EIE/ECE/ASE



«Coding Club»

Coding Club of RVCE



Started in November, 2016

- Coding Club aims to establish coding culture on campus. We organize coding events, technical talks, workshops and work on projects collaboratively.

EVENTS:

- Jan '17 - RVCE Hacks!
- Feb '17 - GSoC Head Start
- Aug '17 - Coding Marathon
- Sept '17 - CodeWars
- Jan '18 - Talk by Anup Kalbalia, head of CodeChef
- Mar '18 - Organized code.fun.do with Microsoft
- Mar '18 - Talk by Shivaram K R, CEO of Curl Analytics
- Session every week on different topics



MEMBER ACHIEVEMENTS:

- Participated in the ACM-ICPC Regionals at Amritapuri, 2018
- Winners and 2nd runners up at XCEED's Geeklathon, 2018
- 2nd runners up at Bosch's iNSCRIBE 2017
- 2nd runners up in Cisco Ideathon 2018
- Participated in Smart India Hackathon, Rajasthan Hack 3.0, Women in Data Science (WiDS), LinkedIn's Wintathon, Smart Cities hackathon held at IISc

COORDINATING DEPARTMENT: ISE

Entrepreneurship Cell, RVCE



April, 2007 : EDC, RVCE (Entrepreneurship Development Cell) was established.

October, 2007 – April, 2008 : Entrepreneurship survey was conducted in various colleges in three different camps

October, 2008 : The first entrepreneurship camp student orientation workshop was conducted

2009 : NITIE Awards - RVCE was awarded the Recognition Award for Best College for Entrepreneurial Education

June, 2014 : First Entrepreneurship Challenge was held with over 48 teams participating

January, 2016 : Entrepreneurship Cell, RVCE won the National Entrepreneurship Challenge held at IIT-Bombay

January, 2016 : The first edition of E-Summit was held – “Stand up, India, Start-up India”

October, 2016 : The first Gyaan Session was held

February, 2017 : The second edition of E-Summit was held based on the global nature of entrepreneurship.

Faculty advisors From IEM Department.

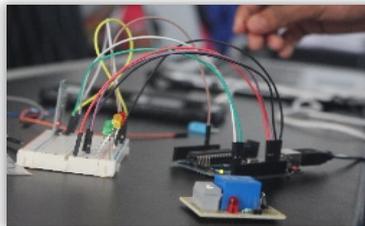
EVENTS: E-Summit (Flagship Event), EMBARK (Ideation Event), Expediens, Business Marathon, Bangalore Entrepreneurship Challenge (BEC).

INITIATIVES: RV College Representative, Campus Ambassador Program, E-Cell Advisory Board, Alumni Interaction Network.

Sponsorship: Google, Kirloskar, Cisco, Mitusbishi, Climveneta, Practr, Zerodha , Envision, Flock, Townscript, TextLocal, StartupJourney, MTV Campus Diaries, Your Story, Nearbuy.



FREQUENCY CLUB



- Started in 2015

PROJECTS

Major:

- 2018-2019 Intelligent Ground Vehicle Competitions.
- To build an autonomous ground vehicle that would be trained to guide through random obstacle courses

Minor:

- (2018) - Gesture Recognition, Home Automation, IGVC Simulation, Personal Bots

Previous:

- Hydroponic System
- Smart Watch – Biomedical Applications

ACCOMPLISHMENTS

Workshops : Machine Learning, Rapid IOT Prototyping, Aero-Modelling, IoT, PCB Design

Tech Talks:

- Application Development – Cloud Computing
- Production Improvement Strategies

TECHNICAL DETAILS

Length: 3 feet - 7 feet long. Width: 2 feet – 4 feet wide.

Height: < 6 feet. Speed: 1 mph – 5 mph.

Sensors: Sick LMS 111 LiDAR, Atlaslink GNSS GP

Structure: Sica Aluminum profile

Departments involved:

CSE/ECE/ME/ISE/TCE/EEE/EIE/IEM/CH/CV/BT/ASE