Comments on the revised version of “materials-585098”

Title: “Controlling grain sizes of 42CrMo steel by pre-stress hardening grinding”

- The current manuscript studies the effect of pre-stress hardening grinding on the grain size of 42CrMo Steel.

- The authors present some interesting results, however, some points need to be considered and revised as follows:

1- In the introduction section, the cases of selecting PSHG instead of heat treatment to hardened the part surface and refinement the microstructure of 42CrMo Steel should be illustrated and supported with more references. Also, the applications related to applying PSHG should be stated.

2- Section 2.1; it is recommended to present the chemical composition of 42CrMo Steel and the machine characteristic for PSHG in separate tables. Also, the number of samples should be stated.

3- A sub-section from section 2 should illustrate the theory of the developed model.

4- The developed model should be presented first before being validated with the experimental results.

5- The standard deviation and repeatability of the measurements should be discussed on the plots and along with the manuscript text.

6- The trends obtained from the current work should be supported with literature studies to be verified in the discussion section.

Please considered the above recommendations and comments carefully, another review of the revised version might be needed.