

CELLENGE 2023: Cellulose Valley Innovative Packaging Challenge

Regulations 2023 contents

Preamble

The “Fondation Partenariale Grenoble INP”, whose registered office is 46 Av. Felix Viallet – 38031 Grenoble Cedex 1, FRANCE, SIRET: 529 525 669 00014 - NAF code 9499Z, hereinafter referred to as **the Foundation**, is a partnership foundation, created to support the development of “Grenoble INP-UGA, Institut d'ingénierie et de management de l'Université Grenoble Alpes”, hereinafter referred to as **the Institute**.

The **Foundation** manages the **Institute's** program of teaching and research chairs with partner organizations and companies.

Concerned by the decisive issues related to the environment and sustainable development, eight companies and the **Foundation** have agreed to create the “Cellulose Valley Teaching and Research Chair”, hereinafter referred to as **Cellulose Valley**, whose aim is to research and design new, high-performance cellulose-based materials for packaging. Details relating to **Cellulose Valley** are available on the **Foundation** web site at <https://fondation-grenoble-inp.fr/nos-actions/cellulose-valley/>

In this context, **Cellulose Valley** is organizing the 2023 edition of its innovative packaging challenge.

1. Aim and specifications

- 1.1 **CELLENGE** offers voluntary student teams opportunities to practice entrepreneurship by addressing relevant technological, environmental, or societal challenges with innovative cellulose-based alternatives to petrol-based products of our daily life, as per the European directive Single Use Plastics.
- 1.2 The student teams can test and benchmark their proposals in competitions at national level, judged by the **Cellulose Valley** Members (CVM) and experts.
- 1.3 Each student team can practice performance to collectively reach pre-set goals in a multidisciplinary and diverse team, anticipating the working environment in the bio-based industry and the bio-economy in general. This working environment is characterized by a high level of innovation, multidisciplinary, and diverse teams.
- 1.4 The student teams should make proposals that can contribute to creating a sustainable and circular economy, through cellulosic solutions with at least 80% content in cellulose, and a low carbon footprint and recyclable final product.

2. Structure and responsibilities

- 2.1 The **Cellulose Valley's** vision is that national **CELLENGE** is a partnership between academia (universities) and industry (companies) with the participation and support of the 8 partner companies to the **Cellulose Valley**.

2.2 The teams will lead and execute their projects in full autonomy. The teams may choose a project supervisor (PS) inside their school / university to supervise them. The PS can come either from the University, research and technology organizations, or the industry.

2.3 The team leader (and the PS if applicable) will be a contact person to exchange with the **CELLENGE** Organization Members (COM).

2.4 The team leader (and the PS if applicable) will participate in 2 visio conference meetings during the duration of the contest for guidance and (non-financial) assistance from the COM. This assistance may address the projects content, prizes, logistics, and the evaluation of proposals (as jury members). The COM will provide communication and awareness among targeted audiences, and will maintain a website with informations relating to **CELLENGE**.

2.5 The participant are not covered by the Foundation including **CELLENGE** organization members and Cellulose Valley members in the event of accident or damage. It is up to each participant to obtain the coverage they need to participate.

3. Participating student Indicative timeline – France

3.1 November 2023 - June 2024: registration period.

3.2 November 2023 - June 2024: submission period.

3.3 June 2024 – December 2024: award ceremony day and invitation in a Cellulose Valley event.

4. Participants

4.1 Student teams for the national **CELLENGE** must consist from 2 to 10 persons.

4.2 **CELLENGE** is opened to students with a level from bachelor degree to Master of Science degree.

4.3 All team members should be enrolled in a program at an institute for higher education in France. This includes students in their graduating years at engineering schools, universities of Applied Sciences, Design, and at universities for fundamental research. Student in exchange program are allowed to participate.

4.4 Because of the multidisciplinary character of **CELLENGE**, it is highly advisable that the teams include students enrolled in curricula in different disciplines.

4.5 Each student team can seek support from any/more staff member(s) at the **Institution**, but these will have no official role in the national **CELLENGE**.

4.6 Ph.D. students are allowed to be chosen as a PS or staff member. The study done in the frame of **CELLENGE** shall be not involved in a published work.

4.7 At least 2 team members should participate in meetings called by the COM, and the award ceremony.

5. Registration

5.1 The registration will be done on internet at this address: <https://fondation-grenoble-inp.fr/cellenge-le-challenge-de-lemballage-innovant/>

5.2 The registration for the national **CELLENGE** will be arranged by one team member.

5.3 The team registration must include:

- The name, mail address and informations about the current institution of each member and a copy of their student ID card.
- The name of the team leader (one of the team members).
- The project supervisor (see 2.3) and his/her coordinates (if applicable).
- A 150-word description of the motivations to the participation at **CELLENGE**.

5.4 The COM will pay attention that the teams comply with this Regulation (especially Art. 4).

6. Challenge and terms definitions

6.1 In **CELLENGE**, student teams are asked to develop an innovative cellulose-based and recyclable product or process which helps resolve technological, environmental, or societal challenges as per european directive on Single Use Plastics. It will benefit the proposed solution if it has been tested in a lab (or beyond lab) to provide an insight into its potential for integration in the current (or near future) bio-based industry and bioeconomy.

6.2 Within the scope of this program, a bio-based product is a product wholly or at a content of at least 80% derived from cellulose sources. These sources can be plant-, forestry-, animal-, or marine/aquatic-based, and can be derived from bio-waste.

6.3 Within the scope of this program, a bio-based process is a process using only bio-based feedstock applying biotechnology, chemical, mechanical, physical, or any other appropriate technology, or combination of technologies. Bio-based feedstock is defined in 6.2. The process may yield intermediate or final products, preferably with a higher economic value Life Cycle Analysis than fossil-based alternatives.

6.4 Aspects related to enhancing biodiversity and circularity, and to climate change mitigation will add value to the proposed solutions.

The development and production of a food and/or feed final product as such are excluded from **CELLENGE**.

6.5 Individual work, done in the framework of a MSc-thesis is not eligible to this program. Further development of a subject/theme as part of such a thesis in a participating team is eligible, provided it is a clear team effort.

6.6 **CELLENGE** invites student teams to meet the challenges as described above, including a presentation of their findings with supporting information, as mentioned in 6.7.

6.7 The teams will provide a 10 pages maximum report. The report consists of the following elements:

- Short description of the innovation.
- Introduction and explanation of the innovative aspect (supported by illustrations), including its sustainability aspects (of which positive environmental impacts detailed as per point 5 here under).
- Technical explanation of the innovation: materials, techniques, test to prove efficiency if done,
- Elaboration of the positive environmental impact of the innovation, e.g.: product life cycle analysis, recyclable aspect and test if done, and energy consumption aspect of the production or the process, comparison with conventional product or process (if applicable).
- Economic viability, e.g.:

Business model canvas with explanation.

SWOT analysis.

Quantitative and qualitative market analysis and a cost benefit analysis.

The team should provide a numerical version poster and a 5 minute video explaining the prototype and how the solution is sustainable. The video should mention the reason and the impact of the alternative presented.

6.8 Each team is free to decide on the language used during the teams presentations, either English or French.

6.9 The presentation and the submitted material should contain results of the work of the team members only. Included content from others should be clearly referenced and identified.

7. Jury and assessment at national level

7.1 The jury will consist of several experts in the fields of e.g., bio-based economy, process technology, primary and market applications sectors, environmental impact assessment. Members of the jury could be from either academia or industry and may be chosen beyond the CVM and the industrial partners.

7.2 Jury members cannot be involved in any way with any of the participating student teams.

7.3 The jury members will be announced after the submission deadline.

7.4 The jury will evaluate the presented cases and proposed solutions by the following criteria (see added-value aspects mentioned in section 6):

Innovation

How creative and novel is the concept? Does it solve an existing problem, or does it provide an alternative of a fossil-based product? Does it demonstrate a better (functional) performance than alternatives?

Sustainability impact

First, is the innovation truly cellulose-based? Is it also environmentally friendly, i.e., does it have a better environmental performance, a more environmentally friendly production process compared to the product it replaces? Is it recyclable? Does it enhance the sustainability of a product on total life cycle basis? Does it protect and enhance biodiversity? How big is the estimated positive impact for the environment if the product would be widely applied?

Technical feasibility

The technical feasibility of the proposed solution is considered.

Economic viability

Is there a market for the proposed product? Is the product economically viable?

Presentation and prototype product / process animation

The presentation is judged on content and presentation skills together. Also, the appearance and professionalism of the prototype product animation are considered under this point.

7.5 The jury's decision is final and cannot be contested.

8. Awards

8.1 The award consists of 1000€ for the team, the participation in a **Cellulose Valley** event, and the privilege to interact with at least one of our industrial partners in order to consolidate the prototype if realizable and to discuss about a potential collaboration under the most convenient form.

8.2 In case of a monetary award, it is provided 'as is' (any taxation should be paid by the receiving party) and is divided equally between the team members.

8.3 In case the winning team declines the prize, the CVM will decide if it can be awarded to another participating student team.

8.4 The Cellulose Valley covers the costs of the prizes.

9. Intellectual property (IP)

9.1 Only the jury, the Cellulose Valley members and partner members have access to the presentations and submitted material, and to personal/private information for matters related to **CELLENGE** only.

9.2 Any pre-existing IP and know-how in the submitted material of the teams remain the property of the original owners. Information submitted in the submitted material will not result in any transfer of ownership to the organizers, jury nor sponsors of **CELLENGE**. Foreground IP and know-how generated by the students during **CELLENGE** rest with the students.

10. General

10.1 All deadlines mentioned in these regulations are 23:59 CET that day.

10.2 The Cellulose Valley can exclude a team member, or a full student team when not complying to this Regulation, acting against existing laws, or otherwise acting immorally.

10.3 The Cellulose Valley team reserves the right to amend, postpone or cancel the national **CELLENGE** or to change the dates and conditions without incurring liability.

10.4 All participants (student team members and supervisors) grant permission to the CVM to use submitted information for promotional purpose. This excludes private and proprietary information. The useable information can include the designed innovative solution targeting a specified challenge. It can also include the awarded prizes. Also, pictures and other contributions provided in the context of the **CELLENGE** can be used free of charge for promotion via different communication channels.

10.5 Participants in the national **CELLENGE** shall not communicate in a way that would harm any other participant or contain confidential information belonging to any other participant.

10.6 In all situations not foreseen in this Regulation or in case of a dispute, the **CELLENCE organization members** shall decide how to resolve the issue.

The **CELLENCE** organization members.

