V1

In their manuscript, Dr Liu et al. described the study of the e-beam process for cladding Ni60 coating. They used ANSYS simulation and orthogonal experimental method to extract the good parameters for the cladding.

The overall impression of this manuscript is preliminary and fragment, lacking of sufficient experimental results, and thus cannot merit the standard of publication in Coatings in that state.

A lot of grammatical mistakes or errors are present. The manuscript needs be corrected and english should be corrected by a native language speaker.

Due to a lack of information about experimental conditions, some parts of the discussion are not clear and some results are not well described and supported. For example the paragraph on page 5 line 148: what is Ii, s, ...? there is no link with the previous paragraph or it is not clear.

With regard to this problem. denotes the sum of the crack rates corresponding to level number i in any column; s is the number of occurrences of each factor level on any column.

The legend of each figure should be completed with all parameters and more described.

There are only 10 references. I think the authors should introduce a little bit more the literature about this field. the introduction is too short. for example, authors mentioned that some toughness components are added but no reference or example.

In the main text, the figure should be mentioned as "figure 1.c".

references and interval are both between brackets. the authors should correct. please verify unit for the scan speed mm/s in main text instead of m.s-1 in table 3&4.

for the crack rate what does it mean "0.01~0.017"? it is not clear.

The crack rate refers to the ratio of the crack area to the detection area, which I explained in the fourth line of the penultimate paragraph in Figure 2. 0.01~0.017 refers to the crack rate between 0.01~0.017 for electron beam flow selection between 25 and 30.

Table 3 (page 5) seems not used in the main text. there are two tables "3" (on page 5 and 7).

From table 3 to 4 the focus current goes from ~700mA to 0.02 mA. is it correct? same comments for electron beam and scanning speed.

V2

The authors have modified their manuscript following some of my remarks.

I have still some remarks or suggestions to avoid misunderstanding or confusion

- I suggest to write the interval range for parameters following this format (xx-yy unit) ex: (25-30 10^{-3} A).

still some mistakes or comments :

- line 44 Zheng et al. instead of ZHENG
- line 52-54 the numbers should be in subscript
- line 74-76 However, "*most of them are the thermophysical parameters at room temperature. The thermophysical parameters of materials change with the change of temperature during the cladding process"* should be replace with *"most of them are at room temperature and change with the temperature during the cladding process".* sound better
- in my opinion the legends of figure are still not well described. for example figure 1.a what is it ?? on figure 2 what is the different image ? same sample ? same area…??? the figure 2 is not the distribution of the cracks but just some image of them. distribution will be related to the number of cracks over the area. The number on picture (fig 2) is related to what ?? clarify
- correct all the numbers (supscript format)
- Again I will point out the lack of clarity of section 4.1 and 4.2. the section 4.1 should be introduce before in the main manuscript
- on table 5 what is the K value ?? it is not mention in the main text. is it R ? not clear
- line 173 table 4 instead of Table 5
- relation between I_i and $\overline{I_l}$?
- Figure 3 is "*the influence of various factors on the R value of the crack rate"*
- on line 186 correct the range 0.017~0.01 instead of 0.01-0.017. the ~ is not appropriate

About references : some errors seem to be present but can not be checked as inaccessible. in Chinese instead of in China, [J] ?, space, subscript numbers,

some refs should be added :

https://doi.org/10.1186/s10033-021-00599-8

https://doi.org/10.3390/met11010053