

Review of: "Visualizing nanometric structures with sub-millimeter waves"

Dmitry Ponomarev

Potential competing interests: The author(s) declared that no potential competing interests exist.

This is a very nice work on 3D imaging in far-field with extremely high accuracy along the height-axis (corresponding to 1:7500 to 1:10000 THz vacuum wavelength). Importantly, that the authors have proposed a technique that is based on photomixing for generation and detection of THz radiation and which does not utilize expensive lasers with extraordinary wavelength stabilization.

I've found some issues that I'm interested in and it would be nice if the authors provide a feedback on them:

1. It has been noted that the presence of sharp edges in the sample topology affects the simultaneous extraction of refractive index and geometrical thickness. Does this mean that the parameters of the focused radiation beam on the object may affect the accuracy? Also, how did the authors choose the optimal spot size?
2. How do you control the optical path difference between two arms of the interferometer to improve the measurement precision?
3. Could you please describe the procedure for subtracting the warped background in more detail?
4. How many pixels does a typical 3D image contain and what is the total registration time?