

Sample Abstract for the 7th Latin-American Conference on Nanostructured and Metastable Materials

Characterization of amorphous, metastable and nano-structured metallic alloys for hydrogen storage using X-ray microtomography

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Magnesium-based alloys are candidate materials for the safe storage of hydrogen in the solid state through the formation of metal hydrides. In this proposal, we investigated the influence of processing by extensive lamination performed at room temperature or cryogenic temperature on the microstructure and hydrogen storage properties of the commercial alloy AZ91. The X-ray microtomography analyzes should contribute to the understanding of the effects of the amount of microcracks in the absorption kinetics and desorption of the material. By using X-ray microtomography we are able to give a complete picture of the internal structure determining distribution of impurities, microcracks volume and density differences into the material. This works contribute to reveal the advantage of this characterization technique on this kind of materials.