

1) More details on the synthesis and crystallization of the ceramics for this study are reported in our previous paper, which is listed as reference 13 in the present paper. To avoid overlap with that paper, we have not provided all of the details in the present paper. To address the reviewer comment, we have added a sentence to the procedure section to clarify the processing conditions and to guide readers to the previous paper that describes the choice of parameters in more detail.

2) As stated on lines 138 and 139 in the manuscript, we believe that the additives were present as second phases and did not form substitutional solid solutions. This assertion is supported by the lattice parameters of the four different specimens, which were all the same within standard deviation. Also, we do not believe that complex phases were formed, but that the graphene and Y_2O_3 remained in their original forms after densification. The low volume fraction of these phases did not allow them to be detected by XRD.

3) We do not understand this comment. The crystallite size that was based on Rietveld refinement of XRD data was presented in the text and changed depending on the additives and milling process. The changes are attributed to a combination of the change in particle size due to milling and the physical effect of pinning of grain growth by the added phases (graphene or Y_2O_3). The scope of this study did not involve deformation mechanisms or defect characterization, so we are not sure why the reviewer asked for characterization of deformation and dislocation density, which would require both experiments to mechanically deform the specimens and extensive TEM characterization that were not part of the research that was conducted.

4) The amount of porosity in the specimens was calculated using bulk density measurements made using Archimedes principle that were summarized in Table I and the true density that was calculated from the XRD lattice parameter measurements. This is described in the procedure, so no changes were made to the present version based on this comment.

5) Figure 2, the XRD figure, has been revised and updated with better quality plots.

We hope you will find these changes satisfactory and accept our paper for publication.

Best regards,

Dr. Nina Obradovic