Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Water photolysis by the $K_2Ln_{2/3}Ta_2O_7$ and $K_2LnTa_3O_{10}$ (Ln=La, Pr, Nd) tantalates[1] HOOVER VALENCIA-SANCHEZ, Escuela de Quimica, Universidad Tecnologica de Pereira, La Julita, Pereira, Colombia, ALICIA NEGRON-MENDOZA, Instituto de Ciencias Nucleares, DWIGHT ACOSTA-NAJARRO, Instituto de Fisica, PABLO DE LA MORA, Facultad de Ciencias, GUSTAVO TAVIZON, Facultad de Quimica, Universidad Nacional Autonoma de Mexico. Cd. Universitaria — Six compounds of the hydrated phase of $K_2Ln_{2/3}Ta_2O_7$ and $K_2LnTa_3O_{10}$ were prepared by the polymerizable complex method; these compounds were characterized in crystal structure, specific surface area (BET), optical band gap (DRS) and reactivity for water photolysis using a 300 W Hg-lamp. Tantalates containing La, Pr and Nd show a shift in the band gap value, from 3.8, 2.6 and 2.07 eV, respectively. Hydrogen production without co-catalyst has been observed, and no noticeable difference appears when NiO_x was impregnated to powders. The hydrogen production notably increases when a sacrificial agent as methanol was used. In this work we compare the hydrogen production efficiencies for the bi-octahedral and three-octahedral tantalum hydrated compounds.

[1]This work is partially supported by grants from PAPIIT; IN 214313 and IN 113913.

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Date submitted: 18 Nov 2013 Electronic form version 1.4