

## Response to reviewers' comments

March 09, 2019.

The Editor

Proceeding of SAIP 2018

Dear Editor

We agree with all the comments made by the reviewers and we accommodated those. For your convenience, each comment is listed below with our response given. The comments of the reviewers are given **in red**, while our responses are in black and the corresponding changes to the manuscript **in blue**.

### Reviewer 1

1) The venue of the RBS instrument used to monitor the Se diffusion should be noted and referenced.

Corrected in lines 54-56.

### Reviewer 2

You never mention which of the many Se isotopes was implanted! You should also mention that it was (presumably) one of the stable ones, this being the whole idea of your work.

Corrected in lines 33, 37-38 and 44.

How close an approximation is the profile to a true Gaussian?

Corrected in lines 72-74.

You state an assumption that 0,3 dpa amorphizes SiC, but this needs a quotation or reference.

Corrected in line 76.

And what is the significance of the diffusion temperatures found, i.e. what sort of temperatures can be expected to occur in fuel particles or waste?

They cover temperatures between 1300 ° C and 1600 ° C in fuel particles during nuclear reactor accidents.

Since this is new work, with nothing to compare it with, the experimental errors must be estimated carefully. Your future readers need this information! Numbers can then be rounded to match; for instance, the experimental projected range can probably be quoted no more accurately than 88 nm and the theoretical value as 90 nm. It's then more obvious that the two values match closely.

Corrected in lines 67-71.

In Fig.1, the maximum damage looks more like 70 nm below the surface.  
Corrected in line 75.

The diffusion coefficient errors must be derived somehow and quoted, since these are your most important results.  
Corrected in lines 102-103.

Yours sincerely,

**ZAY Abdalla**