

Calling all Young Composite Engineers

In conjunction with the Society for the Advancement of Material and Process Engineering, the EPSRC Future Composites Manufacturing Research Hub would like to invite you to participate in a **“Design and Make” competition** to manufacture a **composite crash structure**. This is an opportunity to put your composites experience into action and represent your university in this national event.

Teams will have to use their composites knowledge and creativity to design a suitable structure to protect an egg during a crash landing. This competition is intended to give young engineers hands-on composites experience in design and manufacturing. The objective is to produce a structure that can be dropped from the highest height, whilst avoiding any damage to the occupant (in this case, an egg).

The contest will take place on the 13th September 2022 during the annual Hub Open Day. A prize will be awarded to the team with the winning structure.

Rules

- Produce a composite crash structure from a polymeric resin and synthetic fibre only
- The egg can only be surrounded by fibre and resin. Polymeric foams, foaming adhesives, breather cloth, honeycomb or any other form of padding to wrap the egg is not permitted
- A parachute cannot be used to decelerate the egg. The total kinetic energy generated during the fall must be absorbed by the crash structure.
- Mechanical fasteners cannot be used
- The egg needs to be easily removable in the event of a failure. 60 seconds will be allowed to change over the egg.
- The egg needs to be visible for inspection at the end of each drop.
- The egg will be a standard [medium size](#)
- The total mass of the structure must not exceed 250 g (not including the egg).
- All entries will initially be dropped from a starting height of 500 mm. The launch height will be increased incrementally until there's only one undamaged egg remaining.

Participants

- Teams should consist of at least 2 members
- Teams may contain undergraduate, postgraduate/postdoctoral researchers and early career engineers
- Entries are welcome from all universities and companies in the UK and Ireland.
- Only one entry per team. However, universities/companies are welcome to enter multiple teams if they wish
- At least one team member must be present during the Hub Open Day on 13th September 2022

Registration

Send an e-mail to [Joanne Eaves](mailto:Joanne.Eaves@man.ac.uk) by 12th August 2022 to register your team for the competition. Entries beyond this date will not be accepted.

Please provide the following information:

- Team name
- Team members
- Team point of contact e-mail
- Affiliation

Judging will take place during the Hub's annual Open Day on 13th September 2022, which will be held at the AMRC in Sheffield. The Hub's free-to-attend Open Day will celebrate another year of manufacturing excellence, providing an opportunity for Hub researchers to highlight and showcase project outputs. This will be a great opportunity for those across the composites sector to learn more about the latest research and developments in composites manufacturing. All team members are welcome to attend this event. [Please register here.](#)

SAMPE UK and Ireland is a networking organisation of 150+ professionals and students in advanced materials, which is very active in composites. An objective of SAMPE is to foster technical excellence in the UK, by promoting interest in new materials and processes within the composites community. SAMPE wishes to support this event to create a dialogue and network with tomorrow's engineers. **Free annual membership of SAMPE UK and Ireland** will be offered to all participants who attend the contest in person. Further information about the UK and Ireland Chapter can be found at <https://www.sampe.org.uk/>

Contact

Questions regarding the competition or the Open Day should be sent to [Lee Harper](mailto:Lee.Harper@man.ac.uk).