ALL-TERRAIN VEHICLE

The All Terrain Vehicle (ATV) project aims to design and develop a versatile off-road vehicle capable of navigating various challenging terrains. The ATV is equipped with robust suspension systems, powerful engines, and specialized tires to ensure optimal performance in different environments, including rough terrains, muddy trails, and steep slopes. This project focuses on integrating advanced technologies to enhance safety, control, and user experience. Through a systematic design process, the ATV achieves a balance between power, maneuverability, and stability, making it suitable for recreational purposes, agricultural tasks, and search and rescue operations

SPECIFICATIONS

Engine	-	Briggs and Stratton 305 CC, Single cylinder
Cooling System	-	Air Cooled
Torque (ft.-lb.)	-	14.5
Fuel	-	Petrol
Starting	-	Pull start
Fuel Supply	-	Carburetor
Transmission	-	Continuously variable transmission (CVT)
Wheel Base	-	54”
Tires	-	21*07*10(Front &Rear)
Track Width	-	45”
Chassis Material	-	AISI-4130 Tubular steel (Aircraft grade)
Steering System	-	Ackerman’s (6:1)
Brake	-	Disc Brake (Hydraulic)
Overall weight	-	145kg (Approx.)
Event Name	-	SAE BAJA-2020

PRIZES WON:

1. 20th out of 86 teams in Mega ATV Championship, Nasik
2. 1st in sledge pull and won 25000 cash prize in ATVC, Kota

Future Scope

The future scope of the All Terrain Vehicle project is vast and holds potential for advancements in various aspects, including technology, safety, sustainability, and user experience. These developments will further expand the versatility and utility of ATVs, catering to evolving market demands and emerging applications.

Effi-cycle

The Effi-cycle project aims to design and build an energy-efficient three-wheeled vehicle, combining elements of a bicycle and an electric or hybrid powertrain. The project focuses on achieving optimal energy efficiency, lightweight design, and practicality for urban commuting. The Effi-cycle project emphasizes sustainability by reducing emissions, promoting active transportation, and providing an affordable and efficient mode of personal mobility. Through the integration of innovative technologies and creative engineering solutions, the Effi-cycle project aims to revolutionize urban transportation while addressing environmental concerns.

SPECIFICATIONS

Design	-	TADPOLE
Transmission System	-	Side by Side Trike
Power	-	BLDC Motor with Speed regulator
Maximum Velocity	-	33 KM/hr
Steering	-	Rod Steering Rear tyre
Turning Radius	-	2.25 meter
Brakes	-	Disc
Wheels and Tyres	-	Semi slick Tyres
Wheel Base	-	62”
Track Width	-	51”
Chassis Material	-	Steel

Future Scope

The future scope of the Effi-cycle project presents exciting opportunities for advancements in electric and hybrid powertrains, lightweight materials, connectivity, safety, and urban mobility solutions. These developments will contribute to revolutionizing urban transportation, offering sustainable and efficient alternatives to conventional vehicles, and addressing environmental concerns in densely populated areas.

Electric Go-Kart

The Electric Go-Kart project focuses on designing and developing high-performance go-karts powered by electric drivetrains. The project aims to provide an environmentally friendly and thrilling racing experience, emphasizing speed, acceleration, and maneuverability. Electric go-karts offer low emissions, reduced noise levels, and instant torque, enhancing the overall racing experience while promoting sustainability. The Electric Go-Kart project serves as a platform for innovation, technological advancements, and the exploration of electric mobility in the realm of motorsports.

Specifications:

- Electric Brushless Motor = 48V 1500 Watt (3 Phase), Controller = 48V 50 Ampere
- Motor Forward rpm =3500, MotorReverse rpm = 1800
- Drive System = Chain and Sprocket mechanism
- Steering System = Ackerman Steering System
- Chassis = Seamless Tube
- Material = SS 304 Stainless Steel
- Ground Clearance = 2 inches from the bottom
- Hydraulic Disc Brake (Rear Brakes)
- Range = 50 KM

Photograph:

Future Scope

The future scope of the Electric Go-Kart project presents exciting opportunities for advancements in battery technology, motor optimization, charging infrastructure, telemetry systems, safety features, and competitive racing events. These developments will contribute to enhancing the performance, efficiency, and overall experience of electric go-kart racing while promoting sustainability and encouraging the adoption of electric mobility in the motorsport industry.

ISK GO KART

International Series of Karting project was intended to design and fabricate a reliable and durable go-kart. It's primary objective to build a go-kart using local resources and applying different techniques to limit the cost of vehicles. These objectives were achieved by going through a detailed literature review and studying different techniques which can be implemented. A reliable design was chosen which can be implemented and can be completed in our period. Critically evaluate the design of the vehicle and then different parts were designed. Parts whose manufacturing easy and cost effective were manufactured in a local workshop while other parts which cannot be manufactured locally and were costly, were purchased.

SPECIFICATIONS

Engine	-	Honda Shine 125cc, Single cylinder engine
Cooling System	-	Air Cooled
Torque	-	10.30Nm @5500 RPM
Starting	-	Kick and Electric start
Fuel Supply	-	Carburetor
Transmission	-	4 gears manual transmission
Wheel Base	-	42"
Tires	-	10*4.5-5 (Front) 11*7.1-5 (Rear)
Track Width	-	40"
Chassis Material	-	AISI-4130 Tubular steel (Seamless)
Steering System	-	Ackerman Steering (1:1)
Brake	-	Disc Brake (Hydraulic)
Overall weight	-	100 kg (Approx.)
Event Name	-	International series of Karting 2018
Innovation	-	Electronic Bluetooth device with voice control

PRIZES WON:

1. Driver was awarded with most consistent driver of the event in ISK, BANGLORE.
2. Team won 1st position in 4 events out of 6 events and overall 1st position in TECH-INVENT 2017, CHANDIGARH UNIVERSITY.
3. Team won First Runner Up & awarded with 1.20 Lakh Cash Prize, lightest kart and swiftest kart of the event.

FUTURE SCOPE:

In future go-kart will develop by many ways such as 4-stroke engine. Alternative fuels like bio fuels which are cheaply cost will be used in place of petrol. Solar energy can be produce by solar panels will be apply in go-kart, then it will be convert into E-Kart.

Modification of Bike

The Modification of Bike project aims to explore and implement innovative modifications and upgrades to traditional motorcycles, enhancing their performance, aesthetics, and functionality. The project focuses on customization to suit individual preferences, improve comfort, increase power, and optimize overall riding experience. Through the application of advanced engineering techniques, creative design concepts, and cutting-edge technologies, the Bike Modification project offers enthusiasts the opportunity to transform their motorcycles into unique, personalized machines that reflect their style and performance requirements.

SPECIFICATIONS

- Bike Type - Standard
- Start type - Manual
- Engine Displacement (cc) - 110
- Power (KW) - 30.04 @9600 RPM
- Fuel - Petrol
- Fuel tank capacity (liters) - 18
- Transmission - 4 gears manual transmission
- Wheel type - Spikes
- Gear Box Type Manual
-
- Brake - Drum

Future Scope

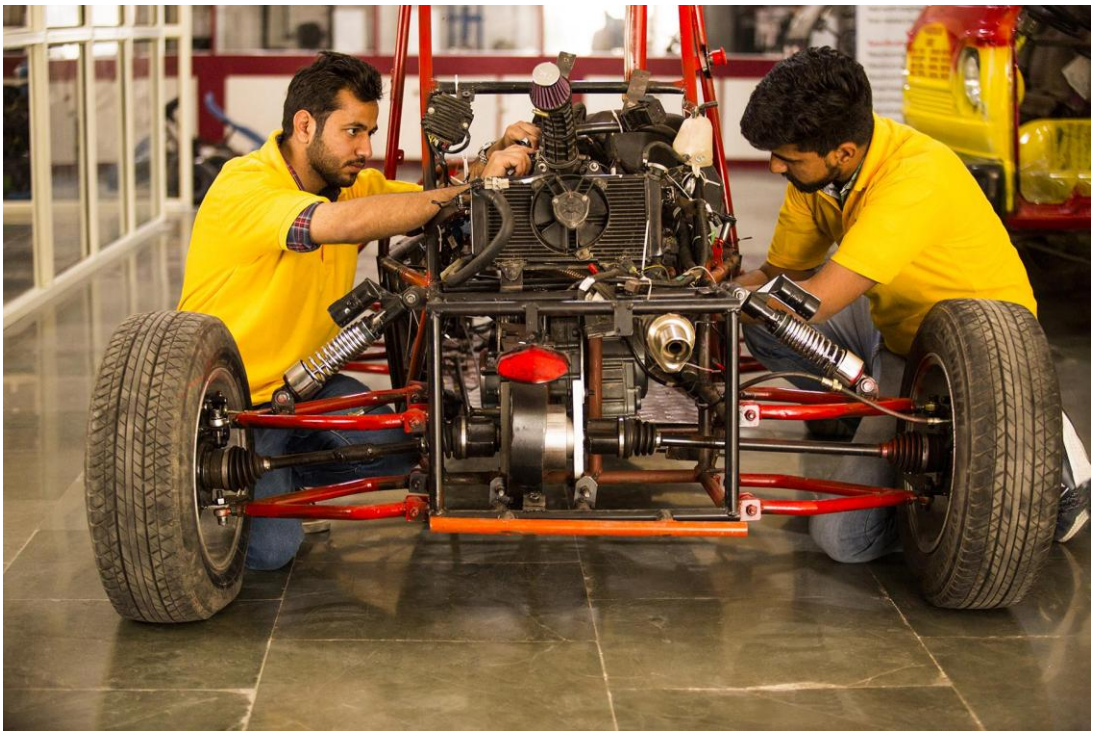
The future scope of the Bike Modification project holds immense potential for advancements in electric conversions, materials, connectivity, performance, safety, and customization. These developments will contribute to pushing the boundaries of motorcycle modification, providing riders with enhanced experiences, improved sustainability, and a greater level of personalization.

SAE SUPRA CAR

The SAE Supra project is a prestigious engineering competition that challenges teams to design, build, and race Formula-style race cars. The project focuses on promoting innovation, teamwork, and practical engineering skills among students. Participants develop a high-performance vehicle, considering various factors such as aerodynamics, chassis design, suspension, power train, and safety. The SAE Supra project provides a platform for students to apply theoretical knowledge to real-world engineering challenges, fostering their professional development and preparing them for careers in the automotive industry.

SPECIFICATIONS

Engine	-	KTM Duke 373.2cc, Single cylinder engine
Cooling System	-	Water Cooled
Torque (Nm)	-	32.92 @7000 RPM
Power (KW)	-	30.04 @9600 RPM
Fuel	-	Petrol
Starting	-	Electric start
Fuel Supply	-	MPFI
Transmission	-	6 gears manual transmission
Wheel Base	-	65”
Tires	-	165*70*R13 (Front) 165*70*R13 (Rear)
Track Width	-	45”
Chassis Material	-	AISI-1020 Annealed Tubular steel (Seamless)
Steering System	-	Ackerman’s (6:1)
Brake	-	Disc Brake (Hydraulic)
Overall weight	-	195 kg (Approx.)
Event Name	-	SAE SUPRA 2019



Future Scope

The future scope of the SAE Supra project presents exciting opportunities for advancements in various areas, including electric powertrains, materials, autonomy, data analytics, safety, and global collaboration. These developments will contribute to pushing the boundaries of engineering, promoting sustainability, and preparing students for the evolving automotive industry.

Solar Power Car project

The Solar Power Car project aims to design and develop a vehicle powered primarily by solar energy, harnessing the power of the sun to propel the vehicle. The project focuses on sustainable transportation solutions, promoting renewable energy sources and reducing carbon emissions. Solar power cars offer an environmentally friendly alternative to conventional combustion engine vehicles, utilizing clean and abundant solar energy for propulsion. The Solar Power Car project serves as a platform for innovation, technological advancements, and the exploration of solar-powered mobility

SPECIFICATIONS

Differential motor :	Single differential DC motor 48 Volt 850 watt BLDC
Motor control :	48 volt 50 amp
Batteries :	80Amp, 12V x 4, Lead Acid batteries (VRLA)
Speed :	25km/hr
Frame Material :	AISI 1018 Seamless pipe
Solar Panel :	100W, 18V x 4
Electric Charger :	Input 220V AC, 5 Amp
	Output 59V DC, 35 Amp
Tire :	Tubeless 90-90-12
Innovation :	Adjustable Steering
Position :	Got 2nd position in Solar racing, 2nd in Autocross, 3rd infinal race and overall 13 th position out of 104 teams inIndo Asian Solar challenge, LPU Jalandhar.

Future Scope

The future scope of the Solar Power Car project presents exciting opportunities for advancements in solar panel technology, energy storage, aerodynamics, charging infrastructure, integrated renewable energy systems, and commercial adoption. These developments will contribute to promoting sustainable transportation, reducing carbon emissions, and accelerating the transition to a clean and renewable energy future.