


# Tender Documents

## 9. INTERNATIONAL COMPETITION FOR DESIGN IN 3D AND 4D PRINTING



Innovation in  
progress

 **purmundus** challenge 2021

# Tender for purmundus challenge 2021

The theme for this year's "purmundus challenge" international competition for design in 3D and 4D printing is:



## Innovation in progress

3D and 4D printing have now become established in industry and research, as drivers of development, sources of inspiration, enablers, and solutions for mass customisation and service on demand. Additive manufacturing itself was an innovation from the very start. A means to an end, for the development of better and entirely new, innovative products. And it is constantly apparent that the potential is far from being exhausted.

Ecologically, economically and socially sustainable AM products, self-supporting and support-free design, mobile, modular and intelligently networked power components: there are many ideas about what should be made by printer in the future. But what sounds simple quickly becomes complicated when it comes to the details. Designers and developers will no longer be able to do without looking at entire system levels, and as a next step, also designing them.

In addition to additive manufacturing per se, the process of innovation itself is becoming increasingly innovative. At the same time, the technocentric focus is becoming less and less important. In its stead, a new culture and a systematic art of innovation is emerging that is both multi-layered and multi-faceted, and allows a fluid transition from the prototype to the series-produced product. That is why the focus this year is above all on interactions within the innovation process, and on the back-and-forth between individual functions and protagonists working towards a shared goal.

The innovation strategy should show what is already possible and what applications are still part of the vision, how end-to-end process chains can be made digital and consistent, or what the requirements are of the production process and the product itself. As part of the competition, the participants tackle the challenge of identifying useful, end-to-end solutions for 3D and 4D printing. In addition to a hybrid production functionality, the aim is also to create a guiding idea for the additive manufacturing and production of tomorrow.

We once again encourage entrants to also consider methods and materials that have not yet become established, are still the subject of research or are yet to be invented.

The purmundus challenge assesses the tailor-made solutions and arrives at a pre-selection. The finalists will be presented at a special exhibition at the Formnext trade fair from 16 to 19 November 2021. The international panel will choose the winners of the purmundus challenge and present them with their awards at the trade fair on 18 November 2021. In addition to money the winners will also receive appealing prizes. The Public Choice Award, voted for over the course of the fair by visitors to Formnext 2021, completes the purmundus challenge.

Receiving an award as part of the purmundus challenge is seen as one of the most important design-related distinctions in the field of 3D and 4D printing.



## Please send your entries to:

purmundus challenge  
Keyword: purmundus challenge 2021  
Römerstraße 8  
71296 Heimsheim  
Germany

Deadline for submissions is on 22 September 2021. Participation is free. The finalists will be notified on 06 October 2021. The participants in the competition agree that their submitted designs will be exhibited at Formnext 2021 on 16-19 November 2021 after passing the process of elimination.

Award ceremony: 18 November 2021 at Formnext.

Further information concerning the tender documents and GTC on: [www.purmundus-challenge.com](http://www.purmundus-challenge.com)

If you have any questions about the competition please contact: [challenge@purmundus.de](mailto:challenge@purmundus.de)

We wish you success,

Corinna Ray, M.Sc.  
Head of purmundus challenge

Corina Schiewe, B.A.  
Marketing

Dennis Lang  
Communication

Claudia Biemel, B.A.  
Event and Community

## Challenge details

### Task

The aim of the competition is to identify a useful, end-to-end workflow for 3D and 4D printing. In keeping with this year's topic of "Innovation in progress", in addition to a hybrid production functionality, the aim is also to create a guiding idea for the additive manufacturing and production of tomorrow.

All common 3D and 4D printing processes may be used to produce the entries. They mustn't simply be dogmatically produced any old way. Here, they can conceivably merge 3D and 4D printing with other semi-finished and other production methods or implement indirect process chains.

### Assessment criteria

- Design
- Degree of innovation
- Relation to announcement
- Appropriateness of design for 3D or 4D printing
- Potential in comparison to conventional production
- Economic potential
- Societal potential
- Relevance
- User experience

The jury is free to decide the weighting given to the individual criteria. Legal recourse is excluded.

### Prizes

The purmundus challenge is offering prize money of EUR 6,000 for purmundus challenge 2021. The winner receives a prize of EUR 3,000, the runner-up prize money of EUR 2,000 and third place prize money of EUR 1,000. In addition, the first three award winners will receive access to the Altair Inspire Studio software. The Altair Inspire platform is an intuitive and powerful software technology platform that facilitates simulation-based design throughout the entire product development process, from concept through to creation.

Together with Altair, the purmundus challenge is also awarding the Simulation Driven Design, with a one-year licence for the complete Altair Inspire platform. The prizes Special Mention, Innovation Prize and Public Choice Award are each awarded with a value voucher of EUR 250, which can be redeemed directly by cirp GmbH in the form of 3D printing services.

All winners also receive the "purmundus challenge trophy", a certificate, and a winner's logo.

The Newcomer Prize will also be awarded in partnership with Addmio for the second time in 2021. The purpose of this category is to draw particular attention to students, start-ups and newcomers. The winner will design the 2022 Newcomer trophy with Addmio's support.

The award ceremony to honor the winners will take place during the Formnext 2021 on 18 November 2021.

### Costs and fees

Registration for the contest is free of charge. The participants will have to bear the cost of working on and sending the submitted designs, as well as assume the shipping and return expenses, including shipment security, and the exhibition risk. purmundus challenge will cover the expenses related to exhibitor insurance and booth security.

### Entry

Each entrant may submit up to three designs. The following documents must be submitted for each entry:

- Registration form
- Product name, product description and concept (DIN A4, PDF)
- Photograph / rendering of the product (300 dpi, JPG, PNG or TIF)

### Exhibition Finalists

For the jury evaluation and special exhibition at the Formnext 2021 fair, the finalists of the contest shall provide the following:

- Visual model
- Optional: pitch video for the Jury
- Optional: a video or slide show to illustrate the concept for the exhibition (MPEG, 16:9)

Submission deadline is 30 October 2021. By then the purmundus challenge team must have received the exhibits. The return shipment will be delivered within one week after the end of the Formnext 2021 fair.

### Rights

Participants retain the copyrights to the drafts they submit. For the duration of the competition, the entrants grant purmundus challenge, the cooperation partners and the jury the rights to use and publish the submitted designs for associated publications and exhibitions. Entrants shall indemnify purmundus challenge, the cooperation partners and competition panellists against any third party claims in cases where he/she/\* is culpable. By registering, entrants acknowledge these terms and conditions. The present enrolment has been translated into English from the German. In case of doubt regarding its interpretation, the German version shall be authoritative.

### Confidentiality

The purmundus challenge, the cooperation partners and the panel members undertake to maintain confidentiality with respect to the competition entries until 6 October 2021. This agreement shall be terminated once the list of Finalists 2021 is published and applies for the submitted designs that will be presented, exhibited and awarded.

### International jury

- Christoph Behling - Christoph Behling Design Ltd.
- Prof. Richard Bibb - Loughborough University
- Isabelle Fröhlich - Volkswagen AG
- Tilla Goldberg - Ippolito Fleitz Group
- James Helliwell - hyperTunnel Limited
- Dr. Alexander Hildebrandt - Festo AG & Co. KG
- Frank Kleemann - Freelance industrial designer
- Andreas Pany - Ernst Strassacker GmbH & Co. KG
- Prof. Dali Sun - Beijing University of Technology
- Graham Tromans - G P Tromans Associates
- Dr. Clara Usma - Deakin University

### Cooperation partners





purmundus challenge  
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Römerstraße 8 | 71296 Heimsheim  
Germany

[challenge@purmundus.de](mailto:challenge@purmundus.de)  
[www.purmundus-challenge.com](http://www.purmundus-challenge.com)



# purmundus

## challenge 2021

### Entrants

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Company/Studio

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First name and surname

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Street and house number

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ZIP/City/Country

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Telephone/Fax/Mobile

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Homepage

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Email

☐ Student    ☐ Young Talent    ☐ Professional

### Submission

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Name of the product/submission

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Dimensions of the product in mm/Weight

#### Declaration:

I agree on the terms and conditions of the international award purmundus challenge 2021. With my signature I commit to mentioned accomplishments and I do ensure that with my participation and my submission, including documents, pictures and datas no third party will be offended.

I indemnify purmundus, co-operation partners and jurors from any claims of third parties. Terms and conditions on [www.purmundus-challenge.com](http://www.purmundus-challenge.com)

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Short description of the product/submission

☒ I agree on the terms and conditions of purmundus challenge.

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Place/Date

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Stamp/Signature