

## Reviewer Report

**Title:** "Laboratory X-ray micro-computed tomography: a user guideline for biological samples"

**Version:** Revision 1      **Date:** 9/5/2016

**Reviewer name:** Alexander Ziegler

### Reviewer Comments to Author:

SG le Roux now more comprehensively and concisely provides the reader with an introduction to  $\mu$ CT scanning. Although the article constitutes a significant improvement compared to previous versions, I still recommend that the authors undertake a MAJOR REVISION of their manuscript.

One of the primary reasons for this recommendation is that in my view the article still is not properly written for the intended audience, i.e. newcomers to  $\mu$ CT from a primarily biological background. While some parts of the article can be easily understood, other aspects can only be grasped with a considerable degree of experience in  $\mu$ CT scanning. I would therefore like to encourage the authors once more to seek the help (maybe even in the form of a co-authorship) of a zoologist without any knowledge in  $\mu$ CT. This person will certainly rapidly be able to identify those parts of the manuscript that are currently unsuitable for a reader without any knowledge in this technique.

Another point that still requires attention as well as love for detail are grammar, style, and wording of the text - although English is not my mother-tongue, I can easily spot numerous mistakes, sometimes several on a single page. These mistakes convey the impression that the authors did not take their submission fully seriously. This same notion also applies to the figures (see my comments below). Here just a few examples from the first text page:

- Page 2, line 1: "The ability to perform non-invasive analysis is often of prime concern when working with biological samples." - overly generalized statement, a cell biologist is working with biological samples and will readily use histology or TEM (invasive!) to conduct his analyses

- Page 2, line 17: three dimensional - written in text form, although the abbreviation (3D) has been introduced a few lines before

- Page 2, line 27: I am not aware of the term " $\mu$  (XCT)"

- Page 2, line 38: "...from small low-cost benchtop systems to cabinet systems able to house larger samples and even as large as walk-in cabinet systems..." - this sentence is not correct English in my opinion

These aspects (grammar, style, content) as well as the fact that the text should be thoroughly checked for consistency once more lead me to suggest a MAJOR REVISION. I would like to urge the authors to invest more time in the preparation of their manuscript.

## Figures

As in my previous comments I would like to encourage the authors to adhere to the basic guidelines in the preparation of figures for zoomorphological publications. For example, in case of figure plates, it is custom to align the individual images in size - this basic concept is not followed in Figure 2 (unprecise placing of images), Figure 4 (missing fourth image), and Figure 6 (quite chaotic figure). Furthermore, in the schematic Figure 1 the position of the detector is confusing (facing the reader instead of the radiation source), while in Figure 3 scales are missing. In addition, the authors need to position the images in Figure 6 in a standardized orientation - it is presently quite difficult to identify the areas that are shown at the consecutive higher magnifications.

Kind regards

Alexander Ziegler

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