Response to Reviewer 1 Comments

Dear Reviewer1:

Thank you for your comments concerning our manuscript entitled ‘A nanoscale sensor based on a toroidal cavity with built-in elliptical ring structure for temperature sensing application’ (Manuscript ID: nanomaterials-1942631). These comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. We have studied comments carefully and have made corrections which we hope meet with approval.

Point 1: I feel that in this paper (and in particular in the introduction) is completely missing the concept of Fano resonances in dielectric resonators and all the aspect related to the excitations of the anapole mode in such kind of structures. Few important references about this issue are, for instance: Tuning the second-harmonic generation in AlGaAs nanodimers via non-radiative state optimization, Metal–dielectric hybrid nanoantennas for efficient frequency conversion at the anapole mode, Doubly mirror-induced electric and magnetic anapole modes in metal-dielectric-metal nanoresonators, Seeing the unseen: experimental observation of magnetic anapole state inside a high index dielectric particle, Nonradiating anapole modes in dielectric nanoparticles, Generalized hybrid anapole modes in all-dielectric ellipsoid particles.

Response 1: We have added an introduction to the concept of Fano resonance and the mechanism of its generation(line 82).

Point 2: I suggest to increase the size letter in figure 1. Also, black letter and blue background is not readable solution.

Response 2: We increased the font size and changed the image background to yellow.

Point 3: Line 213 remove '..'. Line 22 remove '_0'. Line 231 remove '_T'. Line 246 remove '..'.

Response 3: We have made changes and deletions.

Point 4: The authors calculate a sensitivity of 1.187 nm/°C. I think the authors should better explain if it is easy to experimentally detect such small variations? Also, which is the minimum temperature that the authors expect to be realistically measuread by the proposed structure?.

Response 4: We explain the measurement accuracy in line 270. We have suggested the desired minimum measurement temperature and given an analysis of it in line 251.

We tried our best to improve the manuscript and made some changes in the manuscript. These changes will not influence the content and framework of the paper. And we marked the changes in red in revised manuscript.

We appreciate for Reviewers’ warm work earnestly, and hope that the correction will meet with approval.

Once again, thank you very much for your comments and suggestions.

Wishing you good health during this difficult time.

Sincerely,

Feng Liu