Reviwer 1:

The paper presented now to Materials-2264500, refers to the understanding the influence of different arc spraying parameters on the quality and corrosion resistance of 140MXC-530AS coatings.

However, the title gives to explore two different coatings that are 140MAX and 530AS which is obviously inconsistent with the content of the paper. **OK corrected title: Effect of the surface chemical composition on the corrosion resistance in the mixture of FeCrMoNbB (140MXC) and FeCMnSi (530AS) coatings produced with the electric wire arc spraying technique: Part I**

The design and results of the current experiment are insufficient to support the conclusions. In the results and discussion Part, the analysis of the experimental results is not sufficient. In addition, a few data and conclusions are inaccurate. **OK corrected**

Thus, I cannot recommend the manuscript for publication in the present stage and a number of critical points must be addressed:

1) In Introduction, the expression of research background is so redundant that needs to be condensed, meanwhile there are few examples about the status of research that are not representative and the description of the innovation points and research objectives is lacking. **OK corrected**

2) In Materials and Methods, the specific distinctions of the experiments are no clear, and there exist the following questions: a. About table 1; The explanation of the nickname of the coating is lacking in the text. **OK corrected**
The title of table1 doesn't match the content in the article; **OK corrected**
The text is " The percentage of weight ", while the table title is "The percentage of element ". **OK corrected**
b. At lines77-83; **OK corrected**
About experiment1-9, it's only explained the principle of experimental setting and don't introduce the difference between experiments. **OK corrected**
c. Lines 86-89, in the saline experiment, the concentration of NaCl reagent is not stated. **OK corrected**

3) In Results and Discussion, there are some matters such as unclear discussion, missing data and errors. the specific problems are as follows;
4-1. At lines 175-176; Table 3 is exactly the same as Table 1. **OK corrected**
4-2 In the description about XRD, the crystallographic information only needs to retain key data that do prove the views (such as crystal plane index and diffraction) while author should emphasize to analyze the XRD results by the difference of experiments. Besides, at lines 226-228 There is insufficient evidence to confirm that the decrease of $Fe_2O_3(\alpha)$ intensity is related to air pressure and high cooling velocity. **OK corrected**
4-3 In the analysis of SEM, there is only one of coatings and there isn't sufficient evidence to prove the different parameter is how to influence the corrosion resistance of the coating, meanwhile the image size is so disaffinity that is meaningless **OK corrected**。
4-4 In the saline experiment, at lines 245-246 How is weightlessness data obtained? Please present the method and the key measurement data to show in the text. At lines 253-257 When explaining

the causes of weight loss of coatings, the thermal conductivity and porosity are the causes of corrosion, please briefly explain the connection between thermal conductivity of the coating and corrosion. **OK corrected**

4-5 In the discussion of the Tafel test; At lines 266-303.Multiple data errors and conceptual confusion occurred:

a. At line 271 “-600mV”is the breaking potential and isn’t the beginning of passivation. Simultaneously ; In the mixed coating curve, there isn’t enough evidence of a passivation trend. **OK corrected**

b. At line 287-288 The self-corrosion current fitting result of the matrix（5e-7A） is obviously inconsistent with the curve. **OK corrected**

c. At line 298 There is a description of the current range in the corrosion activation zone of the coating from 4.25 nA to 6.11 μA, which is completely inconsistent with the polarization curve. **OK corrected**

4) In Conclusion Some data is first appearance and There isn’t relevant content in the text。Specific questions are as follows:

a. At lines 351-362 "Description of the influence of parameters such as air pressure, current, and voltage on the crystal size", the relevant content is not mentioned and specific size value in the text. **OK corrected**

b. At lines 363-373 the influence of different parameters on porosity and thickness, it was not mentioned in the article. In addition to, there exist many grammatical and spelling errors in the text, and the English text must be improved. **OK corrected**