Author's response to reviews

**Title:** Design process of cementless femoral stem using a nonlinear three dimensional finite element analysis

**Authors:**

Mohd Yusof Baharuddin (mohdyusofbaharuddin@gmail.com)
Sheikh Hussain Salleh (hussain@fke.utm.my)
Ahmad Hafiz Zulkifly (ahafiz@iu.edu.my)
Muhammad Hisyam Lee (mhl@utm.my)
Alias Mohd Noor (alias@mail.fkm.utm.my)
Arief Ruhullah A Harris (arief@biomedical.utm.my)
Norazman Abdul Majid (norazman@utm.my)

**Version:** 2 **Date:** 10 September 2013

**Author's response to reviews:** see over
Dear Editor in Chief,

We would like to submit our study regarding the “Design process of cementless femoral stem using a nonlinear three dimensional finite element analysis” as the Research article in the BMC Musculoskeletal Disorders.

This study proposed a novel design process of the cementless femoral stem using a three dimensional model which provided complete design’s cycle commenced with morphological analysis, followed by femoral stem’s design, fit and fills analysis, and nonlinear finite element analysis (FEA). The three dimensional (3D) finite elements analysis plays important role in the orthopaedic biomechanics as several studies implemented this method to study the bone mechanical properties demonstrated similar result between experimental and simulation.

Detail of the corresponding author:
Name: Prof. Dr. Ir. Sheikh Hussain Salleh
Email: hussain@fke.utm.my
Tel: +607 5535208  Fax: +607 5535430

We anticipate that this study will be of interest since this study provided details explanation of the accurate three dimensional models, from the morphological analysis until the finite element analysis which could be used as the preclinical assessment tools to mimic the actual condition, optimized the stem geometry, and rectified the problems prior fabrication. This paper has not been published and is not under current consideration elsewhere. All authors read and approved the final manuscript.

*Several changes have been made due to the pre review revision:

1) consent filling by participant in Methods

The procedure was approved by Universiti Teknologi Malaysia Human Ethics Research Committee, and the written informed consent was filled by participant prior study.

2) ethics committee has been included

The procedure was approved by Universiti Teknologi Malaysia Human Ethics Research Committee, and the written informed consent was filled by participant prior study.

3) figure legends has been removed from figure, and added after reference.
Thank you.

Best regards,

Prof. Dr. Ir. Sheikh Hussain Salleh  
Director,  
Centre for Biomedical Engineering Transportation Research Alliance,  
Universiti Teknologi Malaysia,  
81310 Skudai, Johor, Malaysia