**Reviewer's report**

**Title:** Custom design of orthopedic implants based on patient specific Computed Tomography data evaluated using Finite Element Analysis - Case of Femoral Component

**Version:** 1  **Date:** 20 February 2007

**Reviewer:** Chris Sutcliffe

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Custom design of orthopedic implants based on patient specific Computed Tomography data evaluated using Finite Element Analysis – Case of Femoral Component

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The following the referees report on the above paper

1. Is the question posed by the authors new and well defined?

The use of customised geometry for the production of implantable devices has been proposed, researched and reported before however this paper proposed that custom geometry be made available for all implants and that the differentiating factor would increase implant performance. As such the question although not new is focused on a new market.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

The methods are appropriate it would be possible to repeat the generation of the geometry and the production of the FEA code.

3. Are the data sound and well controlled?

The data does seem to be sound although I would have like to see a better comparison of the FEA data recorded stresses from the literature. We need to know if the results are of the correct order and that the FEA study is properly converged.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes it does but It is overlong. I suggest that the manuscript is remodelled to be much shorter.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

There is very little hard data presented and as such the discussions are brief and to the point. I don’t like the way in which the discussion and conclusions have been rolled into one.

6. Do the title and abstract accurately convey what has been found?

Yes

7. Is the writing acceptable?

Yes although I have some minor gripes detailed below

1) I dont like (see Figure X) I prefer .Figure X
2) Page 10 why does an STL file triangle need to be of equal size...they dont I can assure you
3) Page 10 "significantly been reduced" should be "been significantly reduced"
4) Page 10 Geomagic......Carolina Version 7.0 should be Geomagic Studio V7.0, Triangle part...
5) Page 11 Paragraph 2 is a repeat of one earlier...remove or compress
6) Page 12 I'm unsure if Uniformize is a word, I think not!
7) Discussion and conclusions need splitting.

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

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**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'