Merry Christmas and Happy New Year

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ABSTRACT

With this paper we would like to demonstrate a christmas card printed with direct laser writing and measured with holographic tomography to wish you Merry Christmas and a Happy New Year.

Keywords: holographic tomography, direct laser writing, Santa Claus, winter, Christmas, New Year

Holographic tomography is a technique, which delivers quantitative information on the refractive index of a sample based on multiple holographic projections. The method is marker-free and suitable to live cell imaging and thus gains attention in the area of biomedical imaging.[1] However, it can also be used to measure technical object such as calibration phantoms manufactured with direct laser writing.[2] In this paper we prepared a step object (50x50x20 μm), which was based on a cartoon of a Santa Claus and measured its 3D refractive index distribution with holographic tomography. To conclude, may the spirit of Christmas bring you and your family hope, happiness and love - Merry Christmas and Happy New Year 2022.
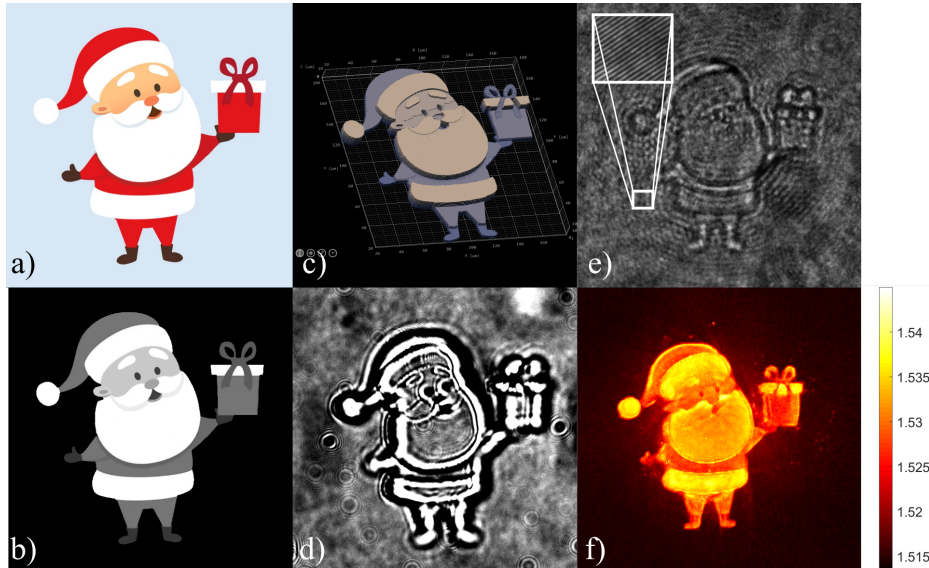

Figure 1. Manufacturing and measurement process of a Santa Claus phase map: a) Santa Claus cartoon[3] - RGB source image, b) source image converted to grayscale values, which encode step height, c) step map for printing, d) post-print preview e) hologram of a Santa, f) maximum intensity projection of the 3D refractive index distribution.

REFERENCES

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[3] Shutterstock, "Shutterstock santa claus holding a gift box," (2021).

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