

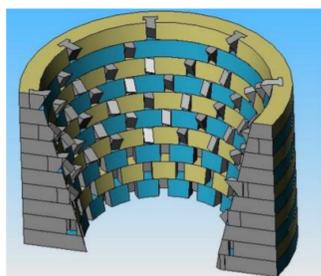
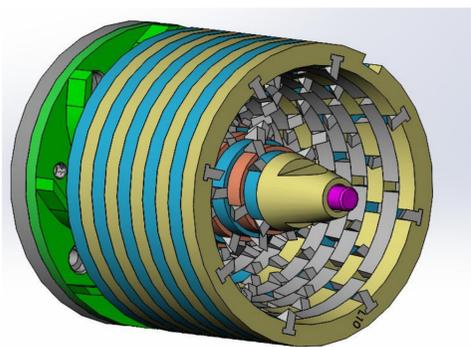
Conical crusher with the use of working elements produced in additive technology

Introduction

The subject of the invention is a device for the grinding of biological materials and plastics. The variety of materials to be shredded is very large, both in terms of shape and mechanical properties. The disadvantage of the known design solutions of plastic shredders is their low efficiency, high energy demand, and high noise level. Moreover, the design features entail a high risk of damaging the working elements - especially the knives. The proposed solution solves these problems.



universal laboratory crusher unit ULR-2.0 / 2004
with an attached shredder probe, with vertical
position of the drive shaft



Main concept

A characteristic feature of the conical grinder is the original shape of the working chamber and the possibility of modifying the final form of the working elements used in the grinding process. The production of teeth in the technology of additive sintering of metals allows to obtain a cutting geometry that will optimally contribute to the commencement of the grinding process. The main purpose in using the cone grinder is to crush biological materials. Controlling the number of rotations and the number of teeth in the outer and inner rings will allow for grinding materials of various geometries and obtaining the desired degree of grinding.

Technical advantages

The advantage of the proposed solution is:

- significant reduction of heat emission and energy demand during the grinding process,
- lower wear of the working elements of the machine while increasing process efficiency,
- increasing the degree of fragmentation of the material through the use of structurally modified and appropriately arranged grinding elements,
- possibility of replacing the set of knives with one adapted to the given shredded material,
- noise level reduction by using low rotational speeds.

Application

The working unit developed within the scope of the invention and used in the grinding devices improves the operating parameters, increases the efficiency of grinding, stable and failure-free operation, which in turn contributes to the increase of the mass efficiency of the process and the decrease of the specific energy consumption. The presented design solution is dedicated to the appropriate groups of materials. It will be work well in industry, especially in mechanical processing and recycling.

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