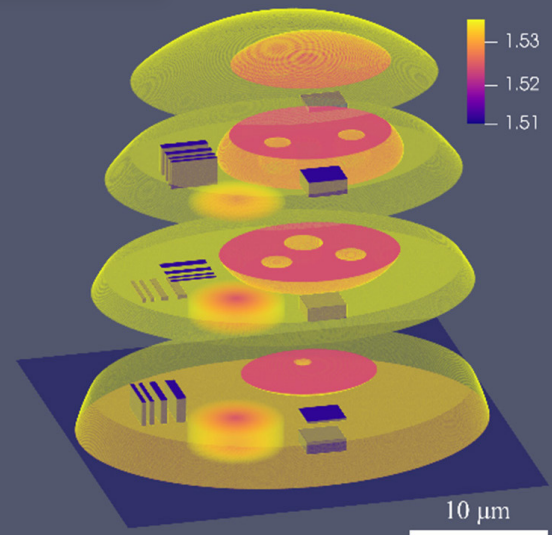


3D-PRINTED BIOLOGICAL CELL PHANTOM



DESCRIPTION:

Cell phantom is a three-dimensional microstructure that is designed to mimic real biological cells for quantitative phase imaging systems. It consists of regions with different refractive index that are fabricated in a single manufacturing step using direct laser writing. The resulting phantom and its features is metrologically validated down to 50 nm and $5 \cdot 10^{-4}$ refractive index value.

APPLICATIONS:

- Testing and metrological validation of 3D imaging and measurement systems
- Benchmarking key parameters such as: resolution, refractive index accuracy, dry mass or segmentation
- Easy design adjustments for novel systems or application areas

ADVANTAGES:

- Faithfully represents real biological cell and measurement conditions
- Metrologically validated (3D morphology and refractive index)
- Accompanied by digital twin enabling numerical simulations and direct comparisons
- Open-access validation methodology (nature.com/articles/s41598-019-55330-4) and quality assessment protocol (doi.org/10.1016/j.measurement.2022.111106)

READINESS:

- Ready for low-volume manufacturing
- Delivered as validated 3D microstructure on top of a coverslip

OPPORTUNITIES:

- Research cooperation
- New design and development services
- Licensing of IP rights

IP PROTECTION:

- patent #P.429994 (PL)
- patent pending in EPO, USA and Japan under PCT/IB2020/054772

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