

# ESVC

Asia's biggest Electric-Solar  
Vehicle Championship



# SOLARIC TEAM



An initiative by the O.P. Jindal University

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# ISIE

ISIE INDIA is the most popular and favourite E-mobility Motorsports, Education and Research Publication organisation in India among engineering institutes and green energy research organisation. It is **Asia's largest solar event**

which started in the year 2013. ISIE INDIA also has support from Confederation of Indian Industries and has used this association for benefit of the participants.

# ESVC

Electric Solar Vehicle Championship (ESVC) is Asia's largest solar event which started in year 2013. The basic objective is to raise awareness among future generation of engineers about renewable energy resources and push them for development in this sector, all of this while making it fun for them. Hence, they are required to build a Solar-Electric vehicle to compete among themselves. Vehicle build by student/Faculty/professional as per Adventure and



professional class regulation must meet the strict specification of the **Rulebook**. The teams participating design and manufacture their vehicles which is ergonomically sound, dynamically stable, light in weight and solar powered, along with all these they are fun to drive at the same time.

It is further divided into classes that is Adventure Class and professional class. These classes are further divided into 3 rounds namely Pre-Virtual Round, Manufacturing period and the final Dynamic round.

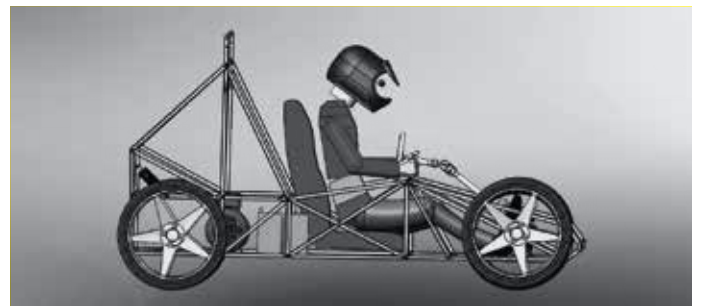
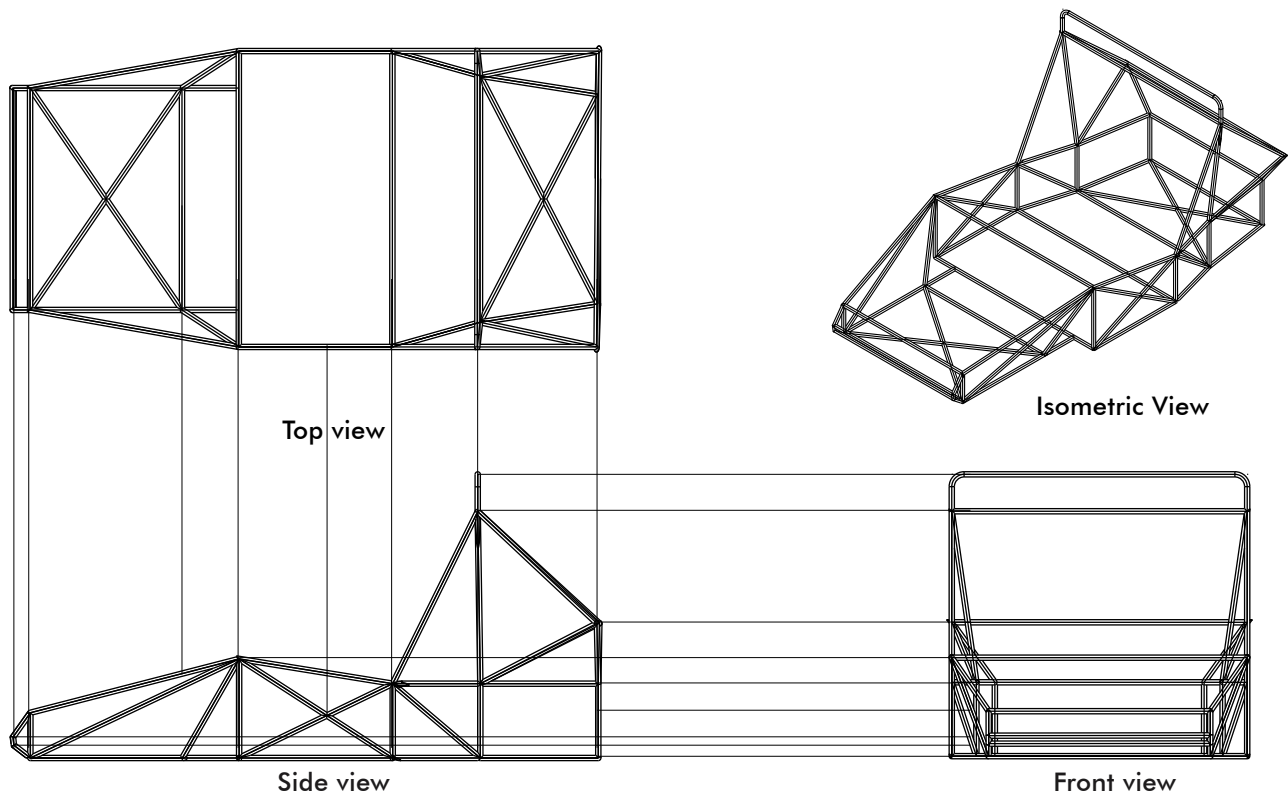
# WHAT IS AN E-S VEHICLE?

A solar vehicle is an electric vehicle powered completely or significantly by direct solar energy. Usually, photovoltaic (PV) cells contained in solar panels convert the sun's energy directly into electric energy.

The basic principle of solar car is to use energy that is stored in a battery during and after charging it from a solar panel. The charged batteries are used to drive the motor which serves here as an engine and moves the vehicle in reverse or forward direction. A Potentiometer is provided so as to control the motor speed. This avoids excess flow of current when the vehicle is supposed to be stopped suddenly as it is in normal cars with regards to fuel. This idea, in future, may help protect our fuels from getting extinguished.



**“Solar Vehicles are the future”**



# OUR VEHICLE

## FEATURES

- More Eco-friendly
- Lower Carbon Footprint
- No Fuel, Cheaper to maintain
- Less Noise Pollution
- Extra foldable solar panels to boost up charging
- Alternative AC charging

## DIMENSIONS

- Material Used: AISI 1018 Mild/low carbon steel
- Chassis Weight : 37 kgs
- Length: 2371.23 mm
- Width : 1200 mm
- Height : 1144.69 mm



# VEHICLE SPECIFICATIONS

| ITEM                | SPECIFICATION  |
|---------------------|--|
| Motor               | <i>2 kilo watt, 48-volt, 3000 rpm<br/>torque:24 newton-meter</i> |
| Battery             | <i>48-volts, 115 Ah</i>  |
| Solar Panel         | <i>300 watt, 30-volt, mono-crystalline</i>                       |
| Transmission System | <i>Continuously Variable Transmission</i>                        |
| Brakes              | <i>Hydraulic Brakes</i>  |
| Wheel               | <i>12 inch dia, tread width: 6.5 inch</i>                        |
| Suspension          | <i>Wishbone ARM suspension</i>                                   |
| Vehicle Frame       | <i>Material: AISI 1018 Mild/low carbon steel</i>                 |



# OUR VISION

Team Solaric believes our future technology should align with the interest of nature. We want to be the torch bearer of the change which will help build a more sustainable world.

Our strategic focus is to build a car which attains a goal of transforming the transportation system through utilization of Solar energy which is in abundance with us.

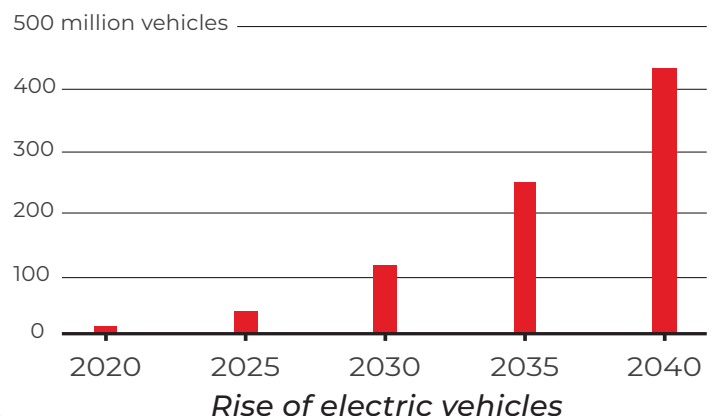
**WE WANT TO REJUVENATE THE THOUGHT PROCESS AND SAFEGUARD ALL THE PEOPLE WITH THE SHIELD OF SOLAR ENERGY UNDER THE DOME OF INEXHAUSTIBLE SOURCE OF ENERGY PRODUCTION.**

# FUTURE SCOPE

The government faces a renewable energy trilemma. It has set itself the target of quadrupling the generation capacity of solar energy by 2022, and shifting the production of new automotive vehicles from internal combustion engine models to electric vehicles by 2030.

Lithium-ion batteries cost ₹69925 per kWh in 2010. By 2017 that cost had fallen to 13985.03₹ per kWh, and it won't stop there. At the Tesla shareholder meeting on June 5th of this year, Elon Musk stated that Tesla would be

at ₹ 6992 per kWh within 2 years. ₹ 6992 per kWh is widely agreed to be the figure where EVs and ICE vehicles will have a comparable upfront purchase price. So, by 2020 the cost of batteries will have fallen 90% in 10 years, and the price will continue to drop



# OUR CONTRIBUTION

The team members have taken the first initiative and forwarded Rs 1,00,000/- on their own. Out of which Rs 43,500/- has been used for the registration purpose and the rest is being used up for workshop and the design related purposes.

The distribution of the team members is involved with utter attention and members are divided into different categories attention and members are divided into different categories of work in accordance to their qualities and capabilities.



# UNIVERSITY'S ROLE

Our university has played an important and sparkling role in providing us with the platform to work and with the optimum guidance under which we were enlightened to carry on this task. Apart from this, college has also contributed to mentor us and lead us for the betterment in the technical part and is trying its best to

negotiate on certain terms so that the load on the students is reduce. Also the aim of our college is the future building of all the goodwill students and this time is practising to set the benchmark so that the further generation would be able to reap maximum profit from this competition.



# MEET THE TEAM



**Shreepat Mishra(Mech)**  
Captain, Co-founder



**Harshit Dubey (Mech)**  
Vice- Captain, Co-founder



**Rishav Kumar(CSE)**  
Manager, Co-founder

## DEPARTMENTS

### MECHANICS & DESIGN

**Nitin Sahu(Head)**

Alok Singh  
Arnav Mankar  
Devashish Singh  
Manish Devangan  
Durgesh  
Mayank Dixit  
Nikhil Prasad  
Nishit  
Nitish Kumar Singh  
Pratham Sharma  
Rajkumar Sahu  
Rohan Prasad  
Shivam Sharma  
Shravan Rajput  
Vipul Saurabh  
Yash Raj

### ELECTRICAL & IOT

**Aditya Amboly(Head)**

Mayank Singh  
Rahul Raj  
Sajid Khan  
Sohel Kumar  
Soubheek Tewary  
**Logo Design:**  
Aman Kumar

### BUSINESS HANDLING & BROADCASTING

**Rishabh Sahu(Head)**

Arekh Singh  
Darshan Padhariya  
Md Kasib Khan  
Mehul Chawda  
Ritesh Kumar  
Shivshankar Raj

**“COMING TOGETHER IS A BEGINNING.  
KEEPING TOGETHER IS PROGRESS.  
WORKING TOGETHER IS SUCCESS.”**

### HENRY FORD

**Contact**

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Instagram: [@esvc\\_solaric](https://www.instagram.com/esvc_solaric)

# SPONSORSHIP LEVELS & BENEFITS

| <b>TYPE</b>             | <b>AMOUNT</b>                 | <b>BENEFITS</b>   |
|-------------------------|-------------------------------|---|
| <b>BRONZE PARTNER</b>   | <b>₹ 30,000</b>               | Promotion on social websites  |
| <b>GOLDEN PARTNER</b>   | <b>₹ 50,000</b>               | Logo visible on vehicle (8"x6")<br>Promotion on social websites   |
| <b>PLATINUM PARTNER</b> | <b>₹ 75,000</b>               | Logo visible on Team apparel<br><br>Logo prominent on vehicle (10"x6")<br>Promotion on social websites  |
| <b>SOLARIC PARTNER</b>  | <b>₹ 1,00,000 &amp; ABOVE</b> | Logo prominent on Team apparel<br><br>Logo prominent on vehicle (12"x8")<br><br>Promotion on all social websites<br><br>Promotion during all public appearances |



**UNIVERSITY OF STEEL,  
TECHNOLOGY AND  
MANAGEMENT**

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**Brochure Design & Concept:**

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