Response for Reviewer 4

We deep appreciate for the comments, which give us much courage and help. All the comments have been carefully studied, and related modification has been finished to this paper.

All the comments are marked in black color and the responses are marked in red color font as required.

Comments 1:

This paper is worth of publication in the Journal of Materials, if the following changes/revisions can be applied/addressed (major revision):

The results have been clearly shown; however, the manuscript suffers from lack of sufficient discussion for the presented results.

Response:

More contents have been added in the discussion part. A new grid in Figure 9 & 10 has been added, which is with the same pattern of our scanning. Figure 4 has been removed, because its content can be described by text. Equation (8) has been re-derived, and also used for calculating the theoretical generated free charges by laser pulse.

Comments 2:

The novelty of the manuscript is not clear.

Response:

Our testing has several different characteristics from other's researches.

1. most of the researches use the commercial SRAM chip, not specifically for SEE testing purpose. In our testing, 6 different SRAM structures are fabricated in the same chip, which contains traditional 6T structure, and several anti-radiation structure, e.g. Quatro structure. This testing chip is specifically designed and used for SEE testing.

2. most research based on commercial SRAM chips doesn't focus on one single SRAM cell. The sensitivity map in those researches mainly have the dimension from several micrometres to dozens of micrometres. In our testing, the sensitive map has been achieved inside one single SRAM cell, with the dimension around one micrometre, and our scanning resolution could reach half a micrometre.

3. because there are different structures in our testing chip, the data of threshold energy for 4 different SRAM structures has been achieved by laser testing; furthermore, this data is confirmed by the Alpha radiation results. This achievement can give a very good reference for energy calibration in SRAM laser testing.

4. a profile of energy distribution along Z axis (the direction that the laser beam injected into the chip) is achieved. TPA process is highly dependent on the irradiance of input laser pulses. This result can provide a result that how the energy changes with the focal length. It's also a good reference for laser testing.

Comments 3:

more info about the similar research projects in the filed can be added.

Response:

Two citation about SEE mapping have been added into the paper. The first one is citation (3), which describes the SEEs testing by protons and neutrons; the other is citation (23), which describes the SEEs testing on SRAM by both Heavy Ion and Laser.

Comments 4:

Authors should explain about the stats methods used in this research; Also, number of samples/tests and errors are missed. Font size in some images should be increased (e.g. Figure 6)

Response:

Three more groups of data have been added into the Figure 3. Clearer trend can be shown between change of error and change of energy & noise level.

Font size in several image has been modified.