

New design for a range of valets/supports for round flasks and other glassware containers used in chemistry

Round-bottomed flask-type vessels are commonly used for good agitation, even heating, and must be correctly maintained.

The Imaging & Transfers team of the INRAE Unit «Qualité des Produits Animaux » has designed, using 3D printing, a range of valets/supports which can hold ergonomically containers of three different sizes on a magnetic stirrer without the use of stems, nuts or clamps. This device prevents glassware breakage and increases operator safety and facilitate the handling of rare liquid samples.

Invention context

Flasks specially those with a rounded balloon body shape are widely used, mainly in the field of chemistry, because their shape allows better agitation of the contents as well as homogeneous heating when placed in a heating mantle.

The invention aims at providing a flasks holder with a small size, which design support bottles of different sizes. The support comprises two parts arranged reversibly by simply turning it over and can thus be used in the appropriate position depending on the number of flasks to be placed.

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Advantages

- No risk of tipping/overturning
- Reinforced safety
- Optimized stirring for more flasks per stirrer (x7)
- Practicality and modularity (storage-reuse)
- System manufacturing: less material consumption when using 3D printing
- Support for 3 different balloon volumes

KEY WORDS: flask, ballon, support, round, impression, 3D, CAO, chemistry, instrument

APPLICATIONS

The device can be used on the following fields:

- Synthetic chemistry
- Organic chemistry
- Laboratory activities for industry

Adaptations are possible both in terms of sizes and materials used thanks to Computer Aided Design (CAD) and plastic/composite or metal 3D printing.



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TRL 1 2 3 4 5 6 7 8 9

DEVELOPMENT STEP:

The new prototypes designed by QuaPA are suitable up to a semi-industrial scale. The team wants to collaborate with partners to apply the design to other plastics/composites materials or to metals in a context of sustainability.

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