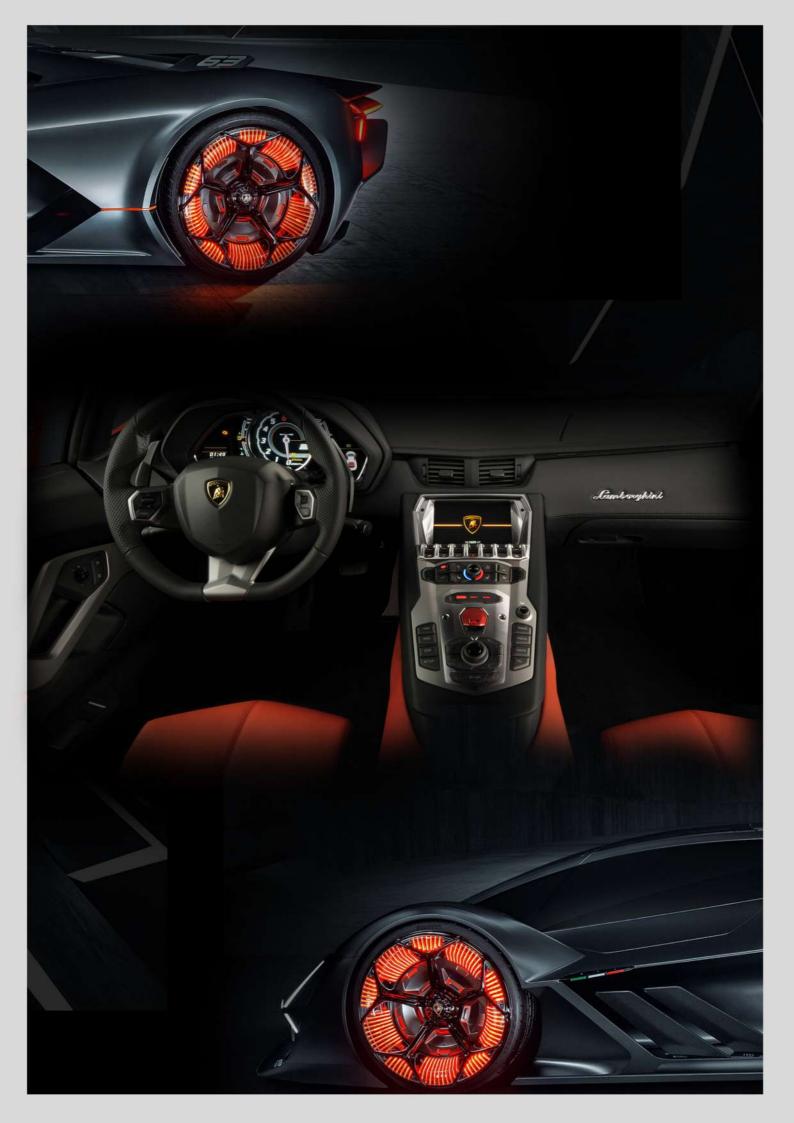
BURNUIT





DEPARTMENT OF AUTOMOBILE ENGINEERING





EDITORIAL

"The secret of getting ahead is getting started" - Mark Twain

Burnout, an epitome of Automobile Engineering Department, which lets us to ruminate the valuable and wonderful memories of events. Being the third issue, it is packed with bags of technofun. This 2019 -20 ODD semester had many remarkable achievements in the history of Automobile Engineering department. The journey started with the 4th successful edition of VAHANA, a most awaited event of our own department with lots of pops and crackles. It made wonders throughout the paths wherever it paved its footprint. Its shoulders were even more strengthened by the 'Autodesk Alias' international seminar.

Furthermore, the industrial experience of the third year automobile engineering students was ignited by the Industrial visit to the Hindustan Machine Tools and the Ashok Leyland Pvt. Ltd. Located at Bengaluru. Also, the Second and the Third year students got an opportunity to visit ATS Elgi equipments, located at Coimbatore. These visits had triggered the young minds of budding engineers, to get a bird's eye view of the industrial scenario.

"Strive for progress, not perfection."

A well said quote for continuous progression towards success. As a part of which our department also spreads its wings to the adrenaline rushing track race events for the third time with Bharath Formula Karting Championship Trophy. This time being a part of electric vehicles era, an E kart was formulated and the team performed in the various aspects in the national level Karting Championship and achieved an award. With the same spirit the students got an opportunity to work in the JK Motorsports Formula 4 racing event as pit-shop trainees to gain knowledge in racing and tuning of racing cars.

With all these, many articles, student creations, artworks, achievements are enhancing the aromatic fragrance of the Magazine 'BURNOUT'

EDITORIAL TEAM

FACULTY EDITORS

Dr.C.Sabarinathan, HOD

Mr.M.Samuel Gemsprim, Asst.Professor

STUDENT EDITORS

Sethumadhavan. J, IV year

Ramgi.M, IV year

Gokul Nath. N, III year

Satish Kumar.K, III year

Hariharan.R, III year

Dharun.K III year

Gavin Christin.R, III year

Sujai.K, III year

Anees.M III year

Hemanth Kumar.G, II year

Krithik Anand.V, II year

CONTENTS

- COVER PAGE
- EDITORIAL INFO
- DEPARTMENT VISION AND MISSION
- PEOS & PSOS
- ARTICLES BY STUDENTS
 - o LEGACY OF INDIA
 - PREMIER PADMINI
 - o MOTORIST OF THE SEASON
 - HENRY FORD
 - o TRIBUTE
 - LAMBORGINI
 - F1 TEAM MERCEDES
 - ROYAL ENFIELD
 - o STUDENTS CREATIONS
 - o MOTOGRAPHY

DEPARTMENT OF AUTOMOBILE ENGINEERING

VISION

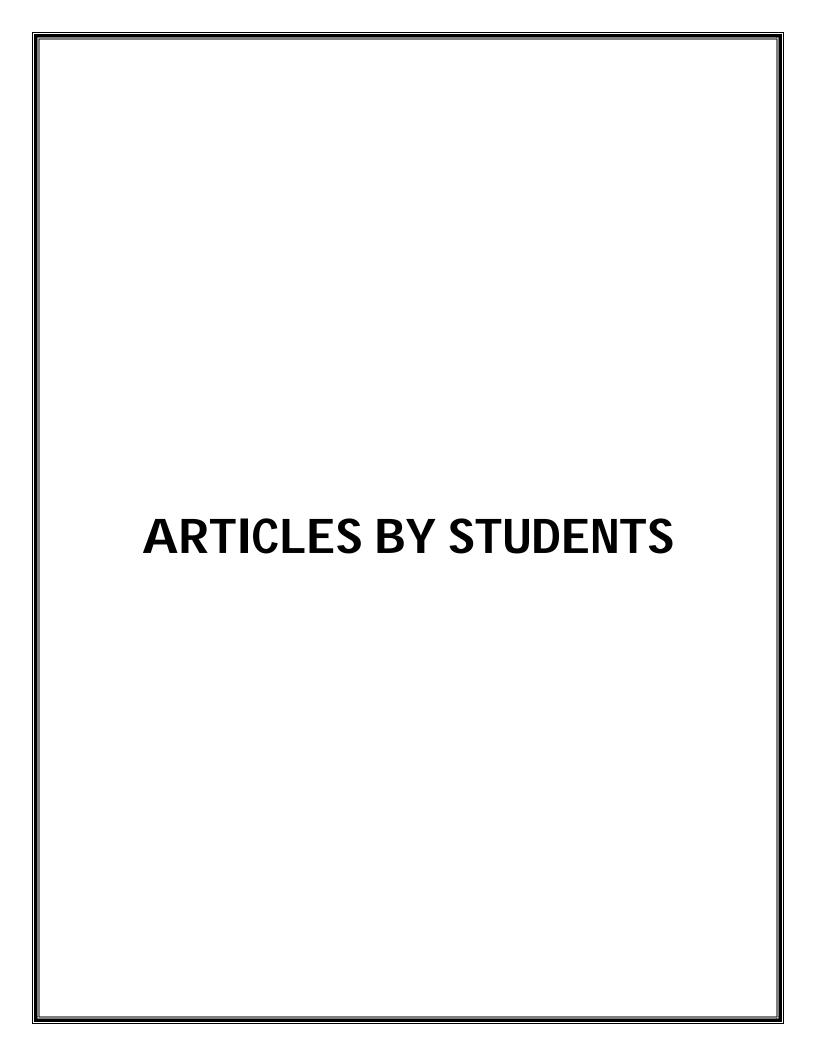
"The Automobile Engineering Department Strives to be renowned globally for stupendous education to well qualified engineers, who are innovative, entrepreneurial and successful in advanced fields of Automotive Engineering"

MISSION

To inculcate complete and fashionable principles of Automobile Engineering and developing skills that will enable graduates to become leaders who can make noteworthy contributions to their profession and to the social environment, Instilling the highest ethical standards and sense of professionalism.

PROGRAMME EDUCATIONAL OBJECTIVES	
PEO1	The programme will prepare graduates for successful carrier in Plan, design, create, construct, develop
	and maintain to improve automobile engineering systems and research that are technically sound,
	economically feasible and socially acceptable to enhance quality of life.
PEO2	The programme will prepare graduates for applying analytical and computational modern techniques
	to address the challenges occupied in the core and allied engineering streams.
PEO3	The programme will prepare graduates with leadership skills, entrepreneurial and self-learning
	capabilities to excel in their profession.
PEO4	The programme will prepare graduates with exhibit professionalism, ethical attitude, team spirit and
	pursue lifelong learning to achieve career and organizational goals.

PROGRAMME SPECIFIC OUTCOMES	
PSO1	Graduate using the knowledge of basic science, professional theory, advanced software and tools for
	diagnosis the systems for technical and social perspectives through a broad area in automotive sector.
PSO2	Acquire the working knowledge and analyze new technical challenge and advancements in the
	automotive industry.



LEGACY OF INDIA

Premier Padmini

Premier Padmini is a four seat saloon that was manufactured in India from 1974 to 2000 by Premier Automobiles Limited, a division of the Walchand Group, under license from Fiat and marketed initially as the Fiat 1100 Delight – and beginning in 1974 as the Premier Padmini. The Padmini's primary competitor in the Indian market was the HINDUSTAN AMBASSADOR and STANDARD HERALD. This famous car ruled the Indian car market and its popularity peaked during 1970s and 80s. The Padmini is named after a 14th century Rajput Princess. Padmini translates to "She who sits on the Lotus" and refers to the Goddess Lakshmi. It was also a common name for girls in India at the time.



Overview

- Manufacturer Premier Automobiles
- Also called Fiat 1100 Delight, Premier President
- Production 1974-2000

Body and Chassis

- Class City Car.
- Body Style 4-door Saloon.
- Layout FR Layout.

Power Train

- . Engine 1,089 cc Fiat 103 I4 . 1,366 cc "PAD 137N". 1,089 cc "S1".
- Transmission 4-speed manual

Dimensions

- Wheelbase 2,340 mm (92 in).
- Length 3,905–3,940 mm (153.7–155.1 in)

Curb Weight - 895 kg (1,973 lb)
Width - 1,460 mm (57 in)

Chronology

• Predecessor - Fiat 1100

• Successor - Premier 118NE

• Interior design

The Fiat 1100D, based on the Fiat 1200 GranLuce Berlina, debuted in India in 1964 with a carbureted 1,089 cc four-cylinder petrol engine — rather than the 1,221 cc engine fitted to the GranLuce in Italy. With a 10.8:1 compression ratio, it created 47 bhp (35 kW) at 4,800 rpm with a maximum torque of 7.20 kg-m (71 N-m; 52 lb-ft) at 3,000 rpm. The original transmission was a four-speed manual gearbox (without synchronized first gear), which drove the rear wheels via a live rear axle. It had a column-mounted shifter, on the left-hand side of the steering column. Weighing 895 kg (1,973 lb) with that engine the car could attain a top speed of 130 km/h (81 mph).





By Hemanth Kumar, II year

MOTORIST OF THE SEASON

HENRY FORD

"Coming together is a beginning, staying together is progress, and working together is success"

A famous quote of Henry Ford (1864-1947) who was an industrialist who changed the face of automobile manufacture in America, becoming the epitome of American Capitalism. He lent his name to 'Fordism' – efficient mass production.

Henry Ford was born in 1863 on a farm in rural Michigan – near Detroit. From an early age he expressed an interest in mechanical devices. He was given a pocket watch at the age of 15 and he developed a reputation for being an experienced watchmaker

Shortly after his mother passed away, Henry left the family farm to gain employment in Detroit. He worked his way up to becoming an engineer at the Edison Illuminating Company. By 1893 he had become chief engineer and gained the recognition and encouragement of Thomas Edison. Henry Ford retained a deep affection for Thomas Edison throughout his life.

It was working as chief engineer at Edison's that he was able to work on a petrol drive quadricycle. His testing was successful and this enabled him to develop this into a small car. This proved the basis for the famous Model T motor car introduced in 1908. The Ford motor company was formed in 1903 with backing of \$28,000 from various investors.

Working Practises of Henry Ford Henry Ford astonished the industrial world by offering a daily wage of \$5 a day. Even by today's prices that is a very good salary. This wage was far above what anywhere else offered. At a stroke it solved the problem of labour turnover and encouraged the best workers to come to Ford. Through paying high wages, Ford was able to encourage the highest level of labour productivity. Although many criticised his seemingly over generous pay, he also pointed out, that the high wage helped the workers to be able to afford the cars they were making.

However, Henry Ford was hostile to the role of trades unions. For a long time he battled against the trades unions refusing to have anything to do them. However, by 1941, with the workers on strike, his wife encouraged him to finally capitulate to the United Auto Workers UAW. It was Henry Ford who also revolutionised the production line processes. He helped to develop the assembly line method of production and was always seeking to cut costs. Although he did not 'invent' the assembly line he did make one of the most successful commercial applications of its potential. This led to his famous decision to give customers any colour they choose so long as it was black.

Any customer can have a car painted any color that he wants so long as it is black. – My Life and Work (1922) Chapter IV, p. 71 This was because black was the quickest colour to dry and therefore the cheapest. The impact of the assembly line was to help reduce the cost of the Model T Motor car. It helped Ford become the dominant motor car. In 1932, it was estimated Ford were producing 33% of the world's automobile production. Henry Ford had a strong dislike of war. He helped to fund a peace ship to Europe in 1915. He spoke out against the 'vague' financiers

who encourage war'. He never really got involved in the Second World War effort, though he allowed other officials in the Ford company to transform Ford into one of the biggest military plane builders in the war.

Henry Ford also subscribed to various antisemitic pamphlets. Although he later apologised for some of his anti-semitic views, he was deeply admired by Hitler. Ford is the only foreigner mentioned in Mein Kampf and it is said, Hitler had a photograph of Henry Ford. Hitler wanted Volkswagen to mirror the production techniques and philosophy of Ford motor company.

Henry Ford was also noted for some of his inspirational self-improvement' quotes – emphasising hard work and selfsufficiency. You will find men who want to be carried on the shoulders of others, who think that the world owes them a living. They don't seem to see that we must all lift together and pull together. As quoted in Wisdom & Inspiration for the Spirit and Soul (2004) by Nancy Toussaint, p. 85 Towards the end of his life he became friendly with Thomas Edison, who moved into West Orange, New Jersey.



Coming together is a beginning, staying together is progress, and working together is success.

TRIBUTE

LAMBORGINI

On April 28, 1916, Ferruccio Lamborghini, the founder of the company that bears his name and is known for stylish, high performance cars, is born in Italy. After World War II, Lamborghini founded a business making tractors from reconfigured surplus military machines, near Bologna, Italy.

Born to grape farmers in Renazzo, from the comune of Cento in the Emilia-Romagna region, his mechanical know-how led him to enter the business of tractor manufacturing in 1948, when he founded Lamborghini Trattori, which quickly became an important manufacturer of agricultural equipment in the midst of Italy's post-WWII economic boom. In 1959, he opened an oil heater factory, Lamborghini Bruciatori, which later entered the business of producing air conditioning equipment.

Lamborghini founded a fourth company, Lamborghini Oleo dinamica in 1969 after creating Automobili Lamborghini in 1963. Lamborghini sold off many of his interests by the late 1970s and retired to an estate in Umbria, where he pursued winemaking. New products and model lines were introduced to the brand's portfolio and brought to the market and saw an increased productivity for the brand. In the late 2000s, during the worldwide financial crisis and the subsequent economic crisis, Lamborghini's sales saw a drop of nearly 50 percent.

Lamborghini currently produces the V12-powered Aventador and the V10-powered Huracán, along with the Urus SUV powered by a twin-turbo V8 engine. In addition, the company produces V12 engines for offshore powerboat racing. Lamborghini Trattori, founded in 1948 by Ferruccio Lamborghini, is headquartered in Pieve di Cento, Italy and continues to produce tractors. Lamborghini grew rapidly during its first decade, but sales plunged in the wake of the 1973 worldwide financial downturn and the oil crisis. The firm's ownership changed three times after 1973, including a bankruptcy in 1978. American Chrysler Corporation took control of Lamborghini in 1987 and sold it to Malaysian investment group Mycom Setdco and Indonesian group V'Power Corporation in 1994. In 1998, Mycom Setdco and V'Power sold Lamborghini to the Volkswagen Group where it was placed under the control of the group's Audi division.



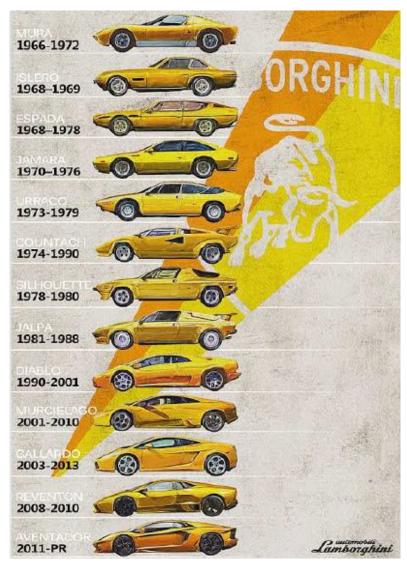






1963 1972 1974 1998

The **Lamborghini logo** symbolizes the founder's zodiac character – the Taurus or a bull. Ferruccio's love of bullfights was depicted in the **logo** and **Lamborghini** cars get their styles from famous bulls. The golden bull ready for bullfights is depicted on the black shield with the golden title "**Lamborghini**" above.



Evolution of Lamborgini



By Gavin Christin, III year

ROYAL ENFIELD

Royal Enfield was a brand name under which **The Enfield Cycle Company Limited** of Redditch, Worcestershire sold motorcycles, bicycles, lawnmowers and stationary engines which they had manufactured. Enfield Cycle Company also used the brand name Enfield without Royal.

The first Royal Enfield motorcycle was built in 1901. The Enfield Cycle Company is responsible for the design and original production of the Royal Enfield Bullet, the longest-lived motorcycle design in history.

Royal Enfield's spare parts operation was sold to Velocette in 1967, which benefitted from the arrangement for three years until their closure in early 1971. Enfield's remaining motorcycle business became part of Norton Villiers in 1967 with the business eventually closing in 1978.

George Townsend set up a business in 1851 in Redditch making sewing needles. In 1882 his son, also named George, started making components for cycle manufacturers including saddles and forks. By 1886 complete bicycles were being sold under the names Townsend and Ecossais. This business suffered a financial collapse in 1891. Albert Eadie, sales manager of Birmingham's Perry & Co Ltd, pen makers who had begun to supply components for cycles, and Robert Walker Smith, an engineer from D. Rudge & Co, were chosen by Townsend's bankers to run the business. Then, in 1892, the firm was re-incorporated and named Eadie Manufacturing Company Limited; it was based in Snow Hill, Birmingham. Later, in 1907, after serious losses from their newly floated Enfield Autocar business, Eadie Manufacturing and its pedal-cycle component business was absorbed by Birmingham Small Arms Company (BSA). Years later, the BSA chairman was to tell shareholders that the acquisition had "done wonders for the cycle department". Eadie still retained a separate identity when Raleigh bought BSA's cycle interests in 1957.

Eadie had won contracts to supply precision parts for fire arms to the government's long-established Royal Small Arms Factory at Enfield, Middlesex, with its offshoot in Sparkbrook and had assumed the brand name Royal Enfield. In 1896 they also incorporated a new subsidiary company, The New Enfield Cycle Company Limited, to handle much of the cycle work and in 1897 Enfield making complete cycles as well parts for other assemblers took all the cycle assembly work from Eadie.

Enfield diversified into motor cycles, 1901 and motor cars, 1902. The motor department was put into a separate subsidiary, Enfield Autocar Company Limited incorporated in 1906 and established in new works at Hunt End, Redditch. However Enfield Autocar after just 19 months reported a substantial loss and, aside from Eadie himself, shareholders were unwilling to provide more capital so in early 1907 Eadie sold his control of Eadie Manufacturing to BSA. Albert Eadie and Robert Walker Smith had been appointed directors of BSA before the proposed sale had been put to shareholders. The new combined BSA and Eadie business manufactured "military and sporting rifles, (pedal) cycle and cycle components, motor-cars etc." "BSA and Eadie cycle specialities".But there were still minority Eadie shareholders alongside BSA in 1957.

The business of Enfield Autocar, that is to say the plant and stock, was sold to Birmingham's Alldays & Onions Pneumatic Engineering. Enfield Cycle Company took over the Hunt End premises.

In 1955, Enfield Cycle Company partnered with Madras Motors in India in forming Enfield of India, based in Chennai, and started assembling the 350cc Royal Enfield Bullet motorcycle in Madras. The first machines were assembled from components imported from England. Starting in 1957, Enfield of India acquired the machines necessary to build components in India, and by 1962 all components were made in India.

Frank Walker Smith (1888-1962), eldest son of Robert Walker Smith, joined Enfield Cycle Company in 1909. Appointed joint (with his father) managing director in 1914 he took over the full responsibility when his father died in 1933. After his death Enfield was bought by investors E & H P Smith who sold Enfield for £82,500 to Norton Villiers in 1967. While Norton Villiers acquired 33 per cent of Enfield India the assets of Enfield's diesel engine division and pedal cycle and spares divisions were not picked up.



Royal Enfield produced bicycles at its Redditch factory until it closed in early 1967. The company's last new bicycle was the 'Revelation' small wheeler, released in 1965. Production of motorcycles ceased in 1970 and the original Redditch, Worcestershire-based company was dissolved in 1971.

Royal Enfield's spare parts operation was sold to Velocette in 1967, which benefitted from the arrangement to such an extent that the company as a whole survived for another three years until their closure in early 1971. C C Cooper, a West Bromwich metals dealer, continued to produce limited spare parts for a short time by a small team of engineers.

Enfield of India continued producing the 'Bullet', and began branding its motorcycles 'Royal Enfield' in 1999. A lawsuit over the use of 'Royal', brought by trademark owner David Holder, was judged in favour of Enfield of India, who now produce motorcycles under the Royal Enfield name. The models produced and marketed in India include Cafe Racers, Cruisers, Retros and Adventure Tourers.



INTERESTING FACTS:

- ➤ The world's first automobile was developed by Carl Benz in 1885. The top speed of the motor car was 16 km per hour. It had a one cylinder four-stroke engine installed horizontally on a specifically designed chassis. It was known as the Benz Patent Motorwagen.
- ➤ Carl Benz applied for a patent for his "vehicle powered by a gas engine" on January 29, 1886. The patent application, bearing the number DRP 37435 could also be referred as the birth certificate of the automobile. The patent application was registered with the German Imperial Patent Office in Berlin.
- ➤ The world's first long-distance journey (from Mannheim in southern Germany to Pforzheim) in the history of the automobile was undertaken by Bertha Benz (wife of Carl Benz) and her two sons in August 1888.
- Almost 95% of a car's lifetime is spent parked.
- A crash typically happens within an average of three seconds after a driver is distracted. According to a source, texting while driving increases the chances of an accident by 23 times.

By Dharun.K III year

.TEAM F1 – MERCEDES AMG

Mercedes-AMG Petronas Motorsport win the FIA Formula One Constructors' Championship for the sixth time in a row



- Lewis and Valtteri are the only two drivers who can still win the Drivers' Championship, securing the sixth consecutive Drivers' Title for the team as well making Mercedes-AMG Petronas Motorsport the first team in Formula One history to win both titles six times in a row
- Valtteri claimed his sixth victory in Formula One, his third of the 2019 season and first at the Japanese Grand Prix
- Lewis finished the race in P3 claiming an additional point for the fastest lap his fourth fastest lap at the Japanese Grand Prix, equaling Michael Schumacher's record for the most fastest laps in Japan
- Today's result marks the 100th points finish for Valtteri
- Lewis (338 points) leads the Drivers' Championship by 64 points from Valtteri (274 points) with Charles Leclerc (221) a further 53 points behind, giving only our two drivers the chance to win the 2019 Drivers' Title
- Mercedes-AMG Petronas Motorsport (612 points) leads Ferrari (435 points) by 177 points an unassailable lead in the Constructors' Championship



Valtteri Bottas

"Six double championships – every single team member at the race track and in the factories can be incredibly proud of this achievement! A big thank you to all of you. I think we don't quite realize yet what an amazing achievement this is, but we're making history in this sport. We've had a really good season so far and managed to make the most of our opportunities, especially in the beginning of the season. It's amazing to think that we've just done something that's never been done before – what a great day for all of us! I had an excellent start today, one of the best ones in my career, and managed to take the lead in the very beginning. We expected our car to be quick in the race, but it's really tricky to overtake on this track, so we knew that we'd have to try and take the lead at the start and I'm very glad it all worked out. I really enjoyed the race afterwards; the car felt really good and our upgrades worked well. Suzuka has always been my favorite track even though I've never been particularly strong here – but now I like this track even more. It's been a while since my last victory, I missed that winning feeling and I'm very happy and proud to have won the race that secured us the Constructors' Championship. "

Lewis Hamilton

"I'm so happy for the team – what a great result! Six consecutive double titles is an amazing achievement that has taken a long time and a lot of hard work. It just shows the strength and depth through and through for the team and I'm incredibly proud to be a part of Mercedes history. It's a well-deserved achievement – thank you to everyone in Brackley, Brixworth and Stuttgart for all the hard work and dedication. Valtteri did a great job today and deserved the win, congratulations to him. I did everything I could today; I think we probably had the chance at a 1-2 today, so we'll take a look at what we could have done better in the debrief. I think we can expect the next races to be very challenging; Ferrari still have a straight-line speed advantage which makes it very hard to qualify ahead of them, so we have to outrace them, but I think that makes it really exciting for the spectators. We will celebrate this monumental achievement today; but tomorrow we'll start pushing again – we still have races to win."

By SUJAI K, III year

F1 TO BE CARBON-NEUTRAL BY 2030

The top tier of motorsport said it will "move to ultra-efficient logistics and travel and 100 per cent renewably powered offices, facilities and factories". It will also offset the remaining emissions that cannot be expunged. All events will be sustainable by 2025 and all single-use plastics will be replaced with recyclable materials.

As for the cars, rules coming into effect in 2021 state that petrol will be required to have a biofuel content of at least 10 per cent. The thermal efficiency of the engines is currently rated at 50 per cent (compared with around 30 per cent for road car engines). Efficiency will take another step forward when the current engines are replaced at the end of 2025.

F1 added it and the automotive industry as a whole will work together to create "the world's first net-zero carbon hybrid internal combustion engine" In the Longer term.

By SUJAI K, III year

DESIGN AWARDS FOR TWO WHEELERS



Ducati Diavel 1260 S.

After winning Europe's iconic "Red Dot Award 2019: Best of the Best" out of 5,500 products from a jury of 40 international experts, the Diavel 1260 S – the second generation of the Diavel – has done it again. This week, the Bologna-breed cruiser clinched one of the USA's most prestigious accolades – the Good Design Award.

2020 Good Design Award Winner: Ducati Diavel 1260 S

Experts decide the Good Design Award winners. These experts represent the following organizations: the Chicago Athenaeum, Museum of Architecture and Design, and the European Centre for Architecture Art Design and Urban Studies

The awards are one of the most sought-after prizes, ones that have been acknowledging and certifying global excellence in design since 1950.Ducati says the second-generation of this

incredibly special bike remains faithful to the spirit of the original, drawing on its key styling elements yet bringing them decidedly up to date.

The cruiser arrives with a 159-horsepower Testastretta DVT 1262 engine and the latest in Ohlins suspension and Ducati electronics. For 2020, the Diavel is available in two new color schemes: Dark Stealth (a total black look, available for the standard version) and an all-new Ducati Red with white trims and red seat tail design on the bike that claimed the Good Design Award – the S version.

Speaking of the Diavel 1260 S, Editor Don Williams said: The 2019 Ducati Diavel 1260 S is about crushing conformity. Many people have fixed ideas of what a cruiser is and what a sporting motorcycle is. "The 1260 S isn't interested in your stereotype or expectations. Instead, it provides the style and Italian-flavored charisma of a cruiser-style urban motorcycle with mind-bending motor performance and appropriately poised handling.

"For a moment, forget about owning the 2019 Ducati Diavel 1260 S—that will come. Most importantly, no matter what your interest in motorcycles, this is a machine that you will want to ride, as there is nothing like it on the planet."





By Hari Haran.R, III year

STUDENT'S CREATIONS













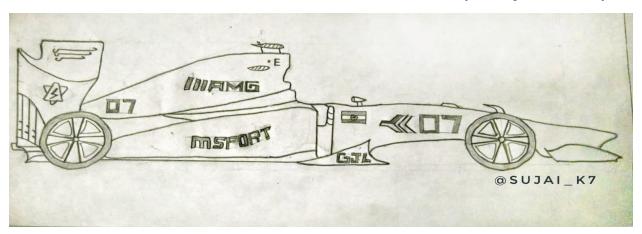


By Muthukumar, III year



Solidworks 3D model of Formula car

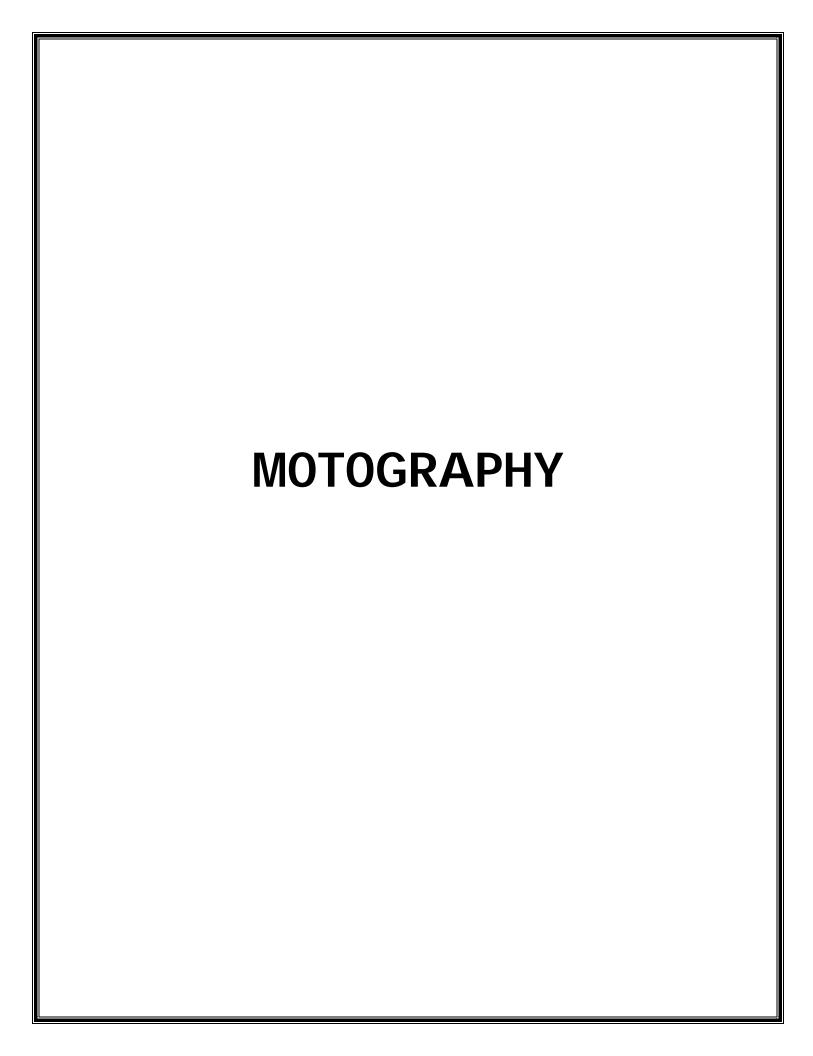
– by S.Rajkumar, IV year

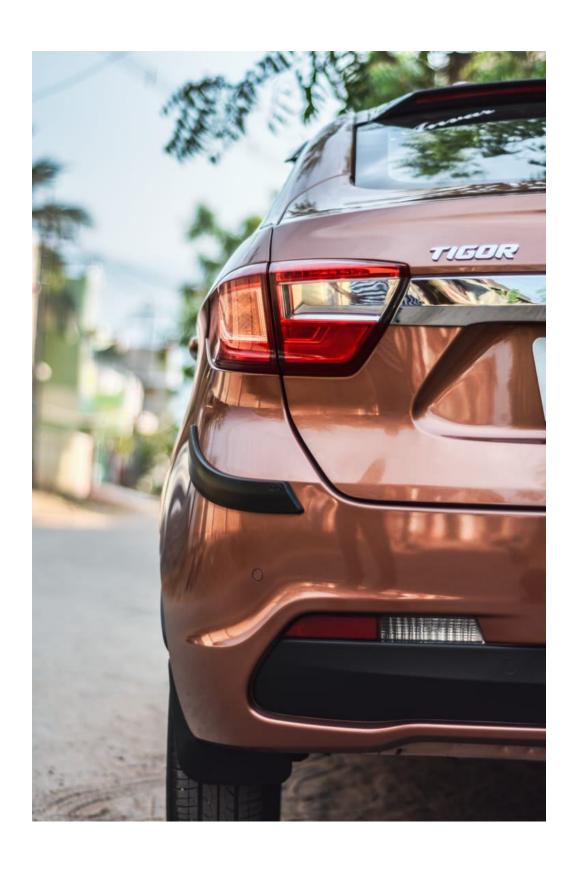


By Sujai.K, III year

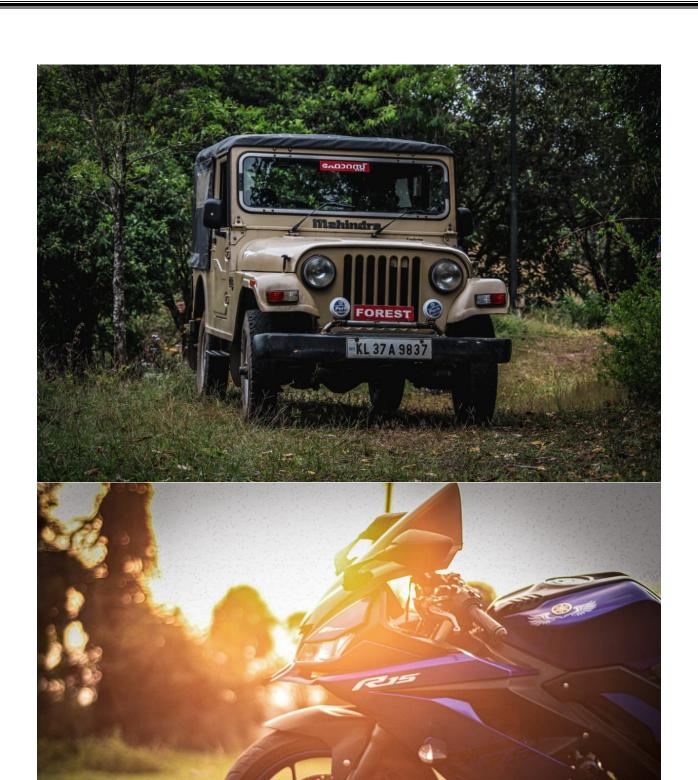


By S.Hemanth Kumar, II year



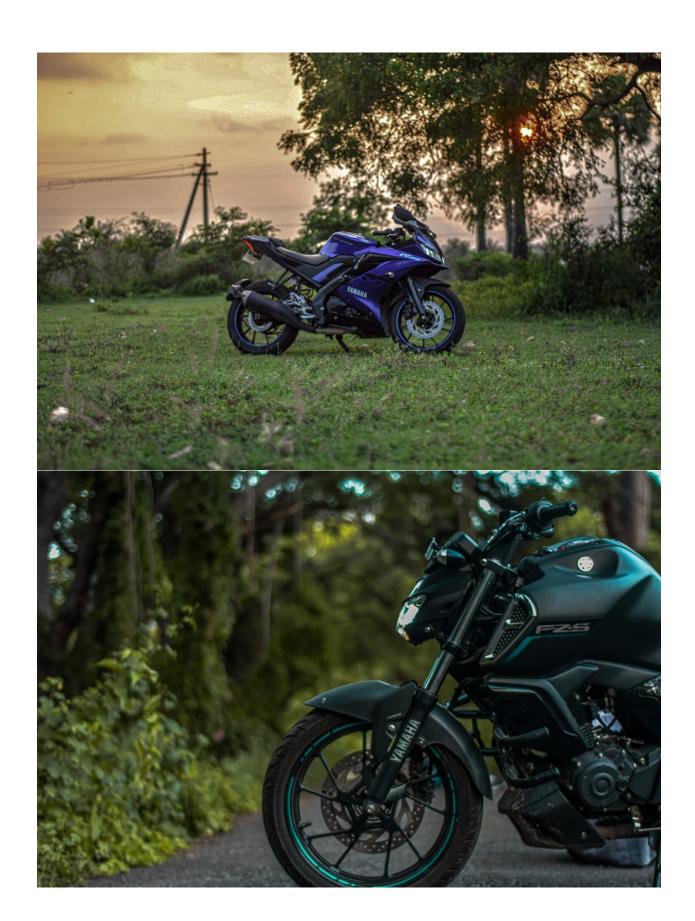


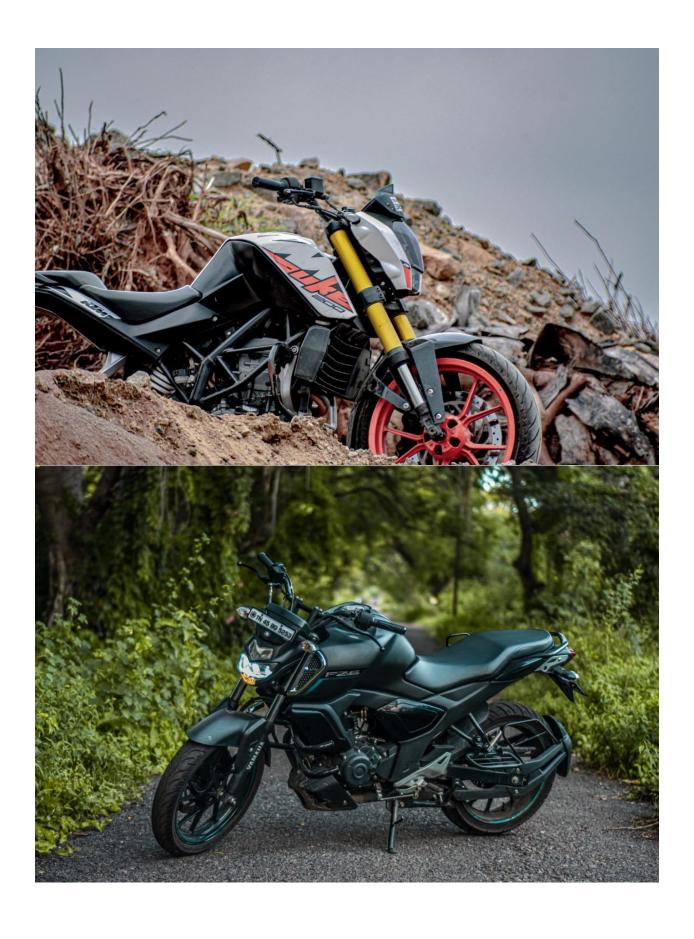








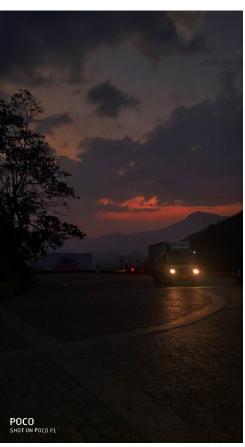






By – Hari Haran, III year





By Siva Subramanian, III year



By G.Pughalenthi, III year



By S.Logesh, IV year













