

FABHEADS COMPOSITES TECH AWARD 2020

About the Fabheads Composites Tech Award 2020

Increasing the power to weight ratio of a car is a primary objective of every race car designer. One way that has enabled them to increase this ratio is by shifting to lightweight composite materials. But to get maximum results, a completely new design methodology is required, keeping the new materials in mind. When done right, significant weight can be reduced at a minimal increase in the cost of fabrication.

The aim of the Fabheads Composites Tech Award 2020 is to increase the awareness among the teams to effectively use composite materials in the design of their cars.

Submission Process:

- Submissions will be accepted until 30th December 2019. An upload portal will be made available for the submission.
- The contesting teams have to select just a single part or a single sub-assembly in their car which they made using composite materials. In case of a subassembly, minimum of 50% by weight should be of composite materials.
- The selected components need not necessarily be just fiber reinforced plastics but can also be any other composites comprised of metals, ceramics, etc.
- The judging of teams will be based only on the selected component for which the relevant document for this contest has to be submitted.
- The teams have to send a document explaining the design approach, fabrication process used and the validation processes that were used for the component.
 - A maximum of 20 pages including pictures / graphs / tables etc.
 - The header of the document must contain the registered Car #, Team Name and Institution Name.
 - The footer of the document must include the current page number and the total number of pages.
 - The document has to be submitted in a PDF format and must be named as Car#_TeamName_Fabheads_2020.
Example: 09_InfinityRacing_Fabheads_2020

Judging Criteria

All the following aspects of the component would be judged and the final results will be based on the sum of these.

- 1) Design: The overall design of the part, layup sequence (if any), functional considerations, along with considerations on the fabrication process and availability of raw materials while designing.
- 2) Validation: Analysis and validation in practice for final use.

- 3) Value Addition: Value that is added to the car by making the component out of composite materials - weight reduced, cost reduction and/or any other advantages gained.
- 4) Fabrication Process/Quality: Choice of fabrication process considering costs, quality, reliability among others.

Finals

A limited number of teams will be chosen from the submitted entry for the final round which will be a design presentation held at the event. Prior to the final presentation, judges will make sure that the submitted component is installed on the vehicle. Two members from the selected teams have to deliver a presentation for 20 minutes (5 mins Setup, 5mins Presentation, 10mins Q&A) addressing the above points followed by a Q&A session.

Award

The winner of the Fabheads Composites Tech Award 2020 will receive a memento, a certificate and advisory support from Fabheads for the next year.

This award is sponsored by [Fabheads Automation Private Limited](https://fabheads.in). Fabheads is a company focused on developing innovative techniques for fabricating composite parts. The company is at present the leading developer of automated high-end manufacturing technologies in the Indian composites manufacturing sector. This requires different engineering skills of the highest levels to come together. Founded only in 2015, the company has already showcased several innovative automated and semi-automated features to fabricate high-strength composite parts in an extremely cost-effective manner. The company caters to several clients from aerospace, marine, automobile and sports sector. Being at the forefront of high-end product development, Fabheads is one of the best engineering focused companies in India. And the company is quite proud to help nurture professional engineering, product development and management skills among students via Formula Bharat.

Website: <https://fabheads.in>
