Assignment | Sustainable packaging

BASF 3D Printing Solutions

The company (Who We Are):
BASF 3D Printing Solutions (3DPS) is one of the world's leading companies in offering a wide range of materials and services along the entire additive manufacturing value chain. From consultancy and development, through bespoke design, digital simulation, prototype printing, to finishing and exhaustive component testing among others. These materials and service solutions are provided under the brand Forward AM.

Context of the (group) assignment:
Within BASF we support sustainable 3D printing and climate positive initiatives. Within our different departments we have a drive to make a positive impact within the Additive Manufacturing eco-system. This is performed by continuously striving to increasing resource efficiency, reduce environmental impact, harness a circular economy, and provide education. We have calculated the footprint (based on Life Cycle Assessment) for some of our products. By performing a sensitivity analysis and harvesting these results it became clear that we have an opportunity to significantly reduce our footprint if we modify the packaging of our product.

Your assignment is to utilize the LCA results and develop and design an innovative but practical packaging for our filament products. The aim is to reduce the carbon footprint of our packaging but at the same time it should maintain a certain robustness and commercial attractiveness so that it will not reduce the quality, usability or damage, the product. The research focuses on selection and verification of the most suitable solution. You can contribute to our ambition to become more responsible for all our products and assist us in our sustainability journey.

You will be closely working with our Product Managers of the Additive Extrusion System (AES) business line. AES focusses on supporting materials and services for Fused Filament Fabrication 3D printing process and is one of the business lines within BASF 3DPS.

Scope of the assignment:
- Investigate sustainable packaging alternatives (brainstorm about alternatives without constraints)
- Perform a competitor packaging analysis and investigate future trends of packaging (e.g., by a S-curve analysis, technical evolution charter).
- Investigate the minimal packaging requirements which are needed to deliver a quality product to our customers.
- The proposed packaging should be verified on applicability and feasibility within our manufacturing capabilities (e.g., by an attractiveness fit assessment). However, this doesn't mean that a manufacturing / handling setup isn't able to change in its setup, but the change should be justified e.g., by a Total Cost of Ownership/ Return on Investment analysis.
- Perform Life Cycle (Impact) Analysis which proves that the footprint is reduced by implementing the proposed packaging.
- Realisation of a (prototype) packaging.

Point of contact:
The student will participate on an ongoing multidisciplinary international investigation cq technology preparation of sustainable initiatives. The team thrives in a fast-paced, fun, start-up to grow-up environment, taking on challenges and applying your expertise and know how in a real-life environment.

The location can be a combination of working remote and/or working at the office in Emmen. The BASF 3D Printing Solutions BV office is located at Eerste Bokslootweg 17, 7821 AT Emmen, The Netherlands within the GETEC Business Park.

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