

Tender Documents

8. INTERNATIONAL COMPETITION FOR DESIGN IN 3D AND 4D PRINTING

Geometry and Material in Harmony

 purmundus challenge 2020

Tender for purmundus challenge 2020

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

Geometry and Material in Harmony

Industry is currently moving rapidly towards a "made-to-order" future. Not in order to merely revise predominant concepts, but to develop individual, tailored concepts from the countless options available that function as a part of the whole. But what should the focus be on in the future given scarce resources, urgent environmental issues and a huge investment bottleneck?

It is not possible to drill around corners, but it is possible to create complex geometries involving three-dimensional structures with organic, functionally optimized undercuts or hollow spaces by means of printing. We can see that disruptive innovations and successful products are no coincidences, but rather a question of methodology. That is why strategies aimed at reducing the amount of material used, improving reusability and making recycling more efficient are becoming increasingly important. 3D and 4D printing are playing an increasingly key role in this respect. Above all, painstaking work is being carried out to develop new materials. New, star materials are being introduced onto the market every month, with better and more unique properties. Mixing different materials in particular makes it possible to 3D-print and 4D-print products that would have been difficult to imagine a few years ago.

This makes the possibilities of additive manufacturing more varied than they have ever been. Whether it's the adaptation of natural blueprints for technical applications or functional integration, rough structures for pressure transfer, free-moving joints and bearings for moving applications or fixed legs for the necessary stability, elastic, temperature-resistant, fibre-reinforced, fire-resistant, anti-static or conductive components – there are a wide range of material properties available as well as methods for building up the layers. Additive manufacturing always involves a sophisticated interplay of materials, process and design.

For the competition, the participants are tackling the significant challenge of incorporating harmony as a state, and as a desire for the coherence and consummation of geometry and material. We explicitly encourage the submission of well-designed products in which both aspects perfectly play a crucial role:

- Innovative materials that have led to new ideas and products
- Product ideas that have required the development of new materials
- The improved used of materials thanks to topology optimisation
- Combinations of materials
- New ways to use materials
- Sustainable materials
- Renewable materials
- Functional materials
- Adaptable materials
- Materials with shape memory
- Materials with above-average properties
- Materials that can only be used with 3D printing
- Processes that make unforeseen materials printable for new products
- New materials that make products tangible in new ways (size, surface, resolution, creative freedom)

In addition to the design itself and innovation, the panel will also assess the benefit in terms of usefulness, economy and aesthetics. 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 10 to 13 November 2020 in Frankfurt. The international panel will choose the winners of the purmundus challenge and present them with their awards at the trade fair on 12 November 2020. 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 2020, completes the purmundus challenge.



Please send your entries to:

purmundus challenge
Keyword: purmundus challenge 2020
Römerstraße 8
71296 Heimsheim
Germany

Deadline for submissions is on 21 September 2020. Participation is free. The finalists will be notified on 06 October 2020. The participants in the competition agree that their submitted designs will be exhibited at Formnext 2020 on 10-13 November 2020 after passing the process of elimination. Award ceremony: 12 November 2020 at Formnext in Frankfurt.

Further information concerning the tender documents and GTC on: www.purmundus-challenge.com

If you have any questions about the competition please contact: challenge@purmundus.de

We wish you success,

Corinna Ray, M.Sc.
Head of purmundus challenge

Corina Schiewe, B.A.
Marketing purmundus challenge

Dennis Lang
Communication
purmundus challenge

Claudia Biemel
Event and Community
purmundus challenge

Challenge details

Task

The task for the competition is to design a product or implementable market concept that makes full use of the production capabilities offered by 3D and 4D printing. This year's theme "Geometry and Material in Harmony" looks for innovative ideas that show how 3D and 4D printing can be set up for the benefit of the product design and production.

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 2020. 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.

This is the second time that Altair has presented the Simulation Driven Design award as part of the purmundus challenge, with a prize of a one-year licence for the complete Altair Inspire platform. The prizes Special Mention, Innovation Prize and Public Choice Award be 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 award ceremony to honor the winners will take place during the Formnext 2020 on 12 November 2020 in Frankfurt.

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
- Entrant's curriculum vitae (DIN A4, PDF)
- Product name, product description and concept (DIN A4, PDF)
- Photograph / rendering of the product (300 dpi, JPG, PNG or TIF)

Exhibition Finalists

For the special exhibition at the Formnext 2020 fair, the finalist of the contest shall provide the following:

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

Submission deadline is 30 October 2020. By then the purmundus challenge team must have received the drafts. The return shipment will be delivered within one week after the end of the Formnext 2020 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 information about the submitted designs for the contest is confidential. During the evaluation period and until 06 October 2020, the purmundus challenge team, the cooperation partners and the members of the jury commit not to reveal or disclose any confidential information. This agreement shall be terminated once the list of Finalists 2020 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





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challenge@purmundus.de
www.purmundus-challenge.com



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challenge 2020

Entrants

Company/Studio

First name and surname

Street and house number

ZIP/City/Country

Telephone/Fax/Mobile

Homepage

Email

Submission

Name of the product/submission

Dimensions of the product in mm/Weight

Declaration:

I agree on the terms and conditions of the international award purmundus challenge 2020. With my signature I commit to mentioned accomplishments and I do ensure that with my participation and my submission, including documents, pictures and data 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

The present enrolment has been translated into English from the German. In case of doubt regarding its interpretation, the German version shall be authoritative.

Short description of the product/submission

I agree on the terms and conditions of purmundus challenge.

Place/Date

Stamp/Signature