Review of Thesis Proposal – 1 st draft

Reviewer Name: Arushri Swarup
Investigator Name: Kevin Luo
Peer Review Committee #: 9
Project Title: Groove cutting topology selection to eliminate the snapping problem in concentric tube manipulators

Brief description of project (to be completed by reviewer):

This project will be modeling, fabricating and testing cut patterns on tubes in order to optimize concentric tubes to improve the stiffness ratio and range of motion of the concentric tube robot. Modeling using FEM software will determine the optimal topologies to be fabricated and then tested. Stiffness will be optimized so that the tubes do not snap while being used.

In addition to your detailed comments and corrections within the document, please answer the following questions and provide explanations/suggestions where appropriate.
1. Are the objectives/research questions clear? Yes
2. Is the literature review appropriate and complete? Yes – describe why nitinol is good and what the limitations of minimally invasive surgery are and how concentric tube robots will address these limitations
3. Is the rationale for the study coherent and complete? yes
4. Is the research innovative? yes
5. Are the methods (design, measurement, analysis) appropriate to achieve the objectives? Yes, as explained
6. Are the expected study outcomes compelling and complete? Is there a dissemination plan and timeline? yes
7. Is the study feasible? yes
8. Is the organization of ideas clear and easy to follow? yes
9. Was the document easy to read and understand? Yes – good flow and easy for a person who is unfamiliar to the research to read and understand
10. What is your overall assessment of the project? Interesting project! Seems like it's feasible and requires both design and validation.
11. Please identify major issues and specific recommendations. See comments in the proposal. Well done!

Lastly, based on your review, please complete the evaluation form on the following page and identify areas where improvements are needed.