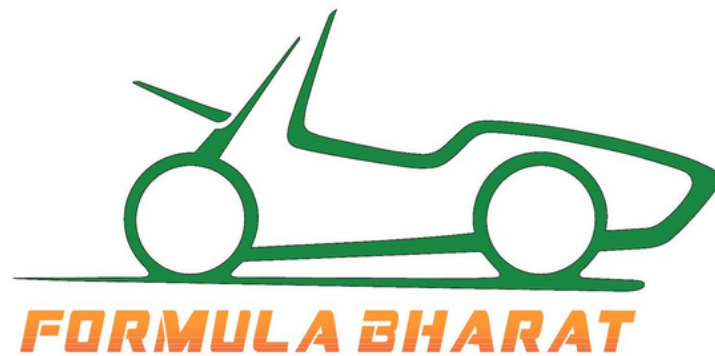




IIT DELHI

FORMULA BHARAT 2022

Event Report



Team AXLR8R Formula Racing



Dear Supporters,

We, AXLR8R Formula Racing are happy to share with you the marvelous experience of Formula Bharat 22. This was our first physical event after the covid which was held at Kari Motors Coimbatore. There were about 25 participating teams. We participated in the electric category and we achieved awards in different categories.

Formula Bharat is an Indian formula student-style engineering design competition in which students from colleges and universities all over the country compete with life-size formula style vehicles in areas of engineering design event, overall cost, marketability and dynamic performance.

This competition is for **students to encourage them to gain hands-on practical experience, and applying engineering theories studied in the classroom**, while learning the art of management and teamwork, which are essential skills required in the 'real-world'.

The challenge to the student team is to design and fabricate a prototype vehicle from scratch year-after-year.

A jury of experts from the **motorsport, automotive and supplier industries** judge the design, cost and business planning of all the teams to determine the best team and vehicle; in addition the team's on-track performance scores will demonstrate how well they hold up under real life conditions.

Event was organized by Curisom Technology and sponsored by companies like MathWorks, Zuken, Ather, Bosch, Micelio, Pravaig, Red Bull, Godrej, Coex Lion and Fab heads.



Technical Inspection

We participated in the formula bharat event with the aim to clear all the technical inspections and testing so that we can run our car in dynamic events. Following are the scrutines conducted for an electric race car:

- Mechanical inspection
- Electrical inspection
- Accumulator inspection
- Tilt test
- Brake test
- Rain test (optional)

Out of these scrutines, we successfully cleared mechanical inspection and tilt test. All the points of Accumulator scrutiny were cleared except the points relating to charging. Since there were problems from the BMS side, we were not able to clear electrical Inspection. But despite that, keeping our motivation high, we did work hard till the very end, and this was also appreciated by fellow teams and organizers.



Performance In Static Events

Formula Bharat tries to familiarize the participating students to the present times interdisciplinary approach. The judging panel comprises experienced judges from automobile, motorsport and other technology industries to judge the performance of the team.

Engineering Design Event - 2nd Position

The concept of the design event is to evaluate the student's engineering process and effort that went into the design of a vehicle, meeting the intent of the competition. Prior to the event, teams are required to submit an engineering design report and a design specifications sheet for evaluation. At the competition, vehicles must be presented in finished condition, fully assembled, complete and ready-to-race condition.

The judges evaluate the teams based on the technical aspects in the designing of the car as well as the reasons behind the technical solutions which the team came up with. The overall design, construction and implementation of production was also judged. And We are proud to say that our team was runner up in the Design event.



Cost And Manufacturing Event - 3rd Position

The objective of the cost and manufacturing event is to evaluate the team's understanding of the manufacturing processes and costs associated with the construction of a prototype race car. This includes trade off decisions between content and cost, make or buy decisions and understanding the differences between prototype and mass production. Prior to the event, teams are required to submit a Cost Report with a detailed Bill of Materials and supporting documentation. At the competition, vehicles are presented to the judges where detailed discussion takes place regarding the manufacturing of the components and the costs involved.

In the design of any product, cost is a critical consideration. We must deal with the calculated size of the vehicle, as well as the necessary manufacturing stages, and document all of this in a written cost report in the cost analysis event. In addition to the thoroughness of the investigation, Our understanding of the production process, the written report, and Project management, risk management, mass production, and total cost of ownership all are evaluated. Our team was second runner up in the event and scored 97 points out of 100.



Business Plan Presentation - 7th Position

The objective of the BPP is to evaluate the team's ability to develop and deliver a comprehensive business model which demonstrates the product – a prototype race car – could become a rewarding business opportunity. The judges should be treated as if they were potential investors or partners for the presented business model. The business plan must relate to the specific prototype race car entered in the competition. The quality of the actual prototype will not be considered as part of the BPP judging. To convince the potential investors or partners that the team's presentation is worthy of their time, it is required that an executive summary is submitted before the competition. The executive summary should contain a brief description of the team's business plan. Each team presents their business proposal for the built prototype to a judge-represented imaginary corporation. We will show why our design best meets the needs and can be successfully marketed during the presentation. The presentation's content, structure, and editing, as well as the team's effectiveness in presenting it, are assessed alongside our responses to the panel's questions.

TEAM

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E09 AXLR8R Formula Racing, Indian Institute of Technology, Delhi, Formula Bharat 2022

RESULTS

We grabbed following Podiums in the event:

- **3rd Overall Position**
- **2nd Position in Engineering Design Event**
- **3rd in Cost and Manufacturing Event**
- **2nd in Best Powertrain Design**



Overall, the event was a success in-terms of the learnings, experience, knowledge and feedback that we have received from the event. Considering that it was the first physical event for almost all the team members, we got the opportunity to experience what exactly formula student is and it's true value. Our achievements of the event is a result of thousands of hours put after making the car, building the team and preparing each and every individual to perform their best. We went to the event as a strong team of 37 and came back more stronger, more motivated and more fortified with each other. Now that we have feedback on our systems, we are looking forward to work on the vehicle and get it on the track to compete with the European teams in the upcoming summer competition.



Our Journey With TechnoCNC

We wish to express our deepest gratitude to Techno CNC for their steadfast support and generosity. When the 2nd wave of Covid hit, it was difficult for everyone. But even in those difficult times, with your immense support we were able to continue and achieve our targets. We are really thankful to you for helping us out with the CNC machining of our U Brackets, Bell Cranks, Footrest, Foot Pedals and Hub Bearing Lockers. Further your anodization of Footrest and Brake Pedals have really helped us in achieving a great looking design.

These are some glimpses of Formula Bharat'22, where we showed our Car, backdrop, standees, t-shirts with Techno CNC logo on them. We hope that we were able to meet the expectations of our supporters and well-wishers.

An unhindered improvement in our system will persist with your continued support in future.







MOVING FORWARD...

We are currently preparing for our stint of European events and parallelly on the designing of our next car. We believe that there is always a scope for improvement and an unhindered improvement in our system will persist with your continuous support and best wishes. We are very grateful for the vital support provided by your company and look forward for the same in the next season!