Editor comments:

1) The editor fail to find an adequate description of the principle of the authors’ proposal.

2) The editorial board member does not believe that the manuscript is technically sound. It needs further numerical calculations or experiments to support the authors’ claim.

Reviewer 1 comments:

1) Title:

The title should be more specific to express THG based on cascading SHG.

2) Abstract and Conclusion:

The authors fail to present the essential conclusions of the numerical study on the proposed scheme (THG based on cascading SHG) in Abstract nor in Conclusion. What is the important new finding?

3) Mechanism of THG based on cascading SHG:

In page 3, lines 2-3, the authors describe as “the third (new) process of the frequency tripling is based on the frequency doupling at big mismatching.” However, it does not explain the mechanism of THG under large phase mismatching condition. The authors should give reasonable explanation on the mechanism. Why is THG generated under the large phase mismatching condition for SHG?

4) Comparison with the conventional scheme of SHG followed by SFG:

The authors should compare the THG efficiency of the proposed scheme with that of the conventional scheme of phase-matched SHG followed by phase-matched SFG. The authors should also present the advantages of the proposed scheme compared with the conventional scheme. Is it true that the proposed scheme gives higher efficiency? If so, why is it?

5) Fundamental properties:

Since the authors perform numerical simulations with short pulses, there are self- and cross-phase modulations and dispersion-induced effects, which complicate the frequency conversion phenomena. In order to clarify the basic properties, e.g., how the THG efficiency depends on the phase mismatch for SHG and that for SFG, the authors should perform numerical simulations with the continuous wave input or for the longer pulse input. After clarifying the fundamental properties, the authors may proceed to study the THG process with shorter pulses.

6) Organization of the manuscript:

The manuscript should be re-organized to focus on the principle and the basic properties of the proposed scheme. It is much more important to present them than to present complicated behaviors induced by self- and cross-phase modulations and dispersion-induced effects.

7) Conclusion and remarks:

This part should summarize the materials presented in the former sections. The authors should not add new numerical simulations here.

8) Supplementary information:

The supplementary information contains so many numerical simulations which does not seem to be necessary to support the materials presented in the main manuscript.

Reviewer 2 comments:

1) Many strange descriptions appear in the manuscript, like “in. 10” (the last sentence, in the section of Introduction), including English itself.

2) Also, there are no indications regarding most of data in the figures.