



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	Ms_BJAST_23371
Title of the Manuscript:	OXYGEN AND HYDROGEN REACTION "IN SITU" WITH MAGNESIUM AND TANTALUM INTO MECHANICAL MILLING SYSTEM WHEN A SOLVENT IS USED
Type of Article:	Original Research Articles

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
After reading this paper the main question is: why? Why di you choose to ball mill Mg and Ta? This is not clear. I guess you wanted to synthesize a ternary alloy Mg-Ta-H which is possible by ball milling, there are papers on this. But you should state it clearly and show how your experiment is different to the other. In your case, the end result is that there seems to be no interaction of Ta and Mg, each doing its own reaction with the solvent except for some small Mg-Ta oxide in the 10 hours pattern. Synthesizing Ta hydride this way is not so interesting because you ends up with a mixture with Mg(OH)₂ which is essentially 'dead' in term of hydrogen storage. To me, the interest would be to ball mill Ta alone. Then, you may end up with only tantalum hydride. However, practical applications with tantalum hydrides are very few because this hydride is too stable. Actually, this is why you make tantalum hydride and not magnesium hydride because tantalum hydride is much more stable than magnesium hydride. The English still has to be improve. I corrected a few misspell but the syntax has also to be improved. Sometimes it is difficult to understand what you mean. Also, the 3 pages discussion before the conclusion section have to be changed. It seems that the authors just list every explanation possible. For example, the authors mention that formation of an amorphous phase is possible. From the broadness of the peaks I do not see any indication of a formation of amorphous phase. The authors also mention that Mg and Ta could lose an electron during milling. Do you have proof of this? Any literature citing this effect? To me this looks very strange. On page 3 you wrote 'particularly in regard to the temperature' : What do you mean by this? Ambient condition means room temperature so, why add this? Page 3 you wrote 'diffractometer adapted to an X-ray tube ' : What do you mean by this? A diffractometer always have a X-ray tube! Page 4, you wrote 'treated with a lime from an ingot' : Instead of 'lime' write 'file' Figure 1: You have to specify in the figure caption what is (a) and what is (b). Page 10, you wrote' of the 2θ angle do not interfere with the magnesium or tantalum elements ' : What do you mean by 'interference'. Bragg peaks do not 'interfere' with each other. They could overlap but using the word 'interference' means that physically there is an interaction between the Bragg peaks which is not the case.	The aim of this work is mentioned in the introduction of clear and concise manner: "The purpose of this paper is the preparation "in situ" of magnesium–tantalum phases. In the literature there is no information about the formation of Mg-Ta-H by mechanical alloying, in other works the obtention of ternary alloys by this technique are formed by adding a metal more metal hydrides or hydrogenated compounds. This paper does not mention that the tantalum hydride was used or It will be used to store hydrogen The manuscript was edited by he American Journal Experts and the revised manuscript is attached In this work the formation of an amorphous phase is not reported during the milling process. Within the mechanical milling system it is difficult to know the effects performed and there are no instruments that can be used to carry out such verification, they are mentioned as likely was exchanged ambient conditions for room temperature. was omitted " diffractometer adapted to an X-ray tube" The word lime was changed to abrasive file Figure caption was corrected. The metals were specified with A and B as suggested The word interfere was changed for overlap. The word interference was changed for superimposed.